

edgeRtoGO

Shradha Mukherjee

R Markdown

```
getwd()
```

```
## [1] "C:/Users/shradha/Desktop/PartOfMy Desktop/Ubuntu/git/StemCells_RNAseq_counts_edgeR_visualization_GO"
```

```
list.files()
```

```
## [1] "clustered_samples.txt"
## [2] "clusteredfit_samples.txt"
## [3] "countdataDGE_BCVplot.pdf"
## [4] "deGenes_lrt_fdr.txt"
## [5] "deGenes_lrt_fdr_final_DensityPlot.pdf"
## [6] "deGenes_lrt_fdr_GO_Biological_Process_2017.txt"
## [7] "deGenes_lrt_fdr_GO_Biological_Process_2017plot.pdf"
## [8] "deGenes_lrt_fdr_initial_DensityPlot.pdf"
## [9] "deGenes_lrt_fdr_KEGG_2016.txt"
## [10] "deGenes_lrt_fdr_KEGG_2016plot.pdf"
## [11] "deGenes_lrt_fdr_Reactome_2016.txt"
## [12] "deGenes_lrt_fdr_Reactome_2016plot.pdf"
## [13] "deGenes_lrt_fdrHuMs.txt"
## [14] "deGenes_lrt_fdrHuMsDisgenetConsolidated.txt"
## [15] "deGenes_lrt_fdrHuMsDisgenetConsolidated_Venn.pdf"
## [16] "deGenes_lrt_fdrHuMsneuroDiseaseVariants.txt"
## [17] "deGenes_lrt_fdrHuMsneuroDiseaseVariants_Venn.pdf"
## [18] "DisGeNet_consolidated_disease_genes.txt"
## [19] "DisGeNet_neuro_genetic-disease.txt"
## [20] "edgeRtoGO_StemCellSig.Rmd"
## [21] "edgeRtoGO_StemCellSig_files"
## [22] "logcountdataDGEfit_boxplot.pdf"
## [23] "logcountdataDGEfit_ClusterPlot.pdf"
## [24] "logcountdataDGEfit_Clusters&SumofSquared.pdf"
## [25] "logcountdataDGEfit_ClustersDendrogram.pdf"
## [26] "logcountdataDGEfit_MDSplot.pdf"
## [27] "logcpmcountdataDGE_boxplot.pdf"
## [28] "logcpmcountdataDGE_ClusterPlot.pdf"
## [29] "logcpmcountdataDGE_Clusters&SumofSquared.pdf"
## [30] "logcpmcountdataDGE_ClustersDendrogram.pdf"
## [31] "logcpmcountdataDGE_corr_P-value.txt"
## [32] "logcpmcountdataDGE_corr_r-value.txt"
## [33] "logcpmcountdataDGE_corrplot.pdf"
## [34] "logcpmcountdataDGE_Heatmap_clustering.pdf"
## [35] "logcpmcountdataDGE_MDSplot.pdf"
## [36] "merged_scVSnonsc_counts.txt"
## [37] "README.md"
## [38] "scVSnonsc_metadata.txt"
```

Libraries and preliminaries

These packages can be downloaded from Bioconductor using the following commands in R or Rstudio ## try
<http://> (<http://>) if <https://> (<https://>) URLs are not supported source("https://bioconductor.org/biocLite.R
(<https://bioconductor.org/biocLite.R>")) biocLite("name_of_package")

```
library(biomaRt)#required for the gene symbol conversion
library(dplyr) # used for general data wrangling
```

```
##
## Attaching package: 'dplyr'
```

```
## The following object is masked from 'package:biomaRt':  
##  
##     select
```

```
## The following objects are masked from 'package:stats':  
##  
##     filter, lag
```

```
## The following objects are masked from 'package:base':  
##  
##     intersect, setdiff, setequal, union
```

```
library(tidyr) # used for tidying tables  
library(ggplot2) # I don't think I need to explain this one  
library(edgeR) # for RNAseq DE testing
```

```
## Loading required package: limma
```

```
library(stringr) # for string substitutions  
library(DT) # for displaying tables interactively in R Markdown  
library(ggmap)#plots  
library(gplots)#plots
```

```
##  
## Attaching package: 'gplots'
```

```
## The following object is masked from 'package:stats':  
##  
##     lowess
```

```
library(RColorBrewer)#color pallet  
library(Hmisc)#for corelation plot
```

```
## Warning: package 'Hmisc' was built under R version 3.4.3
```

```
## Loading required package: lattice
```

```
## Loading required package: survival
```

```
## Warning: package 'survival' was built under R version 3.4.3
```

```
## Loading required package: Formula
```

```
##  
## Attaching package: 'Hmisc'
```

```
## The following objects are masked from 'package:dplyr':  
##  
##     src, summarize
```

```
## The following objects are masked from 'package:base':  
##  
##     format.pval, units
```

```
library(viridis)#for corelation plot
```

```
## Loading required package: viridisLite
```

```
library(corrplot)#for corelation plot
```

```
## corrplot 0.84 loaded
```

```
library("GeneOverlap")#for list comparison  
library("enrichR")#for pathway analysis
```

```
## Warning: package 'enrichR' was built under R version 3.4.3
```

```
set.seed(1903) # setting the random number generator for reproducibility  
options(stringsAsFactors = F) # for reproducibility
```

Loading count data

```
table=read.delim('merged_scVSnonsc_counts.txt', header=T, sep='\t')  
glimpse(table)
```

```
## Observations: 14,822
## Variables: 23
## $ Ms_gene      <chr> "0610007P14Rik", "0610009B22Rik", "0610009O20R..."
## $ asc1_count   <int> 5934, 4399, 1561, 425, 1770, 2023, 30, 5491, 1...
## $ asc2_count   <int> 4159, 2074, 2675, 434, 1831, 1719, 172, 3750, ...
## $ asc3_count   <int> 6152, 2798, 3148, 647, 2154, 2100, 389, 4760, ...
## $ asc4_count   <int> 7408, 3462, 4323, 485, 2519, 2219, 327, 5940, ...
## $ neu1_count   <int> 3429, 1369, 39, 339, 1166, 424, 477, 1566, 303...
## $ neu2_count   <int> 6097, 2606, 2236, 45, 1229, 823, 380, 5545, 13...
## $ neu3_count   <int> 4615, 1114, 925, 183, 994, 847, 65, 4550, 1000...
## $ neu4_count   <int> 2708, 903, 669, 22, 627, 385, 19, 2162, 256, 2...
## $ astro1_count <int> 2741, 374, 2777, 1062, 574, 363, 1397, 2629, 2...
## $ astro2_count <int> 3005, 367, 2644, 1107, 702, 394, 1446, 2172, 1...
## $ endo1_count  <int> 762, 544, 2874, 1443, 2721, 554, 484, 7307, 21...
## $ endo2_count  <int> 769, 613, 2921, 1537, 2525, 621, 494, 6852, 23...
## $ micro1_count <int> 452, 66, 3228, 151, 2568, 251, 623, 9776, 1215...
## $ micro2_count <int> 509, 104, 3714, 57, 2526, 275, 408, 11576, 946...
## $ neuron1_count <int> 1792, 525, 1860, 2993, 1268, 760, 1159, 1025, ...
## $ neuron2_count <int> 1504, 431, 1507, 3841, 999, 639, 859, 815, 113...
## $ oligopre1_count <int> 2815, 561, 2927, 1582, 1308, 748, 1285, 2598, ...
## $ oligopre2_count <int> 3784, 497, 4008, 600, 1611, 1071, 714, 3419, 2...
## $ oligonew1_count <int> 3858, 609, 1992, 1932, 736, 401, 904, 1792, 10...
## $ oligonew2_count <int> 3882, 522, 2369, 758, 972, 490, 522, 2367, 119...
## $ oligomye1_count <int> 3576, 625, 1714, 754, 770, 502, 275, 2635, 795...
## $ oligomye2_count <int> 3431, 506, 1718, 769, 824, 484, 252, 2413, 881...
```

#Incase there are 'na' in the data they can be omitted in the analysis from the table by uncommenting command below, as EdgeR will not work with 'na':

```
#table=na.omit(table)
```

#Incase glimpse(table) shows 'dbl' values instead of 'int', this can be changed to 'int' by uncommenting code below, as EdgeR will not work with 'dbl':

```
#table = table %>%
# mutate_if(is.double, as.integer)
#glimpse(table[1:10])
```

Filter out low counts from table such that sum of row data is greater than the total number of samples. Here we have 22 samples. We do not include the gene name columns and create a variable 'KeepValues' that records or is a placeholder for all rows that are True for the condition of rowSums>22

```
KeepValues<-rowSums(table[, -1])>22
table_filt<-table[KeepValues,]#only retain the KeepValues True rows
#Let's see how many rows we filtered out
dim(table)
```

```
## [1] 14822    23
```

```
dim(table_filt)
```

```
## [1] 14809    23
```

```
glimpse(table_filt)
```

```
## Observations: 14,809
## Variables: 23
## $ Ms_gene      <chr> "0610007P14Rik", "0610009B22Rik", "0610009O20R...
## $ asc1_count   <int> 5934, 4399, 1561, 425, 1770, 2023, 30, 5491, 1...
## $ asc2_count   <int> 4159, 2074, 2675, 434, 1831, 1719, 172, 3750, ...
## $ asc3_count   <int> 6152, 2798, 3148, 647, 2154, 2100, 389, 4760, ...
## $ asc4_count   <int> 7408, 3462, 4323, 485, 2519, 2219, 327, 5940, ...
## $ neu1_count   <int> 3429, 1369, 39, 339, 1166, 424, 477, 1566, 303...
## $ neu2_count   <int> 6097, 2606, 2236, 45, 1229, 823, 380, 5545, 13...
## $ neu3_count   <int> 4615, 1114, 925, 183, 994, 847, 65, 4550, 1000...
## $ neu4_count   <int> 2708, 903, 669, 22, 627, 385, 19, 2162, 256, 2...
## $ astro1_count <int> 2741, 374, 2777, 1062, 574, 363, 1397, 2629, 2...
## $ astro2_count <int> 3005, 367, 2644, 1107, 702, 394, 1446, 2172, 1...
## $ endo1_count  <int> 762, 544, 2874, 1443, 2721, 554, 484, 7307, 21...
## $ endo2_count  <int> 769, 613, 2921, 1537, 2525, 621, 494, 6852, 23...
## $ micro1_count <int> 452, 66, 3228, 151, 2568, 251, 623, 9776, 1215...
## $ micro2_count <int> 509, 104, 3714, 57, 2526, 275, 408, 11576, 946...
## $ neuron1_count <int> 1792, 525, 1860, 2993, 1268, 760, 1159, 1025, ...
## $ neuron2_count <int> 1504, 431, 1507, 3841, 999, 639, 859, 815, 113...
## $ oligopre1_count <int> 2815, 561, 2927, 1582, 1308, 748, 1285, 2598, ...
## $ oligopre2_count <int> 3784, 497, 4008, 600, 1611, 1071, 714, 3419, 2...
## $ oligonew1_count <int> 3858, 609, 1992, 1932, 736, 401, 904, 1792, 10...
## $ oligonew2_count <int> 3882, 522, 2369, 758, 972, 490, 522, 2367, 119...
## $ oligomye1_count <int> 3576, 625, 1714, 754, 770, 502, 275, 2635, 795...
## $ oligomye2_count <int> 3431, 506, 1718, 769, 824, 484, 252, 2413, 881...
```

Loading meta-data

```
metatable = read.delim('scVSnonsc_metadata.txt',header = T, sep = '\t')
glimpse(metatable)
```

```
## Observations: 22
## Variables: 7
## $ sample_id      <chr> "asc1_count", "asc2_count", "a...
## $ individual_id  <int> 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, ...
## $ cell_type      <chr> "asc", "asc", "asc", "asc", "n...
## $ activated.stemcell.non.stemcell <chr> "asc", "asc", "asc", "asc", "n...
## $ cell_type_full_name <chr> "neural_progenitor_cells", "ne...
## $ cell_tissue     <chr> "hippocampus", "hippocampus", ...
## $ GSE_id         <chr> "GSE68270", "GSE68270", "GSE68...
```

The individual_id is added to the metadata pretending same mice contributed once to the variable, though each came from 4-6 mice pooled together. This is included as in practical examples too where same animal or patient may contribute multiple samples constituting different cell types or different tissues part of the same mice.

'cell type' is abbreviation for 'cell_type_full_name' are effectively the same. The cell_type (represents different cell types) and cell_tissue (represents different tissue source) can be used in experimental design step of edgeR.

Note in this particular case activated.stemcell_non.stemcell, GSE_id (represents different study) and cell_tissue are effectively same groups, i.e. activated stem cells come from GSE68270 and hippocampus tissue, while non-stem cells come from GSE52564 and cerebral cortex tissue. Therefore, only one of these three variables should be used to avoid multicollinearity problem in design model 'Error: Design matrix not of full rank.'

It also helps to have same number of replicates for groups within a variable. In this example, there are 4 or 3 replicates in each group. Note we find which can be text as well as numbers, except individual_id.

edgeR formating of input table_filt and DEGList

Count data Convert this count data to DGEList object.

```
countdata<-table_filt[,-1]#except Ms_gene
rownames(countdata)<-table_filt[,1]# 1 for Ms_gene
glimpse(countdata)
```

```
## Observations: 14,809
## Variables: 22
## $ asc1_count      <int> 5934, 4399, 1561, 425, 1770, 2023, 30, 5491, 1...
## $ asc2_count      <int> 4159, 2074, 2675, 434, 1831, 1719, 172, 3750, ...
## $ asc3_count      <int> 6152, 2798, 3148, 647, 2154, 2100, 389, 4760, ...
## $ asc4_count      <int> 7408, 3462, 4323, 485, 2519, 2219, 327, 5940, ...
## $ neu1_count       <int> 3429, 1369, 39, 339, 1166, 424, 477, 1566, 303...
## $ neu2_count       <int> 6097, 2606, 2236, 45, 1229, 823, 380, 5545, 13...
## $ neu3_count       <int> 4615, 1114, 925, 183, 994, 847, 65, 4550, 1000...
## $ neu4_count       <int> 2708, 903, 669, 22, 627, 385, 19, 2162, 256, 2...
## $ astro1_count     <int> 2741, 374, 2777, 1062, 574, 363, 1397, 2629, 2...
## $ astro2_count     <int> 3005, 367, 2644, 1107, 702, 394, 1446, 2172, 1...
## $ endo1_count      <int> 762, 544, 2874, 1443, 2721, 554, 484, 7307, 21...
## $ endo2_count      <int> 769, 613, 2921, 1537, 2525, 621, 494, 6852, 23...
## $ micro1_count     <int> 452, 66, 3228, 151, 2568, 251, 623, 9776, 1215...
## $ micro2_count     <int> 509, 104, 3714, 57, 2526, 275, 408, 11576, 946...
## $ neuron1_count    <int> 1792, 525, 1860, 2993, 1268, 760, 1159, 1025, ...
## $ neuron2_count    <int> 1504, 431, 1507, 3841, 999, 639, 859, 815, 113...
## $ oligopre1_count  <int> 2815, 561, 2927, 1582, 1308, 748, 1285, 2598, ...
## $ oligopre2_count  <int> 3784, 497, 4008, 600, 1611, 1071, 714, 3419, 2...
## $ oligonew1_count  <int> 3858, 609, 1992, 1932, 736, 401, 904, 1792, 10...
## $ oligonew2_count  <int> 3882, 522, 2369, 758, 972, 490, 522, 2367, 119...
## $ oligomye1_count  <int> 3576, 625, 1714, 754, 770, 502, 275, 2635, 795...
## $ oligomye2_count  <int> 3431, 506, 1718, 769, 824, 484, 252, 2413, 881...
```

```
rownames(countdata[1:10,])#to view the first 10 rows
```

```
## [1] "0610007P14Rik" "0610009B22Rik" "0610009O20Rik" "0610010F05Rik"
## [5] "0610010K14Rik" "0610011F06Rik" "0610030E20Rik" "0610031J06Rik"
## [9] "0610037L13Rik" "0610040J01Rik"
```

Note: the rownames changed from 1, 2, 3... to Ms_gene symbols

```
countdataDGE<-DGEList(countdata)
dim(countdata)
```

```
## [1] 14809    22
```

```
dim(countdataDGE)
```

```
## [1] 14809    22
```

edgeR input metatable for edgeR

Metadata Reassign matatable to coldata as a data frame (factors i.e. text+numbers both allowed)

```
coldata<-data.frame(metatable[, -1])
rownames(coldata)<-metatable$sample_id
glimpse(coldata)
```

```
## Observations: 22
## Variables: 6
## $ individual_id      <int> 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, ...
## $ cell_type          <chr> "asc", "asc", "asc", "asc", "n...
## $ activated.stemcell_non.stemcell <chr> "asc", "asc", "asc", "asc", "n...
## $ cell_type_full_name <chr> "neural_progenitor_cells", "ne...
## $ cell_tissue         <chr> "hippocampus", "hippocampus", ...
## $ GSE_id              <chr> "GSE68270", "GSE68270", "GSE68..."
```

```
rownames(coldata)
```

```
## [1] "asc1_count"      "asc2_count"      "asc3_count"
## [4] "asc4_count"      "neu1_count"      "neu2_count"
## [7] "neu3_count"      "neu4_count"      "astro1_count"
## [10] "astro2_count"    "endo1_count"     "endo_count"
## [13] "micro1_count"    "micro2_count"    "neuron1_count"
## [16] "neuron2_count"   "oligopre1_count" "oligopre2_count"
## [19] "oligoneu1_count" "oligoneu2_count" "oligomye1_count"
## [22] "oligomye2_count"
```

Note the only difference in metatable and coldata is that sample_id 1st column of metatable has been assigned as rowname in coldata.

edgeR design matrix

Make design matrix to describe the statistical model Note from edgeR vineatte "> design <- model.matrix(~Batch+Treatment) In this type of analysis, the treatments are compared only within each batch. The analysis correctes for baseline differences between the batches. Similarly can include more variants for corrected analysis". In the design ensure that factors are not redundant or combination of others already in the design, Example: cell_type factor combinations make up activated.stemcell_non.stemcell, so will be redundant for the modeling. Other redundancies in levels are, 1) cell_type is abbreviation of cell_type_full_name, and 2) cell_tissue and GSE_id are redundant i.e. all hippocampus samples belongs to GSE68270 and all cerebral cortex samples belongs to GSE52564. If redundant variables are used in the model generates error 'error in design rank and coefficients cannot be calculated'

For the design here because we are interested in activated.stecell_non.stemcell differential genes we do not add the factor cell_type.

For interest in cell_type specific differences use the design without the group of activated.stemcell_non.stemcell design<-model.matrix(~individual_id+cell_type+cell_tissue, coldata)

```
#Alternative: The 0+ in the model formula is an instruction not to include an intercept column and instead to include a column for each group.
#design<-model.matrix(~0+individual_id+cell_type+activated.stemcell_non.stemcell+cell_tissue, coldata)
design<-model.matrix(~individual_id+activated.stemcell_non.stemcell+cell_tissue, coldata)
colnames(design)
```

```
## [1] "(Intercept)"
## [2] "individual_id"
## [3] "activated.stemcell_non.stemcellnonsc"
## [4] "cell_tissuehippocampus"
```

```
print(design)
```

```

##                (Intercept) individual_id
## asc1_count      1            1
## asc2_count      1            2
## asc3_count      1            3
## asc4_count      1            4
## neu1_count      1            1
## neu2_count      1            2
## neu3_count      1            3
## neu4_count      1            4
## astro1_count    1            1
## astro2_count    1            2
## endo1_count     1            1
## endo_count      1            2
## micro1_count    1            1
## micro2_count    1            2
## neuron1_count   1            1
## neuron2_count   1            2
## oligopre1_count 1            1
## oligopre2_count 1            2
## oligonew1_count 1            1
## oligonew2_count 1            2
## oligomye1_count 1            1
## oligomye2_count 1            2
##                activated.stemcell_non.stemcellnonsc
## asc1_count                                0
## asc2_count                                0
## asc3_count                                0
## asc4_count                                0
## neu1_count                                1
## neu2_count                                1
## neu3_count                                1
## neu4_count                                1
## astro1_count                              1
## astro2_count                              1
## endo1_count                              1
## endo_count                               1
## micro1_count                              1
## micro2_count                              1
## neuron1_count                             1
## neuron2_count                             1
## oligopre1_count                           1
## oligopre2_count                           1
## oligonew1_count                           1
## oligonew2_count                           1
## oligomye1_count                           1
## oligomye2_count                           1
##                cell_tissuehippocampus
## asc1_count                                1
## asc2_count                                1
## asc3_count                                1
## asc4_count                                1
## neu1_count                                1
## neu2_count                                1

```

```
## neu3_count      1
## neu4_count      1
## astro1_count    0
## astro2_count    0
## endo1_count     0
## endo_count      0
## micro1_count    0
## micro2_count    0
## neuron1_count   0
## neuron2_count   0
## oligopre1_count 0
## oligopre2_count 0
## oligonew1_count 0
## oligonew2_count 0
## oligomye1_count 0
## oligomye2_count 0
## attr(,"assign")
## [1] 0 1 2 3
## attr(,"contrasts")
## attr(,"contrasts")$activated.stemcell_non.stemcell
## [1] "contr.treatment"
##
## attr(,"contrasts")$cell_tissue
## [1] "contr.treatment"
```

edgeR TMM normalization and estimating dispersion

With the design matrix given, `estimateDisp` calculates the adjusted profile log-likelihood for each gene or tag and then maximizes it. Other options are functions `estimateGLMCommonDisp`, `estimateGLMTrendedDisp` and `estimateGLMTagwiseDisp`. Default is TMM in `calcNormFactors`, Also other methods are available, RLE

```
countdataDGE <- calcNormFactors(countdataDGE, method=c("RLE"))
upperquartile countdataDGE <-
calcNormFactors(countdataDGE, method=c("upperquartile"))
```

```
countdataDGE<-calcNormFactors(countdataDGE)
countdataDGE<-estimateDisp(countdataDGE, design)
#cell_tissue and activated.stemcell_non.stemcell i.e. factors in the design are all being used to
estimate dispersion
print(countdataDGE)
```

```
## An object of class "DGEList"
## $counts
##          asc1_count asc2_count asc3_count asc4_count neu1_count
## 0610007P14Rik      5934      4159      6152      7408      3429
## 0610009B22Rik      4399      2074      2798      3462      1369
## 0610009O20Rik      1561      2675      3148      4323        39
## 0610010F05Rik       425       434       647       485       339
## 0610010K14Rik      1770      1831      2154      2519      1166
##          neu2_count neu3_count neu4_count astro1_count astro2_count
## 0610007P14Rik      6097      4615      2708        2741      3005
## 0610009B22Rik      2606      1114       903         374       367
## 0610009O20Rik      2236       925       669        2777      2644
## 0610010F05Rik        45       183        22        1062      1107
## 0610010K14Rik      1229       994       627         574       702
##          endo1_count endo2_count micro1_count micro2_count
## 0610007P14Rik       762       769         452         509
## 0610009B22Rik       544       613          66         104
## 0610009O20Rik      2874      2921      3228        3714
## 0610010F05Rik      1443      1537        151          57
## 0610010K14Rik      2721      2525      2568        2526
##          neuron1_count neuron2_count oligopre1_count oligopre2_count
## 0610007P14Rik       1792       1504         2815        3784
## 0610009B22Rik        525        431         561         497
## 0610009O20Rik       1860       1507        2927        4008
## 0610010F05Rik       2993       3841        1582         600
## 0610010K14Rik       1268        999        1308        1611
##          oligonew1_count oligonew2_count oligomye1_count
## 0610007P14Rik       3858         3882         3576
## 0610009B22Rik        609         522         625
## 0610009O20Rik       1992        2369        1714
## 0610010F05Rik       1932         758         754
## 0610010K14Rik        736         972         770
##          oligomye2_count
## 0610007P14Rik       3431
## 0610009B22Rik        506
## 0610009O20Rik       1718
## 0610010F05Rik        769
## 0610010K14Rik        824
## 14804 more rows ...
##
## $samples
##          group lib.size norm.factors
## asc1_count    1 13521650   0.9840589
## asc2_count    1 15578146   1.1971956
## asc3_count    1 19833606   1.2126998
## asc4_count    1 22775468   1.1896453
## neu1_count    1  6742110   0.7630263
## 17 more rows ...
##
## $design
##          (Intercept) individual_id activated.stemcell_non.stemcellnonsc
## asc1_count          1              1                                0
## asc2_count          1              2                                0
```

```
## asc3_count      1      3      0
## asc4_count      1      4      0
## neu1_count      1      1      1
##      cell_tissuehippocampus
## asc1_count      1
## asc2_count      1
## asc3_count      1
## asc4_count      1
## neu1_count      1
## 17 more rows ...
##
## $common.dispersion
## [1] 1.202125
##
## $trended.dispersion
## [1] 0.8500618 0.7809577 0.7746003 0.9250241 0.7835335
## 14804 more elements ...
##
## $tagwise.dispersion
## [1] 0.5069459 0.3713588 0.3725753 0.6542342 0.4283765
## 14804 more elements ...
##
## $AveLogCPM
## [1] 7.493147 6.105186 6.456741 4.888942 6.082848
## 14804 more elements ...
##
## $trend.method
## [1] "locfit"
##
## $prior.df
## [1] 3.766678
##
## $prior.n
## [1] 0.2092599
##
## $span
## [1] 0.2935796
```

By using `countdataDGE` option we can extract these information example `countdataDGE` counts, but note this is not normalized counts, its same as the counts we input. The log transformed counts-per-million (cpm) is normalized counts.

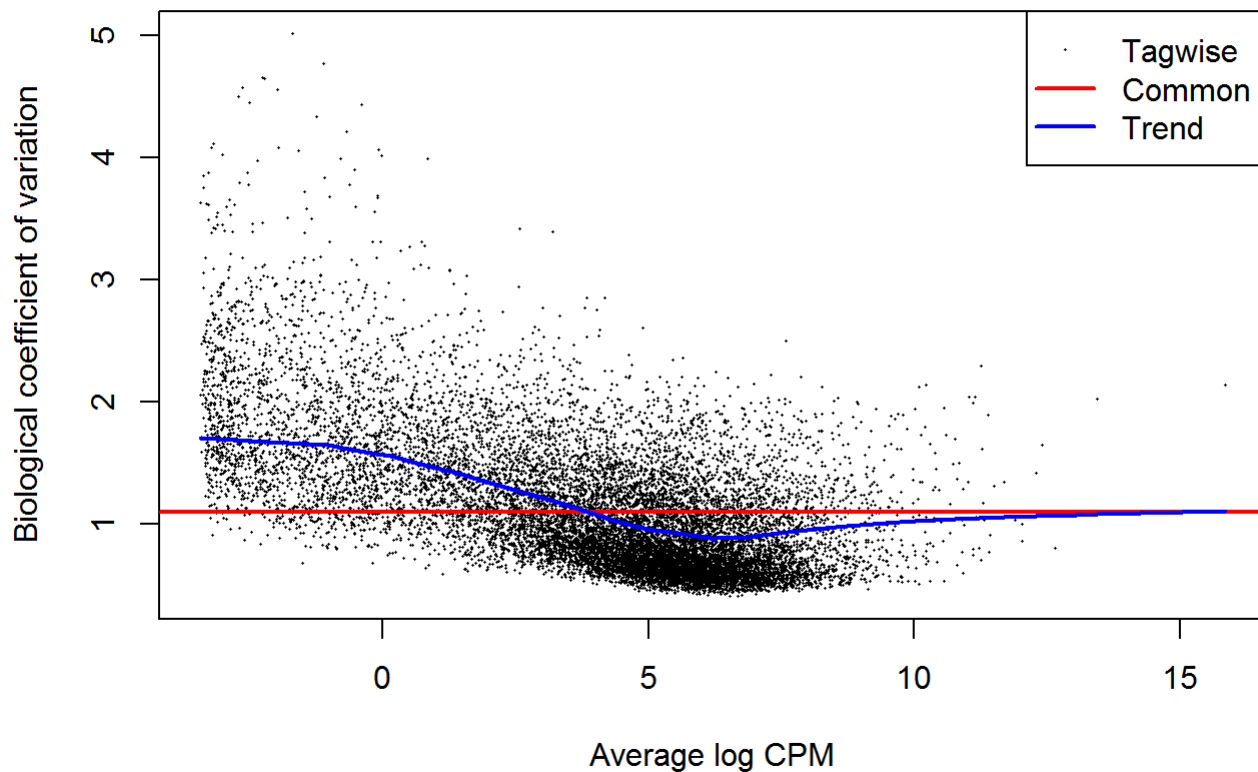
We can plot some information about the heterogeneity of the datasets

```
dim(countdataDGE)
```

```
## [1] 14809    22
```

There are 14809 rows or genes and 22 samples or variables

```
#BCV plot using DGE object
plotBCV(countdataDGE)
```



```
dev.print(pdf, "countdataDGE_BCVplot.pdf")
```

```
## png
## 2
```

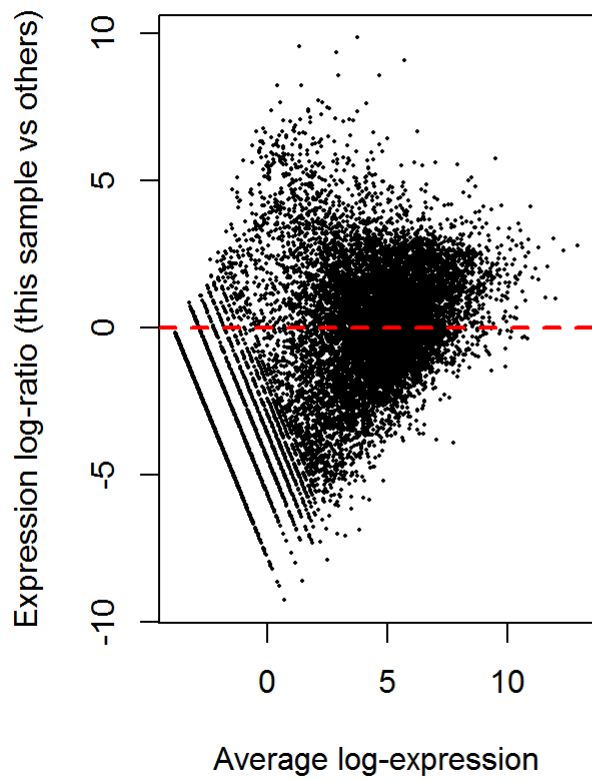
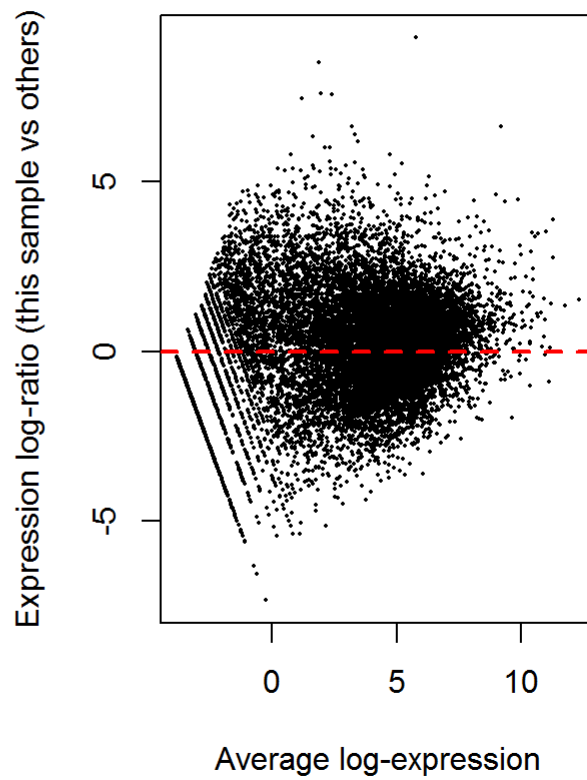
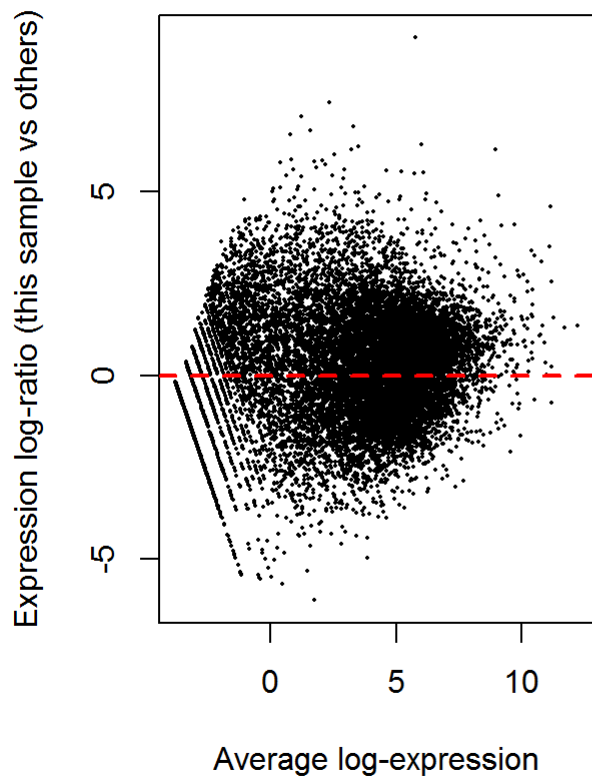
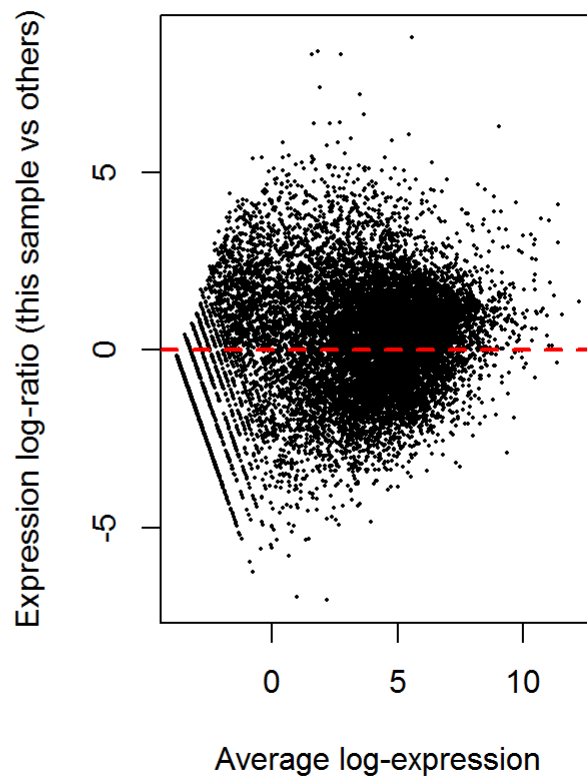
Inputting RNA-seq counts to clustering or heatmap routines designed for microarray data is not straight-forward, and the best way to do this is still a matter of research. To draw a heatmap of individual RNA-seq samples, edgeR documentation suggests using moderated log-counts-per-million, $\log(\text{cpm})$. This can be calculated by `cpm` with positive values for `prior.count`, for example `> logcpm <- cpm(y, prior.count=2, log=TRUE)` where `y` is the normalized DGEList object. This produces a matrix of \log_2 counts-per-million ($\log\text{CPM}$), with undefined values avoided and the poorly defined log-fold-changes for low counts shrunk towards zero. Larger values for `prior.count` produce stronger moderation of the values for low counts and more shrinkage of the corresponding log-fold-changes. The $\log\text{CPM}$ values can optionally be converted to RPKM or FPKM by subtracting \log_2 of gene length, see `rpkm()`.

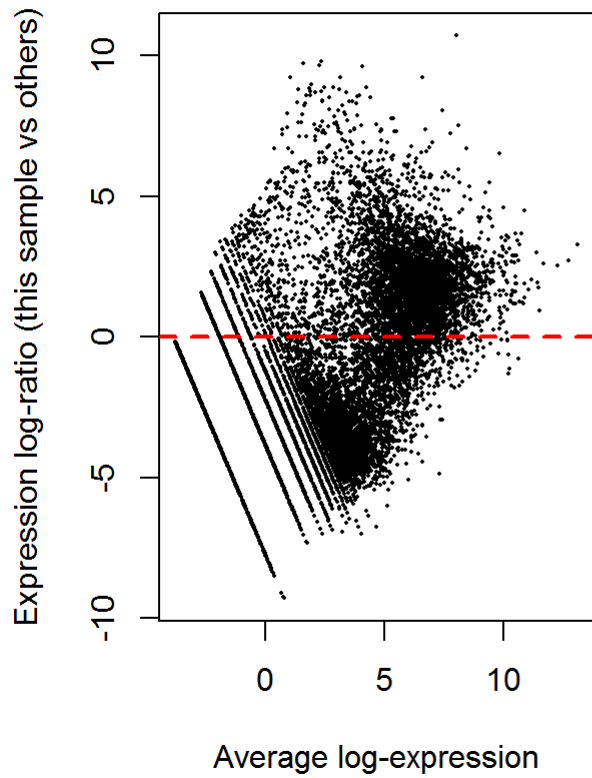
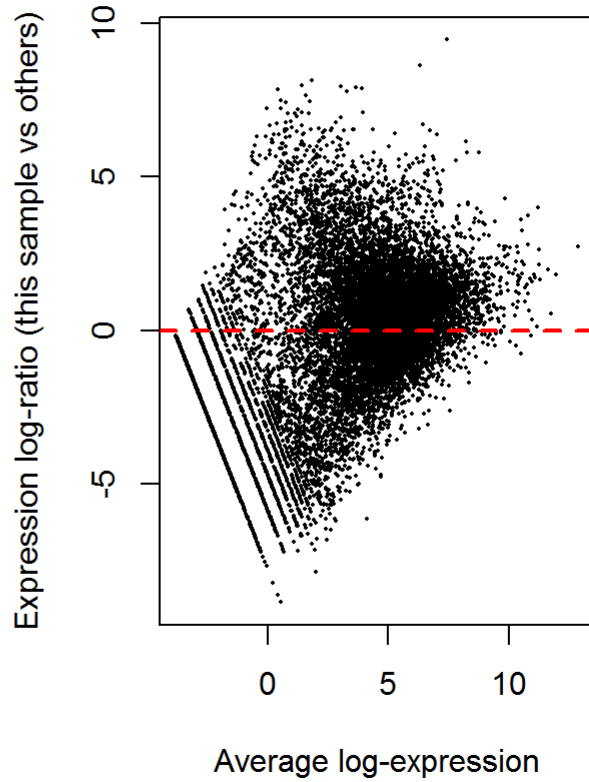
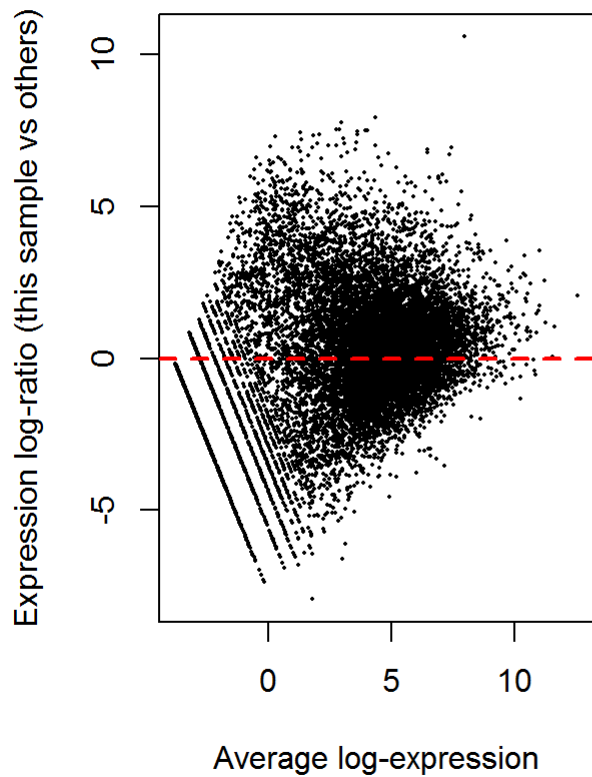
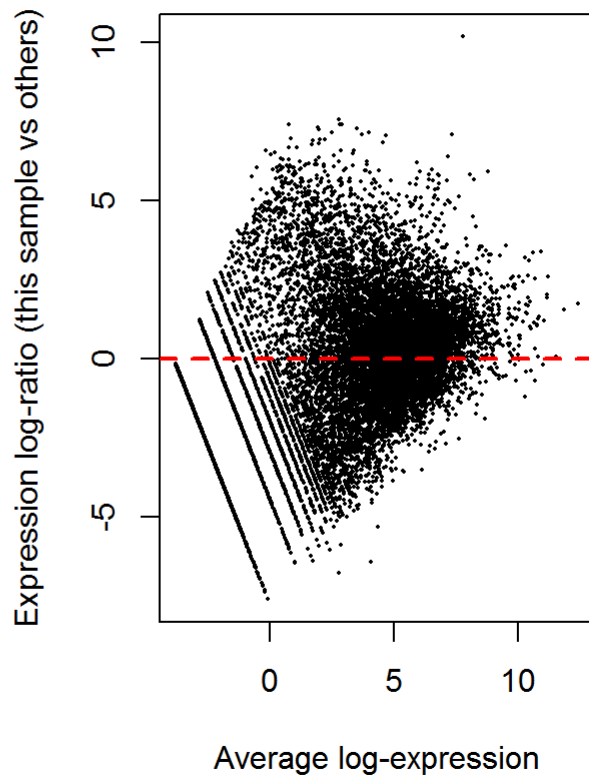
```
logcpmcountdataDGE <- cpm(countdataDGE, prior.count=2, log=TRUE)
```

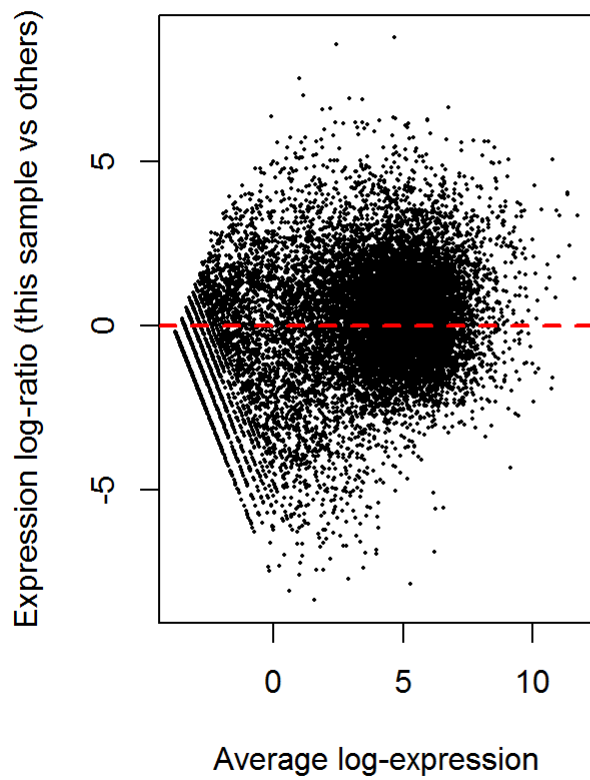
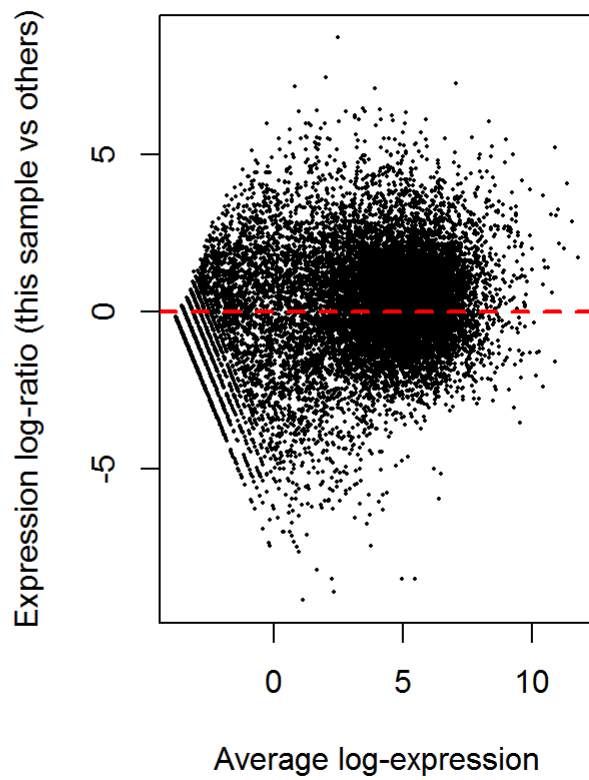
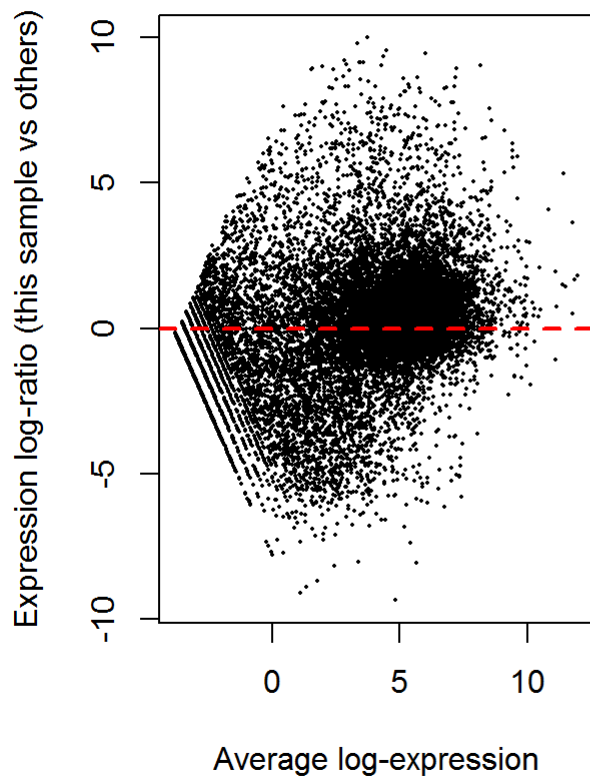
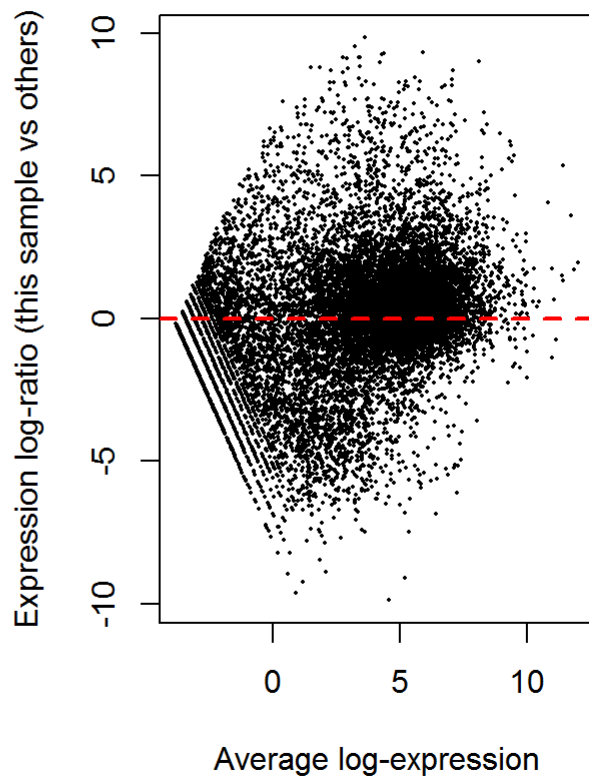
Plots and clustering for visual data exploration of edgeR normalization

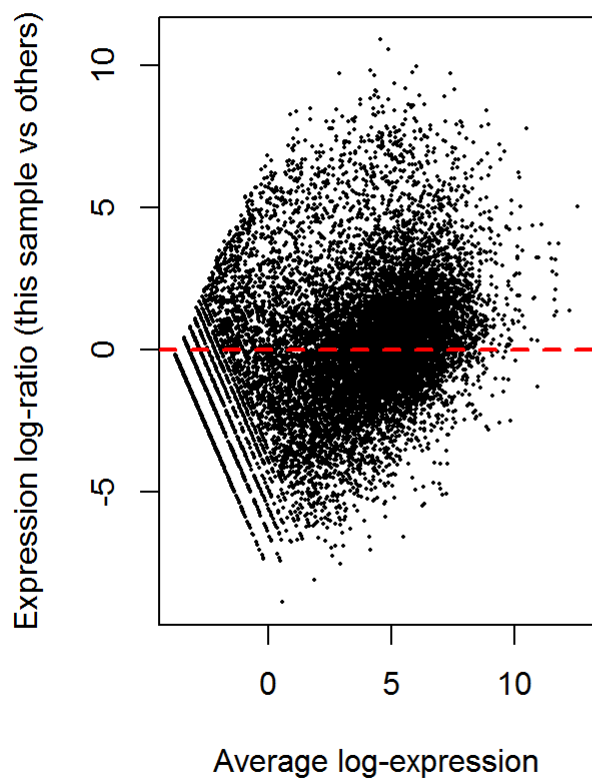
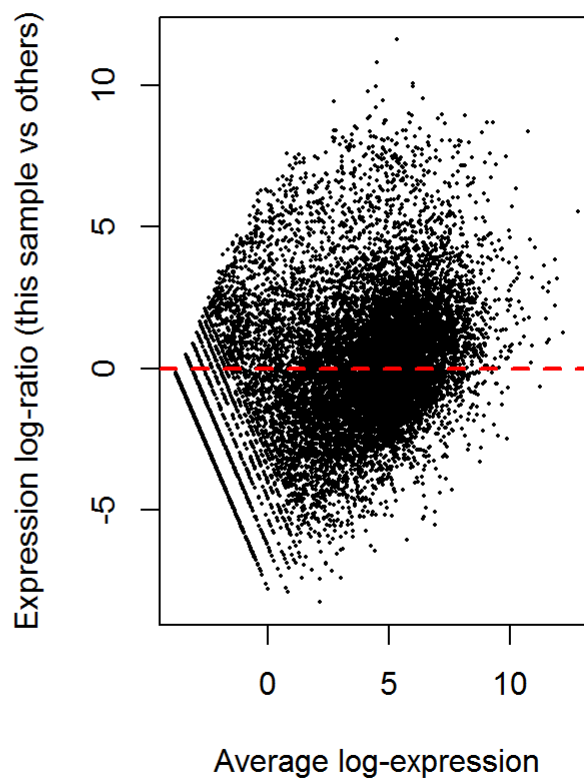
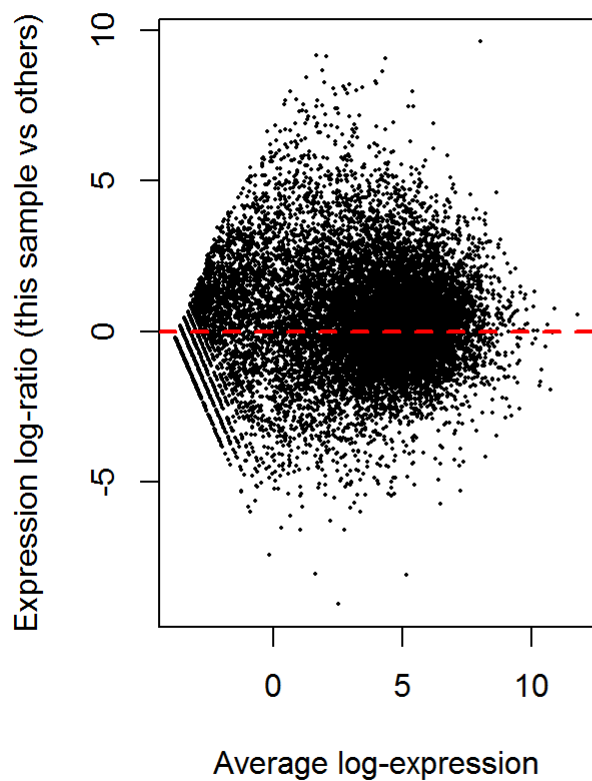
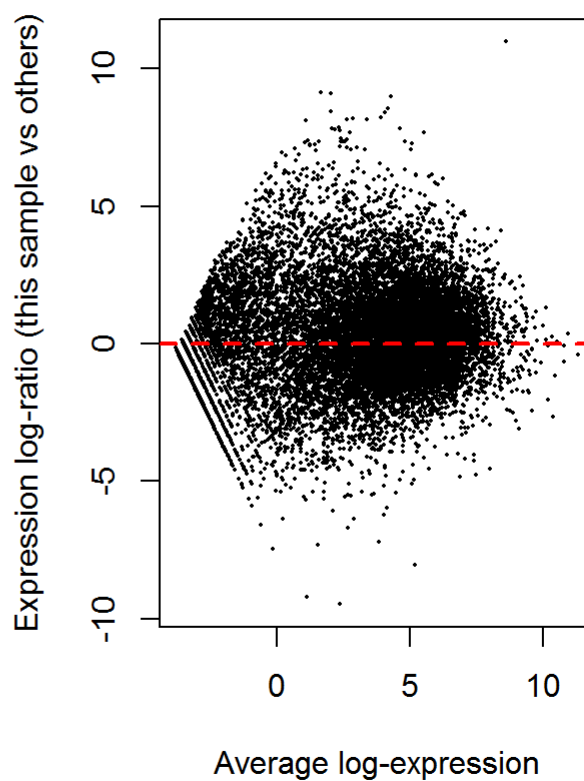
The performance of the edgeR TMM normalization procedure can be examined using mean-difference (MD) plots. This visualizes the library size-adjusted log-fold change between two libraries (the difference) against the average log-expression across those libraries (the mean). The following MD plot is generated by comparing sample 1 against an artificial library constructed from the average of all other samples.

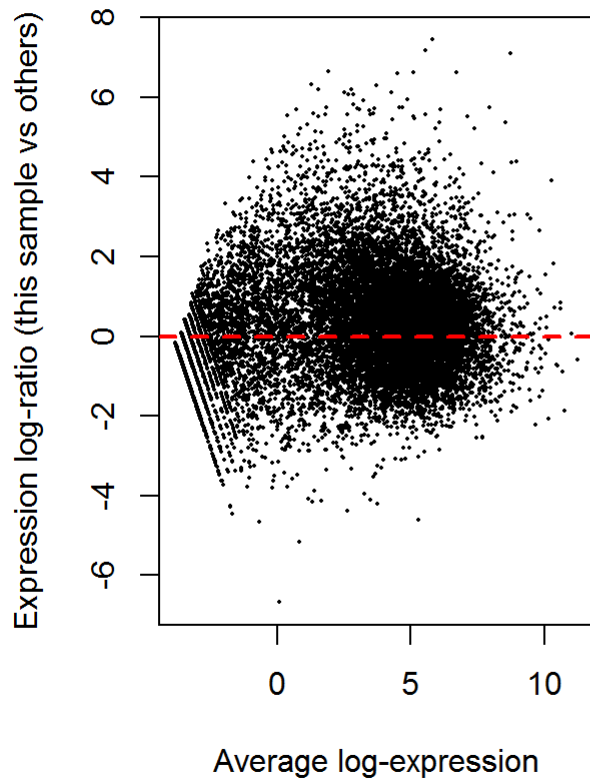
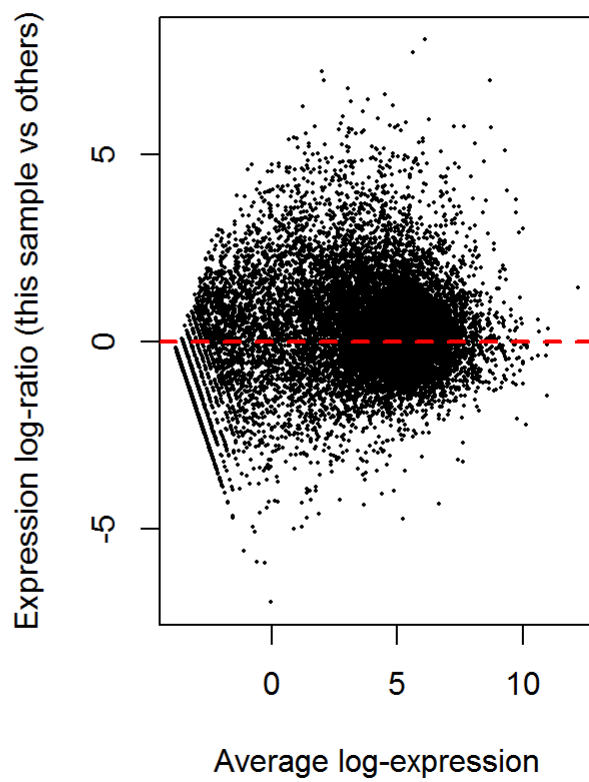
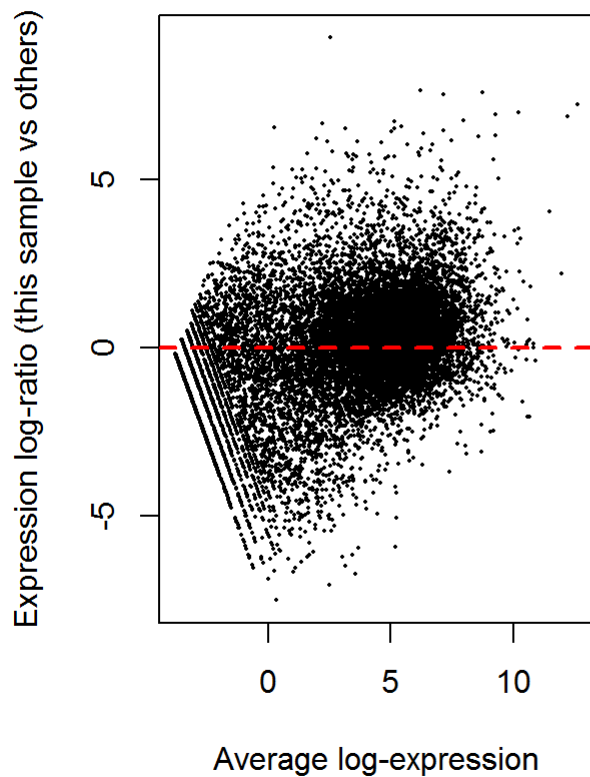
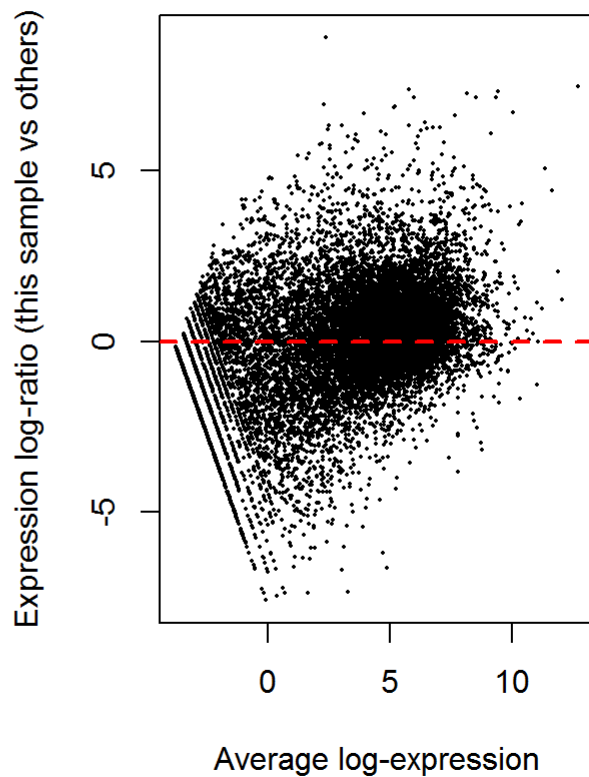
```
par(mfrow=c(1,2))
for (i in seq(1, 22)){
  plotMD(logcpmcountdataDGE, col=i)
  abline(h=0, col="red", lty=2, lwd=2)
}
```

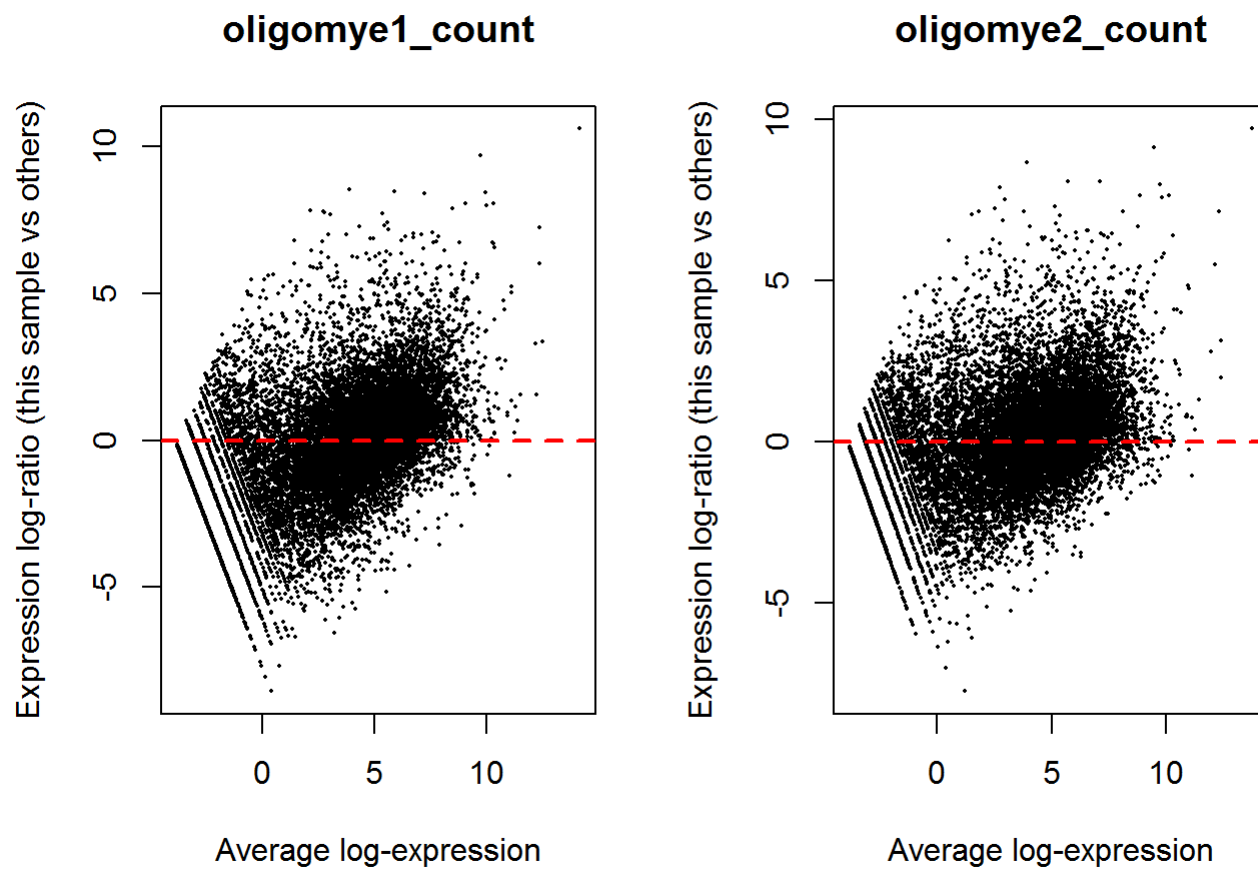
asc1_count**asc2_count****asc3_count****asc4_count**

neu1_count**neu2_count****neu3_count****neu4_count**

astro1_count**astro2_count****endo1_count****endo2_count**

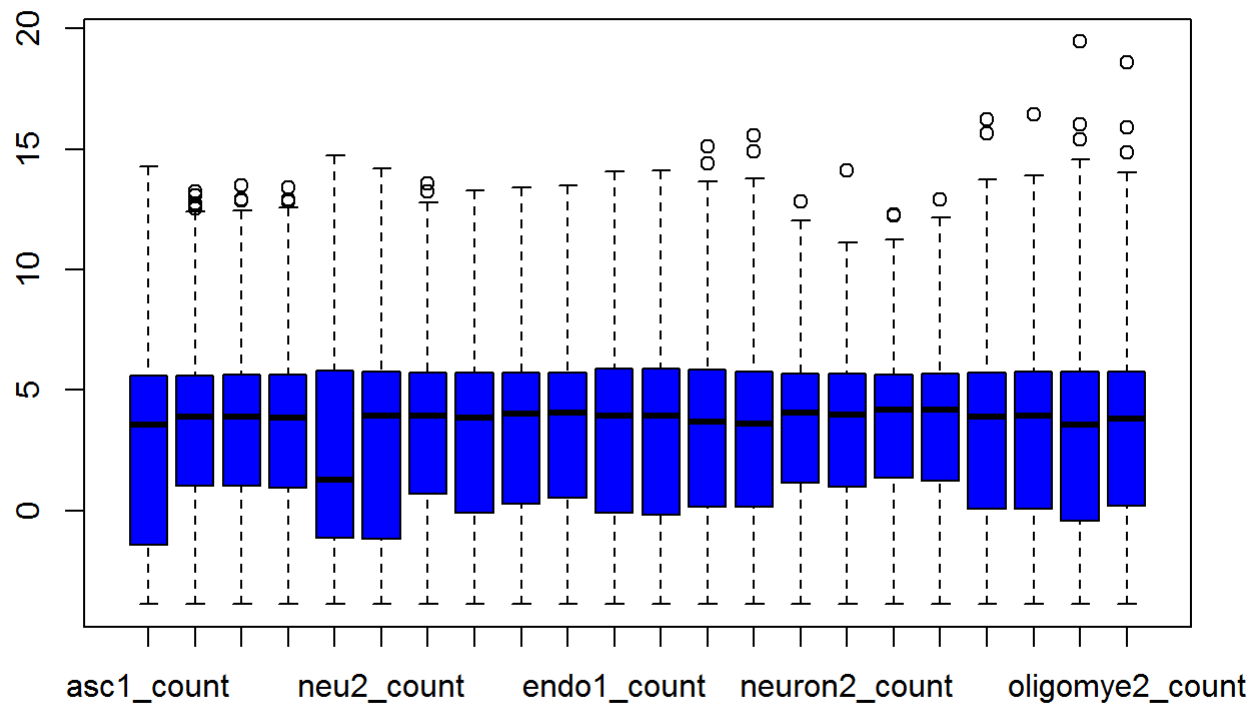
micro1_count**micro2_count****neuron1_count****neuron2_count**

oligopre1_count**oligopre2_count****oligonew1_count****oligonew2_count**



Ideally, the bulk of genes should be centred at a log-fold change of zero, as is the case for our samples. This indicates that any composition bias between libraries has been successfully removed.

```
#Boxplot  
boxplot(logcpmcountdataDGE, col="blue")#blue because we are blue group!
```

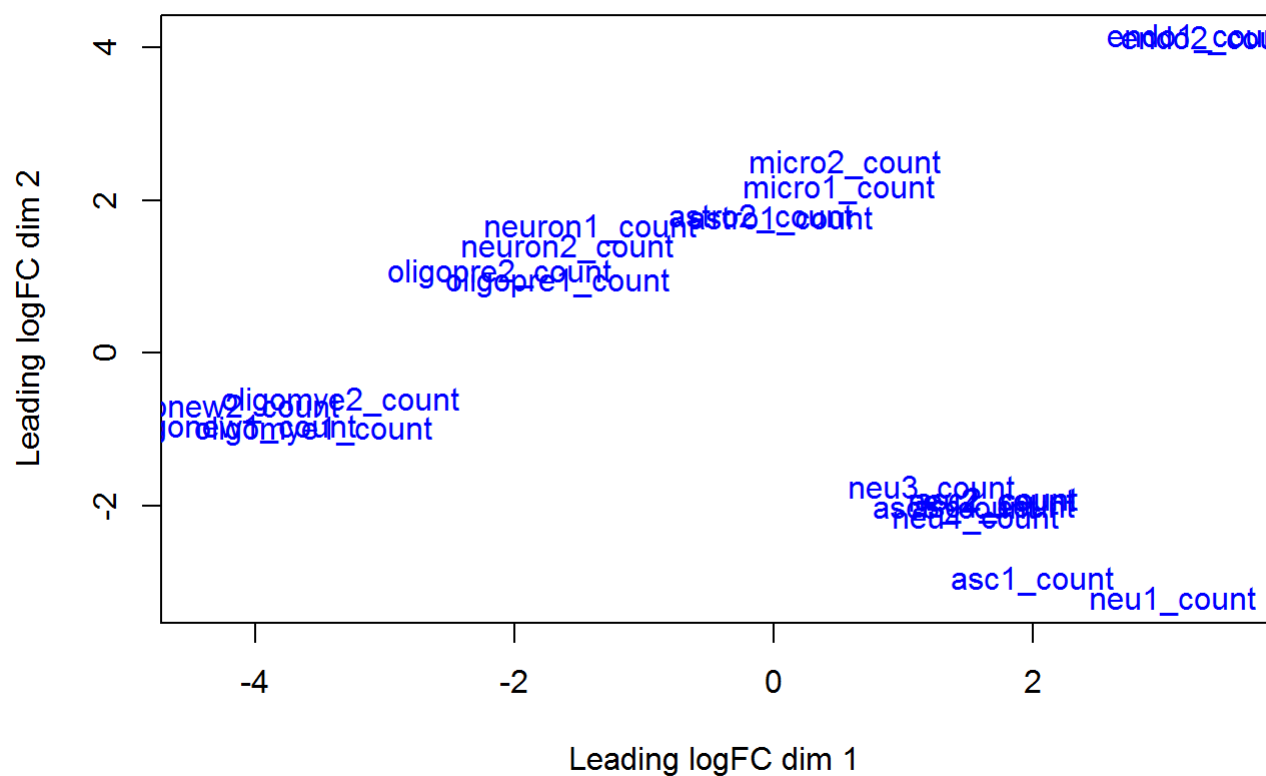


```
dev.print(pdf, "logcpmcountdataDGE_boxplot.pdf")
```

```
## png
## 2
```

The boxplot shows that the normalized counts of samples have similar normal distribution with equal variance.

```
#MDSplot
plotMDS(logcpmcountdataDGE, col="blue")#Like PCA plot
```

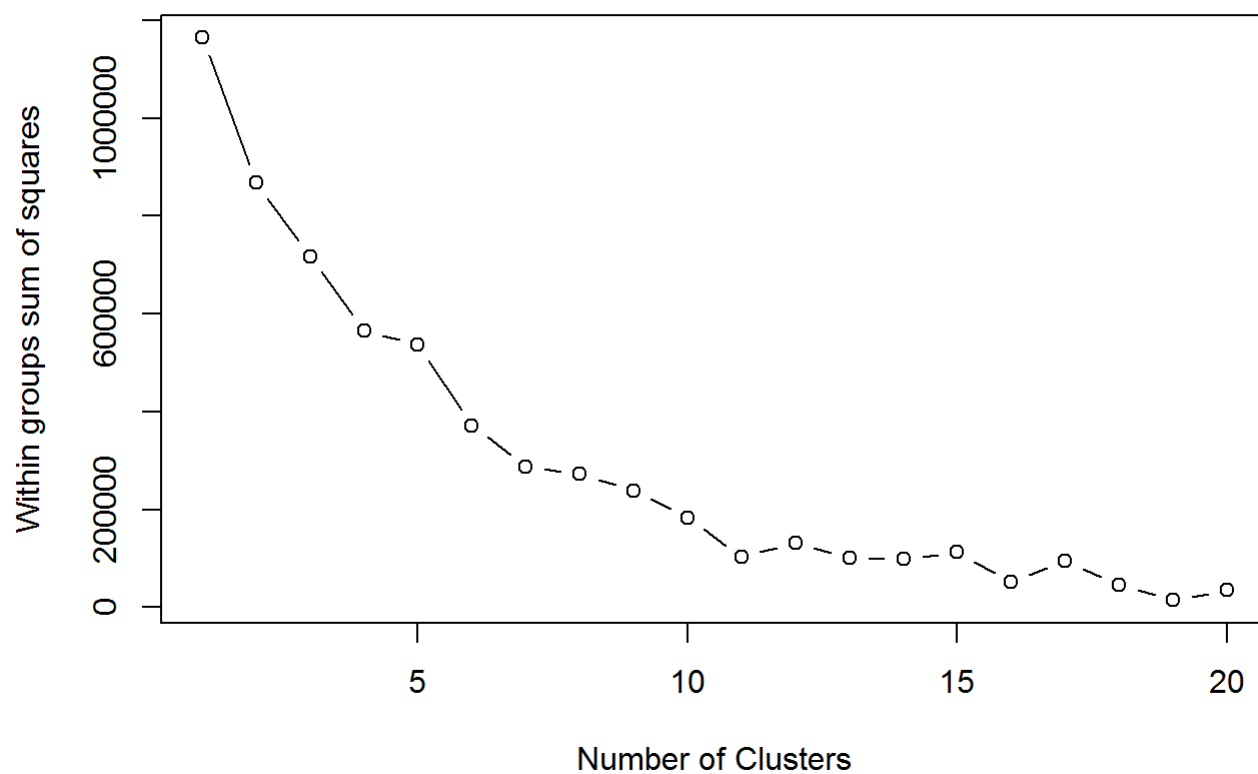


```
dev.print(pdf, "logcpmcountdataDGE_MDSplot.pdf")
```

```
## png
## 2
```

The MDS plot shows multiple clusters of the samples. Next, we will use K-means hierarchical clustering to determine the minimum number of clusters required for minimum sum of squares within group. Clustering diagram also helps view the samples in the clusters better.

```
#Clustering
mydata <- logcpmcountdataDGE#for genes in rows
mydata_t <- t(mydata)#for samples in rows
#Determine number of clusters with samples in rows, cluater values to try between 2 to 20
wss_t <- (nrow(mydata_t)-1)*sum(apply(mydata_t,2,var))
for (i in 2:20) wss_t[i] <- sum(kmeans(mydata_t, centers=i)$withinss)
plot(1:20, wss_t, type="b", xlab="Number of Clusters", ylab="Within groups sum of squares")
```



```
dev.print(pdf, "logcpmcountdataDGE_Clusters&SumofSquared.pdf")
```

```
## png
## 2
```

Therefore the graph indicates, 11 is the minimum number of clusters required for least within group sum of squares

```
# K-Means Cluster Analysis with samples in rows
cluster_t <- kmeans(mydata_t, 11) # 11 cluster solution
# get cluster means
aggregate(mydata_t, by=list(cluster_t$cluster), FUN=mean)
```


##	Group.1	0610007P14Rik	0610009B22Rik	0610009O20Rik	0610010F05Rik
## 1	1	6.361473	3.664698	5.980081	4.654029
## 2	2	4.287292	3.882296	6.203907	5.244995
## 3	3	9.380714	8.056269	2.935229	6.043618
## 4	4	7.965253	6.886368	7.172084	4.488378
## 5	5	8.800992	8.369239	6.875071	5.000359
## 6	6	6.088929	3.145040	6.006108	4.686978
##	0610010K14Rik	0610011F06Rik	0610030E20Rik	0610031J06Rik	0610037L13Rik
## 1	4.682723	3.870872	4.234237	5.841443	5.084676
## 2	6.059496	3.904685	3.643492	7.491265	5.821037
## 3	7.824778	6.366100	6.535894	8.250184	5.881827
## 4	6.547947	6.444481	3.612849	7.685981	6.779321
## 5	7.056252	7.248907	1.215574	8.689074	7.060320
## 6	3.917287	3.174477	5.076558	5.824968	5.484692
##	0610040J01Rik	1110001J03Rik	1110004E09Rik	1110004F10Rik	1110007C09Rik
## 1	5.378967	3.336012	4.1997436	6.485803	4.482446
## 2	-1.159950	3.466130	4.7425305	6.575859	5.330622
## 3	-1.131317	8.462231	4.3560197	9.419317	5.621974
## 4	2.275345	6.861796	4.0541873	7.939835	3.517716
## 5	4.271054	8.140159	5.1142976	8.339423	4.843040
## 6	5.293887	3.172728	3.5536382	5.678438	3.356772
##	1110008F13Rik	1110008L16Rik	1110008P14Rik	1110012L19Rik	1110017D15Rik
## 1	4.4073276	3.085679	3.848759	3.445518	-0.3331177
## 2	4.8572316	4.359302	3.474045	4.593934	-0.7110950
## 3	0.5144282	4.907042	4.780107	8.016751	-3.8841215
## 4	1.0330312	4.024091	3.988538	5.667662	2.6267853
## 5	1.3911881	4.720905	5.645148	6.617918	4.6231013
## 6	4.4373832	3.511558	2.826085	3.101754	0.7425961
##	1110032A03Rik	1110032F04Rik	1110034G24Rik	1110037F02Rik	1110038F14Rik
## 1	3.928836	1.425027	2.803574	5.526276	4.364879
## 2	3.913105	-2.032541	5.842991	6.938288	4.548228
## 3	7.141513	-1.931739	6.292878	6.961959	6.419497
## 4	5.933931	-2.601763	5.032183	5.716985	5.685171
## 5	6.467987	-3.884122	6.092375	5.993736	6.402848
## 6	3.017708	3.300752	3.249159	6.083995	4.441614
##	1110051M20Rik	1110057K04Rik	1110058L19Rik	1110059E24Rik	1110059G10Rik
## 1	5.347212	6.299556	3.349667	3.577187	3.104825
## 2	3.953790	4.712434	3.791245	5.041584	4.372957
## 3	8.682992	2.780569	7.669521	6.866651	6.790163
## 4	7.474277	7.206611	6.904830	6.336911	5.290618
## 5	8.233895	6.960256	7.813795	7.188495	6.354641
## 6	4.601572	5.019935	2.480419	4.010045	2.898865
##	1110065P20Rik	1190002N15Rik	1190005I06Rik	1190007I07Rik	1200014J11Rik
## 1	3.39559466	5.473386	0.4119375	-0.2547618	4.7252623
## 2	3.27248523	3.613230	-1.1647695	1.6164573	5.8437447
## 3	-3.88412153	2.820816	-3.8841215	0.5144282	0.3033916
## 4	0.03436549	3.975009	1.6246386	4.0112718	4.0466315
## 5	1.21557422	4.902250	2.5679590	4.9935682	3.9234895
## 6	2.37121264	4.343982	1.9562370	-0.1826372	5.1065495
##	1500009L16Rik	1500011K16Rik	1500015O10Rik	1600002H07Rik	1600002K03Rik
## 1	1.8457998	3.691896	-3.2454866	2.6988468	2.1124172
## 2	0.4998210	4.191941	-0.3117254	2.5409784	1.1965054
## 3	6.4390214	5.604788	5.5756831	7.1710028	-1.1313170

## 4	3.8813579	6.081613	6.7230192	4.3803371	3.7012200
## 5	4.2311979	7.321877	7.9432196	-0.4264149	3.9091272
## 6	1.4820996	3.005822	-2.1248458	3.2964556	1.7791934
##	1600012H06Rik	1600014C10Rik	1600016N20Rik	1700001C02Rik	1700001C19Rik
## 1	4.502843	3.109647	-3.767000	-3.8841215	-3.512200
## 2	4.498813	3.903128	-3.651962	-2.6498048	1.630073
## 3	1.577013	5.752551	6.455093	-3.8841215	-3.884122
## 4	5.062090	5.020369	-2.861176	0.5470922	-3.884122
## 5	5.773583	-1.173011	-3.884122	4.0335142	-3.884122
## 6	5.157508	2.036405	-2.865381	-2.2162448	-3.884122
##	1700001L19Rik	1700001O22Rik	1700001P01Rik	1700003E16Rik	1700003F12Rik
## 1	-1.36570390	1.6385763	-0.6648269	1.0244042	-2.45050202
## 2	-1.67777113	0.5120011	-0.3138404	-3.2177929	-1.80431358
## 3	-1.93173924	-3.8841215	-3.8841215	-3.8841215	-3.88412153
## 4	1.43686954	0.5574609	-0.5677065	1.9713950	-3.29914828
## 5	3.85020378	0.9609302	2.5309179	-3.8841215	-3.88412153
## 6	-1.71059886	2.6385775	-2.2593694	-0.2283029	0.09828239
##	1700003M02Rik	1700007G11Rik	1700007K09Rik	1700007K13Rik	1700008F21Rik
## 1	-3.55539194	-3.2129532	-2.422790	-2.718357535	-3.231911
## 2	0.03329689	-3.6519623	-3.335655	-1.440869789	-3.884122
## 3	-3.88412153	-3.8841215	-3.884122	-3.884121530	-3.884122
## 4	-0.74956524	0.8978908	-3.884122	0.006656734	-3.289739
## 5	-3.88412153	2.9510998	-3.884122	-3.884121530	-3.884122
## 6	0.01818946	-1.7315301	-0.478460	1.493736173	-2.464057
##	1700008O03Rik	1700009P17Rik	1700010I14Rik	1700011E24Rik	1700011H14Rik
## 1	-0.6129432	-2.53499911	1.1459703	-3.381198	-2.901945
## 2	-3.6565043	0.24304011	0.4387671	-3.483745	-3.884122
## 3	-3.8841215	-1.93173924	-1.1313170	-3.884122	-3.884122
## 4	0.2521811	2.85599482	1.4626902	-2.611917	-3.186080
## 5	1.2615221	3.79659463	-3.8841215	-3.884122	-3.884122
## 6	-1.0260615	-0.07073312	2.3877586	-3.660779	-2.521641
##	1700011L22Rik	1700012P22Rik	1700013F07Rik	1700013H16Rik	1700015E13Rik
## 1	-3.612858	-3.884122	-3.8841215	-3.884122	-3.459799
## 2	-3.335655	-3.424345	-3.2489909	-1.289693	-3.483745
## 3	-3.884122	-3.884122	-3.8841215	-3.884122	-3.884122
## 4	-3.884122	-2.022183	0.4437285	-3.884122	-3.884122
## 5	-3.884122	-3.884122	2.5679590	-3.884122	-3.884122
## 6	-1.926196	-3.660779	-3.2889060	-3.884122	-1.555856
##	1700016C15Rik	1700016K19Rik	1700017B05Rik	1700019B03Rik	1700019D03Rik
## 1	-3.388123	-3.0141783	3.569583	-3.427597	1.4015798
## 2	-3.884122	-0.8201313	5.900627	-3.039241	-2.6471003
## 3	-3.884122	-3.8841215	8.224161	-3.884122	-0.6195262
## 4	-3.884122	-2.4938849	3.332017	-2.371652	5.0136724
## 5	2.194382	-3.8841215	3.484195	-3.884122	6.2658448
## 6	-3.674482	-2.1689451	4.662283	-3.143174	-0.3693852
##	1700019G17Rik	1700019L03Rik	1700020A23Rik	1700020D05Rik	1700020L24Rik
## 1	2.9986157	0.10588962	-1.9310802	-0.5921235	0.3613402
## 2	2.3988000	-1.15517480	-2.8888941	-3.4243451	4.2776012
## 3	1.0083330	-3.88412153	-3.8841215	-3.8841215	-3.8841215
## 4	5.7301704	0.38351558	-3.8841215	-2.2050489	-3.8841215
## 5	5.6537885	-3.88412153	-3.8841215	-3.8841215	-3.8841215
## 6	5.1728907	1.47477833	-1.7076008	0.4592180	-0.5900661
##	1700021F05Rik	1700021K19Rik	1700022I11Rik	1700023E05Rik	1700024G13Rik
## 1	2.937718	7.439349	-3.6675068	-3.884122	-3.88412153

##	2	2.562520	5.718249	-2.2235787	-3.424345	-3.12736903
##	3	8.296410	1.263249	-3.8841215	-3.884122	-3.88412153
##	4	5.846659	5.050058	-3.0786368	-2.987730	-0.62917445
##	5	6.297894	2.586129	-3.8841215	-3.884122	-0.04458439
##	6	3.322556	5.526227	-1.7919785	-2.940735	-3.67448218
##	1700024P16Rik	1700025G04Rik	1700026D08Rik	1700026L06Rik	1700028K03Rik	
##	1	-3.663981	6.5709991	-3.7949831	-3.8841215	-0.9573547
##	2	-3.884122	1.8530874	-2.7210443	-2.3729121	-0.9306696
##	3	-3.884122	0.3033916	-3.8841215	-3.8841215	-3.8841215
##	4	-3.141616	3.4362533	2.1088250	0.4925803	-2.3433427
##	5	-3.884122	3.1716861	-3.8841215	3.4248580	-3.8841215
##	6	-3.288906	5.3138586	-0.5433987	-3.4511394	1.7074074
##	1700028P14Rik	1700029I15Rik	1700029J07Rik	1700030J22Rik	1700030K09Rik	
##	1	-3.8841215	-0.49469677	1.6178941	0.657901919	3.45152418
##	2	-3.6565043	-2.71985567	-0.2950370	-0.007587947	3.08601165
##	3	-3.8841215	-3.88412153	-1.9317392	-3.884121530	0.05610664
##	4	0.2069738	-2.13166472	3.4797573	1.102554094	4.83035041
##	5	-3.8841215	-3.88412153	2.7722112	-2.807117436	4.85807164
##	6	-2.2653802	0.77346118	2.7413951	-0.009842514	3.68510161
##	1700034I23Rik	1700037C18Rik	1700037H04Rik	1700040L02Rik	1700049G17Rik	
##	1	-3.701028	1.3891438	4.182804	-3.2981527	1.6978834
##	2	-3.884122	1.2124184	4.034266	-2.5789021	1.1513035
##	3	-3.884122	-1.1313170	1.753727	-3.8841215	6.1697343
##	4	-2.402757	0.5447151	6.214335	0.7273389	3.4113466
##	5	-3.884122	-0.7519471	6.101878	1.8777815	-1.7701038
##	6	-2.547098	-0.1757135	3.244951	-0.7157558	3.6114999
##	1700052N19Rik	1700055N04Rik	1700066M21Rik	1700067K01Rik	1700084C01Rik	
##	1	3.441581	-2.5893216	5.43695602	-0.9900118	1.4889270
##	2	3.735673	-2.2729379	2.70567528	-2.4179184	-0.8031291
##	3	1.008333	-0.2425151	2.30081861	-3.8841215	0.6984974
##	4	4.549038	-2.7525798	3.22939568	-1.0876772	5.5985119
##	5	5.363756	-3.8841215	4.14802283	-3.8841215	5.8768265
##	6	3.214718	-3.4511394	5.12876860	-1.1792453	5.9012159
##	1700088E04Rik	1700093K21Rik	1700101E01Rik	1700102P08Rik	1700112E06Rik	
##	1	-1.2444701	-3.767000	-3.884122	-0.3459945	0.6669363
##	2	-1.4803607	-3.344469	-3.656504	-0.2352188	-3.2515854
##	3	-3.8841215	-3.884122	-3.884122	-3.8841215	-3.8841215
##	4	1.6011912	-3.884122	-2.005373	-1.1154072	1.1124664
##	5	-2.1973739	-3.884122	-3.884122	-3.8841215	1.8175364
##	6	-0.9796354	-2.065954	-2.819878	-0.2392352	-3.2808450
##	1700113H08Rik	1700123I01Rik	1700123L14Rik	1700123O20Rik	1700125H20Rik	
##	1	-2.592976	-3.701028	-2.992017	4.304728	-3.667507
##	2	-3.884122	-3.476608	-3.884122	5.425804	-2.033501
##	3	-3.884122	-3.884122	-3.884122	7.881773	-3.884122
##	4	-1.264112	-3.884122	-3.884122	6.428815	-2.862578
##	5	-1.770104	-3.884122	-3.884122	7.811866	-3.884122
##	6	-3.451139	-2.010361	-3.288906	4.038642	-3.490484
##	1810009A15Rik	1810011H11Rik	1810011O10Rik	1810013L24Rik	1810022K09Rik	
##	1	3.734344	-0.8898207	-0.6386696	5.412021	0.35804295
##	2	5.119000	-1.8983550	6.4574638	6.178805	1.90518620
##	3	6.541926	-1.9317392	-0.6195262	2.119096	4.71752911
##	4	6.739339	-0.6177734	0.7102662	6.365821	3.72258799
##	5	7.664140	-3.8841215	-0.7519471	6.895251	3.85020378
##	6	3.198128	-3.2889060	3.7771148	6.702089	0.97037174

##	1810026J23Rik	1810030007Rik	1810037I17Rik	1810041L15Rik	1810043G02Rik
## 1	6.503189	4.854046	5.969277	8.6287822	3.2041649
## 2	5.864942	5.168693	6.796827	-0.2112785	4.1522673
## 3	6.161922	7.813602	8.413714	1.1414140	0.3033916
## 4	4.431027	6.161356	7.810994	5.6892523	5.1657013
## 5	4.653576	4.172280	8.342433	5.7971728	4.7043649
## 6	5.880838	4.750719	4.994607	3.2514533	3.8131508
##	1810043H04Rik	1810055G02Rik	2010002M12Rik	2010012005Rik	2010107E04Rik
## 1	2.4515633	5.0505305	-2.4836707	4.053199	5.188658
## 2	3.4699631	1.2869575	-2.0252565	3.673844	6.479637
## 3	0.5144282	0.6984974	-0.6195262	6.772315	8.288359
## 4	4.8556796	5.8691025	-2.9999991	5.476347	7.448244
## 5	5.6815170	4.6749556	-3.8841215	5.245841	8.433057
## 6	1.7003729	4.9936841	-3.8841215	3.993762	4.364834
##	2010107G23Rik	2010111I01Rik	2010300C02Rik	2210016F16Rik	2210016L21Rik
## 1	2.90373317	2.809946	2.8228333	3.4663590	5.223867
## 2	-0.40816403	4.512921	3.9452160	2.6527825	4.915939
## 3	0.51442825	6.345556	0.6984974	0.3033916	6.743815
## 4	3.35395013	3.852858	1.1933276	2.5758313	6.177921
## 5	3.15960326	1.215574	-1.1730114	2.7722112	6.037310
## 6	-0.05096042	1.460914	-1.0306669	2.7776928	4.115672
##	2210018M11Rik	2210408I21Rik	2300005B03Rik	2300009A05Rik	2310002J15Rik
## 1	4.9389089	2.8277221	-3.427803	2.527864	-2.4948102
## 2	5.0058650	3.3204042	-3.884122	1.737172	-3.8841215
## 3	0.5144282	-0.6195262	-1.131317	-1.931739	1.6680739
## 4	6.0805706	3.3330342	-2.120846	1.700917	-1.1622965
## 5	3.2983183	4.1782817	-2.807117	2.240999	-0.9471720
## 6	5.9967848	3.9390780	-3.884122	2.215601	-3.4904843
##	2310003H01Rik	2310005G13Rik	2310007B03Rik	2310007L24Rik	2310009B15Rik
## 1	4.414388	-3.6787318	-2.2743827	-3.4448004	2.0804767
## 2	4.249221	-0.1216125	-3.8841215	-0.2907701	2.9263812
## 3	7.360397	-1.9317392	-0.2425151	-3.8841215	5.0237060
## 4	5.173665	-3.8841215	-2.9617970	-1.4206284	3.4602963
## 5	6.037310	-3.8841215	-2.8071174	-3.8841215	5.1421976
## 6	4.546464	-3.3798866	-3.6744822	-3.2808450	1.1375984
##	2310011J03Rik	2310014L17Rik	2310022A10Rik	2310022B05Rik	2310030G06Rik
## 1	4.625378	1.0846816	3.758572	6.574617	-2.1708465
## 2	5.169128	0.5858844	3.043294	6.567635	0.6732337
## 3	2.356639	1.5770128	1.375592	6.562841	-3.8841215
## 4	5.308577	-0.1199219	4.212692	6.665489	1.0136728
## 5	5.867571	0.4279671	3.631442	6.836695	-2.8071174
## 6	3.714903	0.5958158	3.951187	7.821456	-2.5084540
##	2310033P09Rik	2310035C23Rik	2310036022Rik	2310039H08Rik	2310045N01Rik
## 1	3.120450	6.117398	5.749576	2.300478	3.467744
## 2	4.353259	5.513408	6.412351	3.326213	4.401855
## 3	2.242751	1.263249	1.577013	5.960493	4.674250
## 4	2.794462	4.926765	3.992047	4.197838	5.012467
## 5	4.596458	5.645148	3.666020	4.587467	5.347870
## 6	3.555881	6.167051	5.186674	1.799903	2.771277
##	2310047M10Rik	2310050C09Rik	2310057M21Rik	2310061I04Rik	2310067B10Rik
## 1	3.9655950	-3.8841215	3.354309	4.309620	5.967697
## 2	4.7916097	-3.8841215	2.994929	3.064026	4.811609
## 3	-0.6195262	3.9651926	-1.131317	2.300819	2.652618
## 4	1.3593456	0.6628896	3.877671	3.246939	5.185621

##	5	3.1836685	1.8777815	2.263755	4.304361	4.091904
##	6	4.1058645	-3.8841215	3.442823	4.722789	6.342653
##		2410004B18Rik	2410004P03Rik	2410015M20Rik	2410016006Rik	2410089E03Rik
##	1	4.7981883	-0.8359027	4.692032	3.5231042	5.540592
##	2	4.6214091	-0.4823521	5.952816	2.4853646	4.567831
##	3	-0.2425151	-1.1313170	7.840769	-1.9317392	6.618130
##	4	2.3225252	0.9115122	7.097837	0.8111708	4.713997
##	5	5.2797287	3.9306175	8.520688	-2.8071174	3.850204
##	6	4.0673891	1.6750639	3.677094	2.4810571	6.410786
##		2410127L17Rik	2410131K14Rik	2510002D24Rik	2510003E04Rik	2510009E07Rik
##	1	1.03147758	4.431168	2.604806	6.759094	6.916627
##	2	-0.38340187	3.120788	4.718108	4.987181	6.498507
##	3	-3.88412153	4.696052	-1.931739	1.479815	7.538387
##	4	-1.20321107	4.678564	4.031723	4.972989	6.113004
##	5	-3.88412153	5.219893	4.013514	5.731349	6.656047
##	6	0.60676437	4.387622	2.829588	5.784980	6.827982
##		2510039018Rik	2510049J12Rik	2610002M06Rik	2610008E11Rik	2610015P09Rik
##	1	5.889823	-0.9643994	4.429545	3.909646	2.168387
##	2	6.139195	-2.7161344	4.518194	4.291951	2.498454
##	3	2.053052	-3.8841215	1.141414	7.336304	3.552239
##	4	3.679856	-0.3381604	5.317193	5.979352	4.864056
##	5	3.072065	-3.8841215	4.952138	5.666653	-1.440886
##	6	5.192508	-2.2593694	3.257572	4.587751	4.022011
##		2610018G03Rik	2610020H08Rik	2610034B18Rik	2610301B20Rik	2610507B11Rik
##	1	-2.7238812	2.0005165	4.786436	5.047039	8.526473
##	2	-1.7252598	3.5596192	4.681322	4.875820	8.073709
##	3	-1.9317392	-3.8841215	7.159279	7.297612	6.399704
##	4	-3.1141576	1.9136141	5.674281	5.926037	6.118715
##	5	-3.8841215	-2.1973739	6.730429	6.491072	4.850575
##	6	-1.4572508	3.3041401	4.392398	5.185477	8.990753
##		2610528A11Rik	2700029M09Rik	2700049A03Rik	2700060E02Rik	2700062C07Rik
##	1	-1.1198762	4.5502142	3.2946652	4.593206	2.519444
##	2	-2.3729121	4.6292793	3.5013293	6.139217	2.496562
##	3	-0.6195262	0.8617169	0.5144282	5.325933	1.263249
##	4	-2.5844203	4.9151978	6.0049475	4.853994	4.857396
##	5	-2.8071174	5.7435423	2.2409993	6.065106	5.560378
##	6	-3.8841215	4.7845071	4.0939949	4.040014	3.046575
##		2700081015Rik	2700094K13Rik	2810004N23Rik	2810006K23Rik	2810403A07Rik
##	1	6.100509	4.485074	4.683587	3.0810993	6.1243486
##	2	5.993659	5.967089	4.132831	3.3260582	6.7455050
##	3	6.807792	7.057689	1.753727	0.8617169	1.1414140
##	4	4.871149	7.603294	5.759383	5.5121222	4.6133289
##	5	5.178578	8.218325	6.019036	5.5921914	0.3450364
##	6	6.473032	3.150291	4.162630	2.6139119	7.5252857
##		2810408M09Rik	2810417H13Rik	2810428I15Rik	2810459M11Rik	2810474019Rik
##	1	3.9868770	1.52459833	4.933505	4.6546704	3.2238928
##	2	3.8183823	3.71163231	5.447865	-0.2288633	4.3759245
##	3	1.0083330	2.78056858	7.341501	4.4616153	3.9102948
##	4	2.8041886	6.85034248	6.557369	5.6929960	6.9072625
##	5	4.6053939	6.97066680	7.767274	5.5113018	6.3129731
##	6	4.2088484	0.93578732	3.766445	6.4833604	5.3410004
##		2900011008Rik	2900026A02Rik	3010026009Rik	3110001I22Rik	3110002H16Rik
##	1	6.893266	1.359393	2.4309092	1.2771126	4.4745125
##	2	1.498862	7.170880	2.6216147	3.7014558	4.8541446

##	3	4.461615	2.512206	6.8027773	-1.1313170	8.6672126
##	4	6.366467	2.967466	5.4625906	2.6715657	5.5422854
##	5	6.830992	1.349248	5.7696133	4.1045651	6.1787254
##	6	2.615707	4.090298	1.5925036	2.9616696	5.0753433
##	3110007F17Rik	3110009E18Rik	3110035E14Rik	3110039M20Rik	3110040N11Rik	
##	1	0.05420851	1.4771582	9.8238622	-0.5726126	2.283136
##	2	2.06925314	-0.2205517	1.5809377	-2.4601722	3.146401
##	3	-3.88412153	5.1865749	1.1414140	-0.2425151	6.993113
##	4	0.93030415	4.1272080	3.6859895	4.4906530	4.347492
##	5	1.78644346	3.9795505	1.5101550	4.9969675	5.415480
##	6	0.24589995	0.5272418	0.2526175	0.3480431	1.864613
##	3110043021Rik	3110057012Rik	3110062M04Rik	3110079015Rik	3110082I17Rik	
##	1	5.231574	3.2641381	1.781764	-2.906395	2.1042600
##	2	5.111596	1.7804312	2.197401	-3.483745	3.7577477
##	3	6.586379	-1.9317392	-1.931739	-3.884122	0.3033916
##	4	5.878470	2.4886789	2.052376	1.265127	3.4764174
##	5	5.627711	-2.8071174	2.586129	0.718921	5.1574675
##	6	5.414358	3.7309011	1.836847	1.195987	2.5452994
##	3632451006Rik	3830403N18Rik	3830406C13Rik	4430402I18Rik	4632428N05Rik	
##	1	7.14734223	-3.5680897	3.6555040	1.47624596	5.85095979
##	2	-0.04154757	0.8346751	3.5863197	2.59449530	7.93738602
##	3	0.51442825	-3.8841215	0.8617169	-1.93173924	8.63017987
##	4	3.83715981	-1.9355482	5.9812896	0.56895542	2.80652118
##	5	3.87996629	-3.8841215	6.3129731	0.25704632	-0.04458439
##	6	0.38783631	-3.8841215	3.2999449	0.89786028	4.54359844
##	4632434I11Rik	4833403I15Rik	4833420G17Rik	4833424015Rik	4833427G06Rik	
##	1	0.4158622	-3.450968	5.2448939	7.7032958	-3.884122
##	2	2.3469687	-2.304043	5.1518024	-0.5907804	-3.251585
##	3	-1.9317392	-3.884122	7.1415128	4.2420805	-3.884122
##	4	3.1673217	-3.884122	7.2468917	2.4816186	-1.250559
##	5	0.0631199	-3.884122	6.7222369	-0.9471720	2.772211
##	6	1.9195816	-2.103662	6.5220771	4.0009516	-2.068305
##	4833439L19Rik	4921507P07Rik	4921524J17Rik	4921536K21Rik	4930402H24Rik	
##	1	7.866333	-2.1023634	3.447195	-0.7291277	7.753144
##	2	6.987045	1.7421034	5.429081	-0.2484628	5.887952
##	3	8.330785	4.6067949	5.551968	-3.8841215	2.512206
##	4	8.149420	-0.8803114	5.899879	-0.0982438	6.422734
##	5	7.920576	-3.8841215	6.474098	-3.8841215	4.484674
##	6	7.218821	-1.7839447	2.996425	0.8793442	8.416866
##	4930404N11Rik	4930427A07Rik	4930430F08Rik	4930432K21Rik	4930444P10Rik	
##	1	3.1890882	3.0166954	3.6206753	0.3910786	-2.87749278
##	2	2.3823215	1.3026420	2.9451321	0.2631247	-3.65650428
##	3	-1.1313170	0.3033916	0.3033916	-1.9317392	-3.88412153
##	4	0.5065830	3.1086777	4.9416268	1.4803229	-0.07660222
##	5	0.3450364	1.9636795	4.4749556	-3.8841215	2.60407290
##	6	1.3022640	3.5194730	3.8740278	0.5787962	-2.67369639
##	4930447C04Rik	4930451C15Rik	4930452B06Rik	4930453N24Rik	4930467E23Rik	
##	1	-1.6725051	-3.7949831	0.79898405	4.134588	-3.156456
##	2	-3.8841215	-2.4880632	-0.08840948	4.738933	-3.651962
##	3	-3.8841215	-1.9317392	-3.88412153	6.787627	-3.884122
##	4	-1.4896256	1.5873948	0.51099641	4.516088	-3.884122
##	5	-3.8841215	-2.8071174	-3.88412153	5.562674	-3.884122
##	6	-2.5470980	0.6732272	1.63228985	4.370284	-1.923287
##	4930503L19Rik	4930505A04Rik	4930506M07Rik	4930523C07Rik	4930524B15Rik	

##	1	4.3155753	-2.245902	3.4375204	-0.9744613	-3.612858
##	2	5.9886877	-3.656504	0.5371974	5.7605003	-3.884122
##	3	6.1342417	-3.884122	1.5770128	-0.6195262	-3.884122
##	4	2.9336124	-3.137777	3.8754097	1.5652931	-3.381881
##	5	0.3450364	-3.884122	3.8274719	-1.7701038	-3.884122
##	6	4.8551207	-3.118612	-0.8501022	4.2224167	-3.143174
##	4930529M08Rik	4930539E08Rik	4930548H24Rik	4930550C14Rik	4930558K02Rik	
##	1	-3.0443617	-1.6373231	-3.884122	-2.8218947	-3.884122
##	2	-2.8888941	-1.7760965	-2.182835	-0.0163160	-2.461040
##	3	-3.8841215	-3.8841215	-3.884122	-3.8841215	-3.884122
##	4	-0.1410865	-3.1283151	-2.534101	0.6733137	-3.884122
##	5	-2.8071174	-3.8841215	-3.884122	3.5596964	-3.884122
##	6	-2.6923620	-2.4841412	-2.628015	-1.1318441	-3.512249
##	4930562C15Rik	4930578C19Rik	4930579G24Rik	4930590J08Rik	4931406C07Rik	
##	1	-1.1727597	-3.5551432	2.5655502	-1.3827448	5.813857
##	2	1.3021054	5.3398771	3.1496218	-1.8899718	5.298251
##	3	-3.8841215	6.8952039	-0.2425151	-3.8841215	1.983840
##	4	-0.2572125	-0.5988975	4.8490700	-1.8068425	4.390613
##	5	-3.8841215	-2.8071174	4.1418942	-3.8841215	4.793075
##	6	0.1301967	-2.9479702	2.3731446	-0.8422693	6.113784
##	4931406P16Rik	4931409K22Rik	4931414P19Rik	4931423N10Rik	4931428F04Rik	
##	1	6.725494	-3.437301	2.1633314	-3.385014	4.120461
##	2	9.269988	-3.651962	1.8297139	-3.116511	2.624410
##	3	1.375592	-3.884122	0.5144282	-3.884122	-1.131317
##	4	5.685732	-3.884122	3.8069360	-3.884122	4.718219
##	5	6.162167	-3.884122	3.7081079	-3.884122	2.044749
##	6	5.941435	-2.777676	1.5384044	-3.451139	2.423617
##	4931429I11Rik	4931440F15Rik	4932418E24Rik	4932438A13Rik	4932438H23Rik	
##	1	-3.2172026	-2.8775003	-2.2912521	6.620189	-0.8465246
##	2	0.1153679	-1.2839737	-2.9486615	7.016066	-2.8202690
##	3	-3.8841215	-3.8841215	-3.8841215	1.668074	-3.8841215
##	4	-0.8709093	-3.1978120	-2.9676349	4.976497	1.7317378
##	5	-2.8071174	-3.8841215	-1.7701038	4.649261	-3.8841215
##	6	-1.9859471	-2.2938670	-3.1713129	7.704023	3.0852986
##	4933402J07Rik	4933405L10Rik	4933409K07Rik	4933411K16Rik	4933411K20Rik	
##	1	-3.884122	-2.324087	-3.884122	-3.7949831	2.963911
##	2	-1.157348	-1.704857	-2.276965	-3.6519623	3.879306
##	3	-3.884122	-3.884122	-3.884122	-3.8841215	6.717409
##	4	-3.884122	-2.982136	-3.884122	-3.3735035	5.183406
##	5	-3.884122	2.492901	-3.884122	-3.8841215	3.631442
##	6	-3.884122	-1.201589	-3.288906	0.5036804	4.046128
##	4933426M11Rik	4933427D14Rik	4933430I17Rik	4933433C11Rik	4933434E20Rik	
##	1	6.037190	4.2640071	-1.1570643	-2.515636	5.408290
##	2	7.121152	4.3720899	0.3708203	-2.099921	5.032524
##	3	5.194255	-0.2425151	-3.8841215	-3.884122	8.723362
##	4	4.788542	4.1310041	0.3711544	-3.884122	7.719606
##	5	4.006785	-1.7701038	-3.8841215	-3.884122	8.466852
##	6	6.537858	5.7474340	-0.7075220	-1.345356	5.315771
##	5031414D18Rik	5031439G07Rik	5330417C22Rik	5430421N21Rik	5430427O19Rik	
##	1	-0.9362597	8.427790	-0.8390042	-3.485382	-2.3028264
##	2	-2.5932726	6.088795	-1.9430794	-3.884122	-3.4837445
##	3	-3.8841215	6.568762	7.5171117	-1.131317	-0.6195262
##	4	-1.2558245	4.232238	2.6894711	-2.312419	-1.1079145
##	5	-2.8071174	3.559696	2.4137218	-3.884122	-3.8841215

##	6	-1.1645226	5.788747	-1.7267530	-3.660779	-3.4511394
##		5430435G22Rik	5730409E04Rik	5730455P16Rik	5730508B09Rik	5730559C18Rik
##	1	3.42032820	3.7305307	5.3399398	2.8086119	6.7118673
##	2	-2.46017225	3.2422720	4.2626296	4.9108873	-3.4243451
##	3	0.51442825	-1.9317392	0.8617169	-1.9317392	-1.1313170
##	4	3.36258541	3.6306284	6.3036455	-0.1084309	-0.9335126
##	5	2.07079093	4.1480228	4.5509292	2.9084139	-1.4408855
##	6	2.07629867	3.0403030	5.2584643	2.2636085	-0.2830564
##		5830415F09Rik	5830418K08Rik	6030419C18Rik	6030458C11Rik	6030468B19Rik
##	1	0.04380761	4.4649534	4.6021636	4.5434999	-2.599887
##	2	2.59500529	4.7765758	-0.2790380	4.6403763	-3.248991
##	3	-0.24251506	-0.2425151	-0.6195262	0.8617169	-3.884122
##	4	3.64036985	4.6547489	-0.5266800	5.0979888	-3.251744
##	5	5.29913489	-0.1609828	-3.8841215	4.3999029	-3.884122
##	6	0.65864165	5.7187211	4.2762773	4.8573047	-3.884122
##		6330403A02Rik	6330408A02Rik	6330416G13Rik	6430548M08Rik	6430571L13Rik
##	1	2.9110059	2.9627130	4.3119533	5.992758	0.9841126
##	2	1.6002779	2.6855767	2.4366604	4.397651	-1.4815464
##	3	6.3661004	-1.9317392	-0.2425151	1.911138	-1.9317392
##	4	-0.1104406	1.9855286	3.1847193	5.476138	-0.2112113
##	5	-2.1973739	3.5224398	-0.7519471	2.549557	-0.5800187
##	6	0.9553807	3.5261595	3.9311823	4.689968	0.2568236
##		6430573F11Rik	6820408C15Rik	8030462N17Rik	8430408G22Rik	8430419L09Rik
##	1	2.6310425	-1.1383519	4.111287	-1.3585506	7.260872
##	2	3.1567153	-2.2923224	6.075131	6.9749716	1.795154
##	3	-1.9317392	-3.8841215	-1.931739	1.6680739	7.776992
##	4	1.0608780	0.2827984	2.383751	2.1470970	7.420239
##	5	3.8577022	-3.8841215	-2.197374	-2.1973739	6.987853
##	6	3.3922861	1.3744911	4.617323	-1.6294541	7.587110
##		9030617003Rik	9030624J02Rik	9130008F23Rik	9130011E15Rik	9130019022Rik
##	1	-0.3627152	6.648027	-3.434315	4.620706	1.1153767
##	2	3.0916504	6.234334	-1.376017	4.734980	3.2309289
##	3	-0.6195262	7.574146	-3.884122	-1.131317	-0.6195262
##	4	2.9219955	7.689091	-2.912643	4.258865	2.6330163
##	5	-1.4408855	7.371173	-3.884122	2.992559	-1.4408855
##	6	2.5064463	6.437805	-1.457251	4.240440	2.2397004
##		9130401M01Rik	9230110C19Rik	9330159F19Rik	9330182L06Rik	9430015G10Rik
##	1	3.837490	0.7688666	5.4585624	5.2762342	4.4789928
##	2	4.139837	2.3562958	-0.8666795	1.8508893	3.6930675
##	3	3.139975	0.3033916	4.5835903	0.5144282	0.8617169
##	4	4.946037	4.6418079	6.9827553	2.4585491	5.0653566
##	5	6.014011	5.0371472	6.3047674	2.6736968	2.8938999
##	6	3.883983	1.8932225	5.8373584	6.5241721	5.0861249
##		9430016H08Rik	9430020K01Rik	9530053A07Rik	9530068E07Rik	9530077C05Rik
##	1	4.1162379	5.731660	-0.4412805	7.360154	2.4154909
##	2	4.2851319	10.122162	-1.4427730	7.915653	-1.8307894
##	3	0.8617169	9.245411	-3.8841215	4.435932	0.8617169
##	4	5.0299532	4.270428	-1.2740733	6.088893	5.5436037
##	5	5.7755634	5.301886	-3.8841215	6.074789	5.2082087
##	6	4.3214979	4.478966	-1.6609227	6.781623	3.4998269
##		9630033F20Rik	9930012K11Rik	9930021J03Rik	A130010J15Rik	A230046K03Rik
##	1	2.902266	1.2584884	5.5359332	2.8356053	5.577877
##	2	2.539003	3.8306803	5.8508449	2.5913965	5.986714
##	3	-1.931739	-0.6195262	0.3033916	-0.6195262	1.668074


```

## 4      4.288161      1.0787269      5.0586679      3.7969376      5.860979
## 5      3.394248      0.3450364      0.1633391      4.0727023      3.084901
## 6      2.746216     -0.3405268      6.5553449      3.8217049      6.183598
##      A230050P20Rik      A2m A330021E22Rik A330050F15Rik      A3galt2
## 1      4.0304741 -0.6849334      0.8207008     -3.1577283 -1.4292089
## 2      3.0312989 -1.4417055      0.4967921     -3.8841215  3.3608075
## 3     -1.9317392 -3.8841215     -1.9317392     -3.8841215 -3.8841215
## 4      1.0001586  3.0944522      0.4340960     -0.8837607 -1.9458889
## 5      0.3450364  2.7237947     -3.8841215     -3.8841215 -3.8841215
## 6      3.0749066  6.4670676      1.8394714     -3.8841215 -0.7871305
##      A430005L14Rik A430078G23Rik A430105I19Rik      A4galt A530016L24Rik
## 1      2.839348     -3.038697      2.3517171    -2.3218173    -3.7949831
## 2      4.062095     -3.217793      3.1844988     1.2850323      0.7683751
## 3      7.216968     -3.884122      0.3033916    -1.9317392    -3.8841215
## 4      6.139710     -3.884122      1.0432012     2.3153098    -3.8841215
## 5      6.128468     -3.884122     -2.1973739     1.2615221    -3.8841215
## 6      3.443421     -3.660779      5.2424961    -3.5122488    -3.6744822
##      A530054K11Rik A630007B06Rik A730017C20Rik A830010M20Rik A830018L16Rik
## 1      4.0187203      4.2790489      5.5653189      4.9306108     -0.5475039
## 2      3.2891219      5.4198317      0.1505368      1.9288801     -1.1155203
## 3      4.1660102     -0.2425151      2.1822477      0.8617169     -3.8841215
## 4      3.9520112      4.3537863      6.5713026      6.0604160      0.5365040
## 5     -0.7519471      1.8479734      6.7222369      3.8121159     -1.1730114
## 6      5.6258078      4.8290811      4.4157612      4.6018354     -0.8301930
##      A830080D01Rik AA415398 AA467197 AA474331 AA986860 AA987161
## 1      3.0389006      1.0828040 -3.189717  0.7201716  1.7912730  2.9646977
## 2      4.2692275      1.3322816 -1.943946 -0.5704831  0.4771642  3.9631514
## 3     -1.9317392 -3.8841215 -3.884122 -1.9317392  1.4798145  0.3033916
## 4      3.8612144      1.5078971 -1.309153 -2.5566431  0.6141967  4.3722787
## 5      2.1462087     -2.8071174 -3.884122 -3.8841215  0.8449942  4.3261459
## 6      4.8302711      1.6080969 -3.118612  1.5987300  2.1301300  3.7873704
##      Aaas      Aacs      Aadat      Aagab      Aak1      Aamp      Aanat
## 1  3.694253  7.006379 -2.2205289  5.725297  6.6646700  7.316259 -3.884122
## 2  3.960972  3.815399 -3.8841215  5.577893  6.6091487  7.435936 -3.884122
## 3  2.242751  2.462191 -3.8841215  6.081382  4.1503027  9.347951 -3.884122
## 4  5.823999  6.506877 -2.4467428  6.790690  4.9876304  7.985513 -3.884122
## 5  4.691834  5.681517 -3.8841215  6.089194  0.7833343  8.335401 -3.884122
## 6  3.677851  7.383488 -1.2406643  4.961559  7.3141979  6.883019 -2.848578
##      Aard      Aars      Aars2      Aarsd1      Aasdh Aasdhppt      Aass
## 1  2.502822  7.630205  3.846483  5.006075  3.5386986  4.492924 -0.9136427
## 2 -1.119639  6.649984  3.256971  4.939414  2.3013798  5.088556 -1.0441427
## 3 -3.884122  3.006755 -1.931739  6.871449 -0.6195262  7.479893 -1.9317392
## 4  1.132441  7.005475  1.716214  6.531809  4.2036880  6.407455  4.5712161
## 5 -3.884122  6.880603 -2.197374  7.211356  2.8036091  6.391270  3.6138373
## 6  1.555663  7.111951  3.864634  4.082435  4.8038503  4.664932  4.3696159
##      Aatf      Aatk      AB124611      Abat      Abca1      Abca12
## 1  4.33407564  8.391375 -1.52551690  8.021682  7.007572 -3.7235669
## 2  3.51306425  1.498452 -1.64249663  4.098401  9.705934 -3.8841215
## 3  0.05610664  1.479815  0.05610664  4.134422  5.503337  2.8599701
## 4  3.63611178  3.675054  2.50166813  7.004921  6.369441  0.3408628
## 5  3.03285981  5.320998  2.35134882  5.757639  6.491072  1.1681147
## 6  4.09828477  6.325473  0.31677514  8.488586  9.909943 -2.2760963
##      Abca13      Abca2      Abca3      Abca4      Abca5      Abca6
## 1 -3.07803883  8.965906  7.414237 -2.4191076  5.0229631  3.16445633

```

```

## 2 -3.65650428 4.825385 6.772875 4.9389496 3.0109087 -3.48374455
## 3 -3.88412153 7.887706 4.499303 -1.9317392 4.3560197 -1.13131698
## 4 -2.83193981 6.567664 5.278398 -0.1374869 3.7385386 4.03962506
## 5 -3.88412153 7.389395 3.484195 -3.8841215 4.6535756 3.49385195
## 6 -1.50993035 7.787588 7.619734 -0.2610731 4.8387137 -1.08606100
##      Abca7      Abca8b      Abca9      Abcb10      Abcb1a      Abcb1b
## 1 5.6448176 4.0052451 3.1236929 5.534036 -0.3420987 2.2034780597
## 2 5.5780308 -0.2483317 2.3295765 4.596816 10.0874538 0.0001184268
## 3 -0.6195262 -1.9317392 3.4532981 1.141414 5.8578492 -0.2425150616
## 4 1.6802812 3.3133627 3.7684612 4.008573 2.9351387 1.9315065206
## 5 -1.7701038 2.3082165 4.2254133 5.771599 1.1681147 2.3082164700
## 6 4.6554740 4.4094061 0.7974246 5.053012 2.8634325 2.8272714026
##      Abcb4      Abcb6      Abcb7      Abcb8      Abcb9      Abcc1      Abcc10
## 1 4.5289046 4.852147 5.329364 6.027140 2.848572 6.1407155 4.4966640
## 2 -2.0558375 4.274796 5.550889 4.950922 2.104217 3.8044337 3.1804535
## 3 -1.1313170 -3.884122 3.503617 3.478677 7.072349 0.3033916 0.3033916
## 4 0.9031915 2.512851 5.396598 6.883129 5.929989 4.7975088 2.4788163
## 5 -2.1973739 2.690590 3.341743 6.548958 6.326546 4.0202113 3.9587821
## 6 2.5525534 3.538210 4.704915 5.801472 6.161811 5.3671795 5.1586041
##      Abcc2      Abcc3      Abcc4      Abcc5      Abcc6      Abcc8      Abcc9
## 1 -2.818126 1.44799511 4.321456 7.437394 -2.5500032 -2.2475864 -0.100960
## 2 -2.548285 0.50047696 8.292413 6.224182 7.0567820 -2.3713762 6.980930
## 3 -3.884122 0.05610664 2.119096 4.674250 -3.8841215 -1.1313170 2.410380
## 4 -3.884122 1.00161090 2.180988 6.559991 -2.8319398 2.6642032 3.886131
## 5 -3.884122 -2.80711744 1.431944 5.702490 3.3310089 3.2535457 5.108024
## 6 -2.616080 -1.56125569 5.013920 7.959940 -0.3819567 -2.4391309 2.413560
##      Abcd1      Abcd2      Abcd3      Abcd4      Abce1      Abcf1      Abcf2
## 1 4.791291 1.160893 7.519512 5.1017777 6.767250 6.182561 5.928508
## 2 4.415865 1.472929 6.254563 4.8860226 6.739827 6.729350 6.417389
## 3 3.478677 8.425997 7.869834 -0.6195262 2.652618 2.356639 2.971435
## 4 4.811026 6.155436 7.133583 4.4844325 6.894929 7.106033 6.929584
## 5 3.972661 4.880330 6.812783 5.2657055 6.543156 5.268521 6.658195
## 6 4.235500 7.213098 7.706832 5.4189398 6.934624 5.877157 5.729335
##      Abcf3      Abcg1      Abcg2      Abcg3      Abcg4      Abcg5      Abhd10
## 1 5.942138 6.5334052 4.621577 -3.147109 4.8434031 -3.8841215 3.237377
## 2 5.757418 6.7917470 8.830374 -2.482394 -1.2420117 -3.6565043 3.369575
## 3 3.731831 9.0996753 7.014961 -3.884122 0.8617169 -3.8841215 6.553915
## 4 6.928121 7.4981286 4.690004 -3.164319 3.5223928 -3.8841215 5.129723
## 5 5.777541 7.9352682 4.618695 -3.884122 -0.1609828 -3.8841215 2.740115
## 6 5.871729 0.3978444 2.111362 -3.660779 5.0851801 -3.1431739 4.424462
##      Abhd11      Abhd12      Abhd12b      Abhd13      Abhd14a      Abhd14b      Abhd15
## 1 4.607440 8.486201 -3.88412153 5.374846 3.504088 1.3344558 0.11694544
## 2 3.917950 5.915923 -3.88412153 5.346036 2.185564 2.4708448 1.45835122
## 3 6.767175 7.443300 1.26324902 2.859970 1.375592 0.8617169 4.69605179
## 4 6.100952 5.054808 -0.59927495 3.792040 6.454719 4.1513652 -0.40738466
## 5 6.942735 6.662483 0.65149678 1.935611 6.571933 5.6342747 -3.88412153
## 6 5.706925 7.752200 -3.88412153 5.699250 3.115568 3.7697503 1.65291705
##      Abhd16a      Abhd2      Abhd3      Abhd4      Abhd5      Abhd6      Abhd8
## 1 6.295903 7.689689 6.358728 8.215172 5.721910 4.632127 5.140346
## 2 6.212812 8.930871 1.434935 6.542279 6.661653 5.808974 5.134270
## 3 6.815282 2.119096 7.172948 7.734169 1.983840 6.973163 3.622232
## 4 5.661795 2.743345 6.004952 8.777544 4.867798 6.642177 2.688854
## 5 5.647313 3.640164 6.972395 8.702410 5.765633 6.264435 2.723795
## 6 5.758874 5.954119 7.721670 7.654170 4.760081 5.573247 5.567539

```

##	Abi1	Abi2	Abi3	Abi3bp	Abi1	Abi2	Abi1m1
## 1	6.468829	7.196356	1.3844939	-2.11041121	7.541825	5.9029486	1.007307
## 2	7.798172	5.813368	2.0388695	-0.90476920	7.361418	6.7802798	9.991310
## 3	8.912740	9.501703	8.0823703	0.05610664	2.356639	1.2632490	7.047125
## 4	6.524716	7.431379	-0.3392781	-1.81534378	5.182886	4.3313656	4.293828
## 5	4.148023	7.266619	-1.7701038	-3.88412153	4.320730	0.4279671	4.470072
## 6	7.105087	6.431626	-2.1757859	-0.23702633	6.561777	6.6582011	5.136497
##	Abi1m2	Abi1m3	Abr	Abt1	Abtb1	Abtb2	Acaa1a
## 1	4.7310349	2.0166398	7.834145	3.875623	4.274902	8.5310240	6.337612
## 2	-0.4107136	3.7091511	5.924674	4.892468	4.602385	2.0870994	5.678061
## 3	-0.2425151	-1.1313170	7.841992	1.753727	7.922800	0.6984974	4.820366
## 4	3.1416952	2.7430399	4.655929	5.170204	5.714892	3.1584834	3.679510
## 5	3.6830026	-2.1973739	1.349248	5.114298	4.489509	3.9517923	4.741317
## 6	0.4759328	-0.7683762	8.973901	4.411864	4.388795	6.8568691	5.506871
##	Acaa1b	Acaa2	Acaca	Acacb	Acad10	Acad11	
## 1	0.8954746	2.396498	5.957943	2.56299738	2.1663413	5.1195042	
## 2	1.2507424	6.844483	3.607603	5.14806119	3.5691273	5.1198415	
## 3	-1.9317392	4.166010	1.008333	-0.61952623	2.6526181	6.4614713	
## 4	-1.9453923	6.594156	4.226954	1.21465560	2.4584907	5.4431988	
## 5	1.6889296	7.128545	4.679194	-2.80711744	-2.8071174	0.2570463	
## 6	1.4811087	6.230744	6.318697	1.71932637	2.6908214	5.4553631	
##	Acad12	Acad8	Acad9	Acad1	Acadm	Acads	Acadsb
## 1	1.4479909	5.014705	5.621387	4.749239	5.2939990	4.457593	5.533366
## 2	2.6157551	4.741863	5.517168	7.366958	5.9244284	5.708819	6.345472
## 3	-1.9317392	1.008333	4.706830	6.204375	0.5144282	6.810293	2.053052
## 4	2.7723000	6.250821	4.600730	4.780809	6.2070129	3.500321	7.114479
## 5	3.1351297	4.846812	5.739489	3.648834	6.3265464	4.649261	5.169568
## 6	1.1566740	5.106317	5.517959	6.995396	5.9877648	4.652315	6.075521
##	Acadv1	Acan	Acap1	Acap2	Acap3	Acat1	Acat2
## 1	6.445521	5.3381474	-1.6978232	6.632701	8.7839438	6.784445	6.477469
## 2	7.108052	-2.4122130	1.9466160	6.673736	5.8036560	6.428170	3.430882
## 3	5.581551	-3.8841215	-3.8841215	1.983840	0.8617169	6.464650	7.765438
## 4	7.833560	-0.2156394	-2.2298709	5.059811	4.0122612	8.097014	7.295388
## 5	6.967205	-3.8841215	-3.8841215	4.861805	2.1215049	8.740932	7.561122
## 6	6.817721	0.1586763	-2.4679430	7.341105	6.2511359	5.907413	6.718384
##	Acat3	Acbd3	Acbd4	Acbd5	Acbd6	Acbd7	Accs
## 1	3.6119849	5.531973	3.2110000	5.915293	5.206028	-3.0735189	3.0034864
## 2	0.1839145	6.195577	4.0072828	6.246564	5.420272	-3.4766082	2.2615367
## 3	-3.8841215	6.988704	-1.9317392	7.222612	1.375592	-1.9317392	5.4008607
## 4	3.0898984	4.341712	3.1267497	6.118362	3.048540	1.5696269	3.1794712
## 5	3.4449096	4.479823	-2.8071174	6.660341	4.522906	3.5596964	-1.7701038
## 6	4.3474990	5.850871	3.6746088	6.535558	3.980003	-3.1376752	2.9619824
##	Accs1	Acd	Ace	Ace2	Acer1	Acer2	
## 1	-1.1304621	4.917086	3.7011157	-1.875473	-3.8841215	0.02190271	
## 2	-3.8841215	5.227726	4.7958833	4.453032	-3.8841215	6.56066953	
## 3	-3.8841215	7.415644	-3.8841215	5.074526	1.8345785	5.47208788	
## 4	-1.7289728	6.936855	0.2688138	4.032113	-0.5432813	2.09843065	
## 5	-3.8841215	6.168210	-1.7701038	4.880330	0.9041264	-1.17301144	
## 6	-3.2808450	4.894347	1.8515095	-1.296972	-3.8841215	-0.16956729	
##	Acer3	Ache	Acin1	Acly	Acmsd	Acn9	Aco1
## 1	4.013466	5.00178537	7.112245	8.392013	-1.3719153	1.037605	7.084111
## 2	3.619588	1.21893236	7.386217	7.638395	-2.5340902	1.513293	6.826684
## 3	6.432542	-3.88412153	1.668074	7.348401	-3.8841215	5.290545	8.259366
## 4	3.295989	0.01041839	6.456393	7.953818	-3.6539444	4.307131	6.589030

```

## 5 4.336916 -1.44088555 2.879238 7.128545 -3.8841215 5.400157 5.027207
## 6 5.178288 0.81676774 7.675792 8.315462 -3.3528132 1.484976 7.173620
##      Aco2      Acot1      Acot10      Acot11      Acot12      Acot13      Acot2
## 1 8.333009 5.40782474 0.6865392 2.506533 -1.237132 4.198609 3.283580
## 2 7.918316 4.35232843 4.7551368 -2.679315 -3.884122 4.506333 4.481558
## 3 7.068176 0.05610664 -0.2425151 4.962061 -3.884122 8.139179 4.849841
## 4 8.426994 2.94697291 3.2489509 5.904964 -1.547394 6.671003 6.375965
## 5 8.214315 3.11023384 5.0697960 2.740115 -3.884122 6.872298 7.743186
## 6 7.740318 7.12886957 1.2772927 6.122419 0.919944 3.735780 4.282283
##      Acot3      Acot4      Acot5      Acot6      Acot7      Acot8
## 1 -2.7119961 -0.20966391 -3.212390 1.9104737 6.323702 3.5979708
## 2 -3.8841215 -3.42434508 -3.651962 -1.4417055 5.313496 3.7705773
## 3 0.8617169 -3.88412153 -3.884122 -3.8841215 7.672273 -0.6195262
## 4 -2.7157476 -1.21697330 -3.114158 -1.5542366 7.365450 4.3570540
## 5 -3.8841215 -3.88412153 -3.884122 1.4319435 8.356725 5.8878549
## 6 -3.2889060 -1.05749531 -2.862656 1.7948944 4.161794 3.7510365
##      Acot9      Acox1      Acox2      Acox3      Acox1      Acp1      Acp2
## 1 1.80252124 8.788865 -3.8841215 5.1888348 -3.767000 1.2753599 6.420081
## 2 5.92757025 8.878164 -3.8841215 5.7242571 -2.055838 1.2432388 5.505534
## 3 0.05610664 7.276061 -3.8841215 5.4465921 -3.884122 6.4991624 6.592204
## 4 4.13942062 8.143196 -1.3141012 4.2144129 -3.884122 6.0071044 6.971561
## 5 5.87313151 7.153129 -3.8841215 0.2570463 -3.884122 6.7894491 6.453214
## 6 2.55010409 8.215855 -0.8906926 5.2184287 -3.660779 1.0726016 6.517794
##      Acp5      Acp6      Acpp      Acpt      Acr      Acrbp      Acsbg1
## 1 -2.9607442 4.932126 -3.3067955 -3.268370 -0.8614253 1.9078315 5.320255
## 2 4.8858599 4.182020 -2.9956232 -3.651962 0.2784499 0.2610146 2.302586
## 3 -0.2425151 1.753727 1.2632490 -3.884122 -3.8841215 -3.8841215 9.021427
## 4 -1.2990488 4.576333 -0.8058612 -2.704766 -1.3942528 2.7197884 9.353778
## 5 -2.1973739 3.765042 0.0631199 -3.884122 -3.8841215 -2.8071174 8.610252
## 6 -1.6609227 5.072716 -2.4679430 -3.490484 -0.1810424 3.1440269 9.671703
##      Acsbg2      Acsf2      Acsf3      Acs11      Acs13      Acs14      Acs15
## 1 -3.8841215 0.1341438 3.765135 6.069789 8.266393 4.797494 5.1644439
## 2 -3.3356546 3.5353748 3.820744 6.821516 7.272511 4.843340 6.7996729
## 3 -3.8841215 1.3755916 6.632334 2.820816 8.345517 5.891307 2.6073156
## 4 -0.2378033 3.1062313 4.810690 4.817816 7.369766 5.041708 3.1208363
## 5 -3.8841215 2.5120345 2.263755 3.944768 7.532127 6.851793 0.7833343
## 6 -1.6558492 5.8927413 3.851902 2.118039 8.333403 5.870788 2.9119266
##      Acs16      Acsm3      Acsm5      Acss1      Acss2      Acss3      Acta1
## 1 5.471694 -2.2206465 -3.7669998 5.5354198 6.639458 -2.9578480 -1.6643047
## 2 1.321701 -1.6703085 -3.8841215 0.0724519 1.578532 5.1374541 -1.7091796
## 3 7.808608 -3.8841215 -3.8841215 0.5144282 4.548068 -3.8841215 -1.9317392
## 4 8.059612 -2.8790819 -2.8000061 4.7012245 3.984024 -1.7737799 1.7140357
## 5 6.798244 -3.8841215 -3.8841215 5.0437363 3.732784 -3.8841215 3.6049537
## 6 9.039266 -0.3708286 -0.6966405 8.3048967 7.504050 -0.6689666 -2.6212192
##      Acta2      Actb      Actg1      Actg2      Act16a      Act16b      Act17a
## 1 -0.9284704 10.025181 7.341588 -1.9627637 5.525733 2.7469433 -3.677861
## 2 2.7752792 10.435087 8.369791 -2.4770451 6.358381 -0.2845779 -2.593273
## 3 11.2118661 14.741577 6.749039 -1.9317392 8.087534 1.2632490 -3.884122
## 4 3.9513677 12.957365 6.332892 -0.5602525 6.730470 3.8910370 -3.884122
## 5 5.2991349 14.291009 6.065106 -2.1973739 7.204756 5.2023309 -3.884122
## 6 1.4470670 9.923307 7.764161 -3.6744822 5.324392 -1.1318441 -2.928036
##      Act17b      Act19      Actn1      Actn2      Actn3      Actn4      Actr10
## 1 -3.195404 -3.548678 3.488228 -1.162867 -0.3542189 7.159524 6.573120
## 2 -2.990176 -3.884122 7.803479 -2.534090 -2.7960024 9.979130 6.794726

```

```

## 3 -3.884122 -3.884122 1.141414 -3.884122 -3.8841215 3.478677 8.120154
## 4 -3.884122 -3.884122 4.215687 -1.130718 -2.4058362 6.007267 7.784107
## 5 -3.884122 -3.884122 3.587021 -2.807117 -3.8841215 4.465171 7.955065
## 6 -2.521641 -2.777676 5.494011 -1.357790 -0.8716209 6.937325 5.807477
##      Actr1a  Actr1b      Actr2      Actr3      Actr3b      Actr5      Actr6
## 1  8.258966  7.048355  7.399561  6.371660  4.3120172  3.6999054  3.928978
## 2  7.994424  7.654566  8.105534  8.694480  0.7626884  3.9654935  3.841940
## 3  9.080119  6.461471  10.574065  6.409634  1.0083330 -0.6195262  7.529308
## 4  8.510075  6.299125  8.327513  5.326080  5.0583323  0.7383264  6.598852
## 5  8.880901  5.160502  9.514193  5.537216  4.2541073  0.9609302  6.998916
## 6  7.128861  6.526523  6.852536  5.616938  6.0473498  3.7307860  3.996268
##      Actr8      Acvr1  Acvr1b      Acvr1c  Acvr2a      Acvr2b      Acvr11
## 1  4.8040924  5.041150  5.136946 -2.9629555  4.765956  2.9406928  0.1731015
## 2  4.9119554  6.462105  1.549462 -3.1165114  5.383882  1.3186870  9.5505023
## 3 -0.2425151  5.115550  1.141414  3.5992759  1.141414 -1.9317392 -1.1313170
## 4  5.6278898  3.023176  2.125990 -0.7601495  4.103093  2.9502024  1.8199210
## 5  3.5034443 -2.197374  3.916326 -1.4408855  2.604073  2.3299438  1.4715792
## 6  4.9105612  5.609153  4.379206  1.6125166  5.018102  2.3663191  1.9706857
##      Acy1      Acy3  Acyp1      Acyp2      Ada      Ada1  Adam10
## 1  4.2004484  1.2004025  2.884319  3.704923  1.7859224  4.774140  6.914773
## 2  2.7903499  3.8239239  3.939943  3.868298  1.9666788  4.302948  9.529198
## 3 -0.2425151  6.1929200  6.142205  6.489832 -3.8841215  6.134242  7.659846
## 4  5.2811656  2.5645841  5.329117  5.377798  1.2886627  4.998706  7.013132
## 5  6.0438987 -2.1973739  6.460619  5.216981 -2.1973739  3.872583  7.996412
## 6  4.1686541  0.4442182  1.961240  3.120289 -0.8127956  4.673727  7.098215
##      Adam11  Adam12  Adam15  Adam17      Adam18  Adam19
## 1  6.425299  6.3630534  6.333251  6.625279 -0.002949462  4.5700248
## 2  1.901984  2.1276739  8.415797  7.119457 -3.884121530  3.4958770
## 3 -1.931739 -1.9317392  4.242081  1.753727 -3.884121530 -0.6195262
## 4  3.280424 -0.4395592  2.813552  5.615280 -1.857538475  1.5220466
## 5 -0.947172 -0.9471720  1.688930  5.925804 -3.884121530 -2.1973739
## 6  5.109127  2.9431317  6.077964  6.809349 -3.884121530  0.9473652
##      Adam21  Adam22  Adam23  Adam30  Adam32  Adam33
## 1 -2.3250019  7.2098668  6.7722210 -3.884122 -1.359812 -3.282671
## 2 -2.4194830  0.6116016 -0.3198030 -3.884122 -3.424345 -2.877422
## 3 -3.8841215  5.9559824  0.6984974 -3.884122 -3.884122 -1.931739
## 4 -0.8657868  6.7333307  5.3865083 -3.884122 -3.427701 -1.297680
## 5 -3.8841215  5.8619895  6.1891646 -3.884122 -3.884122 -3.884122
## 6 -3.1431739  5.2348988  3.2868258 -1.923287 -1.332938 -3.451139
##      Adam8  Adam9  Adamdec1  Adamts1  Adamts10  Adamts12
## 1  1.51867021  8.301237 -3.459799  6.174040  5.3386200  0.2168586
## 2 -0.56530513  5.689250 -1.541700  9.952134  6.9405345  4.1895693
## 3 -1.93173924  1.263249 -3.884122  1.263249 -0.2425151 -3.8841215
## 4  1.99443725  4.354586 -3.884122  3.714661  3.1151767 -1.9625402
## 5 -2.19737395  2.965052 -3.884122  1.654903  2.7722112 -2.8071174
## 6  2.13281044  6.046305 -3.884122  8.628114  5.9942420  3.7053009
##      Adamts13  Adamts14  Adamts15  Adamts16  Adamts17  Adamts18
## 1 -3.4738621 -2.1871293 -1.3280165  1.134360  2.79694081 -2.237386
## 2 -2.5532032 -2.0967683 -1.5604800  2.330613  1.83667278 -2.935278
## 3 -1.9317392 -0.2425151  4.3560197 -3.884122  0.05610664 -3.884122
## 4 -2.1645370 -2.3691520 -1.5203764 -1.381081 -0.19597111  2.224750
## 5 -3.8841215 -1.7701038  1.8479734 -3.884122 -2.19737395 -2.807117
## 6 -3.6744822 -2.3464701  2.8419668  3.689382 -0.24729764  1.320097
##      Adamts19  Adamts2  Adamts20  Adamts3  Adamts4  Adamts5

```

```

## 1 -1.6172154 2.9388907 3.5241597 3.2340827 6.079395 2.5532401
## 2 -3.8841215 -2.9352776 -1.6424966 -1.9469025 4.529256 1.0345749
## 3 -3.8841215 -3.8841215 0.6984974 -1.1313170 1.008333 -0.6195262
## 4 -1.7571241 -0.6898503 1.6880241 2.5332143 4.886177 -0.2950787
## 5 -3.8841215 -2.8071174 -3.8841215 2.9370110 5.714929 -2.8071174
## 6 1.5339851 1.1633936 4.5821602 5.5115100 1.213698 4.6904924
## Adamts6 Adamts7 Adamts8 Adamts9 Adamts11 Adamts12
## 1 3.735946 2.9357755 0.5406020 2.7641363 0.5958401 -1.0976891
## 2 1.333701 2.9048303 4.0094087 7.4346588 -0.3125744 8.9006856
## 3 -1.131317 -3.8841215 -3.8841215 -1.1313170 -3.8841215 -3.8841215
## 4 2.705649 0.6155557 -3.6539444 0.6914770 -0.4149161 0.4134134
## 5 -2.197374 -3.8841215 -3.8841215 -1.4408855 -2.1973739 2.4929006
## 6 5.971812 2.7911814 0.5117775 5.3864948 -2.8744502 1.6484498
## Adamts13 Adamts14 Adamts15 Adap1 Adap2 Adar
## 1 4.3722549 1.4503064 -1.9889128 5.866212 -0.3193570 6.151117
## 2 -2.4823940 1.4282293 -0.8666795 1.861677 2.8677647 5.740176
## 3 -1.9317392 -0.2425151 -3.8841215 4.356020 -0.6195262 2.182248
## 4 3.2207344 2.9340268 -1.8967737 2.557713 2.9998669 5.742330
## 5 -2.1973739 4.5964581 -0.9471720 4.872949 1.6889296 5.955809
## 6 0.8165469 1.6135482 -0.4296200 1.503936 -1.4142775 6.561530
## Adarb1 Adarb2 Adat1 Adat2 Adat3 Adc
## 1 4.5561299 3.6275074 1.855847 2.4366221 1.6330945 2.2839502
## 2 3.7770579 -2.8952098 1.060665 3.3687894 2.0104542 2.3488075
## 3 -1.9317392 -1.9317392 2.898090 -3.8841215 -1.9317392 -0.6195262
## 4 2.9554869 -0.4382196 3.778202 2.1883188 -0.6528263 0.2723669
## 5 2.5495573 -2.8071174 -0.947172 -0.5800187 -3.8841215 -2.8071174
## 6 2.6662056 -2.6400046 2.282656 2.2612289 1.1395561 2.2787239
## Adck1 Adck2 Adck3 Adck4 Adck5 Adcy1 Adcy10
## 1 4.896995 4.7120174 4.298314 4.7179693 3.492384 6.381208 -0.9800499
## 2 4.335418 4.3755957 3.107181 3.7637047 3.341049 1.318991 -1.9690256
## 3 6.852160 -0.2425151 1.141414 5.9649895 2.898090 5.360474 -1.9317392
## 4 5.635614 3.3962418 5.652035 4.3739144 5.084196 3.706085 -2.8127444
## 5 5.967986 4.3422715 5.605614 4.3098380 5.030528 3.110234 -3.8841215
## 6 4.730891 4.4925321 2.782327 5.7942438 3.746636 4.447967 -0.9490993
## Adcy2 Adcy3 Adcy4 Adcy5 Adcy6 Adcy7
## 1 4.82716150 5.3547204 -1.7246788 6.7634004 6.3441335 2.1358696
## 2 0.78427303 2.5514679 7.4447111 0.7784643 6.5265148 0.2881853
## 3 0.05610664 0.3033916 -1.9317392 -1.1313170 0.5144282 2.7805686
## 4 4.52734250 1.7846782 -0.6250617 3.4730832 2.4238287 1.3876526
## 5 5.37946879 -0.9471720 -0.2876030 3.4548318 3.4744738 -0.7519471
## 6 7.32306327 5.0761118 0.6726672 2.0816563 6.7726382 0.5279891
## Adcy8 Adcy9 Adcyap1 Adcyap1r1 Add1 Add2 Add3
## 1 4.08234449 4.000965 -2.7113831 8.714237 9.446554 4.5207182 7.120156
## 2 -0.90476920 3.992299 -2.2467233 2.030053 8.482668 0.3546487 7.622140
## 3 -3.88412153 5.290545 -3.8841215 8.355826 8.487454 1.4798145 2.356639
## 4 1.85691682 2.838926 -1.8740268 7.871788 7.969073 5.5904133 6.600828
## 5 3.29831832 -1.440886 -0.7519471 6.688996 7.619076 0.4279671 6.777639
## 6 4.46413802 4.123166 -2.3227562 10.532574 8.501916 0.8925902 7.912939
## Adh1 Adh5 Adh7 Adhfe1 Adi1 Adipor1 Adipor2
## 1 -3.38716646 6.708685 -3.715698 2.820252 5.921074 6.920121 6.810806
## 2 5.03114077 6.880944 -2.936956 -1.373700 4.429994 9.057546 7.492933
## 3 0.69849743 8.946669 -1.931739 3.139975 7.683230 5.032301 7.654288
## 4 -0.54026193 8.708746 -2.366036 5.952819 6.753569 5.319277 5.194315
## 5 -0.04458439 9.307113 -2.807117 5.460498 6.337314 5.534880 6.117579

```

```

## 6 -3.45113945 5.876698 -3.884122 6.452758 3.135143 6.470749 6.421011
##      Adk      Adm      Adm2      Adnp      Adnp2      Ado      Adora1
## 1 5.173971 2.8306568 -3.269192 7.240369 3.861798 7.163575 6.95764904
## 2 4.281436 7.6378799 -2.948662 7.140936 4.233603 3.849118 -0.04624763
## 3 7.988319 -3.8841215 -3.884122 2.652618 -1.131317 8.505315 5.17109089
## 4 7.946328 1.8574419 -3.287822 6.045891 3.919109 9.276213 4.67678995
## 5 7.796342 3.5224398 -3.884122 6.069956 4.336916 9.200578 3.27610569
## 6 5.691223 2.4236244 -3.280845 7.445666 4.573755 3.608248 6.04824405
##      Adora2a      Adora2b      Adpgk      Adprh      Adprh11      Adprh12
## 1 0.03163604 2.87456338 5.1698873 6.633523 -3.31190426 4.4534006
## 2 6.99361917 -0.18810730 5.2573245 6.747407 -3.88412153 4.5597074
## 3 -3.88412153 0.86171687 -0.2425151 8.716045 -3.88412153 -0.6195262
## 4 0.69035163 1.27305679 2.5557137 7.599452 -0.02476914 2.2629454
## 5 2.30821647 4.55554729 2.8190554 7.822922 -2.80711744 3.2872548
## 6 3.82480045 6.26375303 5.5135002 5.834990 -3.37988655 4.7984750
##      Adra1a      Adra1b      Adra1d      Adra2a      Adra2b      Adra2c
## 1 2.210550 2.4595915 0.3069277 1.0152164 -2.7207083 -0.3116148
## 2 -2.807082 -1.6818623 -2.4907738 1.8529688 -0.3624419 -3.4243451
## 3 -1.131317 -3.8841215 -3.8841215 6.3863563 -3.8841215 -3.8841215
## 4 1.471883 -3.2878217 -3.5296461 -0.3184418 -2.6932032 0.6693759
## 5 -3.884122 -3.8841215 -2.1973739 -0.2876030 -3.8841215 1.9356113
## 6 3.604174 4.5038437 -3.2808450 6.2594748 -3.0447446 -2.1757859
##      Adrb1      Adrb2      Adrb3      Adrbk1      Adrbk2      Adrm1      Ads1
## 1 1.56206363 -0.5744592 -2.832409 6.645651 5.0419561 4.062904 4.858446
## 2 -0.02689572 4.5939239 -3.884122 6.717505 0.5243473 4.165843 5.509475
## 3 -1.93173924 2.7391666 -3.884122 1.263249 1.0083330 4.674250 3.171443
## 4 1.14259133 3.5273498 -3.884122 4.369564 6.0025337 3.179611 6.664854
## 5 -2.19737395 0.9041264 -3.884122 4.225413 4.0532413 4.066244 7.251044
## 6 5.19299431 0.2392086 -2.232272 6.525992 8.6990826 4.426861 5.017216
##      Adss      Adss11      Aebp1      Aebp2      Aen      Aes      AF251705
## 1 4.950983 3.3388598 4.347453 5.207406 4.1773443 8.144744 1.920529
## 2 7.412624 -1.6777711 2.314274 5.287702 3.4857326 7.801423 -2.825432
## 3 5.074526 -0.2425151 -3.884122 4.511649 0.8617169 5.074526 8.146125
## 4 5.377505 2.5320109 2.555621 4.979093 4.0669086 5.369037 2.699625
## 5 4.596458 2.6736968 2.286157 6.092375 4.0000241 6.919636 3.147418
## 6 5.674789 -1.5276440 2.929142 5.928159 4.0207418 6.526503 -2.103662
##      AF529169      Afap1      Afap111      Afap112      Aff1      Aff2
## 1 2.2036667 5.752763 5.245009 7.3610959 4.04038534 2.23092048
## 2 -2.8952098 4.295917 8.829355 6.0121750 6.69416112 -2.99562320
## 3 -3.8841215 7.779547 8.218524 0.8617169 0.05610664 -1.93173924
## 4 -2.3203436 8.007291 4.334075 6.2113314 3.04171279 2.57909756
## 5 -3.8841215 6.962866 4.059758 5.7107943 2.63930479 2.26375475
## 6 -0.6050653 5.614748 2.165239 7.1105031 7.29575383 -0.01243663
##      Aff3      Aff4      Afg312      Afmid      Afp      Aftph      Aga
## 1 3.267326847 7.742831 5.5256884 1.0589071 -3.6013384 5.196925 4.009108
## 2 0.009880038 8.463442 5.6686464 1.3954194 -3.1273690 5.834285 4.527786
## 3 -0.242515062 2.512206 0.6984974 -0.6195262 -3.8841215 2.242751 8.675467
## 4 5.060303589 6.112417 4.0840536 3.1852617 -3.8841215 4.850516 5.278071
## 5 4.627494372 6.175729 4.2541073 -1.1730114 -3.8841215 5.262884 5.887855
## 6 3.981873296 8.213866 6.1398302 2.3905887 -3.8841215 5.464427 4.215013
##      Agap1      Agap2      Agap3      Agb11      Agb12      Agb13      Agb14
## 1 7.990444 7.7149440 6.606912 -2.819367 -1.7000188 2.509750 -0.4540607
## 2 5.610720 2.4039934 7.105668 -3.884122 -2.5614538 1.932367 -2.6793155
## 3 5.276143 -3.8841215 1.911138 -3.884122 -1.9317392 -1.931739 -3.8841215

```

```

## 4 5.589973 1.7929842 3.717562 -3.884122 -0.3555565 2.464474 0.1779396
## 5 5.111164 0.0631199 5.716991 -3.884122 2.5309179 3.383899 -2.8071174
## 6 5.780263 3.9247915 5.928133 -2.874450 0.9164137 2.887127 -1.8615858
##      Agb15      Ager      Agfg1      Agfg2      Aggf1      Agk      Agl
## 1 4.2772994 -0.6713091 6.403238 3.899165 5.825253 2.6318025 5.759321
## 2 3.5584269 2.6928583 8.116976 2.743045 5.553817 2.5209107 4.690247
## 3 1.3755916 -3.8841215 5.015059 6.422769 1.479815 -0.6195262 5.672335
## 4 2.8701280 -0.1594298 4.592363 3.034085 4.757512 4.2006441 4.474686
## 5 1.8479734 -2.1973739 5.073021 4.298863 3.879966 1.7221719 4.110854
## 6 4.0377454 2.1961205 5.514469 5.472315 5.778855 3.0696738 7.371935
##      Agmo      Agpat1      Agpat2      Agpat3      Agpat4      Agpat5      Agpat6
## 1 1.9254275 6.917990 0.2526407 8.224861 6.761076 6.657524 7.207120
## 2 4.6068535 5.396838 1.6286002 7.203726 5.533845 5.188731 6.441228
## 3 8.0350421 5.107438 -3.8841215 6.959708 8.088565 5.720998 8.811514
## 4 5.1333433 4.754379 -0.2503756 5.517836 6.840328 6.868486 7.333429
## 5 4.5462963 5.791311 2.5679590 7.220835 7.864456 7.801211 6.100299
## 6 4.1831012 6.134457 0.3436294 8.833007 3.069892 6.956836 6.467166
##      Agpat9      Agps      Agrn      Agrp      Agt      Agtpbp1
## 1 0.01005873 6.5685961 8.908325 -2.9527527 -0.3523829 5.650553
## 2 -0.92821920 6.1741253 11.015668 -3.6519623 0.2286847 4.996090
## 3 -1.93173924 1.7537270 3.872500 -3.8841215 8.7850573 5.515649
## 4 -0.13139657 4.3776210 5.670125 -0.3681176 6.9589283 4.421620
## 5 -3.88412153 3.6745361 6.270066 -3.8841215 8.1188650 5.683628
## 6 -1.60225900 6.0079568 10.219621 -2.4341566 4.4544036 5.001351
##      Agr1a      Agr1b      Agr2      Agrtrap      Ahctf1      Ahcy      Ahcyl1
## 1 -1.4650367 -3.767000 -3.33600055 1.9765606 5.934723 2.776787 7.991492
## 2 -3.6519623 -3.884122 -3.22778239 4.1245526 6.618691 3.023865 7.326262
## 3 -3.8841215 -1.931739 -3.88412153 2.6073156 1.753727 -1.931739 7.982786
## 4 -3.8841215 -3.884122 -3.88412153 5.2948350 4.214751 3.124944 7.653305
## 5 -3.8841215 -3.884122 -3.88412153 5.9834911 1.963680 3.147418 7.078082
## 6 -2.5244447 -3.884122 -3.88412153 3.6252865 6.448932 1.745928 9.164164
##      Ahcyl2      Ahdc1      Ahi1      Ahnak      Ahr      Ahrr      Ahsa1
## 1 5.779298 4.586482 6.613392 1.8832700 0.5631888 1.5031829 6.550701
## 2 4.746472 4.408558 3.628049 8.0280981 4.6374360 -1.1850840 5.858219
## 3 3.261927 3.478677 1.983840 5.4909183 0.3033916 -3.8841215 6.547933
## 4 4.311752 4.677629 6.531437 4.6563245 0.3629079 -1.5258367 7.025757
## 5 3.657453 4.749401 6.887030 5.3611204 -1.4408855 0.0631199 6.723263
## 6 6.606408 5.791515 5.914235 6.0892610 2.8167846 1.2699959 5.179400
##      Ahsa2      AI118078      AI314180      AI317395      AI429214      AI462493      AI464131
## 1 4.553178 3.2624323 6.2759132 -3.723567 1.6667527 3.425189 4.642128
## 2 4.343260 -2.0325413 6.7503728 -3.884122 1.9713971 5.457050 1.132642
## 3 -3.884122 -3.8841215 -0.2425151 -3.884122 -3.8841215 6.830147 1.834579
## 4 4.866011 -3.8841215 5.4137002 -2.134147 3.0502495 6.246197 3.573975
## 5 5.603386 -3.8841215 3.0849008 2.656603 -0.2876030 7.113747 5.355835
## 6 4.635299 -0.5609893 7.0758587 -2.252068 2.3369063 2.992731 8.740307
##      AI467606      AI593442      AI597479      AI661453      AI837181      AI846148
## 1 -1.7361432 1.895536 4.679285 -2.322841 4.7853034 4.69616881
## 2 4.6541644 1.045458 3.807468 2.854730 4.8345452 6.08312627
## 3 5.4271702 9.797606 6.130244 1.141414 0.5144282 -1.93173924
## 4 1.1148341 4.360787 5.767087 -1.368407 4.3278511 2.03905179
## 5 -1.7701038 3.032860 5.773583 2.240999 4.9415924 0.58076638
## 6 -0.9332825 4.312674 4.652327 -2.762539 4.4425433 5.09293694
##      AI848285      Aif1      Aif1l      Aifm1      Aifm2      Aifm3      Aig1
## 1 3.0177949 2.3857111 4.7553391 4.673375 2.2530446 0.2606583 4.826025

```



```

## 2 -2.1192014 -0.5505186 5.9027575 4.650615 0.8068389 2.7991873 2.970233
## 3 -3.8841215 7.9006731 6.9619594 1.479815 -1.9317392 -3.8841215 3.575949
## 4 -1.2975768 3.7774161 7.5497500 5.913972 3.4796328 2.5095345 3.783813
## 5 -3.8841215 3.4248580 7.8916477 5.623319 -2.8071174 -2.8071174 5.069796
## 6 1.8966138 -1.9043579 5.1226484 5.474046 3.0956351 7.8686565 3.066914
##      Aim1      Aim1l      Aim2      Aimp1      Aimp2      Aip      Aipl1
## 1 -0.77286125 -3.1192392 0.2715688 5.345067 4.654343 5.499570 -3.356638
## 2 3.47583949 -3.6519623 2.2013917 6.034088 4.770910 6.842684 -1.242012
## 3 2.60731556 1.0083330 -3.8841215 9.175838 7.497071 8.616669 -3.884122
## 4 -0.40178443 0.1602235 1.5795684 7.041175 6.450164 7.117805 -3.884122
## 5 4.11085407 -0.9471720 -2.8071174 8.040730 7.432085 8.032886 -3.884122
## 6 0.02193087 -3.6744822 -2.2520684 4.412362 4.293957 4.072130 -3.451139
##      Aire      Ajap1      AK010878      Ak1      AK129341      Ak2      Ak3
## 1 -1.202620 1.6463462 1.9995026 4.9975409 2.2231215 5.387448 6.840917
## 2 -3.884122 0.6103905 3.1536115 0.7727648 1.0532552 6.049650 7.570695
## 3 -3.884122 -1.9317392 -0.6195262 7.7960443 -1.9317392 5.862677 7.757684
## 4 -1.478227 0.7493104 4.2397579 6.6293978 0.1358788 4.906553 6.180890
## 5 -3.884122 -2.8071174 3.7163802 6.8214370 -3.8841215 6.758740 6.348001
## 6 -3.451139 -1.4647830 2.4748760 4.4236992 2.4906531 5.678058 6.645567
##      Ak4      Ak5      Ak7      Ak8      Akap1      Akap10
## 1 2.8061853 3.694241014 -2.7728659 -2.1036684 5.419454 4.87428714
## 2 4.6814969 0.004073614 -1.4427730 -2.2177824 5.270991 4.82550734
## 3 6.3177005 1.263249019 -1.9317392 -3.8841215 1.141414 0.05610664
## 4 2.8572088 1.735144885 1.2734267 0.5002821 3.750622 3.15451720
## 5 -3.8841215 -1.770103772 -0.4264149 -3.8841215 4.026878 -1.44088555
## 6 5.8998858 -0.324377437 0.6469287 -2.0138353 5.165740 5.01982135
##      Akap11      Akap12      Akap13      Akap14      Akap17b      Akap2      Akap5
## 1 6.861414 4.8840984 6.265913 -3.723567 3.2312229 3.151928 2.0710905
## 2 6.254120 9.9377526 7.918846 -3.884122 2.2540481 9.408981 -1.0268604
## 3 1.375592 -0.6195262 1.375592 -3.884122 -1.1313170 -1.131317 -0.2425151
## 4 5.599015 3.4992460 4.134022 -3.218516 2.4452243 3.639444 4.2530862
## 5 2.937011 5.0470197 4.242698 -3.884122 3.2872548 3.657453 4.0135136
## 6 7.307144 5.7616927 6.712233 -2.184130 4.3983392 5.426207 3.2712312
##      Akap6      Akap7      Akap8      Akap8l      Akap9      Akirin1      Akirin2
## 1 5.6595892 4.530046 6.325896 6.2956193 6.141389 6.677221 5.767060
## 2 0.2677146 4.500238 6.391320 6.4822319 6.106247 6.187636 5.781141
## 3 1.7537270 6.948399 2.560544 0.8617169 2.119096 5.246901 4.780107
## 4 5.5288087 3.915817 6.178582 4.5556701 6.577068 3.687599 4.235076
## 5 4.3422715 5.331807 4.679194 -1.7701038 3.827472 3.916326 5.465414
## 6 6.8118845 6.182319 7.302181 6.6056457 7.748601 5.826021 5.290430
##      Akna      Akr1a1      Akr1b10      Akr1b8      Akr1c13      Akr1c14
## 1 2.8520168 8.152358 3.034237 -2.6150073 -0.6594960 -3.1530731
## 2 3.9780146 9.960622 1.211377 -2.0967683 -0.8320385 7.4567235
## 3 -1.9317392 9.625803 -1.131317 -3.8841215 -3.8841215 -3.8841215
## 4 2.8453846 9.623086 4.213846 2.1625362 -0.8309882 -0.7918830
## 5 -1.7701038 10.278949 3.264870 -2.8071174 -3.8841215 -2.8071174
## 6 5.8349856 6.964914 5.100802 -2.0659542 0.1934036 -0.9896374
##      Akr1c18      Akr1c19      Akr1e1      Akr7a5      Akt1      Akt1s1      Akt2
## 1 -3.474135 -3.884122 4.297209 4.76491227 7.548992 5.8726427 6.062230
## 2 -3.251585 -3.884122 3.606350 5.21787812 8.144171 6.4067092 4.520817
## 3 -3.884122 -3.884122 1.375592 0.05610664 5.715671 -0.2425151 5.747339
## 4 -3.653944 -1.378853 6.333532 2.89410500 5.305777 1.6459553 5.852367
## 5 4.384412 -3.884122 6.844263 3.17168608 3.916326 3.5688622 5.430643
## 6 -3.884122 -2.039532 4.101816 4.15919329 6.885941 4.8738845 7.919005

```

##	Akt3	Aktip	Alad	Alas1	Alas2	Alb	Alcam
## 1	6.0203403	6.250205	6.658393	4.613324	3.7896119	-3.2487227	6.8941293
## 2	7.1455420	5.043735	6.799564	7.839502	6.8069256	-3.8841215	3.6212056
## 3	1.0083330	8.080299	8.105974	7.476747	11.8559628	-3.8841215	4.1660102
## 4	5.3422443	6.727329	6.844527	6.827989	1.7271323	-3.8841215	6.9424536
## 5	4.0401199	6.540829	7.270837	6.482610	1.6549031	-3.8841215	7.1043222
## 6	6.3915283	5.238340	4.486118	5.525896	0.4173093	-3.8841215	8.2796288
##	Aldh16a1	Aldh18a1	Aldh1a1	Aldh1a2	Aldh1a3	Aldh1a7	
## 1	3.6557696	5.940010	3.6263463	0.35220887	-3.2193104	-1.73100159	
## 2	4.8096395	4.686082	5.1351964	-0.06492329	-2.6317274	4.79632870	
## 3	0.8617169	7.710264	0.6984974	-3.88412153	-1.9317392	-1.93173924	
## 4	2.6212834	6.821788	4.3616734	3.01198574	-2.9075996	-2.35242241	
## 5	4.3261459	5.820383	2.5120345	4.04669554	-3.8841215	-2.19737395	
## 6	2.9461843	5.262400	2.5197910	-2.69236196	-2.0395320	-0.07060372	
##	Aldh1b1	Aldh1l1	Aldh1l2	Aldh2	Aldh3a1	Aldh3a2	Aldh3b1
## 1	2.5379858	3.070286	6.0360350	5.857020	-3.5895933	6.451572	3.5408706
## 2	-3.1080374	1.295952	-0.7672695	7.289616	-3.6519623	6.562991	1.6687725
## 3	6.0178820	7.655680	-0.6195262	3.006755	-1.1313170	5.066179	0.6984974
## 4	3.5555907	5.849142	4.5889687	4.125791	-0.1970276	6.432347	4.9322691
## 5	2.0963708	4.976450	3.2535457	5.020541	3.3838991	5.541878	4.9798900
## 6	0.1866721	9.485590	3.3262348	6.171769	-0.8422693	5.988668	1.1101389
##	Aldh3b2	Aldh4a1	Aldh5a1	Aldh6a1	Aldh7a1	Aldh8a1	Aldh9a1
## 1	-0.18168425	5.730708	6.4095209	6.272034	5.840938	-2.8068546	6.053030
## 2	-0.18505195	6.291085	3.0882985	5.132882	4.874461	-3.4243451	7.329302
## 3	1.37559158	2.560544	0.6984974	8.421915	8.895177	-1.9317392	6.502259
## 4	-1.01850426	5.967634	4.5995547	8.014566	7.001765	-3.8841215	6.782458
## 5	-0.04458439	2.351349	3.7327839	7.134730	6.017363	-3.8841215	6.628915
## 6	-3.05019076	6.431412	7.2101033	7.130709	6.654424	-2.4341566	7.139485
##	Aldoa	Aldoart1	Aldoart2	Aldob	Aldoc	Alg1	
## 1	8.499944	2.818201	-1.5743376	-1.513621846	7.528773	4.759964	
## 2	8.994225	3.238193	-1.0206253	-3.884121530	3.715020	4.662437	
## 3	11.221881	6.741196	5.4971409	-3.884121530	12.302406	6.470987	
## 4	9.775519	5.485153	4.1454196	-2.626074896	12.323460	2.436298	
## 5	10.161645	5.969717	4.5693135	-3.884121530	12.202666	4.973002	
## 6	8.115288	2.361133	-1.6673532	-0.197342695	10.301973	4.705705	
##	Alg10b	Alg11	Alg12	Alg14	Alg2	Alg3	Alg5
## 1	5.3322512	5.094171	4.042911	3.7670791	7.102256	4.088271	4.984313
## 2	5.7495927	3.422720	4.720416	5.3557127	5.294440	3.371257	5.731047
## 3	1.4798145	8.183261	3.710567	0.5144282	8.235372	7.127542	7.687318
## 4	3.2228951	7.496595	4.545815	5.6766879	6.966087	5.976927	6.013872
## 5	-0.4264149	7.220835	4.196137	6.2229426	7.022458	6.480183	5.941767
## 6	5.4875729	4.892241	4.193285	3.4770998	6.652310	4.533154	4.756322
##	Alg6	Alg8	Alg9	Alk	Alkbh1	Alkbh2	Alkbh4
## 1	3.844657	2.882039	4.905352	3.3196535	4.279011	0.9190646	3.301971
## 2	4.749383	2.484019	4.176835	-3.6519623	3.451119	3.6450175	2.389684
## 3	7.768014	1.577013	4.759548	-3.8841215	-1.131317	-3.8841215	6.300014
## 4	4.799630	4.834053	4.231164	-2.8478743	4.155165	1.3323678	4.032863
## 5	5.023878	5.301886	4.499130	0.5807664	-1.173011	2.8494607	-1.770104
## 6	4.172793	3.330378	4.685186	3.4021103	4.610373	1.6676738	2.632963
##	Alkbh5	Alkbh6	Alkbh7	Alkbh8	Allic	Alms1	Alox12
## 1	7.231302	4.237502	2.800856	3.4590450	-3.2699244	3.8484766	-2.14780061
## 2	7.334069	4.782367	2.653708	3.9040607	-1.8297024	3.8425497	1.21190814
## 3	7.506355	1.834579	7.153381	4.8203665	0.3033916	-1.9317392	-0.24251506
## 4	6.649707	6.199120	4.871196	5.6612059	-3.8841215	2.5441775	-2.07047088

```

## 5 7.323909 7.085286 6.139276 4.1902097 -3.8841215 -2.8071174 3.94476849
## 6 7.347246 3.771477 2.843742 4.3444957 -3.8841215 5.9370398 -2.98094048
##      Aloxx12b      Aloxx15      Aloxx5      Aloxx5ap      Aloxx8      Aloxxe3
## 1 -2.86087496 -3.76699984 3.5753063 2.43766421 -2.7128028 -1.241287
## 2 -3.22778239 -2.15910319 -2.6577481 0.11700365 -3.4837445 -2.895210
## 3 1.57701280 -3.88412153 -1.1313170 7.24866235 -1.1313170 1.141414
## 4 -0.96434239 -3.88412153 1.3107910 3.50044978 -3.4989245 1.134513
## 5 -0.04458439 -2.80711744 -0.7519471 3.64883436 -2.8071174 3.352398
## 6 -3.88412153 -3.08599915 -3.4511394 -2.17405558 -0.1887823 -2.397550
##      Alpk1      Alpk2      Alpk3      Alpl      Als2      Als2c1
## 1 1.4586615 -3.767000 -2.61012576 2.7465509 5.592502 4.48104019
## 2 3.6580893 -3.884122 -2.29438792 3.0133891 5.427907 6.00499535
## 3 -1.1313170 -3.884122 -3.88412153 7.2976120 1.141414 0.86171687
## 4 2.6172686 -3.884122 -1.49509120 2.7714802 5.388918 -0.19260324
## 5 -2.8071174 -3.884122 -2.80711744 -1.7701038 4.945116 -0.28760302
## 6 5.2964335 -3.512249 4.37427501 6.6306194 5.324752 7.46887886
##      Als2cr12      Alx1      Alx3      Alx4      Alyref      Alyref2      Amacr
## 1 -3.082153 -3.884122 -1.7750511 -1.04513498 4.938594 1.028152 2.1406116
## 2 -3.656504 -3.476608 0.4871513 -1.96473352 5.318856 1.340745 3.4889181
## 3 -3.884122 -3.884122 -3.8841215 -3.88412153 1.983840 2.859970 0.6984974
## 4 -3.653944 -3.674937 -0.6926396 0.09900237 5.338754 3.295292 2.7185491
## 5 -3.884122 -3.884122 -3.8841215 -3.88412153 6.721210 4.420302 3.1351297
## 6 -3.171313 -3.674482 -3.6744822 -2.55469087 4.849665 1.484733 2.5440951
##      Ambra1      Amdhd1      Amdhd2      Amfr      Amh      Amhr2      Amica1
## 1 5.847710 -3.5735519 3.461364 8.130287 -1.3269633 -1.9174738 -2.9831999
## 2 6.297095 0.6246107 4.566922 7.954146 -2.0578217 -1.1196391 -1.4417055
## 3 1.263249 -3.8841215 6.869052 7.888890 -3.8841215 -3.8841215 -3.8841215
## 4 4.613391 -2.0315060 4.455706 6.753190 -3.8841215 -0.1870102 -0.2879096
## 5 3.195552 -3.8841215 4.902250 7.936596 -3.8841215 -3.8841215 -3.8841215
## 6 6.510753 -3.6744822 3.012657 8.374048 -1.0561324 -1.4396691 -3.6744822
##      Amigo1      Amigo2      Amigo3      Ammecn1 Ammecn1l      Amn      Amn1
## 1 3.221557 1.5084258 2.563039 2.4420319 5.807503 -0.4822028 3.3855510
## 2 1.943971 2.5452657 2.485786 3.7960720 7.112818 -0.7545409 3.2560515
## 3 1.008333 -1.9317392 -1.931739 -0.6195262 8.325550 -3.8841215 0.5144282
## 4 4.994984 0.9460593 0.573135 0.1548015 6.620432 -3.2878217 5.8728650
## 5 5.326413 3.8873120 -1.770104 -2.1973739 6.400283 -3.8841215 6.9844322
## 6 5.114263 4.4513095 4.655385 1.9732617 7.138085 -0.5690707 3.2954091
##      Amot      Amot1l      Amot12      Ampd1      Ampd2      Ampd3      Amph
## 1 2.9733872 5.018226 7.23389766 -2.7454683 5.476327 6.984816 6.592227
## 2 5.3959993 7.852769 6.87741135 0.3488841 5.185399 1.798419 1.415638
## 3 -0.6195262 2.560544 1.83457854 -3.8841215 1.753727 5.587396 1.375592
## 4 4.2866332 6.135882 4.48121616 -3.3818813 5.781473 6.233687 6.052529
## 5 4.9935682 5.063325 1.54772616 -3.8841215 5.799121 5.353185 6.254528
## 6 7.4706235 7.125000 7.56127751 -1.6110346 7.654420 6.828201 4.880911
##      Amt      Amy1      Amz1      Amz2      Anapc1      Anapc10      Anapc11
## 1 4.671001 1.1515288 5.893372 5.780256 7.849379 3.145040 5.333009
## 2 3.895552 -1.6760136 2.514771 5.411679 7.621082 4.292997 5.844233
## 3 -1.131317 -3.8841215 -1.131317 5.304805 7.486163 6.790163 9.586219
## 4 3.370357 1.4888607 3.104653 6.235644 5.979918 5.770688 8.429801
## 5 3.916326 -3.8841215 5.320998 7.044801 5.636456 6.319776 9.601361
## 6 5.001262 1.4520051 2.337349 4.940351 7.462512 3.321858 3.954719
##      Anapc13      Anapc16      Anapc2      Anapc4      Anapc5      Anapc7      Ang
## 1 4.295177 5.942063 6.968216 5.373333 7.389712 5.843194 0.1865627
## 2 4.631787 6.466293 6.741004 6.010349 8.031091 6.373980 -2.5686766

```

```

## 3 8.035042 7.913525 7.420564 1.668074 7.557866 1.263249 -0.6195262
## 4 7.139439 6.700506 5.776373 6.053240 7.537384 4.891025 2.0911604
## 5 7.786063 7.517408 6.612388 5.430643 7.048901 4.379211 -0.7519471
## 6 3.101083 5.187719 6.733757 6.206701 7.173679 5.308865 -2.5546909
##      Angel1  Angel2      Angpt1      Angpt2      Angpt4      Angpt11
## 1 4.24616872 5.656221 -0.05715656 1.41467500 -2.3545126 1.37571928
## 2 4.09998853 6.309400 0.59452475 8.69927939 -3.8841215 -1.55734050
## 3 0.05610664 2.242751 -1.13131698 -0.61952623 -1.9317392 -1.13131698
## 4 3.85510001 6.097852 3.20328117 2.57803670 -0.5634744 1.18296898
## 5 4.41522904 4.773387 -1.77010377 3.01955087 3.2872548 -3.88412153
## 6 5.14927697 5.983851 4.78980426 0.91468439 -3.8841215 2.66850777
##      Angpt12  Angpt13  Angpt14      Angpt16      Angpt17      Ank
## 1 2.8124935 -3.6128580 1.585998 2.4182955 -0.07930693 7.046476
## 2 3.6132450 -3.6519623 8.937309 0.9027725 -3.88412153 5.250777
## 3 0.3033916 -3.8841215 -3.884122 5.4909183 -1.13131698 7.446519
## 4 2.9623172 -3.2091840 3.248738 3.4303538 1.39064212 5.653260
## 5 4.2710537 -3.8841215 5.443157 3.4841954 -1.17301144 6.092375
## 6 3.0932499 -1.7620077 7.231984 0.1837005 -2.54293874 6.781026
##      Ank1      Ank2      Ank3      Ankdd1b      Ankfn1      Ankfy1      Ankhd1
## 1 4.80167203 6.534891 7.8845357 1.8087063 0.8610263 6.868793 5.749107
## 2 -2.05782165 2.093475 -0.2689426 0.6604782 -3.6519623 6.638480 6.647238
## 3 -3.88412153 4.800377 4.8976644 -3.8841215 -3.8841215 5.224573 2.300819
## 4 0.04084686 7.421863 6.8613379 2.5541736 -2.8839804 6.419523 5.865827
## 5 -2.80711744 6.862082 6.1621668 3.4548318 -3.8841215 6.503076 5.558078
## 6 1.68864011 8.804305 0.4921711 1.0477531 -1.9830894 7.098233 7.119878
##      Ankib1      Ankk1      Ank1e1      Ank1e2      Ankmy1      Ankmy2      Ankra2
## 1 6.910191 -2.861243 0.5439128 5.398826 -2.260993 4.316782 5.416029
## 2 6.303641 -3.884122 0.7236752 5.302514 -2.221083 4.349667 3.427200
## 3 4.790278 -1.931739 -0.6195262 8.244647 -3.884122 6.464650 3.710567
## 4 4.941629 -3.653944 0.4517804 6.292764 -1.574622 6.237326 3.694659
## 5 5.023878 -3.884122 0.5807664 7.512072 -3.884122 5.729306 4.902250
## 6 6.484557 -3.118612 1.6564073 6.414485 -2.762539 5.562631 5.020794
##      Ankrd10  Ankrd11  Ankrd12  Ankrd13a  Ankrd13b  Ankrd13c  Ankrd13d
## 1 6.1362576 8.144257 4.791563 7.126651 5.8029402 5.673408 4.5940542
## 2 6.2703155 7.348771 4.711978 7.492910 3.2247507 6.125083 1.7262169
## 3 0.8617169 3.374368 3.347069 2.053052 -0.6195262 6.238203 -0.2425151
## 4 5.9865683 6.068895 6.163694 4.043718 2.5060533 4.557745 1.5675584
## 5 3.7729951 2.070791 4.930969 3.484195 -2.1973739 3.568862 -3.8841215
## 6 6.2855349 8.170008 6.099790 5.510354 5.6517741 5.853508 5.3633515
##      Ankrd16  Ankrd17      Ankrd2      Ankrd22      Ankrd23      Ankrd24
## 1 4.16668249 6.726258 -3.6626473 -3.8841215 3.2665555 3.242951
## 2 4.12416809 7.003806 -2.5932726 -3.6565043 2.2985785 2.834286
## 3 0.05610664 6.110085 -3.8841215 -0.2425151 -0.2425151 1.141414
## 4 3.16204934 6.721780 -2.6584549 -3.5296461 3.0052944 2.129457
## 5 4.11085407 5.175581 -3.8841215 -3.8841215 -2.1973739 3.159603
## 6 6.06094786 7.434497 -3.5122488 -3.6744822 3.2421917 4.250037
##      Ankrd26  Ankrd27  Ankrd28      Ankrd29      Ankrd32      Ankrd33b      Ankrd34a
## 1 3.915238 5.060617 8.157973 2.5511630 2.4501503 0.2220314 0.5886000
## 2 2.853354 4.992702 7.336845 1.8262600 3.7601146 4.3912782 -0.9729436
## 3 -1.131317 1.668074 6.499162 4.8400827 1.5770128 -1.9317392 -3.8841215
## 4 5.203914 5.939439 6.056556 3.8059539 5.3837071 0.7460179 -0.3491717
## 5 -1.173011 5.117424 4.662166 -0.7519471 6.0455411 -3.8841215 4.1108541
## 6 5.014838 5.643853 6.560200 2.9310592 3.8494205 0.4427610 -1.6745232
##      Ankrd34b  Ankrd34c      Ankrd35      Ankrd37      Ankrd39      Ankrd40      Ankrd42

```

```

## 1  2.069694 -3.434315 -0.9723278  1.6323066  3.8973181  7.130302  1.5150938
## 2  -2.409009 -3.251585 -1.9907611  6.7848498  3.1947742  6.948814  1.7934176
## 3  -1.931739 -3.884122  1.5770128 -1.9317392  6.2307536  5.015059 -1.9317392
## 4  -2.635537 -3.884122 -0.4307552  1.3873087  2.9375945  5.891174  1.3371040
## 5  -2.807117 -3.884122 -0.5800187  2.6217964  4.9202662  4.785232  2.2178791
## 6  -2.028792 -3.674482 -0.7079748  0.1179138  3.0642633  6.734571  2.4454444
##      Ankrd44      Ankrd45      Ankrd46      Ankrd49      Ankrd50      Ankrd52      Ankrd53
## 1  5.782129  1.28507628  7.450023  3.4382553  4.51303600  6.157075  0.55470330
## 2  4.235145 -1.86527979  6.521925  3.0028699  4.88148392  4.921309 -3.21779292
## 3  6.704022  0.86171687  9.171954  0.8617169  0.05610664  1.141414 -3.88412153
## 4  3.447174  5.54891937  8.289881  5.3290311  2.69573823  2.083503 -3.67493655
## 5  2.096371  1.65490310  8.078924  4.9521384  5.03384129  1.306052 -3.88412153
## 6  2.416577  3.02321508  5.979393  3.3029339  4.24751291  7.077371  0.00516946
##      Ankrd54      Ankrd55      Ankrd6      Ankrd61      Ankrd9      Anks1      Anks1b
## 1  4.3133378 -1.1503001  5.7385440 -0.3444425  2.043798  5.518910  8.6942486
## 2  4.5815318 -3.6519623  3.6921230 -1.3316554  1.040392  6.890762  0.3041591
## 3  1.0083330 -3.8841215  0.5144282 -3.8841215 -1.131317  1.983840  2.7805686
## 4  2.9917741 -1.5050738  5.3686471 -0.5171686 -1.297577  5.276095  4.0087067
## 5  2.3513488 -3.8841215  4.3422715 -3.8841215 -1.770104  4.644934  5.1267643
## 6  4.2768535 -1.2406643  6.1150719  1.4743647  3.994469  5.678062  1.7778765
##      Anks3      Anks6      Ankzf1      Anln      Ano1      Ano10
## 1  5.238926  4.3593957  4.0767131  5.1335659 -0.9295858  5.658340
## 2  4.985477  0.7910488  3.5259052  4.7943485  3.5082887  6.192490
## 3  4.523891 -1.1313170 -0.2425151  2.1822477  0.5144282  4.738691
## 4  4.496497  1.1655721  4.0469754  5.4398777  2.3604878  5.809150
## 5  4.373992 -2.8071174 -2.8071174  3.6226664 -0.2876030  6.472878
## 6  6.018717  3.7596177  5.2523543  3.7882819  1.9956610  5.397047
##      Ano2      Ano3      Ano5      Ano6      Ano7      Ano8
## 1  -0.3045612  0.90776592 -0.3296528  5.080563 -3.0610431  5.6838820
## 2  -3.4766082 -2.81741594 -3.4243451  7.641597 -3.3444694  3.6493477
## 3  -3.8841215  6.06472014 -3.8841215  2.410380 -1.1313170  1.1414140
## 4  -1.6917676 -0.04560948 -2.9821362  5.819134 -3.0190281 -0.8925815
## 5  -3.8841215 -1.77010377 -3.8841215  5.296379 -1.1730114 -0.4264149
## 6  -3.8841215 -1.84991354 -2.6783180  6.191085 -2.7625386  5.9126173
##      Ano9      Anp32a      Anp32b      Anp32e      Anpep      Antxr1
## 1  -3.88412153  6.181319  5.7958680  7.369344  0.1259640  5.36523452
## 2  -3.88412153  7.477202  6.4846871  6.282745  4.1825851  4.53735696
## 3  1.37559158  6.606665  5.0323012  5.484669 -1.1313170  0.05610664
## 4  -1.06340159  6.267712  4.5320364  7.559540  3.0765801  3.14302023
## 5  -0.04458439  6.005598  4.7534269  7.212087  5.0697960  0.71892097
## 6  -3.88412153  5.785217  5.0613616  6.584604 -0.7822197  6.57480162
##      Antxr2      Anxa1      Anxa11      Anxa2      Anxa3      Anxa4      Anxa5
## 1  2.2959441 -1.5020122  0.3315865  2.483209  0.8324689  1.562208  4.352819
## 2  4.7047338  5.7200314  5.1160810  8.628484  8.3386814  6.374863  8.042967
## 3  -1.1313170  3.0412310  3.4274650  7.507897  8.5275240  6.426034  9.402840
## 4  2.8440035  2.4206691  1.2155304  5.207964  3.7902708  6.431862  7.126574
## 5  3.0720655  6.2587824 -1.7701038  6.465535  3.5960151  6.806016  8.097648
## 6  2.9896515 -0.9861937  0.9088050  4.907819  1.1306973  2.287009  5.287732
##      Anxa6      Anxa7      Anxa8      Anxa9      Aoah      Aoc2
## 1  6.832151  4.011786 -3.7669998 -0.4141831 -2.1810678  2.02272940
## 2  9.314103  7.459884 -3.6565043 -2.2210829 -3.8841215  2.31659083
## 3  5.982837  7.757684  2.7805686  0.6984974  0.6984974 -1.93173924
## 4  7.299917  5.692687 -0.7106879  0.2586632  1.3127762 -0.03574158
## 5  6.911553  5.647313  4.6231013 -0.2876030 -2.1973739 -3.88412153

```

```

## 6 7.417186 3.901805 -3.3798866 1.7453583 -3.6744822 2.48668148
##      Aoc3      Aox1      Ap1ar      Ap1b1      Ap1g1      Ap1g2      Ap1m1
## 1 -2.1110647 -0.5053865 4.5132549 6.132222 6.557734 1.2643150 5.903601
## 2 3.1419349 2.8885226 4.6322870 6.911943 6.697676 1.6575622 6.057445
## 3 -1.9317392 -1.1313170 0.5144282 4.000664 7.614773 -0.6195262 9.359951
## 4 -3.1377768 2.7200996 3.3837008 6.574121 5.851722 2.4321064 7.518096
## 5 -3.8841215 4.5462963 -0.2876030 5.027207 5.961040 -2.8071174 8.129745
## 6 -2.6783180 5.0259183 4.8369385 5.965174 6.843063 3.1799435 6.001201
##      Ap1m2      Ap1s1      Ap1s2      Ap1s3      Ap2a1      Ap2a2      Ap2b1
## 1 -3.38631341 6.487913 3.7754984 -3.2813356 7.750668 7.091927 8.032598
## 2 -2.40900936 6.600924 6.6507958 1.6515808 7.337196 7.506403 8.329919
## 3 0.05610664 7.989423 -0.6195262 -3.8841215 1.375592 4.422917 4.790278
## 4 -2.63553658 6.654912 2.8821698 -2.9324314 4.110654 6.317996 6.224155
## 5 -2.80711744 7.282723 -0.2876030 -2.8071174 4.129558 6.945377 6.478968
## 6 -3.88412153 4.664565 4.2633660 -3.4511394 6.866980 6.315838 7.135823
##      Ap2m1      Ap2s1      Ap3b1      Ap3b2      Ap3d1      Ap3m1      Ap3m2
## 1 5.778242 6.355729 5.478133 6.0926691 7.244704 5.938928 5.716334
## 2 5.872051 6.896835 6.938702 0.4878096 7.025226 5.088175 4.989049
## 3 6.888118 7.464097 2.182248 1.6680739 2.560544 6.682341 2.242751
## 4 6.815305 6.341189 5.536529 6.4603306 6.078169 6.678685 6.342818
## 5 6.803106 7.585036 3.444910 5.0697960 6.063485 6.050457 6.218581
## 6 4.347328 4.580546 5.818834 5.0324816 7.654648 5.951751 5.466492
##      Ap3s1      Ap3s2      Ap4b1      Ap4e1      Ap4m1      Ap4s1      Apaf1
## 1 3.578760 6.429155 3.9662821 4.3588013 3.5773274 4.532969 3.693119
## 2 5.834948 5.114416 4.6577533 4.4408518 4.1871895 4.167370 5.447740
## 3 4.971031 3.347069 -0.2425151 0.6984974 3.2619268 1.141414 3.503617
## 4 3.284996 6.523561 4.5171550 4.2232272 3.9084946 3.027187 3.196426
## 5 3.230627 7.485093 -0.1609828 -0.4264149 -1.1730114 3.765042 -1.173011
## 6 5.146639 5.340948 4.4966492 5.6232666 4.4820354 3.979156 4.512393
##      Apba1      Apba2      Apba3      Apbb1      Apbb1ip      Apbb2      Apc
## 1 6.465022 7.1776669 5.006790 8.468764 2.6881341 5.351350 7.937705
## 2 1.687056 0.9625244 5.239303 3.604590 -2.0999208 7.198716 7.358626
## 3 -1.131317 6.0978538 5.472088 8.172609 -1.9317392 1.577013 5.581551
## 4 3.628756 6.7966164 3.152330 7.598751 0.6091569 5.721601 7.365443
## 5 -2.197374 5.5184157 3.183669 7.918785 -2.8071174 6.961996 5.576372
## 6 6.422140 7.5087806 4.860464 5.971238 -2.6334403 5.379447 8.851287
##      Apc2      Apcdd1      Apeh      Apex1      Apex2      Aph1a      Aph1b
## 1 7.35144413 5.365918 4.993764 3.510890 2.5438936 5.054493 5.9389479
## 2 1.54353228 11.609538 5.495657 3.769502 3.0895954 6.136681 0.7606348
## 3 0.05610664 3.202239 3.528133 5.453008 -0.6195262 1.983840 2.2427509
## 4 4.90357038 4.284196 5.175348 5.984030 4.0795074 1.492881 5.1697937
## 5 4.32614588 6.348001 3.850204 5.428126 -2.8071174 2.951100 3.7246054
## 6 7.76056034 7.012727 5.203138 3.986408 2.8318671 4.368407 5.3958742
##      Aph1c      Api5      Apip      Apitd1      Aplf      Aplnr      Aplp1
## 1 2.4978838 6.643593 4.023923 1.232573 2.459502 -2.4537404 10.204812
## 2 0.7688196 7.424287 4.078186 1.147098 1.649528 8.7586187 3.986250
## 3 -1.1313170 2.898090 7.998224 6.000466 -3.884122 -3.8841215 9.266055
## 4 3.1616047 6.637132 6.029304 4.370601 2.685941 0.2070164 7.207433
## 5 4.5276144 6.395140 6.640916 5.747584 -2.197374 -3.8841215 8.714591
## 6 1.6883951 6.707630 3.532572 1.279341 2.491854 0.8547877 7.631481
##      Aplp2      Apoa1      Apoa1bp      Apoa2      Apob      Apobec1
## 1 9.360386 -1.7341495 5.381049 -3.6639813 -2.1451881 -0.5450337
## 2 10.397505 0.5183622 5.771557 -3.8841215 -3.6565043 2.0824319
## 3 8.712038 -3.8841215 8.071986 -3.8841215 -0.6195262 -0.6195262

```

```

## 4 7.774060 0.1810335 6.784842 -2.3727807 -3.5296461 1.9895726
## 5 7.748238 -2.8071174 7.622382 -3.8841215 -3.8841215 -2.8071174
## 6 9.453522 -1.1970474 4.737129 -3.8841215 -3.8841215 3.7550614
##      Apobec2      Apobec3      Apobr      Apoc1      Apoc2      Apoc3
## 1 -1.2351125 1.5753718 0.6181422 -2.962844 -3.4444343 -3.474135
## 2 -3.6519623 3.1146963 -1.9544473 -3.656504 -2.8174159 -3.884122
## 3 -3.8841215 2.5605442 -1.9317392 5.186575 -1.9317392 5.621974
## 4 -2.4258275 4.7816015 1.8077234 2.020961 -2.3124192 -3.884122
## 5 -3.8841215 0.0631199 4.5601506 3.708108 -3.8841215 -3.884122
## 6 -2.9862494 3.6015283 1.3892397 1.223570 -3.8841215 -3.884122
##      Apod      Apoe      Apof      Apoh      Apol11b      Apol8      Apol9a
## 1 7.4293966 9.595617 -3.884122 -3.337286 -1.390762 -1.9906256 -3.884122
## 2 8.9274516 8.137005 -3.884122 -3.483745 -1.902348 3.7389858 -3.884122
## 3 11.1690279 11.436008 -3.884122 -3.884122 -3.884122 -3.8841215 -3.884122
## 4 9.7619201 9.815650 -2.904973 -3.076750 -3.884122 -1.4116194 -3.884122
## 5 11.0722769 11.200822 -3.884122 -3.884122 -2.197374 -3.8841215 -3.884122
## 6 0.2557621 12.432694 -2.840551 -3.379887 -3.884122 0.2969527 -3.884122
##      Apold1      Apom      Apoo      Apool      App      Appbp2      Appl1
## 1 1.3737936 -2.754214 -0.13478477 2.1408738 10.124733 5.735053 6.080845
## 2 11.5572206 -2.820269 -0.14677050 4.4543106 10.779711 5.950269 5.959078
## 3 0.5144282 -3.884122 3.47867665 6.3247150 7.880584 6.623828 6.671377
## 4 2.2288540 -2.468572 2.15335748 4.2520821 7.423571 5.463740 5.681015
## 5 4.6449342 -3.884122 2.96505227 5.3558348 8.299029 2.070791 5.793268
## 6 3.3930978 -2.188976 0.13111912 1.9431500 8.020935 5.729637 5.946936
##      Appl2      Aprt      Aptx      Aqp1      Aqp11      Aqp12      Aqp2
## 1 6.417649 5.195764 4.434443 -0.02098884 2.17411325 -2.912946 -3.550385
## 2 5.450322 6.106657 3.588931 1.70507040 5.76655186 -3.884122 -3.884122
## 3 3.752786 6.310652 7.338039 -3.88412153 8.24649542 -3.884122 -3.884122
## 4 7.125756 7.094536 5.903546 -2.38280573 3.32200728 -3.884122 -3.674937
## 5 5.986914 7.799266 4.777346 -3.88412153 4.47495564 -3.884122 -3.884122
## 6 8.738376 4.344577 4.527696 1.64802371 1.74285701 -3.512249 -1.894268
##      Aqp3      Aqp4      Aqp5      Aqp6      Aqp7      Aqp9
## 1 0.02497967 3.904024 -0.9777725 -3.723567 -3.596091 -2.4171799
## 2 -3.88412153 3.138942 -3.4243451 -3.884122 -3.884122 -2.8070815
## 3 2.51220565 9.451316 -3.8841215 -3.884122 -3.884122 7.7169442
## 4 -0.58870452 7.468892 -0.4777641 -1.212483 -3.042922 0.7814357
## 5 1.16811471 6.592302 1.9912121 -3.884122 -3.884122 -2.1973739
## 6 -3.49048434 10.889332 -3.8841215 -2.465782 -3.512249 4.3570353
##      Aqr      Ar      Araf      Arap1      Arap2      Arap3      Arc
## 1 5.600508 -3.23696642 6.525217 6.252580 5.256931 1.5656304 4.67608149
## 2 5.882253 -3.42434508 6.206331 3.205103 7.431025 8.7410579 2.20318786
## 3 4.897664 -3.88412153 6.448686 2.300819 1.479815 0.5144282 0.05610664
## 4 5.729881 -3.39449572 7.067835 4.534347 6.340493 0.4627555 2.46127313
## 5 5.225700 -3.88412153 5.854513 2.070791 5.282517 -3.8841215 3.49385195
## 6 5.941450 -2.77767574 6.653490 6.748470 8.229746 2.4974062 5.50134210
##      Arcn1      Areg      Arf1      Arf3      Arf4      Arf5      Arf6
## 1 7.009023 -3.7010282 8.209334 7.730713 8.043817 6.591181 5.930435
## 2 7.492296 -2.7285573 9.256482 6.522468 8.251757 7.092787 8.533020
## 3 5.261596 -3.8841215 9.235210 7.292254 10.103415 6.728029 8.033973
## 4 5.293927 -3.8841215 8.329512 5.704748 8.427382 4.707366 6.005442
## 5 5.163531 -3.8841215 8.557990 5.211139 9.578711 6.024043 6.657121
## 6 6.519154 -2.5546909 7.111904 6.868071 7.163157 5.897948 6.134006
##      Arfgap1      Arfgap2      Arfgap3      Arfgef1      Arfgef2      Arfip1      Arfip2
## 1 6.491015 6.209187 4.153688 6.377238 5.9442823 5.746287 6.172456

```

```

## 2 6.021713 6.199360 4.779711 7.384265 5.4720474 6.747795 6.550727
## 3 8.562066 6.211961 1.008333 1.008333 0.5144282 1.577013 4.759548
## 4 5.017099 6.531647 5.752603 4.704855 2.9623719 5.719895 5.231287
## 5 5.000359 6.286827 5.095393 3.648834 -1.1730114 3.362975 5.666653
## 6 6.006665 6.482591 4.010600 6.475263 6.4983240 6.048123 6.448186
##      Arfrp1      Arg1      Arg2      Arg1u1      Arhgap1      Arhgap10      Arhgap11a
## 1 5.275869 -2.8960851 0.007824961 6.421190 6.453903 2.1766670 3.3011663
## 2 5.064503 -3.0392407 -0.711094985 6.185885 6.405703 2.8601773 3.7972381
## 3 7.113434 -3.8841215 -3.884121530 7.103272 7.407408 2.9352286 0.6984974
## 4 4.874090 -1.2587175 1.980149135 7.923254 7.090478 0.9427229 3.7197233
## 5 5.627711 -3.8841215 -2.197373949 7.569138 6.464308 1.6200547 -0.7519471
## 6 5.179633 -2.6783180 -1.639268487 7.878358 5.420258 0.6288207 4.0517812
##      Arhgap12      Arhgap15      Arhgap17      Arhgap18      Arhgap19      Arhgap20      Arhgap21
## 1 5.169796 -2.2843631 5.1245724 0.4528061 3.369710 5.4100558 6.900350
## 2 5.810571 -1.8551503 5.8261561 8.7657916 3.345029 3.0085854 6.355077
## 3 2.462191 1.4798145 6.2419129 0.8617169 2.182248 -0.2425151 2.119096
## 4 6.598853 1.7240735 3.1422228 3.0400432 4.048640 3.7739471 6.418649
## 5 5.160502 -2.8071174 0.0631199 -1.4408855 1.620055 5.4306425 4.969546
## 6 6.539231 -3.8841215 5.6346742 5.4015406 3.416067 -0.5256877 9.066450
##      Arhgap22      Arhgap23      Arhgap24      Arhgap25      Arhgap26      Arhgap27
## 1 3.4839108 6.975638 4.9979551 1.2742575 3.086522 2.0395893
## 2 -2.2235787 5.538456 0.9826059 6.5755947 5.390699 7.2714677
## 3 -1.9317392 1.834579 1.5770128 -0.2425151 1.141414 -0.6195262
## 4 -0.2259463 3.319666 1.1672604 0.4774372 4.697053 1.2415384
## 5 -3.8841215 4.440416 -0.4264149 -1.7701038 4.609841 -2.1973739
## 6 2.4025055 6.515578 2.4310300 -0.7370109 6.243288 0.4897382
##      Arhgap28      Arhgap29      Arhgap30      Arhgap31      Arhgap32      Arhgap33      Arhgap36
## 1 -2.0279120 4.1775512 1.7239973 7.807306 6.492267 7.4301505 -2.065371
## 2 5.9639731 10.2029084 -1.5416996 8.139782 4.925703 2.2454100 -2.297781
## 3 -3.8841215 0.3033916 -0.6195262 7.515580 1.577013 0.8617169 -3.884122
## 4 -1.5907652 4.0382584 0.7168384 3.434076 5.080172 5.1282858 -2.083619
## 5 -3.8841215 5.4052825 -2.8071174 2.740115 3.757045 3.7809046 -3.884122
## 6 -0.3675191 3.5822378 -3.6607788 6.400570 7.130877 5.3119244 -1.159104
##      Arhgap39      Arhgap4      Arhgap40      Arhgap42      Arhgap44      Arhgap5
## 1 5.8095120 2.4978758 -3.0538277 3.904088 4.907340 5.935062
## 2 3.4251443 -0.1979271 -3.6565043 4.963377 2.506006 6.840675
## 3 -0.6195262 0.5144282 -0.2425151 -1.931739 7.551901 7.700860
## 4 2.1924404 2.2624224 -2.6011071 3.041794 4.504988 7.376765
## 5 1.3911881 -3.8841215 -1.4408855 -1.173011 2.453854 5.296379
## 6 5.5006503 1.9978804 -3.6744822 5.546739 3.796274 8.114235
##      Arhgap6      Arhgap8      Arhgap9      Arhgdia      Arhgdib      Arhgdig
## 1 -0.01211974 0.7742938 -0.3059141 8.833595 2.7349635 3.4857896
## 2 1.83375101 -1.0496656 -1.1968789 9.038823 6.1161903 0.6635848
## 3 -3.88412153 -1.1313170 -1.1313170 8.363510 6.6877916 -3.8841215
## 4 2.62321677 -2.1162334 -1.8988659 8.887870 4.8399642 0.8187815
## 5 1.39118808 -1.7701038 -3.8841215 8.569451 6.3717631 -3.8841215
## 6 -0.46512296 3.2546325 -1.9583985 7.230508 -0.2585832 -0.7795710
##      Arhgef1      Arhgef10      Arhgef10l      Arhgef11      Arhgef12      Arhgef15      Arhgef16
## 1 6.179038 7.047523 6.835539 5.807435 6.937030 0.71482931 -3.5960906
## 2 7.396238 6.284870 1.409267 5.620653 8.842350 7.11946113 0.5410358
## 3 5.107438 6.532868 1.668074 3.773441 5.715671 -0.61952623 -3.8841215
## 4 2.962191 5.063693 3.589915 3.287916 6.239964 -0.03587018 -1.4705616
## 5 1.349248 4.066244 0.718921 2.217879 3.872583 -2.80711744 -2.8071174
## 6 7.396556 5.078938 6.391864 5.944240 8.976109 0.23558965 -2.0576622

```


##	Arhgef17	Arhgef18	Arhgef19	Arhgef2	Arhgef25	Arhgef26	Arhgef3
## 1	4.2777452	5.1223787	4.36421912	6.867454	5.3355328	4.9085596	4.876868
## 2	4.5364949	5.1343930	-2.41224961	7.748046	2.4881721	3.6062375	6.134750
## 3	0.5144282	0.5144282	-0.61952623	6.355865	0.5144282	4.3422598	1.668074
## 4	3.1875532	4.1483182	2.48682584	5.941419	3.8239006	5.9312683	3.170253
## 5	4.4846740	3.8274719	1.68892956	5.826128	4.7969801	5.8507608	3.993232
## 6	6.8556336	5.9202392	4.22310018	5.780211	6.5143908	8.4541329	4.237321
##	Arhgef33	Arhgef37	Arhgef4	Arhgef40	Arhgef5	Arhgef6	
## 1	-2.8709945	-0.99982301	4.7647203	6.3648248	-0.7761368	3.2978162	
## 2	-2.1222972	0.60064896	1.3482488	5.2737565	7.5136813	4.3059429	
## 3	-3.8841215	0.69849743	-0.2425151	-0.2425151	2.0530520	-0.2425151	
## 4	-2.1830893	-0.05501204	4.2091460	3.8850910	1.0493257	2.8577583	
## 5	-3.8841215	-1.44088555	3.7490031	2.1462087	0.6514968	-0.9471720	
## 6	1.9563593	-1.75199032	6.7294152	8.1010403	2.5402449	3.4671249	
##	Arhgef7	Arhgef9	Arid1a	Arid1b	Arid2	Arid3a	Arid3b
## 1	7.467324	6.6617478	7.144550	5.854424	5.898291	1.5484821	1.82745754
## 2	8.632200	4.9749863	6.536332	6.045966	6.242031	3.8577339	3.08115612
## 3	3.347069	0.5144282	3.773441	5.621974	7.315328	-0.2425151	1.26324902
## 4	6.172162	5.1379878	7.235965	7.143704	6.492229	1.3307777	3.58625984
## 5	5.787390	4.3634957	6.460619	8.076918	5.973173	-0.2876030	-0.75194706
## 6	6.272841	7.1532902	7.769659	5.985113	6.870641	-2.0438476	2.88385562
##	Arid3c	Arid4a	Arid4b	Arid5a	Arid5b	Arih1	Arih2
## 1	-2.21736388	4.627976	5.8105857	3.4393529	3.569230	6.046657	5.9310644
## 2	-3.88412153	5.577834	6.8505424	7.4698285	5.656782	7.176435	7.0186407
## 3	-3.88412153	3.107806	1.3755916	0.6984974	2.119096	1.263249	0.6984974
## 4	-2.75968218	6.147258	6.1852895	4.8078117	4.946014	4.610353	3.6205934
## 5	-2.80711744	5.163531	3.5504721	3.9163262	1.068238	5.856386	2.9084139
## 6	-1.97714571	6.456566	6.8348425	5.6244614	4.041406	7.414351	6.2627334
##	Arl1	Arl10	Arl11	Arl13a	Arl13b	Arl15	Arl16
## 1	5.148516	4.7785955	-1.767758	-3.502093	4.401868	4.4820120	3.282509
## 2	5.859801	2.9542618	-2.812590	-3.656504	5.156068	5.8123452	3.548782
## 3	6.535894	6.0092001	6.759431	-1.931739	6.654773	0.3033916	5.969472
## 4	4.968414	0.6454930	-1.724592	-2.821918	3.784421	3.4282916	4.518037
## 5	4.271054	-0.4264149	-2.807117	-3.884122	4.000024	3.2648698	3.298318
## 6	4.305092	3.8494537	-3.490484	-2.467943	4.778006	3.3072226	2.931479
##	Arl2	Arl2bp	Arl3	Arl4a	Arl4c	Arl4d	Arl5a
## 1	5.392914	8.414359	4.992405	6.227085	5.377343	1.4733135	6.310174
## 2	5.454768	8.018797	4.438298	9.180967	3.995796	5.8842201	7.243974
## 3	8.754215	5.969472	6.017882	7.405756	2.971435	-1.1313170	2.053052
## 4	6.961429	4.730242	6.701480	4.826015	5.753054	3.0864288	6.243813
## 5	7.692721	5.612279	7.956375	6.345337	5.943530	1.5101550	5.307373
## 6	4.076363	6.782302	4.637055	6.391915	6.655985	4.7410793	4.973738
##	Arl5b	Arl5c	Arl6	Arl6ip1	Arl6ip4	Arl6ip5	Arl6ip6
## 1	3.973417	0.81730229	3.8828145	8.688830	4.585286	6.963837	3.5039610
## 2	6.547686	3.97965784	4.2421075	8.114563	5.219288	8.333237	4.5644896
## 3	6.118182	-3.88412153	6.8952039	11.669329	6.352437	7.720937	7.4892879
## 4	2.812170	-0.22283159	6.1800585	10.085895	4.588237	7.088964	5.0680201
## 5	1.349248	3.73278388	6.9921180	10.013747	5.964517	8.569451	5.5786428
## 6	5.575512	1.73983740	3.8528802	7.706046	4.209278	5.793307	4.6767702
##	Arl8a	Arl8b	Arl9	Armc1	Armc10	Armc2	Armc3
## 1	7.821607	7.533850	-3.1610540	5.608495	3.128464	0.8463265	-1.3473892
## 2	5.308876	6.888706	-1.2827326	6.169623	5.910844	-1.8183758	-1.6394685
## 3	5.490918	9.832474	-3.8841215	7.163198	3.599276	-3.8841215	-3.8841215
## 4	6.293788	7.544558	-3.1141576	6.802428	4.437025	2.6307246	1.5100930

```

## 5 5.998832 8.880671 -3.8841215 6.478968 2.286157 2.3724409 2.2178791
## 6 7.544855 6.822174 -0.7989295 5.342680 4.327047 2.0627205 0.1642139
##      Armc4      Armc5      Armc6      Armc7      Armc8      Armc9
## 1 -3.8841215 4.6974084 5.0373670 2.8747047 5.150151 3.5303888
## 2 -2.8202690 5.5844475 4.0701079 2.6305968 5.513793 2.7163362
## 3 -3.8841215 0.6984974 0.3033916 -0.2425151 4.052287 0.8617169
## 4 -0.9364779 2.7092669 4.3345624 4.3234128 5.824477 4.7913395
## 5 -3.8841215 3.1716861 4.1480228 -0.5800187 5.402722 4.9166810
## 6 -2.7662815 5.1090576 4.3923600 2.5996006 6.153852 3.9195892
##      Armcx1      Armcx2      Armcx3      Armcx4      Armcx5      Armcx6      Arnt
## 1 3.9864435 5.685190 4.42246401 6.045190 4.7977508 2.7378242 5.510204
## 2 4.6916461 7.222832 3.96519967 6.067675 4.0101973 4.5421897 6.577917
## 3 0.5144282 1.753727 0.05610664 1.263249 -0.6195262 -0.6195262 3.107806
## 4 5.4839829 5.999455 3.68175193 4.691309 3.5113260 3.1637806 4.212340
## 5 5.4281265 4.781294 3.07206548 5.033841 -2.8071174 1.6200547 3.724605
## 6 3.6620365 5.659471 4.21138697 5.823791 4.3321035 3.1236751 6.665806
##      Arnt2      Arnt1      Arnt12      Arpc1a      Arpc1b      Arpc2      Arpc3
## 1 7.676306 3.75822311 -1.9664132 7.644762 6.2321982 6.853205 6.244301
## 2 1.095776 5.14492637 -1.1599497 6.598613 7.9114581 8.641715 9.423504
## 3 1.141414 1.14141397 -3.8841215 9.403668 0.8617169 7.952539 8.459843
## 4 4.704099 4.01924069 -2.1793053 8.411136 3.9420390 6.417168 6.493682
## 5 4.930969 -0.04458439 -3.8841215 9.279987 6.5208959 7.340728 8.188903
## 6 7.681225 6.46985176 0.6173329 5.463954 3.3923087 6.119944 5.207466
##      Arpc4      Arpc5      Arpc51      Arpp19      Arpp21      Arr3      Arrb1
## 1 6.568755 6.879372 5.657388 6.612001 5.553958 -3.495736 6.7374046
## 2 7.695398 7.880803 6.107868 6.761097 1.438238 -3.251585 5.0470474
## 3 9.290444 7.802340 6.553915 7.497071 4.696052 -3.884122 0.6984974
## 4 7.175617 7.109624 5.665314 8.254777 3.079146 -3.884122 5.3837144
## 5 8.108295 7.109042 7.077279 8.340092 -3.884122 -3.884122 5.1017224
## 6 5.256555 5.802318 4.628993 5.606769 6.720378 -2.010361 8.4995757
##      Arrb2      Arrdc1      Arrdc2      Arrdc3      Arrdc4      Arsa      Arsb
## 1 5.520690 1.7560561 4.0009111 6.123739 4.8200100 5.486866 10.357470
## 2 3.810989 5.2369841 3.5742849 6.246659 3.7780344 6.003039 5.316651
## 3 1.375592 0.8617169 -3.8841215 2.898090 0.8617169 3.872500 7.551901
## 4 3.181936 3.3087775 2.2960047 7.446320 2.3528041 4.395590 5.309134
## 5 2.146209 0.3450364 -1.4408855 6.078003 0.5063887 5.670915 6.002219
## 6 4.154609 2.2324435 4.1993084 7.903391 4.3846838 6.634003 5.911501
##      Arsg      Arsi      Arsj      Arsk      Art1      Art3      Art4
## 1 4.861218 -1.525385 0.8523884 4.044269 -2.087710 -1.6436411 -3.767000
## 2 3.472324 -3.424345 -3.6519623 3.434824 -3.884122 5.2282067 -3.251585
## 3 2.356639 -1.931739 -1.9317392 7.010618 -3.884122 0.6984974 -1.131317
## 4 5.170140 -3.884122 0.3766558 5.717164 -2.006894 4.9234272 -3.884122
## 5 6.133110 -3.884122 -2.8071174 3.640164 -3.884122 6.4850329 -2.807117
## 6 3.455036 -2.633440 0.8839754 4.383147 -2.980940 2.2094197 -3.884122
##      Art5      Artn      Arv1      Arvcf      Arx      Arxes1
## 1 -3.177010 -1.8734381 2.663874 6.85991558 1.2396801 4.6548732
## 2 -1.201902 -2.5789021 1.153798 3.89348127 -2.3729121 2.2956806
## 3 -3.884122 -0.6195262 -1.131317 0.05610664 1.3755916 0.8617169
## 4 -3.209184 -3.4989245 3.198684 3.53441060 3.3876161 1.7744595
## 5 -3.884122 -2.8071174 5.040446 2.58612896 1.0682384 1.4715792
## 6 -3.044745 -2.7658025 3.364902 4.75272119 5.7749381 4.2405970
##      Arxes2      As3mt      Asah1      Asah2      Asap1      Asap2      Asap3
## 1 5.61708258 4.383762 6.524036 3.1999073 5.7577345 5.306723 5.2371676
## 2 4.66292640 5.071853 6.550168 4.1847041 6.3785791 5.707270 5.3255612

```

```

## 3 6.74119635 6.508433 8.099853 0.5144282 0.3033916 -1.131317 -0.2425151
## 4 4.14227833 5.420110 7.521736 -0.7017059 3.5798215 3.533288 1.6699719
## 5 4.93451865 5.585433 6.117579 -2.8071174 2.8190554 -0.287603 -1.7701038
## 6 6.23131335 4.513332 7.382243 2.2678083 6.0809563 6.550432 4.7190734
##      Asb1      Asb10      Asb11      Asb13      Asb14      Asb16      Asb18
## 1 5.827836 -2.792573 -3.018644 5.025440 -1.589785 -2.746486 -0.7207813
## 2 3.468765 -2.721044 -3.884122 3.240859 -2.015114 -3.884122 -3.8841215
## 3 1.008333 -1.931739 -1.131317 5.621974 -3.884122 -3.884122 -3.8841215
## 4 6.766273 -1.251353 -3.884122 5.582650 -2.486387 -3.884122 -3.8841215
## 5 6.477752 -3.884122 -3.884122 4.460254 -3.884122 -3.884122 -3.8841215
## 6 5.470726 -3.884122 -2.173010 4.681217 -1.605657 -3.674482 -3.8841215
##      Asb2      Asb3      Asb4      Asb5      Asb6      Asb7      Asb8
## 1 -0.2843243 3.860379 -2.9432920 -0.2316706 5.062676 4.67482608 4.146707
## 2 -2.2532064 4.083721 7.9928260 -1.1576328 4.805823 3.96727205 4.318800
## 3 -0.6195262 7.051360 -3.8841215 -3.8841215 7.515580 0.51442825 4.435932
## 4 -3.2517439 6.103939 -2.9821362 -2.7028485 5.358215 4.36699834 5.702108
## 5 -1.7701038 5.793268 -3.8841215 -3.8841215 3.474474 4.39475776 3.640164
## 6 -1.5631840 4.013728 0.5975366 0.2033493 5.173717 4.66911816 5.431484
##      Ascc1      Ascc2      Ascc3      Ascl1      Ascl2      Ascl3      Ascl4
## 1 3.780410 4.589374 4.667989 3.398901 -2.0164958 -3.233309 -3.884122
## 2 5.104104 5.287416 6.179731 -3.227782 -2.0150420 -2.477045 -3.884122
## 3 1.375592 -1.131317 1.577013 1.479815 -3.8841215 -3.884122 -3.884122
## 4 5.480534 4.453459 3.844884 6.150199 -3.8841215 -3.884122 -1.722761
## 5 6.137737 4.474956 -0.287603 6.029032 -3.8841215 -3.884122 1.068238
## 6 2.907110 4.511782 4.945228 1.470667 -1.7724196 -3.512249 -3.884122
##      Asf1a      Asf1b      Asgr1      Asgr2      Ash11      Ash21      Asl
## 1 4.366730 0.9882612 -2.1835902 -1.79314442 5.994169 6.109782 4.000959
## 2 4.981634 2.0300955 -3.8841215 -3.88412153 6.543505 5.636276 5.630831
## 3 4.869161 1.6680739 -1.9317392 -1.93173924 2.560544 1.375592 1.577013
## 4 4.884351 5.7286967 1.1407192 -0.58028213 6.851506 4.414825 5.754773
## 5 4.986745 5.2769349 4.0000241 -3.88412153 6.243122 4.079131 5.475197
## 6 4.631911 0.3860333 -2.8405514 -3.88412153 7.841344 5.691588 3.885983
##      Asna1      Asns      Asnsd1      Aspa      Aspdh      Aspg      Asph
## 1 6.768737 5.088844 5.1430422 2.711912 2.350753 -0.8973419 5.060089
## 2 6.905671 4.368915 6.1520057 -1.518367 -3.476608 2.3526470 3.964494
## 3 6.544932 8.387994 0.5144282 7.954801 -1.931739 -1.9317392 4.102127
## 4 6.124116 5.364792 3.3631286 6.398972 -1.750428 -1.8220466 5.427942
## 5 7.207693 5.560378 5.5207792 7.773730 -3.884122 -2.1973739 4.966081
## 6 5.724615 1.759587 4.0918410 3.638080 1.702237 3.6067522 6.900275
##      Asphd1      Asphd2      Aspm      Aspn      Asprv1      Aspscr1
## 1 -0.08226597 5.2294385 2.8760457 -2.6286655 -0.9102636 5.786381
## 2 -2.67931547 -0.7727742 2.6801846 4.3085489 -2.4907738 7.051098
## 3 -3.88412153 0.8617169 1.1414140 -0.6195262 6.2712557 2.356639
## 4 0.29993193 4.9722191 5.0493217 4.5475918 3.1483930 4.092360
## 5 -3.88412153 5.6751653 3.4841954 6.0796068 4.2822417 4.236959
## 6 -2.04595036 5.0326768 4.4964307 -0.7933089 -1.1935689 5.939354
##      Asrgl1      Ass1      Aste1      Astl      Astn1      Astn2      Asxl1
## 1 8.358405 -3.6540045 2.7057011 -3.884122 8.1977596 7.0147918 5.967828
## 2 4.147307 -0.2132268 3.2605519 -1.175847 0.9434641 -0.9203015 6.832958
## 3 7.410708 4.8302582 -1.9317392 -3.884122 8.4494518 -0.2425151 6.101943
## 4 8.276694 4.7739453 2.2432636 -3.884122 6.6205756 -1.5606130 4.348090
## 5 8.474493 4.9451163 4.1722804 -3.884122 7.2952030 2.6736968 3.404524
## 6 8.404547 -2.2309101 4.2103218 -3.884122 9.0877794 5.1200404 6.426241
##      Asxl2      Asxl3      Atad1      Atad2      Atad2b      Atad3a      Atad5

```

```

## 1 5.464692 4.1619448 6.947727 3.51328531 5.2924744 5.671936 3.19213916
## 2 6.098843 -0.9963207 6.295033 4.59198587 6.1973443 5.010449 3.33792239
## 3 1.008333 -1.1313170 8.532834 1.26324902 0.8617169 1.479815 1.00833299
## 4 5.142263 3.9515789 7.825912 5.26080222 4.4133621 3.845642 3.98193872
## 5 5.353185 3.3092977 7.347402 4.48467403 2.6566033 2.096371 -1.17301144
## 6 6.936948 -0.5942476 7.335801 5.42587086 6.8793932 6.736858 4.79887219
##      Atat1      Atcay      Ate1      Atf1      Atf2      Atf3      Atf4
## 1 7.357835 7.9113213 5.500869 3.2558227 5.697428 5.898336 7.946932
## 2 3.230587 1.3266051 6.571233 4.3234539 6.029940 10.832474 9.499165
## 3 4.000664 0.8617169 5.736860 0.8617169 6.632334 1.263249 6.499162
## 4 7.993474 5.7271231 5.207843 3.4121970 6.800025 3.388142 6.772808
## 5 7.506120 6.4958857 4.614275 3.4841954 6.634383 3.253546 5.985204
## 6 5.488300 0.7494523 6.812567 4.4310157 6.032143 8.814180 9.275750
##      Atf5      Atf6      Atf6b      Atf7      Atf7ip      Atf7ip2      Atg10
## 1 3.892326 6.270913 6.910861 3.3362539 5.9349602 -3.512490 1.1327505
## 2 4.353319 6.613960 6.210260 3.8641687 5.3005631 -3.884122 2.9578704
## 3 2.780569 1.834579 6.835068 0.5144282 0.3033916 -3.884122 -0.6195262
## 4 2.246304 5.441355 3.926160 3.9627121 5.4219449 -3.603681 4.1750204
## 5 4.079131 5.073021 5.803010 0.0631199 4.8392569 -2.807117 5.7893522
## 6 4.279113 5.385654 6.291854 4.9869912 6.8629774 -2.862656 0.3763543
##      Atg12      Atg13      Atg14      Atg16l1      Atg16l2      Atg2a      Atg2b
## 1 5.574627 6.194337 4.4244363 5.4126057 4.4991382 5.7597715 6.107560
## 2 6.848667 5.561944 5.2658650 5.7893117 3.3260092 5.9074267 5.713295
## 3 1.911138 6.474145 0.3033916 -0.2425151 -0.6195262 0.3033916 1.375592
## 4 6.851442 5.792058 5.5253183 3.0997044 3.3544995 3.7641112 5.038280
## 5 6.487452 6.150004 2.4339276 3.1102338 3.7163802 3.9306175 5.126764
## 6 6.121054 5.495064 4.6574821 6.1914172 4.7501790 6.2552768 6.227271
##      Atg3      Atg4a      Atg4b      Atg4c      Atg4d      Atg5      Atg7
## 1 5.583174 2.2017996 5.762760 4.727498 4.391297 4.748559 5.411733
## 2 5.150674 3.4505891 6.089564 3.018542 4.181371 6.054603 5.773293
## 3 1.375592 -0.6195262 8.327297 5.969472 6.300014 7.538387 1.983840
## 4 4.377334 3.2046569 6.067064 5.078545 1.994602 5.987604 6.416550
## 5 5.405283 4.2020399 6.286827 4.876644 2.756252 5.906050 3.171686
## 6 5.294342 3.1088776 5.653192 4.193075 4.029528 4.423716 5.361751
##      Atg9a      Atg9b      Ath11      Atic      Atl1      Atl2      Atl3
## 1 7.360301 -1.2607345 3.3899046 5.884331 4.767476 4.473334 6.149110
## 2 6.435401 0.2119843 4.1826493 4.371473 3.569303 7.306595 7.410418
## 3 2.053052 1.0083330 -1.1313170 4.461615 7.165153 2.410380 6.897558
## 4 5.822537 -1.4276404 4.9799804 5.922109 6.040973 5.723537 4.126929
## 5 6.186190 -1.1730114 3.5870208 4.254107 6.952398 3.613837 4.098249
## 6 6.606577 -1.6022590 4.8933625 5.145260 3.074480 8.102451 6.167815
##      Atm      Atmin      Atn1      Atoh7      Atoh8      Atox1      Atp10a
## 1 5.286218 6.0162848 6.9718705 -3.224660 0.4727471 5.005967 -0.5770541
## 2 4.725352 5.2485298 6.3492199 -3.884122 2.1867158 8.071477 7.0059269
## 3 1.141414 0.3033916 0.5144282 -3.884122 -3.8841215 9.318386 -3.8841215
## 4 4.976007 4.0059913 3.6326478 -3.299469 0.2916724 7.410262 0.3609920
## 5 2.492901 1.6889296 1.5101550 -3.884122 -3.8841215 8.534205 -3.8841215
## 6 5.936908 3.8760750 7.3381589 -3.280845 1.7326912 3.663968 1.7199166
##      Atp10b      Atp11a      Atp11b      Atp11c      Atp12a      Atp13a1      Atp13a2
## 1 4.0425883 7.470731 5.7751894 3.978566 -3.6778614 6.763844 6.929958
## 2 -3.6519623 5.250211 7.9407367 6.807064 -0.1700856 6.240414 5.957083
## 3 -1.1313170 1.375592 5.5815513 -1.131317 -1.9317392 3.793804 1.008333
## 4 1.0153004 4.629095 4.1391502 3.857755 -3.6749365 4.742351 4.680919
## 5 -2.1973739 4.618695 0.5807664 1.215574 -2.1973739 1.817536 4.455320

```

```

## 6 -0.8675132 7.826077 7.1163677 4.856006 -3.8841215 6.830249 6.234964
##      Atp13a3      Atp13a4      Atp13a5      Atp1a1      Atp1a2      Atp1a3      Atp1a4
## 1  6.436139  3.6746549  0.1279528  9.131896  9.618791  6.750302 -2.4332136
## 2  6.606429 -0.4953661  6.5634473  9.654450  7.863964  3.941071 -0.9647092
## 3  3.833689  6.4422500  7.2669861  6.676869  8.976482  7.821062 -3.8841215
## 4  4.413059  1.2687085  6.1156049  5.835567  9.867475  4.650829 -3.8841215
## 5  4.546296  3.7081079  5.7715994  7.019954  9.314624  3.454832 -3.8841215
## 6  6.464562  8.8164902  4.8792797  6.698412  12.495428  2.911946 -0.7114514
##      Atp1b1      Atp1b2      Atp1b3      Atp1b4      Atp2a1      Atp2a2      Atp2a3
## 1  6.018938  7.685309  6.683765 -3.8841215 -1.21968044  9.305502 -0.7537971
## 2  5.250009  4.894397  7.492668 -3.6519623 -1.11538576  8.279606  5.8137843
## 3  8.056269  8.708020  5.394208 -3.8841215 -1.93173924  4.997609  7.4433003
## 4  4.652615  8.326367  5.590082 -3.8841215 -0.53663136  7.074638  3.8691111
## 5  4.394758  8.693009  7.270135 -3.8841215 -2.80711744  6.208354  4.7331868
## 6  9.018857  11.124024  6.337828 -3.6607788 -0.54900425  10.366095  0.3746730
##      Atp2b1      Atp2b2      Atp2b3      Atp2b4      Atp2c1      Atp2c2      Atp4a
## 1  6.250975  5.0174837  4.45948994  5.385236  7.757033 -3.3556620  2.0626062
## 2  6.692876  0.6797932 -1.38271338  2.549374  7.545221 -2.9352776 -3.2515854
## 3  8.480404  2.9352286 -0.24251506  1.753727  5.032301 -1.1313170 -0.6195262
## 4  6.698983  7.2515011  0.66292239  3.062294  5.910484 -3.8841215  2.4076131
## 5  6.414335  7.2259143 -1.77010377  1.215574  6.548958 -2.1973739  2.1704966
## 6  6.857868  5.5730736 -3.15654382  7.850704  7.235453 -3.1431739  0.8010885
##      Atp5a1      Atp5b      Atp5c1      Atp5d      Atp5e      Atp5f1      Atp5g1
## 1  9.475183  10.043317  7.610650  6.845845  5.606705  6.785780  2.289536
## 2  9.815601  10.162444  8.606302  7.469803  7.565646  7.271040  3.711131
## 3  10.922158  10.270296  10.612010  7.948003  10.171626  9.389939  6.496059
## 4  9.880265  8.588323  9.174998  6.357420  8.697104  8.229215  5.150780
## 5  9.975811  9.664314  10.181387  8.410611  9.964244  9.109689  6.139276
## 6  8.637652  9.161924  6.883931  6.109862  4.461012  5.986698  2.027813
##      Atp5g2      Atp5g3      Atp5h      Atp5j      Atp5j2      Atp5k      Atp5l
## 1 -0.49794812  7.338167  4.644549  6.183707  6.124062  5.620746  0.7998268
## 2  0.44492411  7.931042  5.791360  7.466695  7.183198  6.407607  2.0209096
## 3 -3.88412153  9.486145  8.779962  10.211907  9.028426  8.335134  3.6222316
## 4  0.96115404  8.092208  7.176965  8.534501  8.055353  6.828639  2.9659847
## 5  1.72217194  9.175859  7.993011  9.368600  9.144974  7.909345  4.0662445
## 6 -0.04152957  7.042387  3.776070  5.548545  4.912605  4.697757  0.7219213
##      Atp5o      Atp5s      Atp5s1      Atp6ap1      Atp6ap11      Atp6ap2      Atp6v0a1
## 1  6.321208  3.4633441  4.024644  8.505881 -0.3606606  6.444129  7.440488
## 2  7.118430  3.0734814  4.575686  7.812319 -2.7115565  6.808839  6.686047
## 3  9.749222 -0.6195262  7.655680  10.054676 -3.8841215  10.001499  7.370601
## 4  8.494959  4.4977558  5.673091  8.669690  1.0381456  7.888774  6.857077
## 5  9.756948  4.3947578  5.379469  8.970731 -2.1973739  7.677443  6.037310
## 6  5.570654  3.0153683  3.454585  7.589880 -0.5752713  6.897166  7.438688
##      Atp6v0a2      Atp6v0a4      Atp6v0b      Atp6v0c      Atp6v0d1      Atp6v0d2      Atp6v0e
## 1  7.019801  1.041441  7.733448 -3.419728  7.491514 -3.612858  6.059926
## 2  6.553743 -3.656504  7.351185 -3.127369  7.325687 -3.027715  6.895901
## 3  6.762017 -1.931739  10.786639 -3.884122  7.501720 -3.884122  10.181319
## 4  3.292723 -2.873198  8.383419 -3.603681  7.154345 -3.884122  8.869440
## 5  1.306052 -3.884122  9.578711 -3.884122  8.585910 -2.807117  10.073731
## 6  6.230938 -3.660779  6.724605 -3.674482  6.200911 -3.884122  5.107744
##      Atp6v0e2      Atp6v1a      Atp6v1b1      Atp6v1b2      Atp6v1c1      Atp6v1c2      Atp6v1d
## 1  7.806904  7.629478 -3.79498311  7.274074  5.850462 -2.1482842  5.552169
## 2  5.859125  7.807408 -3.88412153  7.063469  5.877320 -3.4766082  5.855907
## 3  9.384075  10.397371  3.07490229  7.151410  8.084438 -0.2425151  7.799825

```

```

## 4 9.308521 8.233694 -0.05585074 7.044680 6.991500 0.3467244 7.473856
## 5 9.300938 7.565135 1.62005470 7.435847 6.530311 -2.8071174 8.373169
## 6 6.192926 6.674696 -3.66077880 6.210924 5.620803 -3.6744822 5.028116
## Atp6v1e1 Atp6v1e2 Atp6v1f Atp6v1g1 Atp6v1g2 Atp6v1h Atp7a
## 1 6.835727 -3.071135 5.439364 6.127070 4.477477 6.487052 4.363213
## 2 7.354354 -3.884122 6.236766 6.187687 2.158715 6.614168 6.854613
## 3 8.366062 -3.884122 9.144467 9.383656 7.895971 9.149414 1.834579
## 4 8.238893 -3.327813 7.801658 7.568447 4.924761 7.949640 5.285959
## 5 8.562011 -3.884122 9.056109 8.655858 3.541188 8.442438 3.276106
## 6 5.654455 -1.804450 4.264770 4.929763 3.240705 5.581669 5.383836
## Atp7b Atp8a1 Atp8a2 Atp8b1 Atp8b2 Atp8b3
## 1 3.94408549 7.715925 3.080567 2.1940811 6.0507361 0.6767824
## 2 -2.71985567 7.220905 1.210019 2.7106848 6.9837402 -1.8931096
## 3 -3.88412153 2.410380 3.947124 -0.6195262 -0.6195262 -3.8841215
## 4 0.78142004 6.121945 1.959620 0.9172219 2.9079830 -2.7642785
## 5 -3.88412153 7.096421 3.464686 -2.8071174 1.9356113 -3.8841215
## 6 3.47363981 8.393477 -1.923287 -1.1249988 6.0947915 -2.6783180
## Atp8b4 Atp9a Atp9b Atpaf1 Atpaf2 Atpif1 Atr
## 1 -3.4595394 9.053338 6.37321091 2.4154468 4.513114 5.725503 4.5543752
## 2 -2.3597589 6.117889 6.38378130 2.6632636 5.379459 7.119077 5.1585542
## 3 -3.8841215 3.688985 0.05610664 -3.8841215 6.844860 9.478303 0.5144282
## 4 -3.4277009 5.969557 4.01565812 -1.3603622 5.378112 8.737419 3.9508911
## 5 -3.8841215 6.547799 3.15960326 -3.8841215 4.959127 9.778342 1.6889296
## 6 -3.6607788 5.876509 6.83541520 1.9845868 4.696501 4.174493 6.0775297
## Atrip Atrn Atrn11 Atrx Atxn1 Atxn10 Atxn11
## 1 4.9411192 8.003971 5.170109 6.507683 3.904444 7.918381 6.3465810
## 2 4.5070243 6.243493 5.935432 8.114423 5.073299 7.210943 6.5756452
## 3 0.5144282 1.834579 7.801083 3.622232 2.462191 9.127519 0.5144282
## 4 5.2254130 5.484614 2.418394 7.996778 5.929231 9.306085 2.9324840
## 5 3.1596033 5.347870 4.117116 2.937011 4.657877 9.167587 2.2178791
## 6 4.7255141 7.506669 5.519408 8.605020 4.923201 7.081666 5.9665979
## Atxn2 Atxn21 Atxn3 Atxn7 Atxn711 Atxn712
## 1 6.0319101 7.691378 4.3116390 4.47630051 3.29247294 3.5583776
## 2 5.1431463 6.965212 5.5345233 6.13753349 4.59337134 3.3000677
## 3 0.8617169 3.599276 0.3033916 0.05610664 0.05610664 -0.6195262
## 4 5.1184074 3.746895 4.1764754 4.28965499 3.72768036 4.3196244
## 5 5.0138453 3.242132 2.0963708 2.24099926 3.91632624 2.9650523
## 6 6.9972407 8.538059 4.5777202 7.37806618 3.44027741 5.4536306
## Atxn713 Atxn713b AU019823 AU021092 AU022252 AU040320 Auh
## 1 6.483352 8.618172 4.6321424 -2.3077607 3.84919804 7.211864 4.895183
## 2 6.366636 7.132766 5.7013679 9.3412926 3.45079958 5.787116 4.511262
## 3 1.668074 8.876801 6.9887037 4.8498406 -1.13131698 6.812790 5.638957
## 4 2.086438 7.562938 4.8341503 1.6066021 2.95691339 5.281280 2.849892
## 5 -1.770104 7.723314 2.6217964 3.8946204 -0.42641489 4.079131 5.136044
## 6 6.104661 7.193554 5.1698738 1.0010832 3.48307620 6.868044 3.159669
## Aup1 Aurka Aurkaip1 Aurkb Auts2 Aven Avil
## 1 6.383372 2.2351909 5.432280 1.8186546 4.628851 3.162709 -0.78922412
## 2 6.531738 2.9644697 5.388863 2.9677582 5.789801 3.928839 0.34658715
## 3 7.103272 2.3566392 7.753792 4.3143399 5.539963 6.260322 -3.88412153
## 4 6.435489 5.4808391 6.845894 5.8414757 6.798569 2.142295 -1.02215347
## 5 7.316446 5.8242156 7.602435 6.6057240 6.017363 -0.287603 -3.88412153
## 6 5.966608 2.5324261 4.244112 3.0695449 5.319103 2.089925 -0.04660517
## Avl9 Avp Avpi1 Avpr1a Avpr2 AW209491 AW549877
## 1 6.0095083 -3.5264396 1.198711 -3.662690 -3.4007934 2.720400 6.837796

```

```

## 2 6.4739127 -2.7115565 3.952916 -3.884122 -3.8841215 2.889242 6.216072
## 3 -0.6195262 -3.8841215 1.263249 -3.884122 -3.8841215 6.177504 2.820816
## 4 4.6970466 -3.8841215 3.834439 -3.884122 -3.8841215 5.961942 6.222479
## 5 3.9306175 -3.8841215 3.474474 -3.884122 -2.8071174 6.410516 5.260058
## 6 6.1782248 -3.5122488 2.270868 -1.979041 -2.7658025 3.083718 7.695681
## AW551984 AW554918 Awat2 Axin1 Axin2 Ax1 Azi2
## 1 2.1187358 3.444624 -3.407468 5.9612028 5.592603 5.051769 5.303956
## 2 -0.1936805 4.609574 -2.099921 5.9582652 5.490471 5.188840 6.302112
## 3 -3.8841215 3.074902 -1.931739 0.5144282 5.367284 4.962061 3.667075
## 4 -2.1619720 4.165505 1.002923 3.7521578 3.036902 6.816871 4.914818
## 5 -3.8841215 -0.947172 3.454832 1.6200547 3.522440 5.893338 4.499130
## 6 -1.4267321 4.244335 -1.762008 5.4115545 6.928688 8.132945 5.313511
## Azin1 B230118H07Rik B230219D22Rik B2m B3galnt1 B3galnt2
## 1 7.167110 4.546453 6.414137 5.320997 3.6968030 3.1087416
## 2 7.081656 4.510452 7.690148 9.332321 1.6838158 3.1528157
## 3 8.860604 8.307960 3.139975 11.498503 7.9227998 -0.2425151
## 4 8.453765 6.392052 5.589272 8.563205 4.0600426 2.4010452
## 5 7.474158 7.311676 6.433278 9.081347 4.0597575 -2.1973739
## 6 8.510788 3.590294 5.646122 4.870127 0.6278284 4.1852301
## B3galt1 B3galt2 B3galt4 B3galt5 B3galt6 B3gat1
## 1 3.9495429 2.8314076 0.2882689 5.048320 3.366774 8.1361587
## 2 0.6930635 0.5005056 2.0381966 -1.318458 3.386751 0.1504282
## 3 6.4390214 1.1414140 -3.8841215 7.568247 1.263249 1.2632490
## 4 6.5398121 5.1606012 1.4981235 4.357923 2.818694 3.5511695
## 5 6.6157088 4.2426981 3.4646862 2.121505 2.096371 -0.2876030
## 6 6.0195717 4.4766119 1.1588287 2.231674 3.600124 6.7901174
## B3gat2 B3gat3 B3gnt1 B3gnt2 B3gnt3 B3gnt4
## 1 6.1422491 5.782524 6.660905 3.304742 -3.4278034 -0.23841781
## 2 1.2256872 5.604359 5.894458 7.437390 -0.4338065 -1.55160019
## 3 -1.1313170 1.834579 8.562066 1.263249 -1.9317392 -3.88412153
## 4 2.7424072 4.338620 6.578002 3.024096 -3.6036807 -1.58192288
## 5 -2.1973739 4.683420 6.678449 4.430394 -3.8841215 -1.77010377
## 6 4.2093236 5.153147 6.249757 1.785155 -3.8841215 0.06692015
## B3gnt5 B3gnt6 B3gnt7 B3gnt8 B3gnt11 B4galnt1
## 1 4.05231591 -0.1377108 5.038339457 -2.3380515 3.610423 5.1816304
## 2 -0.05996473 -3.4243451 -3.127369030 -0.8456695 2.962001 0.6108201
## 3 0.51442825 -3.8841215 -3.884121530 -0.2425151 -1.131317 1.4798145
## 4 4.34632901 -3.8841215 0.001460151 -0.1708302 2.873830 2.0870964
## 5 4.75744102 -3.8841215 -3.884121530 -0.9471720 3.901892 2.7879955
## 6 5.04549099 -1.9632495 -1.630280261 -1.8263310 3.764596 0.4442182
## B4galnt2 B4galnt3 B4galnt4 B4galt1 B4galt2 B4galt3 B4galt4
## 1 -1.2663310 -1.605034 4.731647 1.7233627 6.1191918 5.560280 4.225976
## 2 -2.3713762 -3.116511 -1.978248 6.8616455 4.3834807 4.306935 5.249565
## 3 -3.8841215 -3.884122 -1.931739 8.0802995 0.5144282 7.526268 7.233834
## 4 -2.6851957 -3.884122 2.898755 4.9498972 3.9172178 6.924598 4.859042
## 5 -3.8841215 -1.770104 2.372441 6.2965148 4.8986200 6.777639 5.679403
## 6 -1.4364226 -3.156544 1.585334 4.4841901 5.3833735 5.364835 5.053796
## B4galt5 B4galt6 B4galt7 B630005N14Rik B930041F14Rik B9d1
## 1 3.751723 5.874369 3.831507 4.781851 4.631017 4.276802
## 2 5.145448 2.089503 4.241016 4.912940 2.776813 4.107313
## 3 4.925616 4.166010 2.182248 7.603282 -1.931739 7.167105
## 4 3.769957 5.815135 3.906409 4.145943 1.687410 6.455606
## 5 5.492158 5.723162 5.181568 5.530195 4.178282 7.159969
## 6 4.892959 4.959118 4.430073 5.023234 2.448397 3.292958

```

##	B9d2	Baalc	Baat	Bace1	Bace2	Bach1	Bach2
## 1	3.209980	5.1834125	-2.808129	7.665997	3.0870255	6.202282	4.5718106
## 2	4.564149	1.6097550	-2.245175	5.280975	2.1749678	8.721485	3.6720376
## 3	6.389705	-0.2425151	-3.884122	2.182248	-3.8841215	1.141414	0.3033916
## 4	5.720473	3.7610943	-3.082383	6.626724	-1.5603049	3.853747	3.7786676
## 5	6.105032	4.3792114	-3.884122	5.893338	-3.8841215	4.489509	3.4938520
## 6	2.845082	8.2573863	-2.263270	6.181995	1.6082711	5.399574	5.4759721
##	Bad	Bag1	Bag2	Bag3	Bag4	Bag5	Bag6
## 1	4.036286	6.394842	3.382816	3.226264	4.451936	4.066426	8.134806
## 2	5.517834	7.137991	5.433020	5.996716	3.975404	5.143693	7.791590
## 3	7.299393	6.541926	-1.931739	1.263249	5.843269	6.682341	2.356639
## 4	6.259215	4.851486	4.872011	4.268355	5.152178	5.701933	5.015430
## 5	7.379662	5.361120	4.644934	3.879966	4.148023	6.116016	4.827849
## 6	3.327430	5.131535	3.128791	6.274593	3.813919	4.234899	7.581712
##	Bahcc1	Bahd1	Bai1	Bai2	Bai3	Baiap2	
## 1	5.6548669	4.8101058	8.759650	8.28526067	5.5220657	5.770210	
## 2	4.1583358	4.9273301	1.204503	0.64820505	0.1755447	7.588975	
## 3	-0.6195262	0.3033916	-1.131317	-1.13131698	4.5238915	5.581551	
## 4	2.8921458	2.3775546	2.361220	1.76211311	4.4142296	4.500794	
## 5	3.2073390	1.4715792	3.032860	-0.04458439	2.2178791	4.430394	
## 6	5.3342176	4.7531928	8.740406	8.92753514	7.6182446	4.407798	
##	Baiap2l1	Baiap2l2	Baiap3	Bak1	Bambi	Banf1	
## 1	-1.5881338	0.6586376	-0.86176302	6.087500	3.171186	5.658128	
## 2	1.4973900	-2.2923224	-0.41455615	6.454254	7.453487	6.634708	
## 3	-1.9317392	-3.8841215	-3.88412153	5.910084	-3.884122	6.393046	
## 4	0.7594712	-1.8168397	1.04362086	1.554961	3.148178	8.269655	
## 5	-3.8841215	-3.8841215	-3.88412153	3.780905	4.190210	9.141906	
## 6	-1.4223501	-1.1970474	1.12378929	4.904915	4.212198	4.534355	
##	Bank1	Banp	Bap1	Bard1	Barhl1	Barhl2	
## 1	-0.1600322	4.199658	6.652938	2.82725141	-2.778081	-3.884122	
## 2	-1.6947179	3.507789	6.931666	1.23057665	-3.651962	-3.656504	
## 3	-0.2425151	7.344955	1.668074	-0.24251506	-3.884122	1.008333	
## 4	1.5566279	6.409363	5.883736	3.21081958	-3.299148	-3.603681	
## 5	-1.1730114	5.818463	5.967986	0.90412645	-3.884122	-3.884122	
## 6	-3.6744822	4.715673	6.624564	2.81459458	-3.044745	-2.877778	
##	Barx2	Basp1	Batf	Batf2	Batf3	Bax	
## 1	3.65574934	7.084804	-2.277177817	-3.2385403	-2.11066799	5.954848	
## 2	-3.03924074	3.044872	2.207342863	0.5497350	-2.67931547	5.902310	
## 3	2.41038029	4.979944	-3.884121530	-1.9317392	-3.88412153	5.587396	
## 4	-1.03154822	6.318631	-2.032351595	-0.1859630	-1.70364121	5.883736	
## 5	-0.04458439	6.779614	-3.884121530	-2.1973739	-2.80711744	7.350062	
## 6	-2.52444472	2.394733	-2.633440257	-2.2632704	-0.08137905	5.095597	
##	Baz1a	Baz1b	Baz2a	Baz2b	Bbox1	Bbs1	
## 1	3.033547	6.783748	6.17233704	5.419846	-3.88412153	4.6025769	
## 2	5.619680	7.242436	6.64973683	6.887500	-2.72855734	2.7936353	
## 3	1.375592	2.410380	2.46219114	2.053052	-0.61952623	-1.9317392	
## 4	2.989310	5.896876	4.83926894	6.485492	-0.10740811	3.5966071	
## 5	3.493852	2.690590	1.21557422	4.460254	4.16625417	1.8777815	
## 6	4.479234	7.292798	7.06843421	7.101107	0.46870395	4.3410408	
##	Bbs10	Bbs12	Bbs2	Bbs4	Bbs5	Bbs7	
## 1	0.68318966	1.1301753	4.2089432	3.703620	2.23983997	3.8004143	
## 2	0.09509679	0.8829244	3.8368142	3.664947	2.59630479	3.1998903	
## 3	-1.93173924	-1.9317392	0.5144282	8.238161	6.75424428	-0.6195262	
## 4	3.03052440	2.5515548	5.2163375	6.178577	3.28697139	4.7677798	


```

## 5 3.56886216 -2.1973739 0.3450364 4.213774 3.26486979 4.4749556
## 6 0.76376446 2.0499139 5.6080557 3.926774 2.83090550 4.5665923
##      Bbs9      Bbx BC003331 BC003965 BC004004 BC005537 BC005561
## 1 4.2109391 4.745514 5.171529 3.930130 6.121387 7.123981 4.7380739
## 2 4.6835151 5.325254 5.808016 4.337590 6.214679 6.582840 4.3864857
## 3 0.6984974 6.169734 1.008333 6.150124 6.782541 2.053052 0.5144282
## 4 5.2181312 6.126884 6.283196 5.736750 6.544776 5.337536 4.5325898
## 5 4.6405939 3.522440 4.927410 5.751614 7.551329 5.511302 -2.1973739
## 6 3.3928726 5.590127 5.496135 4.054551 5.042567 7.182387 6.3205543
##      BC005624      BC005764 BC016579 BC017158 BC017643 BC018242 BC018507
## 1 4.776600 2.28645555 -3.723567 3.639589 5.304681 6.5552193 6.597561
## 2 4.658639 2.09080640 -3.884122 3.611670 4.761456 2.6441298 6.148561
## 3 6.720071 -0.61952623 -1.131317 -1.931739 8.121162 0.8617169 1.141414
## 4 6.092898 4.41735218 -2.458269 2.398050 5.764558 3.7876906 4.313984
## 5 6.351989 5.91326464 -3.884122 3.135130 5.345205 3.9795505 1.847973
## 6 4.059043 4.27070102 -0.120817 4.026424 4.811958 5.2947430 7.173955
##      BC021785 BC021891 BC022687 BC023829 BC024978 BC027231 BC028528
## 1 -3.395078 -1.820803 3.206719 4.827588 2.3697136 3.7606101 -1.0892865
## 2 -3.884122 -3.651962 2.381135 5.505045 1.3257037 4.8939144 6.2899845
## 3 -3.884122 -3.884122 5.715671 1.263249 -0.6195262 -1.1313170 5.8770631
## 4 -2.164530 -3.884122 2.010783 5.285126 -0.6785220 3.0606091 1.0822923
## 5 -3.884122 -3.884122 2.286157 5.578643 -2.8071174 -0.4264149 2.0182291
## 6 -1.669926 -1.415484 3.463185 5.555841 3.0216666 4.2494163 -0.9865471
##      BC029214 BC030336 BC030867 BC037034 BC048403 BC048609 BC049635
## 1 4.405998 5.042028 0.29280376 5.064624 1.9826044 -3.088949 -3.7949831
## 2 4.501165 5.072942 -0.08323452 2.811311 1.7630392 -1.820732 -1.5587864
## 3 7.431977 7.205613 -0.61952623 -1.131317 -1.1313170 -3.884122 -3.8841215
## 4 5.721987 5.381700 2.95110295 1.743917 1.5176882 -3.884122 -0.8311532
## 5 6.166702 6.175729 -3.88412153 2.263755 0.5063887 -3.884122 -3.8841215
## 6 4.175254 4.871291 1.03440571 5.543354 2.4008136 -3.280845 -3.8841215
##      BC049715 BC051019 BC051628 BC052040 BC053749 BC055111
## 1 -2.897536 -3.6778614 -3.3847237 3.0503496 1.22236725 -2.297043
## 2 -2.990176 -2.0418191 -2.5994186 2.1781636 0.05920299 -3.884122
## 3 -3.884122 5.8086642 -3.8841215 0.8617169 -1.13131698 -3.884122
## 4 -2.532015 -0.6147144 -0.7113746 5.1803175 2.90436100 -3.529646
## 5 1.654903 -3.8841215 -3.8841215 2.9925589 2.67369676 -3.884122
## 6 -2.765802 -2.0683045 -3.2680874 2.4995975 2.76669409 -3.143174
##      BC055324 BC061194 BC068157 BC068281 BC089491 BC100451
## 1 1.4137387 -3.229682 5.4012964 2.8975583 -2.119943 -0.83272379
## 2 2.1231534 -2.716134 -0.9756618 1.2483671 -2.578902 -3.42434508
## 3 -0.2425151 -3.884122 0.3033916 -0.2425151 -3.884122 -3.88412153
## 4 2.9495842 -3.653944 4.3744914 3.5398429 -3.137777 -2.99999907
## 5 -2.8071174 -3.884122 4.8316618 0.3450364 -3.884122 -3.88412153
## 6 1.9630786 -3.490484 2.5573711 3.3742753 -2.786374 -0.16848205
##      BC100530 Bcam Bcan Bcap29 Bcap31 Bcar1 Bcar3
## 1 -3.5680897 3.6124101 11.398641 4.385678 6.489116 6.7282876 1.682448
## 2 -0.3088949 7.3613293 3.155063 5.235550 7.680149 7.3724880 6.084138
## 3 3.3470689 5.3398492 8.923754 2.119096 9.809531 -0.2425151 7.088924
## 4 0.2130277 2.6640133 5.485606 6.194193 8.050875 4.8335013 3.790828
## 5 1.0682384 1.4319435 4.691834 7.130867 8.987703 5.5534682 4.674956
## 6 -3.8841215 2.7992920 12.032999 4.533909 5.882859 4.5841743 5.898184
##      Bcas1 Bcas2 Bcas3 Bcat1 Bcat2 Bccip Bcdin3d
## 1 10.12482738 5.856943 5.259526 7.0529652 3.6671135 4.778871 1.2765998
## 2 -1.35420374 5.758770 5.234472 -0.2479294 5.6677747 5.425949 1.1408637

```

```

## 3  0.05610664 8.366062 2.119096 4.3143399 -0.2425151 7.527789 -0.6195262
## 4  3.44770741 7.241255 6.381049 6.7404635 4.3547474 6.574799 4.2850510
## 5  3.71638023 8.184065 5.869427 6.4922772 3.0195509 7.590109 5.7024898
## 6 -0.22263845 5.375201 4.847225 0.4963195 5.1632650 4.924502 1.9173475
##      Bche      Bckdha      Bckdha      Bckdk      Bcl10      Bcl11a      Bcl11b
## 1  3.1894311 5.945934 4.128533 5.412536 4.793113 1.2589546 0.3345623
## 2  6.5517933 6.612162 3.200593 5.899950 7.747704 -0.1065933 -0.8320385
## 3 -1.1313170 6.706709 4.830258 8.519140 7.088924 1.5770128 1.9838395
## 4  2.7940970 6.394585 2.171624 7.084461 5.457820 5.9427981 2.5734111
## 5  1.6200547 6.926783 3.894620 7.822922 5.301886 6.2573658 0.1633391
## 6 -0.6322286 5.540760 4.642092 4.718681 4.884068 1.2752142 -1.6022590
##      Bcl2      Bcl2a1a      Bcl2a1b      Bcl2a1d      Bcl211      Bcl2110      Bcl2111
## 1  2.767839 -2.336709 0.8720200 -0.4727611 5.584412 -3.612858 2.4447514
## 2  6.079483 -3.344469 -0.2110097 -3.8841215 6.529014 -2.990176 5.7665603
## 3  1.375592 -3.884122 6.2307536 5.7368603 8.816499 -3.884122 -0.2425151
## 4  6.186481 -1.397076 0.3281965 -0.6919555 7.777082 -3.884122 3.3144901
## 5  5.353185 -3.884122 0.5807664 -3.8841215 7.690098 -3.884122 3.9447685
## 6  6.800665 -3.884122 -1.8543379 -3.5122488 5.308676 -2.717392 2.6530415
##      Bcl2112      Bcl2113      Bcl2114      Bcl2115      Bcl212      Bcl3
## 1  0.6024913 6.496588 -3.4448004 -1.0714173 6.5163757 -1.16479546
## 2  2.3817775 6.320669 -3.6565043 -1.3316554 4.9441114 3.23504552
## 3 -0.2425151 2.242751 -3.8841215 -1.9317392 0.5144282 0.05610664
## 4  3.9052045 5.354569 -3.8841215 -1.5541113 3.4458110 -2.89922456
## 5  2.8938999 4.091904 2.8792384 -2.8071174 2.9227833 -3.88412153
## 6  3.6567027 6.278577 -3.6744822 0.8069276 6.1887833 -2.19095854
##      Bcl6      Bcl6b      Bcl7a      Bcl7b      Bcl7c      Bcl9      Bcl91
## 1  4.284888 1.5969355 6.6726285 5.116991 3.31316820 4.45231785 5.036240
## 2  2.738865 8.0899361 0.4354461 5.633091 4.06961057 3.17287702 3.685258
## 3  5.604788 -1.9317392 4.3560197 6.089641 -1.93173924 0.05610664 1.753727
## 4  4.040782 1.7873156 6.4380223 4.910990 0.91044330 3.52963390 2.952669
## 5  5.073021 -2.8071174 6.5753480 4.293344 -2.19737395 -0.94717201 3.444910
## 6  5.815196 1.6092977 4.6196565 4.807102 2.19511209 5.73467001 5.915752
##      Bclaf1      Bco2      Bcor      Bcor11      Bcr      Bcs11      Bdh1
## 1  6.593819 1.1942423 4.838051 3.692636 5.609086 4.181657 6.943738
## 2  7.561139 -2.8202690 5.638766 4.458778 7.364872 3.896871 1.537838
## 3  3.478677 1.0083330 1.263249 2.053052 1.141414 7.724920 1.834579
## 4  8.315159 3.1705372 4.996023 3.255284 5.326186 5.648865 5.150069
## 5  7.529195 4.1171157 4.000024 -1.173011 4.536986 5.694137 5.465414
## 6  7.737595 3.2609462 5.576852 4.548040 6.840508 3.577687 7.028113
##      Bdh2      Bdkrb1      Bdkrb2      Bdnf      Bdp1      Bean1
## 1 -3.7235669 -2.605950 0.6258374 -2.2917476 4.4938364 3.369900
## 2 -2.3597589 -3.108037 1.8560398 -1.4538919 5.7702858 1.447343
## 3  6.1967483 -3.884122 -1.9317392 0.6984974 -1.1313170 -3.884122
## 4  5.2250320 -2.790513 -3.6539444 2.3876960 4.0262377 -3.114158
## 5  6.6699559 -3.884122 -3.8841215 -1.7701038 -0.7519471 -3.884122
## 6 -0.4130163 -1.979041 3.8967153 3.7857013 6.1456598 -1.875574
##      Becn1      Begain      Bend3      Bend4      Bend5      Bend6
## 1  5.990101 3.24091686 3.888803 4.0040529 2.2063502 4.5771359
## 2  6.763191 -0.13255867 4.512989 -1.2472383 5.3684224 1.2988426
## 3  7.268806 -1.93173924 3.644828 -1.9317392 -1.1313170 -0.6195262
## 4  5.392882 -0.33831878 2.563398 3.6184122 0.2693451 1.9431497
## 5  4.687633 -3.88412153 3.740916 4.0401199 2.4339276 4.1842580
## 6  6.220253 1.73844607 4.667994 2.9683766 1.2868835 0.9922836
##      Bend7      Best1      Best2      Best3      Bet1      Bet11      Bex1

```

```

## 1  4.08556216 -2.2076563 -3.051602 -3.8841215 5.054506 4.414578 4.0192740
## 2  4.03298122 4.4669499 -2.631727 -3.6565043 5.571390 5.214990 2.0253811
## 3  -3.88412153 4.2714200 -3.884122 -3.8841215 7.668143 7.638893 5.8770631
## 4  1.97815597 -0.1174889 -3.884122 -3.1283151 6.506210 6.098574 5.7488479
## 5  -3.88412153 -2.8071174 -3.884122 -3.8841215 7.147022 7.009894 6.2185814
## 6  2.78302967 -2.1694614 -3.280845 -3.4904843 4.172314 4.407651 2.4167088
##      Bex2      Bex4      Bfar      Bfsp1      Bfsp2      Bglap      Bglap2
## 1  6.405595  3.828482 5.082624 -0.2784730 2.1944529 -2.247695 -2.928795
## 2  1.749302 -1.560480 5.363513 -2.1931064 -3.8841215 -3.884122 -3.656504
## 3  7.414001  5.813659 5.057784 -1.9317392 -1.1313170 -3.884122 -3.884122
## 4  7.308132  5.114084 7.021524 -0.5658334 2.5108101 -2.054722 -3.418218
## 5  8.164548  5.803010 6.658195 -3.8841215 2.3724409 -3.884122 -3.884122
## 6  4.580310  2.517004 5.681899 -1.3943898 -0.8716209 -2.478408 -3.451139
##      Bgn      Bhlha15      Bhlha9      Bhlhb9      Bhlhe22      Bhlhe40
## 1  6.039528 -2.0500512 -1.9557988 6.077911 1.0933947 6.107738
## 2  7.987906 -1.2756702 -3.6565043 5.945398 -0.8451699 9.624669
## 3  6.324715 -3.8841215 -3.8841215 1.668074 6.5717131 6.489832
## 4  7.979036 -2.9446729 -2.9259520 5.835181 5.1619501 5.824190
## 5  8.421403 -3.8841215 -3.8841215 5.003742 5.9168583 2.834338
## 6  5.282268 -2.5546909 -3.8841215 5.857341 -1.4977620 10.701989
##      Bhlhe41      Bhmt      Bhmt2      Bicc1      Bicd1      Bicd2
## 1  4.57583751 -2.4756304 -3.080532 2.9646875 4.7744778 7.475630
## 2  -2.12066954 -3.6519623 -3.076231 1.4027204 -1.2625190 7.159677
## 3  -3.88412153 -3.8841215 -3.884122 -1.1313170 0.6984974 3.575949
## 4  0.09943293 -3.2878217 -3.884122 1.8277537 5.6323470 4.669147
## 5  -3.88412153 -3.8841215 -3.884122 -3.8841215 4.3152945 3.550472
## 6  5.93271761 -3.5122488 -3.884122 3.1488956 4.6292676 7.468281
##      Bid      Bik      Bin1      Bin3      Birc2      Birc3
## 1  2.87918656 -3.0889486 7.999472 3.560782 5.955846 -0.5021815
## 2  2.27692860 0.6995882 5.745924 6.384166 6.257518 6.8018547
## 3  6.05209616 -3.8841215 5.616268 1.141414 7.030060 -1.1313170
## 4  5.01305526 -2.0309194 4.627506 4.908960 6.129455 0.5419048
## 5  4.46025420 -3.8841215 6.698423 4.066244 5.013845 2.7879955
## 6  0.23844688 -2.2938670 4.971284 2.985918 6.407699 2.1113153
##      Birc5      Birc6      Birc7      Bivm      Blcap      Blk
## 1  2.8120206 6.863359 -2.85767516 4.262876 5.688461 -3.5960906
## 2  4.1191665 7.102971 -3.65650428 4.306467 4.146206 -2.9352776
## 3  7.3689052 3.575949 -3.88412153 1.141414 6.764598 -3.8841215
## 4  5.9299877 6.789538 2.76650969 4.707218 7.002027 -3.8841215
## 5  5.7576391 6.820478 -3.88412153 1.654903 6.005598 -3.8841215
## 6  2.6377601 7.724835 0.06534619 4.423252 5.894925 -3.8841215
##      Blm      Blmh      Blnk      Bloc1s1      Bloc1s2      Bloc1s3
## 1  2.56826537 6.198945 1.81101408 4.538156 3.5587052 3.4123873
## 2  2.81919849 6.583610 -2.41224961 5.862210 3.4632877 2.9825911
## 3  -0.24251506 6.274882 0.05610664 7.290464 -0.6195262 -1.9317392
## 4  3.01631006 7.154032 1.61993000 7.196858 4.5595699 0.8863723
## 5  -0.04458439 7.223740 -0.75194706 8.115741 5.4897472 2.6905901
## 6  3.34312169 5.422124 -2.17578593 4.209069 2.7464376 2.3371317
##      Blvra      Blvrb      Blzfl      Bmf      Bmi1      Bmp1      Bmp15
## 1  4.284641 2.601214 4.5089838 3.3369498 6.063881 7.349898 -2.724313
## 2  4.761163 5.676368 5.0505237 4.6560545 6.310609 6.764446 1.227978
## 3  6.795222 8.434128 0.8617169 -0.2425151 6.640789 2.462191 -3.884122
## 4  5.928861 5.982559 5.6787188 0.5709381 4.652937 4.131287 -1.589415
## 5  6.285437 6.686893 5.2853000 -1.7701038 5.534880 2.308216 -3.884122

```

```

## 6 2.469312 3.097560 4.8273656 0.7958593 4.745998 8.169766 1.033477
##      Bmp2      Bmp2k      Bmp3      Bmp4      Bmp5      Bmp6
## 1 2.50491293 4.2311677 -0.7072042 5.7995996 -1.7675226 -0.1414668
## 2 2.10004883 6.0788056 -3.6519623 1.6519644 2.0877468 -0.3256642
## 3 0.05610664 5.6557427 -1.9317392 6.9415708 -3.8841215 -1.9317392
## 4 1.71825476 3.0177301 -0.8262831 0.2701721 1.4550887 1.4177586
## 5 1.62005470 0.9041264 -2.8071174 2.0707909 0.4279671 -1.4408855
## 6 -0.10779325 6.2703566 -1.6699262 -3.4904843 -2.7330183 -0.1635770
##      Bmp7      Bmp8a      Bmp8b      Bmper      Bmpr1a      Bmpr1b
## 1 5.29736803 -3.514643 -1.0501493 3.2371296 6.119363 0.3927369
## 2 -0.50152133 -2.990176 -2.9956232 -2.0325413 3.228889 -0.9963207
## 3 1.57701280 -3.884122 -3.8841215 6.1342417 7.107346 6.4260343
## 4 0.96680451 -3.674937 -3.8841215 6.3902377 5.986243 5.0985045
## 5 0.65149678 -3.884122 -3.8841215 6.1034561 5.489747 5.0272067
## 6 6.02188659 -1.714519 -3.1565438 5.1226231 8.034854 7.6417265
##      Bmpr2      Bms1      Bmx      Bmyc      Bnc1      Bnc2      Bnip1
## 1 4.783685 5.029776 -3.158791 4.38459986 -3.26749998 -3.7901666 3.742944
## 2 7.381857 5.510696 3.719143 3.59442461 -3.65196234 -3.4766082 4.442653
## 3 1.008333 2.182248 -3.884122 0.05610664 0.05610664 -0.6195262 1.263249
## 4 2.965870 4.866444 -3.029652 3.90209137 -2.93334633 -2.2314390 4.662314
## 5 3.207339 3.587021 -3.884122 5.45803308 -1.44088555 -3.8841215 5.251545
## 6 5.827174 6.627824 -2.106804 4.48074127 -3.23725332 -1.4641656 3.870002
##      Bnip2      Bnip3      Bnip3l      Bnip1      Boc      Bod1      Bod1l
## 1 5.192299 4.487954 6.514032 -2.4928535 2.7659762 5.364756 5.097476
## 2 8.185061 4.623858 8.342272 0.8447982 4.2835897 5.293925 5.736250
## 3 4.396529 8.066766 7.863827 -0.2425151 3.0412310 5.367284 1.479815
## 4 4.474232 6.576375 7.545131 -1.6558813 2.8961616 4.531394 6.193966
## 5 4.850575 7.122333 8.339088 -2.1973739 3.0195509 5.845114 1.068238
## 6 5.899115 3.544549 5.395287 -2.4391309 6.3897968 4.537850 6.743882
##      Bok      Bola1      Bola2      Bola3      Bop1      Bpgm      Bphl
## 1 3.4744010 2.589216 4.324584 3.098388 6.195902 7.516715 3.945506
## 2 7.5976573 2.970453 5.020342 4.131419 5.588988 6.912127 3.734016
## 3 2.7391666 7.428725 6.215739 5.747339 1.983840 9.702528 7.736801
## 4 4.5318864 5.722611 6.682564 1.658483 5.355575 6.994097 6.009606
## 5 5.4406630 6.947136 7.625130 3.531845 5.723162 7.158452 5.592191
## 6 0.8899609 2.247709 2.416490 2.939310 4.958576 5.750765 4.155858
##      Bpifa1      Bpifb1      Bpifc      Bpnt1      Bptf      Braf      Brap
## 1 -3.8841215 -3.794983 -3.884122 5.800161 6.575941 5.524374 5.830110
## 2 -3.8841215 1.223423 -3.884122 4.643906 6.954268 5.942007 6.275785
## 3 -3.8841215 -3.884122 4.102127 7.147459 2.780569 3.667075 1.668074
## 4 -3.8841215 -3.884122 1.238875 6.500116 6.930707 6.479467 4.052681
## 5 -3.8841215 -3.884122 2.263755 7.098796 5.911464 2.530918 4.905872
## 6 -3.6607788 -3.280845 -3.512249 5.257202 7.548900 6.792452 5.569776
##      Brca1      Brca2      Brcc3      Brd1      Brd2      Brd3      Brd4
## 1 5.0360774 2.4827972 4.633980 6.289694 8.603844 6.003880 6.443482
## 2 2.5197131 3.4977843 4.884971 6.551778 9.294937 5.245974 6.881977
## 3 -0.2425151 -1.9317392 1.008333 2.971435 5.688739 3.872500 6.844860
## 4 4.2650962 3.5616718 6.177965 5.219982 6.772677 7.866585 5.647791
## 5 4.2426981 -1.1730114 6.370453 5.037147 6.847092 7.473548 4.430394
## 6 3.3527651 4.1537942 4.291724 6.672848 9.158072 5.818761 6.867370
##      Brd7      Brd8      Brd9      Brdt      Bre      Brf1      Brf2
## 1 6.061251 6.144367 6.084785 4.3383277 4.708851 5.7716055 2.74315407
## 2 6.166740 6.297463 6.072867 2.9505997 4.969901 5.9991531 2.69266270
## 3 2.859970 6.189081 1.375592 -3.8841215 7.451335 -0.6195262 0.05610664

```

```

## 4 5.667558 7.904826 6.958011 2.9420038 6.515207 2.6904855 4.59632708
## 5 2.604073 6.507849 7.028284 1.9636795 6.050457 2.7879955 3.95878207
## 6 5.945703 6.962855 6.644202 1.8132587 3.640231 5.7139695 2.92831913
##      Bri3  Bri3bp  Brip1  Brix1  Brms1  Brms1l  Brpf1
## 1 4.1438616 6.533518 0.6194401 4.535516 4.3995885 5.387093 5.3351427
## 2 5.0842052 3.150529 2.2535883 4.858117 5.0476103 5.451187 6.1531650
## 3 0.5144282 6.118182 -0.2425151 6.640789 -0.2425151 1.375592 -0.2425151
## 4 1.7303423 5.426583 3.2165626 6.815613 5.6257619 5.106337 3.5958737
## 5 2.6736968 5.569539 -1.7701038 7.310994 5.4849133 5.282517 3.7887709
## 6 3.1226809 6.048563 1.8901149 4.841985 4.1554139 5.735340 5.8939994
##      Brpf3  Brs3  Brsk1  Brsk2  Brwd1  Brwd3
## 1 4.8824756 -3.884122 6.6922706 6.1716716 6.424199 4.02657076
## 2 4.8052073 -3.884122 0.6649027 -0.5089958 6.264268 4.88171447
## 3 0.6984974 -3.884122 -3.8841215 1.0083330 2.739167 0.05610664
## 4 2.0959565 -3.884122 1.2141186 5.3205607 5.707484 3.15862927
## 5 -0.4264149 -3.884122 0.2570463 4.7331868 5.017197 -0.42641489
## 6 5.1833299 -3.884122 4.9809585 6.7228321 7.124218 4.83428155
##      Bsc12  Bsdcl  Bsg  Bsn  Bspry  Bst1
## 1 6.231694 6.180258 8.280210 5.3401047 0.9831870 -3.22949380
## 2 5.487935 7.114220 14.076773 -0.7068942 3.7036628 -1.28969346
## 3 8.254782 1.668074 11.164026 1.9838395 1.1414140 -3.88412153
## 4 6.976405 5.958463 6.662301 4.1681820 0.1561186 -3.88412153
## 5 7.078082 5.578643 9.472525 1.3060516 1.8175364 -3.88412153
## 6 4.789581 5.705003 7.657865 2.9734013 0.8634781 -3.28890603
##      Bst2  Btaf1  Btbd1  Btbd10  Btbd11  Btbd16
## 1 -0.4071134 5.561472 6.256858 4.80488431 3.1681267 1.0374840
## 2 5.2144454 6.318391 6.039873 5.86518030 4.4238720 -3.8841215
## 3 6.9551952 1.263249 4.560006 0.05610664 -0.2425151 -1.9317392
## 4 3.1135069 4.250433 4.493037 4.45480325 -1.0424936 2.0786644
## 5 5.4078387 3.916326 4.020211 3.38389907 -0.7519471 4.7372576
## 6 -0.1951322 7.529060 6.038541 5.12715027 -0.3615861 -3.8841215
##      Btbd17  Btbd19  Btbd2  Btbd3  Btbd6  Btbd7
## 1 4.7784113 1.56354782 5.3264731 6.058600 4.444330 4.5345425
## 2 -0.7723561 2.56576740 5.1700147 6.731018 4.038217 6.4223056
## 3 6.2270146 2.97143505 0.3033916 7.409059 7.535367 -0.6195262
## 4 2.5628006 0.09631412 4.0968564 5.262446 1.926667 2.6618716
## 5 4.7453649 2.37244086 4.2878034 5.040446 -1.173011 2.6217964
## 6 7.7148546 1.01613256 5.2791812 5.498597 3.861348 5.4120015
##      Btbd8  Btbd9  Btc  Btd  Btf3  Btf3l4  Btg1
## 1 1.3391003 5.982314 -1.8539726 5.610001 5.250932 4.252898 6.438058
## 2 -1.0790769 4.960785 -2.8070815 6.065488 7.053384 3.905685 8.322756
## 3 -1.9317392 7.301173 0.3033916 7.025762 7.099187 1.008333 7.921644
## 4 -1.3464196 5.572896 -1.4320154 6.599334 6.759684 4.163026 8.071589
## 5 1.7221719 4.955637 -0.7519471 6.987853 8.002767 3.894620 8.853270
## 6 1.5173958 5.221636 -0.7619961 5.583506 4.606828 3.842999 8.325606
##      Btg2  Btk  Btla  Btn1a1  Btn2a2  Btnl2
## 1 4.065525 0.28888836 -3.2487227 -2.750959 -2.9979282 -3.4425501
## 2 9.702618 -2.56145378 -3.2489909 -3.884122 -3.8841215 -3.8841215
## 3 8.993639 -1.93173924 -3.8841215 -3.884122 -3.8841215 -3.8841215
## 4 9.075520 -0.51043258 -2.7969081 -2.862578 -3.4277009 -3.4277009
## 5 7.656100 -3.88412153 -3.8841215 -3.884122 -3.8841215 -2.8071174
## 6 8.670706 -2.73301835 -0.5483083 -3.884122 -1.1190002 -3.8841215
##      Btnl9  Btrc  Bub1  Bub1b  Bub3  Bud13  Bud31
## 1 -3.8841215 5.018216 1.95779400 2.6166000 5.980224 3.1587362 5.337925

```

```

## 2 -0.9288743 4.992379 4.49176579 4.3961484 6.578825 2.6354315 6.547525
## 3 -3.8841215 2.053052 0.05610664 6.8904841 3.347069 4.9620612 6.300014
## 4 -3.8841215 6.145722 4.97842823 5.8991763 7.904310 4.5924845 6.319518
## 5 -3.8841215 4.098249 0.71892097 1.9912121 8.641540 0.5063887 6.917844
## 6 -3.6744822 5.112495 3.25557817 3.0826116 5.318865 3.5543149 4.760366
##      Bves      Bysl      Bzrap1      Bzw1      Bzw2 C030039L03Rik
## 1 0.9399756 4.635370 7.0755457 7.929899 6.415026 2.4106345
## 2 -1.5805424 5.047068 -0.9559900 8.291051 5.902697 0.3646783
## 3 -3.8841215 1.911138 -1.9317392 8.261195 2.300819 -0.6195262
## 4 -3.6036807 4.421273 3.4064913 8.116823 7.867666 4.3493984
## 5 -3.8841215 5.085848 2.4538543 6.566223 8.391366 2.8190554
## 6 0.4675134 4.058561 6.8706906 6.951892 5.541163 2.2463929
## C030046E11Rik C130026I21Rik C130060K24Rik C130074G19Rik C1d
## 1 5.9359850 -3.677861 -3.723567 0.3062151 4.704766
## 2 6.6418741 -3.656504 -2.221083 9.3649827 5.996873
## 3 -0.2425151 -3.884122 -3.884122 -1.1313170 8.040378
## 4 2.2561603 -3.884122 -3.884122 0.6338127 7.609198
## 5 -1.1730114 -3.884122 -3.884122 2.2861569 8.492968
## 6 6.4242416 -3.884122 -3.884122 3.5244887 4.644646
##      C1galt1 C1galt1c1      C1qa      C1qb      C1qbp      C1qc
## 1 4.8086099 4.521938 5.2913052 4.6479282 6.307603 4.3031773
## 2 4.8812173 5.195342 -0.3897882 -0.8047768 5.757980 -1.9084573
## 3 -1.9317392 7.829717 9.6451954 10.8788810 3.290869 9.5136455
## 4 0.6224797 5.697767 4.5441995 6.8860667 3.430822 4.6208836
## 5 -3.8841215 6.807953 5.0338413 6.0290323 3.006118 4.5919693
## 6 3.8760750 3.950207 1.0495666 0.3204253 5.120523 -0.2640609
##      C1ql1      C1ql2      C1ql3      C1qtnf1      C1qtnf2      C1qtnf3
## 1 8.20738977 3.9071957 5.6654553 0.4865631 0.8045376 -3.454723
## 2 -2.80708155 -2.4823940 -1.3312924 3.8491692 1.0754538 -2.649805
## 3 -1.93173924 -0.6195262 -0.2425151 -1.1313170 -3.8841215 -1.931739
## 4 -0.07338641 -1.8839110 0.2951116 3.4580036 1.9690293 -2.529636
## 5 -3.88412153 -1.7701038 2.8343382 4.5829496 2.8343382 -3.884122
## 6 0.07183520 -1.8794630 0.8774107 -0.2043299 -3.2808450 -2.288570
##      C1qtnf4 C1qtnf6 C1qtnf7 C1qtnf9      C1ra      C1rb
## 1 4.0257652 5.612647 -2.9060513 -2.431689 -1.4427683 -3.570026
## 2 0.7553659 6.258272 -3.1165114 1.966582 1.9088814 -2.679315
## 3 2.6526181 5.374063 -1.1313170 -3.884122 -1.9317392 -3.884122
## 4 -2.0569707 3.867321 0.5681800 -3.884122 0.7191988 -3.394496
## 5 1.1190407 5.376862 3.7246054 -3.884122 2.0707909 -3.884122
## 6 0.2552414 5.240464 -3.4511394 -2.928036 -2.6212192 -3.884122
##      C1r1      C2 C230052I12Rik      C2cd2      C2cd2l      C2cd3
## 1 -1.2187644 -0.7672958 2.7424430 4.793308 5.420194 5.1167324
## 2 -2.6498048 -1.7568249 1.3323223 6.443448 6.292548 5.2726858
## 3 -3.8841215 0.5144282 0.8617169 1.263249 4.342260 0.3033916
## 4 -1.9314499 2.6797666 4.7921748 3.077736 2.430301 5.0701301
## 5 -3.8841215 0.2570463 3.7246054 3.930617 3.147418 2.2861569
## 6 -2.3524456 1.9960340 1.7696969 4.439655 4.672001 5.9133587
##      C2cd4b      C2cd4c      C2cd4d      C3 C330007P06Rik C330018D20Rik
## 1 0.2183057 2.60436225 -0.7533213 -1.327585 5.047909 3.159931
## 2 -0.9176474 0.06266582 -3.8841215 -1.155175 5.352960 2.253572
## 3 -3.8841215 -3.88412153 -1.9317392 -3.884122 8.245572 7.178766
## 4 -3.8841215 -0.38297043 -3.8841215 -1.988775 5.615058 5.139260
## 5 -3.8841215 -0.75194706 -3.8841215 -2.807117 3.788771 5.961040
## 6 2.7626616 -2.29386698 -0.7644884 -2.131332 5.182235 3.554687

```

##	C330027C09Rik		C3ar1	C4b	C530008M17Rik		C5ar1	C6
## 1	3.18405412	1.3270732	0.3924294		5.5807458	0.02523241	-3.425504	
## 2	4.08528820	-1.5802861	-0.7578504		6.0742675	-2.56145378	-3.884122	
## 3	0.69849743	7.0723493	4.9163586		-0.6195262	7.23569586	-3.884122	
## 4	5.08182292	3.8634818	5.1497890		5.5895913	4.80025531	-2.739401	
## 5	1.58434365	0.4279671	3.5870208		4.3792114	2.53091789	-3.884122	
## 6	4.21113544	-2.0273800	5.8582699		3.9019399	-2.76580247	-3.884122	
##	C77080	C77370	C78339	C87436	C8b	C8g		
## 1	4.9141337	4.1859783	3.9931924	3.3721367	-3.526440	-0.805534348		
## 2	4.1832275	4.1226169	4.3306158	3.9701141	-3.884122	1.005368097		
## 3	3.2908694	-0.6195262	0.8617169	0.8617169	-3.884122	-1.931739237		
## 4	1.4656438	2.2655152	0.2375143	5.5302682	-3.884122	1.041297234		
## 5	0.1633391	-2.1973739	-0.1609828	6.5466401	-3.884122	4.248413962		
## 6	3.2719392	1.0085089	4.4440513	3.7011565	-1.052594	0.003780729		
##	Cab39	Cab39l	Cabin1	Cables1	Cables2	Cabp1	Cabp4	
## 1	7.370180	4.212545	6.218318	3.99778049	4.05874342	2.2413166	-1.7749546	
## 2	7.298887	5.421967	5.659206	4.10301833	5.26538832	2.1668093	-2.8952098	
## 3	7.953671	8.009151	1.008333	0.05610664	4.82036645	-1.9317392	-3.8841215	
## 4	5.536267	6.229538	4.760499	5.40278884	2.53464794	-1.6318490	-3.3278129	
## 5	5.578643	6.100299	3.253546	5.76363862	1.96367954	-3.8841215	-3.8841215	
## 6	6.548714	2.882087	7.005426	4.44720630	4.33174322	-0.4821106	-1.8313112	
##	Cabp7	Cabyr	Cachd1	Cacna1a	Cacna1b	Cacna1c		
## 1	-0.7144867	1.48271288	4.3158964	5.168885	3.65473341	5.4950090		
## 2	-3.0392407	0.34181193	6.5031339	4.530610	-1.27958099	1.6855503		
## 3	-3.8841215	-1.93173924	1.5770128	4.916359	-0.24251506	-3.8841215		
## 4	-3.8841215	0.69090750	5.1096955	3.054023	-0.01748936	1.7577742		
## 5	-3.8841215	-3.88412153	4.8913319	2.604073	-2.80711744	0.0631199		
## 6	-3.0276140	1.56563484	7.0935148	2.721152	-0.41190901	2.2695356		
##	Cacna1d	Cacna1e	Cacna1f	Cacna1g	Cacna1h	Cacna1i		
## 1	5.5947167	5.3428087	-2.6742809	5.66612357	4.8299938	2.2924221		
## 2	0.3828652	5.9205466	-3.8841215	-1.01706990	1.6932815	-1.7048570		
## 3	-1.9317392	1.7537270	-1.9317392	0.05610664	-1.9317392	-1.1313170		
## 4	2.7361290	1.4061959	-2.7969081	1.32546079	0.5764727	-1.6186369		
## 5	1.3492478	-0.4264149	-3.8841215	-3.88412153	0.6514968	-3.8841215		
## 6	4.6908971	2.3257133	-3.4511394	3.29879909	5.7834673	-1.4955290		
##	Cacna1s	Cacna2d1	Cacna2d2	Cacna2d3	Cacna2d4	Cacnb1		
## 1	-3.037060	5.6342367	3.2059107	3.8301907	0.8862847	3.7757527		
## 2	-3.884122	2.1400064	-0.5098795	-0.5461695	-3.8841215	0.5142064		
## 3	-3.884122	1.6680739	2.0530520	-3.8841215	-3.8841215	-1.9317392		
## 4	-3.529646	4.3307740	-2.1014159	1.6408468	0.8426443	-0.6002587		
## 5	-3.884122	5.1544264	-2.8071174	2.5309179	-3.8841215	-3.8841215		
## 6	-2.874450	4.8806184	3.9910129	0.6461932	1.8410247	5.9171201		
##	Cacnb2	Cacnb3	Cacnb4	Cacng1	Cacng2	Cacng3		
## 1	1.888247968	6.3696504	6.216701	-1.2071354	-0.6046189	-0.0543061		
## 2	-0.892369007	1.6444484	2.531725	-0.2667366	-2.4090094	-2.5768592		
## 3	-3.884121530	-0.2425151	-1.131317	-3.8841215	-3.8841215	0.5144282		
## 4	0.081632712	2.8995786	4.769242	-3.8841215	0.4311437	0.9511642		
## 5	1.935611303	-0.1609828	3.772995	-3.8841215	-3.8841215	-0.4264149		
## 6	1.787571737	4.6262830	2.039995	-2.3373822	-2.8626564	-2.1313321		
##	Cacng4	Cacng5	Cacng6	Cacng7	Cacng8	Cacybp		
## 1	7.4129080	4.7472339	-3.526440	6.8766366	2.36995444	5.797800		
## 2	-1.9023480	-2.0452279	-3.884122	-0.7333052	-2.99017567	6.244057		
## 3	-3.8841215	1.3755916	-3.884122	-1.9317392	-1.13131698	7.188412		
## 4	0.2926345	6.6645360	-2.899225	-0.4081940	-1.95968341	6.083555		

```

## 5 2.3082165 5.9204431 -3.884122 -1.1730114 -0.04458439 7.507312
## 6 4.0582416 2.4814369 -2.337382 5.0124028 2.96625069 5.365751
##      Cad      Cadm1      Cadm2      Cadm3      Cadm4      Cadps      Cadps2
## 1 5.559676 7.198275 8.2804392 7.621997 10.0655197 5.8294699 4.0898491
## 2 5.569213 6.168394 0.5917601 1.392309 4.8907655 1.4155735 0.7179183
## 3 2.119096 7.338039 6.5687619 2.356639 0.3033916 0.3033916 -1.1313170
## 4 4.690741 6.691706 5.9833985 4.881711 3.0707269 4.8549887 2.7949787
## 5 2.834338 6.650661 5.0138453 6.434532 4.7453649 4.3529226 3.1227355
## 6 5.770236 7.557407 8.1733183 4.867068 8.1448344 3.4242166 4.4582214
##      Cage1      Calb1      Calb2      Calca      Calcb      Calcoco1
## 1 -0.2635090 0.1209564 3.86357439 -1.714043 -3.884122 5.950818
## 2 1.5652997 0.3001061 0.89479393 -3.344469 -3.651962 6.112832
## 3 -3.8841215 0.3033916 7.95027298 -3.884122 -3.884122 6.324715
## 4 -0.4340382 1.6208107 8.67186336 -2.573232 -3.884122 7.215411
## 5 -3.8841215 -2.1973739 9.80379705 -3.884122 -3.884122 6.534995
## 6 0.8652167 -1.4247926 -0.04704284 -1.815929 -3.884122 6.224115
##      Calcr      Calcr1      Cald1      Calhm2      Calm1      Calm2
## 1 -3.4621170 5.9016223 5.8110596 -1.8634383 9.202867 7.261653
## 2 -3.0277153 6.7101807 7.3876254 1.2545956 10.624175 8.319681
## 3 -3.8841215 9.7660681 2.6073156 6.8448595 12.168154 11.119721
## 4 -3.8841215 7.4915682 7.3728187 0.4524438 11.242925 9.939316
## 5 -3.8841215 8.6566638 6.6168140 1.4319435 12.167438 10.491184
## 6 -3.6744822 -0.1869325 2.7809602 -0.3581265 7.837317 6.185457
##      Calm3      Calm4      Calm13      Calm14      Caln1      Calr
## 1 8.480964 -3.884122 -3.8841215 -3.495736 0.6000525 9.842621
## 2 8.067181 -3.884122 -2.0647642 0.121872 0.1410250 10.210277
## 3 8.680944 5.991678 2.6526181 6.383000 -1.1313170 9.326272
## 4 7.943455 2.607838 -0.4270415 2.289156 0.8331195 8.602178
## 5 9.280685 7.242477 0.9041264 3.484195 -2.8071174 8.765556
## 6 6.734454 -3.884122 -2.9479702 -2.547098 -1.7839447 9.357018
##      Calr3      Calu      Caly      Camk1      Camk1d      Camk1g      Camk2a
## 1 0.67657151 8.032765 4.27699882 6.0630992 3.423679 2.7198652 6.671514
## 2 1.97347266 9.697906 0.80061552 5.8643436 2.234651 -1.5493876 1.870268
## 3 -0.61952623 6.406332 9.36250961 -0.2425151 1.141414 -3.8841215 6.122214
## 4 2.89302355 8.655674 3.90392118 2.3946435 3.413516 -0.3439511 5.145745
## 5 3.56886216 7.421372 3.55969641 4.4749556 4.674956 -3.8841215 1.261522
## 6 1.39038137 8.260455 0.06030246 4.5191258 5.448778 3.0183545 2.485432
##      Camk2b      Camk2g      Camk2n1      Camk2n2      Camk4      Camkk1      Camkk2
## 1 5.226764 5.834221 6.840697 3.916104 4.776491 4.3369970 4.6511922
## 2 2.476974 5.662995 6.298040 1.145755 2.082659 1.8124333 4.9461295
## 3 4.953036 1.479815 5.147549 -1.131317 -1.131317 0.5144282 6.0730752
## 4 5.377514 5.377178 4.645740 1.808597 2.671564 3.0922669 0.8631209
## 5 4.352923 3.979550 4.358219 1.688930 3.772995 2.5861290 1.0155818
## 6 2.692049 8.905322 6.575906 1.911136 2.905328 4.4276392 4.7043016
##      Camkv      Caml      Camp      Camsap1      Camsap2      Camsap3      Camta1
## 1 3.6769933 4.797873 -2.970218 6.0731435 7.824443 4.4842899 4.508811
## 2 2.2955985 6.163289 -1.633217 5.1186773 8.120695 -0.4877179 4.264185
## 3 -0.6195262 7.428725 -3.884122 0.8617169 2.119096 0.8617169 5.644574
## 4 2.2626403 6.152591 -3.884122 5.9949892 5.565258 2.0540751 6.466086
## 5 -1.4408855 5.869427 -3.884122 5.5718204 5.567254 1.0155818 5.169568
## 6 1.4940824 4.887630 -3.660779 6.4625093 7.440389 2.7207545 4.488158
##      Camta2      Cand1      Cand2      Cant1      Canx      Cap1      Cap2
## 1 5.9646669 6.662356 3.5499638 6.157503 9.321704 8.132711 2.980550
## 2 4.9376735 6.709179 1.1667580 5.339951 9.015561 8.772594 1.445318

```



```

## 3 1.1414140 3.261927 0.5144282 3.813884 11.506333 9.460501 1.753727
## 4 4.3019124 6.249715 4.2122282 4.551311 10.207051 8.390581 5.927596
## 5 0.6514968 6.539664 4.3792114 5.607839 11.476804 7.634982 2.433928
## 6 6.6816031 7.314990 4.3268809 5.752421 9.320013 6.488353 5.346935
##      Capg      Capn1      Capn10      Capn11      Capn12      Capn2
## 1 -0.6897641 -0.6353414 5.32815725 -2.3876131 -3.1996954 6.7177707
## 2 7.1901374 4.1667654 3.40286804 -3.6519623 0.7375416 7.9287507
## 3 5.9783955 1.7537270 0.05610664 -1.9317392 -0.6195262 0.5144282
## 4 3.9683886 2.9932100 2.91800126 -0.1682188 -3.2091840 5.2695427
## 5 4.4253568 4.7574410 4.94511633 -2.8071174 -2.8071174 4.4651713
## 6 0.6555617 2.4971214 5.25716530 2.1605134 -3.1565438 7.5106659
##      Capn3      Capn5      Capn6      Capn7      Capn9      Capns1
## 1 2.37921750 7.3780034 2.2917305 5.3972986 -2.808491 7.391512
## 2 -1.80431358 0.1738865 -3.4766082 6.1044951 -3.884122 9.079935
## 3 0.51442825 0.5144282 0.3033916 0.6984974 -3.884122 7.702207
## 4 -0.05077282 5.0896169 -0.7488564 4.3291511 3.129318 7.015778
## 5 -2.80711744 -0.1609828 -0.9471720 3.9018920 3.596015 6.762739
## 6 -2.43913094 3.2858400 -3.5122488 6.1792099 -1.811542 6.351455
##      Capns2 Caprin1 Caprin2      Caps2      Caps1 Capza1
## 1 -2.15497466 8.250351 3.1666993 -2.99959337 -3.7949831 3.355662
## 2 -3.88412153 8.475408 2.1757610 -3.65196234 -3.2277824 6.110426
## 3 0.86171687 2.780569 -1.1313170 -3.88412153 -1.9317392 2.560544
## 4 -1.81981665 6.808026 2.3291462 -0.27357186 1.8937882 4.675823
## 5 -0.04458439 6.575348 -1.4408855 -3.88412153 2.1704966 4.166254
## 6 -3.88412153 7.652552 3.8045999 1.43301161 0.3050785 3.298915
##      Capza2 Capzb      Car10      Car11      Car12      Car13      Car14
## 1 7.084748 7.319775 3.2333353 5.231626 -0.1402700 -0.5018559 1.8327497
## 2 8.041436 8.470826 -1.9690256 0.500477 -1.7218769 -0.7383165 4.8414275
## 3 9.940875 7.604723 -1.1313170 6.196748 4.0180778 0.8617169 7.9158490
## 4 8.648985 7.437759 1.0337994 3.001418 0.8348225 -0.2348432 5.3505783
## 5 9.196333 7.748238 -2.1973739 -1.173011 -0.9471720 3.1836685 6.3305936
## 6 7.124809 6.486628 1.0320424 3.601632 -1.7145191 -0.2765361 -0.8856587
##      Car2      Car3      Car4      Car5a      Car5b      Car6
## 1 6.636170 -2.1231596 0.2954792 -3.790167 -0.2470596 -1.463729
## 2 8.136833 -3.8841215 10.4588587 2.374734 1.2365681 -1.228415
## 3 11.983394 -3.8841215 8.8874997 1.753727 -3.8841215 -1.931739
## 4 10.766576 -1.3372715 5.1187070 -2.071522 3.6361839 -3.101440
## 5 11.547766 -3.8841215 7.3606563 -3.884122 2.7879955 -3.884122
## 6 8.521618 0.5220146 2.4456012 -3.143174 3.8420772 -3.490484
##      Car7      Car8      Car9      Card10      Card11      Card14
## 1 -0.37599917 5.59521081 -2.33647215 0.1367026 -0.6449434 -2.0506354
## 2 -1.23924928 0.81517084 -2.67931547 5.7032056 -2.3013285 -2.7960024
## 3 -3.88412153 7.93888935 -3.88412153 1.1414140 -3.8841215 -0.6195262
## 4 0.07430066 0.01688446 -2.44200561 -0.7100644 -3.6539444 -2.7525798
## 5 -3.88412153 -2.19737395 -1.77010377 -0.5800187 -3.8841215 -3.8841215
## 6 -2.02879162 7.48487130 -2.01383534 0.9667056 -3.8841215 -1.3872901
##      Card6      Card9      Carf Carhsp1 Carkd      Carm1
## 1 -0.62885250 0.389594 2.0737593 7.050021 6.140680 5.1058328
## 2 3.85223944 -3.112310 3.0201069 6.746645 5.578238 5.2178952
## 3 -1.13131698 -3.884122 -3.8841215 7.241267 7.547410 0.3033916
## 4 1.42251953 -1.368407 -0.1158755 7.404913 7.054282 2.5503160
## 5 -3.88412153 -3.884122 -3.8841215 8.057107 7.672668 3.9234895
## 6 0.03726252 -1.293341 3.2582341 5.606403 5.367715 5.5100530
##      Carns1      Cars      Cars2      Cartpt      Casc1      Casc3

```

```

## 1 3.50968514 5.277313 3.8796589 -2.144672741 -2.0050116 5.958048
## 2 0.01176232 4.887952 4.0680895 -2.990175668 0.4563865 5.766655
## 3 -1.93173924 6.792695 -0.6195262 -3.884121530 -3.8841215 1.008333
## 4 3.16198285 5.688700 1.5353967 -3.381881310 0.3929061 4.728503
## 5 2.37244086 5.053564 3.5034443 -3.884121530 -3.8841215 4.753427
## 6 1.80848966 5.742876 4.3556708 1.143558201 -0.5072036 6.574845
##      Casc4      Casc5      Casd1      Cask      Caskin1      Caskin2
## 1 6.984071 0.9694223 5.2369655 7.922242 6.95371931 8.8401492
## 2 4.446224 2.1942765 6.2999333 6.179151 1.14105146 7.0560791
## 3 6.790163 0.3033916 1.9111385 3.171443 -1.93173924 0.6984974
## 4 5.927685 4.5842516 5.7475288 6.863135 4.05613923 2.8541457
## 5 6.499485 1.8175364 0.7833343 6.447013 -0.04458439 3.3838991
## 6 7.074153 3.1945168 5.5407296 6.887709 8.54778213 6.6087035
##      Casp1      Casp12      Casp14      Casp2      Casp3      Casp4      Casp6
## 1 -1.71275130 -3.429892 -3.8841215 5.266684 5.551216 -1.319363 2.339310
## 2 -1.70485700 3.722406 -3.8841215 5.293596 5.134317 3.809674 6.827051
## 3 0.05610664 -1.131317 3.2022392 2.410380 1.375592 -3.884122 6.701329
## 4 0.64330790 -1.845641 -0.3698491 6.947302 5.793806 -1.804517 4.882164
## 5 -1.77010377 -3.884122 0.9041264 6.395140 6.794342 -2.197374 6.498286
## 6 1.54226921 -1.279784 -3.8841215 4.647642 4.147194 -3.379887 3.258840
##      Casp7      Casp8      Casp8ap2      Casp9      Casq1      Casq2
## 1 3.9217285 -0.07565986 3.8731372 4.2612362 -1.6923498 -1.6203400
## 2 6.5926890 6.72906315 5.0088377 4.7470914 0.7239379 4.4115690
## 3 7.8260144 7.38912198 0.5144282 0.5144282 -3.8841215 -1.1313170
## 4 3.4129407 2.57818837 5.5854508 4.7084405 0.8063900 3.8367737
## 5 -1.1730114 3.73278388 0.4279671 3.0720655 2.5309179 4.4101384
## 6 3.7506448 2.40069016 5.6209130 4.9363340 1.4109595 -0.9502935
##      Casr      Cass4      Cast      Casz1      Cat      Catsper2
## 1 1.541655 0.5829977 -0.5458021 -0.79312864 7.010454 2.234808
## 2 -3.884122 -1.7122704 7.6362753 -0.57149483 7.719880 1.941364
## 3 -3.884122 -1.9317392 1.3755916 1.91113848 4.499303 -3.884122
## 4 -3.498924 1.2411159 3.1401967 0.50800705 8.288267 2.743678
## 5 -3.884122 -2.8071174 0.0631199 1.54772616 8.326647 -2.197374
## 6 -2.524445 -3.4511394 1.5032772 -0.93949817 7.381439 4.122145
##      Catsper3 Catsperg1 Catsperg2      Cav1      Cav2      Cav3      Cbfa2t2
## 1 -2.690423 -2.5428672 -3.4276669 6.9853286 5.1457089 -3.794983 4.498630
## 2 -3.651962 -3.2277824 -3.6519623 9.6496124 7.6057621 -3.656504 5.022738
## 3 -3.884122 -3.8841215 -3.8841215 8.4054674 7.9411733 -1.931739 4.271420
## 4 -2.517858 -1.2156395 -3.8841215 6.8471536 7.7968523 -2.485570 7.326115
## 5 -3.884122 -3.8841215 -3.8841215 5.8146155 7.5742668 -3.884122 7.501939
## 6 -2.424867 -1.3133961 -2.7330183 4.0867626 4.9644586 -3.044745 5.388209
##      Cbfa2t3      Cbfb      Cbl      Cblb      Cblc      Cbl11      Cbln1
## 1 0.3811048 6.552959 5.5025005 4.268250 -3.3627000 3.834966 1.41329891
## 2 4.8747288 6.262052 5.3806441 4.331338 -2.9956232 3.551720 -1.65402030
## 3 0.8617169 3.813884 5.1396152 3.107806 5.5033368 2.356639 -3.88412153
## 4 4.5470754 5.577382 2.7091464 4.761935 -0.8548238 6.073557 -1.21196783
## 5 2.1462087 5.504153 0.1633391 2.413722 -3.8841215 4.623101 -3.88412153
## 6 -0.7960014 6.578275 6.0309008 6.330432 -2.9809405 3.774108 -1.76200770
##      Cbln2      Cbln3      Cbln4      Cbr1      Cbr3      Cbr4
## 1 1.6978142 -2.0980688 -1.0452881 5.195124 4.0312016 2.402386
## 2 3.1408217 -2.3597589 -2.3587360 4.876968 -0.2388625 3.229568
## 3 -3.8841215 -3.8841215 -3.8841215 7.624754 4.7595477 6.939287
## 4 -1.7662960 -0.5286107 -0.6325041 6.529726 2.7974695 4.601499
## 5 -3.8841215 -3.8841215 -3.8841215 6.841430 2.7562522 5.629902

```

```

## 6 -1.7724196 0.3806326 -1.9082793 4.421177 5.5979599 3.223701
##          Cbs          Cbwd1          Cbx1          Cbx2          Cbx3          Cbx4
## 1  2.4337285 3.053764646 4.659333 2.0096597 2.4560544 6.033070
## 2 -0.3132818 3.794566110 5.208778 2.3708756 2.3342817 4.911343
## 3  2.7391666 -1.131316983 5.853005 0.6984974 6.2857063 5.040846
## 4  7.9170366 4.208550011 5.944983 3.1545431 5.8225929 2.174832
## 5  6.9488918 4.265426993 5.279729 1.3492478 6.4041293 2.922783
## 6  8.5255913 3.140403687 5.283996 2.7542233 2.5080876 6.620514
##          Cbx5          Cbx6          Cbx7          Cbx8          Cby1          Cc2d1a          Cc2d1b
## 1  7.517269 6.921711 2.44118996 3.716365 5.177758 4.7080675 6.030051
## 2  6.272153 6.113358 0.68808598 3.014159 5.215875 4.3940217 4.407516
## 3  8.429255 3.965193 0.05610664 -3.884122 2.182248 0.5144282 1.263249
## 4  8.743745 4.805730 3.22356276 3.032465 6.821669 3.2171771 4.117957
## 5  8.604693 3.879966 0.50638872 3.812116 7.209159 0.9609302 3.006118
## 6  9.229317 5.776088 3.47126989 5.007279 4.553664 5.4041397 5.957119
##          Cc2d2a          Ccar1          Ccbe1          Ccbl1          Ccbl2          Ccdc101          Ccdc102a
## 1  5.3272860 5.983988 0.9546633 4.2934059 2.4252216 3.927945 -1.7448904
## 2  4.0419846 6.924731 -2.4823940 3.0053472 1.1708297 4.674516 4.4700991
## 3  1.0083330 3.074902 -3.8841215 0.5144282 0.3033916 1.753727 -3.8841215
## 4  5.3803510 7.643525 -2.7167670 5.1587542 4.2429928 6.006410 0.3081162
## 5  0.9041264 5.670915 -3.8841215 3.1102338 3.9932318 5.916858 0.2570463
## 6  6.7653300 7.065987 -3.2680874 4.2567169 3.9749978 2.823043 3.9238264
##          Ccdc103          Ccdc104          Ccdc105          Ccdc106          Ccdc107          Ccdc108
## 1 -1.7417011 5.596065 -2.954275 4.05318906 4.166820 -3.5985761
## 2 -1.5912547 5.374631 -3.884122 -0.04487018 4.434912 -2.4907738
## 3 -1.9317392 1.375592 -3.884122 0.05610664 5.621974 -3.8841215
## 4  2.2601850 5.616657 -3.114158 4.41994149 4.638816 -1.4558510
## 5 -2.8071174 5.000359 -3.884122 4.14189416 5.803010 -2.8071174
## 6  0.6385513 5.363318 -3.660779 2.17755712 4.046929 1.1289925
##          Ccdc109b          Ccdc11          Ccdc110          Ccdc112          Ccdc113          Ccdc114
## 1 -2.50317791 -2.4761062 -2.703359 2.1793372 -3.7949831 2.9911782
## 2  0.92388639 -1.9098432 -3.884122 -0.1886719 -2.5768592 1.6156393
## 3  0.05610664 -3.8841215 -3.884122 -1.1313170 -1.1313170 -0.6195262
## 4 -1.33389905 -2.6915534 -3.097636 2.3988402 -0.3051552 3.6374707
## 5 -2.80711744 -3.8841215 -3.884122 4.9202662 -3.8841215 -0.9471720
## 6 -3.13767524 -1.6335771 -3.451139 2.1908030 -0.7449263 3.7397297
##          Ccdc115          Ccdc116          Ccdc117          Ccdc12          Ccdc120          Ccdc121
## 1  4.4799740 -1.2328337 5.3870204 3.968903 3.16523366 -3.794983
## 2  4.4701323 -1.1943236 6.0107991 4.854137 1.17151261 -2.182835
## 3  0.3033916 -0.6195262 -0.2425151 5.581551 2.30081861 -3.884122
## 4  4.6177688 -3.2897395 3.3392671 4.506990 2.47047742 -2.597952
## 5  4.3422715 -2.8071174 2.9227833 4.304361 3.54118834 -2.197374
## 6  3.3710747 -0.4651230 4.9434321 3.449490 2.41080173 1.148974
##          Ccdc122          Ccdc124          Ccdc125          Ccdc126          Ccdc127          Ccdc129          Ccdc13
## 1 -0.1629358 5.542237 -1.9827833 3.226726 5.373590 -3.411148 3.4088894
## 2  2.7187840 5.403288 4.6000964 5.773941 5.198307 -3.884122 -1.8832078
## 3 -0.6195262 8.057322 -1.9317392 7.233834 8.082370 -3.884122 -0.6195262
## 4  1.0894299 6.360526 -0.2934908 4.101652 7.191154 -2.446089 4.1471313
## 5 -2.8071174 7.074869 -3.8841215 2.217879 7.212087 -3.884122 4.9730020
## 6  2.5910611 4.197036 -1.2380627 3.096200 5.560878 -3.884122 3.4873862
##          Ccdc130          Ccdc132          Ccdc134          Ccdc135          Ccdc136          Ccdc137
## 1  3.4464181 5.493928 5.385338 -3.5553919 1.7379748 4.8289916
## 2  3.3246694 5.391088 3.008784 -1.9907611 4.0321145 4.6088432
## 3  0.3033916 1.577013 -1.931739 -3.8841215 -0.2425151 0.8617169

```

```

## 4  5.1344795 5.549176 4.770854 0.4359119 4.7872781 4.6815655
## 5  3.1836685 3.951792 2.329944 -0.4264149 2.5679590 2.0963708
## 6  3.5361419 5.935264 4.271013 -0.7980790 6.6799965 4.4514142
##      Ccdc138      Ccdc14      Ccdc141      Ccdc142      Ccdc146      Ccdc147
## 1  1.4330942 2.18089244 0.20606532 3.5551702 -1.9174443 -3.234363
## 2  1.4302342 2.08136585 9.50084931 2.5793067 -2.2729379 -3.483745
## 3 -3.8841215 -0.61952623 -0.61952623 -1.9317392 -3.8841215 -3.884122
## 4  3.8275144 3.77544425 3.47488774 1.7156959 0.4224648 -3.884122
## 5 -1.1730114 2.90841386 -2.19737395 2.3513488 -3.8841215 -3.884122
## 6  3.4404910 3.19444364 7.88944518 4.4221243 1.8286455 -3.268087
##      Ccdc148      Ccdc149      Ccdc15      Ccdc150      Ccdc151      Ccdc152
## 1  0.3332630 4.2276199 -0.04812399 -2.6412349 -0.4289632 -2.8313702
## 2 -1.3957006 3.6742311 0.63279934 -2.4601722 -2.5532032 4.6225633
## 3  3.2619268 -1.9317392 -0.61952623 -3.8841215 -3.8841215 -3.8841215
## 4  2.0712969 2.4856009 2.50621827 -3.1978120 2.2170404 -1.5038208
## 5  3.6914197 -1.7701038 -3.88412153 -3.8841215 -3.8841215 -3.8841215
## 6 -0.8344318 4.1925388 1.73650957 -1.7919785 2.1892404 -1.2757933
##      Ccdc153      Ccdc154      Ccdc155      Ccdc157      Ccdc158      Ccdc159
## 1 -3.756645 -3.794983 -2.3028902 3.5180606 -3.7235669 2.48165761
## 2 -2.272938 -1.639469 -3.4837445 4.8474872 -3.4243451 -0.08022808
## 3 -3.884122 -3.884122 -3.8841215 -3.8841215 -3.8841215 -3.88412153
## 4  2.646277 -3.884122 -0.1250206 3.4519217 -0.3525765 2.13154048
## 5  4.546296 -3.884122 -2.1973739 1.6889296 -3.8841215 -3.88412153
## 6 -1.138668 -3.884122 -2.2309101 7.0350858 -1.7620077 3.72636406
##      Ccdc160      Ccdc17      Ccdc18      Ccdc19      Ccdc22      Ccdc23
## 1 -0.16373869 0.5608364 -0.14403817 -3.7010282 4.4902147 4.277575
## 2 -1.59020322 1.7853233 1.57306897 0.1969975 4.2492214 5.522638
## 3 -3.88412153 -1.9317392 -0.61952623 -1.9317392 0.5144282 6.429292
## 4  0.08181777 1.8979471 3.73980637 -0.0592599 4.8555111 6.501745
## 5 -3.88412153 -2.8071174 -1.77010377 1.6549031 4.2137739 7.407389
## 6  0.73568355 1.6879607 2.65475253 -0.9409905 4.5086607 3.531295
##      Ccdc24      Ccdc25      Ccdc27      Ccdc28a      Ccdc28b      Ccdc3
## 1  0.6922618 4.214143 -1.9719212 1.7444971 5.240831 -0.83008912
## 2 -0.5005483 4.568668 -3.2515854 2.4973446 5.093955 2.07560163
## 3 -3.8841215 4.499303 -1.9317392 -0.6195262 6.189081 0.30339162
## 4  0.9652062 5.669969 -3.8841215 4.1353786 6.138782 1.81390539
## 5 -3.8841215 5.163531 -3.8841215 0.7833343 7.187008 0.50638872
## 6  1.0720062 4.426050 -3.6744822 1.1985081 5.256164 3.24853215
##      Ccdc30      Ccdc32      Ccdc33      Ccdc34      Ccdc36      Ccdc37
## 1  0.81943881 4.473967 -3.8841215 4.075162 -1.3340749 1.80648266
## 2  2.16408686 4.438353 -0.5701098 4.164237 -2.9352776 -2.37291213
## 3 -1.93173924 1.983840 -1.1313170 1.375592 -3.8841215 -3.88412153
## 4  2.98553220 6.063127 2.3408551 5.955354 -0.2931425 0.08287917
## 5  0.84499419 6.584415 -0.2876030 5.467866 -2.8071174 0.50638872
## 6  2.03213411 3.874145 -1.9790411 4.320908 -1.8954416 6.23201681
##      Ccdc38      Ccdc39      Ccdc40      Ccdc42      Ccdc42b      Ccdc43
## 1 -0.9859521 2.09844808 -0.09725542 -3.5146428 -2.090841 4.228320
## 2 -1.8183758 -0.73831650 -1.08431935 -0.5621877 -1.943079 4.923841
## 3 -3.8841215 -3.88412153 -3.88412153 -3.8841215 -3.884122 7.440074
## 4 -0.4453856 3.33015612 2.69510794 -3.8841215 -3.082383 5.739960
## 5 -2.8071174 1.30605160 -3.88412153 -3.8841215 -3.884122 4.996968
## 6 -0.1271929 4.10798624 1.17299391 -3.4511394 -2.138425 4.299757
##      Ccdc47      Ccdc50      Ccdc51      Ccdc53      Ccdc55      Ccdc57      Ccdc58
## 1  6.815400 6.339249 1.616927 3.741671 2.794516 2.2017126 2.867329

```

```

## 2 7.015815 7.240635 3.104712 5.228153 4.457157 0.9196669 3.628324
## 3 3.139975 2.898090 -1.931739 7.708924 4.652113 -1.9317392 6.310652
## 4 7.189690 6.687246 3.815507 5.640078 6.477399 3.3657845 4.506371
## 5 7.339390 6.017363 4.484674 6.029032 6.461850 -2.8071174 6.139276
## 6 6.680334 7.362534 3.351767 3.311475 4.833794 3.9345931 3.693053
##      Ccdc59      Ccdc6      Ccdc60      Ccdc61      Ccdc62      Ccdc63
## 1 4.448076 4.977150 -3.8841215 3.1054373 2.2588086 -3.5680897
## 2 4.650990 4.680923 -3.4243451 3.2217248 2.2932148 -2.9369560
## 3 5.066179 7.507897 -3.8841215 -1.1313170 -3.8841215 -3.8841215
## 4 6.185745 7.173493 -3.2878217 1.0794157 2.2621612 -1.2277678
## 5 6.444526 6.722237 -3.8841215 -0.7519471 -1.7701038 -3.8841215
## 6 4.981443 6.283238 0.8319134 3.9664784 3.4592839 -3.4904843
##      Ccdc64      Ccdc64b      Ccdc65      Ccdc66      Ccdc67      Ccdc68
## 1 3.2389521 -3.3359375 0.2790579 3.813981 -3.3811982 -3.7901666
## 2 0.5496547 1.4982332 -1.1417088 3.857269 -1.2089885 -0.8730929
## 3 1.1414140 0.6984974 -1.9317392 -1.931739 -3.8841215 -3.8841215
## 4 0.2957194 -2.3654972 1.7798817 4.381097 0.5910537 -3.5296461
## 5 -0.5800187 -0.7519471 2.6393048 -1.440886 -3.8841215 -3.8841215
## 6 1.6131854 -3.6607788 -0.9182238 4.823920 0.9445446 -3.8841215
##      Ccdc69      Ccdc71      Ccdc73      Ccdc74a      Ccdc77      Ccdc78
## 1 -1.4797485 3.8567766 1.4411475 2.7334415 3.1322884 1.57407570
## 2 1.4520478 4.9734424 -0.3025248 -0.2907149 3.8351519 -1.52922809
## 3 -1.9317392 0.3033916 -1.9317392 -3.8841215 -0.6195262 -1.93173924
## 4 -1.3905711 3.7754881 0.9372642 1.7915840 4.0496609 0.55969672
## 5 3.4147268 3.9306175 2.0182291 2.7401147 2.9650523 -3.88412153
## 6 1.0409570 3.5968468 1.2868835 3.3977888 4.2063175 2.71102710
##      Ccdc79      Ccdc8      Ccdc80      Ccdc81      Ccdc83      Ccdc84
## 1 -2.7344113 -0.7114943 1.849680 -2.3347200 -3.884122 2.7233138
## 2 -3.2277824 4.6490257 2.491635 -2.8888941 -3.424345 2.6145009
## 3 4.3001746 -1.1313170 6.089641 -3.8841215 -3.884122 -1.9317392
## 4 -3.6749365 -0.7341078 6.453674 -0.5522086 -3.381881 0.8922065
## 5 -2.8071174 -3.8841215 5.895161 -2.1973739 -3.884122 1.5101550
## 6 -3.4511394 4.3676684 8.205453 -0.2628870 -1.894268 4.3848931
##      Ccdc85a      Ccdc85b      Ccdc85c      Ccdc86      Ccdc87      Ccdc88a      Ccdc88b
## 1 2.2617962 5.458741 2.455211 4.311795 -2.2443579 6.635267 1.3411552
## 2 6.9287613 7.204827 3.325618 3.961761 -3.6565043 6.704655 -2.2716306
## 3 -1.9317392 2.053052 -3.884122 1.753727 -3.8841215 5.484669 -3.8841215
## 4 2.6732227 1.407441 -2.331004 4.809043 -2.0883926 7.249787 -2.3086728
## 5 1.7221719 -0.287603 -2.807117 1.015582 -3.8841215 5.268521 -3.8841215
## 6 4.4225566 5.035161 3.001563 3.424389 -1.9859471 8.333376 -1.9790411
##      Ccdc88c      Ccdc89      Ccdc9      Ccdc90b      Ccdc91      Ccdc92
## 1 5.5146104 0.7948708 5.082039 4.306426 4.6996458 4.800703664
## 2 4.4912994 -1.3422152 5.367471 5.282303 5.6584685 0.002454808
## 3 -0.2425151 -1.9317392 1.577013 3.528133 0.3033916 -1.131316983
## 4 3.5649311 0.7058770 2.619692 6.616109 4.3875666 2.007859829
## 5 0.7833343 -3.8841215 -1.173011 6.541993 4.7812943 3.522439751
## 6 7.1006334 -0.2160951 6.004156 4.570574 3.4948113 1.293876184
##      Ccdc93      Ccdc94      Ccdc96      Ccdc97      Cchcr1      Ccin
## 1 4.8744146 2.801172 -0.003584553 5.743310 1.1602339 -3.6013384
## 2 4.3078052 3.513029 -0.464546689 5.535355 4.7379107 -1.6777711
## 3 0.3033916 -1.931739 -1.931739237 1.668074 -0.2425151 -3.8841215
## 4 4.4508741 2.223779 0.312020799 5.554175 1.8468822 -3.8841215
## 5 4.7969801 -1.770104 -3.884121530 5.089036 -1.1730114 -3.8841215
## 6 5.7738048 3.297157 1.879542792 4.936741 4.1327564 -1.2015893

```

##	Cck	Cckbr	Ccl1	Ccl11	Ccl12	Ccl17	
## 1	1.6697450	-0.5630664	-3.884122	-2.5471266	-1.762528	-2.1890190	
## 2	0.8710058	-2.5532032	-3.884122	-3.4243451	-3.424345	-2.4793973	
## 3	2.8208155	-3.8841215	-3.884122	-3.8841215	6.426034	-3.8841215	
## 4	-0.9337927	-0.1383826	-2.483127	-0.7904455	4.063773	-0.9634666	
## 5	-2.8071174	1.5477262	-3.884122	-3.8841215	3.550472	-3.8841215	
## 6	2.0772312	-2.8405514	-3.884122	-3.8841215	-3.237253	-3.4904843	
##	Ccl2	Ccl20	Ccl22	Ccl24	Ccl25	Ccl27a	
## 1	0.59171093	-3.767000	0.7946203	-1.2321768	1.2092910	2.947207	
## 2	-0.01778942	-0.143885	-3.8841215	-3.8841215	1.7698093	2.201219	
## 3	7.18456122	-3.884122	-3.8841215	1.3755916	-3.8841215	3.773441	
## 4	5.57676837	-3.884122	-2.3903125	3.1531635	2.8102267	3.679233	
## 5	4.20791885	-3.884122	-2.8071174	-1.1730114	2.3932290	4.605394	
## 6	-1.08752856	-3.451139	-3.8841215	-3.8841215	1.0160998	3.036477	
##	Ccl3	Ccl4	Ccl5	Ccl6	Ccl7	Ccl8	
## 1	2.78151608	2.6249229	-2.4446875	1.2277903	-0.6705516	-3.45096805	
## 2	0.48912388	-1.1937439	-0.5908917	0.7363567	-2.5932726	-3.65650428	
## 3	1.14141397	6.7952219	7.6913936	7.1415128	4.0522874	-1.93173924	
## 4	3.28221263	3.4149572	1.7725573	1.8387776	5.7014738	0.06860578	
## 5	2.24099926	-0.7519471	3.3310089	-1.4408855	1.8777815	-0.04458439	
## 6	-0.05949875	-0.1973427	-3.8841215	-3.2808450	-2.0532875	-3.88412153	
##	Ccl9	Ccm2	Ccna1	Ccna2	Ccnb1	Ccnb1ip1	
## 1	1.7381800	4.695112	-1.5093921	2.9928774	1.7340349	-3.884122	
## 2	-1.8010665	5.611806	-3.3356546	4.4267564	2.2610359	-3.651962	
## 3	7.6501060	3.427465	-3.8841215	1.3755916	1.9838395	-3.884122	
## 4	0.8907228	3.885247	1.5826954	4.4591391	6.0444096	-1.855109	
## 5	-2.1973739	5.023878	-3.8841215	2.8036091	5.4776318	-3.884122	
## 6	-1.7519903	4.337503	-0.5561272	4.0004193	1.8056636	-3.352813	
##	Ccnb2	Ccnc	Ccnd1	Ccnd2	Ccnd3	Ccnbdp1	Ccne1
## 1	2.2685150	4.739388	6.875772	4.386002	5.439791	5.798970	2.7297082
## 2	4.2578663	4.236625	8.681628	5.458613	6.963057	5.430280	2.1660806
## 3	1.2632490	7.877009	5.683292	7.730212	2.242751	9.590227	0.8617169
## 4	5.0010912	6.147942	4.373414	10.477106	2.672397	6.784340	2.8656952
## 5	3.4841954	7.105897	4.254107	9.235353	3.804376	7.265210	4.1171157
## 6	2.4626596	5.207776	7.600016	8.850835	5.682225	4.653094	3.2573227
##	Ccne2	Ccnf	Ccng1	Ccng2	Ccnh	Ccni	Ccnj
## 1	0.8378045	1.8151969	5.642474	5.297593	4.958503	7.478228	4.032845
## 2	2.2300448	0.8363169	5.400842	8.972812	4.475158	8.621836	3.877367
## 3	-1.9317392	1.7537270	7.623332	3.773441	6.106020	4.018078	2.859970
## 4	3.2253882	5.2140587	4.781971	5.333001	7.150908	7.108698	4.549422
## 5	1.4319435	3.2648698	2.512034	5.400157	7.363951	8.011617	3.019551
## 6	0.8594218	2.5375306	5.100383	5.578877	4.540721	6.252025	3.775397
##	Ccnj1	Ccnk	Ccnl1	Ccnl2	Ccno	Ccnt1	
## 1	2.56982841	5.52775739	6.31859685	6.8150971	-1.003626	3.804892	
## 2	4.87594610	4.67213653	8.61613669	7.0272779	-1.227783	5.238928	
## 3	-1.93173924	0.05610664	0.05610664	5.1788537	-3.884122	1.141414	
## 4	1.86432906	3.35317714	5.15535455	4.9501231	-3.498924	6.387773	
## 5	3.34174318	3.14741838	3.93771032	-0.1609828	-3.884122	5.706648	
## 6	3.62925870	5.44748996	8.71760060	8.0447453	3.737251	4.922157	
##	Ccnt2	Ccny	Ccnyl1	Ccp1	Ccr1	Ccr10	Ccr11
## 1	6.258451	7.143488	4.6698114	6.479669	0.3401770	-2.0682176	-3.004180
## 2	6.015019	8.285301	5.4067826	6.629192	-3.2515854	0.4509502	-3.884122
## 3	5.268888	1.911138	-3.8841215	6.508433	8.3368696	-3.8841215	-3.884122
## 4	5.536518	3.773846	0.7945549	6.896502	3.3986343	-2.0240300	-3.884122

```

## 5 2.922783 4.865529 1.3492478 5.863853 0.9041264 -3.8841215 -3.884122
## 6 7.081173 6.023337 3.9852371 5.923659 -2.8485783 -1.3857175 -3.674482
##      Ccr2      Ccr3      Ccr5      Ccr6      Ccr7      Ccr9
## 1 -2.4845343 -3.309084 1.3934486 0.3508201 -1.01552843 -2.5881779
## 2 -3.1165114 -3.476608 -1.7595499 -3.8841215 0.44294906 -1.4091098
## 3 5.8530055 -3.884122 9.1553276 -3.8841215 -3.88412153 -1.9317392
## 4 -0.5721329 -3.653944 0.8679967 -0.7419936 -1.15091637 -0.1864293
## 5 2.0447493 -3.884122 -1.4408855 -3.8841215 -2.19737395 -2.8071174
## 6 -3.8841215 -3.884122 -2.3524456 -3.2808450 -3.04474463 -2.5244447
##      Ccr12 Ccrn41      Ccs      Cct2      Cct3      Cct4      Cct5
## 1 3.3878055 3.389129 4.429808 7.864982 7.890115 7.176047 8.057481
## 2 6.4593086 7.120332 5.329674 8.433341 7.847324 7.955379 8.694626
## 3 6.6741257 3.347069 8.547899 8.397173 8.701299 9.371005 8.872021
## 4 2.8766053 3.148753 6.260710 8.241101 8.658300 7.866545 9.542131
## 5 3.3734750 4.399903 6.768718 8.998978 9.177545 8.176590 9.970201
## 6 1.9258442 4.404994 4.999332 6.979692 6.745193 6.492615 6.754475
##      Cct6a      Cct6b      Cct7      Cct8      Ccz1      Cd101      Cd109
## 1 7.550256 -1.7042324 7.973426 7.307207 5.47001960 -1.423007 -3.1260294
## 2 7.436117 -1.8456210 8.147965 7.455473 6.56199075 -1.157633 4.5728132
## 3 8.691836 -3.8841215 10.193105 8.242797 0.05610664 -3.884122 2.1822477
## 4 8.407619 0.7924736 9.295347 8.646307 3.91507775 -3.653944 0.5051276
## 5 8.364642 -3.8841215 9.505866 8.480880 4.69183425 -3.884122 0.7189210
## 6 6.728027 -1.1540433 6.318114 6.761263 5.12179437 -2.986249 -1.5453772
##      Cd14      Cd151      Cd160      Cd163      Cd164      Cd16412
## 1 1.8064263 4.795322 -2.2005035 -0.4828019 7.003865 -2.3340277
## 2 2.3583526 9.382925 -1.3779235 -2.5614538 7.989144 -2.5482845
## 3 9.3748120 9.466459 -3.8841215 1.9838395 8.968107 -3.8841215
## 4 4.5820370 6.046704 -0.9759993 3.6396587 8.597272 -3.2991483
## 5 3.5129733 6.787487 -3.8841215 0.7833343 8.024166 -3.8841215
## 6 3.0370006 5.483210 -2.0576622 -1.3350955 7.508398 -1.9241560
##      Cd180      Cd19      Cd1d1      Cd1d2      Cd2      Cd200
## 1 1.1903381 -3.8841215 0.4692977 -3.884122 -3.4298924 5.3932308
## 2 -1.4272679 -0.2048683 3.8859366 -1.818732 -0.5146396 7.0738010
## 3 -0.2425151 -3.8841215 1.1414140 -3.884122 -1.9317392 7.1845612
## 4 -1.9945712 -3.8841215 5.2036718 -3.427701 -1.2110280 7.0068828
## 5 -2.8071174 -3.8841215 6.0022188 -3.884122 3.4147268 6.4357852
## 6 -2.1909585 -3.6607788 2.1304034 -3.379887 -3.8841215 3.7911901
##      Cd200r1 Cd200r2 Cd200r3 Cd209b Cd209d Cd209e
## 1 -2.5090779 -3.884122 -3.884122 -2.3402131 -3.88412153 -3.8841215
## 2 -3.6519623 -3.651962 -3.884122 -3.8841215 -3.88412153 -3.8841215
## 3 -0.2425151 -3.884122 -3.884122 1.9838395 -1.93173924 -1.9317392
## 4 1.4998835 -2.640482 -1.978002 3.6157537 -0.03915416 -0.8063992
## 5 -1.1730114 -3.884122 -3.884122 0.9609302 -2.80711744 -2.1973739
## 6 -2.8744502 -3.451139 -3.237253 -3.8841215 -3.88412153 -3.8841215
##      Cd22      Cd226      Cd244      Cd247      Cd248      Cd24a
## 1 -2.5711203 -2.035197 -3.5680897 -3.485382 1.091832792 1.738055
## 2 -3.0762312 -3.651962 -3.6565043 -0.222365 5.505109497 6.326495
## 3 -1.1313170 -3.884122 -3.8841215 -3.884122 1.141413971 7.536878
## 4 0.3284634 -2.928743 -1.6174247 -2.503103 2.728251936 7.851871
## 5 -2.8071174 -3.884122 -3.8841215 -3.884122 4.435413892 9.169282
## 6 -3.8841215 -2.288570 -1.6657853 -2.028792 1.354680908 4.733410
##      Cd27      Cd274      Cd276      Cd28      Cd2ap      Cd2bp2
## 1 -2.16488477 0.4133279 5.3758103 -2.8810564 4.653295 6.198756
## 2 1.06114761 0.5198822 3.5033264 -0.5229983 7.635683 6.444475

```

```

## 3 -3.88412153 0.3033916 -1.1313170 -3.8841215 1.668074 1.263249
## 4 -1.98437274 2.2315089 3.5488847 -2.7162757 4.155883 6.170038
## 5 -3.88412153 1.5477262 2.6040729 -3.8841215 3.568862 4.920266
## 6 -1.79907439 0.8515296 4.7843067 -3.5122488 6.122065 5.944186
##      Cd300a      Cd300e      Cd3001b      Cd3001d      Cd3001f      Cd3001g
## 1 0.5975052 -3.0034812 -1.815665 -3.016590 -0.1581964 -3.7669998
## 2 -1.4427730 -2.8070815 -2.948662 -2.820269 -3.6565043 2.7113757
## 3 7.8210624 -3.8841215 -1.931739 -3.884122 -3.8841215 -1.9317392
## 4 2.3554648 -3.0823831 -3.674937 -2.800006 -3.3944957 -1.4697839
## 5 4.5039166 -3.8841215 -3.884122 -3.884122 -3.8841215 -3.8841215
## 6 -1.9806404 -3.8841215 -3.884122 -3.884122 -3.2808450 -3.2808450
##      Cd302      Cd320      Cd34      Cd36      Cd37      Cd38      Cd3d
## 1 4.260700 4.732102 1.083303 -1.1614385 1.93813723 0.08526032 -3.536505
## 2 4.268743 7.517983 11.036282 -0.6438180 0.09161946 4.71874636 -1.272984
## 3 8.364361 1.834579 8.085471 1.1414140 5.96947200 6.83506767 -3.884122
## 4 6.573569 5.629951 3.558715 2.6680407 2.03613422 3.69735664 -3.884122
## 5 7.844310 6.032349 5.763639 0.5063887 -0.94717201 0.58076638 -3.884122
## 6 4.184305 4.882857 2.681068 1.6874153 -1.77341066 5.80911843 -3.884122
##      Cd3e      Cd3eap      Cd3g      Cd4      Cd40      Cd44
## 1 -3.88412153 3.764024 -3.8841215 -2.1111038 -2.7004196 -0.09678588
## 2 -3.65650428 3.269892 -0.9454030 -1.1551748 7.5512347 0.61984125
## 3 -1.93173924 1.983840 -3.8841215 -0.2425151 -1.9317392 2.24275094
## 4 -2.44467896 5.801764 -3.1978120 -1.0672661 -0.2692357 3.16571455
## 5 -3.88412153 4.831662 -3.8841215 -1.7701038 -3.8841215 1.11904070
## 6 -3.88412153 2.868988 -3.8841215 -3.8841215 -1.0802330 6.40948060
##      Cd46      Cd47      Cd48      Cd5      Cd53      Cd55
## 1 -0.4399799 5.882426 -2.2954016 -3.199540 3.49475268 0.4136275
## 2 1.0255769 5.292773 -2.4823940 -1.077927 0.93367655 4.2927101
## 3 -3.8841215 4.971031 7.9850020 -3.884122 11.37712860 -0.6195262
## 4 -1.2732235 5.482403 1.9023090 -2.861176 5.10575237 1.5268081
## 5 -3.8841215 5.279729 0.2570463 -3.884122 5.03384129 -2.1973739
## 6 2.1302599 5.710930 -3.8841215 -3.512249 -1.66507371 -1.7839447
##      Cd59a      Cd59b      Cd51      Cd6      Cd63      Cd68
## 1 1.9334634 -3.1423830 -3.8841215 -3.291376 5.353367 3.789430
## 2 6.3663439 -1.7236953 -3.8841215 -1.529706 2.860607 1.151303
## 3 7.3310888 -3.8841215 -3.8841215 -3.884122 10.089841 7.609039
## 4 4.6091291 0.2764031 -3.8841215 -3.884122 8.367006 4.894134
## 5 5.7211081 1.7546656 -3.8841215 -3.884122 9.418570 2.044749
## 6 -0.4138644 -3.1431739 -3.8841215 -3.490484 6.425492 2.606452
##      Cd69      Cd7      Cd70      Cd72      Cd74      Cd79a
## 1 -3.5680897 -3.5680897 -1.3336147 -2.402899 0.3539231 -2.6813572
## 2 1.1550955 -2.1919090 -3.8841215 -2.477045 1.8727270 -0.5198211
## 3 -3.8841215 -3.8841215 -3.8841215 -1.131317 9.4943339 -3.8841215
## 4 -0.4047026 0.1283518 -0.9198039 -2.017560 7.5382274 -2.3960736
## 5 -3.8841215 -2.8071174 2.5861290 -3.884122 8.0399066 -3.8841215
## 6 -3.6744822 -3.8841215 -3.4511394 -1.861586 -1.7145191 -1.9135865
##      Cd79b      Cd80      Cd81      Cd82      Cd83      Cd84
## 1 -2.68786055 -1.9486773 9.975050 5.837613 4.357513 0.49973676
## 2 0.99590549 0.2615775 8.880555 8.604143 5.651889 -1.63523523
## 3 -1.93173924 -3.8841215 12.986323 9.904761 7.473595 0.69849743
## 4 -1.36136415 -1.3731336 11.403165 7.153823 4.489202 2.48552252
## 5 3.13512972 -3.8841215 12.076503 8.741186 1.510155 -0.94717201
## 6 -2.97217796 -2.7658025 9.340001 3.745591 1.934411 -1.80444983
##      Cd86      Cd8a      Cd8b1      Cd9      Cd93      Cd96

```



```

## 1  0.7416076 -3.6064452 -3.6778614  9.720479 -0.58389659 -3.72356689
## 2 -1.7048570 -2.7115565 -3.6565043  5.468099 10.90664257 -2.61323113
## 3  7.2263622 -1.9317392 -3.8841215 11.793738  8.83749412 -3.88412153
## 4  2.8826995 -3.8841215 -3.4277009 10.864974  3.31992754 -0.04126545
## 5  0.5063887 -3.8841215 -3.8841215 11.981327  3.52243975 -3.88412153
## 6 -3.2808450 -3.1376752 -3.6607788  8.693509  3.77725535 -3.66077880
##      Cd97  Cd99l2      Cda  Cdadc1      Cdan1  Cdc123  Cdc14a
## 1  1.8683751 6.454038 -2.4356905 5.032275  5.3558308 6.131789  3.731745
## 2  8.6793978 6.561652 -1.1971367 5.339257  5.0925825 5.112400  4.861381
## 3 -0.2425151 6.897558 -3.8841215 8.788232 -0.6195262 7.252346 -1.931739
## 4  4.0835100 6.508257 -2.7967295 6.436848  3.7958637 7.050931  2.142242
## 5  4.0466955 6.024043 -3.8841215 6.948014  3.8946204 7.652332 -2.197374
## 6  4.2776084 6.137555 -2.7243184 5.096171  6.0265018 5.102252  5.284936
##      Cdc14b  Cdc16      Cdc20  Cdc23  Cdc25a  Cdc25b  Cdc25c
## 1  3.40461137 6.497073  3.4356534 5.943601 3.5761779 2.906611  1.87323351
## 2  3.29264763 6.956515  4.8059588 6.897605 4.9080337 3.613121  1.83849255
## 3  0.05610664 1.479815  0.8617169 2.300819 0.5144282 1.577013  0.69849743
## 4  2.64539269 5.430332  4.3477832 7.288952 4.1667862 5.043573  4.88455414
## 5  2.77221117 6.020706  4.4700718 7.055437 5.2628844 1.349248  4.60539391
## 6  3.64393616 6.392201  2.8429172 5.853741 4.0534099 5.140220  1.88342621
##      Cdc26  Cdc27      Cdc34  Cdc37  Cdc37l1  Cdc40  Cdc42
## 1  3.556913 6.052806 4.67774097 6.788589 6.429042 5.145939  8.714413
## 2  5.019842 7.507502 5.13266294 8.236605 5.706019 5.260533  9.738830
## 3  6.464650 7.040749 0.05610664 6.864246 5.969472 2.696541 11.148049
## 4  5.496331 5.790617 2.25553391 6.177147 5.388941 6.087513  9.599283
## 5  5.534880 5.027207 4.43541389 6.638742 5.293617 4.753427 10.205646
## 6  3.094902 6.740276 3.55880609 5.729805 5.939056 5.613300  7.872259
##      Cdc42bpa Cdc42bpb  Cdc42bpg  Cdc42ep1 Cdc42ep2  Cdc42ep3 Cdc42ep4
## 1  6.979882 7.508853  3.9004899 6.2247558 2.927824  1.8685873 5.438772
## 2  6.615759 8.633000  2.4930149 6.4337689 4.400106  8.3794408 7.554543
## 3  1.668074 2.053052  1.4798145 0.5144282 7.773151  4.3831520 1.983840
## 4  6.008013 3.070749  1.2550411 2.6535747 5.422838  1.9531478 6.187257
## 5  4.117116 3.857702 -0.2876030 4.3582188 6.981003  2.0963708 6.353316
## 6  7.176345 8.050370  5.3559248 5.7592522 1.855073  1.0324191 7.398716
##      Cdc42ep5 Cdc42se1 Cdc42se2      Cdc45  Cdc51      Cdc6  Cdc7
## 1 -0.01690906 7.729966 8.086336  2.6856642 4.750252  1.7217588 4.2789640
## 2  2.74458439 7.979074 7.242398  3.9577788 5.160472  3.2816128 2.8048845
## 3  5.97839549 7.215082 9.043917  0.8617169 1.263249  1.0083330 1.0083330
## 4  1.01780351 6.714380 7.421334  5.1821807 6.093653  5.3685200 4.6185790
## 5  3.25354570 6.798244 7.486303  5.5418784 4.737258  3.4646862 -1.7701038
## 6 -0.44039141 6.709669 6.434976  2.9682671 4.680821  1.7564603 4.0677658
##      Cdc73  Cdca2  Cdca3  Cdca4  Cdca5  Cdca7
## 1  4.674513 2.0219201 2.7615796 3.868837 1.5859117 0.73599454
## 2  5.816775 2.4344096 3.3240787 5.027512 2.6822055 4.03878415
## 3  6.292878 1.7537270 6.4422500 1.668074 1.0083330 1.57701280
## 4  4.009729 5.5333934 6.1726597 5.692231 4.7911184 6.00253976
## 5  4.470072 0.3450364 6.3599312 4.839257 0.0631199 5.35318474
## 6  5.471671 3.4821255 2.9820973 3.606152 2.4909061 3.20977823
##      Cdca7l  Cdca8  Cdcp1  Cdh1  Cdh10  Cdh11
## 1  2.01641063 3.1595806 -3.5264396 -2.862437 5.5044559 6.2247839
## 2  3.51627295 3.3797216 -3.8841215 -2.272938 -1.1585745 7.4326708
## 3 -0.24251506 2.4103803  1.1414140 3.232392 0.5144282 7.2633399
## 4  3.04946674 6.5449312 -1.3705524 0.809926 5.1642230 5.6620174
## 5  1.68892956 5.4381644 -0.2876030 2.772211 4.1418942 4.1662542

```

```

## 6 2.01429523 3.1714272 -3.8841215 -3.884122 6.8714653 6.6726035
##      Cdh12      Cdh13      Cdh15      Cdh17      Cdh18      Cdh19
## 1 -1.510451 6.55506067 -1.015285 -2.8889304 1.447946 1.1368774
## 2 -3.476608 2.55836161 -3.248991 -0.7383165 -1.376394 -3.6519623
## 3 -1.131317 5.17885366 -1.931739 -3.8841215 -3.884122 -3.8841215
## 4 -1.591620 2.73609257 -1.815896 -1.3816371 -2.791033 2.2337981
## 5 -3.884122 -0.04458439 -3.884122 -3.8841215 -3.884122 2.6566033
## 6 -2.862656 4.81724992 -2.362848 -0.1359813 -1.835803 0.2914171
##      Cdh2      Cdh20      Cdh22      Cdh24      Cdh26      Cdh3
## 1 6.79719975 6.2002631 3.0360275 4.1314816 -3.8841215 -2.7698134
## 2 6.97916956 -1.5116790 -0.5621877 1.4237868 0.1779422 -2.7115565
## 3 3.79380441 -3.8841215 -3.8841215 -1.9317392 -3.8841215 3.0067551
## 4 6.38522985 2.0127980 -3.1283151 -1.0981810 0.3182481 -0.4688987
## 5 6.52325534 2.9925589 -3.8841215 -2.1973739 -3.8841215 0.5807664
## 6 7.91949416 6.5441329 1.8731149 3.4591864 -1.8980101 -3.8841215
##      Cdh4      Cdh5      Cdh6      Cdh7      Cdh8      Cdh9
## 1 4.2475178 -0.4452086 4.335208 -0.01975373 -1.35676545 -2.2053748
## 2 1.4576223 10.1795438 1.307314 -2.67814076 -0.97314949 -1.9963549
## 3 2.4621911 6.4030216 -3.884122 0.69849743 -3.88412153 3.7734409
## 4 7.6671720 1.7910856 1.198428 -2.19273085 1.69562581 0.9789416
## 5 6.7746713 4.0401199 -3.884122 -3.88412153 2.90841386 -1.1730114
## 6 5.2221437 3.2043714 3.357427 -2.54709800 -1.66056408 -3.0276140
##      Cdhr1      Cdhr2      Cdhr3      Cdipt      Cdk1      Cdk10      Cdk11b
## 1 1.4618606 -2.0279765 -3.767000 7.022029 2.753130 4.179409 6.008507
## 2 -2.1562509 -3.8841215 -1.589188 7.413090 6.326148 3.605221 7.336759
## 3 -1.9317392 -3.8841215 -1.931739 7.963816 2.971435 3.793804 6.820254
## 4 -3.6539444 -3.8841215 1.704499 5.939285 6.714625 4.426004 6.145684
## 5 -1.7701038 -3.8841215 4.636241 6.143883 6.168210 3.887312 2.756252
## 6 -2.7173925 -3.8841215 -1.711590 6.434601 3.260901 4.892246 8.053522
##      Cdk12      Cdk13      Cdk14      Cdk15      Cdk16      Cdk17      Cdk18
## 1 4.928464 5.443335 6.476374 -3.6540045 7.4308054 5.6763419 3.870032
## 2 5.946869 6.355655 4.525584 -3.8841215 6.7136661 7.1521679 -2.112253
## 3 7.107346 5.147549 4.717529 -3.8841215 0.8617169 0.8617169 -3.884122
## 4 5.439272 3.894815 4.978781 -3.0215668 4.9165398 5.0456850 1.758476
## 5 6.221490 2.512034 5.753625 -3.8841215 5.7272612 4.4354139 3.604954
## 6 5.865704 5.831722 4.614853 -3.6607788 7.0759514 6.7558981 -2.521641
##      Cdk19      Cdk2      Cdk20      Cdk2ap1      Cdk2ap2      Cdk4      Cdk5
## 1 6.3913189 4.9598634 3.4362587 5.339408 4.900124 7.691378 6.519683
## 2 6.7453169 6.3894322 2.7689492 4.559351 4.193686 7.639653 5.320555
## 3 0.5144282 1.9111385 -0.6195262 3.644828 1.911138 8.785693 5.147549
## 4 5.4290048 4.8792618 5.2797580 5.236425 5.382931 9.191728 6.286373
## 5 2.1462087 3.1596033 5.1725775 5.924019 5.603386 9.540348 7.215009
## 6 5.7344961 5.4941080 4.3134430 4.608605 3.995294 6.001495 6.180042
##      Cdk5r1      Cdk5r2      Cdk5rap1      Cdk5rap2      Cdk5rap3      Cdk7      Cdk8
## 1 6.021968 4.8281647 2.443142 5.1386747 5.618388 4.595793 3.5635555
## 2 2.466085 1.1423016 2.723898 4.3983726 5.401316 5.005443 4.2888919
## 3 6.256659 -3.8841215 6.562841 0.3033916 7.216968 7.363806 0.3033916
## 4 6.468259 -1.7103647 4.047439 4.8529350 7.034508 5.871470 2.8359412
## 5 6.915151 -3.8841215 4.990161 -1.4408855 7.009894 5.990329 0.0631199
## 6 2.995469 0.3650678 3.289414 6.7988744 5.564715 5.330503 5.3441199
##      Cdk9      Cdkal1      Cdkl1      Cdkl2      Cdkl3      Cdkl4
## 1 5.1030922 3.459913 -1.95652104 1.9457104 2.4788980 -0.9140219
## 2 6.5263548 4.407734 1.69539023 1.1310377 1.7259692 -1.2939099
## 3 0.8617169 6.278499 -3.88412153 -1.1313170 -0.6195262 -1.9317392

```

```

## 4 3.3326684 6.085089 -1.50610307 2.3411664 2.3758450 1.0818172
## 5 4.3261459 5.487332 -3.88412153 4.1045651 2.0963708 -3.8841215
## 6 6.1096610 3.840683 0.01626291 -0.2061840 3.3265842 0.4074230
##      Cdk15      Cdkn1a      Cdkn1b      Cdkn1c Cdkn2aip Cdkn2aipn1      Cdkn2b
## 1 3.04518326 2.922120 5.671314 4.9688683 4.217226 4.692753 -1.5087204
## 2 2.59247010 8.792570 7.309598 7.1660762 5.821217 6.355350 6.5344275
## 3 0.05610664 6.260322 7.423834 5.1396152 3.171443 1.983840 -1.9317392
## 4 2.03555040 4.110205 7.282848 2.2504177 4.630465 5.321827 -1.7223553
## 5 -1.77010377 4.098249 8.262423 0.3450364 4.123350 7.025790 -3.8841215
## 6 1.46080266 3.689581 6.546199 0.5987217 4.984741 2.864514 0.8037023
##      Cdkn2c      Cdkn2d      Cdkn3      Cdnf      Cdo1      Cdon
## 1 3.2276862 1.6504081 -0.71120896 -1.7207137 7.06522046 4.153518
## 2 2.6199537 1.6635702 1.97112261 -0.3131649 3.24172539 2.543816
## 3 1.9111385 4.0690927 -0.61952623 -1.9317392 4.79027754 1.008333
## 4 6.3026556 2.2307951 4.10621533 -1.0882284 1.53800105 4.168542
## 5 6.9887072 2.6905901 4.54164844 3.5504721 3.07206548 1.847973
## 6 3.3770953 0.9269254 -0.33747043 -1.1792453 5.91107091 4.137790
##      Cdr2      Cdr2l      Cdr4      Cds1      Cds2      Cdsn      Cdt1
## 1 4.7565083 6.5159265 -2.112723 2.3458677 7.823717 -3.180786 3.22409640
## 2 6.5226455 4.4470371 -2.888894 -1.1585745 7.310011 -3.884122 2.99969864
## 3 -1.9317392 0.8617169 -3.884122 1.9111385 4.435932 4.840083 0.05610664
## 4 0.7175661 5.7119243 -2.955903 0.4235443 5.372197 2.238764 3.53288815
## 5 -2.1973739 5.8469984 -3.884122 -0.1609828 6.299271 3.341743 5.22569962
## 6 3.6606135 4.0510153 -1.660923 0.8690397 8.378337 -3.884122 2.97385259
##      Cdv3      Cdy1      Cdy12      Ceacam1 Ceacam10 Ceacam15
## 1 7.421411 4.3561723 3.66428432 -0.1379992 -3.598576 -3.7949831
## 2 7.044382 5.0671101 4.55508963 5.2876371 -3.884122 -3.8841215
## 3 6.906936 1.1414140 0.05610664 -1.1313170 -3.884122 -1.1313170
## 4 5.797338 2.3648741 3.21502231 0.3108354 -3.674937 -0.7944985
## 5 6.668891 -1.1730114 -1.17301144 -2.8071174 -3.884122 -3.8841215
## 6 5.778504 3.7249011 3.92686383 -1.2380627 -3.884122 -1.7147679
##      Ceacam16 Ceacam18 Ceacam19      Cebpa      Cebpb      Cebpe      Cebpg
## 1 -2.2023217 -3.723567 -3.8841215 3.823552 2.245706 -3.884122 4.753631
## 2 -2.7210443 -3.884122 -3.8841215 1.649322 3.859184 -1.712270 5.866089
## 3 -3.8841215 -3.884122 1.1414140 3.688985 3.575949 -3.884122 1.141414
## 4 -1.7304940 -3.884122 -2.3410964 1.831861 2.013621 -3.884122 5.442083
## 5 -3.8841215 -2.807117 -2.1973739 2.170497 1.654903 -3.884122 2.965052
## 6 -3.5122488 -3.884122 -3.8841215 2.970421 5.060092 -3.884122 5.193964
##      Cebpz      Cccr2      Cccr5      Cccr6      Cel      Cela1      Celf1
## 1 5.459444 4.076453 4.9913891 2.71649922 -3.297175 2.123281 7.053649
## 2 6.162755 2.814083 4.2297376 -1.77609648 -1.423699 -2.372912 6.970558
## 3 6.977620 1.479815 -0.6195262 -1.13131698 -3.884122 -1.931739 6.289296
## 4 6.064218 5.574920 3.0454640 1.75804907 -3.884122 1.908778 6.330003
## 5 4.347607 4.789158 0.4279671 2.99255889 -3.884122 4.104565 5.513677
## 6 5.487614 6.113397 7.0870966 3.23074747 -2.616080 -3.674482 7.821520
##      Celf2      Celf3      Celf4      Celf5      Celf6      Celsr1
## 1 6.094240 4.3564208 3.617856 4.0284925 -0.15937631 0.005178167
## 2 3.941338 -0.6445179 1.471833 0.1394266 -0.96655711 -0.186841424
## 3 4.069093 -0.6195262 6.192920 -0.2425151 0.05610664 2.119095598
## 4 8.888179 4.2741719 5.725733 4.6275799 -0.12393599 4.600252535
## 5 8.427715 5.8488809 1.510155 3.3734750 -3.88412153 5.455564405
## 6 8.144122 0.9465197 2.342513 2.0054978 -1.33657037 6.379707831
##      Celsr2      Celsr3      Cend1      Cenpa      Cenpb      Cenpc1      Cenpe
## 1 6.533293 4.1789085 5.708241 3.0467311 7.215480 4.2433706 2.1241588

```

```

## 2 1.309930 -0.9140281 1.753632 4.7923400 7.984313 4.0047884 3.8864827
## 3 4.256825 -0.2425151 3.074902 5.6501691 2.607316 1.8345785 2.5122057
## 4 6.806333 4.3401507 4.325922 5.5494107 3.631779 6.1499864 5.9697745
## 5 6.078003 2.4137218 5.098561 6.9079465 3.230627 5.4481329 4.2654270
## 6 7.263171 2.2326481 3.623000 2.5351504 6.766632 5.1444569 3.9278437
##      Cenpf      Cenph      Cenpi      Cenpj      Cenpk      Cenpl
## 1 3.128792 1.0626366 2.5953069 2.32735931 -0.08966824 2.2876562
## 2 3.773833 1.6919182 2.6960901 3.16269622 0.79366504 4.2665762
## 3 7.535367 -0.6195262 0.3033916 -0.61952623 0.05610664 1.0083330
## 4 6.678199 3.8948443 3.9782556 4.71606147 4.73534061 4.8118338
## 5 4.781294 5.1017224 0.8449942 -0.04458439 3.55047206 4.5509292
## 6 4.576634 1.7072730 2.8964606 3.23480102 0.96158600 3.1514385
##      Cenpm      Cenpn      Cenpo      Cenpp      Cenpq      Cenpt
## 1 1.6197723 2.6601914 2.6013075 1.5282137 3.8005690 4.5016610
## 2 2.6037436 3.0992654 2.5293426 2.1868970 3.3566764 4.4061793
## 3 2.1190956 1.8345785 -1.9317392 0.5144282 1.1414140 0.8617169
## 4 5.9734319 4.7388278 3.8008020 4.1605177 5.4806253 6.1477868
## 5 6.3625689 4.0135136 -1.1730114 4.7167877 4.3844122 3.7163802
## 6 1.5238385 2.2200497 2.8991824 0.8039200 4.3762510 4.9191540
##      Cenpv      Cenpw      Cep120      Cep135      Cep152      Cep164
## 1 4.454235 0.7025126 5.5774119 3.4518087 3.56268311 3.9477394
## 2 1.777027 1.5336233 6.2093575 4.8614280 3.09930586 3.6699314
## 3 5.490918 4.9256157 0.5144282 -1.9317392 0.05610664 -0.2425151
## 4 4.365166 4.0368587 5.4944006 2.5317442 2.13742785 3.3031379
## 5 5.053564 5.1329574 3.4349186 -1.1730114 -3.88412153 2.6736968
## 6 3.542544 0.3521916 5.4592848 4.8891014 4.67184975 5.2685482
##      Cep170      Cep192      Cep250      Cep290      Cep350      Cep55      Cep57
## 1 6.668104 4.4351882 5.3316724 1.94350530 6.075540 1.3060427 4.565314
## 2 6.622322 5.1849468 4.2805109 3.66941301 6.077938 3.7571381 5.589757
## 3 7.149436 -0.6195262 0.6984974 0.30339162 1.263249 -1.1313170 7.032204
## 4 7.160309 4.2979597 3.7604963 4.35507378 4.257583 4.0297681 5.900296
## 5 7.363293 -1.1730114 3.6574526 0.71892097 2.194382 3.2983183 5.978341
## 6 6.489399 5.8421657 6.6895866 4.17390467 7.069918 1.7916543 5.625124
##      Cep5711      Cep63      Cep68      Cep70      Cep72      Cep76
## 1 2.3864264 4.2366504 5.8397205 2.5003297 2.9117346 4.0586382
## 2 3.3677079 4.2356696 6.7601068 4.0904064 2.8509810 4.0308312
## 3 -0.2425151 -0.2425151 0.5144282 0.8617169 -0.6195262 0.3033916
## 4 4.2883955 4.1497942 4.4939858 5.8127637 3.1549602 3.2490475
## 5 3.3838991 1.7221719 4.0401199 4.0662445 3.1955523 3.9163262
## 6 2.9291579 5.3955663 5.7733525 3.8685986 2.5298944 4.4506338
##      Cep78      Cep97      Cept1      Cer1      Cercam      CerK
## 1 4.0214445 4.563221 4.891790 -3.67873177 4.8645680 6.82129705
## 2 4.2288299 3.859269 5.663241 -3.65196234 -0.4935781 6.58187980
## 3 -1.1313170 6.640789 8.226972 -1.93173924 3.9830373 0.51442825
## 4 3.1230752 5.632353 6.672759 -0.08304073 4.3593494 3.35539357
## 5 -2.1973739 6.312973 6.757738 -2.80711744 2.3513488 -0.04458439
## 6 4.5838187 4.844535 5.545333 -2.17405558 3.6223667 5.43342992
##      CerK1      Ces2b      Ces2e      Ces2f      Ces2g      Ces5a
## 1 -2.6341978 -3.884122 -3.884122 -3.88412153 -3.7235669 -3.884122
## 2 -0.6471022 4.235566 2.537626 -3.88412153 0.4684357 -3.884122
## 3 -1.9317392 -3.884122 -3.884122 0.05610664 2.1822477 -3.884122
## 4 2.5543281 -3.884122 -3.884122 -3.14444907 -0.8956868 -2.031506
## 5 -3.8841215 -3.884122 -2.807117 -1.44088555 0.0631199 -3.884122
## 6 -0.9589225 -2.972178 -3.490484 -3.88412153 -3.8841215 -2.077771

```

##	Cetn2	Cetn3	Cfb	Cfdp1	Cfi	Cfl1	Cfl2
## 1	4.225746	5.481378	1.0967268	5.521046	-3.452905	9.558902	6.893899
## 2	5.659107	6.689830	1.1100434	6.496518	1.372921	9.909186	6.472909
## 3	8.190959	8.544898	-3.8841215	6.866651	-3.884122	9.986372	8.633008
## 4	7.324349	8.007251	0.4138689	7.857426	-2.790513	9.695585	8.207060
## 5	8.345102	9.026891	-2.8071174	8.423616	-3.884122	10.060288	8.505851
## 6	3.953482	5.512881	2.1443791	4.851140	-2.986249	8.190476	5.822693
##	Cflar	Cfp	Cftr	Cggbp1	Cgn	Cgnl1	Cgref1
## 1	3.601431	3.076447	-1.4162646	6.381174	1.0966881	0.5812443	1.8933641
## 2	6.175787	1.087988	-0.8456695	7.800603	-3.1273690	8.8503434	0.1512088
## 3	4.548068	5.484669	-3.8841215	2.512206	0.8617169	0.3033916	-3.8841215
## 4	4.854281	4.320693	-3.8841215	5.927374	3.5246982	2.3772219	0.3425249
## 5	3.394248	1.391188	-3.8841215	5.806889	4.0067846	3.3838991	-3.8841215
## 6	5.171193	4.317262	-3.6744822	6.175068	1.5941974	2.8109594	3.9026424
##	Cgrrf1	Ch25h	Chac1	Chac2	Chad	Chad1	
## 1	4.310986	-1.3939803	0.88848830	2.591250	-3.41114802	8.3605853	
## 2	5.615604	0.2239587	2.52266297	2.866618	-0.09817212	-0.4372688	
## 3	6.303568	-3.8841215	-3.88412153	4.000664	-3.88412153	1.1414140	
## 4	5.527545	-1.6367574	1.37694204	4.708645	0.24638256	1.0401853	
## 5	6.826222	-3.8841215	-1.44088555	5.013845	-3.88412153	-3.8841215	
## 6	4.457596	-1.2418789	2.14619578	2.787891	0.97274224	5.4954731	
##	Chaf1a	Chaf1b	Chat	Chchd1	Chchd10	Chchd2	Chchd3
## 1	3.44662180	1.9464761	-3.884122	4.343603	2.701517	5.284242	6.278135
## 2	3.73377664	3.4789172	-3.884122	5.081992	1.133186	6.837386	6.856430
## 3	0.05610664	1.2632490	-3.884122	6.486708	-1.131317	8.646368	8.027538
## 4	3.12132067	5.2618213	-3.884122	7.276819	1.583753	6.687379	6.682186
## 5	-0.58001868	4.1108541	-3.884122	8.468078	3.724605	8.660688	7.076476
## 6	3.34582233	2.4402884	-3.884122	3.777605	4.380596	4.344654	6.032532
##	Chchd4	Chchd5	Chchd6	Chchd7	Chd1	Chd11	Chd2
## 1	3.668753	3.462962	3.872782	2.20573507	5.522403	3.74074276	6.075074
## 2	2.884023	4.373622	3.608157	4.23802945	7.104606	4.88421916	6.950854
## 3	7.643108	6.810293	5.661295	0.05610664	1.577013	-1.13131698	6.068904
## 4	4.899983	6.174280	5.894981	3.79173497	4.543023	3.60886767	5.820863
## 5	5.063325	7.312359	7.159969	5.54884348	3.253546	-2.80711744	2.453854
## 6	2.459450	2.726655	2.167791	3.20848794	6.718826	4.28225920	7.970288
##	Chd3	Chd4	Chd5	Chd6	Chd7	Chd8	Chd9
## 1	7.855597	8.009697	5.2962857	6.540791	6.767982	6.753335	5.866433
## 2	7.437337	8.281648	0.3041466	6.672691	5.506315	6.727127	4.878000
## 3	3.599276	2.607316	-1.1313170	1.479815	2.898090	1.753727	1.375592
## 4	4.407410	6.607402	1.3909130	6.175512	6.136766	5.924643	6.104644
## 5	4.591969	5.520779	-1.4408855	3.780905	4.839257	5.596679	3.916326
## 6	7.225888	8.862732	1.6896770	7.753888	7.090289	7.388170	7.714403
##	Chdh	Chek1	Chek2	Cherp	Chfr	Chga	
## 1	0.3002026	1.51658865	1.2423879	5.664545	6.1433726	5.88369224	
## 2	-1.1676167	2.11287771	4.1244368	5.199046	5.8364252	-0.01216767	
## 3	0.3033916	0.05610664	6.6181295	2.053052	5.5932166	5.66129473	
## 4	0.4486703	4.56402166	4.6836699	5.692110	4.9569408	4.76916081	
## 5	3.0849008	5.08584751	3.8121159	5.312838	2.7237947	3.79659463	
## 6	-1.7724196	2.86560874	2.6828886	6.016751	5.4013123	-0.43270546	
##	Chgb	Chic1	Chic2	Chid1	Chit1	Chka	Chkb
## 1	4.895356	3.6217752	4.220072	5.762765	-3.7901666	6.143749	-1.6955276
## 2	1.288970	1.2571318	6.539930	5.004299	-3.8841215	6.334499	-1.6352352
## 3	1.983840	0.6984974	1.983840	3.427465	1.2632490	1.008333	-3.8841215
## 4	5.611286	5.3166183	1.882136	5.736032	-1.0334578	4.612592	0.2323368

```

## 5 4.242698 3.8799663 2.787996 6.024043 0.0631199 3.444910 -0.5800187
## 6 4.365384 5.8167626 4.229603 5.145746 -3.8841215 6.859162 -1.2757933
##      Chl1      Chm      Chm1  Chmp1a  Chmp2a  Chmp2b  Chmp3
## 1 7.1069964 4.864141 3.6045426 6.662605 6.236013 5.555556 5.938743
## 2 1.3111959 6.271234 4.5808402 6.648669 7.186892 7.199603 7.164162
## 3 3.0749023 5.793576 -1.1313170 7.084798 8.927790 1.668074 7.507897
## 4 7.2542618 5.639213 1.9634609 6.606776 7.971810 4.541066 6.559083
## 5 5.9971353 5.193469 1.1681147 6.822395 8.938829 4.843040 7.709912
## 6 7.6205262 5.352899 4.5337918 5.693656 5.261033 4.871567 5.261689
##      Chmp4b      Chmp4c      Chmp5      Chmp6      Chmp7      Chn1      Chn2
## 1 7.110032 -3.1610540 6.516649 4.9565665 6.477697 5.462057 6.6843449
## 2 7.074226 -2.4601722 7.291489 6.4976418 6.590378 3.311756 6.2668880
## 3 4.474287 -0.6195262 8.881566 6.0813821 1.141414 8.513779 7.0040785
## 4 3.586371 -2.4595568 8.257416 3.9254660 5.324256 7.113481 5.8921943
## 5 5.329113 -3.8841215 8.956615 0.9609302 5.501762 7.468660 5.9886228
## 6 6.948839 -2.7863740 5.527567 4.3272927 5.951191 5.620381 0.4537549
##      Chod1  Chordc1      Chpf      Chpf2      Chpt1  Chrac1      Chrd
## 1 -0.9972138 5.017014 5.8927619 4.763120 6.565514 3.335088 3.7876951
## 2 -2.6793155 5.460619 2.3288815 5.947059 4.090708 5.243753 0.1653163
## 3 -3.8841215 6.676869 0.8617169 7.244970 6.480440 8.513012 3.5759491
## 4 -3.4277009 6.232708 3.4663347 2.310621 4.241297 5.788622 0.5180696
## 5 -3.8841215 5.487332 4.4651713 4.938060 4.587467 7.409942 -3.8841215
## 6 -2.9280359 5.547368 6.1171672 5.358138 5.795382 2.599782 4.2159612
##      Chrd11  Chrd12      Chrm1      Chrm2      Chrm3      Chrm4
## 1 3.0023802 -3.546860 2.7702717 1.113356 -1.63202486 0.96360654
## 2 -1.2486930 -3.651962 0.6686241 -2.120670 -0.78174188 0.32991186
## 3 7.6873176 -3.884122 6.4614713 -3.884122 -3.88412153 -1.13131698
## 4 2.2054378 -3.884122 0.9686585 -3.884122 -2.07102487 1.32379327
## 5 -1.4408855 -3.884122 -0.9471720 -3.884122 -3.88412153 -0.04458439
## 6 8.0845228 -1.007654 -2.1384252 -1.013671 -3.67448218 1.23883419
##      Chrm5  Chrna1      Chrna2      Chrna3      Chrna4      Chrna5
## 1 -2.9126205 -2.484814 -3.33525169 -3.427915645 6.7011229 -1.0108258
## 2 -3.8841215 -3.424345 -3.88412153 -3.651962338 -2.1585061 -3.6565043
## 3 -3.8841215 -3.884122 -3.88412153 -3.884121530 -3.8841215 -3.8841215
## 4 -3.8841215 -3.114158 -3.88412153 -2.000832810 0.2862620 -2.5764509
## 5 -3.8841215 -3.884122 -3.88412153 -3.884121530 -1.1730114 -3.8841215
## 6 -3.8841215 -3.379887 -2.62121916 0.004226645 1.3797573 -2.2938670
##      Chrna7  Chrnb1  Chrnb2  Chrnb3  Chrnb4  Chrne
## 1 1.8349330 -0.18591234 2.9292860 -3.626559 -3.2343635 -0.8551507
## 2 -3.6565043 5.10067276 -0.2563999 -3.884122 -3.8841215 -3.4243451
## 3 -3.8841215 -1.13131698 -0.6195262 -3.884122 -3.8841215 -1.9317392
## 4 -3.0976357 1.79435339 3.5207342 -3.884122 -3.8841215 -1.6556464
## 5 -3.8841215 -3.88412153 2.2178791 -3.884122 -3.8841215 -3.8841215
## 6 0.2518292 0.97275755 3.1274289 -3.044745 -0.6964992 -3.8841215
##      Chrng  Chst1  Chst10  Chst11  Chst12  Chst14  Chst15
## 1 -2.062511 2.808944 5.1588493 8.053009 3.699747 2.3543512 4.202129
## 2 -3.884122 5.993345 -0.1632796 7.215777 1.195418 3.3958572 5.887448
## 3 -3.884122 6.483577 -0.6195262 1.263249 6.355865 -1.1313170 3.773441
## 4 -3.884122 2.618257 5.5724314 3.919019 5.792124 0.7453723 3.911127
## 5 -3.884122 4.213774 6.8713720 5.169568 5.771599 -2.8071174 3.493852
## 6 -3.884122 7.668713 6.8225211 7.483832 4.416397 2.4766848 4.101675
##      Chst2  Chst3  Chst4  Chst5  Chst7  Chst8
## 1 7.984371 6.6459582 -3.003285 4.62434308 4.0814805 3.5086487
## 2 6.371664 2.6301874 -3.884122 -3.65196234 4.8521554 -3.1123102

```

```

## 3 6.189081 -0.6195262 -3.884122 -1.93173924 -3.8841215 7.0149611
## 4 7.977028 2.4650625 -3.884122 -0.32999014 -2.3467111 -0.3102519
## 5 7.995138 0.9609302 -3.884122 2.65660325 1.7864435 -3.8841215
## 6 8.518529 5.4730760 -3.884122 -2.44639078 4.4215671 -2.6212192
##      Chst9      Chsy1      Chsy3      Chtf18      Chuk      Churc1      Ciao1
## 1 -2.55376212 4.676151 2.0694771 2.627887 6.2254564 4.311447 4.474481
## 2 1.08859434 4.862625 -0.6747075 2.405725 6.4533434 4.753221 5.469113
## 3 1.47981450 5.268888 3.7527859 4.971031 7.4319767 7.607602 7.636077
## 4 0.03373365 6.556650 -2.8611755 4.051705 4.5125562 6.013718 5.919180
## 5 -2.80711744 7.707321 -0.9471720 -1.440886 0.1633391 7.528021 6.137737
## 6 -3.11861158 6.839851 2.8867463 2.765527 6.8646855 2.824969 4.324727
##      Ciapin1      Cib1      Cib2      Cic      Cidea      Cideb      Ciita
## 1 5.290023 4.010069 2.7228610 7.380614 -2.6396046 -1.7633022 -0.4059916
## 2 6.549664 5.579062 0.4107385 6.222124 -3.2515854 -3.0762312 -0.9665571
## 3 6.474145 7.749888 5.5638745 1.911138 -0.6195262 4.8691608 -3.8841215
## 4 6.561885 5.768842 2.9811725 4.183934 0.6661925 1.4267508 -0.5507417
## 5 6.335972 6.800191 4.0000241 3.930617 3.2421320 -1.7701038 -2.1973739
## 6 5.193717 4.495281 2.2371201 7.197787 -0.1824052 0.7814098 1.8226125
##      Cilp      Cilp2      Cinp      Cir1      Cirbp      Cirh1a      Cisd1
## 1 -3.388895 0.4873687 4.877806 2.5616632 5.874275 4.046867 5.980499
## 2 -3.651962 -0.5431146 4.879513 3.0577676 5.789428 4.834562 5.014041
## 3 -1.931739 -3.8841215 6.916254 -0.6195262 7.492406 1.008333 7.192252
## 4 -1.553860 -0.5451556 6.178849 2.4840646 7.725780 5.666593 7.316647
## 5 3.622666 -2.8071174 5.913265 1.6200547 8.494472 5.893338 9.086143
## 6 -3.490484 -1.1591039 4.381635 3.0179383 6.243048 4.555394 4.881462
##      Cisd2      Cisd3      Cish      Cit      Cited1      Cited2      Cited4
## 1 5.162977 2.947385 0.2313604 4.0764336 1.8455258 3.676750 -0.4111685
## 2 6.292398 2.053628 5.1264853 3.6814525 -1.0021878 5.012742 -1.9098432
## 3 7.807356 5.082824 -0.2425151 0.3033916 -3.8841215 2.182248 -0.2425151
## 4 6.435225 5.142252 2.9941991 2.6970136 1.1123106 4.319491 -2.2296679
## 5 7.189238 5.755634 3.6401644 -0.7519471 -3.8841215 4.905872 -2.8071174
## 6 5.167085 2.260457 1.6796859 4.6714295 1.3675789 4.855333 1.0400672
##      Ciz1      CK137956      Ckap2      Ckap2l      Ckap4      Ckap5      Ckb
## 1 5.7129930 1.6522543 4.3907210 3.3310242 4.311195 6.586559 9.549384
## 2 5.5411666 -3.4766082 3.8761235 3.0587692 6.532808 6.239378 4.755891
## 3 2.2427509 -1.1313170 0.8617169 2.5122057 5.304805 6.030808 11.436615
## 4 5.3480796 -3.6749365 5.7767834 6.5367839 4.991690 8.499876 10.820479
## 5 0.1633391 -3.8841215 5.1048765 5.3264129 5.342536 6.516165 11.071874
## 6 6.0030800 -0.4454755 4.0438856 3.7395048 5.496102 8.460513 9.956616
##      Cklf      Ckm      Ckmt1      Ckmt2      Cks1b      Cks2      Clasp1
## 1 2.041710 -3.023953 3.3482167 -3.088754 1.849658 0.9942077 6.074197
## 2 3.860960 -3.248991 1.4116654 -3.651962 4.492319 3.4709890 6.577258
## 3 5.757743 -1.931739 7.5216972 -3.884122 6.795222 0.5144282 1.834579
## 4 5.060609 -3.218516 3.2134721 -2.899225 6.261876 3.7123249 6.817381
## 5 5.262884 -3.884122 3.8725830 -3.884122 6.639829 3.5504721 5.925804
## 6 2.722145 -3.490484 -0.9064325 -3.237253 1.837994 1.0367834 7.372870
##      Clasp2      Clasrp      Clca5      Clcc1      Clcf1      Clcn1
## 1 8.184863 6.4857830 -3.48421673 4.936425 -2.8656149 -0.1984981
## 2 6.580783 4.6378457 1.89245207 5.409508 -1.3002275 -3.3444694
## 3 8.365212 -1.1313170 0.05610664 6.508433 -3.8841215 -3.8841215
## 4 8.100332 2.3408164 -2.82557267 6.386313 -2.2887931 -1.1303739
## 5 7.851839 -3.8841215 -2.80711744 5.592191 -3.8841215 -3.8841215
## 6 8.720969 7.1099642 -3.45113945 5.656048 -0.3863869 -0.6441716
##      Clcn2      Clcn3      Clcn5      Clcn6      Clcn7      Clcnkb      Cldn1

```

```

## 1  5.840331 7.901243 4.294787 7.379279 5.928068 -3.612858 -1.4517606
## 2  2.792861 6.846675 4.271642 3.830305 5.290202 -1.289180 -0.2465354
## 3 -1.131317 8.067812 -1.131317 7.867434 5.726305 -3.884122 2.1822477
## 4  4.049178 7.961813 2.530478 3.090559 5.014798 -3.209184 0.2789349
## 5  1.817536 7.710430 2.740115 3.147418 3.909127 2.965052 0.7189210
## 6  6.598888 7.973187 5.108797 7.331120 6.287435 -3.884122 -0.9780167
##      Cldn10      Cldn11      Cldn12      Cldn14      Cldn15      Cldn19
## 1  2.7044261 8.1410999 5.7106244 1.418979 -1.4451174 -0.7624653
## 2  0.2298982 0.7721321 4.8557642 -3.884122 0.7625390 -3.0277153
## 3 10.5616865 11.0341813 0.8617169 -3.884122 -3.8841215 -3.8841215
## 4  7.7172264 8.5461871 4.6811973 1.091788 -1.4364679 -2.7584499
## 5  8.5791224 10.6487364 4.6749556 4.484674 -3.8841215 -3.8841215
## 6  7.3870049 -1.5531717 6.4328386 -3.884122 -1.9261960 1.0466542
##      Cldn2      Cldn20      Cldn22      Cldn23      Cldn25      Cldn26
## 1 -3.715698 -2.9264995 -2.6709414 -2.03795313 7.427247 -3.0983409
## 2 -1.972194 -3.8841215 -0.7346737 -3.42434508 6.256185 -3.6565043
## 3 -1.131317 -3.8841215 -3.8841215 0.05610664 9.646246 5.8136588
## 4  2.108938 -2.8611755 -3.4989245 -0.34966507 8.741877 -3.3278129
## 5 -1.770104 -3.8841215 -3.8841215 -1.77010377 9.037247 -3.8841215
## 6 -1.336570 -0.3518951 -3.4511394 -3.51224876 6.517767 -2.6003052
##      Cldn3      Cldn4      Cldn5      Cldn6      Cldn7      Cldn9
## 1 -3.76699984 -3.2504537 0.7012186 -3.767000 -3.142300 -3.551255
## 2 -0.83678578 -2.3597589 12.6628715 2.120728 -2.488063 -1.639469
## 3 0.05610664 1.9111385 8.1321988 -3.884122 -3.884122 -3.884122
## 4 3.27951085 -1.6558813 1.2804469 -3.884122 -2.915977 -1.305817
## 5 5.14219757 0.3450364 4.9969675 -3.884122 -3.884122 -2.807117
## 6 -2.27609632 -3.5122488 4.2770123 -2.333419 -2.865381 -3.884122
##      Cldnd2      Clec11a      Clec12a      Clec12b      Clec14a      Clec16a
## 1 -3.183746 -0.4599215 -3.22520234 -3.884122 1.2816451 6.3198759
## 2 -1.157348 -1.3405594 -2.99017567 -3.039241 8.1543372 5.4981756
## 3 -3.884122 -3.8841215 0.05610664 -3.884122 -1.9317392 -0.6195262
## 4 -3.394496 2.0934404 1.01187405 -1.102401 -1.1804780 4.4171332
## 5 -3.884122 1.5477262 -2.80711744 -3.884122 0.3450364 5.3872615
## 6 -2.865381 -0.7013841 -3.67448218 -3.884122 0.7917322 5.9228625
##      Clec18a      Clec1a      Clec1b      Clec2d      Clec2i      Clec2l
## 1 -2.7263002 0.6086773 -3.42989243 -1.8150710 -3.3090839 4.21873741
## 2 -3.8841215 5.9837438 -0.08222124 6.3414857 -3.6565043 0.14557048
## 3 7.0991872 -1.1313170 -3.88412153 -3.8841215 -1.9317392 -1.13131698
## 4 -2.6489048 -1.0817402 -2.92595197 -2.0431889 -2.9049726 -0.08144273
## 5 -2.1973739 -3.8841215 -3.88412153 -3.8841215 -2.8071174 -2.80711744
## 6 -3.4904843 -1.5631840 -3.45113945 -0.8856587 -3.6607788 0.78762758
##      Clec3b      Clec4a1      Clec4a2      Clec4a3      Clec4b1      Clec4d
## 1 -0.01567596 -1.9219395 -0.02463393 -0.94465047 -3.8841215 -2.8590235
## 2 -0.15478720 -2.6981583 -3.65196234 -3.07623119 -3.8841215 -2.5614538
## 3 -3.88412153 5.7156710 8.42762721 0.30339162 5.7783276 -3.8841215
## 4 -0.23727688 2.7572868 2.82468438 2.67921216 -1.8604608 -3.5296461
## 5 -2.80711744 3.8946204 -1.17301144 -0.04458439 -3.8841215 -3.8841215
## 6 -0.18054869 -3.4511394 -3.45113945 -3.67448218 -3.8841215 -3.8841215
##      Clec4e      Clec4n      Clec5a      Clec7a      Clec9a      Clgn
## 1 -2.697790 -2.0512065 -0.6910289 -2.3503711 -2.3214360 3.5482835
## 2 -2.159103 -2.9901757 -3.6519623 -1.0380227 2.9095300 -2.5768592
## 3 -3.884122 0.6984974 7.4007856 1.0083330 -3.8841215 -1.1313170
## 4 -3.884122 2.0887378 1.3556275 0.8114805 -2.9713031 0.5993845
## 5 -3.884122 -0.4264149 -2.8071174 -2.8071174 -3.8841215 -1.4408855

```



```

## 6 -3.884122 -3.8841215 -3.8841215 -3.1713129 -3.0447446 -2.3612530
##      Clic1      Clic3      Clic4      Clic5      Clic6      Clint1      Clip1
## 1  3.626330  0.56332312  7.511396 -1.6136620 -3.5839065  6.197461  4.451174
## 2  9.064826 -0.06751192  9.498306  6.7914156  3.5030848  8.000151  7.441601
## 3  6.717409  2.30081861  5.360474 -1.1313170 -3.8841215  3.202239  2.898090
## 4  6.687960  1.14745957  6.079975  0.7831615  0.7879328  4.604446  4.667441
## 5  7.332007  3.53184450  6.297894 -3.8841215 -2.8071174  4.265427  3.264870
## 6  4.751118  0.23607921  7.733147 -0.4025171 -1.6335771  5.753159  6.251850
##      Clip2      Clip3      Clip4      Clk1      Clk2      Clk3      Clk4
## 1  8.0479507  8.999339  4.666453  6.716723  5.43155947  6.263904  6.306646
## 2  5.4332132  2.656124 -1.969026  8.911928  5.42369173  6.526267  6.383659
## 3 -0.6195262  3.261927  1.008333  6.263976  0.05610664  2.119096  5.353632
## 4  3.3716254  8.793149  4.716393  7.461720  3.39385926  6.151292  6.826053
## 5  4.7209050  7.893473  3.732784  5.489747  0.84499419  6.701551  5.898800
## 6  7.0631298  7.317393  5.009071  8.671790  6.89727355  6.701604  7.410655
##      Clmn      Cln3      Cln5      Cln6      Cln8      Clnk      Clns1a
## 1  4.528648  5.341586  5.141183  3.6681546  6.976430 -3.555143  6.379745
## 2 -1.589177  3.555998  5.585220  2.3100399  4.499418 -3.884122  6.127684
## 3  1.008333  6.892846  4.583590  0.5144282  8.356682 -3.884122  7.776992
## 4  5.440250  6.517441  3.184499  3.4329229  6.026451 -3.884122  6.696690
## 5  4.843040  5.895161 -1.440886  4.9695456  5.945290 -3.884122  7.536806
## 6  6.330677  5.041583  5.163727  3.9965443  5.205185 -3.884122  5.170024
##      Clock      Clp1      Clpb      Clpp      Clptm1      Clptm1l      Clpx
## 1  5.8641789  3.07931550  5.6950924  5.244728  8.238997  7.393721  5.270876
## 2  6.8051529  4.61532132  5.6950061  4.792646  8.448067  7.050071  5.844228
## 3 -0.6195262  0.05610664  0.3033916  8.332526  5.857849  7.654288  1.668074
## 4  4.7031774  4.50024569  6.0060402  7.522875  4.084636  4.662835  5.153432
## 5  2.7722112  5.36112035  5.5231389  8.518916  5.925804  5.329113  3.352398
## 6  6.9963487  3.55680736  5.0701514  4.425389  7.915614  6.395234  5.603564
##      Clrn1      Clspn      Clstn1      Clstn2      Clstn3      Clta      Cltb
## 1 -2.9126205  1.5410926  8.675136  2.3902691  6.386841  6.950560  6.853782
## 2 -2.1037807  2.5910547  6.540777  1.1458073  1.340247  7.935162  7.133559
## 3 -3.8841215  0.8617169  4.780107  6.5358938  6.022203  8.009151  7.030060
## 4 -0.7276384  4.3652422  5.291242  3.3580772  3.941946  5.152151  4.990521
## 5 -3.8841215 -1.1730114  4.298863 -0.2876030  3.032860  6.591178  6.244553
## 6 -3.6744822  3.2272038  8.404427 -0.4009110  1.383475  5.720655  5.206604
##      Cltc      Clu      Cluap1      Clvs1      Clvs2      Clybl      Cma1
## 1  8.741380  8.119030  3.870275  0.6969532  2.4150992  1.2548143 -3.8841215
## 2  9.834947  4.271698  4.086318 -2.0252565 -1.8426661  3.4482789 -2.5789021
## 3  7.833411  11.973665  6.920890  0.5144282 -0.2425151  6.8952039 -1.1313170
## 4  7.969191  12.649151  5.987281  4.8058983  1.7173664  6.3141175  5.4240141
## 5  7.795366  11.990255  6.683732  3.4449096 -1.4408855  6.2112832  2.9227833
## 6  8.896989  10.599708  4.228945 -2.9479702 -2.3464701  3.6339752 -3.6744822
##      Cmas      Cmb1      Cmc1      Cmk1r1      Cml1      Cml2      Cml3
## 1  4.310265  1.4628394  3.121030  0.9554713  2.9566603 -1.3920216 -1.099778
## 2  5.909748  0.9404644  4.288765  5.0618220  3.3425504 -0.2073109 -3.651962
## 3  5.699572 -1.1313170  5.276143  2.1822477  7.6233325 -3.8841215 -3.884122
## 4  3.332865  3.7193168  5.769227  0.3682769  5.2821526  0.4420297 -2.843337
## 5  2.512034  4.9309687  6.620124 -2.8071174  6.7845400  0.0631199 -3.884122
## 6  3.976623  2.3209425  2.434347 -1.3097364  4.2614824  0.9029031  2.065510
##      Cml5      Cmpk1      Cmpk2      Cmtm3      Cmtm4      Cmtm5      Cmtm6
## 1 -2.6443324  6.093774  3.82551704  5.047780  8.134738  7.1050616  6.671050
## 2 -3.6565043  7.452861  2.65922232  6.417345  4.882194  0.1324546  8.442876
## 3 -1.1313170  1.375592 -1.13131698  6.927817  2.560544  11.7798477  7.859003

```

```

## 4 0.6416401 6.121292 2.71104181 5.228175 4.158735 9.5701366 5.457926
## 5 -3.8841215 7.540305 -2.19737395 6.220037 2.707288 10.6210529 5.569539
## 6 0.5841084 5.346856 3.53345100 6.311742 7.718135 6.3447435 5.962250
##      Cmtm7      Cmtm8      Cmya5      Cnbp      Cndp1      Cndp2
## 1 2.1529959 -1.4169264 0.1038595 7.771746 -3.884122 6.359652
## 2 2.8234860 5.3411356 -1.5891883 8.605613 -3.884122 6.403203
## 3 1.1414140 -0.6195262 -1.1313170 11.101968 -3.884122 4.706830
## 4 -1.4706601 1.2904973 2.2888457 9.973179 -3.884122 6.098965
## 5 -2.8071174 2.8036091 -3.8841215 10.188652 -3.884122 3.909127
## 6 -1.9043579 -1.4619868 3.8426512 7.254239 -3.884122 5.501248
##      Cnfn      Cnga2      Cnga3      Cnga4      Cnih2      Cnih3      Cnih4
## 1 -3.5881515 -3.7156978 -3.8841215 -3.083088 5.149514 1.8636046 5.772487
## 2 -3.8841215 -1.9023480 -3.8841215 -2.895210 1.530873 -0.6489924 5.911264
## 3 1.3755916 -3.8841215 -1.9317392 -3.884122 5.459396 -0.6195262 7.938889
## 4 -1.0797823 -3.8841215 -3.4447594 -2.372107 3.232152 3.6480418 6.616732
## 5 0.6514968 -3.8841215 -3.8841215 -3.884122 2.849461 4.0401199 6.640916
## 6 -3.8841215 -3.6744822 -3.8841215 -2.333419 2.542126 3.0695142 4.676403
##      Cnksr1      Cnksr2      Cnksr3      Cnn1      Cnn2      Cnn3
## 1 -2.377946 2.0058647 6.0379225 -3.8841215 2.74732263 7.484275
## 2 -2.548285 -1.3779235 6.5541739 -2.8888941 8.12988814 9.165114
## 3 -1.931739 -3.8841215 0.8617169 -1.1313170 0.69849743 2.935229
## 4 -3.444759 1.0555925 2.2279619 -1.4403733 3.76146639 7.478094
## 5 -2.807117 -2.1973739 3.8577022 -3.8841215 5.40783869 8.465626
## 6 -2.285751 -1.4572508 4.8488445 1.0098906 2.13533063 9.006955
##      Cnnm1      Cnnm2      Cnnm3      Cnnm4      Cnot1      Cnot10      Cnot2
## 1 3.2679590 4.3006294 5.418831 3.641521 6.851788 6.346777 5.649919
## 2 -2.1828345 3.2202341 3.987759 3.558427 7.593918 6.358508 6.399558
## 3 7.5201703 6.3997039 7.220733 7.135542 7.121513 1.983840 3.752786
## 4 0.8639882 1.4250201 5.313866 6.012047 5.791765 5.162928 7.164032
## 5 -1.7701038 -0.7519471 4.704365 5.791311 5.379469 3.110234 6.190650
## 6 -2.4262406 4.5699135 6.324805 3.822137 7.080185 6.306577 6.187054
##      Cnot3      Cnot4      Cnot6      Cnot61      Cnot7      Cnot8      Cnp
## 1 5.095628 4.501868 5.8013366 4.0687509 5.553069 5.486268 11.033545
## 2 4.798523 4.980502 6.9567852 7.0631587 6.169271 6.983316 4.852912
## 3 5.217053 5.545978 0.8617169 4.3143399 6.982064 7.034345 11.069321
## 4 4.111731 6.507364 4.5699564 3.5569116 5.380311 6.639301 10.590624
## 5 3.404524 5.969717 3.5318445 -0.7519471 5.767625 6.557041 11.944636
## 6 5.144742 5.591267 6.2036003 4.3091362 6.160329 5.175138 7.390521
##      Cnpy2      Cnpy3      Cnpy4      Cnr1      Cnr2      Cnrip1      Cnst
## 1 5.458633 6.651370 4.715019 2.1255383 -1.619182 4.514978 4.8744486
## 2 5.790641 5.939565 5.120619 0.1797673 4.716102 2.567237 5.5813779
## 3 9.375234 6.975394 7.167105 7.6900362 -1.131317 5.914740 0.8617169
## 4 7.495007 5.945963 6.894655 7.4126791 -1.777547 6.503821 4.2793414
## 5 8.729483 7.039866 7.094042 7.2273622 -2.197374 7.385510 2.9510998
## 6 4.434972 5.943087 3.923260 6.0387984 -2.600305 4.081439 5.0007186
##      Cntd1      Cntf      Cntfr      Cntln      Cntn1      Cntn2
## 1 -0.02760243 -1.5848879 5.6526451 4.5174947 10.345987 5.7402848
## 2 -0.17998010 -0.6263851 -0.9409705 5.7654464 1.713779 -1.3081756
## 3 -0.61952623 -3.8841215 7.1315474 -0.2425151 8.776769 0.3033916
## 4 0.47138347 -2.7584499 1.8835576 4.0460408 5.476161 5.0829827
## 5 -3.88412153 -3.8841215 3.5688622 -1.4408855 7.263094 6.7627391
## 6 1.34212345 -0.5852726 7.1909486 5.1708792 3.459171 -0.6308617
##      Cntn3      Cntn4      Cntn5      Cntn6      Cntnap1      Cntnap2
## 1 0.1519161 4.6260551 -3.35408812 5.1129500 3.3364837 0.3742060

```

```

## 2 -3.2489909 -2.3414404 -2.41224961 -1.8931096 1.6364545 3.2938048
## 3 -3.8841215 -3.8841215 -3.88412153 -3.8841215 0.3033916 0.5144282
## 4 -0.7718451 2.2113129 -0.71252820 -2.0096396 1.3407823 6.4745576
## 5 -3.8841215 -3.8841215 -3.88412153 -3.8841215 2.5309179 7.6625359
## 6 -1.4849763 -2.0459504 -0.01878334 2.1306112 1.5156968 5.4646563
##      Cntnap3      Cntnap4      Cntnap5a      Cntnap5b      Cntnap5c      Cntrob      Coasy
## 1 -2.553996 1.28308762 -2.230658 3.1893262 -3.884122 3.930306 5.394618
## 2 -3.656504 -1.37300766 -2.419483 -2.5932726 -3.651962 3.779156 4.645022
## 3 -3.884122 -1.93173924 -3.884122 -3.8841215 -3.884122 -1.131317 1.008333
## 4 -2.716767 2.39948976 -1.475761 -0.5755671 -3.884122 3.335341 5.432262
## 5 -3.884122 -3.88412153 -3.884122 -2.1973739 -3.884122 -0.287603 5.763639
## 6 -3.451139 -0.79739833 -3.379887 2.2382588 -3.268087 4.836172 4.848368
##      Cob1      Cob1l1      Coch      Cog1      Cog2      Cog3
## 1 5.7773606 5.2802970 -1.3226804 4.62714597 4.625687 5.79193103
## 2 -0.2128735 7.6498020 -0.1371119 5.06367922 4.869431 6.09519679
## 3 1.1414140 1.0083330 2.1190956 0.05610664 6.185233 1.14141397
## 4 1.7165712 2.3791940 3.0364943 3.64836188 5.725368 3.14648973
## 5 0.7833343 3.6488344 4.2541073 5.09539336 4.415229 -0.04458439
## 6 -1.1346774 2.9225081 -1.2049839 4.92771052 5.474710 6.16812472
##      Cog4      Cog5      Cog6      Cog7      Cog8      Coil
## 1 5.721355 4.08746107 5.4036690 4.752308 3.87679171 4.15119525
## 2 5.822704 5.09104432 5.2695186 4.318946 4.95499136 3.15291958
## 3 1.983840 0.05610664 0.3033916 5.736860 -1.13131698 -3.88412153
## 4 6.359568 3.93032592 5.2229228 5.909875 0.84365994 3.83050677
## 5 6.025708 0.25704632 4.6578771 2.922783 -3.88412153 -2.19737395
## 6 5.090304 4.11412548 5.5820190 4.604803 4.27328711 3.39261441
##      Col10a1      Col11a1      Col11a2      Col12a1      Col13a1      Col14a1
## 1 -3.051021 5.4651115 8.5761060 0.2376718 0.50688669 -2.7499734
## 2 -2.936956 -1.9082266 1.0781372 -0.9282192 0.05252136 3.1476350
## 3 -3.884122 -0.6195262 -3.8841215 1.1414140 -3.88412153 0.8617169
## 4 -2.752580 3.0447501 0.4836483 2.1269743 -1.29155678 -1.1852486
## 5 -3.884122 2.3724409 -3.8841215 1.7221719 -3.88412153 -0.5800187
## 6 -2.446391 4.7448804 4.7157773 1.8440697 -2.76580247 -2.4391309
##      Col15a1      Col16a1      Col17a1      Col18a1      Col19a1      Col1a1
## 1 3.9294827 6.4019260 -2.3468255 4.8431290 2.2792989 2.20986833
## 2 4.5324723 0.8028993 -1.3821291 7.8503135 -2.8202690 1.24176391
## 3 -1.9317392 0.5144282 5.2018945 1.9111385 -1.1313170 5.89602449
## 4 1.6501726 0.9914189 2.3765731 1.3980223 -1.0343211 3.74438775
## 5 -2.1973739 1.6200547 3.7327839 -0.2876030 3.9234895 4.32614588
## 6 -1.3329382 7.1917604 -2.4248666 2.3898372 -1.5794421 2.33017742
##      Col1a2      Col20a1      Col22a1      Col23a1      Col24a1      Col25a1
## 1 3.824437 5.3277301 -1.2329396 2.702607 1.290043 -1.37523746
## 2 4.530390 0.8235428 -2.0724156 1.432181 -3.476608 -0.03321104
## 3 5.563874 -3.8841215 0.8617169 -1.931739 -3.884122 -0.61952623
## 4 5.255047 -1.5223285 -3.1377768 2.880728 -3.884122 -1.55669719
## 5 7.373136 -2.8071174 -3.8841215 3.559696 -3.884122 -1.77010377
## 6 5.516668 2.5481739 0.9174630 4.697556 -1.163670 -2.52991203
##      Col27a1      Col28a1      Col2a1      Col3a1      Col4a1      Col4a2
## 1 4.2169083 -2.789348 2.473503 3.23384265 6.242394 4.964359
## 2 1.6626541 2.930163 -3.076231 4.64829887 12.367553 11.988996
## 3 0.5144282 -3.884122 -3.884122 1.91113848 2.410380 1.008333
## 4 1.4728213 -1.099815 -0.118701 2.93705715 4.562805 3.780878
## 5 -0.5800187 -2.807117 -3.884122 4.40502971 6.166702 5.448133
## 6 5.0038418 -1.563184 3.391124 0.07240425 7.188064 6.278328

```

##	Col4a3	Col4a3bp	Col4a4	Col4a5	Col5a1	Col5a2		
## 1	-0.7896670	5.3052234	-0.6373014	2.56338846	3.69373448	0.68145847		
## 2	4.0904031	7.1317275	-1.0716833	2.17769973	2.23182647	5.03315474		
## 3	-1.9317392	4.1021273	-3.8841215	0.05610664	0.05610664	0.05610664		
## 4	0.4606685	2.9297480	0.1309379	3.34668150	-0.83522950	2.45806605		
## 5	-2.1973739	1.2155742	-2.1973739	-0.04458439	-0.58001868	-1.77010377		
## 6	-1.6657853	6.0291609	1.6266682	6.47003084	3.81303764	4.57362965		
##	Col5a3	Col6a1	Col6a2	Col6a3	Col6a5	Col6a6		
## 1	3.7976338	1.5089200	3.7452102	3.7563156	-2.196792	-3.0585209		
## 2	3.5748852	0.1969975	0.7509463	2.6124624	-2.716134	1.4509639		
## 3	-3.8841215	-0.6195262	-1.9317392	0.8617169	-3.884122	-3.8841215		
## 4	-1.0393412	1.3864904	0.4938474	1.0384239	-2.516289	-3.6749365		
## 5	-3.8841215	1.5843436	-0.7519471	0.2570463	-3.884122	2.7237947		
## 6	4.6949550	0.8486287	1.1742785	-0.7417121	-3.156544	-3.3528132		
##	Col7a1	Col8a1	Col8a2	Col9a1	Col9a2	Col9a3		
## 1	2.0580986	-2.9905713	-2.4013401	0.9749851	5.7850584	8.6346749		
## 2	4.1246130	1.0951405	-1.8899718	-2.8000981	3.2251289	0.3065134		
## 3	3.2908694	1.5770128	-3.8841215	-3.8841215	-1.9317392	-1.1313170		
## 4	0.2649809	-0.5410858	-0.6175291	-1.1684270	1.2040146	3.7265602		
## 5	1.6200547	-1.4408855	0.6514968	-2.8071174	1.4715792	4.5555473		
## 6	2.8422661	-2.9809405	-1.6842441	3.4127980	3.4719537	6.4725216		
##	Colec11	Colec12	Colq	Commd1	Commd10	Commd2	Commd3	
## 1	-1.1828516	2.2040578	-2.162402	4.581585	4.730302	4.220578	5.846917	
## 2	-2.0418191	4.9661546	-2.895210	6.161889	5.659264	5.077224	5.957278	
## 3	-3.8841215	0.5144282	-3.884122	7.687318	6.961959	7.235696	9.813588	
## 4	-1.4649170	4.7489409	-3.078637	6.715459	5.913740	6.266309	7.843802	
## 5	-3.8841215	5.2256996	-3.884122	8.217597	6.879682	6.410516	8.951806	
## 6	-2.4262406	4.1839592	-0.212696	3.201895	4.099064	3.498022	4.653784	
##	Commd4	Commd5	Commd6	Commd7	Commd8	Commd9	Comp	
## 1	5.534109	2.794403	4.781799	5.023014	4.987151	4.389365	-2.911678	
## 2	5.518111	3.267656	4.859339	6.116814	6.525015	4.642795	-3.651962	
## 3	6.146170	6.480440	8.000416	1.911138	8.786963	7.572673	-3.884122	
## 4	6.911486	4.926506	7.319891	6.014193	7.125679	6.369451	-3.884122	
## 5	7.693769	5.142198	7.985758	6.520896	7.551907	7.192207	-3.884122	
## 6	4.930043	2.426324	4.160880	4.154681	4.685089	3.247741	-3.451139	
##	Comt	Comtd1	Copa	Copb1	Copb2	Cope	Copg2	Cops2
## 1	6.139384	2.658793	7.875454	7.055816	6.859774	6.513998	6.110120	5.996534
## 2	6.100046	1.717631	8.455117	7.862043	7.808839	7.350766	6.085494	7.462626
## 3	7.506355	6.909271	9.137014	7.365508	7.819822	8.466201	4.916359	2.971435
## 4	6.888508	3.363647	7.947007	7.238230	7.113943	8.040091	5.238236	7.425363
## 5	7.078884	4.379211	6.400283	7.216468	6.433278	8.942360	2.018229	7.628422
## 6	5.384600	2.677423	7.409767	7.316311	6.568585	5.638298	5.759957	5.894291
##	Cops3	Cops4	Cops5	Cops6	Cops7a	Cops7b	Cops8	
## 1	6.007652	6.337892	6.462316	6.317450	5.959410	4.71204920	6.261230	
## 2	6.128803	6.950336	6.493343	6.949031	6.655386	4.16586083	6.094997	
## 3	7.906529	5.736860	7.817337	8.802121	7.937746	-1.13131698	7.313566	
## 4	6.557768	7.955930	7.352686	7.565344	7.022349	4.93159883	7.798109	
## 5	7.070035	8.019577	7.317126	7.827225	7.171297	-0.04458439	8.048942	
## 6	6.028623	5.454587	5.701219	5.060766	5.645905	4.64013172	5.765292	
##	Copz1	Copz2	Coq10a	Coq10b	Coq2	Coq3	Coq4	
## 1	6.809886	0.4970165	5.05260780	3.700290	4.928288	2.1726698	3.28063405	
## 2	7.298056	4.0321385	4.18089095	6.519810	4.579308	2.6862201	3.50972246	
## 3	8.750964	5.5873958	-0.61952623	1.375592	4.606795	0.3033916	6.61812951	
## 4	8.655825	2.3909788	3.58603112	4.604421	3.280903	4.6962243	5.29464087	

```

## 5 8.573726 3.7570449 4.66216567 3.559696 2.978871 4.1722804 6.37568561
## 6 6.130176 2.0993896 4.47640106 6.943568 5.086123 3.1494871 2.97446592
##      Coq5      Coq6      Coq7      Coq9      Corin      Coro1a      Coro1b
## 1 3.8987056 4.566029 4.544349 5.959566 -0.7946843 3.8041818 7.036438
## 2 4.0453416 4.633963 4.081996 5.267850 0.4054172 2.8766467 8.141168
## 3 0.6984974 7.246817 6.640789 8.758106 -3.8841215 6.8497306 7.363806
## 4 6.1461931 5.504425 6.072128 6.349911 -3.8841215 4.5615557 6.907523
## 5 5.2052728 5.765633 7.129319 5.906050 -3.8841215 4.5647394 7.293131
## 6 3.9235378 4.490270 3.899856 5.554886 -3.4904843 -0.3205941 6.167239
##      Coro1c      Coro2a      Coro2b      Coro6      Coro7      Cort      Cot11
## 1 6.829643 -0.3893524 5.5652839 -1.8719591 5.848360 -0.6968934 6.266664
## 2 7.840691 -1.5200152 5.6528645 1.6624519 5.757946 -2.4793973 6.981944
## 3 7.854163 -1.9317392 0.8617169 -3.8841215 2.053052 -3.8841215 5.661295
## 4 7.335696 -1.1336839 5.4919451 -3.3818813 5.561603 -1.3970762 6.600156
## 5 7.118436 -3.8841215 5.8261280 -3.8841215 4.653576 -3.8841215 7.882947
## 6 4.009038 -2.1942889 6.8405333 -1.4401619 5.550135 -1.0296110 5.184483
##      Cox10      Cox11      Cox15      Cox16      Cox17      Cox18      Cox19
## 1 3.883033 3.565317 4.72104361 3.599556 3.553649 3.6183656 4.025386
## 2 4.178425 3.144878 4.07741624 4.882598 4.742505 3.2504433 4.546957
## 3 2.898090 1.668074 0.69849743 7.163198 8.382962 -1.9317392 1.479815
## 4 5.056310 3.542150 4.56768014 5.830066 6.553276 0.5944121 6.285048
## 5 6.430767 1.119041 -0.04458439 6.543156 7.443342 3.3417432 6.772689
## 6 5.417123 4.346738 4.75086234 3.228276 2.775139 3.5801609 4.015728
##      Cox4i1      Cox4i2      Cox5a      Cox5b      Cox6a1      Cox6a2      Cox6b1
## 1 8.043432 -3.0196955 6.0782738 3.114903 7.397035 -0.7555862 7.157672
## 2 9.121606 4.2146965 7.0034128 3.159331 7.930979 -3.6519623 7.838220
## 3 11.977565 6.2344829 0.6984974 5.872284 10.077435 -3.8841215 9.935730
## 4 9.983384 5.4041673 4.4528294 3.989229 9.007751 -2.9388957 8.692372
## 5 11.268883 7.3164457 5.2401151 5.729306 9.973979 -3.8841215 9.767809
## 6 6.689589 0.5849934 5.5348923 2.887440 5.899409 -3.2808450 5.829426
##      Cox6b2      Cox6c      Cox7a1      Cox7a2      Cox7a2l      Cox7b2      Cox7c
## 1 2.1004862 6.458735 -1.3714805 6.131314 5.845876 -2.4664430 2.820060
## 2 1.0602841 7.040816 -0.7346737 7.165523 7.931380 -3.8841215 2.935240
## 3 -1.9317392 9.696119 4.0690927 9.553751 8.359246 5.3189249 4.536031
## 4 4.7246253 8.114998 1.9054188 8.438300 7.055064 -0.7615931 3.722853
## 5 4.8543283 9.086343 3.1716861 9.730007 7.816202 -2.8071174 4.265427
## 6 0.7803606 5.521259 -0.2316817 5.207634 4.764342 -0.7232116 2.384805
##      Cox8a      Cp      Cpa1      Cpa2      Cpa3      Cpa4
## 1 7.008915 4.72189823 -3.794983 -0.03489584 -3.884122 -1.4067049
## 2 6.857662 5.22007577 0.969586 -0.77683740 -3.884122 -3.8841215
## 3 9.185021 6.63797633 -3.884122 -3.88412153 -1.131317 3.3192428
## 4 7.688461 5.80594236 -3.884122 2.98668625 4.920528 1.3074584
## 5 8.754050 6.06023929 -3.884122 4.38441215 -2.197374 3.6049537
## 6 6.127884 0.01116883 -2.554691 -0.57362372 -3.674482 0.4822071
##      Cpa6      Cpb2      Cpd      Cpe      Cpeb1      Cpeb2      Cpeb3
## 1 -3.252708 -3.662690 7.317600 9.586046 4.7195517 6.615642 4.8961268
## 2 -3.884122 -3.424345 8.808480 9.785367 0.1071513 5.228063 2.6789896
## 3 -3.884122 -3.884122 2.696541 9.504794 5.4401471 6.383000 -0.6195262
## 4 -3.884122 -2.396074 5.943734 10.611167 3.8078591 3.507358 2.6183211
## 5 -3.884122 -3.884122 6.519715 11.239587 4.3739918 4.662166 2.5861290
## 6 -3.884122 -3.118612 6.732806 12.107699 5.1206204 5.758013 4.6590094
##      Cpeb4      Cplx1      Cplx2      Cplx3      Cpm      Cpn1      Cpne1
## 1 5.551345 5.0027809 5.373714 1.5348413 4.4893773 -3.673045 5.0114201
## 2 4.750033 1.4948164 4.012670 -1.3827134 3.3458858 -3.651962 6.2956456

```

```

## 3 -1.931739 0.8617169 3.171443 -3.8841215 2.1822477 -1.931739 2.4621911
## 4 3.201813 6.3034468 7.424262 -3.8841215 5.4932746 -1.627412 4.9829533
## 5 -0.947172 4.1295581 5.634275 -3.8841215 6.4420339 -3.884122 4.4749556
## 6 7.391002 2.1281642 5.793117 -1.3428946 -0.7644884 -3.674482 6.3006000
##      Cpne2      Cpne3      Cpne4      Cpne5      Cpne6      Cpne7
## 1 5.641957 5.137037 0.7524564 -0.5309360 0.8625988 1.15949470
## 2 4.544021 5.739131 -1.1153858 -0.6684094 -0.1214324 -0.04390934
## 3 -1.131317 9.082707 5.7986227 -3.8841215 7.0971404 -3.88412153
## 4 4.233009 6.811111 1.1877732 -1.7035492 3.7051687 -0.51567581
## 5 4.172280 6.801163 -2.8071174 -3.8841215 4.7291044 -3.88412153
## 6 6.183372 5.364720 -1.3365704 -1.8159294 3.0583366 -1.95839846
##      Cpne8      Cpne9      CpoX      Cpped1      Cps1      Cpsf1      Cpsf2
## 1 2.7504242 -0.3222116 6.363541 5.182262 -2.858443 6.420932 5.263753
## 2 4.9424141 -1.8022195 3.458723 5.333755 -3.884122 6.159890 5.832058
## 3 4.6521135 -3.8841215 6.577598 7.651501 -3.884122 1.375592 1.753727
## 4 2.6038389 2.0003782 4.774471 5.576284 -3.884122 6.049108 5.810850
## 5 3.1227355 -3.8841215 5.136044 4.569314 -3.884122 4.913087 4.550929
## 6 2.6234751 -1.5059683 3.289943 5.171092 -3.143174 6.636512 5.154144
##      Cpsf3      Cpsf3l      Cpsf4      Cpsf4l      Cpsf6      Cpsf7      Cpt1a
## 1 6.201747 5.510924 4.081763 -0.7839321 7.064184 6.431523 6.323138
## 2 5.777065 6.713376 4.526811 -0.6677583 6.338978 6.065945 8.577056
## 3 7.861417 4.869161 3.813884 -0.6195262 4.728149 2.242751 1.911138
## 4 7.321621 4.919498 4.457771 -2.9254607 7.097642 6.654213 5.907017
## 5 6.382200 6.020706 3.320194 -2.8071174 6.640916 4.513442 4.631874
## 6 5.754450 4.952543 4.221228 0.3318773 7.352844 7.394275 8.216094
##      Cpt1b      Cpt1c      Cpt2      Cpv1      Cpxm1      Cpxm2      Cpz
## 1 -2.819708 6.666885 3.064150 -2.967552 4.5108672 1.9030002 -1.139421
## 2 -3.248991 2.032403 4.559052 -3.483745 0.7594525 -2.3729121 -2.337770
## 3 -3.884122 8.842390 1.911138 -3.884122 -1.1313170 -3.8841215 -3.884122
## 4 -3.884122 6.901049 5.565639 -3.141616 4.6001333 -1.2462338 -3.418218
## 5 -3.884122 6.887030 5.616705 -3.884122 4.8392569 -1.7701038 -3.884122
## 6 -1.201141 6.051441 3.981004 -2.865381 5.3147663 3.1466505 -3.660779
##      Cr1l      Crabp1      Crabp2      Cradd      Cramp1l      Crat
## 1 3.991835 -3.8841215 -1.187929137 1.8841784 5.3789861 6.075096
## 2 7.501384 -2.0967683 0.076209978 1.9850578 6.0948346 5.400526
## 3 9.136018 -3.8841215 6.376263876 -1.1313170 0.5144282 3.107806
## 4 5.238319 0.1934735 0.975153270 3.6213675 4.7694653 6.129782
## 5 6.527963 2.1943824 5.801067211 3.2872548 1.8479734 5.506540
## 6 4.489052 -3.4511394 0.008467964 0.7164218 6.5105409 6.149661
##      Crb1      Crb2      Crb3      Crbn      Crcp      Creb1      Creb3
## 1 -2.4639720 -0.64790442 -1.778843 5.128037 4.086413 5.220133 5.906447
## 2 -3.2177929 -2.37180130 -2.470541 6.020749 4.912784 6.491314 6.249809
## 3 -1.9317392 -3.88412153 -1.931739 7.209408 1.263249 4.499303 9.593498
## 4 2.1989006 1.02667350 -1.547076 6.979068 5.911058 6.334266 7.332126
## 5 -1.7701038 0.65149678 -3.884122 7.059507 5.219893 5.353185 8.138236
## 6 0.8470525 5.14387831 -1.368183 5.018859 4.004015 5.547602 5.142248
##      Creb3l1      Creb3l2      Creb3l3      Creb3l4      Creb5      Crebbp
## 1 2.3189879 5.0220049 -0.6152540 -1.9159379 4.0019669 6.022692
## 2 1.7227267 5.8507747 -0.4099039 -1.7747533 1.8523614 5.820606
## 3 1.7537270 2.6965413 -3.8841215 -1.9317392 -0.6195262 2.560544
## 4 3.0727117 1.4505073 -1.3994350 2.4868480 4.1145654 6.443972
## 5 2.9925589 0.0631199 -2.8071174 4.4553202 -2.1973739 5.995437
## 6 4.0954604 4.2955614 -2.7330183 0.2979350 4.8344829 6.711810
##      Creb12      Crebzf      Creg1      Creg2      Creld1      Creld2      Crem

```

```

## 1 3.0900820 6.03263715 5.172479 6.1287488 5.965978 5.350886 2.323904
## 2 2.2992510 4.45408358 5.892046 -0.3316058 6.338507 5.888548 7.828486
## 3 -3.8841215 0.05610664 4.606795 6.0937535 6.118182 1.141414 6.643597
## 4 1.9911021 3.98878964 3.244205 3.9742398 5.231804 3.614275 4.673885
## 5 -3.8841215 3.00611801 3.835089 -0.9471720 5.169568 4.020211 4.532308
## 6 3.1340016 6.83126243 5.251431 2.8819280 5.425820 5.502538 3.994970
##      Crh      Crhbp      Crhr1      Crhr2      Crim1      Crip1      Crip2
## 1 -2.878512 -2.4678752 0.4469320 -3.612858 4.442173 1.0251448 5.007765
## 2 -2.888894 -2.1043103 -2.2177824 -3.483745 5.498991 4.2681506 8.504439
## 3 -3.884122 -3.8841215 -3.8841215 -1.931739 2.607316 10.4849034 8.955170
## 4 -1.224459 -3.8841215 -2.4485396 -3.444759 3.400172 5.8414752 8.982659
## 5 2.096371 -3.8841215 -3.8841215 -3.884122 4.494327 6.2978935 9.548045
## 6 -3.884122 -0.5469463 -2.0977731 -3.884122 5.207099 1.8233164 6.238760
##      Crip3      Crip1      Crispld1      Crispld2      Crk      Crkl      Crlf1
## 1 -1.3969767 5.179424 -1.8040397 -0.78544594 7.199505 6.704961 1.2736550
## 2 -3.6519623 6.407838 3.8917563 0.29126597 8.957908 6.374730 -1.3407515
## 3 -3.8841215 8.568728 -3.8841215 7.26516413 4.461615 2.356639 0.3033916
## 4 -2.8126150 7.802812 -0.3405102 3.66842800 5.625942 4.898815 1.6862686
## 5 -3.8841215 8.653436 -3.8841215 4.18425800 5.402722 5.315564 4.7331868
## 6 -0.9207438 4.082892 -2.6003052 -0.04619793 6.426234 6.317144 1.9684860
##      Crlf2      Crlf3      Cris1      Crmp1      Crnk11      Crocc      Crot
## 1 3.72721293 3.9680365 4.930844 5.573395 4.275100 3.180620 5.269773
## 2 5.18835658 5.1523776 4.006129 3.140510 5.622365 2.382670 5.352089
## 3 -1.13131698 0.3033916 1.141414 2.356639 1.263249 -3.884122 7.797306
## 4 -0.25521909 3.9705009 4.767939 7.180074 6.088448 1.403294 6.770837
## 5 1.06823845 1.2615221 5.296379 7.781635 6.319776 1.817536 5.871280
## 6 3.28976576 5.5597209 4.437104 3.927339 4.226908 4.091645 7.362780
##      Crtac1      Crtam      Crtap      Crtc1      Crtc2      Crtc3
## 1 3.62759625 -2.567619 3.7986798 5.915543 5.1630132 4.7653454
## 2 -0.08222124 -2.721044 6.7033088 4.001403 6.4774119 5.0450193
## 3 0.51442825 -3.884122 6.9574535 6.957453 -0.6195262 0.3033916
## 4 2.29505431 -3.884122 2.1934642 4.791700 3.3687426 3.7499080
## 5 -1.44088555 -3.884122 3.0591149 4.435414 2.8792384 4.0855320
## 6 -0.27054032 -1.985947 4.1328815 5.706358 5.9135100 6.0883089
##      Cry1      Cry2      Cryaa      Cryab      Cryba1      Cryba4      Crybb1
## 1 4.9537494 6.285473 -3.081370 6.981134 -3.767000 -0.2423416 3.03662802
## 2 5.1176374 4.214802 -3.884122 3.689542 -3.476608 -2.5254901 -2.19310639
## 3 5.4140754 6.285706 -3.884122 11.150272 -3.884122 -1.9317392 6.79269461
## 4 2.1552497 4.579896 -3.884122 8.900198 -3.029652 -0.9563096 1.12041199
## 5 0.4279671 4.287803 -3.884122 10.367705 -3.884122 -2.8071174 -0.75194706
## 6 5.5232991 8.589861 -3.884122 3.086721 -3.490484 -3.6744822 0.74539809
##      Crybb3      Crybg3      Cryga      Crygn      Cryl1      Crym      Cryz
## 1 -1.7782081 2.6250525 -3.884122 -3.0665403 4.805404 1.3797139 4.2840839
## 2 2.4469656 6.8959065 -3.651962 -1.6449894 2.781684 1.3264239 5.3208766
## 3 -1.9317392 -0.6195262 -3.884122 -3.8841215 1.008333 0.6984974 0.3033916
## 4 2.5874637 2.6772583 -3.884122 0.2520268 3.674162 2.8795069 5.9273816
## 5 4.1602026 0.1633391 -3.884122 2.7879955 4.066244 4.5601506 5.1080237
## 6 -1.7519903 1.8001339 -3.884122 -2.4025666 1.924319 2.5911415 4.0318782
##      Cryz11      Cs      Csad      Csd2      Csd1      Cse11      Csf1
## 1 4.449858 7.707380 5.975291 4.199743 7.521905 6.261835 6.339843
## 2 4.508039 7.627820 4.763054 2.023427 8.561180 6.439092 6.676230
## 3 8.918547 6.676869 6.338642 7.882962 10.333169 7.350121 6.916254
## 4 6.873915 8.552285 5.164735 7.459820 9.966413 7.202485 3.517018
## 5 8.054254 7.756785 4.952138 6.370453 9.781672 6.391270 3.159603

```

```

## 6 4.349515 8.539629 6.207696 8.046192 7.664177 6.187263 6.922215
##      Csf1r      Csf2      Csf2ra      Csf2rb      Csf2rb2      Csf3
## 1 7.215315 -3.8841215 3.5968591 -0.3122996 -1.0672619 -3.221543
## 2 1.613094 -3.8841215 2.2807026 -0.5650542 -0.4601773 2.596027
## 3 9.668472 -3.8841215 0.3033916 -0.6195262 -1.1313170 -3.884122
## 4 6.651492 -2.2616000 1.3062423 1.4610856 -1.0175363 -3.884122
## 5 4.824026 -3.8841215 -0.1609828 -2.8071174 -3.8841215 -3.884122
## 6 2.468183 -3.1431739 3.2392150 -3.1186116 -3.1186116 -2.337382
##      Csf3r Csgalnact1 Csgalnact2      Csk      Csl      Csmid1
## 1 2.4304774 4.7565347 3.932262 6.363948 1.21636635 6.4023142
## 2 -0.5951988 5.4359220 5.538049 5.545304 2.03903056 -2.3597589
## 3 6.5980058 1.0083330 4.196921 6.574658 1.14141397 -3.8841215
## 4 1.3687630 5.1978189 3.618047 4.641046 4.62997909 2.6962182
## 5 -1.4408855 1.8479734 2.146209 5.433154 3.74091628 2.5861290
## 6 -1.7809320 6.5119169 4.037817 4.751894 1.67004947 6.6986141
##      Csmid3 Csnk1a1 Csnk1d Csnk1e Csnk1g1 Csnk1g2 Csnk1g3
## 1 6.1851203 7.750326 7.938782 6.476745 4.393263 6.137961 5.1848693
## 2 -2.6577481 8.726500 8.274324 6.252248 5.403915 7.707136 6.0620279
## 3 5.5156492 7.205613 2.053052 2.242751 1.753727 1.008333 0.3033916
## 4 2.3618754 6.155245 6.215896 6.391531 6.361773 2.969465 3.9716905
## 5 0.9041264 7.632252 6.081209 6.240257 5.358480 1.215574 2.9084139
## 6 0.3812187 7.250774 7.348503 6.295641 5.678832 5.915747 5.2612801
##      Csnk2a1 Csnk2a2 Csnk2b Cspg4 Cspg5 Cspp1 Csrnp1
## 1 6.606560 4.541897 6.232349 9.290576 10.061436 3.8750626 5.6732003
## 2 5.727287 5.344434 7.057412 5.572526 3.126958 4.3682346 8.1640093
## 3 8.647767 1.375592 8.887500 1.263249 9.895958 0.6984974 0.5144282
## 4 5.290638 2.775498 7.859579 2.955752 7.536368 5.5006974 -0.5562389
## 5 6.361251 5.160502 8.676939 2.453854 7.719204 1.9636795 -0.5800187
## 6 5.932914 4.854715 5.438780 3.986831 10.595612 6.7437450 7.6542955
##      Csrnp2 Csrnp3 Csrp1 Csrp2 Csrp2bp Cst6 Cst7
## 1 5.270139 4.3856489 7.654063 1.3672292 5.1660492 -0.4709154 -2.352036
## 2 3.494657 -0.6103793 8.816218 9.5143954 5.0188038 1.1069435 -3.127369
## 3 3.232392 -0.6195262 8.869625 5.8770631 0.3033916 5.0992797 -3.884122
## 4 5.053185 2.0141100 6.709001 4.9658208 4.0952714 0.5433771 -1.633618
## 5 5.578643 2.9925589 8.411248 6.0455411 2.8938999 8.9394921 -3.884122
## 6 5.104857 -0.2516836 7.504819 2.0969625 4.5466138 -3.4904843 -2.621219
##      Cstb Cstf1 Cstf2 Cstf2t Cstf3 Cstl1 Ctage5
## 1 3.422747 4.497459 7.183820 5.626197 4.583280 -3.180786 5.776190
## 2 6.501582 4.592477 6.778096 4.664342 5.082142 -3.884122 6.088245
## 3 8.674781 1.141414 1.668074 8.765214 6.764598 -3.884122 5.527858
## 4 7.058542 5.801911 5.987382 6.937206 5.756993 -3.884122 5.623641
## 5 8.110259 6.214207 2.096371 8.283802 5.175581 -3.884122 4.657877
## 6 2.325286 4.547254 6.798094 5.451601 5.125399 -3.027614 5.783560
##      Ctbp1 Ctbp2 Ctbs Ctcf Ctdnep1 Ctdp1 Ctdsp1
## 1 8.067981 4.4199763 3.102444 6.223644 6.084090 4.6515204 6.287804
## 2 7.556528 6.1589782 4.993904 6.773430 6.230813 4.9427217 7.254847
## 3 2.652618 0.8617169 5.147549 4.571847 5.297693 0.5144282 2.300819
## 4 5.495759 4.9385471 3.858058 5.975769 4.100004 2.5901583 5.272631
## 5 5.759642 3.0849008 4.536986 5.092218 4.966081 -2.1973739 5.571820
## 6 6.954994 6.7694347 4.403434 6.172834 5.357930 4.6007263 5.820114
##      Ctdsp2 Ctdspl Ctdspl2 Ctf1 Ctgf Cth Cthrc1
## 1 7.614254 3.799269 4.562423 -0.42942827 2.2312819 -0.1336737 4.0579936
## 2 7.122341 3.782104 5.279712 -0.41068101 7.1659845 0.4438540 7.0068387
## 3 7.397463 5.569791 1.263249 -3.88412153 -1.9317392 -0.2425151 6.6686228

```



```

## 4 6.694230 5.754104 5.934795 0.49496498 2.3183950 3.7159955 6.2911808
## 5 7.171297 6.035659 3.951792 -3.88412153 -0.2876030 3.4147268 8.0493511
## 6 7.306199 5.435480 5.265436 0.86962463 6.7907726 5.8737440 4.1589672
##      Ctif      Ctla4      Ctnna1      Ctnna2      Ctnna3      Ctnna11      Ctnnb1
## 1 5.4753239 -3.7235669 6.457345 6.9703632 -0.8967884 6.1049154 9.274375
## 2 5.7485776 -1.7747533 9.612471 1.1556841 -1.8297024 0.6128351 10.959707
## 3 0.8617169 -3.8841215 4.085705 0.3033916 -1.1313170 4.5835903 9.188871
## 4 4.4603426 -3.8841215 8.241015 5.1061674 0.3066758 4.2242138 8.229585
## 5 4.7413169 -3.8841215 7.375097 5.7814890 3.1474184 2.5861290 8.443996
## 6 5.2385675 -3.6744822 7.917042 6.7108609 -3.0501908 6.1421665 8.401353
##      Ctnnbip1 Ctnnb11 Ctnnd1 Ctnnd2 Ctns Ctps Ctps2 Ctr9
## 1 6.456772 5.217689 7.349055 7.034373 5.033188 6.153261 4.361471 6.415994
## 2 7.193917 6.231526 9.042202 1.496095 4.609194 5.756024 5.360667 5.632408
## 3 7.780822 6.785086 8.526003 3.928827 8.904571 6.787627 1.753727 3.853225
## 4 5.996034 6.772399 6.192972 7.639919 6.374588 5.274824 6.158218 6.275100
## 5 5.516048 6.143883 5.974897 8.006988 5.350530 6.405409 5.799121 3.724605
## 6 6.920180 4.245581 7.480987 8.267856 5.581297 5.378790 5.282083 5.845935
##      Ctrb1      Ctrl      Ctsa      Ctsb      Ctsc      Ctsd
## 1 -2.8412728 -0.95025334 7.655004 9.768585 1.965288 9.451297
## 2 -1.4359682 -1.47453522 7.962310 8.636810 6.136678 8.714509
## 3 -3.8841215 -3.88412153 9.947707 11.389517 5.853005 11.873110
## 4 -3.8841215 -0.22615821 8.463085 10.416841 5.449446 9.649305
## 5 -3.8841215 -3.88412153 8.585628 10.102419 4.674956 9.948748
## 6 -2.9862494 0.40442440 6.711485 9.014320 6.217106 8.979723
##      Ctse      Ctsf      Ctsh      Ctsk      Ctsl      Ctso      Ctss
## 1 -1.8457785 6.529301 2.2947050 3.64057198 8.512964 5.992860 5.99013819
## 2 -0.8086090 3.678205 9.1811931 3.23056162 9.508696 6.559078 0.58194752
## 3 -3.8841215 7.483031 9.0105933 7.38577213 9.619043 7.664000 11.22539901
## 4 0.4917351 5.956714 5.1982220 3.98489631 8.496411 6.212385 6.33936158
## 5 -2.8071174 4.887674 6.9133535 5.99883177 9.123363 5.777541 5.78739044
## 6 -3.8841215 7.015487 1.9263582 0.76511397 8.631201 6.821492 0.08955091
##      Ctsw      Ctsz      Ctnn      Ctnnbp2 Ctnnbp2n1      Ctu1      Ctu2
## 1 -2.4463772 5.400623 6.940019 6.1078835 6.194909 3.1370750 4.3294681
## 2 6.3291080 6.175519 7.428187 4.9538455 8.474613 1.8056918 4.3412629
## 3 -1.9317392 8.519140 5.217053 1.4798145 5.715671 -0.2425151 -0.6195262
## 4 -0.7068643 7.559874 6.824394 7.3026843 5.674783 2.3213555 0.9674543
## 5 -3.8841215 8.010776 6.183209 5.6537885 4.741317 1.9356113 -2.8071174
## 6 -0.9618482 5.574682 6.584173 6.8099829 5.941968 1.4468479 4.5956421
##      Ctxn1      Ctxn2      Ctxn3      Cubn      Cuedc1      Cuedc2      Cul1
## 1 6.165677 -1.6896709 -2.0605710 -1.0875165 6.2525819 6.833326 6.792186
## 2 3.254847 -2.4823940 -3.2177929 -1.4747565 3.2946521 7.112910 7.335527
## 3 1.263249 -1.1313170 6.9370006 -1.1313170 -0.2425151 8.033973 3.872500
## 4 4.968789 0.7526002 2.5304781 -1.7892601 3.7240258 7.362798 6.765532
## 5 6.003909 2.5861290 -3.8841215 2.8494607 0.9041264 8.307609 5.882351
## 6 4.475720 -2.5216411 -3.5122488 -1.0240173 6.5898705 5.630191 6.894217
##      Cul2      Cul3      Cul4a      Cul4b      Cul5      Cul7      Cul9
## 1 5.1741032 6.209102 6.060466 5.404130 5.403841 5.973052 6.249911
## 2 5.9380387 7.304870 6.483285 5.972186 5.613646 6.063080 3.349508
## 3 0.3033916 5.969472 1.479815 1.834579 8.172609 1.911138 5.268888
## 4 5.0559223 4.865716 4.554332 5.851069 6.775697 3.909141 3.130825
## 5 5.8805120 4.536986 4.160203 4.479823 6.243122 4.219605 -2.807117
## 6 5.5849398 6.782768 6.340063 6.017885 5.988267 6.227454 6.204718
##      Cuta      Cutc      Cux1      Cux2      Cuzd1      Cwc15      Cwc22
## 1 5.623972 1.4181292 6.257549 5.7870290 -2.919602 6.440042 6.870334

```

```

## 2 5.604363 3.4699573 6.574609 -1.0021878 -1.437663 6.866359 3.579050
## 3 7.268806 -0.2425151 2.560544 -3.8841215 -3.884122 8.691157 5.023706
## 4 7.197669 3.8521801 7.048154 -0.3037862 -3.884122 7.855281 6.326073
## 5 7.900750 4.5086874 6.386094 -3.8841215 -3.884122 8.562298 3.622666
## 6 4.984673 1.9522376 5.940586 2.5855924 -3.288906 5.350743 8.926848
##      Cwc25      Cwc27      Cwf1911 Cwf1912      Cwh43      Cx3c11      Cx3cr1
## 1 4.6939157 3.1561087 3.3904174 3.182217 -1.9886426 6.444045 5.1836433
## 2 4.9205259 3.8523920 3.2123735 3.978232 -2.7285573 6.193497 -0.1424803
## 3 0.5144282 0.5144282 0.6984974 3.983037 -1.1313170 3.347069 8.1687160
## 4 5.2195576 5.1204500 4.8540425 5.237788 -2.2021677 3.264015 4.9557244
## 5 -0.7519471 5.6364560 -2.8071174 3.708108 -2.1973739 2.263755 1.8777815
## 6 5.7148712 4.5137186 3.4386751 5.188774 -1.3097364 3.184706 0.1115833
##      Cxc11      Cxc110      Cxc111      Cxc112      Cxc114      Cxc116
## 1 0.4254132 -0.6225777 -3.884122 5.067764 5.9113618 0.9211623
## 2 7.3524810 2.3454412 2.166475 9.469124 0.3958548 2.7926450
## 3 -1.9317392 3.3743684 -1.931739 8.464614 4.7491572 0.3033916
## 4 1.5505784 0.6546723 -2.338306 5.258657 3.8859096 2.0969532
## 5 -2.8071174 -2.1973739 -3.884122 6.685840 5.2936168 3.6914197
## 6 3.7763139 5.0605558 -1.003549 2.006899 7.5990049 -1.0635863
##      Cxc117      Cxc12      Cxc13      Cxc15      Cxcr2      Cxcr3
## 1 -3.7949831 -0.65390469 -3.601338 -1.3045875 -3.5680897 -3.2587237
## 2 -3.6565043 5.74163539 -3.884122 -3.8841215 -3.6565043 -3.6565043
## 3 -3.8841215 -1.13131698 -3.884122 -3.8841215 -3.8841215 -1.1313170
## 4 0.5136712 2.85162699 -3.884122 -0.4462267 -3.8841215 1.1253342
## 5 2.8644264 -3.88412153 -3.884122 -3.8841215 -3.8841215 -1.4408855
## 6 -3.8841215 1.71247179 -3.884122 -3.6744822 -3.8841215 -3.6607788
##      Cxcr4      Cxcr5      Cxcr6      Cxx1a      Cxx1b      Cxx1c      Cxxc1
## 1 1.704694 -2.154334533 -2.3361853 4.948717 5.430750 5.285236 5.73048144
## 2 7.079226 -2.104310323 -3.0392407 6.030642 6.004011 5.901196 6.73291324
## 3 3.427465 -1.931739237 -3.8841215 3.427465 5.115550 6.383000 0.05610664
## 4 5.787982 0.396011424 0.7386148 1.837905 3.108237 6.325737 4.33656764
## 5 6.303395 0.163339093 -2.8071174 4.154126 4.026878 7.066804 4.55554729
## 6 2.903361 -1.466106128 -1.0240173 3.925537 4.198624 4.029466 6.20347141
##      Cxxc4      Cxxc5      Cyb561      Cyb561d1      Cyb561d2      Cyb5b      Cyb5d1
## 1 3.3454512 5.121939 1.3778897 3.139559 3.872692 6.848637 2.2703323
## 2 3.2486856 5.357697 3.7988089 3.769362 4.066743 7.638889 2.6856229
## 3 0.6984974 2.182248 6.0048395 7.228234 6.943850 5.459396 -3.8841215
## 4 2.4682485 5.735851 2.1599805 2.988995 5.346469 6.929833 1.8668057
## 5 -0.7519471 7.082089 0.2570463 -1.770104 6.624527 5.487332 0.9609302
## 6 3.7645292 5.046112 -0.1441805 4.290059 2.921425 6.983040 2.5373982
##      Cyb5d2      Cyb5r1      Cyb5r2      Cyb5r3      Cyb5r4      Cyb5r1      Cyba
## 1 4.166388 3.076077 -0.9933053 5.690711 3.16852698 1.5482635 2.3192174
## 2 2.309526 5.226731 -3.8841215 7.620417 3.85041870 1.6741182 7.3649270
## 3 6.496059 1.141414 -1.9317392 2.300819 -0.24251506 -1.1313170 10.2750571
## 4 5.278341 5.515797 1.3031234 6.565422 1.85806869 2.4906084 6.9457513
## 5 5.366387 6.485033 -3.8841215 6.697378 2.81905543 3.4744738 7.5850358
## 6 3.632428 3.799216 -2.4341566 5.411528 2.66773672 0.7525609 2.3370711
##      Cybb      Cybrd1      Cyc1      Cycs      Cyfip1      Cyfip2      Cygb
## 1 -0.9918433 0.2961951 6.852323 1.459452 7.127498 8.953870 3.6064692
## 2 -1.0176151 0.1189268 7.021834 1.730253 7.980785 2.720287 1.9731170
## 3 5.4971409 6.4867078 6.009200 3.171443 8.032902 5.509506 1.0083330
## 4 3.3293912 2.2053985 4.836384 4.070655 7.422401 5.804047 2.6823473
## 5 0.2570463 4.9415924 5.660235 4.231198 6.586673 4.737258 2.0447493
## 6 -3.8841215 6.5657785 6.688807 1.583899 7.647171 4.494672 -0.9090344

```

##	Cyhr1	Cyld	Cyp11a1	Cyp19a1	Cyp1a1	Cyp1b1	
## 1	6.358178	5.9483972	-3.5881515	-3.884122	-3.5486778	0.326699535	
## 2	5.958670	4.6425006	-3.0762312	-3.884122	-3.8841215	-0.005054663	
## 3	7.677762	0.8617169	-0.2425151	-3.884122	-3.8841215	1.911138482	
## 4	6.872456	5.0072136	1.9167563	-3.884122	-2.3871423	6.202196993	
## 5	7.502537	1.8479734	-3.8841215	-3.884122	-3.8841215	6.863944500	
## 6	5.880263	5.1225084	-3.8841215	-3.884122	-3.1565438	5.750555675	
##	Cyp20a1	Cyp26a1	Cyp26b1	Cyp27a1	Cyp27b1	Cyp2b19	
## 1	4.345625	-3.320180	2.91359541	4.4749675	-1.7624705	-3.8841215	
## 2	5.619729	-2.104310	0.87635174	-1.4538919	-3.6565043	-3.8841215	
## 3	1.141414	-3.884122	-0.24251506	1.2632490	-3.8841215	1.4798145	
## 4	6.130314	-3.884122	1.30402620	2.4708994	-1.7349195	-1.6972746	
## 5	6.058614	-3.884122	3.12273548	2.4538543	-3.8841215	-0.7519471	
## 6	4.457376	-3.884122	0.03723791	0.7428539	-1.1158047	-3.8841215	
##	Cyp2d22	Cyp2d26	Cyp2e1	Cyp2f2	Cyp2j12	Cyp2j13	Cyp2j6
## 1	3.064493	-3.268370	-3.884122	-3.7949831	0.0620388	-1.4209173	7.911014
## 2	7.539732	-3.656504	-3.217793	-3.2277824	-3.8841215	-3.8841215	5.188023
## 3	6.714741	-3.884122	-3.884122	-0.2425151	7.3100361	-3.8841215	7.285080
## 4	6.847598	-3.884122	-3.884122	-2.5091938	1.5169084	-3.8841215	5.452320
## 5	5.494565	-3.884122	-3.884122	-3.8841215	-2.8071174	-3.8841215	6.559342
## 6	6.541443	-2.980940	-3.884122	-3.8841215	-3.8841215	0.7112867	6.732462
##	Cyp2j8	Cyp2j9	Cyp2r1	Cyp2s1	Cyp2u1	Cyp39a1	
## 1	-1.1392764	5.9409166	-3.2851549	-1.6541533	2.5611484	0.5506872	
## 2	-3.8841215	-0.1733809	-0.6205144	-3.2489909	-1.2161876	3.3965076	
## 3	-3.8841215	6.4709868	-3.8841215	-0.2425151	3.7938044	2.2427509	
## 4	-3.0296522	6.4997666	-2.7584499	-0.2088604	0.4767532	6.2571282	
## 5	-3.8841215	6.2798666	-3.8841215	-3.8841215	3.8198143	6.5431565	
## 6	-0.4962926	6.5944429	-3.1713129	-1.7990744	2.0561910	1.9658997	
##	Cyp3a13	Cyp46a1	Cyp4b1	Cyp4f13	Cyp4f14	Cyp4f15	
## 1	0.3868275	5.61005409	-3.7669998	4.012549	-0.27713560	0.6465203	
## 2	-3.8841215	-0.04369552	-3.2177929	3.610909	-2.82026903	-2.0647642	
## 3	-1.9317392	1.00833299	-1.9317392	3.552239	-0.24251506	-1.9317392	
## 4	-2.4786490	2.03067991	-3.4277009	3.806069	2.38621545	4.1206971	
## 5	-2.1973739	2.74011471	-3.8841215	5.245841	4.33154113	3.4147268	
## 6	-3.8841215	4.84108823	-3.8841215	5.368184	4.82155887	7.0412112	
##	Cyp4f16	Cyp4f17	Cyp4f18	Cyp4f39	Cyp4v3	Cyp4x1	
## 1	4.6662020	2.7943670	-3.317193	-3.7566452	2.0847009	-2.989366	
## 2	4.5136023	2.5678480	-2.122297	-3.6519623	4.4817001	-3.039241	
## 3	-0.6195262	-0.6195262	-3.884122	0.3033916	6.3762639	-3.884122	
## 4	3.5691543	2.5704313	-3.089963	-2.2274195	5.8735275	-3.141616	
## 5	4.6535756	-1.1730114	-3.884122	-0.9471720	4.3947578	-3.884122	
## 6	5.3185647	4.6300818	-3.884122	-3.8841215	4.6170489	-3.512249	
##	Cyp51	Cyp7b1	Cyp8b1	Cyr61	Cys1	Cysltr1	
## 1	8.351356	2.9516226	-3.884122	5.5306061	1.0019218	-1.18379156	
## 2	6.210613	-0.1275126	1.628612	10.3372600	-0.1831363	1.14364540	
## 3	7.055582	5.7629167	-3.884122	0.6984974	-3.8841215	0.05610664	
## 4	7.458148	5.6770582	-3.884122	5.0340691	-0.1552025	1.43441537	
## 5	7.340728	3.9795505	-3.884122	0.1633391	-3.8841215	-1.44088555	
## 6	9.092958	5.1915115	-3.884122	11.1647092	-2.6544356	-3.88412153	
##	Cysltr2	Cyth1	Cyth2	Cyth3	Cyth4	Cytip	
## 1	-3.2326460	5.9582485	7.177300	3.754983	3.1055739	-0.8887797	
## 2	2.4573755	6.6586938	7.299543	6.670470	5.1526859	1.0759317	
## 3	-3.8841215	-0.2425151	6.943850	5.604788	2.1822477	-1.1313170	
## 4	0.6596855	4.5142099	4.183379	4.005357	4.4396954	-1.0355322	

```

## 5 4.9202662 4.8008750 5.603386 6.529137 1.1190407 -3.8841215
## 6 -2.6783180 5.7078710 5.874066 4.976016 4.6541576 -3.5122488
##      Cyt11      Cyrr1 D030056L22Rik D10Bwg1379e D10Jhu81e D10Wsu102e
## 1 -3.8841215 -2.9359693 4.5208049 3.6111913 5.5577030 5.298219
## 2 -0.1168292 6.7480413 3.9868774 -1.8022195 5.5639977 5.281966
## 3 -3.8841215 -3.8841215 0.3033916 -0.2425151 0.6984974 1.479815
## 4 -2.5272281 -1.8543204 3.9519426 0.8774703 3.3345308 5.239380
## 5 -3.8841215 -3.8841215 4.9521384 3.6138373 4.3739918 5.145265
## 6 -3.8841215 -0.9490993 3.7021711 -1.6726522 5.0575819 5.152726
##      D11Wsu47e D130040H23Rik D130043K22Rik D15Ertd621e D16Ertd472e D17H6S53E
## 1 3.004366 1.5868669 0.02121987 6.936945 5.254002 2.837994
## 2 2.583334 1.5113854 -2.89520984 6.843719 4.214813 1.915919
## 3 -1.931739 1.2632490 -0.61952623 8.651258 7.407408 6.663099
## 4 3.454639 3.7024525 -1.06525184 5.113486 4.686686 4.418280
## 5 4.716788 -0.4264149 -2.80711744 3.740916 3.923490 5.265706
## 6 3.885601 4.2219009 0.31632559 6.921769 5.162355 3.499549
##      D17Wsu104e D17Wsu92e D19Bwg1357e D1Ertd622e D230025D16Rik D2hgdh
## 1 6.069356 7.128412 5.115903 5.3610646 4.7608596 2.4409494
## 2 6.795549 7.389255 5.207193 5.3119967 4.7027478 1.8097792
## 3 8.597973 2.053052 2.739167 -0.6195262 6.1658335 -0.6195262
## 4 6.798898 4.913373 6.954970 3.9054589 2.6709298 3.6102763
## 5 7.556522 4.020211 6.757738 4.7812943 -0.4264149 3.3838991
## 6 5.304024 5.970861 5.246615 4.6850888 4.6535114 2.7572933
##      D2Wsu81e D330045A20Rik D3Bwg0562e D3Ertd254e D3Ertd751e D430041D05Rik
## 1 4.565537 -1.5803960 4.7465668 4.14879291 2.5602464 6.1674425
## 2 3.434939 -3.6565043 0.5176197 4.23926056 1.8651144 -0.8080818
## 3 5.015059 -1.9317392 8.7046635 0.05610664 0.5144282 0.5144282
## 4 5.856566 1.4627980 3.8260315 5.84861493 4.4687441 4.4919343
## 5 5.775563 -2.8071174 1.7546656 5.00374233 3.1716861 2.1462087
## 6 4.251430 -2.7173925 1.6026981 6.43784961 3.5496407 1.5933857
##      D430042009Rik D5Ertd579e D630003M21Rik D630023F18Rik D630039A03Rik
## 1 4.3636997 6.4810481 4.4767710 0.5200473 -2.606873
## 2 4.1401928 5.7792511 0.4913244 -3.2515854 2.287833
## 3 0.5144282 0.5144282 -1.9317392 -3.8841215 -3.884122
## 4 3.1673106 4.7913684 3.1919604 -1.3231519 -3.884122
## 5 -1.4408855 5.4481329 1.5101550 -2.8071174 -3.884122
## 6 5.6270400 6.4061538 6.0612987 -1.1862885 2.037323
##      D630045J12Rik D6Wsu163e D7Ertd443e D8Ertd738e D8Ertd82e D930015E06Rik
## 1 7.1176093 4.528535 0.19789000 5.500154 6.008283 4.11555314
## 2 0.6067573 3.831118 -3.88412153 6.054526 4.920984 4.07809819
## 3 1.5770128 6.505350 -3.88412153 6.800263 1.008333 1.14141397
## 4 5.1035384 4.578578 1.82090926 7.546358 5.345538 5.05437364
## 5 5.2572257 3.072065 -2.19737395 8.605528 2.018229 4.24269807
## 6 5.5962560 3.238094 -3.49048434 5.093626 3.383776 4.38597773
##      D930020B18Rik Daam1 Daam2 Dab1 Dab2 Dab2ip
## 1 -3.7901666 6.308494 5.8497876 6.3345494 5.182625 5.889776
## 2 -3.6565043 6.415465 4.3151577 -0.4278239 8.160631 7.862954
## 3 -3.8841215 2.410380 0.5144282 2.2427509 4.790278 1.834579
## 4 -2.8992246 5.926204 5.6456279 6.9259312 6.531416 3.172098
## 5 -3.8841215 5.433154 4.4602542 6.3319402 4.902250 4.450369
## 6 0.3021428 7.695037 10.7373609 7.2405546 5.826579 6.059702
##      Dach1 Dach2 Dact1 Dact2 Dact3 Dad1 Dag1
## 1 2.046018 1.3140355 4.958826 1.044428 6.5259233 6.341096 8.206303
## 2 6.994166 2.8258791 2.671602 -2.120670 0.9703913 6.706322 7.410446

```

```

## 3 -1.131317 -3.8841215 -3.884122 2.119096 3.2619268 9.372698 2.971435
## 4 2.981709 0.2008487 3.056302 -3.884122 3.6138791 8.689145 5.161454
## 5 3.596015 -3.8841215 4.831662 -2.807117 2.8190554 9.249138 4.059758
## 6 2.082731 -2.7173925 3.003367 2.518426 4.3113383 5.916971 9.565512
##      Dagla      Daglb      Dak      Dalrd3      Dand5      Dap      Dap3
## 1 4.431967 5.087019 3.872055 4.619630 2.034256 4.189706 6.080987
## 2 4.225539 3.119614 2.872764 3.868609 1.778179 6.261186 5.756809
## 3 5.407483 9.742690 1.375592 6.643597 -1.931739 4.840083 7.478321
## 4 2.285810 6.103869 5.022122 4.946194 3.547844 5.992368 7.218552
## 5 1.688930 5.795222 5.069796 1.963680 3.979550 6.730429 7.814758
## 6 7.079459 4.715602 3.578870 5.204572 1.142808 2.347025 5.592935
##      Dapk1      Dapk2      Dapk3      Dapl1      Dapp1      Dars      Dars2
## 1 2.889601 2.2823066 5.3541545 -3.8841215 0.1086645 6.586122 4.258246
## 2 6.518112 3.7383207 6.1848332 -1.4268535 -0.1893422 6.507797 3.883384
## 3 1.577013 -3.8841215 -3.8841215 1.9838395 6.4709868 7.702207 1.263249
## 4 5.595920 1.0484703 0.5370035 0.3781204 4.3580877 7.460966 5.366954
## 5 5.882351 -1.4408855 0.8449942 3.4349186 2.9084139 7.783113 2.740115
## 6 6.087205 2.2859388 4.8621131 -3.8841215 5.1468251 6.241275 3.672841
##      Daxx      Dazap1      Dazap2      Dazl      Dbf4      Dbh      Dbi
## 1 4.5555013 6.212465 7.811120 -2.6643730 2.9707553 -3.701028 7.470737
## 2 4.7529748 6.555419 8.709965 -3.6565043 4.8191932 3.777490 6.372725
## 3 0.6984974 2.053052 10.434119 -3.8841215 -0.6195262 1.834579 10.284981
## 4 5.0407185 3.726039 9.211927 -3.1416164 2.7629767 -2.833737 10.705669
## 5 4.6535756 3.159603 9.205912 -3.8841215 2.6217964 -3.884122 11.295655
## 6 4.3393735 5.369181 7.253542 -2.6003052 3.4584415 -3.884122 8.643042
##      Dbn1      Dbndd1      Dbndd2      Dbnl      Dbp      Dbr1      Dbt
## 1 5.694834 3.1388156 6.829240 6.473377 4.368319 4.073666 5.458495
## 2 5.569025 0.3862683 3.683298 6.413502 3.911828 3.591527 3.138984
## 3 5.155439 -1.1313170 10.906026 1.983840 -3.884122 3.773441 7.914687
## 4 5.775365 3.9941760 8.115230 6.315089 2.124933 1.932028 5.323887
## 5 6.750707 4.2020399 9.257311 6.270066 3.740916 3.666020 2.864426
## 6 6.574029 3.0372488 7.435648 5.413723 5.885711 3.934626 5.596332
##      Dbx2      Dcaf10      Dcaf11      Dcaf12      Dcaf12l1      Dcaf12l2      Dcaf13
## 1 3.4737747 5.0154538 6.800428 6.897338 5.343858161 0.4512135 4.200833
## 2 -2.4601722 6.2427870 6.494590 6.366125 -0.005054663 -3.8841215 5.089145
## 3 7.8035954 0.5144282 7.666763 5.551968 -1.931739237 -1.9317392 4.696052
## 4 6.0435852 3.3003076 7.349846 4.770806 2.601397566 -1.8076042 6.161690
## 5 5.6342747 3.3092977 7.975025 5.562674 1.510155011 -3.8841215 7.102745
## 6 6.4467318 5.3372175 6.647737 6.020258 1.609366542 -3.5122488 4.684966
##      Dcaf15      Dcaf17      Dcaf4      Dcaf5      Dcaf6      Dcaf7      Dcaf8
## 1 5.77294787 4.636342 4.155782 5.8498112 5.507890 7.499490 6.946167
## 2 5.15155998 3.511355 3.698807 6.4805599 7.011126 6.579276 7.278532
## 3 0.05610664 -1.131317 7.192252 1.0083330 4.271420 2.607316 6.869052
## 4 2.88608049 4.199160 5.882495 4.5239339 4.070168 6.039481 6.409481
## 5 3.55047206 4.465171 6.092375 0.9609302 3.122735 5.638634 6.376991
## 6 6.13865180 4.519040 3.702124 5.6795104 5.792352 6.732290 7.311945
##      Dcakd      Dcbld1      Dcbld2      Dcc      Dcdc2a      Dcdc2b
## 1 6.207272 4.06340125 5.8634110 5.1039190 2.10723101 3.090658
## 2 5.313552 6.74993426 4.2856894 -1.7591046 -0.04993648 3.401112
## 3 6.389705 -1.13131698 -0.6195262 0.3033916 -1.13131698 -1.131317
## 4 8.444227 -0.15094128 2.8013972 5.2912198 3.05423488 2.625920
## 5 8.032058 3.74900311 3.6830026 5.3318072 3.89462042 3.110234
## 6 4.970066 4.55550342 6.0660835 5.4545445 1.72461315 2.533444
##      Dcdc2c      Dchs1      Dck      Dclk1      Dclk2      Dclk3      Dclre1a

```

```

## 1 -3.884122 6.041481 4.829156 6.983774 6.5818514 0.4663401 3.7937426
## 2 -3.884122 6.879901 5.145809 2.606748 5.4236719 -1.6048149 3.7935075
## 3 -3.884122 1.141414 1.983840 6.013548 -0.2425151 -3.8841215 1.5770128
## 4 -3.884122 5.102869 6.249917 8.041408 5.0696160 -1.6220447 4.0126898
## 5 -3.884122 3.613837 7.119996 6.988707 3.8350891 -2.1973739 -2.8071174
## 6 -3.884122 6.970678 4.620018 9.988734 8.8870527 0.7560904 4.2972930
##      Dclre1b      Dclre1c          Dcn          Dcp1a          Dcp1b          Dcp2
## 1 3.174278 3.2812547 2.0936298 5.07884781 3.9797344 4.87189833
## 2 3.465123 2.7674422 0.8338134 5.22356219 4.1902110 5.45203770
## 3 2.356639 -0.2425151 5.7473394 0.51442825 -0.2425151 0.05610664
## 4 4.423822 4.1552039 7.1708627 4.67500771 4.1356185 3.91378017
## 5 4.342271 1.0155818 7.3048352 -0.04458439 3.6745361 -1.17301144
## 6 2.605150 4.7332030 -1.2507276 5.57065219 4.3640015 5.54403599
##      Dcps      Dcst1      Dct      Dctd      Dctn1      Dctn2      Dctn3
## 1 5.595595 0.4214704 4.7518050 2.96777223 7.805124 7.928239 6.691204
## 2 5.421675 -0.3392660 -3.8841215 2.30567219 7.730911 8.509505 5.193019
## 3 5.688739 -3.8841215 3.4274650 0.51442825 1.753727 7.078587 7.194168
## 4 6.434410 -1.1817251 -0.5785715 3.91569719 4.454537 7.364664 6.938119
## 5 6.834796 -2.8071174 0.1633391 1.62005470 4.614275 8.204425 8.149353
## 6 3.624963 -1.2724399 -2.4248666 3.92363715 7.080134 7.224921 5.692991
##      Dctn4      Dctn5      Dctn6      Dctpp1      Dcun1d1      Dcun1d2      Dcun1d3
## 1 6.888810 6.079316 5.596092 3.765842 4.007139 5.1399611 4.3039683
## 2 6.548837 5.756944 6.394867 4.171627 4.304735 4.6173205 5.4263247
## 3 9.148920 8.151066 7.263340 5.928619 7.823541 0.8617169 0.6984974
## 4 7.993436 7.395611 6.649298 6.669568 5.892427 5.2283106 3.4186650
## 5 8.780674 8.184810 7.163755 7.735576 5.755634 4.6231013 1.5477262
## 6 7.175163 5.335796 4.652908 2.134721 4.001383 4.9942332 4.6923995
##      Dcun1d4      Dcun1d5      Dcx      Dcxr      Dda1      Ddah1      Ddah2
## 1 5.380596 5.453647 6.1811248 3.157108 6.227021 6.601199 6.125067
## 2 4.738061 6.621322 0.2493624 2.172745 5.933740 7.179872 7.160824
## 3 5.414075 5.186575 2.4103803 6.282107 5.318925 5.627657 3.478677
## 4 5.360110 4.592718 8.0522375 4.391416 4.305830 8.531907 7.980353
## 5 2.070791 5.753625 7.0448013 5.929366 5.412937 7.887533 8.826532
## 6 5.425829 5.487941 0.7480961 3.170948 5.398828 8.066922 5.873893
##      Ddb1      Ddb2      Ddc      Ddhd1      Ddhd2      Ddi2      Ddit3
## 1 8.899795 2.9107789 4.3879160 6.2777304 5.543262 3.14223328 4.708187
## 2 9.670908 2.3180858 6.6674591 4.8980040 4.291310 5.52686342 5.340681
## 3 8.042507 -0.6195262 7.9525390 0.8617169 4.166010 -1.93173924 6.081382
## 4 8.243490 2.3226600 3.4094774 4.6069450 5.811767 0.08945405 5.811815
## 5 7.361316 4.1782817 6.3265464 3.6138373 5.925804 -1.77010377 5.931144
## 6 8.011833 4.2715315 -0.5509910 8.6781438 6.084037 3.77616859 6.046211
##      Ddit4      Ddit4l      Ddn      Ddo      Ddost      Ddr1      Ddr2
## 1 6.495366 -0.9781199 4.9993199 -2.9478282 7.934480 8.622781 0.6371718
## 2 4.891936 1.2347878 0.5993517 -2.4793973 7.666721 1.044147 3.4197866
## 3 2.820816 6.6986318 0.3033916 -1.1313170 7.169055 7.856585 -0.6195262
## 4 2.124953 3.4708062 3.3170390 5.5319752 5.168388 6.038724 3.0389738
## 5 2.433928 3.8043761 -0.9471720 2.5679590 6.253108 6.888861 -2.8071174
## 6 7.569150 3.1223414 0.3480431 2.5755906 7.037094 7.038148 5.0731629
##      Ddrgk1      Ddt      Ddx1      Ddx10      Ddx11      Ddx17      Ddx18
## 1 6.451948 3.732482 7.387718 3.9167089 2.1091537 9.426244 3.301259
## 2 6.820211 4.542046 6.828695 5.5570291 3.1253346 9.242529 3.051020
## 3 7.840769 6.762017 7.731532 1.5770128 -0.6195262 7.263340 3.139975
## 4 6.498186 6.838555 7.995558 5.3804591 2.8250559 6.338522 4.977670
## 5 7.363951 7.696908 8.103967 -0.1609828 1.3060516 5.971446 4.555547

```

```

## 6 5.382959 3.925786 6.417713 4.3855858 4.0285651 10.406862 3.002560
##      Ddx19a      Ddx19b      Ddx20      Ddx21      Ddx23      Ddx24      Ddx25
## 1 5.5066701 4.571774 3.9566670 5.970152 6.391937 6.484413 4.4985084
## 2 5.9667807 4.769854 3.3503181 7.132314 6.478674 6.365987 0.6491959
## 3 -0.2425151 1.008333 -1.9317392 2.462191 1.008333 7.953671 8.0286127
## 4 3.8575607 3.430535 2.2762983 5.657003 3.459711 8.016595 5.4120198
## 5 3.1351297 2.879238 1.2615221 5.719051 -1.440886 7.147787 6.0553565
## 6 4.7017741 5.827938 4.2779435 6.253426 6.347065 6.032107 2.2948178
##      Ddx26b      Ddx27      Ddx28      Ddx31      Ddx39      Ddx39b      Ddx3x
## 1 5.933951 5.170269 3.100982 3.5998056 4.6417090 8.245481 8.611048
## 2 5.644488 5.216786 2.615306 3.5453166 6.1681306 7.394130 9.892231
## 3 2.652618 1.375592 5.752551 -0.2425151 3.5992759 9.088386 8.197661
## 4 3.571159 4.898166 1.202467 3.9243856 6.6154754 9.325452 7.148570
## 5 -0.947172 4.569314 -1.173011 -1.4408855 5.9114644 9.457028 4.909484
## 6 6.692671 5.034306 3.097580 3.9664576 4.8946929 8.191628 9.292162
##      Ddx3y      Ddx4      Ddx41      Ddx42      Ddx43      Ddx46      Ddx47
## 1 5.077178 -3.2886188 5.4758569 5.993053 1.3788727 6.077054 5.620556
## 2 6.892913 -2.7531074 6.0063820 6.345993 -1.8551503 6.717980 6.177029
## 3 8.520668 -3.8841215 0.5144282 7.621909 -3.8841215 2.300819 7.036483
## 4 6.976585 0.2924592 5.8725027 6.186743 -2.5745102 6.219469 7.043322
## 5 5.475197 -3.8841215 2.9650523 3.772995 -3.8841215 5.069796 6.389978
## 6 7.092282 -2.2349732 5.4944961 7.307356 -3.5122488 6.972840 5.785530
##      Ddx49      Ddx5      Ddx50      Ddx51      Ddx52      Ddx54      Ddx55
## 1 4.281985 9.017453 4.914461 4.6315305 4.958639 6.480575 4.209960
## 2 4.957692 9.943150 6.737234 3.9644618 5.554887 7.005513 3.226473
## 3 1.263249 7.036483 5.472088 0.8617169 1.753727 1.668074 6.968692
## 4 4.987241 8.389920 5.596644 2.4275402 6.558141 4.493410 5.000132
## 5 5.716991 8.234975 3.901892 1.9636795 6.642002 1.306052 4.600933
## 6 3.884389 9.445814 6.199374 4.6957861 5.399970 5.799863 4.829563
##      Ddx56      Ddx58      Ddx59      Ddx6      Ddx60      Deaf1      Deb1
## 1 5.507724 2.4922425 4.003478 7.553637 -0.004369968 5.74002030 5.421234
## 2 4.950158 6.2175839 3.474023 7.757815 2.383363153 4.92247990 3.975524
## 3 8.395508 0.8617169 -1.931739 6.668623 -1.131316983 0.05610664 8.333396
## 4 6.875592 3.7720253 2.254258 5.797694 1.193115716 3.92354578 7.025623
## 5 7.406751 0.5807664 2.453854 5.721108 -3.884121530 0.25704632 7.876963
## 6 5.104354 3.2496161 3.370736 6.883255 0.787763000 5.06473336 3.591183
##      Decr1      Decr2      Dedd      Dedd2      Def6      Def8      Defb1
## 1 5.186769 3.955094 4.995368 3.3802813 -0.6857176 6.118609 -3.8841215
## 2 5.899019 4.041837 5.316912 4.9745959 6.6849433 5.200995 -3.8841215
## 3 6.278499 4.943954 4.052287 0.5144282 -0.6195262 1.577013 0.6984974
## 4 6.022969 6.088590 5.594876 -0.1103885 -1.9894030 6.293582 -2.8922555
## 5 6.109750 6.157618 6.078003 2.4339276 -1.7701038 6.731450 0.2570463
## 6 6.134665 3.819409 4.873885 3.0828058 0.1803011 5.596566 -3.6744822
##      Defb20      Defb25      Degs1      Degs2      Dek      Dennd1a      Dennd1b
## 1 -3.0744071 -3.884122 8.169129 1.164943 5.654890 5.83274006 4.4486074
## 2 -3.8841215 -3.884122 7.784448 4.303495 7.157581 4.93462791 4.0680234
## 3 -3.8841215 -3.884122 9.418907 8.492135 3.006755 0.05610664 0.5144282
## 4 -1.5510692 -3.287822 8.160749 2.143820 6.034331 4.74651340 4.5626051
## 5 -3.8841215 -3.884122 8.881591 3.309298 4.026878 1.26152207 0.8449942
## 6 -3.8841215 -3.884122 6.454081 1.861068 6.559130 6.96996986 5.4307243
##      Dennd1c      Dennd2a      Dennd2c      Dennd2d      Dennd3      Dennd4a
## 1 0.69664998 6.816823 0.3061269 -2.3693026 1.00571264 6.447872
## 2 -1.52001524 5.336249 5.8723981 -1.7588932 7.78694816 5.795025
## 3 -3.88412153 3.041231 0.6984974 -1.1313170 1.14141397 7.153381

```

```

## 4 1.27959827 4.694835 0.1180004 -1.6590444 0.08807581 4.169774
## 5 -1.77010377 4.231198 -0.5800187 1.4319435 -3.88412153 3.362975
## 6 -3.15654382 6.461011 -0.7124001 -2.2632704 2.60210384 5.795144
##      Dennd4b      Dennd4c      Dennd5a      Dennd5b      Denr      Depdc1a
## 1 5.2411822 4.6298686 9.296762 5.1790968 4.823979 -0.7752134
## 2 2.7465868 6.0590276 9.044198 7.1826120 5.471556 2.0513129
## 3 -1.1313170 -0.2425151 4.356020 6.7174085 2.971435 -1.1313170
## 4 3.1055795 2.4733716 7.293667 5.9317324 5.980855 1.6078871
## 5 1.2155742 -0.7519471 7.139352 5.3637559 6.430767 -2.8071174
## 6 4.7224886 6.5230345 8.369715 5.3821174 4.193537 1.1797048
##      Depdc1b      Depdc5      Depdc7      Deptor      Dera      Derl1
## 1 2.36250969 5.3961862 -0.28737273 -0.4703685 3.55348985 6.834388
## 2 1.89971743 4.0737480 0.30565487 0.7568656 5.53402112 6.863316
## 3 0.05610664 0.8617169 5.44014712 -0.6195262 0.05610664 7.636077
## 4 2.74954513 5.1616038 1.51469946 4.1825082 3.81180076 5.509773
## 5 -1.44088555 1.5101550 -1.17301144 3.8799663 3.98640737 5.841336
## 6 0.69888423 5.5538020 1.51879454 1.3142612 4.09945626 6.832682
##      Derl2      Derl3      Des      Det1      Dexi      Dffa
## 1 5.325352 1.5631411 -0.6381789 2.2309700 4.3549089 4.57063005
## 2 5.252732 -0.5505186 4.1209391 2.8188944 3.6897556 4.48445092
## 3 8.252945 -1.9317392 7.2094079 -0.6195262 -0.2425151 -0.24251506
## 4 7.014344 2.1854434 -0.1253513 3.2237401 2.1097700 3.69337002
## 5 7.679031 1.9069861 -1.4408855 2.3932290 1.3492478 3.92348954
## 6 5.783271 0.8577792 -1.1190002 2.3889317 4.7853594 3.59741288
##      Dffb      Dfna5      Dfnb59      Dgat1      Dgat2      Dgcr14      Dgcr2
## 1 3.3493971 2.4375320 -3.5960906 4.679437 4.897444 4.742987 7.718601
## 2 3.8721750 -1.1266324 -3.4243451 4.775032 1.047147 4.888166 6.941533
## 3 -0.6195262 -1.1313170 -3.8841215 2.512206 7.231970 5.239496 6.964207
## 4 2.9962604 4.1502479 -0.3141075 4.202015 3.431661 5.461997 6.085781
## 5 -3.8841215 2.2178791 -3.8841215 3.195552 2.433928 5.339861 5.962780
## 6 4.5228477 1.4070841 -1.1710834 5.441436 2.431979 5.184725 7.278454
##      Dgcr6      Dgcr8      Dgka      Dgkb      Dgkd      Dgke
## 1 5.213526 4.5899318 5.02634217 3.6171570 6.635275 4.2295463
## 2 5.479337 4.4679044 6.34278702 -0.0628266 7.057466 5.9698143
## 3 5.290545 0.5144282 0.05610664 2.8599701 1.008333 -0.6195262
## 4 4.817975 3.4720834 3.75910844 5.8684871 4.473752 3.3011683
## 5 6.114452 3.5596964 2.78799553 4.3207304 5.181568 4.0791314
## 6 5.120897 4.3093442 3.14670899 6.3611964 6.591243 4.2267801
##      Dgkg      Dgkh      Dgki      Dgkk      Dgkq      Dgkz      Dguok
## 1 -0.04204636 1.707401 3.1164653 0.7658161 4.670291 6.488680 3.535401
## 2 -1.09886981 5.185463 3.2518384 -1.0716833 3.601685 7.060988 3.637364
## 3 0.69849743 -1.931739 -1.9317392 -3.8841215 -1.931739 6.598006 6.161922
## 4 2.51385201 1.269316 0.9402619 -1.9271788 1.639523 4.871701 5.140561
## 5 -0.42641489 2.530918 -2.1973739 -1.4408855 -2.197374 4.793075 5.787390
## 6 -2.02737996 3.447591 4.4887849 -2.4262406 5.822712 6.055424 3.679592
##      Dhcr24      Dhcr7      Dhdds      Dhdh      Dhfr      Dhh      Dhodh
## 1 9.018677 7.314339 5.510752 2.932710 3.842713 1.010855 4.504580
## 2 5.236423 5.201258 5.521415 1.787102 3.890997 1.668708 4.574758
## 3 5.387524 9.035925 7.996029 -1.931739 1.479815 -3.884122 1.008333
## 4 4.165372 7.471203 6.379844 3.497244 5.907477 -3.884122 5.888905
## 5 6.140813 7.369863 6.963735 2.413722 6.602380 -3.884122 5.508923
## 6 8.767869 8.431304 4.793267 2.905528 2.917573 -3.280845 3.845048
##      Dhps      Dhps1      Dhps11      Dhps13      Dhps2      Dhps3      Dhps4
## 1 4.352166 6.166658 2.6646856 4.6857262 -3.884122 1.875433 3.2253955

```



```

## 2 4.477016 5.387494 2.7576325 1.4804990 -3.884122 5.542934 4.8387262
## 3 1.668074 7.277870 -3.8841215 -0.6195262 -3.884122 10.538870 0.5144282
## 4 2.640340 8.023028 0.6337246 1.6293667 -3.884122 9.213818 5.0015702
## 5 4.117116 7.746219 -3.8841215 5.0922184 -3.884122 9.482260 6.0306917
## 6 3.897801 7.161777 3.7027043 4.4330664 -1.417829 5.597705 4.4839477
##      Dhxs7      Dhxs7b      Dhxs7c      Dhtkd1      Dhx15      Dhx16      Dhx29
## 1 5.686547 4.730051 -3.327204 3.0587389 7.112396 5.4943635 5.1913434
## 2 5.232702 5.033661 -3.884122 -2.5614538 8.207000 5.5165408 4.5606052
## 3 6.827680 8.881566 -3.884122 -0.6195262 6.701329 0.6984974 -0.6195262
## 4 6.273694 5.400964 -3.884122 2.1608316 6.813489 2.6067913 3.5672441
## 5 6.992969 6.579889 -3.884122 -1.7701038 6.450737 0.6514968 3.8651618
## 6 4.913539 4.272864 -3.884122 5.6424341 7.388971 5.5230111 5.1999839
##      Dhx30      Dhx32      Dhx33      Dhx34      Dhx35      Dhx36      Dhx37
## 1 6.905938 4.198695 6.179479 4.4105748 5.0487610 5.756261 5.1947924
## 2 6.588105 5.431700 5.460971 3.9528463 4.7147836 5.543328 3.4606071
## 3 7.997127 6.068904 1.141414 0.8617169 -0.6195262 1.668074 -0.6195262
## 4 7.255027 5.071488 4.052453 2.7499254 5.2532788 5.975590 3.6196722
## 5 5.178578 5.037147 2.473510 1.1681147 5.2458412 5.932920 2.1215049
## 6 6.979967 5.737369 5.951358 4.5892749 5.8028096 6.820432 4.3961489
##      Dhx38      Dhx40      Dhx57      Dhx58      Dhx8      Dhx9      Diablo
## 1 5.997850 5.016305 4.8255741 -0.17155812 5.106159 7.404200 5.913678
## 2 6.350468 7.278519 4.8380571 1.60184585 4.844990 7.921787 5.219925
## 3 1.263249 4.706830 -0.6195262 7.38073272 4.383152 2.696541 8.143152
## 4 4.696539 5.943242 4.3266834 0.94405001 5.123048 5.345945 6.800068
## 5 4.000024 4.573873 3.0195509 2.24099926 4.160203 6.089194 7.555370
## 6 6.107055 5.839074 5.7791317 0.61808918 5.201812 7.518542 5.441308
##      Diap1      Diap2      Diap3      Dicer1      Dido1      Diexf      Dimt1
## 1 4.488003 4.0037858 1.0882311 6.4844280 6.028937 4.8662798 2.794570
## 2 6.017656 5.8024820 2.4197067 6.0281019 6.496824 3.6391216 3.139432
## 3 1.577013 -0.2425151 4.6409166 0.6984974 3.853225 3.1078056 4.595239
## 4 2.244532 3.2333916 2.4690858 3.9467717 5.495281 4.0736808 3.584008
## 5 2.096371 2.6040729 2.6040729 3.2983183 2.707288 0.7833343 3.951792
## 6 4.990299 4.7141067 1.9406464 6.8204766 7.029785 5.1023912 3.094464
##      Dio2      Dio3      Dip2a      Dip2b      Dip2c      Diras1      Diras2
## 1 5.077956 -3.629612 7.763840 6.700696 6.360543 4.4883510 5.0024399
## 2 1.097469 -3.884122 5.897744 6.051241 5.119416 -0.7835111 0.4878096
## 3 2.242751 -3.884122 6.795222 2.739167 4.150303 -1.1313170 7.2394125
## 4 5.998918 -3.529646 4.097231 6.730443 4.713689 1.3235493 2.1680109
## 5 4.352923 -3.884122 4.666442 6.671020 3.850204 2.4929006 -1.7701038
## 6 9.631173 -3.156544 7.111426 6.660235 5.601902 -1.3350143 3.4574756
##      Dirc2      Dis3      Dis3l      Dis3l2      Disc1      Disp2      Dixdc1
## 1 7.070955 4.8930485 5.129048 5.1918434 1.777163 5.90306802 6.0302190
## 2 6.501003 4.7382047 5.058118 5.0436775 3.852450 0.09775943 3.1308627
## 3 6.289296 -0.6195262 1.375592 0.6984974 -3.884122 8.59217141 3.2022392
## 4 4.875107 3.3492774 4.925312 4.9513074 -3.653944 4.26256355 6.0762369
## 5 6.084408 3.6997879 1.877781 3.4841954 -3.884122 3.26486979 6.7466744
## 6 6.217455 5.3847823 4.940685 4.4639812 3.975776 3.10130982 2.5234571
##      Dkc1      Dkk1      Dkk2      Dkk3      Dkk11      Dlat      Dlc1
## 1 4.296042 -3.663981 0.1612614 4.221834 -2.2074047 5.483578 3.715913
## 2 4.669494 -2.460172 2.2879990 3.274532 -2.3597589 5.212886 8.796044
## 3 6.386356 -3.884122 -3.8841215 3.232392 1.5770128 4.696052 4.461615
## 4 6.665427 -3.603681 -1.5805375 8.144759 -0.7487767 3.954704 2.940883
## 5 2.819055 -3.884122 1.7864435 7.240328 -0.4264149 4.737258 2.351349
## 6 4.485135 -2.079562 1.0692013 8.621177 -2.1068044 5.525002 6.268321

```

##	Dld	Dlec1	Dleu7	Dlg1	Dlg2	Dlg3	Dlg4
## 1	6.212051	-0.3617369	1.6820333	6.942394	5.5011146	5.694612	7.0747932
## 2	6.361974	-2.4285606	-0.6584809	7.069728	1.0142539	2.461521	3.1122713
## 3	8.330785	-3.8841215	-1.9317392	4.242081	-0.6195262	4.997609	-0.6195262
## 4	7.235281	-0.4544718	1.5640281	4.779855	2.4549921	4.433964	3.0225778
## 5	5.562674	-3.8841215	2.8938999	5.544204	0.9609302	2.433928	2.7237947
## 6	6.674113	0.6634133	0.3995953	6.307484	1.4696632	5.596147	7.1429559
##	Dlg5	Dlgap2	Dlgap3	Dlgap4	Dlgap5	Dlk1	
## 1	5.1973434	0.75240369	4.6786170	6.745895	1.4824612	-2.9580022	
## 2	4.8467803	-2.19190903	0.5654758	6.065015	2.7444164	-1.0776772	
## 3	0.3033916	-3.88412153	-3.8841215	6.595108	0.5144282	-3.8841215	
## 4	5.0687714	0.02569431	-0.9349765	6.674319	4.2358234	-2.7669041	
## 5	5.5672542	-1.77010377	-3.8841215	5.580910	-1.4408855	-3.8841215	
## 6	7.8640556	-2.33738216	0.3146936	6.170478	2.4338261	2.8550929	
##	Dlk2	Dll1	Dll3	Dll4	Dlst	Dlx1	
## 1	4.2531187	6.4263846	5.0636668	-0.8036147	6.770061	-1.87775298	
## 2	-1.1585745	1.9697374	-3.6565043	9.4140842	6.651370	-2.41791844	
## 3	-1.1313170	0.5144282	-3.8841215	-1.9317392	7.444911	-3.88412153	
## 4	0.2986845	3.9170058	1.1279922	2.4494223	6.089645	2.01931765	
## 5	-0.9471720	3.8502038	1.6200547	-1.4408855	4.484674	-2.80711744	
## 6	-2.0946010	3.3300214	-0.9261316	3.0415011	7.269892	0.07218048	
##	Dlx2	Dlx3	Dlx5	Dlx6	Dmap1	Dmbt1	Dmbx1
## 1	-0.4121191	-3.7901666	-3.224660	-2.927027	4.6495700	-3.884122	-2.609888
## 2	-2.3597589	-3.6519623	-3.476608	-3.424345	4.7418647	-3.884122	-3.424345
## 3	-0.6195262	0.6984974	-1.931739	-3.884122	0.6984974	-3.884122	-3.884122
## 4	1.6190510	-1.7696831	1.014966	-3.674937	5.4850153	-3.884122	-3.884122
## 5	2.1215049	-0.9471720	-3.884122	-3.884122	4.8505752	-3.884122	-3.884122
## 6	0.7223346	-3.8841215	-2.478408	-3.171313	4.7424786	-3.044745	-3.512249
##	Dmc1	Dmd	Dmgdh	Dmkn	Dmp1	Dmpk	
## 1	-0.69833633	5.0424006	-3.1229334	-3.1203517	-1.2089987	5.1691361	
## 2	-3.42434508	4.0571075	0.4143467	-3.8841215	-1.3779235	2.9171515	
## 3	-3.88412153	3.1078056	-3.8841215	6.7876267	-3.8841215	-3.8841215	
## 4	1.96861649	6.0147426	-3.8841215	3.7315808	-2.1012985	0.4934487	
## 5	-3.88412153	4.6098412	-3.8841215	5.7190512	-2.8071174	2.4735096	
## 6	0.51926162	7.4386824	-3.6744822	-0.5271232	2.1213270	6.1241673	
##	Dmrt2	Dmrt3	Dmrta1	Dmrta2	Dmrta1	Dmrta2	
## 1	-3.884122	0.4584266	3.4756271	3.0831603	6.0848357	0.6821460	
## 2	-2.678141	-3.6519623	-3.6565043	-1.5233009	-2.3527304	-3.8841215	
## 3	-3.884122	-3.8841215	-1.9317392	-1.1313170	-3.8841215	-3.8841215	
## 4	-3.884122	2.3224203	-2.8981380	4.5389329	0.2329159	-1.4736093	
## 5	-3.884122	-1.1730114	-3.8841215	2.6905901	-2.8071174	-3.8841215	
## 6	-3.280845	-2.0977731	-0.4327055	4.8289835	-0.9732744	-2.4463908	
##	Dmtf1	Dmwd	Dmx11	Dmx12	Dna2	Dnaic1	Dnaic2
## 1	5.985297	6.834359	5.7957750	6.110008	0.8007069	-0.9164174	1.625085
## 2	6.265379	6.036741	6.6683901	5.136979	2.2027536	-2.4194830	0.778930
## 3	1.983840	6.252986	0.3033916	1.008333	-0.2425151	5.9604930	-3.884122
## 4	5.999196	4.595367	4.5585268	5.077244	3.4515384	2.9252010	1.870941
## 5	4.541648	4.513442	3.8725830	3.276106	-0.7519471	3.9018920	-2.807117
## 6	7.015788	6.419166	6.9903576	6.909659	2.7838625	3.0866723	1.904967
##	Dnaja1	Dnaja2	Dnaja3	Dnaja4	Dnaja1	Dnaja2	
## 1	5.446865	7.082695	4.776043	5.4770617	6.105265	7.112797	5.5315508
## 2	5.873936	7.767306	4.930358	5.3618888	7.982052	6.749585	5.2467368
## 3	7.123525	7.495517	5.773209	-0.6195262	7.061893	6.541926	-0.2425151
## 4	7.549744	6.074896	6.046781	2.9821126	5.222515	5.271418	4.2538716

```

## 5 7.048901 7.061132 6.339993 3.9657381 4.753427 4.363496 3.1955523
## 6 5.169892 6.790101 4.920115 6.0008390 6.077419 6.748043 4.9888093
##      Dnajb13  Dnajb14  Dnajb2  Dnajb4      Dnajb5  Dnajb6      Dnajb7
## 1 -2.0215534 3.7653320 6.682959 5.234835 5.06541613 3.779398 -2.9205581
## 2 1.1708750 3.2994754 3.993273 6.216308 6.22752517 5.320915 -2.9901757
## 3 -1.9317392 -0.6195262 5.900726 1.577013 0.69849743 4.102127 -3.8841215
## 4 0.7659828 1.4642964 5.137955 6.139326 3.78683816 4.012903 -0.4090909
## 5 -2.8071174 -3.8841215 6.416875 5.710794 -0.04458439 4.880330 -3.8841215
## 6 -0.5267844 3.4779020 5.767698 6.514576 5.38720988 3.849351 -1.3342288
##      Dnajb9  Dnajc1  Dnajc10  Dnajc11  Dnajc12  Dnajc13  Dnajc14
## 1 5.860276 5.1569934 5.709507 5.931368 2.7929972 5.4442890 5.417586
## 2 8.258258 6.2860337 8.619428 5.275738 2.9960472 6.7479078 6.054279
## 3 3.813884 0.3033916 2.780569 1.753727 0.5144282 4.6742499 6.950668
## 4 5.306081 4.1760720 6.637610 6.315110 5.0282091 4.3215640 5.102904
## 5 6.733489 4.1961369 5.876826 6.100299 6.2937534 0.5063887 5.962780
## 6 7.150852 5.4581067 6.019466 5.420489 1.9516902 6.6351433 4.916192
##      Dnajc15  Dnajc16  Dnajc17  Dnajc18  Dnajc19  Dnajc2  Dnajc21
## 1 3.129973 5.201731 2.2770198 6.390538 1.05179879 3.6674382 3.041034
## 2 4.756635 5.257996 1.5682023 5.663816 1.33376831 5.4001891 4.374525
## 3 2.780569 1.577013 -1.9317392 8.473320 0.05610664 -0.6195262 -1.931739
## 4 7.495260 4.165537 3.2203847 8.126411 3.76364103 3.1134220 2.829940
## 5 8.709679 4.761444 1.1681147 8.091301 4.33691628 3.9234895 1.722172
## 6 2.622101 5.445862 2.1689901 6.372763 0.49071168 4.4289759 3.956562
##      Dnajc22  Dnajc24  Dnajc25  Dnajc27  Dnajc28  Dnajc3  Dnajc30
## 1 -3.161221 4.592654 2.69808940 4.8963845 1.6797829 6.245347 3.273287
## 2 -3.656504 3.606372 3.24826430 4.3623109 0.7280160 7.435345 3.058007
## 3 -3.884122 6.979844 -3.88412153 -0.6195262 -0.6195262 2.820816 7.710264
## 4 -3.674937 5.507176 0.77012470 3.3396737 4.1015902 5.486410 5.429447
## 5 -3.884122 6.346670 -3.88412153 2.2637547 0.7189210 5.932920 5.320998
## 6 -2.019835 3.961949 3.07583552 5.6692607 1.8955699 7.512660 2.621602
##      Dnajc4  Dnajc5  Dnajc5b  Dnajc6  Dnajc7  Dnajc8  Dnajc9
## 1 3.470350 7.354389 -3.0220156 4.5994153 7.193475 5.743375 4.939132
## 2 4.075488 7.198007 -3.8841215 0.9917557 7.050627 7.010078 4.868324
## 3 1.008333 7.304725 -3.8841215 4.2568248 6.146170 7.288672 8.704663
## 4 4.947811 5.865488 -3.8841215 4.5218665 6.878817 7.507474 6.024152
## 5 6.411790 5.013845 3.0061180 4.3687533 6.848033 8.581389 5.896981
## 6 3.284401 6.910729 -3.6744822 1.3594639 7.301364 5.092073 4.272017
##      Dnali1  Dnase1  Dnase111  Dnase112  Dnase113  Dnase2a
## 1 -3.3433463 2.2348918 -0.06672756 1.10082607 -2.6112545 3.503515
## 2 -1.7539003 0.4597380 5.01693097 -1.89835503 0.2549814 2.326963
## 3 -3.8841215 -1.9317392 -0.24251506 1.26324902 -0.2425151 2.053052
## 4 1.8716908 1.1446376 2.77096541 1.62976838 0.4246425 4.125831
## 5 -3.8841215 -3.8841215 4.04011993 -1.17301144 0.4279671 1.391188
## 6 0.7817411 2.0392116 1.50570508 1.26388760 -3.3528132 3.819489
##      Dnd1  Dner  Dnlz  Dnm1  Dnm11  Dnm2  Dnm3
## 1 0.33450129 7.706133 5.363003 7.076744 6.233860 7.488249 6.6387507
## 2 -1.12876348 1.372857 4.675590 2.753475 7.001607 8.090329 5.7794316
## 3 -3.88412153 7.074432 3.202239 6.767175 6.448686 7.946867 1.0083330
## 4 0.77185353 2.932923 3.567048 1.481626 6.854712 5.573197 4.5930993
## 5 -0.28760302 3.341743 4.352923 -1.770104 6.461850 3.842666 5.2628844
## 6 0.09946379 7.582333 4.529969 2.046613 7.548426 6.935486 1.4624023
##      Dnmbp  Dnmt1  Dnmt3a  Dnmt3b  Dnpep  Dntt  Dnttip1
## 1 4.528213 6.086065 7.120413 1.4720802 5.516761 -3.767000 4.368892
## 2 5.057354 5.759601 5.873506 4.6093105 6.285390 -3.884122 5.320561

```

```

## 3 -1.131317 5.209494 7.778270 -0.2425151 8.291048 -3.884122 5.762917
## 4 3.133082 6.360373 5.797769 1.7127253 6.398363 -2.251412 3.303438
## 5 2.772211 5.729306 5.585433 -3.8841215 6.117579 -3.884122 4.265427
## 6 4.890174 6.182572 8.138283 2.6070891 5.321123 -3.884122 4.418184
##      Dnttip2      Doc2a      Doc2b      Dock1      Dock10      Dock11      Dock2
## 1 5.113086 2.6778960 -0.3921755 6.622384 7.342496 3.6238130 3.0438418
## 2 6.408121 2.2843994 -0.1620383 7.525389 2.764004 4.7735671 -0.1790769
## 3 7.498622 -0.6195262 -3.8841215 7.696810 5.964989 -0.6195262 -0.6195262
## 4 6.518475 2.5081566 -1.7358108 6.350067 4.497815 4.6255254 1.2558438
## 5 4.781294 0.7189210 -3.8841215 6.461850 6.030692 5.4897472 -1.1730114
## 6 5.476863 2.0885507 -1.6873968 7.808091 4.688373 4.9775439 -2.7173925
##      Dock3      Dock4      Dock5      Dock6      Dock7      Dock8
## 1 6.09620010 7.3711378 2.2688840 6.4001358 2.2697783 2.44439276
## 2 -0.08438733 7.5917575 3.4213137 8.2869245 2.6617010 0.15120881
## 3 -0.24251506 -0.2425151 -3.8841215 1.6680739 0.5144282 2.85997007
## 4 3.21232737 2.4307454 2.3327551 3.5693021 5.2621288 0.00837704
## 5 1.54772616 3.4646862 3.7327839 4.4050297 6.2243934 -1.44088555
## 6 6.17695509 7.3627587 1.3104475 5.2354849 7.2596243 0.51459200
##      Dock9      Dohh      Dok1      Dok2      Dok3      Dok4
## 1 8.761316 5.1913316 2.8036780 -1.1505306 0.8657111 2.437479
## 2 8.650577 5.1600964 0.9185429 -1.0492592 0.7823651 9.158082
## 3 2.935229 0.6984974 -3.8841215 0.3033916 -3.8841215 -1.931739
## 4 3.499978 4.0053358 0.7451278 1.4723504 -0.2224710 1.579148
## 5 1.877781 4.6791938 2.6566033 -1.4408855 -2.8071174 1.431944
## 6 3.530936 4.1254375 2.3775443 -0.9983898 0.4413973 2.288133
##      Dok5      Dok6      Dok7      Dokk      Dolpp1      Donson
## 1 2.6061259 1.3189880 2.6699318 4.5300919 5.3625094 3.3218256
## 2 -0.2907149 -2.8952098 1.1435853 3.8657342 3.8196415 3.4684425
## 3 4.8203665 -3.8841215 -3.8841215 0.8617169 -0.2425151 -0.6195262
## 4 5.4285134 -3.0823831 1.9202607 5.2447764 5.8229336 2.4376202
## 5 4.3999029 -3.8841215 -3.8841215 5.4727571 5.5160483 1.4319435
## 6 4.6894742 2.2787654 2.6605963 4.7911416 5.1002927 4.0200352
##      Dopey1      Dopey2      Dos      Dot11      Dpagt1      Dpcd      Dpep2
## 1 5.627123 6.4589038 5.773541 6.918422 4.311933 3.560880 -3.884122
## 2 6.584933 5.2664596 1.841214 6.205773 5.354176 4.629602 -2.191909
## 3 3.872500 -0.6195262 5.023706 1.008333 4.150303 7.086862 -3.884122
## 4 4.812144 4.4188022 3.958048 3.908641 5.683403 5.834497 -1.048777
## 5 3.512973 3.3092977 2.492901 -1.440886 5.585433 7.027453 -3.884122
## 6 5.960544 7.4465223 5.431261 7.727680 4.841893 2.854584 -3.490484
##      Dpf1      Dpf2      Dpf3      Dph1      Dph2      Dph3      Dph5
## 1 5.146603 6.529803 0.8612515 3.539405 3.6084775 5.400641 3.096601
## 2 2.865033 6.156155 1.3696351 3.589356 1.8431852 6.127276 3.058694
## 3 3.813884 8.572417 5.2905452 -1.131317 0.8617169 7.129546 6.154067
## 4 4.633315 7.660632 2.8959054 3.832910 4.8395137 6.321696 4.885183
## 5 3.362975 6.260198 1.5843436 3.596015 -0.5800187 6.710897 4.379211
## 6 4.070454 6.255523 2.7644372 3.896444 3.0367357 5.117830 3.687831
##      Dpm1      Dpm2      Dpm3      Dpp10      Dpp3      Dpp4      Dpp6
## 1 4.919465 5.054361 3.762202 5.6275993 5.995205 -1.8313336 7.856595
## 2 5.275253 4.435119 4.944855 0.4598138 6.088536 6.0882040 0.393201
## 3 5.813659 6.126234 7.512511 -3.8841215 6.097854 -0.2425151 1.668074
## 4 7.090824 6.742333 6.861093 -2.9886270 5.231990 -0.1490766 4.656542
## 5 7.782620 7.580511 7.907991 -3.8841215 5.172578 -1.1730114 2.879238
## 6 4.946390 4.293505 2.432670 -1.4792370 5.375778 -1.6484072 3.816874
##      Dpp7      Dpp8      Dpp9      Dpt      Dpy1911      Dpy1912      Dpy1913

```

```

## 1 4.883069 7.3282496 5.840530 -2.472242 7.543275 -3.794983 6.543757
## 2 3.358888 7.6371383 6.004026 -3.651962 5.697882 -3.884122 4.195403
## 3 1.753727 0.8617169 1.141414 -1.931739 4.486849 -3.884122 6.646399
## 4 5.264210 3.4293763 4.200346 -2.753335 6.756477 -3.529646 6.278802
## 5 2.263755 2.2861569 4.824026 -3.884122 7.640970 -3.884122 6.451976
## 6 5.027932 7.9035787 5.750185 -2.337382 5.591634 -2.407473 7.502129
##      Dpy1914      Dpy30      Dpyd      Dpys      Dpys12      Dpys13      Dpys14
## 1 5.043587 4.340185 4.6792352 -3.026544 7.273805 7.0774889 6.3636471
## 2 6.417243 4.850072 -3.1080374 -3.884122 5.291177 2.2458286 0.4184049
## 3 4.356020 8.439793 -1.9317392 -1.931739 13.125631 3.7318309 1.0083330
## 4 3.557227 7.678887 1.6554798 -2.286471 12.075703 8.4757604 6.5034108
## 5 5.673042 8.301436 -2.8071174 -3.884122 12.224670 7.3467357 4.5784186
## 6 5.405859 3.778326 0.8354821 -3.451139 6.689023 5.8306546 5.8473522
##      Dpys15      Dqx1      Dr1      Dram1      Dram2      Drap1      Drd1a
## 1 3.4676895 0.1520557 5.6524153 0.4578669 5.262719 6.729816 0.1137050
## 2 1.2775505 -1.1283587 6.3322706 1.5576576 7.242608 7.073055 -2.0252565
## 3 0.8617169 -3.8841215 0.3033916 -1.9317392 5.224573 3.074902 -3.8841215
## 4 6.2107720 0.1727286 3.9270588 0.5755025 6.576150 4.619995 -2.0160088
## 5 6.8870296 -3.8841215 3.8274719 -2.8071174 6.081209 5.558078 -3.8841215
## 6 2.5084337 0.8704006 4.8836546 0.3231008 4.933564 5.577860 1.0425488
##      Drd2      Drd3      Drd4      Drd5      Drg1      Drg2
## 1 -2.1179178 -3.79498311 -3.05669077 -2.900145 5.745299 5.979471
## 2 -3.4837445 -3.88412153 -3.65650428 -3.656504 6.638366 5.473847
## 3 -3.8841215 -1.93173924 -1.93173924 -3.884122 8.934111 7.186488
## 4 -0.5945765 2.30474207 -3.88412153 -1.728199 7.896938 7.314903
## 5 -3.8841215 -1.77010377 1.01558177 -3.884122 7.971574 7.066804
## 6 -1.5631840 0.03435553 -3.66077880 -3.884122 5.002478 5.160022
##      Drosha      Drp2      Dsc1      Dsc2      Dsc3      Dscam
## 1 6.5190297 3.9885553 -3.7010282 -0.8800587 -3.8841215 8.5033342
## 2 6.4967961 -0.5098795 -3.6519623 -2.3713762 -3.6519623 -1.2019022
## 3 0.8617169 -1.1313170 3.6889850 -1.9317392 3.6670753 -0.6195262
## 4 6.1575809 3.6338076 0.8069535 -2.6880284 1.1664852 2.5509513
## 5 5.6122787 -3.8841215 1.6549031 -1.7701038 2.8190554 0.0631199
## 6 5.9797411 6.7988159 -3.0276140 -0.1760793 -3.0097167 -1.7315301
##      Dscam11      Dsccl      Dscr3      Dse      Dsel      Dsg1a
## 1 6.94761465 0.06724167 5.424685 3.040211 4.30277845 -3.884122
## 2 -1.65402030 0.89852736 5.943801 2.043473 4.77574241 -3.884122
## 3 0.05610664 -3.88412153 5.224573 2.053052 0.05610664 5.420638
## 4 4.84201678 2.04486303 6.643339 4.377093 2.84134794 2.867424
## 5 4.50868739 3.48419540 7.939691 5.997135 -1.44088555 4.020211
## 6 3.33518536 0.65639801 5.812965 1.785256 4.23081223 -3.884122
##      Dsg1b      Dsg1c      Dsg2      Dsg3      Dsn1      Dsp
## 1 -3.8841215 -3.884122 -3.7235669 -3.88412153 3.0150888 -3.663981
## 2 -3.8841215 -3.884122 -2.8952098 -3.88412153 4.1727965 3.772709
## 3 1.4798145 -3.884122 -0.6195262 0.30339162 0.8617169 7.743359
## 4 -1.1674399 -3.884122 -1.2750140 -2.48619521 5.0996089 5.150854
## 5 -0.5800187 -3.884122 -0.9471720 -1.77010377 2.1215049 6.203948
## 6 -3.8841215 -3.884122 -2.7863740 -3.88412153 4.5454227 -2.545956
##      Dst      Dstn      Dstyk      Dtd1      Dtl      Dtna      Dtnb
## 1 8.896855 8.015079 6.077930 4.697527 2.5376110 5.9787897 5.0327887
## 2 7.332656 8.852623 5.300834 4.083436 2.9726850 0.8732206 4.1026971
## 3 2.462191 10.906026 7.600394 8.178429 1.7537270 8.4913556 0.8617169
## 4 6.719721 9.082359 4.007185 5.895581 5.2497893 8.3746851 2.4722110
## 5 4.631874 9.698121 4.674956 7.288977 3.0460471 7.7360842 3.3201941

```

```

## 6 8.966222 6.374297 5.786342 2.776927 3.6700512 9.1594349 4.9099882
##      Dtnbp1      Dtwd1      Dtwd2      Dtx1      Dtx2      Dtx3
## 1 4.6755715 2.3379134 1.7458372 6.3650961 4.2922963 7.097029
## 2 5.1575134 2.1213305 2.4678424 0.3637825 4.3921271 5.855368
## 3 -0.2425151 0.3033916 -3.8841215 1.0083330 -0.2425151 1.983840
## 4 3.7152869 4.2718872 3.0435779 4.5670107 2.1475637 6.517969
## 5 4.6535756 4.7852317 3.4045239 5.1605022 4.1171157 6.546640
## 6 3.4513334 2.3995451 2.0632332 6.9359370 3.6011703 8.002243
##      Dtx3l      Dtx4      Dtymk      Duox1      Duox2      Duoxa1      Duoxa2
## 1 1.0025916 4.956639 5.336334 -1.0783080 -3.2353940 -1.8439279 -3.723567
## 2 4.2864239 2.107359 5.403528 -0.8311310 -0.4877179 -3.8841215 -3.039241
## 3 1.0083330 5.304805 5.991678 -1.9317392 -3.8841215 -3.8841215 -3.884122
## 4 3.9736975 4.334466 7.376682 -2.4417173 -3.8841215 -2.8922555 -3.884122
## 5 2.1462087 5.274136 7.912948 -3.8841215 -3.8841215 3.4744738 -3.884122
## 6 1.2745346 6.747796 4.886212 -1.3093105 -2.8653806 -1.2011405 -3.884122
##      Dupd1      Dus1l      Dus3l      Dus4l      Dusp1      Dusp10      Dusp11
## 1 -3.794983 4.942261 5.903990 2.13551440 6.084518 5.0096895 7.275519
## 2 -2.627338 5.373916 5.121770 1.80101244 10.902279 3.8919171 7.561121
## 3 -3.884122 -1.131317 1.263249 -1.13131698 6.303568 0.5144282 2.182248
## 4 -3.884122 2.833790 5.283491 2.58385052 5.638517 4.1341739 6.392105
## 5 -3.884122 3.414727 4.225413 -0.04458439 4.846812 5.6233186 6.111319
## 6 -3.674482 4.972137 6.216036 2.39870110 10.036532 6.0734721 7.624689
##      Dusp12      Dusp13      Dusp14      Dusp15      Dusp16      Dusp18
## 1 3.629840 -3.568089747 2.63167202 7.1318436 5.868776 4.312976
## 2 3.423614 -3.344469368 -0.09769003 -2.3810719 6.021509 3.374249
## 3 -1.131317 -1.931739237 2.60731556 -3.8841215 5.254267 5.877063
## 4 2.564512 -3.444759391 6.36652337 1.1953460 4.426294 6.232434
## 5 3.804376 -3.884121530 7.42200458 3.8502038 5.231483 5.679403
## 6 2.806020 -3.156543817 2.17028001 4.3768560 6.148095 4.885162
##      Dusp19      Dusp2      Dusp22      Dusp23      Dusp26      Dusp27
## 1 3.7401242 1.8287385 3.194454 1.3351500 5.4580247 -2.053271
## 2 2.6425688 7.6408147 5.543488 2.9551865 0.1918609 1.740932
## 3 0.3033916 -3.8841215 5.346757 -0.6195262 -1.9317392 -3.884122
## 4 4.5485168 -3.2991483 4.284306 2.2162767 2.6532197 -3.884122
## 5 5.8933376 -3.8841215 3.879966 4.2079189 3.3417432 -3.884122
## 6 2.0193141 1.4059742 4.387186 -1.4586670 -0.9477159 -3.268087
##      Dusp28      Dusp3      Dusp4      Dusp5      Dusp6      Dusp7      Dusp8
## 1 3.4174874 6.616298 3.0098588 1.8268650 5.198859 4.7468990 6.397981
## 2 2.7026338 8.678526 5.3105852 3.4107560 9.793531 3.0564468 6.123383
## 3 6.2307536 8.553881 -1.1313170 -3.8841215 9.288651 4.8003771 4.652113
## 4 1.1255715 7.461871 2.3430190 -3.8841215 6.129191 2.8827695 7.409979
## 5 2.9227833 6.960256 2.8938999 -0.2876030 2.286157 4.0532413 6.474098
## 6 1.3990854 6.059393 4.9426908 4.3586807 8.056299 0.5278673 7.324423
##      Dusp9      Dut      Dvl1      Dvl2      Dvl3      Dydc1      Dydc2
## 1 3.9829813 3.9810365 7.0195341 4.8583499 6.187739 -3.335252 -3.388895
## 2 -0.9647092 4.2722404 6.3182471 3.4116195 3.539148 -3.884122 -3.656504
## 3 -1.9317392 -0.6195262 0.6984974 -1.1313170 4.663224 -3.884122 -3.884122
## 4 -3.3944957 4.3652660 2.6488448 2.5022205 6.108232 -3.027406 -2.094253
## 5 -2.1973739 4.3207304 2.2637547 3.5504721 4.990161 -1.173011 2.787996
## 6 -0.2202007 2.9370382 7.2200325 5.1696938 6.019171 -2.654436 -3.044745
##      Dym      Dync1h1      Dync1i1      Dync1i2      Dync1li1      Dync1li2      Dync2h1
## 1 5.14655062 9.728132 2.1451414 7.310225 6.048323 7.928376 4.1459789
## 2 5.47170742 9.039653 4.1862275 7.487050 6.538139 6.919625 2.6571614
## 3 0.05610664 4.342260 5.2688880 5.788511 5.374063 3.528133 0.6984974

```

```

## 4 3.73630818 7.060079 2.5607927 8.125262 4.983787 6.630952 5.5822086
## 5 4.47982302 7.207693 -0.7519471 7.435847 5.668785 6.289601 4.8086335
## 6 4.25727412 8.978045 -0.1280983 6.462016 5.688615 7.262654 6.4992532
## Dync2l1l Dynl1l Dynl12 Dynlrb1 Dynlrb2 Dynlt1a Dynlt1b
## 1 3.775498 7.704550 9.045386 6.350904 -3.4956384 1.7350259 2.0940510
## 2 2.826432 8.198245 5.698589 6.733513 -2.2923224 1.4849633 -3.8841215
## 3 7.038618 11.104263 4.181549 9.324523 4.7386914 -0.6195262 -3.8841215
## 4 6.086254 9.417464 3.631734 8.823194 2.9271614 3.4392155 -3.8841215
## 5 5.789352 10.045078 3.541188 9.842929 4.6186948 4.4895088 -3.8841215
## 6 3.504301 5.989421 5.969068 5.151506 0.3657383 -0.7079748 0.4494663
## Dynlt3 Dyrk1a Dyrk1b Dyrk2 Dyrk3 Dyrk4 Dysf
## 1 6.248667 6.437850 4.2652694 4.255315 2.7300894 -1.7271594 -0.4225133
## 2 7.703083 6.419737 4.1333210 5.515761 -1.8891850 -2.1931064 7.0178936
## 3 7.946867 7.397463 1.2632490 -1.131317 0.8617169 -3.8841215 -1.1313170
## 4 6.874089 6.018195 0.2833526 2.724468 2.6695550 -3.8841215 -0.3666154
## 5 6.335972 6.829086 1.7546656 4.033514 -3.8841215 -3.8841215 -3.8841215
## 6 5.676424 7.336936 4.4521019 5.982339 3.2565118 -3.1565438 2.5029869
## Dyx1c1 Dzip1 Dzip1l Dzip3 E030030I06Rik E130012A19Rik
## 1 0.1281397 6.31308185 3.3306147 5.613824 -3.884122 3.6683969
## 2 -1.7747533 0.21467300 1.2097777 4.084740 -3.884122 3.3204108
## 3 -1.9317392 0.05610664 -1.1313170 -1.131317 -3.884122 -3.8841215
## 4 2.4416126 5.28645372 1.5828191 4.988637 -1.762063 1.4761066
## 5 2.4339276 2.21787909 -2.8071174 4.450369 -3.884122 -0.2876030
## 6 0.8401737 6.93594886 7.3391460 6.607961 -3.884122 4.5459514
## E130308A19Rik E130309D02Rik E130309F12Rik E130311K13Rik E230008N13Rik
## 1 5.541870 5.29033849 5.9465209 2.5456017 -2.9946062
## 2 2.410526 5.56306206 -1.4747565 2.3303006 -2.5614538
## 3 7.139525 3.47867665 5.4593963 3.0749023 -3.8841215
## 4 3.500449 3.09744450 3.3584976 1.4577521 -0.7843182
## 5 4.129558 3.72460537 -2.1973739 2.6393048 -3.8841215
## 6 3.746542 3.95129970 0.9591187 3.3001222 -0.8529864
## E2f1 E2f2 E2f3 E2f4 E2f5 E2f6 E2f7
## 1 2.7974844 3.2010754 5.112550 5.031476 4.761872 4.044284 0.9511869
## 2 2.9646696 3.1159547 4.716211 5.136551 4.471105 4.769146 4.5799323
## 3 -0.2425151 -0.6195262 1.375592 1.479815 7.115458 -1.131317 -1.9317392
## 4 3.2010207 2.4343936 3.179494 3.250981 4.001792 3.268028 2.8024701
## 5 2.9650523 -1.4408855 1.306052 1.215574 4.445401 2.951100 -3.8841215
## 6 3.8146425 2.3523296 5.296045 5.151758 5.285726 5.215028 2.0963742
## E2f8 E330009J07Rik E430018J23Rik E430025E21Rik E4f1
## 1 4.7088706 4.484628 1.0193003 6.267746 4.95898976
## 2 1.3337728 3.295404 3.2093425 6.473271 4.53596852
## 3 0.5144282 -3.884122 2.9352286 6.013548 0.05610664
## 4 3.7510089 -0.804499 2.2100186 5.014359 2.47288057
## 5 0.6514968 -3.884122 2.5120345 5.069796 -0.94717201
## 6 1.9997086 2.175447 0.6495521 5.833882 5.94460296
## Eaf1 Eaf2 Eapp Ears2 Ebag9 Ebf1
## 1 5.8564920 -0.67532791 4.343640 2.851980 3.740425 -1.4896539
## 2 6.8541917 -0.48411760 4.976470 1.780368 3.266084 5.8047548
## 3 0.6984974 -3.88412153 8.162857 -1.931739 -1.931739 -3.8841215
## 4 3.1687918 1.13446187 6.521758 1.311530 3.980547 2.4851857
## 5 -0.1609828 -3.88412153 7.741161 -3.884122 3.559696 -2.1973739
## 6 5.4998834 -0.07306509 3.794605 2.980616 3.886013 -0.8845668
## Ebf2 Ebf3 Ebf4 Ebi3 Ebna1bp2 Ebp Ebp1
## 1 -2.812658 -1.4958866 4.5437497 0.6159326 5.628181 5.539918 4.031892

```

```

## 2 -3.424345 0.7720442 -0.2049825 -1.5802861 5.918274 5.362965 3.060348
## 3 -3.884122 -1.9317392 -1.9317392 -0.6195262 5.057784 7.572673 2.898090
## 4 -3.076750 -3.3944957 1.2186221 2.3038476 7.183780 6.060676 4.313906
## 5 -3.884122 -1.7701038 -3.8841215 2.6040729 7.537973 7.069228 5.761642
## 6 -3.884122 -1.8358027 4.1696462 -3.6744822 5.502255 3.303149 2.605019
##      Ecd      Ece1      Ece2      Ecel1      Ech1      Echdc1      Echdc2
## 1 5.476883 6.386019 5.3864405 -0.5155129 5.812638 3.0595794 3.2578093
## 2 5.442673 8.389731 3.9354434 -1.9988721 7.136537 2.7055979 -0.2478082
## 3 5.747339 4.000664 0.6984974 -3.8841215 10.284082 5.1155495 -0.2425151
## 4 6.940908 5.163499 5.4419757 -2.2941087 8.402938 4.8845783 3.9409009
## 5 5.237244 5.496968 5.0238779 -2.8071174 9.379710 3.8873120 0.0631199
## 6 4.841700 6.402288 4.6939560 -0.3301957 5.732537 3.6081085 6.0675428
##      Echdc3      Echs1      Eci1      Eci2      Eci3      Ecm1      Ecm2
## 1 -1.37899941 6.435683 4.665476 5.619647 -1.9038625 1.2188602 -0.9680102
## 2 -0.83724295 6.588221 5.406723 7.676092 -2.2467233 7.3798608 5.3974912
## 3 -1.93173924 7.874621 5.551968 6.878617 -3.8841215 1.2632490 1.9111385
## 4 0.09469058 8.195749 5.246778 7.110199 -3.6539444 3.7126096 5.6161802
## 5 -3.88412153 8.670035 7.017445 7.648014 -3.8841215 4.3315411 6.1500036
## 6 1.82641423 6.206358 5.297255 6.798518 -0.9983898 2.5096585 0.6716474
##      Ecscr      Ecsit      Ect2      Ect2l      Eda      Eda2r
## 1 0.7308987 4.615470 3.23984524 -3.794983 0.9730569 2.38336953
## 2 8.5156225 3.533860 3.98984919 -3.884122 -1.4236985 -0.19792197
## 3 7.3380387 7.428725 1.26324902 -3.884122 -0.2425151 -1.13131698
## 4 1.5475794 5.669045 5.64015365 -2.653393 3.0652702 3.38890053
## 5 3.0849008 5.743542 4.31529446 -3.884122 -2.1973739 0.06311990
## 6 0.3034194 4.482777 3.57438532 -3.512249 4.4786093 0.09672565
##      Edar      Edaradd      Edc3      Edc4      Edem1      Edem2      Edem3
## 1 -0.05364352 -1.54531120 4.278393 6.182777 5.955033 5.722732 6.16012368
## 2 2.02533379 -2.99562320 4.411900 6.065892 6.248476 5.838806 6.51005560
## 3 0.51442825 0.51442825 7.074432 2.053052 6.138229 7.038618 0.05610664
## 4 2.32835727 -0.02722229 5.094781 5.792466 3.675795 4.882831 3.88919124
## 5 4.14802283 -2.80711744 2.308216 2.070791 5.085848 5.558078 2.12150494
## 6 -1.07870016 -2.52164107 4.393351 6.666900 6.433641 4.953867 6.72007450
##      Edf1      Edil3      Edn1      Edn3      Ednra      Ednrb
## 1 6.064813 7.3513198 -0.8693669 1.16922155 4.1363883 9.037274
## 2 6.736207 -0.4145561 7.4081843 5.90603141 4.5576813 3.351883
## 3 5.394208 7.9227998 2.6526181 5.27614324 2.8980900 8.458249
## 4 6.412919 6.0470354 -0.3336373 4.10701956 3.1711567 7.493833
## 5 7.226638 6.3466699 0.7189210 5.28251703 4.9130868 7.506716
## 6 4.475004 -0.6138359 0.6675335 -1.27243993 4.6451549 10.584053
##      Eea1      Eed      Eef1a1      Eef1a2      Eef1b2      Eef1d      Eef1e1
## 1 4.7979400 4.3912496 10.694375 6.8071639 7.606208 6.306671 4.414841
## 2 5.7248342 5.3269039 12.721189 2.7035094 9.555584 6.777541 4.050526
## 3 0.8617169 0.8617169 11.965344 0.3033916 9.858989 9.065537 8.325550
## 4 4.9700264 5.3261384 11.235471 1.2983493 8.248010 7.835349 6.671787
## 5 3.2872548 5.2991349 12.079587 2.5495573 9.469317 8.253568 7.777688
## 6 6.9917054 5.2740965 9.013967 0.7629273 6.407861 5.755161 3.466222
##      Eef1g      Eef2      Eef2k      Eefsec      Eepd1      Efcab1      Efcab10
## 1 5.810293 10.958544 5.3250738 4.0699630 1.616487 1.1926573 -3.395078
## 2 7.155969 12.148133 5.1330593 4.0699866 3.032934 -1.9023480 -3.217793
## 3 7.747280 9.562308 4.6067949 -0.2425151 6.386356 -3.8841215 -3.884122
## 4 7.075848 10.044114 4.7793745 4.9911029 1.644763 2.2843803 1.189302
## 5 7.463754 10.541301 5.2572257 6.0406083 -3.884122 -2.1973739 2.393229
## 6 5.367051 9.597950 6.3798411 2.3479303 6.906133 -1.7753079 -3.512249

```


##	Efcab2	Efcab4a	Efcab4b	Efcab5	Efcab6	Efcab7	
## 1	2.0491112	-0.83502682	-0.6102847	-0.4225135	-1.6556962	1.4591438	
## 2	1.8487437	6.00057139	-1.4368220	-1.4876340	-3.0762312	2.4921122	
## 3	-1.9317392	-1.13131698	-3.8841215	-1.9317392	-3.8841215	-0.6195262	
## 4	4.5014624	-0.07006456	-2.8127444	1.2083085	0.1171133	3.6753413	
## 5	5.2169807	-2.19737395	-3.8841215	-2.8071174	-3.8841215	4.1357393	
## 6	3.3611089	-0.11910447	-0.3183059	0.3382842	-2.1194133	2.2326076	
##	Efcab9	Efemp1	Efemp2	Efhb	Efhc1	Efhc2	
## 1	-1.379321	0.1430977	4.187987	-2.6669337	-0.25713381	-2.4136196	
## 2	-3.251585	0.1289705	3.652131	-2.7198557	1.26372001	0.2856997	
## 3	-3.884122	7.6219095	6.913930	-3.8841215	-3.88412153	-1.9317392	
## 4	-2.925952	4.9612755	5.697788	0.5757422	1.42340860	-1.9257762	
## 5	-3.884122	4.3792114	6.513794	-3.8841215	4.34227148	-3.8841215	
## 6	-1.626262	-0.1097064	5.371911	-0.4744908	1.84340873	-2.1384252	
##	Efhd1	Efhd2	Efna1	Efna2	Efna3	Efna4	
## 1	3.9000277	4.264350	3.0158899	3.9391009	-0.02960135	-2.1383423	
## 2	1.3827179	5.213931	8.1416369	-2.5546942	1.74073534	1.2956961	
## 3	5.3672844	7.239412	1.3755916	-1.9317392	1.57701280	0.3033916	
## 4	3.4108286	5.790640	4.3230080	2.0103369	-0.49662535	1.6662866	
## 5	4.2766586	6.037310	5.4481329	3.8043761	-0.04458439	3.2872548	
## 6	5.7685965	7.095836	2.8215108	3.2789259	0.14847974	2.7861371	
##	Efna5	Efnb1	Efnb2	Efnb3	Efr3a	Efr3b	
## 1	-1.2275266	3.10781812	3.86080194	7.480307	5.671840	5.763026	
## 2	-2.1192014	3.70669297	6.56017409	1.785590	6.343810	8.450995	
## 3	1.9111385	2.18224770	3.92882712	8.432506	2.300819	6.830147	
## 4	6.1513062	4.19002413	4.34416798	5.557299	5.157081	5.669563	
## 5	4.4404163	4.65357565	4.92026621	6.790429	5.475197	4.573873	
## 6	0.8944825	4.86515300	4.68017274	4.670083	5.931457	7.951102	
##	Efs	Eftud1	Eftud2	Egf	Egfl6	Egfl7	Egfl8
## 1	7.3563315	3.574101	6.777394	1.1323419	-0.3918519	1.488327	-0.4683848
## 2	-1.3730077	4.080098	7.450895	0.3579694	-3.6519623	9.801108	6.7531688
## 3	5.9872641	1.668074	6.477296	-3.8841215	-3.8841215	6.130244	-3.8841215
## 4	5.7467032	4.818644	7.385834	1.9275307	-0.6938955	3.332123	-0.9902032
## 5	4.5181819	4.479823	6.834796	-2.1973739	-3.8841215	3.195552	3.4548318
## 6	5.7735778	4.097095	6.422837	2.4437804	3.9898767	2.090874	1.7108979
##	Egflam	Egfr	Egln1	Egln2	Egln3	Egr1	Egr2
## 1	3.6040502	1.1222783	6.386318	5.598080	3.52349178	7.181126	3.1855579
## 2	7.1042104	0.5132009	6.555305	5.945355	0.43437399	10.456107	3.5148516
## 3	-0.2425151	5.5278575	2.410380	5.604788	0.05610664	3.644828	0.6984974
## 4	3.3715713	5.7909025	5.004598	4.524777	-0.27816047	7.724236	2.4874051
## 5	3.9447685	2.9788711	5.771599	4.869244	-0.94717201	4.522906	3.3838991
## 6	0.5885386	8.2083764	5.609010	5.275731	5.07815314	10.612917	3.9010752
##	Egr3	Egr4	Ehbp1	Ehbp111	Ehd1	Ehd2	Ehd3
## 1	1.0312850	0.4302975	4.8736874	2.6251668	7.336216	1.909022	7.307205
## 2	4.1525491	1.3262089	4.3296093	5.3443444	7.014144	6.921577	3.164651
## 3	0.8617169	-3.8841215	3.5992759	-1.1313170	7.503267	3.528133	5.688739
## 4	-2.5594758	-3.2991483	4.9080049	2.8506523	5.138431	4.121033	5.316370
## 5	-0.9471720	-3.8841215	5.6473132	0.4279671	6.685840	2.621796	5.891512
## 6	3.4911857	1.8522686	6.7321556	3.4932163	5.211546	3.843901	3.158512
##	Ehd4	Ehf	Ehhadh	Ehmt1	Ehmt2	Ei24	Eid1
## 1	4.263823	-3.8841215	2.7614531	5.556851	7.591240	6.953368	7.440658
## 2	6.251551	-3.8841215	2.3551439	6.068134	6.948675	7.158816	7.160030
## 3	1.141414	0.3033916	-1.9317392	4.256825	2.300819	5.268888	8.332526
## 4	2.152288	-1.6413565	2.3481784	6.543841	5.116163	4.333463	6.083753

```

## 5 3.046047 3.3201941 -2.8071174 4.708518 4.541648 5.392433 7.282027
## 6 1.683409 -2.3395529 3.0161743 6.533454 7.319713 6.567971 5.307656
##      Eid2      Eid2b      Eif1      Eif1ad      Eif1ax      Eif1b      Eif2a
## 1 4.171351 4.1140570 7.306290 5.024901 5.561235 7.058570 5.3539565
## 2 3.272384 3.0566042 9.009724 5.425698 5.968777 6.500774 6.3674100
## 3 -3.884122 -3.8841215 9.194147 3.171443 7.565289 8.701972 -0.2425151
## 4 2.459385 2.2187174 8.264722 5.793977 7.492569 7.173337 6.3493365
## 5 1.349248 2.8938999 8.506150 6.198053 8.419188 8.008673 5.9346938
## 6 3.430319 2.9551172 7.553373 3.887538 4.981212 5.984993 5.1188579
##      Eif2ak1      Eif2ak2      Eif2ak3      Eif2ak4      Eif2b1      Eif2b2      Eif2b3
## 1 5.779134 1.74469231 6.247167 5.045477 4.962203 5.379423 3.870756
## 2 4.801474 5.45798528 6.315101 5.936295 5.059730 6.752841 4.639648
## 3 3.374368 0.05610664 3.793804 3.261927 3.872500 7.563807 1.834579
## 4 4.367518 3.66432096 3.441514 3.028040 6.819263 5.932126 5.831517
## 5 3.788771 3.30929769 4.745365 -1.173011 7.173552 5.783459 6.892515
## 6 5.342321 5.54860647 5.491955 5.916765 4.097517 5.201372 3.231160
##      Eif2b4      Eif2b5      Eif2d      Eif2s1      Eif2s2      Eif2s3x      Eif3a      Eif3b
## 1 5.252053 5.806922 5.233242 5.310463 5.103715 4.201735 7.254046 7.398278
## 2 5.329908 6.780173 5.557404 6.412657 6.645591 4.409997 8.254790 7.890191
## 3 6.477296 7.012791 4.102127 4.728149 5.996079 3.688985 3.644828 3.478677
## 4 5.956108 4.565909 6.055119 7.080339 6.619708 3.800990 7.973092 5.512970
## 5 5.320998 1.991212 6.323842 7.880188 7.091659 4.259778 4.410138 5.848881
## 6 5.140080 4.648731 4.932056 4.924006 5.085537 3.468327 8.117210 7.037563
##      Eif3c      Eif3d      Eif3e      Eif3f      Eif3g      Eif3h      Eif3i
## 1 8.071662 7.063317 6.060072 7.475320 6.240734 6.734377 6.748663
## 2 8.239789 7.673704 8.060202 8.744947 6.858595 9.038504 7.702343
## 3 7.423834 8.618097 9.009505 5.478392 8.383802 9.325398 7.936602
## 4 7.891848 7.823590 7.503962 5.581022 7.370527 8.475591 8.546305
## 5 7.309627 7.190723 8.415700 6.685840 8.139390 9.492080 9.552383
## 6 6.880079 6.324283 5.307162 6.049568 5.122023 5.661746 5.746465
##      Eif3k      Eif3l      Eif3m      Eif4a1      Eif4a2      Eif4a3      Eif4b
## 1 6.308900 7.034858 4.438199 6.170954 8.262197 5.830877 8.045630
## 2 7.616203 7.485884 6.203618 6.872170 8.688718 6.478108 9.159814
## 3 10.327724 9.320142 7.433600 7.373986 9.565642 7.597501 4.328367
## 4 8.521910 8.584879 6.162629 6.093884 8.871030 6.816214 7.591135
## 5 9.925300 8.929965 7.010735 8.091699 9.024395 6.973258 7.224465
## 6 4.794778 5.833900 3.777893 6.040061 8.615000 4.976626 6.941094
##      Eif4e      Eif4e2      Eif4e3      Eif4ebp1      Eif4ebp2      Eif4ebp3      Eif4enif1
## 1 5.573421 5.745696 2.4868980 1.3307532 5.1381603 1.6844641 5.449654
## 2 6.040995 6.758729 4.8569360 3.9562698 5.0386185 2.7707039 6.290138
## 3 9.257833 6.335173 -1.1313170 4.2420805 1.1414140 -1.1313170 7.435221
## 4 7.537076 6.504458 3.5016604 1.1791176 2.6199398 2.7700676 5.396518
## 5 7.472328 6.710897 3.3629751 4.5784186 0.9041264 2.5120345 1.935611
## 6 5.581162 5.761638 0.3970093 1.3096811 4.5130637 3.2232273 5.917333
##      Eif4g1      Eif4g2      Eif4g3      Eif4h      Eif5      Eif5a      Eif5a2
## 1 8.699553 10.528806 7.858086 8.168703 7.614467 7.915712 4.9966142
## 2 8.888397 10.802783 7.542483 8.423964 8.291154 8.541652 2.6981428
## 3 3.773441 10.115600 2.696541 7.669521 6.081382 8.700625 -3.8841215
## 4 5.334706 10.653547 6.223980 7.075972 6.792273 7.598414 3.4081238
## 5 3.732784 9.546015 4.789158 6.869519 7.358015 8.683547 3.8873120
## 6 8.878894 9.754832 9.307351 7.223957 8.587081 7.392341 3.5853345
##      Eif5b      Eif6      Elac1      Elac2      Elane      Elav11      Elav12
## 1 5.875131 5.504969 3.567602 5.3608303 -3.884122 6.626061 2.3800832
## 2 6.820665 7.180367 3.632471 4.5473505 -3.884122 6.424265 0.5975397

```

```

## 3 3.290869 7.893615 -1.131317 -0.6195262 -3.884122 8.709361 1.6680739
## 4 6.901114 6.321604 3.817190 2.7762422 -3.884122 6.553418 7.4650075
## 5 5.962780 7.670541 -1.173011 -1.7701038 -3.884122 7.774225 6.4922772
## 6 6.488267 4.851454 3.753283 5.0254283 -3.884122 6.172110 1.7389707
##      Elav13      Elav14      Elf1      Elf2      Elf3      Elf4      Elf5
## 1 7.7292759 4.7153154 5.080214 5.848296 -2.822791 -0.2880071 -2.479034
## 2 0.9413778 -0.3720332 7.215037 7.417466 -0.471171 1.5772556 -2.631727
## 3 3.5522389 6.1019425 6.839972 1.141414 -3.884122 -1.1313170 5.254267
## 4 7.0453175 8.7812928 3.515550 4.060860 -3.884122 -1.0440489 -1.033458
## 5 5.5184157 8.4508287 3.796595 -0.287603 -2.807117 -1.4408855 -2.807117
## 6 3.8882132 3.9698041 4.492181 5.614666 -1.241879 -0.6869302 2.186530
##      Elfn1      Elfn2      Elk1      Elk3      Elk4      Ell      Ell2
## 1 4.9495560 7.8244192 5.088699 3.183832 4.533416 5.256702 5.069658
## 2 -2.5789021 0.7282024 4.867638 7.630307 6.302048 4.990950 4.947018
## 3 -3.8841215 -3.8841215 7.194168 1.008333 3.006755 1.008333 1.141414
## 4 -3.1014405 0.3275152 3.859349 2.330687 2.818461 4.841213 2.700703
## 5 -2.8071174 -2.1973739 4.020211 -1.770104 4.600933 4.450369 4.546296
## 6 -0.4816840 2.0507055 5.513004 4.273816 5.007627 5.419349 3.657701
##      Ell3      Elmo1      Elmo2      Elmo3      Elmod1      Elmod2      Elmod3
## 1 -0.9209812 7.162854 6.072203 -0.3358384 3.7843694 4.614524 4.786617
## 2 -2.0724156 6.338537 6.324342 0.9043398 0.1407893 4.438606 4.455373
## 3 -1.9317392 4.571847 1.983840 -0.6195262 4.7068304 3.202239 7.873426
## 4 -1.0686173 6.257483 6.513108 2.6089335 1.5054077 5.377964 6.324753
## 5 -2.8071174 4.835464 5.852638 -2.1973739 -0.4264149 1.119041 6.345337
## 6 -1.1663014 1.703697 7.365792 1.7791934 0.2585207 4.661656 5.144428
##      Eln      Elof1      Elov11      Elov12      Elov13      Elov14      Elov15
## 1 4.64581781 4.381567 6.889036 1.96106355 -2.928144 5.9357143 7.629699
## 2 7.66609451 5.349859 6.507218 -0.05700603 -3.884122 1.4318213 7.346613
## 3 0.05610664 7.375676 9.202739 8.27755476 -3.884122 6.7227287 9.476336
## 4 1.21012569 6.782674 7.006799 5.29735191 -3.653944 5.0891108 8.223304
## 5 4.42030179 7.857928 8.547306 5.18753095 -3.884122 5.9364653 7.964646
## 6 5.16660816 3.873659 5.381679 7.59588698 -3.660779 4.8268958 9.845536
##      Elov16      Elov17      Elp2      Elp3      Elp4      Eltd1      Emb
## 1 7.627807 5.9602115 6.146005 5.646687 4.317144 -0.9981071 3.27736725
## 2 3.988923 5.0510635 5.631960 6.001037 4.249060 10.9125869 0.85208418
## 3 2.512206 7.7048977 8.348962 7.261513 1.479815 7.9805675 6.27125569
## 4 6.368658 3.7874443 7.825408 7.187041 5.520591 3.0014169 2.70026509
## 5 5.607839 4.4651713 6.770705 7.329986 5.066564 5.6320902 -0.04458439
## 6 7.408626 2.6204892 6.649943 5.252275 4.971029 2.8161683 -2.42624064
##      Emcn      Emd      Eme1      Eme2      Emg1      Emid1      Emilin1
## 1 -2.5679007 5.232208 0.4321387 3.103103 4.686257 7.4449994 2.0910565
## 2 7.9714723 6.174879 0.6472056 2.431038 5.274422 2.0181184 4.3645989
## 3 -0.6195262 6.904597 -0.6195262 6.508433 7.487726 -0.6195262 -3.8841215
## 4 3.4078311 4.980618 3.3496994 2.859332 6.911464 2.9049374 0.4302579
## 5 3.1955523 6.504271 -1.7701038 4.737258 8.119255 3.9447685 -2.8071174
## 6 0.3436294 7.119704 0.6970557 3.095533 4.747944 6.5233203 0.9598986
##      Emilin2      Emilin3      Eml1      Eml2      Eml3      Eml4      Eml5
## 1 3.1177636 0.6345825 6.8880473 5.935551 4.6265203 5.6492380 4.8434558
## 2 -0.5892728 -1.5587864 4.7678479 5.559873 5.9735537 5.2594453 1.9637338
## 3 -1.9317392 -3.8841215 0.8617169 1.141414 0.8617169 0.8617169 7.5489088
## 4 -0.3240936 -3.2517439 5.3485384 2.937625 2.9367084 4.6263943 5.2617504
## 5 3.3523982 -3.8841215 5.6516333 4.679194 2.2409993 3.3942483 0.6514968
## 6 -0.1812575 0.9365459 4.1700321 3.025482 5.7524422 5.9288255 5.6734435
##      Eml6      Emp1      Emp2      Emp3      Emr1      Emr4

```

```

## 1  4.2118297 2.960235 3.057753 0.4956200 3.1542225 -1.6935990
## 2  3.6105167 6.873695 5.251771 2.3115334 -1.8603861 -1.0942201
## 3 -1.9317392 3.575949 7.572673 6.6713769 4.3143399 -3.8841215
## 4  0.7369611 2.484030 7.185475 3.8049777 4.7815300 -2.4467428
## 5  3.8043761 2.044749 7.831515 6.4826100 2.1704966 -2.8071174
## 6  3.2480731 5.055793 8.204927 0.4798962 -1.5338469 -3.6607788
##      Emx1      Emx2      En1      En2      Enah      Enc1      Endod1
## 1  0.8286288 1.7019022 -2.376374 0.6712982 6.441784 6.829572 6.538557
## 2 -2.4770451 -2.7198557 -3.884122 -2.9956232 5.120264 7.839606 5.666566
## 3  0.3033916 5.4401471 -3.884122 -3.8841215 1.577013 9.413571 6.526798
## 4  5.9258822 5.5747329 -3.653944 -2.9139512 3.828537 9.716460 5.478630
## 5  6.6495816 5.4481329 -3.884122 -3.8841215 4.352923 8.746497 6.060239
## 6  1.7825150 5.8041147 -3.674482 -1.6830088 7.888603 4.216662 5.030176
##      Endog      Endou      Eng      Engase      Enho      Enkur
## 1  1.5116466 -2.1778680 2.037847 2.95582413 5.202432 -2.6474882
## 2  1.6492759 4.3425135 10.550249 4.43600947 1.857943 -0.2690258
## 3 -3.8841215 2.6073156 5.661295 0.69849743 7.768014 -1.9317392
## 4 -0.8798709 -0.2636563 1.235816 1.56270624 4.664488 2.2857282
## 5  1.8175364 1.0682384 -0.947172 -0.04458439 4.091904 -2.8071174
## 6  1.3551349 1.4075107 3.638749 3.06413430 5.924271 1.6710441
##      Eno1      Eno2      Eno3      Eno4      Enoph1      Enox1      Enox2
## 1 -2.3197897 5.863869 2.403775 -0.0671809 6.045426 4.0353785 3.0748520
## 2 -2.5614538 2.683987 1.528641 -2.2943879 4.520934 -1.7760965 4.9914025
## 3 -3.8841215 5.803652 -1.931739 -1.9317392 4.830258 -3.8841215 -0.2425151
## 4 -0.2533375 5.547116 1.312710 0.8171216 6.676637 3.1970990 3.7814149
## 5 -0.9471720 3.827472 -0.947172 -3.8841215 6.693193 1.6200547 3.9091272
## 6 -3.1565438 4.394045 4.018357 -0.2319624 4.234879 2.8464297 2.8069913
##      Enpep      Enpp1      Enpp2      Enpp3      Enpp4      Enpp5
## 1 -2.1336776 2.9883397 10.227503 1.3756002 5.3563966 6.6894437
## 2  4.4837487 -0.3077335 8.675357 4.1532748 3.9620282 3.6767771
## 3 -0.6195262 -1.9317392 11.549917 -3.8841215 9.0883855 7.6261743
## 4  3.6661719 1.6618829 9.468793 0.6821488 6.1435144 6.4436640
## 5  5.2657055 3.0849008 9.760952 -3.8841215 5.7715994 7.2054906
## 6 -0.8979817 -0.2497762 3.657501 -1.5059683 4.3261015 5.8314707
##      Enpp6      Ensa      Entpd1      Entpd2      Entpd3      Entpd4      Entpd5
## 1  5.3290223 6.975038 3.810013 2.1107170 -1.5372801 6.0179377 6.669495
## 2 -2.2173133 7.592139 7.229251 0.7413732 -3.1165114 5.7444088 5.475239
## 3  5.5156492 6.629504 2.356639 6.7977448 -3.8841215 -0.6195262 5.539963
## 4  2.8136129 7.509374 4.270716 9.2237555 -3.8841215 2.1507999 6.011121
## 5  3.0460471 7.715598 3.930617 8.3839196 -3.8841215 3.9018920 2.413722
## 6 -2.8744502 6.677973 4.547702 7.7592351 -1.5794421 5.5366527 5.922874
##      Entpd6      Entpd7      Entpd8      Eny2      Eomes      Ep300      Ep400
## 1  4.688347 3.2852095 -3.6064452 5.091171 -3.6639813 6.574134 7.074149
## 2  2.485492 2.0366717 -0.2479294 5.466057 -1.4785784 6.273762 6.147643
## 3  1.577013 0.3033916 -3.8841215 5.325933 1.2632490 3.074902 5.276143
## 4  6.062568 4.6567764 -3.8841215 6.867961 6.7703731 4.079057 5.804464
## 5  4.769417 3.6401644 -3.8841215 6.774671 6.9619962 2.740115 5.589942
## 6  5.767145 2.6271904 -2.8485783 5.508179 -1.7003695 6.836428 7.369395
##      Epas1      Epb4.1      Epb4.111      Epb4.112      Epb4.113      Epb4.114a      Epb4.114b
## 1  7.454695 7.083851 7.48713315 9.000875 6.8961774 3.5621175 3.2922643
## 2  9.850739 6.709912 3.36254870 7.079619 0.2062322 0.7228375 -0.1215785
## 3  6.654773 5.339849 0.05610664 8.369458 1.6680739 -0.2425151 0.5144282
## 4  5.327846 4.444185 4.35708650 4.598158 6.7695601 2.2506014 -0.6798397
## 5  5.374250 5.225700 4.46517134 5.282517 7.3041493 -2.8071174 -1.7701038

```

```

## 6 8.276344 5.154375 5.21654023 8.039369 1.1949610 5.5436885 2.9433661
##      Epb4.115      Epb4.2      Epc1      Epc2      Epcam      Epdr1      Epgn
## 1 3.4181835 -2.695944 6.315249 5.3715604 1.4747260 6.041972 -2.725518
## 2 2.2013145 -2.817416 6.589563 6.2160923 -3.8841215 2.956643 -3.651962
## 3 1.7537270 -3.884122 3.965193 1.4798145 1.1414140 1.263249 -1.131317
## 4 6.2804719 -3.327813 5.450406 4.4820933 1.7008509 4.789263 -3.498924
## 5 4.4991300 -3.884122 5.470313 -0.7519471 3.6138373 5.902429 -3.884122
## 6 6.0630801 -3.660779 7.097841 5.7821038 -2.4341566 6.753095 -2.692145
##      Epha1      Epha10      Epha2      Epha3      Epha4      Epha5
## 1 0.40962799 1.451347 0.7735689 1.2031807 5.844951 4.5246760
## 2 0.76088476 -2.490774 8.2351010 -0.4948779 5.735077 -0.5907804
## 3 1.47981450 -3.884122 0.8617169 -1.1313170 3.853225 4.8400827
## 4 -0.65646928 -3.427701 -0.4852847 2.8883804 8.338616 3.4880479
## 5 -0.28760302 -2.807117 -1.7701038 1.3911881 7.778676 1.6889296
## 6 -0.83510225 -2.874450 3.0472970 -0.2707707 6.456579 5.4927984
##      Epha6      Epha7      Epha8      Ephb1      Ephb2      Ephb3
## 1 -2.0962348 1.1813261 -2.0078649 7.670558 3.5791499 4.8439635
## 2 -2.7198557 1.8359647 -2.7960024 1.290269 -2.5932726 -1.9690256
## 3 -3.8841215 7.9285667 -3.8841215 5.778328 -1.9317392 1.0083330
## 4 -3.8841215 5.3714498 -0.6439223 6.475480 3.3597719 3.7072413
## 5 -3.8841215 4.5369856 2.3082165 6.425731 5.4001566 2.4339276
## 6 -3.6607788 1.9024654 -2.6334403 6.352027 2.1757602 7.4602622
##      Ephb4      Ephx1      Ephx2      Ephx3      Ephx4      Epm2a
## 1 0.01552133 3.902134 1.5102209 -2.7356629 3.6975868 2.175305
## 2 7.31013626 5.164877 -1.2127451 -1.1576328 -1.3400166 1.964565
## 3 1.57701280 7.222612 1.8345785 -0.6195262 1.5770128 -3.884122
## 4 2.38584687 4.699824 6.0101276 -0.2373521 3.8398312 -1.257172
## 5 2.39322898 5.010485 4.0202113 3.7081079 4.9451163 -3.884122
## 6 4.80778758 4.993623 6.2428046 -1.2598484 -2.4248666 1.469125
##      Epm2aip1      Epn1      Epn2      Epn3      Epor      Eprs      Eps15
## 1 6.455389 7.344865 9.677786 -2.8256836 0.8147919 7.308367 7.020043
## 2 6.555814 6.648468 7.641660 -2.9956232 4.5016275 6.959549 7.069697
## 3 4.356020 5.666826 8.000416 0.6984974 -1.1313170 4.166010 7.297612
## 4 6.242503 3.364369 6.699075 -2.1168338 -0.2783220 8.365936 7.463712
## 5 5.129864 4.117116 6.681621 -1.7701038 -1.7701038 7.200339 6.565079
## 6 6.941911 6.725243 6.973945 -1.9323507 -0.9509275 7.427411 8.052898
##      Eps15l1      Eps8      Eps8l1      Eps8l2      Epsti1      Ept1
## 1 5.728664 6.7286522 -1.66289480 -0.4561461 -1.3765026 6.690019
## 2 6.437915 3.2595366 -1.28380378 1.7482184 0.2203228 3.873066
## 3 2.053052 0.3033916 2.18224770 0.3033916 -3.8841215 2.053052
## 4 6.419942 5.1480082 0.12882161 -0.3136607 1.0205218 5.963366
## 5 3.835089 4.2822417 2.77221117 -0.7519471 -3.8841215 3.394248
## 6 6.805979 7.2975890 1.10615385 -1.7724196 -3.0447446 6.435699
##      Epx      Era11      Erap1      Erbb2      Erbb2ip      Erbb3
## 1 -3.88412153 4.264729 4.5945871 -0.8404642 6.905458 6.7954022
## 2 -3.65196234 3.973086 6.4977124 4.3361493 8.180232 -2.9369560
## 3 -1.93173924 1.577013 1.2632490 1.5770128 6.052096 1.7537270
## 4 0.29963675 6.234294 4.6685718 1.9922353 6.056213 3.0207814
## 5 -2.80711744 5.066564 -0.7519471 0.1633391 5.618913 3.5318445
## 6 -1.59680378 4.360283 5.4672654 5.8716558 7.886631 -3.2808450
##      Erbb4      Erc1      Erc2      Ercc1      Ercc2      Ercc3      Ercc4
## 1 5.1269024 5.2452000 4.4367981 4.055016 5.49425986 5.056448 4.908651
## 2 -3.0392407 6.3845505 0.7176253 4.357325 3.74277315 5.767672 4.859884
## 3 -3.8841215 0.5144282 0.6984974 1.263249 0.05610664 2.859970 1.479815

```

```

## 4 -1.5845024 4.4982852 3.3844978 5.938336 1.93757284 4.721152 4.799389
## 5 -2.8071174 4.8392569 4.0135136 6.738574 1.01558177 5.801067 1.620055
## 6 -2.0142124 5.9010055 2.9955853 3.696652 5.56962112 5.078151 4.879745
##      Ercc5      Ercc6      Ercc6l      Ercc8      Erf      Erg
## 1  4.2754288  4.7532146  0.3649754  4.3356347  6.6126485 -1.8927726
## 2  5.5847273  5.3133756  2.5200584  3.2778774  7.0519560  8.1173038
## 3 -0.2425151 -0.2425151  1.0083330 -0.6195262  1.3755916 -3.8841215
## 4  4.7751457  3.8130643  4.0224814  3.7900892  0.4373691 -3.1141576
## 5  4.4101384 -1.1730114 -0.7519471 -1.7701038  1.1190407 -3.8841215
## 6  5.3441360  5.7491267  1.6484498  3.7117498  6.7957508  1.3129994
##      Ergic1 Ergic2 Ergic3      Erh      Eri1      Eri2      Eri3
## 1  6.523217  5.292725  7.273424  5.016736  3.933018  3.4543643  6.278191
## 2  5.799134  5.747893  7.795917  5.219033  4.838149  3.1598082  5.715791
## 3  3.644828  7.514047  9.586219  6.296450  1.375592  0.8617169  8.536615
## 4  5.800399  6.458781  8.426910  5.864173  3.973383  4.7973984  7.504069
## 5  7.098005  5.251545  9.105365  6.566223  2.772211  5.1934692  8.128583
## 6  6.284475  5.638055  6.802111  4.151419  3.405585  3.9962685  5.609186
##      Erich1 Erlec1      Erlin1 Erlin2      Ermap      Ermn      Ermp1
## 1  2.192228  5.414818  4.4291870  6.632970 -2.202155  4.335343  8.033272
## 2  3.601507  5.855726  4.3000163  6.814363 -1.954447 -3.651962  6.409436
## 3 -3.884122  4.849841  1.0083330  7.887706 -3.884122  9.165619  6.615272
## 4  3.861521  5.195711  4.7313750  6.608740 -2.594046  8.019058  4.309577
## 5  2.756252  5.342536 -0.1609828  4.499130 -3.884122  8.912745  5.714929
## 6  1.550868  5.893625  4.4799911  6.486296 -1.923287 -3.288906  7.142718
##      Ern1      Ern2      Ero1l      Ero1lb      Erp27      Erp29      Erp44
## 1  3.3933646 -3.884122  5.174716  3.350213 -0.4418099  6.886495  6.219603
## 2  4.4721448 -3.248991  5.616049  4.025357 -3.4243451  7.337270  6.900057
## 3 -1.1313170 -3.884122  3.983037 -1.131317 -3.8841215  8.789501  6.916254
## 4  0.4940373 -3.884122  2.456345  2.297183 -2.4058362  6.635497  5.902142
## 5 -0.9471720 -3.884122 -3.884122 -2.197374 -3.8841215  7.687997  5.848881
## 6  3.8460842 -3.884122  4.673299  2.978689 -3.6744822  6.205882  6.105558
##      Errfi1      Esam      Esco1      Esco2      Esd      Esf1      Esm1
## 1  5.796278  0.3881227  4.084875  0.5717304  4.716734  3.3223613 -3.790167
## 2  7.349529  10.5284784  5.673627  1.2169183  5.704765  4.5891998  3.347840
## 3  6.303568  8.7806003 -1.931739  1.5770128  8.538879  3.2022392 -3.884122
## 4  2.955702  5.0752058  5.014842  5.2849104  7.285694  6.3286396 -3.884122
## 5  4.207919  6.2316257 -1.173011  2.9084139  8.407102  5.8165407 -3.884122
## 6  5.827805  2.8755547  5.952438  2.9654253  3.562597  4.6093785 -1.838149
##      Esp1l      Espn      Espn1      Esr1      Esr2      Esrp1
## 1  2.95203031 -1.9705922 -2.163224 -2.7858743 -2.823322 -1.9842604
## 2  2.17552524 -0.6684094 -2.995623 -0.9358728 -3.884122 -3.8841215
## 3 -0.24251506 -3.8841215 -3.884122 -1.9317392 -3.884122  3.1714430
## 4  3.57268013 -1.4469511 -3.884122 -3.2991483 -3.884122  1.3387931
## 5  0.58076638 -3.8841215 -3.884122 -3.8841215 -3.884122  2.6736968
## 6  4.35609247  0.7972578 -3.143174 -3.6744822 -2.621219 -3.8841215
##      Esrp2      Esrra      Esrrb      Esrrg      Esyt1      Esyt2
## 1 -3.2333088  4.4621434 -0.6623936  0.6673306  3.226380  5.925328
## 2 -1.4815464  4.6972754 -2.8000981  2.4242217  8.419444  8.938549
## 3  1.3755916 -3.8841215 -3.8841215 -3.8841215  1.008333  1.668074
## 4 -1.2445446 -0.3595501 -3.0689711 -3.5296461  2.800317  4.392801
## 5 -0.4264149  0.9041264 -3.8841215 -2.8071174  3.207339  5.172578
## 6 -2.9809405  5.1243530 -1.5315973  1.5539997  3.794700  5.879800
##      Esyt3      Etaa1      Etf1      Etf2      Etfb      Etfdh      Ethe1
## 1  0.008178537  2.3301498  7.000072  4.378681  5.595716  5.783600  3.103684

```

```

## 2 -2.272937867 3.0651958 8.133434 5.690817 6.854094 6.960350 2.612112
## 3 2.053052048 -1.1313170 2.462191 6.223266 9.356961 2.462191 5.928619
## 4 0.326643287 2.9535780 5.394546 6.359045 7.816478 5.938351 3.178600
## 5 0.257046315 3.6226664 4.941592 7.086084 9.117909 5.172578 4.172280
## 6 0.784472935 4.7077451 6.813668 5.236457 5.030823 5.995713 2.073777
##      Etl4      Etnk1      Etnk2      Ets1      Ets2      Etv1      Etv3
## 1 1.11909198 8.198848 2.0258678 3.052198175 4.717484 5.149279 5.013164
## 2 5.56641481 8.098971 1.8019568 9.744339674 8.471570 1.523849 5.701863
## 3 1.14141397 7.913525 -3.8841215 0.056106644 2.242751 6.009200 1.983840
## 4 0.73636920 5.367696 -1.4888128 3.715223046 2.632987 5.468815 3.097073
## 5 -0.94717201 6.042254 -2.8071174 3.097622918 3.827472 5.587689 4.304361
## 6 3.36558331 8.378643 0.3305387 2.736642261 5.389191 4.441678 5.345287
##      Etv4      Etv5      Etv6      Evc      Evc2      Evi2a
## 1 6.2059826 5.8556956 5.655570 3.2228775 3.3284267 4.9319480
## 2 2.1060515 3.0434931 6.606311 1.4730037 -0.1065933 -1.7122704
## 3 4.8302582 0.3033916 4.629632 -1.1313170 -3.8841215 9.5667520
## 4 1.1189284 3.6997105 2.965460 3.3128136 3.1478660 6.7674878
## 5 0.5063887 3.9091272 2.146209 2.7562522 2.2409993 8.1343826
## 6 8.2537058 7.2233776 4.963903 5.4839548 5.5510621 -0.7495479
##      Evi2b      Evi5      Evi5l      Evl      Ewsr1      Exd1      Exd2
## 1 0.3039021 6.0716909 7.0245724 5.612859 7.267696 -2.6429725 6.071746
## 2 -2.8899073 6.6737287 3.5390616 6.277485 6.856456 -0.8670606 4.670890
## 3 -1.1313170 0.3033916 -3.8841215 -3.884122 3.453298 6.2119608 6.517645
## 4 1.4302263 5.2996807 1.4867254 2.226524 6.641707 0.3560934 6.278974
## 5 -2.8071174 4.1295581 1.4319435 3.788771 6.814711 -3.8841215 4.219605
## 6 -1.7809320 7.1326640 4.6093515 4.672653 7.647737 1.7214178 5.559787
##      Exo1      Exoc1      Exoc2      Exoc3      Exoc3l      Exoc4      Exoc5
## 1 0.72004751 5.660604 5.794729 6.578289 0.7051906 6.235304 5.867061
## 2 1.22042119 5.299948 7.072206 5.720934 6.7480447 6.084378 7.622739
## 3 -0.61952623 1.834579 2.182248 4.474287 5.4971409 5.040846 2.739167
## 4 3.58707348 5.908120 5.933727 7.282812 1.5913056 5.355485 4.485456
## 5 -0.75194706 5.178578 5.924019 6.678449 -2.8071174 2.586129 3.986407
## 6 1.44977471 6.593872 5.627671 6.009037 0.5234541 5.554272 6.007520
##      Exoc6      Exoc6b      Exoc7      Exoc8      Exog      Exosc1      Exosc10
## 1 3.94416600 6.789448 5.950665 3.612379 4.822763 3.470518 6.020572
## 2 6.25813938 6.791510 5.968882 3.454543 2.306714 3.707468 6.512060
## 3 0.05610664 6.984281 4.790278 5.040846 7.571199 5.838376 1.834579
## 4 3.44503002 5.807212 6.977005 5.032923 5.591564 5.970858 6.483441
## 5 -2.80711744 5.848881 6.981003 4.716788 5.211139 6.192133 4.430394
## 6 2.76691435 6.447535 5.966764 3.380382 3.119101 3.438310 5.878134
##      Exosc2      Exosc3      Exosc4      Exosc5      Exosc7      Exosc8      Exosc9
## 1 4.462717 2.3414809 3.869741 3.859556 3.504337 4.125447 3.155716
## 2 4.407576 4.0388164 4.071933 5.014690 3.967723 4.576507 4.429805
## 3 1.753727 -0.2425151 6.245614 6.196748 7.241267 6.685069 8.212864
## 4 5.828439 2.9206028 5.269500 6.216464 6.034024 6.247785 5.537063
## 5 6.032349 5.1934692 5.636456 6.524434 7.228086 6.720182 5.969717
## 6 3.614280 3.2942237 3.653136 3.142404 3.925820 4.060491 3.822861
##      Exph5      Ext1      Ext2      Extl1      Extl2      Extl3      Eya1
## 1 -1.6244699 5.4993191 6.635964 3.1191277 6.072384 6.604805 5.1348099
## 2 0.4040883 6.3058430 7.261642 -3.4243451 4.360685 7.876205 -1.4050349
## 3 0.8617169 0.5144282 2.182248 0.3033916 6.073075 4.069093 0.3033916
## 4 1.7641000 3.6833509 3.787186 1.4520486 6.750455 5.469042 5.0750375
## 5 -0.5800187 5.3742501 3.894620 -2.8071174 6.758740 6.136196 4.6362406
## 6 -2.6334403 6.1796107 6.084643 0.8589136 5.444741 7.443047 5.9379264

```

##	Eya2	Eya3	Eya4	Ezh1	Ezh2	Ezr	F10
## 1	2.6040067	4.2101404	0.5173268	4.585680	4.8729556	3.483476	-3.452905
## 2	-2.3729121	4.9661662	-3.8841215	5.691718	5.1669772	5.543940	-1.478578
## 3	-3.8841215	0.3033916	-1.9317392	3.107806	0.5144282	4.166010	-3.884122
## 4	-0.2822457	4.3427088	2.2446742	5.811011	5.5719955	8.461402	-3.884122
## 5	3.9447685	-2.1973739	0.6514968	4.644934	4.6621657	7.788027	-3.884122
## 6	-2.2632704	5.1077976	0.9145360	4.621363	5.4468155	9.204326	-3.884122
##	F11r	F12	F13a1	F2	F2r	F2r11	
## 1	1.89348079	-3.462117	1.5286212	-3.5512555	5.7784576	-3.2319114	
## 2	8.21921224	-3.656504	-2.7161344	-0.3138404	8.0394914	0.5038056	
## 3	8.12418017	-3.884122	4.2420805	-3.8841215	4.2271840	1.1414140	
## 4	2.90883672	-3.884122	5.5519410	-2.3352573	4.6150543	-0.1944278	
## 5	3.78877094	-3.884122	2.6217964	-3.8841215	4.9591265	0.2570463	
## 6	0.96152769	-2.947970	-2.6212192	-1.9261960	5.5729266	-2.8744502	
##	F2r12	F2r13	F3	F5	F7	F8	
## 1	-3.72356689	-2.9507007	5.047101	-1.2951355	-3.248763	0.5011192	
## 2	-3.88412153	3.3589788	1.319150	2.6447959	-2.304043	0.1027435	
## 3	0.05610664	-3.8841215	8.481189	-3.8841215	-3.884122	-3.8841215	
## 4	1.50660371	-3.8841215	6.032648	-0.4651059	-3.884122	-0.2055273	
## 5	-2.19737395	-3.8841215	5.959299	-2.8071174	-3.884122	-2.1973739	
## 6	-3.15654382	-1.8543379	8.659627	0.9624899	-3.884122	0.9582631	
##	F8a	F9	Fa2h	Faah	Fabp3	Fabp4	
## 1	3.7615598	-2.0760249	7.4848192	5.5011789	0.3443643	-3.794983	
## 2	2.6649384	-3.6519623	-3.8841215	-1.2635092	-0.8743735	-1.540729	
## 3	-0.2425151	-3.8841215	4.8302582	7.1395253	2.7805686	-1.931739	
## 4	1.1832067	-3.6036807	4.8191005	2.4449813	2.2287343	-3.444759	
## 5	2.7237947	-3.8841215	5.3101081	3.4841954	3.6314419	-3.884122	
## 6	2.7917628	-3.8841215	-2.4248666	0.5799926	-0.5238356	-3.512249	
##	Fabp5	Fabp6	Fabp7	Fadd	Fads1	Fads2	Fads3
## 1	6.314151	-3.588151	6.982128	2.77778349	8.554496	7.418964	3.786552
## 2	2.442886	-2.297781	4.195920	3.69303603	6.860488	4.709845	4.056270
## 3	7.949139	-3.884122	9.217418	1.83457854	4.069093	5.828540	-3.884122
## 4	7.922636	-3.884122	10.464833	2.82140481	8.288733	5.825517	2.211388
## 5	9.309336	-3.884122	11.332994	4.02687810	7.987895	6.020706	-1.440886
## 6	8.014564	-2.980940	10.764636	2.52739001	9.442435	9.206483	4.584792
##	Fads6	Faf1	Faf2	Fah	Fahd1	Fahd2a	Faim
## 1	3.2602388	5.73756006	6.113852	5.243173	2.9121536	3.8620670	4.6672899
## 2	-2.7198557	6.70566090	5.838066	2.174077	2.3049878	4.4284392	5.8469832
## 3	-3.8841215	0.05610664	4.242081	6.864246	0.6984974	0.8617169	0.6984974
## 4	1.6113727	4.42541499	6.796195	4.969153	5.2048412	5.6097104	3.7575214
## 5	-2.8071174	4.49912995	5.472757	6.671020	5.2023309	6.1530540	4.8543283
## 6	3.4440503	4.97973792	6.416980	4.650517	2.9823388	3.5803991	3.6443803
##	Faim2	Faim3	Fam101a	Fam101b	Fam102a	Fam102b	Fam103a1
## 1	6.3135719	-3.723567	-0.4647686	2.1491456	8.120430	6.4405389	2.209888
## 2	-0.1893422	-3.651962	3.1068641	8.8207074	5.394125	6.4636541	3.934751
## 3	8.1510663	-3.884122	-3.8841215	-0.2425151	6.932416	6.3661004	2.898090
## 4	5.7718386	-3.884122	-2.0321955	1.5100757	5.706253	2.7192309	4.508586
## 5	5.7795165	-3.884122	2.5495573	0.9609302	5.886023	0.1633391	5.445647
## 6	1.1356580	-3.884122	-0.5205635	1.9723232	6.440204	5.7195984	2.583359
##	Fam105a	Fam107a	Fam107b	Fam109a	Fam109b	Fam110a	Fam110b
## 1	2.26185550	4.8450709	4.983282	4.2606831	-2.4223669	3.190411	4.2368121
## 2	-0.02069153	5.4982403	6.172980	3.5217410	-2.0452279	4.187281	0.9265698
## 3	0.51442825	7.3397709	5.171091	2.3008186	-1.9317392	7.107346	6.8301467
## 4	0.97164335	8.0358508	5.473647	1.8598084	1.3608553	5.189243	4.1188633


```

## 5 -1.44088555 7.0090522 6.503076 4.3582188 -2.8071174 5.854513 2.1462087
## 6 -1.39312038 5.8940664 7.149155 3.8004228 -1.9323507 2.367804 4.3677800
##      Fam110c      Fam111a  Fam114a1  Fam114a2  Fam115a      Fam115c
## 1 -3.356638 1.39003090 5.2659265 5.478445 6.604223 0.24550975
## 2 -1.394709 5.34513783 5.2202378 6.270360 6.743967 5.25515684
## 3 -3.884122 3.77344095 0.3033916 2.859970 3.503617 0.05610664
## 4 -3.884122 4.25272110 4.1518425 6.901691 7.035625 -1.16523097
## 5 -3.884122 -1.44088555 4.2988628 8.004879 3.850204 -1.77010377
## 6 -3.884122 1.58634681 4.1242632 5.156449 6.603909 1.29587171
##      Fam117a  Fam117b      Fam118a  Fam118b  Fam120a  Fam120b  Fam120c
## 1 3.2310081 5.418314 5.0934720 4.644304 6.914289 5.874090 5.851348
## 2 0.7883278 6.830542 7.0384472 5.820121 7.287374 4.766048 3.253414
## 3 -0.2425151 1.263249 0.5144282 8.099853 7.964939 1.834579 5.853005
## 4 1.6816095 4.761396 4.0783667 6.766298 6.857316 6.549760 5.204048
## 5 -3.8841215 3.958782 -0.5800187 6.772689 6.990414 3.622666 4.123350
## 6 4.8808304 4.616524 5.2143024 4.064322 7.518586 5.706103 7.560936
##      Fam122a  Fam122b      Fam124a  Fam124b  Fam126a  Fam126b
## 1 3.1989489 4.9831552 3.6168029 -3.8841215 5.4203037 4.608606
## 2 3.6539559 1.4238224 0.4389238 5.9494209 6.0835958 4.745697
## 3 5.9240073 -0.2425151 -0.6195262 -3.8841215 0.3033916 4.369650
## 4 2.8086196 3.0540786 2.9307177 -3.8841215 4.9444080 5.567533
## 5 -1.7701038 0.6514968 3.0195509 -3.8841215 5.1205444 5.453092
## 6 4.1931997 2.5139232 4.9101627 -3.1186116 6.2779000 4.923557
##      Fam129a  Fam129b      Fam129c  Fam131a  Fam131b  Fam131c
## 1 -0.76212325 5.062643 2.3661279 4.765827 6.5315635 -0.4328385
## 2 8.37213125 8.034760 0.1313223 4.138903 -0.3834019 -2.8952098
## 3 4.01807779 3.773441 -3.8841215 7.526268 -3.8841215 -3.8841215
## 4 1.19712145 3.155564 -0.4134479 5.157355 0.8596226 -2.3389018
## 5 0.16333909 3.373475 -3.8841215 5.389850 0.7189210 -3.8841215
## 6 0.97461035 4.101107 3.5053522 4.791914 0.9332251 -3.2680874
##      Fam132a  Fam132b  Fam133b  Fam134a  Fam134b  Fam134c  Fam135a
## 1 1.5637132 -0.9927621 4.687090 7.319491 5.067359 6.665188 5.585679
## 2 1.4722662 -2.0452279 4.947923 6.649896 5.633648 7.645368 6.183337
## 3 0.8617169 -3.8841215 6.580531 2.462191 4.448831 1.753727 1.834579
## 4 1.4768321 -2.0719816 6.477705 5.738105 5.700022 3.073507 4.033717
## 5 3.7650420 -1.1730114 6.150004 6.056986 4.858072 2.740115 4.691834
## 6 2.1944660 -1.1970474 5.124241 6.483693 2.611244 5.629481 6.984455
##      Fam135b  Fam136a      Fam13a      Fam13b  Fam13c  Fam149a  Fam149b
## 1 1.2213063 3.616987 2.5159851 5.1150051 5.5668924 4.895342 4.711225
## 2 -3.2515854 3.824064 6.7307161 5.3509874 6.4652585 3.664621 5.268531
## 3 -3.8841215 1.141414 -0.2425151 -1.1313170 5.3672844 -1.931739 3.401161
## 4 -2.8204672 6.320180 3.5882942 2.9693473 5.6324097 2.912921 4.072610
## 5 -3.8841215 7.080487 -1.7701038 -1.4408855 0.2570463 3.850204 2.992559
## 6 -0.6878803 2.665663 4.0965004 6.4159368 7.4381488 4.631932 5.087202
##      Fam150b  Fam151a  Fam151b  Fam154b  Fam155a  Fam159b
## 1 -3.570026 -3.411148 2.0269904 -0.3472334 5.4535028 -2.85363895
## 2 -3.884122 -3.884122 1.1986111 -1.7595499 -0.7644087 -3.65196234
## 3 -3.884122 -3.884122 -3.8841215 2.6526181 0.6984974 5.92861880
## 4 -2.905640 -3.884122 -0.2856971 2.1749471 2.6344349 3.93431924
## 5 -3.884122 -3.884122 1.7864435 2.0447493 0.5807664 4.21377393
## 6 -3.674482 -1.436423 0.6234669 -0.3185698 -0.3186760 -3.88412153
##      Fam160a1  Fam160a2  Fam160b1  Fam160b2  Fam161a  Fam161b
## 1 -2.3045891 5.0606320 5.397558 3.97088240 1.6233128 2.19733978
## 2 1.2591257 4.9318051 6.520170 3.33364435 2.5316656 0.02884057

```

```

## 3  1.0083330 0.3033916 6.544932 5.12361611 -3.8841215 -0.24251506
## 4  -0.8187707 3.7518155 3.941051 2.12543196 2.3219853 4.02093430
## 5  -0.4264149 3.9657381 2.772211 -0.04458439 -1.7701038 1.21557422
## 6  -2.9809405 6.1237288 5.976349 5.35730561 1.1607539 3.28235388
##      Fam162a  Fam162b  Fam163a  Fam163b  Fam166a  Fam166b
## 1  4.356084 -3.884122 5.0229333 1.5043295 -2.597811 -2.94430891
## 2  5.189004 -1.676176 -1.3405023 -0.2856234 -1.681862 -1.47453522
## 3  1.834579 -3.884122 -1.1313170 5.4271702 -3.884122 -1.93173924
## 4  5.747069 -3.884122 3.2367386 1.4557669 -1.742412 -0.01580794
## 5  6.838591 -3.884122 4.0466955 -0.5800187 -3.884122 -3.88412153
## 6  4.022231 -3.237253 4.1959289 -0.7424745 -1.193488 -0.80763782
##      Fam167a  Fam167b  Fam168a  Fam168b  Fam169a  Fam171a1  Fam171a2
## 1  0.2329331 -0.6902995 8.593088 8.016931 4.7482226 5.224143 5.1190844
## 2  2.6512215 -0.1038638 5.984019 7.066040 2.2134446 6.521537 6.4598978
## 3  -0.6195262 6.7174085 6.787627 2.696541 1.2632490 4.300175 0.3033916
## 4  4.0257896 -0.1870699 7.575157 6.364054 2.4926837 4.026042 0.9712826
## 5  1.7546656 -3.8841215 7.633891 6.329246 -2.8071174 4.373992 0.3450364
## 6  4.8799104 -3.1186116 7.688795 8.148310 2.7499145 6.659873 4.5138336
##      Fam171b  Fam172a  Fam173a  Fam173b  Fam174a  Fam174b  Fam175a
## 1  6.485374 5.672532 6.121828 3.5806401 5.252162 4.1628459 2.2129729
## 2  1.405471 4.924418 4.818013 3.4417174 5.608483 4.9059992 2.5651744
## 3  6.338642 6.810293 8.282967 0.3033916 6.535894 6.3524367 0.3033916
## 4  5.776076 5.414054 5.957015 4.8615838 3.527869 3.9582272 4.2367161
## 5  4.379211 5.537216 7.186263 4.6960233 3.724605 3.1474184 -1.1730114
## 6  7.858054 5.772897 5.975529 3.1831991 3.797185 2.1093992 3.2986280
##      Fam175b  Fam178a  Fam178b  Fam179a  Fam179b  Fam180a  Fam181a
## 1  4.093580 5.208701 -0.4198471 -2.3551117 4.8400751 1.963822 -0.7246902
## 2  4.438695 5.502714 -0.8853241 -1.8899718 5.8636573 -2.817416 -2.1043103
## 3  1.375592 1.834579 -3.8841215 -3.8841215 -0.6195262 -1.931739 -3.8841215
## 4  5.450182 5.935743 -0.1816507 -1.4397863 4.2282832 3.377208 0.5242218
## 5  5.749601 4.135739 -3.8841215 -3.8841215 3.2648698 5.312838 -1.7701038
## 6  5.062998 5.972050 -3.5122488 1.9736121 5.9638861 -3.660779 4.9699174
##      Fam183b  Fam184a  Fam184b  Fam185a  Fam186b  Fam187b
## 1  -3.115860 5.0233053 2.3766405 2.4673771 -2.2534268 -3.4448004
## 2  -2.548285 0.5990506 -1.8022195 2.3309419 -2.5768592 0.9874325
## 3  -3.884122 -3.8841215 -3.8841215 -1.1313170 -3.8841215 -1.9317392
## 4  2.944580 1.9100362 0.8350960 1.8937182 -2.8597861 -2.1136966
## 5  4.560151 -2.8071174 -2.8071174 -2.8071174 -3.8841215 -3.8841215
## 6  -1.390918 6.5523482 4.0828874 3.2071248 -1.7506650 -2.5299120
##      Fam188a  Fam188b  Fam189a1  Fam189a2  Fam189b  Fam192a  Fam193a
## 1  5.167597 2.1809514 5.23272581 3.172092 4.3747743 5.687240 5.5079530
## 2  5.701875 3.9415476 -1.59306625 6.011207 2.1978718 5.392546 5.4710988
## 3  6.782541 -0.2425151 -0.61952623 -3.884122 0.5144282 1.577013 0.6984974
## 4  5.419943 4.4347025 0.79854717 1.795516 2.4778012 6.623534 5.0863092
## 5  6.086005 3.2421320 -2.80711744 2.096371 4.0919043 6.936553 4.1418942
## 6  4.630591 3.2297529 0.02374558 5.825020 3.7298971 5.066318 6.5194191
##      Fam193b  Fam195a  Fam195b  Fam196a  Fam196b  Fam198a
## 1  6.8296285 2.2419215 6.422080 3.0205475 3.098268 2.1569792
## 2  6.2426567 1.3907022 7.120524 -1.3316554 -2.753107 -2.1222972
## 3  1.0083330 -1.1313170 7.509437 -3.8841215 -3.884122 7.2207329
## 4  3.5529124 2.0227143 5.515389 2.7265989 -3.674937 4.1141460
## 5  -0.5800187 4.4503693 7.024125 4.2878034 -3.884122 3.6660196
## 6  7.8905843 4.3552045 5.468774 1.4658384 -2.980940 4.5486914
##      Fam198b  Fam199x  Fam19a1  Fam19a2  Fam19a3  Fam19a4

```

```

## 1  2.02765620  3.8731632  2.38596861  4.87626555 -3.4407838  2.92537599
## 2  4.15993755  3.7707807 -1.44424714 -1.30711431  0.8123322 -3.88412153
## 3 -1.93173924 -0.2425151 -1.93173924  0.05610664 -3.8841215 -3.88412153
## 4 -0.16304780  4.0914010  0.30027018  1.40166032 -3.8841215 -0.19438627
## 5 -2.19737395  1.5101550 -2.80711744 -1.77010377 -3.8841215 -3.88412153
## 6 -1.05613236  4.7993303 -2.44639078 -1.66092271 -3.1565438 -2.25206838
##      Fam19a5  Fam203a  Fam20a  Fam20b  Fam20c  Fam24a  Fam25c
## 1  6.54499601  3.588333  0.4224727  6.009405  5.012151 -3.216165 -3.884122
## 2  0.03097005  3.331982  2.1024541  5.674249  5.050710 -3.884122 -3.884122
## 3  2.56054423 -1.931739  6.4422500  3.853225  1.008333 -3.884122  6.676869
## 4  4.92307225  2.122765  3.9431835  4.246041  3.354110 -3.884122  4.208385
## 5  6.02404256  1.754666  0.0631199  2.978871  2.263755 -3.884122  5.342536
## 6  5.42705864  3.462687  7.1446433  5.295340  6.486224 -2.346470 -3.451139
##      Fam26e  Fam26f  Fam32a  Fam35a  Fam3a  Fam3c  Fam43a
## 1 -1.2005282 -3.308322  5.682036  2.306682  5.087487  7.886097  3.7409377
## 2 -2.0452279 -3.884122  5.813407  3.285899  5.109265  5.373135  7.5268317
## 3 -0.6195262 -3.884122  7.139525 -1.131317  7.101231  7.950273  0.3033916
## 4  2.1896484 -1.797759  7.397623  2.480736  5.938771  6.484467  0.7801787
## 5  3.6401644  1.119041  7.714049  2.740115  6.442034  7.301403 -1.4408855
## 6 -0.9207438 -3.884122  4.843447  2.858461  4.265878  6.522089  3.1016542
##      Fam43b  Fam45a  Fam46a  Fam46b  Fam46c  Fam47e
## 1  0.4985474  4.877999  3.7310601 -1.38965553  2.7479901 -3.8841215
## 2 -3.4766082  5.276528  0.9810940 -2.93695601  2.6000232 -3.8841215
## 3 -3.8841215  8.444630  5.2394965  0.05610664 -3.8841215 -3.8841215
## 4 -2.7279077  6.263325  2.7236685 -3.04737206  0.9691021  0.3587473
## 5 -3.8841215  4.420302 -0.4264149 -2.19737395 -1.4408855  2.4538543
## 6 -3.1565438  4.813604  2.5398027 -2.98624936  3.0911489 -1.2819779
##      Fam49a  Fam49b  Fam50a  Fam53a  Fam53b  Fam53c  Fam57a
## 1  5.576361  6.728431  4.947447  4.96746635  5.149329  6.215529  4.7309098
## 2  3.349832  5.988035  4.881450  5.50604382  4.083852  6.115060  6.0664066
## 3  7.819822  8.717378 -1.131317 -0.61952623  1.375592  1.668074  1.2632490
## 4  7.036942  4.240047  4.953960  1.20207429  5.120498  5.761970  3.0769748
## 5  7.027453  5.374250  5.017197  3.11023384  5.945290  5.492158  3.4646862
## 6  6.209658  6.697147  5.185953  4.46965294  5.428438  6.417744  2.0701990
##      Fam57b  Fam58b  Fam60a  Fam63a  Fam63b  Fam64a  Fam65a
## 1  4.6316931  4.112843  0.1311272  7.052739  6.488436  1.9727553  5.202246
## 2  4.5102439  2.364700  3.6681714  7.536887  7.112257  3.5230661  7.670947
## 3 -0.6195262  6.376264  4.0006639  6.496059  7.370601  6.9887037  5.655743
## 4  3.7988222  4.467082  3.8281422  6.530748  5.064869  6.3756997  4.436856
## 5 -0.9471720  6.550115  3.2872548  5.601154  3.827472  6.4606192  4.282242
## 6  1.9296106  3.885726  0.7636755  5.227264  6.577321  2.7170776  5.960099
##      Fam65b  Fam65c  Fam69a  Fam69b  Fam69c  Fam71a
## 1  1.44024858 -1.4000582  4.268625  5.006393  3.51507415 -1.7023819
## 2  2.83341199 -3.1165114  4.905551  3.734154 -1.94394635  5.7018823
## 3  0.05610664 -1.9317392  5.057784  2.820816  4.38315201 -3.8841215
## 4  1.99245712 -2.1696543  5.202321  3.166629  3.55752608 -3.8841215
## 5 -0.42641489 -2.8071174  4.725011  4.474956  3.45483176 -3.8841215
## 6  5.54892937 -2.6400046  3.565700  3.735247  5.51238064  3.8695343
##      Fam71d  Fam71e1  Fam71f2  Fam72a  Fam73a  Fam73b  Fam76a
## 1 -3.124546  0.6939963 -0.5966512 -0.2070735  6.71882574  5.751469  5.745381
## 2 -2.525490 -1.4141028  2.5598746  2.7630470  5.06887796  4.633453  6.711330
## 3 -3.884122 -3.8841215 -3.8841215 -3.8841215  0.05610664  7.900673  7.344955
## 4 -3.884122  0.7840556 -0.4104993  1.2384805  4.48581349  4.287205  4.582930
## 5 -3.884122  0.8449942 -3.8841215  2.8494607  4.29334366  4.213774  1.991212

```

```

## 6 -2.765802 1.0915756 0.1474390 0.6740926 5.72875282 6.088454 6.084024
##      Fam76b      Fam78a      Fam78b      Fam81a      Fam83a      Fam83b
## 1 4.80812290 0.1567108 1.75113960 2.478423 -3.3846217 -3.88412153
## 2 5.66783736 2.3441603 2.28162775 1.690266 -3.8841215 -3.88412153
## 3 0.05610664 -3.8841215 -1.93173924 5.304805 0.3033916 0.51442825
## 4 3.85377098 -1.3687691 2.39492575 3.356203 -2.7411259 -2.15830691
## 5 5.13295742 -3.8841215 -3.88412153 2.217879 -0.7519471 -0.58001868
## 6 6.37396554 -1.2424541 -0.02883558 2.202600 -1.1710834 1.21923784
##      Fam83c      Fam83d      Fam83e      Fam83f      Fam83g      Fam83h
## 1 -3.458592 4.0065918 -2.199488 -1.0154389 -2.0086241 0.4074665
## 2 -3.027715 2.2156815 -1.716040 -3.8841215 1.2074984 -1.9082266
## 3 -1.131317 2.6526181 -3.884122 -0.6195262 0.5144282 1.3755916
## 4 -2.932431 1.9937591 -2.988339 -3.1014405 -1.6373078 -0.3302730
## 5 -2.807117 1.3060516 2.849461 -3.8841215 -0.1609828 -0.7519471
## 6 -3.674482 2.8772354 -1.450247 -1.2362053 -2.4341566 2.0663399
##      Fam84a      Fam84b      Fam86      Fam89a      Fam89b      Fam92a      Fam92b
## 1 1.1910728 3.445112 2.4511981 3.9204110 5.248212 4.326590 -3.1548084
## 2 -0.4787760 5.413902 4.4726968 -0.3923087 5.806974 5.113988 -3.2515854
## 3 7.0018921 4.830258 7.8010828 1.8345785 5.818636 -1.131317 -3.8841215
## 4 5.4663326 1.756773 5.2473212 -0.1796831 4.957632 4.785811 2.7422922
## 5 7.0140939 3.195552 3.7650420 0.5807664 6.199529 4.342271 3.0720655
## 6 5.5524829 4.629290 3.1340457 0.3632690 4.752298 4.272966 -0.5205635
##      Fam96a      Fam96b      Fam98a      Fam98b      Fam98c      Fan1      Fanca
## 1 5.385940 4.570318 6.5352606 5.2574365 3.248453 3.6638645 2.6197399
## 2 5.746884 4.977423 4.7266674 5.4946329 4.040109 3.0646177 1.2589580
## 3 8.954039 6.957453 0.8617169 0.3033916 -1.131317 -0.6195262 -1.9317392
## 4 6.971352 6.276279 4.7065415 4.9406361 -1.821058 2.7671064 2.5567237
## 5 7.460064 7.515039 4.3895942 4.4651713 -0.947172 -2.8071174 -3.8841215
## 6 4.235261 3.603026 6.2440173 5.5918711 2.935385 4.6289420 3.1004642
##      Fancb      Fance      Fancd2      Fance      Fancf      Fancg
## 1 1.93163998 2.8988074 2.1975606 4.3480837 1.6715721 3.4731223
## 2 0.74663319 4.1021587 1.7371796 4.0567674 0.9897591 3.5975910
## 3 -0.24251506 6.1461698 -0.2425151 -1.1313170 3.1078056 0.6984974
## 4 2.48995480 4.8179181 3.6021821 1.4679889 1.7071614 4.6866533
## 5 -3.88412153 -0.1609828 3.1955523 -1.7701038 3.1955523 3.7490031
## 6 1.50457585 3.7796242 2.8641577 4.3721819 1.6310936 3.6085350
##      Fanci      Fanc1      Fancm      Fank1      Fap      Far1
## 1 2.70986797 2.855989 4.3781612 -2.7485819 -2.6020423 6.383207
## 2 2.36238707 3.649131 3.5220005 -2.2709628 0.5593923 5.699584
## 3 0.05610664 -1.931739 0.5144282 -3.8841215 -3.8841215 6.880998
## 4 3.91030549 3.841242 3.1863270 0.5245555 -1.2609829 6.190314
## 5 0.96093015 3.474474 -2.1973739 -3.8841215 -3.8841215 6.024043
## 6 3.20086878 3.776053 5.0669586 -0.3886158 -2.5429387 6.376904
##      Far2      Farp1      Farp2      Fars2      Farsa      Farsb      Fas
## 1 1.8826893 6.631850 3.666083 3.652424 5.857642 5.639950 -2.4481504
## 2 5.6845735 6.058025 2.470992 4.714158 5.734069 5.862276 4.0927997
## 3 -1.1313170 6.595108 -1.131317 4.118365 7.014961 7.008441 -0.6195262
## 4 1.3660318 4.670600 2.811584 5.871563 6.793615 7.046257 1.6776087
## 5 -1.7701038 1.510155 -2.197374 7.006525 6.653895 6.346670 -2.1973739
## 6 2.8948411 6.788104 3.788104 5.896125 5.474543 4.930231 2.7723946
##      Fas1      Fasn      Fastk      Fastkd1      Fastkd2      Fastkd3      Fastkd5
## 1 -2.608410 10.169469 5.652711 3.348793 3.9780173 3.021902 2.4871719
## 2 -2.548285 5.283499 5.251298 3.037541 3.7044766 2.235555 2.5542361
## 3 -3.884122 3.478677 1.141414 3.319243 1.4798145 -1.131317 7.4140010

```

```

## 4 -3.884122 6.863866 4.944227 2.335378 5.3552195 4.700811 4.3432863
## 5 -3.884122 7.223740 5.721108 -1.440886 3.4841954 4.489509 0.5063887
## 6 -3.884122 10.302029 6.408949 4.402301 4.2441200 3.527712 2.4831254
##      Fat1      Fat2      Fat3      Fat4      Fate1      Fau
## 1 8.001854 -3.310681673 4.6544584 5.30303977 -3.884122 3.650243
## 2 5.238895 -3.127369030 -0.9442351 6.92717916 -2.561454 4.692453
## 3 3.374368 0.861716875 0.8617169 -0.24251506 -3.884122 3.401161
## 4 4.619411 -1.279856955 3.8114622 3.55678335 -3.141616 3.656262
## 5 3.541188 0.163339093 -1.4408855 3.23062733 -3.884122 4.141894
## 6 9.012635 -3.660778796 6.3123078 6.64676557 -3.674482 2.889141
##      Fbf1      Fbl      Fblim1      Fbl11      Fbln1      Fbln2
## 1 5.9739229 3.2282991 -1.7262585 2.68922874 2.4620083 3.3168873
## 2 5.1516565 2.6677306 2.2422109 -0.60977846 5.7817396 6.9788457
## 3 -0.6195262 3.3470689 -0.6195262 0.69849743 0.8617169 1.0083330
## 4 3.2829683 0.5317401 1.5380542 -0.02313271 4.2838823 5.3336561
## 5 2.2178791 1.6200547 -0.7519471 2.99255889 5.3237082 4.5369856
## 6 6.5012652 3.9388236 -0.6875330 -1.98594706 5.5130855 6.7997238
##      Fbln5      Fbln7      Fbn1      Fbn2      Fbp1      Fbp2
## 1 2.6001733 3.3395814 5.1419213 5.6189214 1.1542863 -2.0468474
## 2 6.6359557 -0.7342418 2.3805106 -2.2769649 -3.3356546 -3.4243451
## 3 0.6984974 -3.8841215 -3.8841215 -3.8841215 -1.9317392 -3.8841215
## 4 3.3762329 0.8079982 0.3968501 -0.2702140 -0.6296824 -3.8841215
## 5 4.3098380 -0.9471720 3.2872548 -1.4408855 -3.8841215 -3.8841215
## 6 0.8454982 0.7865966 3.9254120 0.4050192 -1.2627741 0.3095659
##      Fbrs      Fbrs11      Fbx112      Fbx113      Fbx114      Fbx115      Fbx116
## 1 5.573589 5.234754 3.143621 -2.812701 4.6328625 2.993199 5.8828481
## 2 5.463930 4.739095 4.855053 -2.990176 4.8294974 3.321476 0.7348987
## 3 1.263249 3.041231 -1.131317 -3.884122 0.8617169 -1.931739 5.9469187
## 4 3.432711 4.447272 2.835230 -1.699272 2.9121250 -1.647936 4.0323866
## 5 3.757045 2.286157 4.053241 -3.884122 3.4744738 1.306052 3.5960151
## 6 5.723975 8.170666 3.884764 -2.022865 4.1679439 2.320786 3.7515582
##      Fbx117      Fbx118      Fbx119      Fbx12      Fbx120      Fbx121
## 1 5.247271 3.2903275 5.6765297 2.9625697 5.176467 -0.4138640
## 2 6.261071 2.2227766 4.8392943 3.7563676 5.670227 -2.9956232
## 3 6.733311 4.4229170 0.3033916 -0.2425151 1.479815 7.2706230
## 4 4.004884 1.7449344 0.5244388 3.7647512 4.513424 1.3599387
## 5 3.819814 -1.4408855 -1.7701038 3.5596964 3.732784 -2.1973739
## 6 5.387394 3.8398596 5.6022731 0.1139362 6.199828 2.4707641
##      Fbx122      Fbx13      Fbx14      Fbx15      Fbx16      Fbx17
## 1 0.43520607 5.937863 4.11794185 6.520078 5.063182 1.42551662
## 2 3.69274879 6.764182 4.20197003 6.248192 6.312121 4.82824063
## 3 -1.93173924 6.979844 0.05610664 7.279676 7.799825 -1.93173924
## 4 0.52177189 4.956212 4.21922714 6.881234 2.219333 2.51644651
## 5 -2.19737395 4.938060 5.72521308 7.307575 4.110854 -2.80711744
## 6 -0.03201632 6.824911 4.83739539 6.291272 5.432550 2.69192673
##      Fbx18      Fbxo10      Fbxo11      Fbxo15      Fbxo16      Fbxo17      Fbxo18
## 1 -0.7899822 5.0807926 6.160477 -3.678732 0.8419728 2.4585058 6.390121
## 2 2.3610395 5.7406854 6.469755 -3.656504 -0.1952137 -0.7644087 7.252934
## 3 -3.8841215 0.8617169 1.479815 -3.884122 4.6521135 -3.8841215 1.983840
## 4 -0.8598773 3.4883269 5.872783 -1.930058 2.7422453 0.7223150 5.829462
## 5 1.6549031 2.5861290 6.074789 -3.884122 -2.8071174 -1.4408855 4.219605
## 6 -1.8893983 5.5757843 6.485673 -3.156544 1.3262843 2.0273304 7.036881
##      Fbxo2      Fbxo21      Fbxo22      Fbxo24      Fbxo25      Fbxo27      Fbxo28
## 1 4.2004677 6.7017050 4.716733 -0.7249010 5.407532 2.10185795 5.678834

```

```

## 2 -0.2910093 5.2489798 4.925007 -1.4070472 4.940821 -1.08380424 6.522835
## 3 5.2469007 0.5144282 1.753727 -3.8841215 4.962061 -3.88412153 1.008333
## 4 3.9793265 5.4569016 5.830465 -2.4600481 6.050131 -0.02705447 4.659505
## 5 5.2908499 6.7015513 5.453092 -3.8841215 6.312973 -2.80711744 3.937710
## 6 5.1781163 5.2464489 5.185610 0.7277572 4.946744 0.24684477 5.444455
##      Fbxo3      Fbxo30      Fbxo31      Fbxo32      Fbxo33      Fbxo34      Fbxo36
## 1 5.656584 3.489801 5.804774 5.183001 4.9415314 3.9162246 1.2457656
## 2 6.016640 5.890200 3.818087 3.667773 5.2751179 5.2359077 1.2639149
## 3 6.964207 5.465756 7.495517 7.774432 0.8617169 -0.2425151 -1.9317392
## 4 6.514658 4.289001 3.300654 4.841358 4.0007506 2.7101329 4.2572076
## 5 7.050538 -0.287603 2.864426 4.225413 4.0855320 4.1171157 4.3792114
## 6 5.891228 5.996209 4.443200 2.655703 5.9178013 4.4188379 0.2239433
##      Fbxo38      Fbxo4      Fbxo41      Fbxo42      Fbxo43      Fbxo44      Fbxo45
## 1 5.521016 3.550656 3.986535 5.282533 -3.4193833 4.8039126 5.2863984
## 2 5.702427 4.120842 -1.354920 5.289625 -1.2277834 0.1839145 4.4881468
## 3 3.667075 6.241913 -1.931739 2.300819 -3.8841215 7.2169678 0.3033916
## 4 6.155277 1.440042 2.961450 3.687112 -3.2897395 5.8737021 4.6468040
## 5 3.287255 -0.947172 -1.440886 5.136044 -3.8841215 4.7002001 3.8350891
## 6 5.978877 3.957876 3.555838 5.659895 -3.3528132 5.7821036 4.6644360
##      Fbxo46      Fbxo47      Fbxo48      Fbxo5      Fbxo6      Fbxo7      Fbxo8
## 1 2.580221 -2.82946907 -0.5579595 1.7605264 4.102902 5.817874 6.044550
## 2 2.121223 -1.90984315 -2.0558375 2.3315504 5.625452 4.980516 5.415034
## 3 5.910084 -3.88412153 -3.8841215 1.3755916 6.089641 7.268806 6.013548
## 4 5.322099 -0.02384397 -1.3083928 5.4825783 5.061686 4.661492 5.977093
## 5 6.391270 -3.88412153 -3.8841215 1.3911881 5.407839 5.033841 5.585433
## 6 2.742279 -2.19428890 0.5117775 2.7982282 4.388513 4.280913 4.954546
##      Fbxo9      Fbxw10      Fbxw11      Fbxw15      Fbxw2      Fbxw4      Fbxw5
## 1 5.27641716 -2.6424106 7.070136 -3.548678 5.324016 5.08971443 6.373754
## 2 5.21624307 -0.1696271 8.012679 -3.884122 6.719674 4.60458782 5.236063
## 3 0.05610664 -3.8841215 7.338039 -3.884122 1.263249 0.05610664 8.243723
## 4 4.01842892 1.2569491 5.698069 -1.629324 4.251497 2.26569858 6.927217
## 5 2.43392761 -3.8841215 5.893338 -3.884122 3.394248 -2.19737395 6.558192
## 6 4.84832177 0.1033556 7.017013 -3.884122 5.436288 4.37100205 6.321804
##      Fbxw7      Fbxw8      Fbxw9      Fcamlr      Fcgr1a      Fcgr1g      Fcgr2a
## 1 4.127365 7.068861 4.594283 -3.884122 -3.884122 2.8586771 -2.2229592
## 2 4.985314 7.131089 5.611108 -2.561454 -3.884122 -1.1101805 -3.0392407
## 3 6.274882 7.190333 1.375592 -3.884122 -3.884122 9.3765006 -3.8841215
## 4 5.771510 4.812641 4.103572 -3.653944 0.514195 5.1711338 -3.6749365
## 5 5.205273 5.621117 4.046696 -3.884122 -3.884122 4.1295581 -3.8841215
## 6 5.775633 6.104600 4.964064 -3.451139 -3.884122 -2.0395320 -2.7330183
##      Fcf1      Fcgbp      Fcgr1      Fcgr2b      Fcgr3      Fcgr4      Fcgrt
## 1 2.845849 -1.3274885 1.127437 0.8215555 2.921499 -2.3498956 2.054593
## 2 3.709134 -3.6519623 -2.593273 -2.4122130 -1.540729 -3.4837445 9.087394
## 3 5.049340 -3.8841215 7.662617 7.8662324 9.393697 -3.8841215 9.832782
## 4 5.932047 -3.3944957 2.878393 3.2725164 4.140896 -1.3892149 7.483673
## 5 7.010735 -3.8841215 1.068238 2.9925589 2.146209 -3.8841215 7.905732
## 6 3.316635 -3.1431739 -2.439131 -3.5122488 -1.835376 -3.8841215 4.486045
##      Fcho1      Fcho2      Fchsd1      Fchsd2      Fcrla      Fcrlb      Fcrls
## 1 6.2699197 5.807530 3.2379673 7.511397 -3.626559 -1.967893 4.3491320
## 2 0.1773768 8.127379 3.5882329 6.009941 -1.893110 -3.884122 -0.9434270
## 3 6.4030216 1.479815 -0.2425151 1.263249 -3.884122 -3.884122 10.4580411
## 4 3.3326235 5.003813 2.0265677 6.138285 -3.884122 -3.603681 5.8228702
## 5 -0.1609828 4.384412 -1.1730114 5.136044 -3.884122 -3.884122 3.2073390
## 6 3.3192833 6.594203 3.7360648 6.866258 -3.884122 -3.884122 -0.7105419

```

##	Fdft1	Fdps	Fdx1	Fdx11	Fdxacb1	Fdxr	Fech
## 1	6.770391	5.502555	2.3746509	0.50594300	2.6102049	4.460144	5.885443
## 2	4.571753	3.801806	3.9696162	0.56620142	2.8607053	2.112878	5.282997
## 3	7.648709	5.969472	1.1414140	-3.88412153	-0.6195262	1.263249	7.308268
## 4	7.821992	5.239886	2.4116847	-3.01902813	4.1966947	4.217863	5.051095
## 5	7.586165	6.613496	2.8644264	-1.17301144	3.6049537	5.154426	5.743542
## 6	8.173617	5.920035	3.2135287	-0.06747018	2.9132269	5.192519	4.745992
##	Fem1a	Fem1b	Fem1c	Fen1	Fermt1	Fermt2	Fermt3
## 1	5.973314	6.980206	4.6272848	4.295883	-3.7949831	7.782272	2.72377979
## 2	5.526151	6.916760	6.6755148	4.570534	-3.2177929	9.687568	0.89644315
## 3	5.726305	6.866651	-0.6195262	2.300819	0.5144282	6.827680	0.51442825
## 4	4.692407	6.057335	3.8704168	6.037691	-2.0547223	6.544683	3.10303285
## 5	3.541188	5.940002	4.0401199	5.574098	-1.1730114	6.571933	-0.04458439
## 6	5.185935	6.213119	5.2289014	2.819999	-3.8841215	8.558674	2.19989469
##	Fes	Fez1	Fez2	Fezf2	Ffar2	Ffar3	
## 1	1.5887111	8.605064	5.5540677	-0.9007592	-3.8841215	-2.556400	
## 2	5.9958704	3.367611	6.0952019	-2.1828345	-0.7383165	-3.884122	
## 3	-1.1313170	9.128522	-0.6195262	-1.1313170	-3.8841215	-3.884122	
## 4	1.4465065	9.167119	2.3995234	5.8299129	-3.1978120	-3.884122	
## 5	-2.1973739	9.841748	3.7163802	4.4602542	-3.8841215	-3.884122	
## 6	0.5156935	8.112130	4.8400763	2.9771615	-3.6607788	-3.884122	
##	Fga	Fgd1	Fgd2	Fgd3	Fgd4	Fgd5	
## 1	-3.767000	4.4679162	1.7441693	4.2643440	2.0602122	0.6558095	
## 2	-3.884122	4.3239929	0.8542548	-1.1758474	-0.3221129	7.8300488	
## 3	-3.884122	-1.9317392	0.8617169	-3.8841215	2.7391666	-1.9317392	
## 4	-2.796729	1.4809734	2.0286209	0.3731816	5.5088185	0.5773231	
## 5	-3.884122	-1.4408855	-0.5800187	1.6889296	2.9370110	-3.8841215	
## 6	-3.884122	5.2035769	1.0025516	-2.5459558	5.3808064	1.4277715	
##	Fgd6	Fgf1	Fgf10	Fgf11	Fgf12	Fgf13	
## 1	2.37889642	4.165595	-2.87994605	2.6834628	4.918124	3.645717	
## 2	7.12427579	-1.482217	-3.11231018	-2.4122496	1.275580	1.847883	
## 3	0.05610664	1.983840	-1.93173924	-3.8841215	6.181374	1.834579	
## 4	4.18509236	5.554992	-1.15812883	-1.5773753	4.951579	4.420501	
## 5	1.81753643	5.548843	2.51203447	-3.8841215	3.242132	4.202040	
## 6	7.32926231	6.877193	-2.65443562	2.9615110	4.157496	4.235012	
##	Fgf14	Fgf15	Fgf16	Fgf17	Fgf18	Fgf2	
## 1	2.9331062	-3.1086007	-3.414373	-2.062842	-2.86802490	-0.3963219	
## 2	-2.1222972	-3.8841215	-3.884122	-2.721044	-2.49077382	-2.4122496	
## 3	0.5144282	-3.8841215	-3.884122	-3.884122	-3.88412153	-3.8841215	
## 4	2.7350138	-3.8841215	-3.884122	-2.925461	-2.70728908	-3.1141576	
## 5	-0.9471720	-3.8841215	-3.884122	-3.884122	-3.88412153	-2.8071174	
## 6	0.9742609	-3.1186116	-3.674482	-1.980640	0.15943027	1.5056630	
##	Fgf22	Fgf23	Fgf3	Fgf5	Fgf7	Fgf9	
## 1	-1.5228547	-3.7901666	-3.884122	-2.1931536	0.2314118	-1.4736304	
## 2	-3.2489909	-3.8841215	-3.884122	-3.0277153	-2.3414404	-1.7979417	
## 3	-0.2425151	-3.8841215	-3.884122	-3.8841215	-3.8841215	4.7068304	
## 4	-3.2185159	-3.8841215	-3.884122	-1.2395787	-0.6952979	0.1099192	
## 5	-3.8841215	-3.8841215	-3.884122	-3.8841215	-3.8841215	-3.8841215	
## 6	-3.6744822	-0.8889978	-3.884122	-2.3726443	1.0276187	-1.8381494	
##	Fgfbp1	Fgfbp3	Fgfr1	Fgfr1op	Fgfr1op2	Fgfr2	Fgfr3
## 1	-2.8300409	2.2582395	5.805641	4.6900456	5.614874	5.5034986	5.030521
## 2	6.0562618	1.4137788	5.883499	4.2707376	5.932621	0.9918338	2.300374
## 3	2.4621911	2.7391666	3.347069	5.6445740	6.068904	6.5176450	8.850918
## 4	2.8969890	1.7877904	7.695380	4.7620752	5.730291	5.8886909	7.219439

##	5	5.5786428	4.0855320	7.798779	-1.4408855	4.271054	6.0273710	6.967205
##	6	-2.6003052	6.4250129	8.923759	5.8845076	5.595173	8.5191534	10.731721
##		Fgfr4	Fgfrl1	Fgg	Fggy	Fgl1	Fgl2	
##	1	-2.1839563	6.20760461	-3.884122	3.179741	-3.8841215	-0.79497953	
##	2	0.9478616	3.29323304	-3.651962	-1.606532	-3.8841215	0.21340431	
##	3	-3.8841215	0.05610664	-1.931739	-3.884122	-3.8841215	0.30339162	
##	4	-1.7050770	3.54676169	-3.884122	3.807713	-0.9335126	1.69892674	
##	5	-3.8841215	-0.94717201	-3.884122	-2.807117	-3.8841215	-0.04458439	
##	6	-0.5736634	7.49347611	-1.152168	3.051436	-2.9407352	1.72460058	
##		Fgr	Fhl	Fhad1	Fhdc1	Fhit	Fhl1	
##	1	-2.0022395	5.971632	-2.7079678	2.855529768	1.0903080	6.311172	
##	2	-1.3730077	6.485171	-0.8226882	2.455966399	-0.8670606	2.199114	
##	3	-3.8841215	6.626669	4.8302582	1.141413971	5.5399634	5.545978	
##	4	-3.4277009	7.045667	1.3721491	0.004412185	2.7986695	5.646478	
##	5	-2.8071174	7.345403	-3.8841215	-0.751947062	3.1596033	5.685736	
##	6	-3.2889060	5.836008	0.8621953	3.055132353	-0.1959767	6.883558	
##		Fhl2	Fhl3	Fhl5	Fhod1	Fhod3	Fibcd1	
##	1	3.4842383	3.5251250	-3.678732	2.06342554	3.88079156	0.1144463	
##	2	0.5712092	5.4360005	-1.818376	4.46973124	-0.10386377	-1.4376625	
##	3	-0.2425151	4.9348138	-3.884122	-3.88412153	-1.93173924	-3.8841215	
##	4	2.3020430	1.2916867	-2.601512	1.38895786	0.09892759	-0.4687223	
##	5	4.2254133	4.2020399	-3.884122	1.21557422	-3.88412153	-1.1730114	
##	6	2.2675219	0.3476240	-3.674482	4.50522879	3.15280568	-1.2189130	
##		Fibin	Fibp	Ficd	Fig4	Figf	Fign	Fignl1
##	1	-2.1457574	4.978183	2.859174	5.4979307	-2.5865737	3.6571676	1.8902709
##	2	-2.5849728	5.618076	2.537125	5.0949309	-0.2599809	0.5243454	1.1437217
##	3	-1.9317392	6.439021	4.859533	1.5770128	-1.9317392	-0.6195262	1.6680739
##	4	2.2288337	6.017644	3.606281	3.4726376	0.1871206	1.4444364	5.8293423
##	5	3.1102338	6.181716	4.287803	3.3734750	-2.1973739	-3.8841215	0.0631199
##	6	-0.5991955	5.173305	4.745704	4.5359235	0.3193642	1.6038890	2.3334410
##		Filip1	Filip1l	Fip1l1	Fis1	Fitm2	Fiz1	Fjx1
##	1	-1.2700386	2.0134233	6.5618246	6.664894	3.8805497	4.9276175	4.645150
##	2	5.7228638	5.7030084	6.1930899	6.935150	2.0559687	5.5031702	3.059937
##	3	0.3033916	1.0083330	0.8617169	9.949693	-0.2425151	5.7049585	6.916254
##	4	0.3931776	1.3903013	4.9814770	8.475526	1.9816012	3.8265557	3.573332
##	5	-3.8841215	-0.2876030	3.6488344	9.618152	1.0155818	4.9166810	5.237244
##	6	-0.5999305	-0.1139729	5.7235007	5.162753	3.5028689	4.1731507	8.800067
##		Fkbp10	Fkbp11	Fkbp14	Fkbp15	Fkbp1a	Fkbp1b	Fkbp2
##	1	0.4959264	0.3020171	4.662826	6.670445	8.501743	1.4262720	5.127519
##	2	7.7304349	1.3028244	4.825073	6.129797	9.216365	1.2411990	4.405892
##	3	3.6670753	5.5638745	8.063625	4.499303	8.396341	5.7986227	7.687318
##	4	5.2186007	0.7876057	5.095400	4.996572	6.654249	1.1272200	6.220076
##	5	5.3531847	-3.8841215	3.046047	4.394758	7.934382	4.1357393	7.215739
##	6	6.3885225	1.0659874	4.817764	5.958422	6.003073	0.7763522	4.761098
##		Fkbp3	Fkbp4	Fkbp5	Fkbp6	Fkbp7	Fkbp8	Fkbp9
##	1	4.011823	7.302161	4.789395	-3.884122	2.3849439	7.704946	7.383382
##	2	5.167016	7.402769	3.863016	-2.272938	4.7662850	8.065250	8.243355
##	3	6.911602	6.338642	1.668074	-3.884122	6.2232658	6.081382	5.896024
##	4	7.943811	6.651579	2.919337	-3.884122	4.8401452	6.327307	5.002911
##	5	8.578839	6.098718	1.261522	-3.884122	5.0338413	6.274274	6.525611
##	6	4.153559	6.093773	1.554714	-3.884122	2.3454093	6.686083	7.006406
##		Fkbp1	Fkrp	Fktn	Flad1	Flcn	Flg2	
##	1	1.69259267	4.5491533	5.29472936	4.8170881	6.529860	-3.8841215	
##	2	4.36171033	4.9929343	3.05502109	3.5242448	5.970422	-3.8841215	


```

## 3  0.05610664 0.3033916 0.05610664 0.8617169 7.182632 3.8336888
## 4  3.88480152 2.1422552 5.47144172 5.4389229 5.390959 0.4761166
## 5  3.20733899 5.1964292 -0.42641489 4.4404163 5.428126 1.7546656
## 6  2.03918130 3.7567902 4.86693698 5.2585860 6.581704 -3.8841215
##      Fli1      Flii      Flna      Flnb      Flnc      Flot1      Flot2
## 1  -0.34342338 5.836020 6.062226 5.178511 1.6263801 5.545640 5.803140
## 2  7.94740544 7.032528 9.367389 8.834822 2.9648545 5.615019 2.918412
## 3  6.80277728 1.983840 5.877063 1.577013 -1.9317392 6.857007 5.346757
## 4  3.58876101 5.349797 6.527380 4.676875 0.1786165 5.509475 5.529290
## 5  2.41372180 5.092218 4.990161 4.410138 -2.8071174 5.120544 5.433154
## 6  0.08857586 6.027906 7.731750 4.948483 4.1520722 5.405371 6.193658
##      Flrt1      Flrt2      Flrt3      Flt1      Flt3      Flt3l
## 1  4.83116446 4.0072249 4.4581798 -0.1014850 -1.8649052 1.7067277
## 2  -2.89520984 6.8257896 0.6830405 11.2185399 -1.9540170 2.7762020
## 3  3.13997517 0.8617169 2.8980900 6.0520962 -3.8841215 -3.8841215
## 4  8.48697927 3.8678480 7.1526337 3.7750815 -2.6017627 1.0156517
## 5  6.56278686 5.5113018 7.1614844 0.7833343 -3.8841215 -2.1973739
## 6  3.02395613 3.2027262 4.1164001 3.6309170 -3.1186116 2.5551442
##      Flt4  Flywch1  Flywch2      Fmn1      Fmn2      Fmn1l
## 1  -2.4041240 5.829684 1.593358 1.6904989 5.52523419 4.0979680
## 2  7.9299649 4.848930 -1.842354 -1.8954318 -1.25094707 0.8121650
## 3  -3.8841215 1.479815 -1.931739 -0.2425151 0.86171687 -0.6195262
## 4  -0.3176553 3.149008 3.662763 0.2777639 4.92945533 2.1349629
## 5  -2.8071174 4.966081 1.391188 -1.1730114 4.24269807 -3.8841215
## 6  0.8269419 5.611916 1.048940 -1.0766778 7.45136545 1.6189416
##      Fmn12  Fmn13      Fmo1      Fmo2      Fmo4      Fmo5
## 1  7.7718511 5.594885 1.21520274 -3.5680897 -3.794983 1.1516876
## 2  6.9600628 9.108882 3.44843859 0.2990869 -2.817416 2.9671975
## 3  0.6984974 -1.131317 0.05610664 0.6984974 -3.884122 -3.8841215
## 4  5.6662955 2.567039 5.16136609 -0.2251116 -3.299148 3.2209264
## 5  6.2616115 2.639305 4.89498055 -2.1973739 -3.884122 2.5679590
## 6  7.2718302 6.038291 7.90473506 -1.3486508 0.680575 2.4165042
##      Fmod      Fmr1      Fmr1nb      Fn1      Fn3k      Fn3krp
## 1  -0.241478100 5.845476 -3.2501924 4.782653 1.81778568 3.6242913
## 2  1.035899476 6.063463 -1.5802861 12.115684 -0.48003208 1.5973264
## 3  -0.619526232 6.314180 -3.8841215 2.410380 6.12623443 0.3033916
## 4  4.684427013 5.515150 -3.8841215 3.559556 4.03791384 5.3696764
## 5  6.133110075 4.854328 -3.8841215 3.857702 2.60407290 4.9901608
## 6  -0.792078034 7.243121 -3.8841215 5.643022 0.03152831 3.8474109
##      Fnbp1  Fnbp1l      Fnbp4      Fndc1  Fndc3a  Fndc3b  Fndc4
## 1  6.556077 5.318501 6.4155630 4.4337780 5.937666 4.134075 6.877410
## 2  4.119187 7.710851 6.3228641 7.0553792 6.071316 6.599780 2.997080
## 3  1.753727 1.753727 0.8617169 -1.1313170 2.560544 1.263249 6.632334
## 4  5.654481 5.301353 5.6333483 -1.6143781 5.728624 3.324864 6.475025
## 5  4.800875 5.219893 1.2155742 -2.8071174 5.350530 3.716380 7.332679
## 6  8.426604 6.280825 7.7687371 -0.6978848 6.382275 6.591898 6.838240
##      Fndc5      Fndc7      Fndc8      Fnip1      Fnip2      Fnta      Fntb
## 1  4.0290584 -3.3784359 -0.1489592 6.079848 5.3794215 7.291357 5.518362
## 2  -0.8146385 -3.6565043 -1.9098432 6.223106 4.5509572 6.687045 4.353064
## 3  2.7391666 1.7537270 -3.8841215 6.822734 -0.2425151 3.853225 6.785086
## 4  0.3416009 -3.8841215 -3.1416164 5.590167 2.6636774 5.194453 5.943198
## 5  -2.1973739 -3.8841215 -3.8841215 5.916858 2.6736968 4.154126 5.548843
## 6  6.5372150 -2.1194133 -1.9241560 6.162654 5.0334030 5.601110 3.886604
##      Folh1      Folr1      Folr2      Folr4      Fos      Fosb

```

```

## 1 2.9996624 -3.8841215 1.3896220 -3.7949831 8.779595 8.3877830
## 2 -2.3597589 -0.9665571 -2.4823940 -2.4770451 11.350016 10.1330842
## 3 -1.9317392 8.8672246 1.6680739 -3.8841215 4.869161 0.5144282
## 4 4.8934177 1.2540999 2.8258584 -3.8841215 8.762395 3.5710302
## 5 3.3310089 5.0104855 3.3629751 -3.8841215 5.779517 0.4279671
## 6 6.2197778 -2.8744502 -0.7377185 -3.8841215 13.390404 11.5414537
##      Fosl1      Fosl2      Foxc1      Foxc2      Foxd1      Foxd2      Foxd4
## 1 -2.545213 3.544423 -0.2449206 -2.2035171 -1.7145754 -3.335938 -3.518903
## 2 1.536985 8.390759 6.5111742 -0.1371119 0.2150403 -1.759105 -1.818376
## 3 -3.884122 4.285869 0.6984974 -3.8841215 -3.8841215 -3.884122 -3.884122
## 4 -3.884122 1.950441 2.6237290 -3.1860804 0.5965808 -2.833244 -3.884122
## 5 -3.884122 2.018229 4.7654360 -3.8841215 0.9609302 -3.884122 -3.884122
## 6 -1.262774 7.923147 0.9174209 -3.0447446 -1.9583985 -3.379887 -2.986249
##      Foxf2      Foxg1      Foxj1      Foxj2      Foxj3      Foxk1      Foxk2
## 1 -0.7362657 5.8146404 2.99717765 5.6003034 5.05760364 5.593408 6.845005
## 2 7.7047340 0.2615775 0.36576896 4.8954459 5.87214686 5.721232 6.755504
## 3 -1.1313170 4.0352840 -1.93173924 0.8617169 0.05610664 4.448831 7.034345
## 4 -0.2926708 6.3040351 0.02241360 3.5107441 4.40368838 2.605554 4.518906
## 5 -0.9471720 6.4295094 1.51015501 4.7733869 2.89389987 3.147418 4.202040
## 6 1.0118371 7.0989104 3.97787014 6.2476683 6.24986112 5.755754 6.710656
##      Foxl2      Foxm1      Foxn2      Foxn3      Foxn4      Foxo1      Foxo3
## 1 -3.386313 4.256604 5.990298 5.302517 -3.884122 3.715055 4.52397926
## 2 4.664803 4.102122 5.178744 5.071448 -3.656504 6.761768 5.15653880
## 3 -3.884122 1.263249 6.800263 6.830147 -3.884122 6.646399 0.30339162
## 4 -2.925952 4.014663 5.982204 7.106105 -1.262493 5.999254 -0.93807669
## 5 -3.884122 1.963680 6.814711 7.286895 -3.884122 6.895251 -2.19737395
## 6 -1.669926 4.550830 6.670358 4.698864 -1.876201 6.669490 4.76514269
##      Foxo4      Foxo6      Foxp1      Foxp2      Foxp3      Foxp4
## 1 5.4478880 2.6973342 2.854221 1.8798912 -1.8325388 4.40181341
## 2 5.8147748 -1.2277834 7.235503 2.1945271 -2.6781408 1.41599839
## 3 0.6984974 -0.2425151 1.911138 -3.8841215 -3.8841215 0.05610664
## 4 2.1990922 1.5821802 5.269890 0.5176633 -3.2991483 1.80611210
## 5 0.2570463 0.8449942 6.029032 -3.8841215 -3.8841215 -1.77010377
## 6 4.6195635 0.7596665 3.559019 1.3591932 -1.3268693 2.78598448
##      Foxq1      Foxr2      Foxred1      Foxred2      Foxs1      Fpgs
## 1 -1.06448483 -1.871708 5.13088624 4.20688616 -0.07767011 3.7104227
## 2 8.22904019 -3.651962 5.45829984 0.36464375 2.99146619 4.5439892
## 3 4.10212728 -3.884122 0.05610664 0.51442825 7.56972406 -0.2425151
## 4 -0.92662576 -1.003075 5.25493750 4.43070124 1.50748443 3.1834115
## 5 2.99255889 -3.884122 5.51367700 0.78333430 5.19346918 -1.4408855
## 6 1.59173715 1.047753 5.26422353 5.06127267 2.29079909 4.4369469
##      Fpgt      Fpr1      Fpr2      Fras1      Frat2      Frem1
## 1 4.2135571 -3.2551761 -3.7235669 0.8797078 3.2480886 -0.06608672
## 2 2.6584022 -2.3597589 -2.1585061 -0.8320385 4.6012046 5.89296545
## 3 7.5338547 0.8617169 -3.8841215 1.4798145 -3.8841215 -1.93173924
## 4 4.6321796 1.9281872 -2.9808892 3.3234314 1.7325251 3.05477291
## 5 5.1205444 3.3629751 -2.8071174 0.5063887 0.9041264 -1.44088555
## 6 4.2864549 -3.8841215 -3.8841215 5.8179196 4.7259799 4.62891777
##      Frem2      Frem3      Frg1      Frk      Frmd3      Frmd4a      Frmd4b
## 1 0.04720083 -3.884122 4.103999 -2.0360994 2.3508390 7.169279 5.030567
## 2 4.44692951 -3.112310 5.289625 2.0267514 -2.5768592 5.392770 8.571766
## 3 2.24275094 -3.884122 7.827250 -3.8841215 -3.8841215 1.983840 2.119096
## 4 2.59852877 -3.884122 7.012495 1.2466086 3.5234299 4.605733 6.648270
## 5 -0.16098275 -3.884122 7.614104 -2.8071174 -1.7701038 4.219605 6.986144

```

```

## 6 7.41412620 -3.660779 3.960263 -0.3429921 0.9209416 7.884736 5.410726
##      Frmd5      Frmd6      Frmd7      Frmd8      Frmpd1      Frmpd3
## 1 5.3522232 4.710470 2.4525258 7.597048 4.1386193 -2.3951451
## 2 -0.1283656 6.431257 -2.8070815 6.383209 -1.7160401 -3.6565043
## 3 -3.8841215 1.375592 -3.8841215 8.282967 0.5144282 -3.8841215
## 4 2.9098405 3.316964 -3.1014405 5.561190 1.5739890 -3.4989245
## 5 1.1681147 3.373475 -3.8841215 6.694241 -1.1730114 -3.8841215
## 6 0.8470525 4.740911 -2.2349732 5.220200 6.8947912 0.3871902
##      Frmpd4      Frs1      Frs2      Frs3      Fry      Fryl      Frzb
## 1 0.7402692 1.9673489 5.4490278 3.2479223 6.564410 7.463846 3.0268613
## 2 -1.3779235 3.6823025 4.7552232 2.5154518 8.022998 6.500553 5.1678005
## 3 -1.1313170 0.5144282 0.6984974 6.1619221 1.911138 2.053052 1.2632490
## 4 1.8552326 3.3886449 4.8738742 1.1995163 5.277955 5.785703 7.2463797
## 5 0.9041264 2.2861569 4.3739918 3.4646862 2.433928 4.769417 6.9160495
## 6 -0.5020792 2.0542798 6.1147110 3.3464999 7.226457 6.954471 0.5474954
##      Fsbp      Fscn1      Fscn2      Fscn3      Fsd1      Fsd11
## 1 -2.0431470 8.788602 -1.1104550 -3.202716 5.06163420 5.1617630
## 2 0.0190413 8.993035 -0.7817419 -2.888894 0.09751863 1.2514676
## 3 -3.8841215 2.820816 -3.8841215 -3.884122 6.81777039 -0.2425151
## 4 0.1326894 5.144405 -3.0732255 -3.653944 5.97609988 4.5827752
## 5 -3.8841215 6.073180 -3.8841215 -3.884122 6.13773706 3.2190301
## 6 0.8558192 5.085584 -2.4248666 -2.947970 2.67674322 4.5748345
##      Fsd2      Fsip1      Fst      Fstl1      Fstl3      Fstl4
## 1 -2.77785981 -3.1837459 -3.03117504 3.473381 -2.9031818 0.6440962
## 2 -3.65196234 -2.1206695 -2.96071653 6.689240 -1.4155287 -3.8841215
## 3 -3.88412153 -3.8841215 0.05610664 6.626669 -3.8841215 -3.8841215
## 4 0.80902979 -1.4377132 -2.67546240 7.378528 -2.6015122 -1.9386100
## 5 -1.17301144 -3.8841215 -0.94717201 7.845253 -3.8841215 -3.8841215
## 6 -0.06676027 -2.5429387 1.65726603 7.026557 -3.3798866 -3.0859991
##      Fstl5      Ftcd      Fth1      Ftl1      Fto      Ftsj1      Ftsj2
## 1 3.4106820 -3.8841215 9.603495 8.482893 7.029084 4.802474 1.870327
## 2 -0.6735938 -3.8841215 12.127077 9.109236 6.029949 5.071924 1.440189
## 3 0.6984974 -3.8841215 12.361474 10.858937 7.504812 2.607316 1.141414
## 4 6.1602303 -3.8841215 9.393534 9.920887 8.230118 6.405601 3.707705
## 5 4.9345186 -3.8841215 12.671822 10.444486 6.717093 7.256018 3.207339
## 6 0.5467009 -3.8841215 7.920606 7.980252 6.157928 4.090438 1.591119
##      Ftsj3      Fubp1      Fubp3      Fuca1      Fuca2      Fuk      Fundc1
## 1 5.387133 7.090529 6.647773 6.303144 5.685903 3.392750 5.424844
## 2 5.063948 7.223040 5.809677 6.763778 5.010221 5.003071 4.999000
## 3 1.577013 7.099187 8.618097 8.322049 1.577013 -1.931739 8.641460
## 4 6.151062 7.963876 7.136639 6.985899 6.021180 1.947484 6.933041
## 5 4.785232 6.365202 7.817645 7.958556 6.140813 -1.173011 7.283420
## 6 5.725789 7.017558 6.199093 6.564866 4.950281 4.659423 4.311345
##      Fundc2      Furin      Fus      Fut1      Fut10      Fut11      Fut2
## 1 4.975820 5.256381 7.538905 -3.601338 2.713633 4.916125 -3.0702816
## 2 6.248258 6.882129 7.913055 -2.895210 2.659436 5.622327 0.4417231
## 3 7.959316 3.261927 5.057784 -1.931739 -1.931739 2.462191 -0.6195262
## 4 7.233129 3.183983 4.650048 -3.653944 3.702511 2.752137 -1.9709707
## 5 7.954191 4.225413 4.184258 -1.770104 1.991212 3.072065 -1.7701038
## 6 4.123448 5.560541 7.747776 -3.660779 3.261626 4.520438 -1.9111812
##      Fut4      Fut7      Fut8      Fut9      Fuz      Fxn
## 1 0.06916136 -2.6615975 6.558796 5.63303478 4.8110644 2.6867413
## 2 3.01954862 -3.6519623 7.394016 -0.06336655 4.2581368 2.6926627
## 3 -3.88412153 -3.8841215 5.969472 1.57701280 -1.1313170 -0.6195262

```

```

## 4 -3.88412153 -2.3004164 4.171312 6.44213632 2.9695952 4.4733365
## 5 -2.80711744 -3.8841215 4.872949 5.04044552 3.7809046 5.4530915
## 6 -2.04384758 -3.4511394 7.138851 7.43952711 4.6759860 2.5898316
##      Fxr1      Fxr2      Fxyd1      Fxyd2      Fxyd3      Fxyd4
## 1 6.240661 6.751938 0.43416357 -1.3314628 -3.767000 -2.714472
## 2 7.304633 6.916371 -0.77590894 -2.6273383 -3.884122 -1.020625
## 3 2.300819 1.753727 9.01818548 -1.9317392 4.285869 -1.931739
## 4 5.921706 3.346268 7.45868233 2.8322311 -1.333662 -2.252475
## 5 5.467866 2.740115 8.07007513 3.9018920 3.765042 -3.884122
## 6 6.550785 6.386662 4.55077997 -1.8761642 -2.362848 -2.521641
##      Fxyd5      Fxyd6      Fxyd7      Fyb      Fyco1      Fyn      Fytttd1
## 1 -0.57094425 7.768527 1.9393220 1.5148062 4.5699893 9.665015 5.924913
## 2 7.21973929 5.512293 0.5904341 -0.8485644 6.5067425 7.720973 6.918424
## 3 8.33513386 6.837522 -1.9317392 1.1414140 0.5144282 8.464614 6.230754
## 4 3.54801764 8.618212 3.0705084 2.6197092 4.8398878 6.265773 6.565115
## 5 5.05682502 9.742971 2.3932290 0.4279671 0.6514968 5.909662 4.887674
## 6 -0.05401327 5.209612 -0.6273500 -3.5122488 5.5969769 7.384849 6.152238
##      Fzd1      Fzd10      Fzd2      Fzd3      Fzd4      Fzd5
## 1 4.88797669 0.009865321 1.33513611 6.4712929 2.4406075 3.0427613
## 2 5.23658700 -2.995623197 -1.33129243 3.6606259 7.5278606 3.4520924
## 3 0.69849743 1.479814503 0.05610664 3.5281325 2.8599701 -0.2425151
## 4 5.22966264 -1.668936257 4.12274420 7.3656387 -0.7929137 -1.7033796
## 5 5.21406260 0.960930152 4.50868739 7.2120870 -2.8071174 -3.8841215
## 6 6.07947906 6.243667632 6.20935264 6.8692235 4.8823224 4.4980392
##      Fzd6      Fzd7      Fzd8      Fzd9      Fzr1      G0s2      G2e3
## 1 1.2933814 0.9377756 3.8220495 4.4406751 5.463065 5.023810 5.1161875
## 2 9.4051496 1.8704042 4.3237464 -0.6339226 4.588061 1.681694 5.2534198
## 3 2.9714350 2.1822477 0.5144282 -1.1313170 7.230103 5.773209 1.1414140
## 4 3.7722101 2.0938803 0.8986694 0.4014964 4.569541 3.580736 6.3459129
## 5 4.0532413 2.7722112 1.3060516 -2.1973739 4.555547 4.913087 1.9069861
## 6 4.9391233 5.4275064 3.6614399 5.9549929 5.206645 5.205962 5.3292669
##      G3bp1      G3bp2      G630090E17Rik      G6pc      G6pc3      G6pd2      G6pdx
## 1 6.162968 7.483809 -3.756645 -3.8841215 5.706981 1.3525284 5.942877
## 2 6.991261 7.610458 -3.656504 0.9890569 4.370387 0.1455705 4.975432
## 3 7.498622 8.453457 -1.931739 -3.8841215 7.481463 1.1414140 7.030060
## 4 7.472018 8.161458 -2.980889 -3.6749365 6.276932 3.0063527 7.034218
## 5 8.141311 7.111397 -3.884122 -3.8841215 6.349332 1.3060516 6.886113
## 6 5.706996 6.708830 -3.884122 -3.8841215 5.604747 -0.1772224 4.653579
##      Gaa      Gab1      Gab2      Gab3      Gabarap      Gabarap11      Gabarap12
## 1 7.371386 7.699058 5.2482641 1.9715153 7.703330 7.646006 4.790785
## 2 4.844401 7.260383 5.8556699 0.5904341 8.301851 9.159350 5.464200
## 3 8.337737 8.176491 -1.1313170 -3.8841215 9.502863 7.993830 7.304725
## 4 8.083347 5.486155 3.3556471 0.9317269 9.107566 6.132429 6.215451
## 5 7.310994 5.240115 2.0963708 -2.8071174 10.093515 7.105110 7.386158
## 6 7.133676 7.046718 4.7576567 -0.2762871 6.502488 6.943157 3.415419
##      Gabbr1      Gabbr2      Gabpa      Gabpb1      Gabpb2      Gabra1      Gabra2
## 1 7.723378 4.9582986 5.628367 4.4064834 4.958117 2.5419747 2.4042535
## 2 4.855243 -0.5167036 7.040494 6.2889232 5.620629 0.3887363 -1.7236953
## 3 6.580531 -1.9317392 1.668074 0.3033916 1.834579 7.0806604 5.0910755
## 4 5.351826 -1.0315482 5.062503 3.5480619 4.042062 0.5110417 4.8822062
## 5 6.000526 -2.1973739 4.379211 4.9969675 4.196137 2.4735096 0.0631199
## 6 10.393060 7.9776278 6.057182 4.2655706 6.425468 -2.0198352 5.3125538
##      Gabra3      Gabra4      Gabra5      Gabrb1      Gabrb2      Gabrb3
## 1 5.54969292 2.351441805 -0.5710957 1.3447695 4.8832307 5.756721

```

```

## 2  0.04727438 -0.005177106  0.4054172 -2.4285606  0.7142172 1.083469
## 3 -3.88412153  6.687791561  0.8617169  1.2632490  6.3762639 7.435221
## 4  0.58293789  6.523070736  1.3319650  5.7617727  3.7177963 4.536762
## 5 -3.88412153  6.543156498  0.3450364  5.9329202  4.3422715 4.983322
## 6 -0.59340683  5.862593561 -1.3268693  5.1945928  4.1184444 2.522941
##      Gabrd      Gabre      Gabrg1      Gabrg2      Gabrg3      Gabrq
## 1  0.3717373 -1.02309192  4.74869785  2.0446850  1.4431017 -0.7006188
## 2 -2.1222972 -0.43205555  0.09775943 -0.2073109 -3.4766082 -3.8841215
## 3  4.1344223 -3.88412153  1.37559158  7.9861085 -3.8841215 -3.8841215
## 4 -0.7051589 -3.88412153  3.55960169  4.8047403  0.8165223 -3.8841215
## 5 -2.8071174 -3.88412153 -1.17301144  4.3634957  0.9609302 -3.8841215
## 6 -3.4511394 -0.38374728  7.57496868 -1.0339209  2.1749485 -3.6607788
##      Gabrr1      Gabrr2      Gad1      Gad2      Gadd45a      Gadd45b
## 1 -3.790167 -0.8275844  4.560242341 -0.1447515  3.816330  5.157558
## 2 -1.954447 -1.1972874  2.298604402  0.3383035  5.619470  7.435263
## 3 -3.884122 -3.8841215 -0.619526232 -3.8841215  3.528133  6.118182
## 4 -3.674937 -0.8013497  2.342467824 -0.6425026  3.481612  3.151585
## 5 -3.884122 -3.8841215 -1.770103772 -3.8841215  3.916326 -0.947172
## 6 -3.280845 -0.0656007  2.859010403  3.6814085  4.227401  7.321009
##      Gadd45g Gadd45gip1      Gadl1      Gak      Gal      Gal3st1      Gal3st3
## 1  5.434031  3.964961 -3.4741348  6.498807 -1.3968428  7.743742  3.711569
## 2  5.663968  3.527461 -3.0762312  6.837866 -1.6947179 -2.820269 -2.593273
## 3  3.478677  1.008333 -1.1313170  1.479815 -3.8841215  5.465756 -1.931739
## 4  8.402325  2.684720  1.2078267  4.902169  4.5593891  2.596768  1.706544
## 5  6.765731  4.909484 -1.4408855  5.887855  5.5718204  4.410138  3.159603
## 6  8.108907  3.065244  0.8395934  6.505823  2.6870577 -2.188976  2.288442
##      Gal3st4      Galc      Gale      Galk1      Galk2      Galm
## 1  1.1957390  6.6526350  3.4570187  4.1226157  3.9416513 -0.5945775
## 2 -1.4747565  5.8595085  3.8377833  4.4807132  3.8686151  1.5304445
## 3  7.0171278  0.3033916 -0.6195262  0.3033916  0.6984974 -0.6195262
## 4  2.1061621  4.4567969  3.2939130  3.5454620  4.6546608  4.0701556
## 5  2.9925589  4.9130868  4.5086874  3.3942483 -0.5800187  4.7773460
## 6  4.2020038  6.1671843  4.8261894  3.2111050  2.6635646  2.1185880
##      Galns      Galnt1      Galnt10      Galnt11      Galnt12      Galnt13      Galnt14
## 1  2.342639  6.547837  7.3170316  5.674367  1.8673018  5.7487316  2.09911493
## 2  3.777933  7.377443  5.4108135  5.563410 -2.9369560 -2.1043103 -2.40900936
## 3  5.996079  1.668074 -0.2425151  2.971435 -3.8841215 -1.9317392 -1.93173924
## 4  3.204590  4.931972  0.6410562  3.533099 -1.9893583  0.6966573 -0.13171481
## 5  3.444910  5.043736  0.5063887  4.379211 -2.8071174 -2.1973739 -2.80711744
## 6  2.612341  6.968163  1.4921540  5.388766 -2.0287916 -2.4391309  0.45422224
##      Galnt2      Galnt3      Galnt4      Galnt5      Galnt6      Galnt7
## 1  6.921372  3.15513624  1.8931400 -2.2609040  3.6634042  3.8469431
## 2  5.848916 -3.88412153  4.7179898 -3.8841215 -1.6703085  5.2207290
## 3  1.834579  0.05610664 -0.6195262 -3.8841215  1.9838395  0.6984974
## 4  5.415288 -0.30625373  2.9083385 -3.8841215  3.8060390  4.1136556
## 5  4.757441 -2.80711744  4.1961369 -3.8841215  5.7415172  3.7809046
## 6  5.784828 -3.67448218  5.8214952 -3.6744822 -3.4904843  4.5305767
##      Galnt9      Galnt16      Galr1      Galr2      Galt      Gamt      Gan
## 1 -0.2616816 -0.4685751 -2.329988 -0.6514223  4.743603  4.897661  2.8604047
## 2 -0.8080818 -2.7210443 -3.483745 -2.8254318  6.236749  3.522214  1.3402470
## 3 -3.8841215 -3.8841215 -1.131317 -3.8841215  5.720998  5.066179  1.1414140
## 4  0.8006756 -2.2263297  3.688724 -3.6036807  5.256427  3.605894 -0.1373272
## 5 -2.8071174 -3.8841215 -2.197374 -3.8841215  5.610061  5.683628 -1.7701038
## 6 -2.2885695 -1.1292678 -3.379887  0.7166903  4.852439  3.426453  3.6561452

```

##	Ganab	Ganc	Gap43	Gapdh	Gapdhs	Gapt	Gapvd1
## 1	8.408554	3.833628	5.354133	2.3616975	1.3991499	-3.7949831	6.779996
## 2	8.010932	3.883333	2.503819	1.8610376	0.4777177	-3.2277824	7.363733
## 3	3.731831	2.119096	1.008333	1.8345785	-0.6195262	-1.9317392	7.953671
## 4	6.904080	4.415115	5.244501	0.6362376	2.2547781	-3.6036807	6.182306
## 5	6.145416	3.362975	5.618913	-3.8841215	2.7722112	-2.8071174	5.460498
## 6	8.027992	4.582414	2.053637	3.4139787	2.1163176	-3.8841215	7.019529
##	Gar1	Garn13	Gars	Gart	Gas1	Gas2	Gas211
## 1	3.411535	2.834888	6.400190	5.785909	4.8694231	4.1781556	4.673495
## 2	3.814303	2.934303	7.274956	4.796484	0.5904341	-0.2226892	5.184892
## 3	1.008333	-1.931739	1.983840	5.427170	2.3008186	1.4798145	2.182248
## 4	2.091064	3.224802	5.092138	6.782674	5.5450581	3.3222202	2.331148
## 5	2.530918	-2.807117	5.085848	6.362569	6.9732578	3.3417432	2.893900
## 6	3.343444	3.970101	5.126130	5.300919	6.9410380	2.5591589	4.602571
##	Gas212	Gas213	Gas6	Gas7	Gas8	Gast	Gata2
## 1	-2.9748514	2.978662	6.448354	7.148683	3.782029	-3.756645	-1.63119555
## 2	-2.1828345	5.794070	6.363156	1.196505	3.441461	-2.576859	6.16902416
## 3	-3.8841215	4.409783	2.356639	7.157316	6.508433	-1.131317	0.05610664
## 4	-1.2849569	5.799558	3.994415	6.190029	4.714327	-3.427701	1.27693206
## 5	-3.8841215	5.765633	2.656603	7.336039	3.887312	-2.807117	-3.88412153
## 6	-0.1133877	2.814304	4.826391	4.614881	4.348285	-2.980940	-0.22102267
##	Gata3	Gata6	Gatad1	Gatad2a	Gatad2b	Gatc	Gatm
## 1	-3.6013384	-3.3863134	5.728624	6.220936	4.8064504	4.688283	8.135128
## 2	2.4888168	-0.2907149	6.199468	6.921279	4.7148992	3.574978	7.596868
## 3	0.6984974	-3.8841215	8.258450	7.901846	0.5144282	1.668074	9.693751
## 4	-1.1730467	-3.2185159	7.183490	5.677815	3.9663178	5.819378	8.398666
## 5	-0.4264149	-3.8841215	8.130519	6.833846	3.1474184	4.793075	9.096678
## 6	-3.1186116	-2.8485783	5.442307	5.622719	5.0339132	4.346412	6.824598
##	Gats12	Gats13	Gba	Gba2	Gbas	Gbe1	Gbf1
## 1	5.876472	-0.8721845	6.159178	5.673068	6.202128	3.5894707	7.035859
## 2	2.748190	5.2357893	6.419723	5.389737	6.504390	6.0320928	6.529481
## 3	1.263249	1.9111385	9.070240	5.246901	8.849095	-0.6195262	3.453298
## 4	5.238099	3.8826348	6.096527	3.546783	7.164212	3.4460296	5.190040
## 5	4.564739	3.3942483	7.112180	2.170497	7.808484	5.0633251	4.072702
## 6	4.725795	4.2612499	5.889961	6.304171	6.423204	3.7584752	6.792058
##	Gbgt1	Gbp11	Gbp2	Gbp3	Gbp4	Gbp5	
## 1	-2.0537871	1.661445	-1.7757363	-0.2599801	-2.489289	-2.6521700	
## 2	-1.0418423	-2.807082	5.1356636	5.7164594	4.211145	4.2862677	
## 3	6.1060197	-1.931739	-1.9317392	7.2832807	3.453298	-3.8841215	
## 4	-2.2694640	1.055873	4.9257055	3.6850115	-0.222750	-0.1380166	
## 5	-2.8071174	-3.884122	4.3947578	-0.7519471	-3.884122	-3.8841215	
## 6	-2.6003052	-2.173010	0.2922904	4.7033980	-2.011510	2.5923497	
##	Gbp6	Gbp7	Gbp8	Gbp9	Gbx1	Gbx2	
## 1	-1.1351976	0.7980489	-3.677861	-1.5213517	-3.790167	-3.3864431	
## 2	0.2788051	5.4899928	-2.576859	5.5017814	-2.817416	-2.4705410	
## 3	-1.9317392	1.8345785	-3.884122	-1.9317392	-3.884122	-3.8841215	
## 4	1.4064014	5.5606765	-2.006605	1.2056044	-2.980889	-3.8841215	
## 5	-2.8071174	2.6217964	-2.807117	-2.8071174	-3.884122	-3.8841215	
## 6	-0.1015620	5.3745444	-3.884122	-0.1744154	-3.490484	-3.3798866	
##	Gca	Gcat	Gcc1	Gcc2	Gcdh	Gcgr	
## 1	3.58958829	3.1906262	4.3229183	4.893056	4.8758922	-3.767000	
## 2	-2.04181913	0.4667172	4.7412115	6.908135	3.0707218	-3.483745	
## 3	6.82520892	7.5563773	0.5144282	4.706830	0.8617169	-3.884122	
## 4	6.38419205	5.7784647	3.4985444	6.023907	6.0975970	-3.498924	

```

## 5 4.33154113 5.1993831 -0.9471720 4.696023 5.8878549 -3.884122
## 6 4.66334276 3.6178501 5.6171664 5.799466 5.4018360 -3.451139
##      Gch1      Gchfr      Gck      Gckr      Gclc      Gclm
## 1 -1.1103864 -1.7873122 -1.64594473 -3.099101 5.789997 4.8691502
## 2 6.7745899 0.8702133 -2.46104042 -3.651962 5.513806 5.5371830
## 3 -3.8841215 -1.9317392 -3.88412153 -3.884122 1.479815 0.8617169
## 4 -0.3971479 2.2486674 0.04190667 -3.197812 4.874568 2.5035241
## 5 1.7546656 1.9912121 -3.88412153 -3.884122 4.930969 3.9377103
## 6 0.2099266 -3.2808450 -3.26808737 -1.687397 5.760003 5.2109783
##      Gcn111      Gcnt1      Gcnt2      Gcnt4      Gcnt7      Gcsh
## 1 6.946095 -0.351559510 -0.5752577 -0.2534822 -1.0042837 5.687676
## 2 6.332780 -0.006617645 6.6629708 -1.1840411 -3.1165114 4.630242
## 3 1.834579 7.117479006 1.2632490 7.7973056 -3.8841215 6.767175
## 4 5.083399 1.650285623 3.4042393 1.4554508 0.2047157 6.929666
## 5 2.044749 -1.440885550 4.1602026 -2.8071174 2.7237947 8.241438
## 6 6.947310 -1.628371739 2.1597242 6.1025477 -1.1591039 6.762169
##      Gda      Gdap1      Gdap111      Gdap2      Gde1      Gdf10      Gdf11
## 1 1.5180875 4.8737541 4.7096806 4.546394 7.761201 -1.7106330 3.8157716
## 2 1.6087699 0.7900030 0.2612939 5.732458 7.258971 -2.6793155 0.3468706
## 3 -0.2425151 -0.2425151 1.2632490 7.479893 5.527858 5.5459784 -3.8841215
## 4 1.1582629 5.1441072 5.9805315 5.293537 4.904485 1.6046944 -0.1970276
## 5 -1.7701038 3.0720655 6.1469468 4.657877 6.499485 2.6736968 -0.4264149
## 6 -0.3063376 1.2320665 3.3281598 3.851770 6.703907 2.7446454 3.5093335
##      Gdf15      Gdf5      Gdf6      Gdf7      Gdf9      Gdi1      Gdi2
## 1 -0.6354715 -2.3819239 -3.570026 -2.792474 -0.3272789 8.368989 7.869526
## 2 4.1620918 -3.1123102 -3.884122 -3.656504 0.3888700 7.242130 9.413987
## 3 -3.8841215 -1.9317392 -3.884122 -3.884122 -3.8841215 9.095580 9.607226
## 4 -3.1726963 -3.2185159 -3.884122 -3.884122 3.8384192 9.667731 8.813878
## 5 -3.8841215 -3.8841215 -3.884122 -3.884122 4.7167877 8.816226 8.698500
## 6 2.7842745 0.1207021 -1.838149 -3.156544 0.5466885 8.200055 7.477703
##      Gdnf      Gdpd1      Gdpd2      Gdpd3      Gdpd5      Gem      Gemin4
## 1 0.7167176 5.740778 2.5762516 -0.6540113 4.696593 3.869009 3.005780
## 2 -3.3444694 5.037702 -1.8307894 4.7215844 7.054565 8.228434 3.306489
## 3 -1.9317392 3.575949 2.9714350 5.4657561 6.654773 1.263249 6.517645
## 4 -3.3944957 7.943524 5.5288919 4.2529730 4.112626 5.490085 4.803718
## 5 -3.8841215 8.049760 5.6277111 0.1633391 3.596015 5.271331 3.796595
## 6 -1.9790411 4.926805 8.1741283 2.2121270 4.562599 9.044438 2.536627
##      Gemin5      Gemin6      Gemin7      Gemin8      Gen1      Get4      Gfap
## 1 4.9343563 0.5418923 3.910791 2.8407424 0.09372606 5.374673 4.464660
## 2 5.0247103 0.8964433 5.259582 2.9779005 0.30874251 5.710139 4.048685
## 3 0.3033916 5.7783276 3.347069 0.8617169 -1.13131698 1.753727 7.290464
## 4 3.6598364 4.2643428 3.977975 5.0002447 2.43639698 2.047083 9.982606
## 5 0.6514968 3.4449096 5.685736 5.4849133 1.01558177 2.673697 8.406463
## 6 4.8732720 0.5445578 3.241733 3.9675904 1.38549592 4.794728 9.119567
##      Gfer      Gfi1      Gfm1      Gfm2      Gfod1      Gfod2      Gfpt1
## 1 4.487718 -2.948802 4.8161268 4.73531479 5.7273906 3.402734 6.8338390
## 2 4.301895 -1.667701 5.6204770 4.31039324 6.0009320 5.225382 5.9701487
## 3 3.644828 -3.884122 0.3033916 0.05610664 0.6984974 1.263249 0.3033916
## 4 2.792549 -3.884122 5.1471514 5.45177510 2.2893499 4.442478 5.1890959
## 5 4.276659 -3.884122 5.2515447 5.61670483 3.0061180 2.639305 5.4205520
## 6 3.896620 -2.874450 4.9252611 5.74269268 3.2138340 3.423775 6.2761018
##      Gfpt2      Gfra1      Gfra2      Gfra3      Gfra4      Gga1
## 1 4.1708697 7.35272247 3.4018027 -3.723567 1.9344027 6.102309
## 2 1.7510749 0.39065379 0.2003008 -3.884122 -1.7979417 6.572254

```

```

## 3 -1.9317392 0.05610664 7.4513345 -3.884122 3.5759491 1.983840
## 4 3.9441142 2.38920228 4.4720240 -3.603681 -0.7442737 3.319638
## 5 4.3043608 2.81905543 3.4045239 -3.884122 2.3082165 1.688930
## 6 3.4163004 3.63854490 -2.1889762 -3.490484 -2.5470980 6.079031
##      Gga2      Gga3      Ggct      Ggcx      Ggh      Ggn      Ggnbp2
## 1 4.744453 5.899739 1.7770523 4.871688 5.263816 0.8243056 5.660221
## 2 5.871062 4.165704 1.4175678 4.467724 4.846879 0.5187509 6.770875
## 3 1.479815 1.479815 2.4103803 5.032301 8.132199 -3.8841215 6.746430
## 4 4.816591 5.493404 4.3110557 5.534101 5.852133 -2.1620701 5.779142
## 5 4.749401 3.757045 6.0537253 5.430643 7.477812 -2.1973739 4.219605
## 6 4.228168 5.712459 -0.5693676 5.564081 5.073598 1.3664991 6.992370
##      Ggps1      Ggt1      Ggt5      Ggt6      Ggt7      Ghdc      Ghitm
## 1 4.081592 1.1207300 -0.2136288 -3.4563872 6.712433 4.49566528 7.306660
## 2 5.426199 2.5465483 3.8940973 -2.8952098 1.016900 4.65587442 7.691613
## 3 7.351839 -1.1313170 -1.1313170 0.6984974 7.850523 0.05610664 8.683675
## 4 6.381256 3.7150403 3.2741342 0.1119734 5.438952 3.44838345 8.953316
## 5 5.211139 4.9935682 4.5086874 -1.4408855 6.019036 -1.17301144 8.708902
## 6 4.521510 1.4287813 -1.2627741 -2.3975498 5.434091 3.93318312 7.210054
##      Ghr      Ghrh      Ghr1      Ghsr      Gigyf1      Gigyf2
## 1 1.40931407 -3.444434 -0.7033868 -3.884122 5.800145 5.3669360
## 2 5.34581041 -3.884122 -1.3708963 -3.424345 4.556727 5.8683905
## 3 0.05610664 -3.884122 -3.8841215 -3.884122 1.375592 0.8617169
## 4 2.68055248 -2.652875 -2.5149853 -3.884122 6.945266 5.2797447
## 5 3.09762292 -3.884122 -3.8841215 -3.884122 5.254388 3.9163262
## 6 5.08512986 -2.162729 0.9853952 -2.138425 6.747646 6.6606651
##      Gimap1      Gimap4      Gimap6      Gimap7      Gimap8      Gimap9
## 1 -1.7965350 -3.2522174 0.3206061 -3.8841215 -2.6482231 -3.32731265
## 2 6.4459888 6.0163530 9.4696384 -2.8888941 6.3910882 5.57945911
## 3 3.1399752 -3.8841215 7.7731509 -3.8841215 -3.8841215 -3.88412153
## 4 -2.1021462 0.3714324 3.3134864 -2.6227548 -2.0688447 -0.01196077
## 5 -3.8841215 3.9234895 4.7167877 -3.8841215 -3.8841215 1.78644346
## 6 -0.6901791 -2.3334194 1.8037939 -3.8841215 -0.7568233 -1.71981430
##      Gin1      Gins1      Gins2      Gins3      Gins4      Gipc1
## 1 2.4570147 1.1889966 1.9076267 1.5581352 4.55439655 7.103446
## 2 2.4778712 1.3975548 2.8999871 2.0276855 4.68812751 6.418236
## 3 0.8617169 -0.6195262 -0.6195262 -1.9317392 0.05610664 1.668074
## 4 4.2621071 5.2690291 4.9985966 3.4911759 4.86404055 4.757647
## 5 4.6749556 5.6011536 6.5303107 -0.7519471 5.33986093 5.865713
## 6 3.3845383 1.8144785 1.9727206 1.7735366 3.09995760 5.096844
##      Gipc2      Gipc3      Gipr      Git1      Git2      Gja1      Gja3
## 1 -3.8841215 -2.6554286 -1.5447747 6.842794 5.597434 4.307265 -3.884122
## 2 -1.9986392 2.3286461 -1.8832078 7.782925 7.483420 8.211406 -3.884122
## 3 -3.8841215 -3.8841215 -3.8841215 1.668074 6.154067 12.287730 -3.884122
## 4 -3.1978120 -3.8841215 -1.1111468 4.668218 6.423406 10.337290 -3.674937
## 5 -3.8841215 -3.8841215 -3.8841215 4.445401 5.896981 10.501916 -3.884122
## 6 -3.2889060 -3.1376752 -2.2520684 6.101044 5.569100 10.869818 -3.268087
##      Gja4      Gja5      Gjb1      Gjb2      Gjb3      Gjb4
## 1 -1.4634359 -3.310475 5.046268 -0.4769941 -3.75664523 -2.2857846
## 2 6.4671745 2.031340 -3.884122 -0.7987480 -3.88412153 -3.8841215
## 3 9.2610357 -1.931739 9.287306 1.8345785 0.86171687 1.1414140
## 4 3.8961874 -2.282782 5.294248 3.5775411 -1.80252692 -1.4204622
## 5 6.5776201 -2.807117 7.519182 5.7169914 2.74011471 4.4553202
## 6 -0.3871340 -1.556590 -3.171313 3.2573158 -2.92803589 -3.8841215
##      Gjb5      Gjb6      Gjc1      Gjc2      Gjc3      Gjd2

```



```

## 1 -3.6730449 2.7317209 -1.208874 4.4908418008 7.9170242 -1.0997757
## 2 -3.8841215 0.0163879 6.724429 -2.7198556733 -3.6565043 -2.5532032
## 3 0.5144282 10.2759621 6.223266 0.3033916219 4.6067949 -3.8841215
## 4 -2.2963656 7.1502014 2.874650 0.9173707861 5.7972471 0.3127418
## 5 2.8938999 7.7939013 3.604954 3.2421320243 5.8394441 3.3734750
## 6 -3.5122488 7.0123564 4.586016 -1.1030035792 -2.6334403 -3.1565438
##      Gjd3      Gk2      Gk5      Gkap1      Gla      Glb1
## 1 -2.768240 -3.8841215 1.430136 4.468007 4.65454809 5.1593569
## 2 -2.719856 -3.8841215 2.413570 4.229284 6.02824636 6.6875794
## 3 -3.884122 -3.8841215 -1.131317 4.474287 0.05610664 0.8617169
## 4 -3.884122 -1.8854802 -0.561274 3.936155 4.04593594 5.2937122
## 5 -3.884122 -3.8841215 -3.884122 -2.197374 4.79698009 4.8803301
## 6 -3.674482 -3.8841215 2.500683 3.966041 6.92724557 5.3156778
##      Glb11      Glb112      Glb113      Glcci1      Glce      Gldc
## 1 3.32267369 -0.3685473 -2.7350541 5.479832 5.5765071 4.8783141
## 2 3.18444769 -2.1919090 -0.7976813 5.978943 5.1285113 -0.3879151
## 3 0.05610664 -1.9317392 -3.8841215 1.753727 0.6984974 2.1822477
## 4 3.73408245 3.8660897 -3.8841215 5.551229 4.9401741 6.9948127
## 5 -1.44088555 3.6401644 -3.8841215 2.096371 4.0135136 6.7476837
## 6 6.27471719 2.1601544 -3.4511394 5.008220 3.6082852 7.1962108
##      Gldn      Gle1      Glg1      Gli1      Gli2      Gli3
## 1 -2.2413806 5.341727 7.413197 -0.9907822 0.43243184 -0.05117411
## 2 -3.6565043 5.586317 7.252729 -2.2943879 -2.99562320 1.82986727
## 3 -3.8841215 9.046040 3.374368 0.6984974 1.26324902 4.35601973
## 4 -0.5267605 6.345972 5.728163 3.1539553 2.55000330 5.68218446
## 5 -3.8841215 1.847973 6.349332 -0.5800187 0.90412645 5.92758606
## 6 0.8601249 5.107888 7.594114 6.6125438 7.07156717 7.38390406
##      Glipr1      Glipr2      Glis1      Glis2      Glis3      Glmn
## 1 -1.955217 1.0848337 0.7810022 5.0996107 -1.3758789 2.2890422
## 2 -2.246723 4.7825084 -3.8841215 4.8267383 -0.8730929 3.3994732
## 3 -3.884122 7.2958284 -3.8841215 -1.9317392 3.0412310 3.4274650
## 4 -0.965366 4.9262457 -3.2878217 2.9537976 0.5345018 4.5765237
## 5 -2.807117 -0.2876030 -3.8841215 -0.7519471 -1.1730114 4.0791314
## 6 -3.044745 3.6787844 -1.9806404 5.5659154 4.1969046 4.0517530
##      Glo1      Glod4      Glod5      Glp1r      Glp2r      Glra2      Glra3
## 1 5.477904 6.614919 -3.4621170 -3.473862 -1.0154308 -2.73445179 -3.257893
## 2 5.610012 7.175780 -3.6565043 -3.884122 -3.8841215 -1.47475653 -3.335655
## 3 7.441688 8.712038 -3.8841215 -3.884122 -3.8841215 -3.88412153 -3.884122
## 4 7.761508 7.354106 -2.8640082 -3.603681 -2.2803524 -0.01419871 -3.884122
## 5 8.425824 8.123149 -3.8841215 -3.884122 -3.8841215 -2.80711744 -3.884122
## 6 5.357399 4.808916 -3.1713129 -2.434157 -3.2680874 -1.86158579 -3.884122
##      Glra4      Glrb      Glrx      Glrx2      Glrx3      Glrx5      GlS
## 1 -1.260500 7.5074070 3.388507 5.216807 2.614586 5.7071947 6.353804
## 2 -3.112310 0.5975397 5.607866 4.917688 3.837730 6.3764276 7.066470
## 3 -3.884122 4.2568248 7.837095 3.319243 5.414075 0.3033916 3.290869
## 4 -2.527943 4.5399985 4.798374 4.961372 5.303232 3.2420384 4.776217
## 5 -3.884122 4.3261459 5.810758 4.869244 6.000526 1.7546656 4.033514
## 6 -2.194289 5.8449694 4.040096 5.064987 1.758541 3.9418274 7.072449
##      GlS2      Glt1d1      Glt8d1      Glt8d2      GltP      GltPd1
## 1 2.2244031293 0.9973855 5.180357 -1.4822295 8.678718 4.138070
## 2 0.0004048557 -3.8841215 4.742724 -0.2948252 5.409575 5.024814
## 3 -3.8841215304 -3.8841215 6.979844 -0.6195262 6.211961 1.668074
## 4 -0.5852892613 -2.2461219 4.848240 2.7832108 5.896113 5.820396
## 5 -2.8071174364 -2.8071174 5.583173 3.7327839 6.433278 5.662377

```

```

## 6 0.2375215358 -2.8405514 6.141423 -0.7946269 4.014098 3.671210
##      Gltpd2      Gltscri1 Gltscri2      Glud1      Glu1      Glyat13      Glyctk
## 1 -2.8266999 4.5888957 6.314679 7.732421 8.390550 -3.606445 0.9531463
## 2 -3.8841215 4.2378846 8.247816 8.288532 9.596111 1.114003 0.7631010
## 3 -3.8841215 -0.6195262 2.560544 8.144144 10.928935 -3.884122 2.1190956
## 4 -3.1975237 1.9421260 5.388939 7.581365 8.793066 -3.884122 2.7595267
## 5 0.2570463 -0.4264149 5.172578 8.532156 9.532317 -3.884122 2.7072879
## 6 -3.0501908 5.1956418 6.526040 10.341294 11.399797 -3.512249 2.5444631
##      Glys1      Gm10033      Gm101      Gm10639      Gm10767      Gm11128
## 1 7.460836 -0.2602441 -3.884122 -3.8841215 -0.78279097 -2.3390956
## 2 7.465879 0.7051056 -3.656504 -3.8841215 0.06276852 -3.8841215
## 3 5.853005 -1.1313170 -3.884122 -3.8841215 -3.88412153 -3.8841215
## 4 7.315339 4.3209833 -2.364047 -0.8901898 1.18020710 -3.8841215
## 5 5.532539 3.6660196 -3.884122 0.9609302 -1.44088555 -3.8841215
## 6 7.332583 1.2998293 -1.119000 -3.8841215 0.71245703 -0.2472684
##      Gm1123      Gm11437      Gm11567      Gm11992      Gm128      Gm12942
## 1 -3.6013384 -3.510308 -3.8841215 -1.180624 -2.7685757 0.7447664
## 2 0.6176548 -3.884122 0.1510715 -2.372912 -1.0024177 1.7959240
## 3 -3.8841215 -3.884122 -3.8841215 -1.131317 -3.8841215 6.2456135
## 4 -3.4182176 -1.200866 -3.8841215 2.809875 -0.7397262 3.7388173
## 5 -3.8841215 -3.884122 -3.8841215 -2.197374 3.5129733 4.0919043
## 6 -3.8841215 -3.280845 -3.6607788 1.463316 -1.9241560 0.8991178
##      Gm13178      Gm13212      Gm13242      Gm13308      Gm13889      Gm14124
## 1 -2.905638 -2.384101 -3.512200 -0.4642604 6.168236 -3.277701
## 2 -3.656504 1.693282 -1.853277 2.8748949 5.610224 -3.651962
## 3 -3.884122 -3.884122 -3.884122 1.3755916 3.107806 -3.884122
## 4 -3.381881 -2.873198 -3.884122 -1.3105865 1.398431 -3.498924
## 5 -3.884122 -3.884122 -3.884122 -2.8071174 3.414727 -3.884122
## 6 -2.337382 -3.884122 -2.777676 -0.2784457 5.668355 -2.039532
##      Gm14137      Gm14295      Gm14378      Gm14446      Gm15319      Gm1564
## 1 -0.14379644 -0.6357146 2.1294369 -1.555190 -2.6924194 -0.5181317
## 2 -0.78174188 -3.8841215 -1.6065316 -3.424345 -3.8841215 -1.5891883
## 3 0.30339162 -1.1313170 -1.9317392 -3.884122 -3.8841215 -3.8841215
## 4 -1.40119591 1.8400054 0.3527764 -2.198667 -3.4277009 -0.7805587
## 5 -0.28760302 2.6566033 -3.8841215 -2.807117 -3.8841215 -3.8841215
## 6 0.20822349 -0.6926466 3.4765596 -3.027614 -1.8761642 -0.8465097
##      Gm15800      Gm16039      Gm16515      Gm166      Gm1661      Gm1673
## 1 7.072043 3.177407 6.8609619 1.5306296 -3.79498311 3.5862623
## 2 5.584635 2.378301 5.0524161 1.6798114 -2.80708155 2.0084159
## 3 7.070264 4.916359 5.9054125 -0.2425151 -3.88412153 4.7801068
## 4 6.222338 4.819160 4.0545029 3.8837363 -1.17901806 3.0935748
## 5 5.980060 5.187531 5.9988318 5.5041527 -1.17301144 1.9636795
## 6 6.858559 3.214354 5.0540370 3.1879707 -0.07186291 2.9576139
##      Gm17296      Gm17359      Gm17455      Gm2a      Gm3893      Gm4477
## 1 3.7422584 -3.219310 -3.0598945 9.367458 -3.502093 -2.2360702
## 2 3.1717696 -3.651962 -1.9439463 5.989386 -3.217793 -3.8841215
## 3 -0.6195262 -3.884122 -3.8841215 10.071714 -3.884122 -3.8841215
## 4 1.9587213 -2.441717 -0.3283933 9.168344 -3.884122 -3.8841215
## 5 -3.8841215 -3.884122 2.6217964 10.228419 -3.884122 -3.8841215
## 6 4.4377790 -1.965835 1.5591179 7.930338 -2.424867 0.3065775
##      Gm4907      Gm4944      Gm4980      Gm5069      Gm525      Gm527
## 1 -3.8841215 2.1348926 2.4316746 2.1830675 -3.7566452 2.532442
## 2 -2.8888941 2.8099478 -0.1248278 2.5416120 -0.4580151 1.766974
## 3 -3.8841215 5.4846688 0.6984974 -0.6195262 -3.8841215 -3.884122

```

```

## 4 -3.8841215 3.2587124 -1.5496030 2.7962932 -3.3818813 -2.256436
## 5 -3.8841215 -0.9471720 -2.8071174 2.6040729 -3.8841215 -3.884122
## 6 -3.8841215 3.3677449 -1.0166542 2.3907367 -3.8841215 2.190878
##      Gm5424      Gm5434      Gm5483      Gm561      Gm5617      Gm572
## 1 -1.425051 -0.4663184 -3.4597993 3.038633 1.4888230 -3.119494
## 2 3.948459 0.2380259 -1.0794434 3.339909 2.6849261 -3.884122
## 3 6.429292 2.7805686 -3.8841215 5.946919 5.7629167 -3.884122
## 4 7.086914 1.1193621 -3.8841215 5.251195 4.7786990 -3.884122
## 5 7.302090 2.3082165 -3.8841215 6.195096 5.5017617 -3.884122
## 6 1.534220 -0.6271903 -3.8841215 2.054695 0.8551854 -3.884122
##      Gm5868      Gm608      Gm614      Gm6484      Gm6537      Gm6578
## 1 -3.1383718 5.0122300 -3.6639813 -1.608169 -2.560137 -1.791480
## 2 -3.6565043 5.5835083 1.1297977 -1.456448 -3.424345 -1.328528
## 3 -3.8841215 0.3033916 -3.8841215 -3.884122 -1.931739 1.834579
## 4 -0.9054965 3.3383033 -3.8841215 -3.114158 -3.197524 2.110082
## 5 -3.8841215 4.1722804 -3.8841215 -3.884122 -1.173011 3.032860
## 6 -3.6607788 6.3973368 -3.3528132 -1.882463 -3.884122 -1.827382
##      Gm6583      Gm6588      Gm6592      Gm6614      Gm6792      Gm684
## 1 -2.6064205 0.9337397 -2.894461 -3.884122 -3.884122 -2.3756892
## 2 -3.4243451 -3.8841215 -3.884122 -1.070166 3.167147 1.2181525
## 3 -3.8841215 -3.8841215 -3.884122 -3.884122 -3.884122 -3.8841215
## 4 -3.8841215 -3.8841215 -3.884122 -3.884122 -3.884122 2.8138158
## 5 1.3492478 -3.8841215 -3.884122 -3.884122 -3.884122 3.1596033
## 6 -2.7330183 1.3933935 -2.986249 -3.674482 -3.171313 1.0025238
##      Gm6904      Gm694      Gm7102      Gm711      Gm7120      Gm7173
## 1 -2.964309 -3.1942763 -0.2912143 -1.61794576 4.705938 -1.14451616
## 2 -1.704857 4.7628377 0.8206182 -2.22108290 3.185815 -3.88412153
## 3 -3.884122 -1.9317392 4.3422598 -3.88412153 2.119096 -3.88412153
## 4 -3.884122 -1.4390127 -1.3662726 -2.80088334 1.874686 -0.38015960
## 5 -3.884122 -3.8841215 -2.8071174 0.50638872 -1.440886 -3.88412153
## 6 -2.762539 -3.1565438 -0.6817077 -0.01231626 4.144676 0.01617858
##      Gm8994      Gm94      Gm960      Gm973      Gm9833      Gm996
## 1 0.7235552 -3.8841215 -0.92929522 -2.0933710 5.237372 4.7529687
## 2 1.0971487 -3.8841215 -1.60653164 -2.4122130 4.895474 -0.4841176
## 3 0.6984974 1.6680739 -3.88412153 -1.1313170 -3.884122 -0.6195262
## 4 0.2284252 -1.0208379 0.07895652 3.7662411 1.655741 0.9729376
## 5 1.1681147 0.0631199 -2.80711744 1.8175364 -1.770104 2.4735096
## 6 -0.4307661 -3.8841215 0.85471622 4.8849817 4.650722 3.7369747
##      Gm9992      Gm9994      Gmcl1      Gmnds      Gmeb1      Gmeb2      Gmfb
## 1 -3.884122 -3.203307 4.9325890 3.7531473 4.7356756 5.4960033 7.455669
## 2 -3.476608 -3.251585 4.7152889 4.7822679 5.2408961 5.8042101 7.001024
## 3 -3.884122 -3.884122 0.5144282 -0.2425151 -0.2425151 0.8617169 3.232392
## 4 -3.884122 -2.933346 4.6983194 2.4773729 5.0161738 2.7808211 7.922732
## 5 -2.807117 -3.884122 5.8242156 2.7879955 5.2657055 -0.5800187 6.987853
## 6 -3.884122 -1.882463 4.6289198 1.5735107 5.3188063 5.9223259 6.854615
##      Gmfg      Gmip      Gmnn      Gmppa      Gmppb      Gmpr      Gmpr2
## 1 -2.0542475 3.44483543 2.0782885 4.646896 3.5407358 3.1212629 5.012728
## 2 2.8149133 2.65807638 3.8723454 4.472087 3.4473869 6.1062719 5.383836
## 3 3.9830373 0.05610664 6.2157390 1.375592 -0.6195262 0.6984974 4.810406
## 4 -0.3822641 4.48131377 4.9740049 5.631476 4.1146878 3.4911945 5.409660
## 5 -3.8841215 3.00611801 3.9657381 5.658089 -0.5800187 3.7887709 5.033841
## 6 -3.8841215 2.76439288 1.8273882 4.779147 4.9896239 3.0194266 4.930612
##      Gmps      Gna11      Gna12      Gna13      Gna14      Gna15      Gna11
## 1 4.902755 7.116156 7.5511016 6.427346 -2.92413512 0.02464123 6.556311

```

```

## 2 5.857147 7.336167 6.2592659 7.684284 -1.88320782 -2.48806316 5.211914
## 3 8.291943 6.267620 0.3033916 4.943954 -3.88412153 4.91635863 4.663224
## 4 7.499790 6.907867 4.0163088 6.645868 -2.68714231 0.03968175 4.169064
## 5 6.491072 7.816683 4.2988628 6.238822 -2.19737395 -2.19737395 5.092218
## 6 5.394106 5.907291 6.6939525 8.790138 -1.84541827 -3.67448218 3.850104
##      Gnai2      Gnai3      Gnal      Gnao1      Gnaq      Gnas      Gnat1
## 1 8.796791 6.563805 5.1738621 9.191696 6.827559 9.793144 0.33137870
## 2 10.947748 7.689682 3.0171319 2.732508 6.429295 10.308877 -2.25320643
## 3 8.106991 8.914485 0.3033916 5.509506 6.657554 8.792666 -3.88412153
## 4 7.344613 7.030103 3.3825510 8.092638 7.918541 8.019331 -1.60503411
## 5 8.001921 5.829945 4.2822417 7.597405 7.086882 8.709938 -2.80711744
## 6 8.549485 7.045344 3.4112317 10.633959 6.359431 8.870611 -1.36095526
##      Gnat2      Gnaz      Gnb1      Gnb11      Gnb2      Gnb211      Gnb3
## 1 -2.768914 4.1304049 8.798452 1.7271996 8.909302 8.600310 -3.512490
## 2 -1.818376 -0.6213169 9.406647 2.8365272 9.141305 10.746913 -3.884122
## 3 -3.884122 -3.8841215 11.222116 -1.9317392 7.601839 10.823008 -3.884122
## 4 -1.117426 1.2736797 10.692143 3.3953383 5.534023 9.489491 -1.780651
## 5 -3.884122 -3.8841215 11.236490 5.0238779 6.871372 10.317354 3.341743
## 6 -2.514679 2.3780612 8.030572 1.8034964 7.545631 7.179128 -2.288570
##      Gnb4      Gnb5      Gne      Gng10      Gng11      Gng12      Gng13
## 1 7.151010 4.790070 4.573012 6.161416 3.7523861 8.781272 0.4063564
## 2 7.919994 3.856663 6.149827 3.960758 8.6870326 7.981659 -2.8125900
## 3 7.285080 6.774879 7.977233 9.661216 9.5770693 3.074902 -1.9317392
## 4 6.239021 5.815698 2.768800 7.978679 6.0779114 6.621668 -1.5772183
## 5 5.941767 6.694241 -1.440886 9.187435 8.3659567 6.081209 -3.8841215
## 6 4.585685 4.875073 3.838516 4.329713 1.4118895 8.486714 -3.6744822
##      Gng2      Gng3      Gng4      Gng5      Gng7      Gng8      Gngt2
## 1 4.907968 6.649951 4.8436466 3.389015 6.315696 1.9492049 0.4108746
## 2 4.814812 1.979912 0.1534044 5.712296 3.585571 -3.8841215 2.8869631
## 3 4.256825 5.900726 -0.6195262 6.797745 6.278499 -3.8841215 7.0806604
## 4 7.970797 5.584090 -1.6124424 5.510332 6.146570 0.7993881 -0.1300996
## 5 8.082528 6.406687 -0.9471720 6.177228 6.610170 2.2861569 -3.8841215
## 6 3.189313 1.968912 -1.0076594 3.316816 3.384724 -2.1627286 -3.4904843
##      Gnl1      Gnl2      Gnl3      Gnl3l      Gnmt      Gnpat      Gnlda1
## 1 6.0435117 5.914616 5.322245 6.777525 -0.30604093 6.724556 2.61790077
## 2 5.5325390 5.906081 5.136312 6.655501 -1.89835503 6.302886 -0.06751192
## 3 -0.2425151 1.479815 5.147549 6.547933 -3.88412153 1.753727 5.32593347
## 4 3.6665229 6.448644 5.742861 7.291782 -0.93618448 5.452718 5.28524708
## 5 3.7081079 2.586129 1.068238 7.269432 -3.88412153 5.574098 5.08584751
## 6 5.9288235 6.641402 6.236126 5.789259 0.03454201 6.255682 2.74708861
##      Gnlda2      Gnlda1      Gnlda3      Gnlda4      Gnlda5      Gnlda7      Gnlda7b      Gnlda1
## 1 4.775769 2.4982405 7.517298 6.381054 -2.08459545 7.401646 5.318574
## 2 5.941381 3.4201022 5.084070 5.031137 -0.42834258 6.225848 4.620004
## 3 7.449731 -0.6195262 6.317700 7.704898 -3.88412153 6.968692 1.008333
## 4 6.573292 3.8224168 4.608615 6.457384 -1.80561770 5.365281 5.590991
## 5 6.913354 3.8502038 4.435414 5.753625 -3.88412153 4.000024 2.308216
## 6 4.558235 2.9199592 6.625576 5.446329 -0.03165615 7.016229 6.054128
##      Golga2      Golga3      Golga4      Golga5      Golga7      Golga7b      Golga1
## 1 6.621274 5.1106115 6.066334 4.72022353 7.937457 2.2886774 5.459227
## 2 6.133150 5.4107784 6.040468 5.74614492 6.177342 -0.6519716 6.270127
## 3 3.622232 0.5144282 1.911138 0.05610664 6.984281 7.1999021 5.414075
## 4 4.502467 4.8661998 5.342379 3.70033926 6.831850 2.4607373 6.303951
## 5 4.854328 2.6566033 1.431944 0.42796713 6.978426 0.0631199 4.219605
## 6 6.598849 6.0059752 7.000271 5.60060108 5.614878 -0.0357786 7.438503

```

##	Golim4	Golm1	Golph3	Golph3l	Golt1b	Gon4l	Gopc
## 1	5.612465	5.681564	6.550809	4.203511	5.085309	5.6705457	5.3879833
## 2	8.076030	7.669387	7.311288	4.751427	5.257734	5.0735389	5.0355428
## 3	6.345556	4.810406	5.074526	7.297612	7.868634	-0.6195262	0.6984974
## 4	5.144771	6.259163	5.118928	6.467652	6.928304	4.1287483	3.6563590
## 5	4.271054	5.898800	5.841336	6.257366	7.626228	4.1480228	1.9069861
## 6	6.515800	6.083148	6.810677	4.054552	4.726336	6.2886892	5.3224929
##	Gorab	Gorasp1	Gorasp2	Gosr1	Gosr2	Got1	Got1l1
## 1	3.6705813	5.0296452	6.946754	5.748770	7.191523	5.571718	-3.053555
## 2	3.2850275	4.2173136	7.137678	5.783464	7.353663	3.268400	-3.076231
## 3	0.5144282	-0.6195262	3.833689	5.661295	7.983895	8.696575	-3.884122
## 4	5.1023003	3.7828722	5.315470	5.878143	6.874712	5.867986	-3.299148
## 5	1.6549031	2.6566033	5.095393	5.310108	5.856386	5.848881	-3.884122
## 6	4.0426009	4.1372558	6.100996	5.484519	6.140384	5.670915	-1.357790
##	Got2	Gp1ba	Gp1bb	Gp2	Gp49a	Gp5	
## 1	6.242311	0.2876635	5.1439722	-1.409476	-2.172689	-2.1467538	
## 2	5.953847	1.3548204	0.3821364	-3.884122	-1.554368	-1.2266841	
## 3	1.008333	-3.8841215	5.2394965	-3.884122	-3.884122	-3.8841215	
## 4	4.911148	-1.4311504	-0.9260532	-3.884122	-1.657492	-3.8841215	
## 5	6.047182	-2.8071174	-2.8071174	-3.884122	-3.884122	-3.8841215	
## 6	4.130801	0.4495406	3.1325758	-3.884122	-3.674482	-2.5216411	
##	Gp9	Gpaa1	Gpam	Gpank1	Gpat2	Gpatch1	Gpatch2
## 1	-0.8908333	5.855479	6.0246881	3.044824	-0.7975606	3.817435	4.7092827
## 2	-0.5322509	5.214685	5.5659948	3.295785	-2.2210829	3.170042	4.8550123
## 3	-3.8841215	7.643108	7.6162035	6.345556	-3.8841215	4.536031	-1.9317392
## 4	-2.1242136	5.045155	3.0418886	4.627684	-2.7507120	4.933324	3.4604002
## 5	-3.8841215	5.594437	-0.1609828	6.045541	-3.8841215	4.336916	2.5309179
## 6	-3.4511394	5.751147	9.3885139	2.107031	-0.8707218	4.308133	6.1006530
##	Gpatch3	Gpatch4	Gpatch8	Gpbar1	Gbp1	Gbp1l1	Gpc1
## 1	2.9714234	2.3635066	6.181235	-3.058521	6.037119	5.043520	7.729810
## 2	3.3515988	2.6138169	5.693911	-3.884122	7.305808	6.691840	2.418881
## 3	-3.8841215	2.5122057	1.911138	-3.884122	6.523754	3.290869	7.153381
## 4	0.4068171	4.7995774	6.610370	-3.251744	7.393254	5.888306	5.709569
## 5	1.9636795	1.6549031	2.549557	-3.884122	5.366387	6.010652	7.697430
## 6	2.5274849	2.8773291	6.883062	-3.451139	6.425821	5.424584	6.440531
##	Gpc2	Gpc3	Gpc4	Gpc5	Gpc6	Gpcpd1	
## 1	4.3448825	0.9305357	1.2145094	6.008950	4.5240487	6.739602	
## 2	3.3383601	2.9018951	2.2730460	-1.377941	0.8459321	10.070745	
## 3	0.5144282	4.5718465	4.7801068	7.526268	-0.6195262	7.821062	
## 4	3.2402058	3.5150834	3.3154217	5.803199	4.3582661	5.088400	
## 5	1.8777815	5.8068892	4.2822417	4.945116	5.5113018	5.154426	
## 6	5.4878359	-0.7447132	5.9624327	6.819789	7.0058604	7.425604	
##	Gpd1	Gpd1l	Gpd2	Gpha2	Gphb5	Gphn	Gpi1
## 1	8.0805688	6.894757	5.770826	-3.884122	-3.450968	6.176567	7.094008
## 2	0.8874268	6.238817	8.107417	-3.884122	-1.394709	5.016717	8.745454
## 3	4.8203665	4.840083	8.446239	-3.884122	-3.884122	1.263249	7.611909
## 4	7.8838123	5.082852	6.682797	-3.141616	-3.884122	5.831207	7.380141
## 5	7.6598577	4.304361	5.839444	-3.884122	-3.884122	4.470072	8.012877
## 6	3.1336541	5.893923	7.291882	-2.621219	-3.660779	5.759508	7.268261
##	Gpihbp1	Gpkow	Gpld1	Gpm6a	Gpm6b	Gpn1	Gpn2
## 1	-3.884122	5.650433	7.194804	9.255841	9.724710	4.988144	3.4441267
## 2	2.984636	6.635758	4.526335	4.405471	5.160096	4.433486	3.5433310
## 3	-3.884122	7.402444	4.166010	12.324936	10.361157	7.900673	4.1021273
## 4	-3.884122	6.583245	7.703473	11.450599	11.701560	6.820137	1.5290210

```

## 5 -3.884122 7.063565 6.682677 10.658429 10.843938 6.916049 4.8124972
## 6 -3.451139 5.990048 7.637445 10.281299 10.447337 4.474013 3.1950489
##      Gpn3      Gpnmb      Gpr1      Gpr101      Gpr107      Gpr108      Gpr110
## 1 3.726494 3.21469085 -3.677861 -3.5468596 6.3807086 5.202891 -3.457258
## 2 4.460317 -3.88412153 -1.249391 -3.1273690 6.1362673 5.850556 -0.975108
## 3 1.911138 0.05610664 -3.884122 -3.8841215 0.3033916 7.456134 -3.884122
## 4 5.334146 -0.17662084 -3.884122 -2.9126426 5.5467314 6.132679 -3.884122
## 5 6.378295 -0.94717201 -3.884122 -3.8841215 5.2343662 7.081288 -3.884122
## 6 3.487939 -0.16745622 -3.884122 -2.2885695 6.7629610 5.359779 -3.884122
##      Gpr111      Gpr113      Gpr114      Gpr115      Gpr116      Gpr12
## 1 -2.0608232 -3.756645 -2.528297 -2.891014 -0.6713908 -1.9672181
## 2 -3.2177929 -1.306421 -1.853277 -3.248991 10.7893275 -2.8070815
## 3 -1.9317392 -3.884122 -3.884122 1.753727 1.4798145 6.1929200
## 4 -3.0473721 -3.209184 -2.739401 -1.324348 3.1094458 0.5311274
## 5 -2.8071174 -3.884122 -3.884122 -1.173011 3.8799663 -2.1973739
## 6 -1.4943232 -3.660779 -3.280845 -2.621219 3.7142998 -3.1713129
##      Gpr123      Gpr124      Gpr125      Gpr126      Gpr132      Gpr133
## 1 3.2727156 3.2763842 5.887977 -1.271654 -1.869054 -1.8810828
## 2 -1.1226908 8.3039806 6.045667 4.496509 -2.631727 -0.5611100
## 3 2.2427509 -1.1313170 1.479815 5.209494 -3.884122 -1.1313170
## 4 4.4419830 0.6369517 4.319897 1.796524 -1.455975 1.9288231
## 5 3.0061180 1.8175364 5.405283 -2.807117 -3.884122 -2.1973739
## 6 4.5168987 2.3267331 6.309280 2.902615 -3.884122 -2.9407352
##      Gpr135      Gpr137      Gpr137b      Gpr137c      Gpr139      Gpr143      Gpr146
## 1 0.08501192 6.014332 4.494186 3.2091829 -3.767000 -2.6327946 5.279827
## 2 0.76088476 5.242799 2.887552 0.2549814 -3.884122 0.7897928 7.205536
## 3 -3.88412153 3.006755 -1.131317 -1.1313170 -3.884122 -1.9317392 6.445471
## 4 -2.28157363 4.347083 3.153955 1.6011035 -3.884122 -2.0799102 4.050333
## 5 -3.88412153 5.085848 1.306052 -1.1730114 -3.884122 4.4303941 4.282242
## 6 -0.28744758 5.429813 3.921152 2.8501465 -3.884122 -2.3373822 6.239337
##      Gpr149      Gpr15      Gpr150      Gpr151      Gpr152      Gpr153      Gpr155
## 1 1.492575 0.1579824 -2.09083778 -2.661654 -3.495736 4.1757196 7.504862
## 2 -3.651962 -3.8841215 -3.65196234 -2.104310 -3.112310 1.4920303 6.161746
## 3 -3.884122 -1.9317392 -3.88412153 -3.884122 -3.884122 5.5638745 7.486163
## 4 -2.685792 -0.3283200 -2.66217501 -3.603681 -3.884122 2.8516818 5.367083
## 5 -3.884122 -3.8841215 -3.88412153 -3.884122 -3.884122 1.7864435 4.662166
## 6 -3.674482 -2.9809405 -3.45113945 -2.097773 -2.554691 5.3363979 5.580787
##      Gpr156      Gpr157      Gpr158      Gpr160      Gpr161      Gpr162
## 1 0.7590813 0.56821680 4.3531873 -1.7094841 2.4824038 6.0235681
## 2 -1.6944177 -0.37231260 -0.9866708 2.9298744 1.5920616 1.2352101
## 3 1.3755916 0.05610664 6.1382287 -0.6195262 -3.8841215 -0.6195262
## 4 -0.4319450 1.34651321 -0.4277687 1.2503690 -0.9349587 -0.4087617
## 5 -3.8841215 1.93561130 -2.1973739 -2.1973739 -3.8841215 -3.8841215
## 6 3.9614622 -0.74787078 2.6891996 -2.0115098 3.1174793 5.9085083
##      Gpr17      Gpr171      Gpr173      Gpr176      Gpr179      Gpr18
## 1 12.1653020 -3.5189031 3.869682 3.8340580 -2.0317390 -2.936097
## 2 0.3821364 -3.0762312 -2.103781 -2.3597589 -3.6565043 -2.270963
## 3 7.7209374 -3.8841215 -1.131317 -3.8841215 -1.1313170 -1.931739
## 4 3.7449545 0.2011049 1.437773 -1.1930004 -1.0774189 -3.884122
## 5 4.0791314 -3.8841215 1.168115 -1.4408855 -3.8841215 -3.884122
## 6 0.1386222 -3.1186116 4.262185 -1.3097364 3.5609304 -2.545956
##      Gpr180      Gpr182      Gpr183      Gpr19      Gpr20      Gpr21
## 1 5.4939883 0.03319041 0.9155858 5.160043 -3.3811982 -0.04028586
## 2 5.2278443 2.15850037 -0.4963348 1.763511 -2.0967683 -0.42032436

```

```

## 3  0.3033916  1.75372696  8.1151056  1.911138  7.2319696 -1.93173924
## 4  2.9623835  1.92185769  4.1441829  6.953871 -2.7497424 -0.69222494
## 5 -2.1973739  3.03285981  0.9041264  7.215009 -2.1973739 -3.88412153
## 6  4.8208530 -0.34093509 -1.6657853  6.713432 -3.4511394  0.20834781
##      Gpr22      Gpr25      Gpr26      Gpr27      Gpr3      Gpr33
## 1 -1.873342  1.812547 -0.03051637  2.3293332  1.3829923 -3.8841215
## 2 -1.211682 -3.656504 -2.29232239 -2.3377699  0.3928532 -3.8841215
## 3  6.376264 -3.884122 -1.93173924 -3.8841215 -3.8841215 -3.8841215
## 4  1.467373 -2.163382 -1.34145090 -2.3093398 -0.3110232 -3.6539444
## 5 -0.947172 -3.884122 -3.88412153 -3.8841215 -0.9471720 -2.8071174
## 6 -2.362848 -3.674482 -3.11861158 -0.8961047  4.3152894 -3.8841215
##      Gpr34      Gpr35      Gpr37      Gpr3711      Gpr4      Gpr45
## 1  3.2487472 -0.2639951  5.3267446  9.726625 -0.2029082  1.9134710
## 2 -2.2173133 -2.9956232 -2.6498048  1.785894  6.8247634 -3.6519623
## 3 11.4612922 -1.9317392  9.1675712 11.685511  6.6519873 -3.8841215
## 4  4.1367777 -1.9774705  7.5310986  9.713236  2.3574458 -1.9410550
## 5  3.5411883 -2.8071174  8.3072671  9.381824 -0.9471720 -3.8841215
## 6 -2.4341566 -1.2819779  4.4318561  9.992371  1.3378995 -1.5565902
##      Gpr50      Gpr55      Gpr56      Gpr6      Gpr61      Gpr62
## 1 -2.9494977 -3.45859151  8.210015 -1.8525406  0.13372843  3.4702061
## 2 -3.6565043 -0.05700603  5.076437 -3.6565043 -3.47660817 -1.7591046
## 3 -3.8841215 -3.88412153  8.858793 -3.8841215 -1.13131698  0.8617169
## 4 -0.4631421 -2.31241920  9.840476 -3.4989245 -0.82655776 -0.0798420
## 5 -3.8841215 -3.88412153  9.164000 -3.8841215  4.37399182  3.6830026
## 6 -0.6964992 -1.40696354 10.665178 -3.8841215 -2.28856954 -0.4243963
##      Gpr63      Gpr64      Gpr65      Gpr68      Gpr75      Gpr82
## 1  1.0020955  1.1335751 -2.834367 -2.02452029  2.9541386 -3.013356
## 2 -1.1939303 -3.2489909 -3.344469 -2.81741594 -0.5461695 -3.884122
## 3 -1.9317392 -3.8841215  4.328367 -1.93173924  4.5718465 -3.884122
## 4 -2.0556087 -0.9150163  2.883206 -0.06139484  4.0453051 -2.235133
## 5 -3.8841215 -1.4408855 -1.440886  0.84499419  4.0855320 -3.884122
## 6  3.0999445 -1.2015893 -3.490484  0.21203686  0.9294526 -3.118612
##      Gpr83      Gpr84      Gpr85      Gpr87      Gpr88      Gpr89
## 1 -1.769415 -1.0644002  4.6902339 -3.7669998 -0.4324397  5.0554489
## 2 -3.656504 -2.4179184  5.4384104 -3.8841215 -1.6777711  4.7009357
## 3  7.259684  6.1852328  7.1671055  0.8617169 -3.8841215  0.8617169
## 4 -1.895273 -2.6276608  5.8008963 -2.4180765 -1.0715298  5.6016968
## 5 -3.884122 -1.1730114  6.6157088 -1.1730114 -2.8071174  4.8240265
## 6 -2.484141 -1.9806404  1.9299089 -3.8841215 -0.5690707  4.3865577
##      Gpr97      Gpr98  Gprasp1  Gprasp2      Gprc5a  Gprc5b  Gprc5c
## 1 -2.2359711  3.580872  7.190349  5.562260 -2.4634108  7.167508 -1.324062
## 2  3.9287317 -1.853277  4.394050  3.341124  2.1174153  4.052320  2.772589
## 3 -3.8841215  6.399704  3.644828  6.632334 -1.1313170  7.623332  1.983840
## 4 -0.6626172  4.858631  6.749612  5.685435 -2.1694283  6.213067  3.806528
## 5 -3.8841215  4.282242  4.983322  5.402722 -3.8841215  6.948014  4.399903
## 6 -1.7139657  4.922493  7.149365  5.426366 -2.0142124  7.367555 -0.986921
##      Gprc5d  Gprin1      Gprin2  Gprin3      Gps1      Gps2
## 1 -3.7949831  3.944201 -0.38085543 -2.302273  4.933863  4.9175559
## 2 -2.9486615  1.046665 -3.88412153 -3.251585  4.003830  5.1189197
## 3 -0.6195262 -1.931739  0.05610664 -3.884122  5.616268  0.5144282
## 4 -2.3131647  3.213334 -2.57098527 -2.406157  5.348373  5.7046647
## 5  3.7409163  3.522440 -2.80711744 -3.884122  5.727261  5.1755806
## 6 -0.6254626  1.763370 -0.57885954 -3.171313  4.817851  4.9852280
##      Gpsm1      Gpsm2      Gpsm3      Gpt      Gpt2      Gpx1      Gpx2

```

```

## 1  5.8175822 5.9943876 0.7090101 3.452541 8.632703 6.454560 -3.432485
## 2  5.1763124 4.5616740 3.4871344 1.035442 1.969329 9.120392 -3.884122
## 3  -0.2425151 2.0530520 -0.6195262 7.402444 5.778328 9.402840 -3.884122
## 4  4.0313843 5.2585272 0.6007345 4.295467 5.315267 7.529538 -3.674937
## 5  2.7072879 4.5134425 -2.8071174 4.708518 5.010485 8.763811 4.564739
## 6  5.6938075 5.0387064 1.4604790 6.008965 6.780556 4.265532 -3.884122
##      Gpx3      Gpx4      Gpx6      Gpx7      Gpx8      Gramd1a      Gramd1b
## 1  4.783152 3.350330 -3.884122 4.4209719 3.8375524 7.3105668 4.91266148
## 2  2.435133 4.859390 -1.967709 5.7661939 3.7231800 7.5777131 3.18716278
## 3  3.478677 6.314180 -3.884122 6.9301180 8.5373700 0.3033916 -0.61952623
## 4  4.461590 4.908635 -3.884122 5.6197940 7.3752487 3.9844491 3.78462735
## 5  4.835464 6.263024 -3.884122 6.6773903 8.8820506 4.7852317 -0.04458439
## 6  2.127022 4.144212 -3.674482 4.2962750 5.0077976 7.5379905 5.56742329
##      Gramd1c      Gramd2      Gramd3      Gramd4      Grap      Grap2
## 1  2.5754516 -0.2554728 6.007767 5.711798 2.0166490 -3.0694106
## 2  0.1246307 -2.8952098 4.482006 4.512067 8.4700271 -0.9306696
## 3  3.8138844 -3.8841215 2.182248 2.462191 1.4798145 -3.8841215
## 4  3.1996315 -2.3539225 4.895052 4.281715 2.1716126 -3.6539444
## 5  3.6049537 -3.8841215 1.015582 3.341743 3.2421320 -3.8841215
## 6  4.1440551 -0.1589433 7.425967 7.707277 0.6461932 -3.8841215
##      Grasp      Grb10      Grb14      Grb2      Grb7      Grcc10
## 1  2.9723568 1.932590 5.6338297 6.723484 -3.39507831 5.878360
## 2  6.5464281 7.830660 6.3166436 7.025981 4.85044889 7.891751
## 3  -0.2425151 -1.131317 8.8606035 5.407483 -1.13131698 9.366339
## 4  -0.2258265 2.062673 6.3430345 5.586576 -3.04250385 8.453546
## 5  2.2178791 4.858072 8.2993730 6.258782 -3.88412153 9.566608
## 6  3.1115960 2.479235 1.3242309 5.439857 -2.76628147 5.059954
##      Greb1      Greb11      Grem1      Grem2      Grhl1      Grhl2
## 1  -0.3302128 0.6414422 -1.4187230 -1.416299 2.4244101 -1.1542672
## 2  -2.9901757 -1.8891850 -3.4243451 -1.933140 -0.3611225 -1.9540170
## 3  -1.9317392 -3.8841215 -3.8841215 -3.884122 2.4103803 0.5144282
## 4  -0.8089382 -1.9438487 -3.6036807 -1.861663 2.4803424 -0.9992697
## 5  -3.8841215 -3.8841215 -3.8841215 -3.884122 4.6707048 -0.5800187
## 6  4.4833120 -1.3268693 -3.1186116 -1.773411 6.9577446 -1.6873968
##      Grhl3      Grhpr      Gria1      Gria2      Gria3      Gria4
## 1  -0.98301696 4.988017 5.0730723 8.936280 7.1447175 7.5312272
## 2  -3.65196234 4.678697 0.6216275 1.620761 -0.9680492 1.2924159
## 3  1.26324902 7.105310 4.6521135 7.045003 1.8345785 -1.9317392
## 4  -1.99247630 5.306479 7.0113305 8.142467 2.0662935 2.0442747
## 5  -1.44088555 6.401567 6.5878007 5.874980 3.2190301 3.1474184
## 6  -3.15654382 3.789435 2.8045263 10.268408 3.2380611 0.2977239
##      Grid1      Grid2      Grid2ip      Griffin      Grik1      Grik2
## 1  6.4429918 5.1002469 2.8675405 -3.884122 4.8226690 6.13021356
## 2  -2.7285573 -2.9369560 -3.4766082 -3.483745 -2.1037807 0.20623221
## 3  3.6222316 -3.8841215 -1.9317392 -3.884122 -3.8841215 0.05610664
## 4  2.3894134 1.3505989 -3.6749365 -2.167979 -0.8547258 4.71361074
## 5  -1.7701038 -3.8841215 -3.8841215 -3.884122 0.0631199 4.59645805
## 6  6.0628452 5.3380778 1.0245163 -0.918411 1.2168729 4.62666371
##      Grik3      Grik4      Grik5      Grin1      Grin2a      Grin2b
## 1  7.5955354 5.7751744 7.6887079 4.3451267 -2.647665 -0.176050
## 2  -1.6528860 -1.8043136 1.8633411 0.2208489 -3.424345 -2.576859
## 3  3.5992759 -1.9317392 0.5144282 0.6984974 -1.931739 3.427465
## 4  0.1211834 0.6979063 2.2426842 0.8738602 -2.453378 6.407135
## 5  -1.7701038 3.8577022 3.2190301 1.3492478 -2.197374 5.123658

```



```

## 6 -0.5852726 0.3243697 7.9004468 3.0093106 -3.674482 2.493726
##      Grin2c      Grin2d      Grin3a      Grin3b      Grina      Grip1
## 1  2.8278599 3.54229387 5.5205085 1.6030133 7.553042 3.0322756
## 2 -1.3827134 0.42203509 -1.5353907 -0.1923917 5.952783 -1.3093987
## 3  4.1660102 -1.93173924 -3.8841215 -3.8841215 9.157785 -1.9317392
## 4 -0.6506068 -1.96741675 -2.7527634 -0.6615339 6.901229 1.5822640
## 5 -3.8841215 -1.77010377 -3.8841215 -3.8841215 7.098005 -2.1973739
## 6  7.4442870 0.01845044 4.5178581 0.9495894 8.258420 5.8737132
##      Grip2  Gripap1      Grk1      Grk4      Grk5      Grk6
## 1  0.95257610 5.814827 -3.092518 2.2543113 3.7233426 5.923964
## 2 -0.68968728 4.957594 -3.483745 2.5884174 6.1858673 6.365427
## 3 -3.88412153 1.834579 -3.884122 -3.8841215 -3.8841215 1.263249
## 4  0.03833397 5.778679 -3.884122 1.4367462 1.1562011 3.449345
## 5 -3.88412153 2.549557 -3.884122 -3.8841215 -3.8841215 2.217879
## 6 -2.61607951 6.113495 -3.674482 3.1256130 2.5128905 5.539043
##      Grm1      Grm2      Grm3      Grm4      Grm5      Grm6
## 1  2.1524264 -0.2194618 3.218340 2.3397836 5.87438155 -3.7949831
## 2 -2.1611633 -2.1919090 3.168469 -3.4837445 0.48715134 0.5521109
## 3 -1.1313170 4.5600064 9.170981 -1.9317392 1.98383951 -3.8841215
## 4 -0.1001107 1.4101719 7.304118 -3.8841215 3.20669324 -3.6749365
## 5 -2.1973739 1.9069861 7.764784 -3.8841215 -0.04458439 -3.8841215
## 6 -2.3726443 -0.5344860 9.410310 -0.8845668 8.37057040 -3.8841215
##      Grm7      Grm8      Grn      Grp      Grpel1      Grpel2
## 1  2.9771757 -0.2408824 6.832764 0.2957065 5.316898 4.9299340
## 2  0.4949526 -3.2489909 7.067908 2.5846815 6.698363 3.3805286
## 3  3.2908694 -1.9317392 9.906223 6.4390214 8.608789 0.8617169
## 4  1.4700851 -2.3904409 7.638200 0.3688765 7.639072 5.8145569
## 5 -2.8071174 -3.8841215 7.566280 -1.7701038 8.465012 5.2486958
## 6 -1.9583985 -0.4063236 6.972881 -1.5965104 4.336791 4.7056260
##      Grpr      Grrp1      Grsf1      Grtp1      Grwd1      Grxcr2
## 1 -3.8841215 -2.5093577 5.689445 4.85143931 4.2412982 -2.052644
## 2 -3.4837445 5.5602990 6.433207 0.04121968 3.2793682 -3.884122
## 3 -1.9317392 -3.8841215 1.753727 -1.93173924 -0.6195262 -3.884122
## 4  0.1765092 -3.4277009 5.437262 4.22541286 5.0206171 -2.982136
## 5 -2.1973739 -3.8841215 4.236959 3.97955048 4.6707048 -3.884122
## 6 -2.6212192 -1.1693643 5.580694 5.42539936 3.7211826 -3.451139
##      Gsc      Gsc2      Gsdma      Gsdmc      Gsdmc4      Gsdmd
## 1 -3.884122 -3.545526 -3.8841215 -3.88412153 -2.902409 1.4225152
## 2 -3.884122 -3.884122 -3.8841215 -3.88412153 -1.395701 5.2118166
## 3 -3.884122 -3.884122 1.0083330 0.05610664 -3.884122 -3.8841215
## 4 -3.884122 -3.884122 -1.0928505 -1.76990911 -3.884122 3.4595928
## 5 -3.884122 -3.884122 -1.7701038 -0.94717201 -3.884122 -3.8841215
## 6 -3.884122 -3.884122 -3.2808450 -3.88412153 -2.874450 1.4073736
##      Gse1      Gsg1      Gsg11      Gsg2      Gsk3a      Gsk3b      Gsn
## 1 5.136233 -2.110409 4.186314 -0.1604845 6.167101 7.199161 9.325495
## 2 5.196691 -2.895210 -1.197137 1.2199955 5.678969 7.178906 1.907912
## 3 5.074526 -3.884122 -3.884122 -3.8841215 1.479815 8.750313 10.724681
## 4 5.670462 -1.494042 1.071943 0.8785608 3.309658 9.550746 8.517976
## 5 4.259778 -3.884122 -3.884122 -1.7701038 4.609841 10.003221 9.635977
## 6 4.951554 -1.022615 6.216887 1.4533794 5.010663 7.690111 3.715145
##      Gspt1      Gspt2      Gsr      Gss      Gsta2      Gstcd      Gstk1
## 1 7.222154 3.5161071 4.796967 5.0295896 -3.8841215 3.8440934 3.5431281
## 2 6.922512 -1.0624988 4.767032 4.4524594 -3.8841215 3.4518988 4.7048765
## 3 3.006755 -1.1313170 5.420638 0.6984974 -1.9317392 -3.8841215 7.3790490

```

```

## 4 5.686808 2.3798777 4.618855 5.6735124 -2.9883388 -0.7183401 5.8362021
## 5 4.527614 -2.1973739 4.178282 6.7129651 -0.7519471 -2.8071174 6.6179183
## 6 6.609106 3.5035809 4.678203 4.7148864 -3.8841215 3.8697383 3.4522073
##      Gstm4      Gstm5      Gstm7      Gsto1      Gsto2      Gstp1      Gstp2
## 1 3.018664 6.522226 4.800576 4.401488 1.34596711 5.348545 -3.1415749
## 2 3.163748 6.174201 7.372430 3.538292 -0.33773193 4.171495 -2.5768592
## 3 4.790278 11.509607 7.510975 6.704022 0.05610664 8.956864 0.8617169
## 4 4.281758 9.763684 6.872011 5.331417 2.40876120 7.480810 -1.6518485
## 5 4.315294 10.771355 7.282723 5.172578 4.29886275 8.240722 -1.7701038
## 6 2.408144 6.408434 3.163060 2.327632 0.01204363 3.515603 -3.6744822
##      Gstt2      Gstz1      Gsx1      Gsx2      Gtdc1      Gtf2a1      Gtf2a11
## 1 0.05441208 5.193582 4.2534994 0.7454653 4.313399 4.567939 -3.298028
## 2 5.91734320 4.666269 -3.6519623 -3.8841215 5.228482 3.435032 -3.884122
## 3 -1.13131698 8.104955 -3.8841215 -3.8841215 7.317088 8.430069 -3.884122
## 4 3.89809787 6.572576 -3.8841215 -2.1335718 4.801637 6.918991 -2.790513
## 5 5.49456505 7.192207 -3.8841215 -3.8841215 5.304632 6.361251 -3.884122
## 6 1.64846678 5.798396 -0.1034324 -0.3843300 3.501290 5.146256 -3.156544
##      Gtf2a2      Gtf2b      Gtf2e1      Gtf2e2      Gtf2f1      Gtf2f2      Gtf2h1      Gtf2h2
## 1 4.804181 4.727670 4.842683 4.040943 5.858877 4.965687 6.202785 4.166659
## 2 5.684270 5.701798 3.541665 5.684562 5.709255 5.104563 6.238569 5.435003
## 3 7.218852 7.692750 7.764149 8.166766 1.983840 4.934814 7.465684 1.577013
## 4 7.164625 6.307642 5.394037 6.300432 6.659769 6.408257 3.807878 5.356467
## 5 8.294892 6.815674 2.286157 5.833752 6.552428 6.552428 4.141894 6.454451
## 6 4.625452 4.049676 4.323582 4.064960 5.716923 3.670367 5.805849 4.266478
##      Gtf2h3      Gtf2h4      Gtf2h5      Gtf2i      Gtf2ird1      Gtf2ird2      Gtf3a
## 1 4.485601 3.11256374 5.643037 8.681892 4.9763950 3.7273219 3.2216599
## 2 4.083816 3.27609778 5.872140 8.648653 5.9412956 3.1389039 3.2281466
## 3 3.374368 0.05610664 8.830119 4.271420 0.8617169 -3.8841215 -0.2425151
## 4 6.016697 5.01705074 7.926593 7.070032 3.7200877 3.1096172 -1.2335324
## 5 6.130017 5.91326464 8.659080 6.691096 -0.2876030 -0.7519471 -0.7519471
## 6 4.296188 3.30663500 4.529661 8.529528 5.5639828 4.0678638 1.6044335
##      Gtf3c1      Gtf3c2      Gtf3c3      Gtf3c4      Gtf3c5      Gtf3c6      Gtl3
## 1 7.298497 6.955812 4.1621187 6.330328 5.101152 4.264144 6.1218575
## 2 6.979225 6.686310 4.6952020 5.405417 5.418539 3.980839 6.2845449
## 3 3.107806 2.053052 0.3033916 3.401161 1.983840 6.795222 -0.2425151
## 4 5.318803 6.832994 4.8249715 4.358647 5.391864 6.751171 5.2843120
## 5 6.076397 4.869244 2.1943824 4.666442 6.548958 6.311609 6.9869987
## 6 7.269493 7.159993 4.7855816 5.840977 5.397385 3.563165 5.7569990
##      Gtpbp1      Gtpbp10      Gtpbp2      Gtpbp3      Gtpbp4      Gtpbp6      Gtpbp8
## 1 5.857894 2.32786728 6.043829 4.0039633 4.633167 3.0980017 2.8487585
## 2 5.889075 3.20882028 6.525057 4.3340060 5.958454 3.6938239 2.4140313
## 3 1.141414 5.09107550 1.141414 -1.1313170 8.387156 -1.9317392 -0.2425151
## 4 4.871309 4.19073264 3.637746 0.5681079 6.251847 0.3586147 4.1018376
## 5 5.205273 3.75704485 5.282517 0.5807664 6.568510 -3.8841215 4.2933437
## 6 5.762841 3.50657726 6.353322 3.7766940 5.190415 3.2918826 3.3348164
##      Gtse1      Gtsf11      Guca1a      Guca1b      Guca2a      Gucy1a2
## 1 2.1680308 -3.884122 -2.0226109 -3.409318 -2.767019 3.10561377
## 2 1.3753672 -3.217793 -1.1226908 -3.884122 -2.800098 2.26388691
## 3 6.5834580 -3.884122 -3.8841215 -3.884122 -3.884122 0.51442825
## 4 4.6830705 -2.925952 -0.8546069 -3.019028 -3.884122 3.37235346
## 5 -0.1609828 -3.884122 -3.8841215 -3.884122 -3.884122 2.78799553
## 6 2.5342785 -3.884122 -3.6607788 -2.524445 -2.640005 3.07228236
##      Gucy1a3      Gucy1b3      Gucy2c      Gucy2e      Gucy2f      Guf1      Guk1
## 1 5.3080255 5.308757 -3.356740 -1.561387 4.0198341 4.8214518 5.438048

```

```

## 2 4.5760308 5.478047 -3.884122 -3.483745 -3.4243451 5.0800506 5.562132
## 3 5.7263046 1.141414 -3.884122 -1.931739 -3.8841215 -0.2425151 7.066084
## 4 3.6419341 5.050309 -2.879082 1.375176 1.0935261 3.5735667 5.566755
## 5 3.1227355 6.134654 -3.884122 -2.807117 -3.8841215 3.1716861 6.854606
## 6 5.4987785 5.829337 -2.874450 1.457791 4.3142592 6.1703057 4.684419
##      Gulp1      Gusb      Gxylt1      Gxylt2      Gyg      Gyk      Gylt11b
## 1 -1.0919630 5.619624 4.7491373 -2.144175 6.372513 3.973287 -1.78426316
## 2 4.3780852 7.254512 5.5090206 -1.038023 6.330562 2.728042 -3.25158535
## 3 -3.8841215 1.911138 -0.6195262 -3.884122 8.475685 6.822734 0.05610664
## 4 3.2186478 5.504531 3.7747580 -2.031506 6.567143 4.689811 -0.83480734
## 5 -1.4408855 6.285437 1.2155742 -2.807117 6.595670 -2.197374 -0.42641489
## 6 4.7972773 5.346302 5.8657949 -3.268087 4.963599 6.245812 0.98960208
##      Gypa      Gypc      Gys1      Gzf1      Gzma      Gzmb
## 1 -1.64432453 -1.2154571 4.6938090 5.133309 -2.877482 -3.2326460
## 2 -0.09817212 2.9227503 3.4188548 5.251589 -1.155175 -3.4243451
## 3 -3.88412153 3.6222316 0.8617169 7.297612 6.412929 -3.8841215
## 4 -3.67493655 3.9343518 5.1072917 5.641539 -1.731089 -3.8841215
## 5 -3.88412153 3.5129733 4.2196053 4.154126 -3.884122 -3.8841215
## 6 -3.88412153 -0.3618772 6.1731911 5.494529 -3.674482 -3.8841215
##      Gzmm      H13      H1f0      H1foo      H1fx      H2afj      H2afv
## 1 0.155916019 6.842084 7.279184 -3.794983 3.8279151 5.121559 5.630293
## 2 0.116631629 7.008793 8.187017 -2.156251 3.4574488 5.430620 6.804155
## 3 -3.884121530 7.462508 6.857007 -3.884122 3.0749023 2.512206 6.600898
## 4 0.111733453 5.140701 6.190896 -3.884122 0.9722678 2.967772 7.363488
## 5 -3.884121530 6.460619 6.625625 -3.884122 2.4339276 3.691420 8.701889
## 6 -1.209535624 6.589521 7.124236 -3.451139 3.4550591 3.467626 5.059681
##      H2afx      H2afy      H2afy2      H2afz      H3f3b      H6pd      Haa0
## 1 5.2291476 6.807857 5.63273436 3.491387 8.542702 2.5138637 -3.654004
## 2 4.9520857 6.666100 2.75728473 4.671838 9.699292 4.6930478 -2.936956
## 3 0.8617169 6.779991 0.30339162 6.701329 10.326414 4.6632242 -3.884122
## 4 3.3051778 7.441398 3.47216573 6.272220 10.638359 1.8056400 -1.031837
## 5 4.6142748 8.027079 3.07206548 6.851793 11.162927 4.0000241 -3.884122
## 6 3.9413483 6.684079 3.34148070 3.280904 9.566449 1.9358262 -3.674482
##      Hapb4      Hace1      Hac1l      Hadh      Hadha      Hadhb      Hagh
## 1 5.431225 4.3793586 4.006190 6.137895 7.667753 3.902577 5.215638
## 2 4.509158 5.5698748 3.922804 7.670118 8.317584 4.835337 5.374978
## 3 -3.884122 0.3033916 6.986494 7.929717 8.482758 6.093753 8.544898
## 4 2.517897 2.9067593 6.009983 7.643180 7.670981 5.860457 6.044566
## 5 -1.440886 1.1681147 5.508923 8.366942 6.742630 5.050296 7.093248
## 6 4.287514 4.6497895 4.165495 6.280797 7.379514 4.127859 4.334583
##      Haghl      Hal      Hamp      Hamp2      Hao1      Hap1
## 1 5.441635 -3.23711726 -2.792596 -2.2088925 -2.2639127 6.740123
## 2 3.457126 -1.90984315 -3.884122 -3.8841215 -1.0502798 1.696590
## 3 1.008333 2.93522857 -3.884122 -3.8841215 -3.8841215 -1.131317
## 4 5.482121 -0.14320458 -3.884122 -2.0902036 -3.8841215 2.747915
## 5 5.826128 0.90412645 -3.884122 -0.7519471 -3.8841215 -3.884122
## 6 5.208909 -2.98624936 -3.280845 -3.8841215 -2.6783180 3.717749
##      Hapln1      Hapln2      Hapln3      Hapln4      Harbi1      Hars
## 1 4.4743723 1.5436666 3.0567297 1.14584812 2.3736479 6.175159
## 2 1.5978321 -3.8841215 5.4373021 -2.71985567 1.5557819 5.877884
## 3 5.5339231 -1.9317392 -3.8841215 -1.13131698 -0.2425151 7.957060
## 4 5.0543604 0.2535495 4.0166911 -1.54322462 4.3198343 7.495457
## 5 5.2256996 2.3082165 -0.9471720 -0.75194706 4.2254133 7.222288
## 6 8.4810932 -2.8376544 4.7526729 2.85662461 2.2443621 5.102460

```

##	Hars2	Has1	Has2	Has3	Hat1	Haus1	Haus2
## 1	4.822904	-1.4189497	3.10106874	-0.3270855	3.908777	2.642265	4.6506109
## 2	5.171837	-1.4747565	-3.88412153	0.1990572	5.167288	4.213165	5.0348083
## 3	1.577013	-3.8841215	-3.88412153	1.1414140	1.479815	7.501720	0.6984974
## 4	5.369992	-2.2143005	-1.66770747	-1.1358557	6.605347	6.003626	5.4379318
## 5	3.264870	-3.8841215	-3.88412153	-0.5800187	6.384797	6.710897	6.5126072
## 6	5.850632	-1.7503875	3.77564139	0.2808631	4.549040	2.809448	4.2747439
##	Haus3	Haus4	Haus5	Haus6	Haus7	Haus8	Havcr1
## 1	2.381437	1.75311157	3.211503	3.0913358	4.677493	3.6263253	-3.884122
## 2	4.023984	3.74953091	3.134248	3.9541057	4.608904	3.0244900	-1.703944
## 3	2.652618	-1.13131698	-1.931739	0.6984974	1.479815	0.8617169	-3.884122
## 4	4.748083	2.97767273	4.503915	3.4415223	5.771063	5.6022924	-3.884122
## 5	5.689943	0.96093015	5.120544	4.0791314	5.539549	4.0727023	-3.884122
## 6	4.334136	2.19069689	2.968082	3.6289385	5.278266	2.7276722	-3.884122
##	Havcr2	Hax1	Hbegf	Hbp1	Hbq1a	Hbq1b	Hbs11
## 1	0.7631696	3.3764800	4.892932	5.872592	-3.6128580	-2.7805757	5.836503
## 2	-2.5932726	4.1000211	7.450318	8.016466	-2.0647642	-1.1196391	5.302509
## 3	0.5144282	-0.6195262	1.577013	8.325550	-3.8841215	-3.8841215	4.810406
## 4	-0.3234459	4.3443681	3.033024	7.799817	-3.0689711	-3.8841215	6.913598
## 5	-2.8071174	5.2572257	1.688930	6.910653	0.9041264	-3.8841215	6.310243
## 6	-2.1068044	2.9711641	6.830501	6.719312	-3.6607788	-3.8841215	5.790643
##	Hc	Hccs	Hcfc1	Hcfc1r1	Hcfc2	Hck	Hcls1
## 1	-0.8791462	6.053955	7.355905	4.821885	4.3518765	0.7664523	2.8702254
## 2	-3.8841215	5.001804	6.888707	5.173341	4.1193980	-0.9683782	3.9121510
## 3	-3.8841215	7.171003	2.652618	7.624754	0.5144282	7.1012311	0.6984974
## 4	-1.4415408	5.158958	6.354908	7.553614	4.8755419	0.6460972	1.0164317
## 5	-3.8841215	5.668785	6.180221	8.352087	2.5120345	-2.1973739	-2.8071174
## 6	0.6229165	6.269945	7.066392	4.545810	4.7476829	-2.4248666	-1.1774342
##	Hcn1	Hcn2	Hcn3	Hcn4	Hcrt	Hcrt1	Hcrt1
## 1	-0.63707018	6.04036482	3.28743570	-0.04618142	-2.586609	0.4337356	
## 2	-2.56145378	6.05046370	-1.52022972	-2.10431032	-3.884122	-3.4243451	
## 3	-3.88412153	-1.93173924	-3.88412153	-3.88412153	-3.884122	-3.8841215	
## 4	2.80825378	-1.61995995	2.23120128	-2.87665220	-2.635537	-3.8841215	
## 5	3.66601961	-0.16098275	1.87778149	-3.88412153	-3.884122	-3.8841215	
## 6	-2.98094048	2.06555229	3.19104979	-1.52207689	-3.674482	-3.6744822	
##	Hcrt2	Hcst	Hdac1	Hdac10	Hdac11	Hdac2	Hdac3
## 1	-3.1120892	-2.2322148	2.628956	4.2317797	6.253050	6.506841	6.355670
## 2	-3.8841215	-2.9369560	3.371489	4.2904406	2.117229	6.642690	6.313083
## 3	-3.8841215	-1.9317392	4.396529	0.8617169	7.813602	4.810406	7.575617
## 4	-3.8841215	-0.4603629	3.498243	5.4266772	6.154874	5.939702	6.367496
## 5	-3.8841215	-3.8841215	3.541188	5.1483250	6.514980	7.287589	6.382200
## 6	-3.6607788	-3.0501908	2.749004	4.2015675	4.477306	6.312069	6.906263
##	Hdac4	Hdac5	Hdac6	Hdac7	Hdac8	Hdac9	Hdc
## 1	3.587182	7.114302	5.824165	4.592551	3.6615406	3.4545380	-1.5917487
## 2	3.898660	6.437059	4.756325	7.390116	3.6758342	2.9584731	1.6016321
## 3	4.085705	1.008333	4.435932	1.141414	0.5144282	0.3033916	-1.9317392
## 4	4.964978	4.348287	5.580492	3.001857	4.9189777	5.7683655	1.3446289
## 5	3.122735	4.679194	4.927410	-2.197374	2.3932290	5.0404455	4.6362406
## 6	4.661140	7.135240	6.290548	6.518397	4.7534154	4.6937802	0.1929293
##	Hddc2	Hddc3	Hdgfrp2	Hdgfrp3	Hdhd2	Hdhd3	Hdlbp
## 1	3.6114324	5.010595	6.1692870	5.757137	6.759889	2.253073	7.700426
## 2	4.8174514	4.804882	5.9314662	4.471573	4.861252	3.579418	9.100702
## 3	-0.6195262	1.008333	-0.2425151	2.780569	8.587076	7.145480	3.552239
## 4	4.6628965	5.679914	4.9712279	5.355360	7.514944	4.730178	6.814078

```

## 5 5.0697960 6.789449 4.9309687 6.424469 7.653948 5.430643 5.799121
## 6 3.6889233 3.650089 6.8076970 5.259160 6.242850 2.548985 7.789624
##      Hdx      Heatr1      Heatr2      Heatr3      Heatr5a      Heatr5b      Heatr6
## 1 0.4409160 5.1390376 3.647357 5.945207 5.8934707 5.4978093 4.912593
## 2 1.4399920 4.5576854 4.183637 5.097579 6.3494137 4.7531226 4.086610
## 3 -3.8841215 0.3033916 -1.931739 6.959708 0.5144282 0.5144282 3.290869
## 4 2.3267290 4.6445899 1.913139 4.805191 3.2331530 4.5093921 5.972919
## 5 2.4929006 1.4715792 3.046047 4.858072 3.4744738 1.4319435 4.618695
## 6 1.6154294 5.7329711 4.030299 5.473744 5.2352433 6.1474427 5.245316
##      Hebp1      Hebp2      Heca      Hectd1      Hectd2      Hectd3      Hecw1
## 1 4.192632 1.8416688 5.083039 6.414740 2.8681662 5.848939 1.5598928
## 2 4.645003 0.1977351 5.366559 8.372712 -0.2993061 5.814887 -1.0950042
## 3 7.435221 0.6984974 1.753727 5.066179 -1.9317392 1.375592 6.9392875
## 4 4.345853 1.4821400 2.643952 5.701939 1.2155294 3.535908 6.2584604
## 5 6.610170 3.4548318 -0.287603 5.482490 -3.8841215 2.413722 6.2112832
## 6 4.970049 -1.2347806 5.394227 7.497719 5.9137255 5.650762 -2.1313321
##      Hecw2      Heg1      Helb      Hells      Helq      Helt
## 1 4.28114975 2.2957627 3.033825 2.3118657 4.2447515 -3.444434
## 2 5.28526759 8.1375870 3.304807 4.2994585 3.3132243 -3.884122
## 3 -1.93173924 4.9976087 -1.131317 -0.2425151 -1.9317392 -3.884122
## 4 1.17259714 2.7699447 1.572213 4.1011661 1.6062571 -2.112642
## 5 1.93561130 0.0631199 1.620055 1.7221719 -2.8071174 -3.884122
## 6 -0.68065674 4.3424577 3.994783 3.9610387 4.3255947 -2.877778
##      Helz      Hemk1      Hepacam      Hepacam2      Heph      Heph11      Herc1
## 1 4.5027172 4.22644545 7.551005 -3.090924 -0.6400385 -3.884122 6.738652
## 2 5.5102608 4.07547652 1.255043 -3.344469 5.6222400 -3.656504 6.698673
## 3 0.6984974 0.05610664 6.925511 -3.884122 1.0083330 -1.131317 5.246901
## 4 3.7648503 4.73697827 6.227099 -2.297051 1.5662531 -2.545132 5.937620
## 5 1.1681147 4.85807164 6.810853 -3.884122 -2.1973739 -1.440886 2.018229
## 6 5.4520847 3.91880680 9.296454 -2.356144 4.1493049 -3.884122 7.778851
##      Herc2      Herc3      Herc4      Herc6      Herpud1      Herpud2      Hes1
## 1 7.417113 4.95007832 4.9376298 0.98110678 6.019268 6.286468 2.0429206
## 2 6.843527 4.23191263 6.0284030 4.18152254 7.823876 6.080207 7.6286822
## 3 2.242751 0.05610664 0.6984974 -0.24251506 9.687302 6.004840 7.7381150
## 4 5.461156 4.33256609 4.3810107 4.23693946 7.133824 4.755044 5.4160881
## 5 3.298318 2.04474935 2.9650523 -1.77010377 7.566280 4.148023 5.3794688
## 6 7.965858 5.05170361 6.0636691 4.98972726 6.079012 5.975485 7.7613027
##      Hes3      Hes5      Hes6      Hes7      Hexa      Hexb
## 1 -2.4881933 5.8562861 4.7475058 -1.3707136 6.826102 6.808682
## 2 -3.6565043 -0.6684094 4.8190542 -2.9369560 6.339499 6.428695
## 3 -3.8841215 -1.1313170 -1.1313170 -3.8841215 8.924331 11.646941
## 4 -3.8841215 2.6694206 4.0807392 -3.8841215 6.797113 5.233064
## 5 -3.8841215 4.6960233 5.2314831 -3.8841215 7.137043 4.460254
## 6 -2.1909585 9.0212546 4.5468160 0.1623023 5.972366 4.158457
##      Hexdc      Hexim1      Hexim2      Hey1      Hey2      Heyl
## 1 4.286264 5.7294095 1.3448146 6.5261143 3.5657680 2.60543016
## 2 3.083872 7.1946938 0.3470517 8.0640338 2.2318017 4.45006559
## 3 -3.884122 -0.6195262 -0.6195262 0.3033916 0.5144282 0.05610664
## 4 3.370516 4.1970690 4.4195374 2.4513655 1.2841286 4.57680324
## 5 -0.947172 4.3947578 3.7965946 4.0982486 -2.1973739 5.12365770
## 6 4.904717 6.1356596 2.3784417 7.5404088 5.5191149 4.83555346
##      Hfe      Hfm1      Hgd      Hgf      Hgfac      Hgs      Hgsnat
## 1 1.877547 -2.6324348 -3.677861 -1.036485 -3.6730449 6.482379 5.079237
## 2 5.074244 -3.8841215 -1.290485 -1.725260 -0.1043014 5.967669 5.860099

```

```

## 3  5.813659 -1.9317392 -3.884122 -3.884122 -3.8841215 1.375592 2.652618
## 4  3.530319  0.8788869 -3.498924 -3.884122 -2.2332893 6.117344 3.740438
## 5  4.160203 -2.8071174 -3.884122 -3.884122 -3.8841215 5.397587 4.479823
## 6  2.203294 -3.4511394 -2.439131  6.785010 -0.6396763 5.467836 5.072638
##      Hhat      Hhat1      Hhex      Hhip      Hhip11      Hiat1
## 1  0.6828841  1.6176559 -0.29860536  4.792422  2.1129713 6.590536
## 2  2.4346521 -0.8947357  6.18439391 -2.825432 -2.2235787 7.157415
## 3 -1.1313170  7.8235406 -1.93173924 -1.131317 -3.8841215 3.171443
## 4  1.1386952  2.8248504  0.20529699  4.500231 -2.0692363 4.242324
## 5  2.5309179  2.9084139 -2.80711744  5.334497 -3.8841215 4.930969
## 6  0.2587060  1.5624627 -0.07621889  4.949765  5.0435014 7.173305
##      Hiat11  Hibadh      Hibch      Hic1      Hic2      Hif1a      Hif1an
## 1  6.552378  6.062587  4.2902655 -0.7918599  4.04592025 7.419522 5.5552886
## 2  6.582546  5.555973  4.4274856  5.4649836  4.10317875 8.198349 4.7554999
## 3  7.575617  7.633254  0.6984974 -3.8841215  0.05610664 3.006755 0.3033916
## 4  5.503918  5.264161  5.3230053 -1.8864953  3.45613869 5.652165 4.4431475
## 5  6.351989  5.301886  5.1142976  0.9041264 -1.44088555 7.065186 4.2597782
## 6  6.417096  5.603648  5.0986989  0.8236643  4.60871931 7.418140 6.0347519
##      Hif3a  Higd1a      Higd1b  Higd2a  Hilpda      Hinfp      Hint1
## 1 -1.6910308  4.513401 -2.36000800  5.628648  3.240326  3.729786 6.550581
## 2 -1.7252598  4.499715  5.65301075  6.557701  8.145261  3.987295 7.789978
## 3 -1.9317392  4.256825  8.16481243  9.096605  7.203712 -1.931739 9.825073
## 4  2.6336722  5.302564  5.26069819  7.259769  5.465885  3.474330 8.923729
## 5 -3.8841215  5.653788  7.77075391  8.346102  6.931232 -1.770104 9.987286
## 6  4.4253157  4.499399 -0.06452856  4.668703  2.456472  4.672330 4.888307
##      Hint2      Hint3      Hip1      Hip1r      Hipk1      Hipk2      Hipk3
## 1  3.889036  3.178070  8.212874  8.688333  6.966626  6.549880 5.732873
## 2  5.330031  3.898069  8.679537  6.258614  7.929008  3.928995 7.845438
## 3  6.181374  4.212132  1.834579  1.479815  7.983895  1.375592 1.911138
## 4  3.894897  3.921952  5.859444  3.639442  6.174210  4.624754 4.727659
## 5  6.047182  4.916681  3.887312  3.622666  5.920443  2.329944 4.450369
## 6  3.291778  2.634198  7.783319  5.924313  7.297914  5.818504 6.205511
##      Hipk4      Hira      Hirip3  Hist1h1a  Hist1h1b  Hist1h1c
## 1 -0.907613618  6.113919  3.58891995 -1.8361389 -2.68193750 5.278824
## 2 -0.006617645  5.859380  3.98335298 -0.8126027 -2.22357870 5.545947
## 3 -3.884121530  3.575949  0.69849743 -3.8841215  0.05610664 3.232392
## 4 -0.352888693  3.119423  4.41813534  1.7065103  3.93005643 4.908321
## 5  0.718920975  3.474474  3.99323182 -1.7701038  4.60093290 7.120775
## 6 -0.064621367  5.935205  4.53577675 -1.4759464 -1.66007466 5.434255
##      Hist1h1d  Hist1h1e  Hist1h2ac  Hist1h2ad  Hist1h2bb  Hist1h2bc
## 1 -0.70134851  1.3805273  0.02606206 -2.0939406 -3.497841  4.632428
## 2 -1.27382505 -0.4711710 -1.75889318 -3.4766082 -3.884122  3.376791
## 3 -3.88412153  5.4909183 -1.93173924 -1.9317392 -3.884122  7.235696
## 4  0.40976436  2.4024165  2.28950094 -3.8841215 -2.560336  7.736586
## 5 -1.44088555  4.7694169  2.47350956 -3.8841215 -3.884122  8.434625
## 6  1.05740085  1.8431887 -0.80883518 -1.9043579 -2.972178  4.263156
##      Hist1h2bh  Hist1h2bm  Hist1h3a  Hist1h3i  Hist1h4c  Hist1h4f
## 1 -2.262853 -3.6778614 -3.427803 -3.0430332 -3.2143380 -3.884122
## 2 -2.936956 -3.2177929 -2.728557 -3.4766082 -3.1080374 -3.251585
## 3 -3.884122 -3.8841215 -3.884122 -3.8841215  2.9352286 -3.884122
## 4 -2.086001 -0.4755566 -3.498924 -3.4182176 -0.9816995 -3.884122
## 5 -3.884122 -2.8071174 -3.884122 -3.8841215 -2.8071174  1.306052
## 6 -2.600305 -3.6744822 -2.103662 -2.3628485 -3.5122488 -3.884122
##      Hist1h4i  Hist1h4n  Hist2h2ab  Hist2h2ac  Hist2h2bb  Hist2h2be

```

```

## 1  1.30567944 -2.7234923 -2.586349 -2.0691387 -1.7970664  1.9795188
## 2  0.29126597 -2.8174159 -2.120670 -1.4368220 -3.2177929  2.4601178
## 3  0.05610664 -3.8841215 -3.884122 -3.8841215 -1.9317392 -1.1313170
## 4  3.12446501 -3.6036807 -3.884122 -3.6539444  0.8699231  4.2207291
## 5  2.69059010 -3.8841215 -3.884122 -3.8841215 -3.8841215  2.7562522
## 6 -0.88952674 -2.7787628 -1.617384 -1.2598484 -1.1934877  2.4649388
##      Hist2h3c1 Hist3h2a Hist3h2ba      Hist4h4      Hivep1      Hivep2
## 1  2.59459012 4.244187  4.6741942 -3.58390652 5.4937209  5.2345862
## 2  0.91894130 3.717306  0.1166316 -2.46017225 6.4106619  6.4566141
## 3 -3.88412153 1.263249  6.4960588  4.96206120 0.5144282  0.3033916
## 4  2.20859607 7.041330  5.5975627 -0.06224207 3.9704297  3.1603863
## 5 -0.04458439 8.102390  6.6581953  1.11904070 1.5843436 -1.4408855
## 6  2.32082474 3.035131 -0.8174322 -2.22162020 7.5518748  6.2293209
##      Hivep3      Hjurp      Hk1      Hk2      Hk3      Hkdc1
## 1  3.1146723  0.4999437 6.516893  4.220145  1.25228170 -1.3762247
## 2 -0.8014081  1.0635322 7.456966 -1.560480 -2.88889413 -2.4823940
## 3 -3.8841215 -1.9317392 4.242081  4.227184  5.20949367 -3.8841215
## 4  3.5619537  2.0560517 6.711893  4.207124  2.13631901 -1.7268270
## 5  1.5477262  2.4929006 5.990329  3.749003  1.62005470  2.0182291
## 6  2.9674657  0.6657823 6.502546  5.124469 -2.33738216 -0.3935323
##      Hlcs      Hlf      Hltf      Hlx      Hmbox1      Hmbs      Hmcn1
## 1  3.6250244 5.190727 4.829727 -1.2787778  5.5950699 4.6599489 -1.129761
## 2  4.3081901 2.265491 4.905503  5.3904630  5.3554755 4.9081825  9.143243
## 3 -3.8841215 8.088565 8.162857 -3.8841215 -1.1313170 0.8617169 -1.931739
## 4  3.0053282 5.728794 5.146608 -2.5651461  2.9101657 4.0595502 -1.397847
## 5  2.2409993 4.225413 1.963680 -1.4408855 -1.7701038 4.5134425 -3.884122
## 6  4.5191536 6.389038 4.540768  2.0208951  4.8309115 4.2172801  2.615377
##      Hmg20a      Hmg20b      Hmga1      Hmga2      Hmgb1      Hmgb2      Hmgb3
## 1  6.377181 4.8821529 -0.9248998 -2.7960115 4.940944 4.129508  4.0381350
## 2  6.202453 6.8390705 -1.0843194 -3.4766082 4.929573 5.582391  4.3698910
## 3  4.571847 6.9045972 -3.8841215 -3.8841215 6.764598 4.085705  0.3033916
## 4  6.964682 2.7318070 -3.8841215 -2.5654344 6.534634 6.706521  5.4424737
## 5  6.354641 0.0631199 -3.8841215 -1.7701038 6.918740 6.881523  5.8933376
## 6  6.299318 5.8675740 -1.1970474 -3.1565438 4.299526 5.925053  5.1960245
##      Hmgcl      Hmgcll1      Hmgcr      Hmgcs2      Hmgn1      Hmgn2      Hmgn3
## 1  5.319237  3.0770782  8.430228 0.9998448 6.326429 2.879591  5.455587
## 2  5.479150 -2.0999208  7.177124 9.3689566 7.251577 2.124523  3.612881
## 3  2.462191  0.3033916  7.038618 7.3310888 5.910084 6.665864  6.759431
## 4  6.658931  4.7770799  7.284290 5.1844069 5.950982 8.383663  7.283346
## 5  7.692197  4.0000241  7.507312 5.4281265 6.993820 9.051212  7.428313
## 6  4.699872  2.7346483 10.274280 3.9874157 6.256841 3.125158  7.095263
##      Hmgn5      Hmgxb3      Hmgxb4      Hmha1      Hmnr      Hmox1
## 1  2.9310706  5.7986708 4.4192341  2.49041911 1.94009515 5.4506722
## 2  5.7392628  5.9527382 4.9969200  0.83111737 3.52041650 7.0480112
## 3  1.1414140  0.5144282 0.3033916  0.51442825 4.97103052 7.5578664
## 4  5.8121554  4.1035539 5.2345558  0.05581636 5.43736119 4.5237202
## 5  4.7372576 -0.5800187 3.1227355 -1.77010377 5.37163373 0.6514968
## 6  4.5822390  5.5225303 4.8303677 -2.02737996 3.06751704 5.2600583
##      Hmox2      Hn1      Hn1l      Hnf1a      Hnmt      Hnrnpa0      Hnrnpa1
## 1  5.361698  5.508547 5.219731 -2.0978701  2.760202 7.353691  1.2193577
## 2  5.219787  5.563235 5.319573 -2.5789021 -1.161238 7.698979  1.6404130
## 3  7.341501  8.409597 2.242751 -3.8841215  5.515649 8.492913 -1.9317392
## 4  6.814987  9.661000 6.503675 -1.3986479  5.087840 7.622228  1.7366992
## 5  7.799752 10.257231 4.729104  0.5063887  5.587689 9.049371  0.6514968

```

```

## 6 4.218803 4.241809 3.157041 -2.6783180 2.067114 6.662034 2.0282919
## Hnrnpa2b1 Hnrnpa3 Hnrnpab Hnrnpc Hnrnpd Hnrnpf Hnrnph1
## 1 9.174408 5.127690 7.854097 8.000021 6.663645 6.269781 7.773386
## 2 9.348764 5.676614 8.481197 8.382537 6.673838 7.439064 7.832300
## 3 7.472016 -1.931739 6.035090 8.366062 6.296450 6.899908 3.374368
## 4 9.783152 3.753089 7.089382 8.806259 6.213649 5.661684 7.700799
## 5 8.711491 3.493852 7.285506 9.393962 6.136196 6.078003 6.582154
## 6 10.202438 5.853584 6.614289 6.941374 6.804140 5.771869 8.709254
## Hnrnph2 Hnrnph3 Hnrnp1 Hnrnpm Hnrnpr Hnrnpu Hnrnpul1
## 1 6.000718 3.0912851 8.268203 6.750676 6.459176 8.601620 7.366135
## 2 6.543276 2.3929167 8.611042 7.137214 6.174156 8.639289 7.310946
## 3 5.465756 -0.2425151 9.002414 4.342260 6.000466 6.056316 2.242751
## 4 6.589528 2.9162632 7.599432 7.764990 6.905043 8.661903 4.382371
## 5 6.755733 3.7081079 8.803178 6.235948 5.976620 8.934182 1.261522
## 6 5.970868 3.5537861 8.095637 7.430843 6.244931 9.092785 6.633800
## Hnrnpul2 Hoga1 Homer1 Homer2 Homer3 Homez
## 1 7.507673 -0.9133982 5.4658364 4.425234 4.4413856 2.1098851
## 2 7.493492 1.3369982 4.4588114 -1.000544 5.7436970 2.6301512
## 3 2.780569 -3.8841215 0.6984974 1.577013 0.3033916 7.3135663
## 4 4.339292 1.0819366 3.4261926 4.617870 2.0899884 2.2443947
## 5 3.159603 -2.8071174 4.4404163 1.306052 1.8777815 3.6226664
## 6 7.085620 2.9887322 5.8243081 3.098351 4.4122981 2.4987448
## Hook1 Hook2 Hook3 Hopx Hormad2 Hoxb3
## 1 4.2953237 3.12725859 6.580177 1.050635 -3.425504 -3.88412153
## 2 1.0087869 1.03974496 6.714930 6.274143 -1.853277 -2.80009807
## 3 -0.6195262 0.51442825 7.006262 4.422917 -3.884122 0.05610664
## 4 0.3830570 1.70214947 6.155864 6.884550 -2.828528 -2.68802844
## 5 -1.7701038 -1.44088555 4.166254 7.101167 -3.884122 -3.88412153
## 6 3.6108750 3.82891077 7.769887 4.564168 -3.884122 -3.88412153
## Hoxb4 Hoxd1 Hoxd8 Hp Hp1bp3 Hpca Hpcal1
## 1 -3.568090 -3.4978411 -3.548678 -3.023538 7.752272 2.9368747 2.8657406
## 2 -3.424345 -3.8841215 -1.437663 -1.588411 7.351215 2.0081361 5.1385801
## 3 -1.131317 -3.8841215 -1.131317 -3.884122 3.622232 5.0828244 -0.6195262
## 4 -3.373504 -3.8841215 -3.653944 -2.749211 7.803558 4.3774300 3.5378963
## 5 -2.807117 -3.8841215 -2.807117 -3.884122 7.050538 4.6009329 4.0919043
## 6 -3.660779 -3.8841215 -3.884122 -3.674482 7.310011 0.7950091 0.4314202
## Hpcal4 Hpd1 Hpgd Hpgds Hpn Hprt
## 1 5.1948777 -0.3612813 1.4748995 1.2312038 -2.2353571 4.396657
## 2 1.6764426 -2.3597589 -2.5340902 -1.3779410 0.7094745 7.971703
## 3 5.2615960 -3.8841215 8.4654079 7.4172860 -3.8841215 8.999678
## 4 4.5360450 0.1401953 3.9378227 3.4752692 -2.1925510 6.992805
## 5 1.0155818 -3.8841215 1.5843436 2.5495573 -3.8841215 7.730479
## 6 0.5614241 0.1335655 0.9668011 -0.7495479 -2.8744502 3.903893
## Hps1 Hps3 Hps4 Hps5 Hps6 Hpse
## 1 3.7409174 4.246916 4.4724044 6.0966331 1.7967844 -2.36806818
## 2 1.9213129 5.797822 3.4233457 4.9404706 2.0202197 -3.24899092
## 3 -0.2425151 1.577013 0.5144282 1.9111385 -1.1313170 0.05610664
## 4 4.0564411 3.205036 4.6833323 4.9877479 0.2231549 -2.39015263
## 5 5.1421976 1.510155 2.4339276 3.5318445 0.1633391 -2.80711744
## 6 4.3574261 4.481085 5.0071004 5.7990481 1.7369591 -1.83754109
## Hpx Hr Hrasls Hrc Hrh1 Hrh2
## 1 -1.5647956 6.812809 3.69669328 -2.9603781 3.7614513 -1.5939463
## 2 -0.3305488 -2.057822 -1.28137695 0.1588344 -3.8841215 -3.4837445
## 3 -3.8841215 3.528133 -3.88412153 -3.8841215 -1.1313170 -0.6195262

```



```

## 4 -2.5100726 2.176544 0.45123567 -1.1874511 0.8676731 -2.4825790
## 5 -3.8841215 2.756252 -3.88412153 -1.7701038 -2.1973739 -3.8841215
## 6 -1.2655402 5.539989 -2.02879162 -2.8485783 5.0931352 -3.0097167
##      Hrh3      Hrh4      Hrk      HrnR      Hrsp12      Hs1bp3      Hs2st1
## 1 0.692639 -3.794983 3.10322975 -3.884122 3.168427 4.067648 6.675175
## 2 -2.033501 -2.660720 -2.41791844 -3.884122 3.899631 2.629144 5.940145
## 3 -3.884122 -3.884122 0.05610664 4.035284 7.495517 3.319243 1.008333
## 4 -2.485490 -3.884122 3.73303818 1.185010 7.460382 4.517811 4.915021
## 5 -3.884122 -3.884122 3.63144193 2.121505 7.859796 3.657453 4.729104
## 6 -2.053287 -1.493590 0.03321694 -3.884122 3.931109 3.373331 6.902825
##      Hs3st1      Hs3st2      Hs3st3a1      Hs3st3b1      Hs3st4      Hs3st5
## 1 3.973560 0.2149595 -2.7746981 -2.557389 0.6382600 -0.6353684
## 2 3.685246 -1.4376625 -3.2277824 0.169824 -0.3848919 -3.2489909
## 3 8.323800 -3.8841215 -1.9317392 -1.931739 -3.8841215 -3.8841215
## 4 5.137149 -3.4277009 1.5868352 -2.118581 -1.3487323 -3.4182176
## 5 6.475317 -3.8841215 4.3999029 -1.770104 -3.8841215 -3.8841215
## 6 1.700316 -1.4401619 0.6850458 3.320661 -2.0273800 -3.3798866
##      Hs3st6      Hs6st1      Hs6st2      Hs6st3      Hsbp1      Hsbp111      Hscb
## 1 -3.5882215 5.591289 3.2023107 0.2446619 7.533342 -2.8630270 2.661389
## 2 -3.8841215 4.516134 -0.1215785 -3.3356546 7.522888 -2.6273383 3.964113
## 3 -3.8841215 1.141414 -3.8841215 -3.8841215 10.227430 -1.9317392 6.039361
## 4 -1.8488396 3.591786 0.2861756 -3.8841215 9.459849 -0.8809941 4.599282
## 5 -2.8071174 0.718921 -3.8841215 -1.7701038 10.272301 -2.8071174 5.712863
## 6 -3.8841215 6.128060 -0.2823683 -0.8465097 6.366223 -2.4391309 2.047908
##      Hsd11b1      Hsd11b2      Hsd17b1      Hsd17b10      Hsd17b11      Hsd17b12      Hsd17b14
## 1 0.8519803 -2.0867498 -1.7320123 5.041800 6.096028 8.176095 -2.960144
## 2 -1.9023480 -2.0967683 -2.2235787 5.986751 8.227565 6.775701 -2.584973
## 3 9.8312434 -3.8841215 -3.8841215 8.502998 5.515649 8.127192 -1.131317
## 4 5.2897738 -3.6749365 -2.7492114 7.441639 3.645474 8.152639 -1.947948
## 5 6.0715686 -3.8841215 -3.8841215 8.286930 5.095393 7.870955 3.559696
## 6 5.5563867 -0.4543698 -3.1376752 4.710480 4.973903 7.774704 -3.156544
##      Hsd17b4      Hsd17b7      Hsd3b2      Hsd3b3      Hsd3b7      Hsd11      Hsd12
## 1 7.538336 6.033226 -3.350431 -2.5697575 3.566513 5.278219 5.632391
## 2 6.897131 3.704646 -3.227782 -3.8841215 6.469685 5.017339 4.212094
## 3 6.480440 8.620949 -3.884122 -3.8841215 8.046755 7.774432 1.911138
## 4 7.606843 5.235221 -3.884122 -1.1226253 5.732717 6.468347 6.012608
## 5 6.838591 4.816351 -3.884122 -3.8841215 6.541993 4.769417 5.504153
## 6 6.793899 7.011346 -3.379887 -3.2889060 4.856793 4.716638 6.822798
##      Hsf1      Hsf2      Hsf2bp      Hsf4      Hsf5      Hsh2d      Hsp90aa1
## 1 5.5484570 5.848525 -2.8909457 -2.2726318 -2.4755473 -3.010512 7.033412
## 2 5.2207214 4.574882 0.3068368 3.2240876 -2.7531074 -2.371376 7.230698
## 3 0.8617169 6.185233 -3.8841215 -1.9317392 -3.8841215 -3.884122 7.163198
## 4 4.4335095 6.338521 -3.0767504 -1.6017526 1.0879410 -3.884122 8.132712
## 5 3.5129733 7.240328 -3.8841215 -3.8841215 -2.8071174 -3.884122 7.830086
## 6 5.5751052 5.807040 -2.9479702 -2.0946010 -1.3258021 -2.765802 7.215726
##      Hsp90ab1      Hsp90b1      Hspa12a      Hspa12b      Hspa13      Hspa14      Hspa1a
## 1 10.599070 9.242769 3.3406558 0.5921434 6.287226 5.403788 6.2400272
## 2 11.460951 9.773215 2.9372884 8.1016290 6.537611 6.222840 8.2378473
## 3 9.701181 7.263340 0.5144282 -1.1313170 7.285080 6.966451 4.7281490
## 4 11.058741 8.897399 4.5587401 -0.5262392 6.900117 6.421461 2.4382351
## 5 10.460041 8.078924 5.3425355 2.3299438 6.762739 6.455686 0.7833343
## 6 9.487053 9.864364 0.7613052 1.1920723 6.469823 6.426656 4.9657358
##      Hspa1b      Hspa1l      Hspa2      Hspa4      Hspa4l      Hspa5      Hspa8
## 1 6.187269 1.6563395 4.867182 7.587407 5.4236314 10.021721 6.097101

```

```

## 2 8.820273 -0.2667366 4.188403 8.327270 2.0852552 10.588906 7.482261
## 3 2.462191 -1.9317392 7.572673 7.624754 0.8617169 9.875802 8.675467
## 4 1.498056 1.1665430 8.261362 5.312311 5.6458197 9.690622 9.021361
## 5 -1.440886 -2.8071174 8.533327 5.719051 4.3207304 8.581389 8.169075
## 6 4.553736 2.3073089 5.956729 7.142816 5.7281655 11.358964 6.366219
##      Hspa9      Hspb1      Hspb11      Hspb2      Hspb3      Hspb6
## 1 7.879775 -0.5742675 3.0398846 -2.37364272 -0.6115080 2.4697192
## 2 7.632377 7.1880937 3.1351115 1.67372975 -3.6519623 1.4484112
## 3 4.571847 2.3566392 5.3942077 7.77699181 -3.8841215 0.6984974
## 4 6.423680 0.2707186 5.0236614 0.06913466 -3.2878217 4.6640249
## 5 5.843226 1.3060516 6.1846999 2.67369676 -3.8841215 4.0791314
## 6 7.846966 1.0574792 2.2921367 -2.86265641 -0.5299662 3.5456070
##      Hspb7      Hspb8      Hspb9      Hspbap1      Hsppb1      Hspd1      Hspe1
## 1 -3.7949831 0.8906401 -0.2864538 1.040713 5.213942 6.423942 5.227631
## 2 -3.0762312 5.5849386 0.6724688 1.398693 4.481880 5.394791 4.844138
## 3 -3.8841215 6.9347100 -1.9317392 -1.131317 1.983840 5.581551 6.685069
## 4 -3.2091840 5.8062621 -3.8841215 4.319099 5.559379 7.421254 6.664764
## 5 -3.8841215 5.4256061 -3.8841215 3.772995 6.899798 6.288215 7.247481
## 6 -3.6744822 4.0568614 -1.5794421 1.852364 4.265794 6.261713 4.433915
##      Hspg2      Hsph1      Htatip2      Htatsf1      Htr1a      Htr1b      Htr1d
## 1 6.110587 8.169858 1.9168990 5.645435 -2.21074620 -3.514643 -2.896676
## 2 9.805055 6.496052 2.0974078 6.221701 -2.65774812 -3.884122 -3.884122
## 3 5.049340 7.292254 -3.8841215 7.483031 0.30339162 -3.884122 -1.931739
## 4 1.721936 7.012869 0.4025760 5.788433 -0.17140170 -3.884122 -3.114158
## 5 2.834338 4.315294 2.6566033 4.920266 -2.19737395 -3.884122 -3.884122
## 6 5.703005 6.922111 -0.3405268 5.750293 -2.39754982 -3.674482 -2.194289
##      Htr1f      Htr2a      Htr2b      Htr2c      Htr3a      Htr3b
## 1 -1.346896 -1.9132199 -1.50814190 -2.1869637 -2.8666741 -3.7566452
## 2 -3.884122 4.0913925 -1.15517480 -0.6174193 -3.6519623 -3.8841215
## 3 -3.884122 -3.8841215 -3.88412153 -3.8841215 -3.8841215 -3.8841215
## 4 -3.884122 -3.8841215 -2.09140996 -2.6900396 0.3214324 -3.8841215
## 5 -3.884122 -3.8841215 -3.88412153 -3.8841215 -3.8841215 -3.8841215
## 6 -3.674482 -0.3845134 -0.04670123 -3.1431739 -3.1565438 -3.5122488
##      Htr4      Htr5a      Htr6      Htr7      Htra1      Htra2
## 1 -1.0357166 2.0500802 -1.85549617 -2.0543618 6.760818 4.442354
## 2 -3.4243451 -3.3444694 -3.34446937 -2.3414404 7.803469 3.910439
## 3 -3.8841215 -1.9317392 -3.88412153 -3.8841215 9.891831 5.747339
## 4 -2.3256081 -0.3162781 -3.20918405 -3.1141576 6.217853 3.438944
## 5 -2.1973739 -3.8841215 -3.88412153 -3.8841215 6.786506 3.757045
## 6 -3.8841215 1.2163547 -0.03023639 -3.1713129 10.353474 4.489203
##      Htra3      Htra4      Htt      Hunk      Hus1      Hus1b      Huwe1
## 1 5.366053 -2.7179780 7.009187 5.7371667 5.2996163 -2.381968 8.174145
## 2 8.772783 -2.8888941 5.787921 4.2901021 4.6448070 -2.059766 8.116879
## 3 6.955195 -1.9317392 1.141414 -0.6195262 0.6984974 -3.884122 4.085705
## 4 4.453425 -1.6426191 3.910008 3.3995170 4.4940680 -3.327813 6.551139
## 5 4.959127 -3.8841215 3.242132 3.6314419 3.7490031 -3.884122 5.508923
## 6 4.278884 -3.6744822 7.486773 5.3796652 5.8136808 -1.302114 8.996006
##      Hvcn1      Hyal1      Hyal2      Hyal3      Hydin      Hyi
## 1 2.9460334 1.16120412 3.166417 -0.58801189 -2.7581515 3.4226651
## 2 2.2586266 3.51793093 5.591653 1.29198421 -2.3713762 1.5976350
## 3 -0.2425151 0.05610664 1.577013 -3.88412153 -3.8841215 6.0308076
## 4 0.8736579 5.06478076 5.891620 0.89692449 1.7105608 -0.9239806
## 5 -0.4264149 4.92026621 6.631105 -0.04458439 -1.4408855 -3.8841215
## 6 3.7532625 5.06278481 3.942457 0.65864165 -0.2616554 1.9104720

```

##	Hyls1	Hyou1	I830012016Rik	I830077J02Rik	Iah1	Iars	
## 1	1.5076000	7.155454	-1.256520	-1.8901897	4.082053	5.857699	
## 2	1.3158748	7.667475	-2.412250	-3.4766082	4.613027	5.672351	
## 3	-1.1313170	1.983840	-1.931739	-3.8841215	6.073075	7.025762	
## 4	2.8829348	4.806755	3.900313	-2.8255727	5.797339	6.214888	
## 5	3.0720655	5.596679	5.126764	-1.4408855	7.040690	6.335972	
## 6	1.9989854	7.096773	-1.057495	-3.4904843	2.817975	6.040118	
##	Iars2	Ibsp	Ibtk	Ica1	Ica1l	Icam1	Icam2
## 1	5.571926	-2.555441	5.0826011	4.2996281	3.9498488	1.681517	-2.6181017
## 2	5.994313	-3.884122	5.3103526	5.3759872	4.6513543	9.558844	8.7096580
## 3	4.181549	-3.884122	0.3033916	0.3033916	-3.8841215	1.008333	8.5206680
## 4	3.758820	-2.549523	4.6358505	4.1459347	1.6438138	2.466629	1.5912961
## 5	4.627494	-3.884122	4.7413169	4.1480228	-1.7701038	2.604073	2.8190554
## 6	6.339482	-3.512249	5.6225920	-0.8502524	0.6577144	4.573588	0.2360792
##	Icam4	Icam5	Ick	Icmt	Icos	Icosl	
## 1	-2.6432065	2.4044088	7.234239	6.3073529	-2.7953398	2.95187164	
## 2	-0.5234718	0.8324047	5.427939	6.6149266	-0.7970871	3.05957657	
## 3	-3.8841215	4.7068304	1.479815	0.6984974	-3.8841215	2.82081551	
## 4	-2.1570354	-1.3210559	4.944156	3.2270065	-1.7405662	5.89238163	
## 5	-3.8841215	-3.8841215	5.513677	-1.7701038	-2.8071174	4.98332174	
## 6	-3.1431739	-1.1265658	4.530434	5.5874044	-3.6744822	1.53025297	
##	Ict1	Id1	Id2	Id3	Id4	Ide	Idh1
## 1	4.559315	1.221401	5.775433	3.988902	2.1516255	6.681590	7.633934
## 2	5.432669	6.389515	5.268308	7.128995	1.5192460	5.941052	5.648658
## 3	7.153381	8.935830	10.771156	10.345292	6.6850687	3.793804	9.550389
## 4	6.672386	4.769879	9.916922	6.719504	5.8615073	5.495546	8.425317
## 5	7.816202	6.875071	10.726690	8.539459	6.9801446	5.658089	9.552239
## 6	3.640581	6.500607	8.806776	8.119764	6.8230287	7.330278	7.878304
##	Idh2	Idh3a	Idh3b	Idh3g	Idi1	Ido1	Ido2
## 1	5.439710	6.712119	6.551124	6.049386	4.23877257	-2.883807	0.4953139
## 2	5.987697	6.270360	7.293594	7.012242	2.29196486	-3.344469	-3.8841215
## 3	2.820816	7.899499	8.252025	9.216475	3.57594910	-3.884122	-3.8841215
## 4	5.284086	7.952268	7.325525	8.124982	2.22373458	-3.884122	-1.7137682
## 5	6.532655	7.805095	6.838591	8.789032	2.07079093	-3.884122	-3.8841215
## 6	6.837655	6.776841	6.817560	6.352136	6.28622072	-3.884122	-3.8841215
##	Ids	Idua	Ier2	Ier3	Ier3ip1	Ier5	Ier5l
## 1	7.151511	4.048124	4.581946	2.634134	5.101932	5.733455	2.4172896
## 2	5.911089	2.628368	9.950135	8.133372	5.687982	7.299933	5.5656437
## 3	2.935229	6.844860	2.242751	6.383000	8.388831	3.171443	-1.1313170
## 4	4.967768	6.198769	3.953416	4.967976	7.400279	5.523649	-2.6222161
## 5	5.228594	5.629902	2.372441	1.261522	7.910697	6.943617	-2.8071174
## 6	6.077340	5.485864	7.897754	4.388990	4.682580	5.457574	4.0521174
##	Iffo1	Iffo2	Ifi204	Ifi2712a	Ifi2712b	Ifi30	
## 1	7.1652235	4.726776	-3.5700264	-3.368260	-3.7669998	3.1921835	
## 2	3.7312989	5.232767	-3.2489909	-2.578902	-3.8841215	1.5158563	
## 3	-0.2425151	3.232392	-3.8841215	5.569791	-3.8841215	1.9111385	
## 4	3.1039401	2.971636	0.7257295	1.792308	-3.0689711	3.2979302	
## 5	3.6745361	3.772995	-3.8841215	3.454832	-3.8841215	3.0720655	
## 6	5.8753510	5.907511	-3.8841215	-3.674482	-3.8841215	2.4159877	
##	Ifi35	Ifi44	Ifih1	Ifit1	Ifit2	Ifit3	
## 1	0.5946211	-3.495736	-0.9800157	-3.0058117	3.9930659	-0.8805355	
## 2	5.4473558	2.703986	4.3195779	0.2306560	2.5877965	-0.1508156	
## 3	6.3592847	6.568762	-0.6195262	8.1221685	1.1414140	1.0083330	
## 4	2.8996250	-1.429655	2.4116789	3.8815226	5.6452615	4.6852403	

```

## 5  5.8786704  4.474956 -2.8071174  3.4349186  1.4319435  3.5960151
## 6  -0.3416388 -2.616080  0.4775500 -1.4267321  2.0557260  0.9008395
##      Ifitm1      Ifitm2      Ifitm3      Ifitm5      Ifitm7      Ifltd1
## 1  -2.7841664  1.2875494 -0.3689301 -3.767000  0.3877007 -3.276410
## 2   3.6491312  5.8416829  6.7224646 -1.818732 -3.8841215  2.665871
## 3   4.8691608  7.4007856  9.4989923 -3.884122 -3.8841215 -3.884122
## 4   3.9645611  6.4251214  6.4396137 -3.653944 -2.3524224 -3.498924
## 5   6.2488367  7.4765952  7.2120870 -3.884122  1.5101550 -3.884122
## 6  -1.3329382  3.3271583  3.0160198 -2.439131 -3.1565438 -3.512249
##      Ifnar1  Ifnar2      Ifnb1      Ifng  Ifngr1  Ifngr2      Ifnk
## 1  6.330585  5.539870 -3.884122 -3.884122  4.380687  4.438711 -3.5895933
## 2  9.531348  7.726531 -3.884122 -3.476608  6.132990  5.768171 -3.8841215
## 3  2.652618  5.074526 -3.884122 -3.884122  9.816079  3.374368 -3.8841215
## 4  6.396509  4.115269 -3.884122 -2.876652  6.454764  4.665889 -0.8727101
## 5  6.349332  4.110854 -3.884122 -3.884122  5.145265  5.751614 -3.8841215
## 6  7.031483  4.446803 -3.884122 -2.862656  4.630180  4.703981 -3.4511394
##      Ifrd1  Ifrd2  Ift122  Ift140  Ift172  Ift20  Ift27  Ift46
## 1  6.120593  2.303796  5.123023  5.719971  5.031277  4.999596  4.055459  6.193570
## 2  8.862837  3.551556  3.995251  3.435283  5.030375  5.483594  3.553685  5.309981
## 3  6.714741  1.008333  6.883375  1.008333  6.649196  7.600394  7.290464  6.997509
## 4  4.035703  3.740368  5.880949  5.183449  5.097429  6.180502  6.916616  7.673013
## 5  1.015582  3.464686  2.690590  4.816351  5.216981  6.524434  7.594042  7.987468
## 6  8.302149  3.375736  5.118153  5.526561  5.781421  4.178768  3.850909  5.134578
##      Ift52      Ift57      Ift74      Ift80      Ift81      Ift88  Igbp1
## 1  4.508953  4.408300  3.6234244  4.0724489  3.911750  3.2411494  5.474173
## 2  5.317148  2.983191  4.6282660  3.2486206  3.137286  3.8348565  7.389755
## 3  6.122214 -1.131317  1.2632490  0.5144282 -1.131317  0.5144282  6.902255
## 4  6.184808  4.078593  6.2164037  5.2026033  5.974817  4.3413674  5.947650
## 5  6.703633  3.454832  5.4654139  3.9657381  6.038960  2.0963708  7.386158
## 6  4.615177  5.010663  4.8130340  5.1594056  4.706881  4.4582273  4.574845
##      Igdcc3  Igdcc4      Igf1  Igf1r  Igf2  Igf2bp1  Igf2bp2
## 1  1.4056638  4.8139295 -1.072105  5.409256  3.887843 -3.7010282 -0.3104810
## 2  1.2264783 -0.6748536  1.121113  8.616851  6.493581 -3.6565043 -2.0597664
## 3 -0.6195262  1.8345785  1.008333  4.706830  3.347069 -1.1313170  0.6984974
## 4  3.6729728  5.7465264  3.927276  6.597487  6.144739 -2.7047662 -1.7870341
## 5  1.7864435  5.2741358  6.238822  7.114530  7.265914  0.3450364 -2.8071174
## 6  3.2342162  8.5125271 -1.538129  6.368905  3.179735 -1.8044498 -0.6012082
##      Igf2bp3  Igf2r  Igfals  Igfbp1  Igfbp2  Igfbp3  Igfbp4
## 1  1.19212225  5.361875 -2.523545 -3.7949831  5.069353  5.34942525  4.679798
## 2  2.21264066  6.403375 -2.948662  0.4923811  3.473907  6.38114174  8.706610
## 3  0.05610664  1.577013 -1.931739 -3.8841215  6.676869  0.05610664  6.583458
## 4  1.11535671  4.620558 -2.540472 -3.8841215  3.729777 -1.23851472  1.950355
## 5  3.59601511  5.237244 -2.807117 -3.8841215  5.211139 -3.88412153  2.329944
## 6  4.09086269  6.774509 -2.274528 -3.6744822  9.382074  1.33919116  5.544268
##      Igfbp5  Igfbp6  Igfbp7  Igfbp11  Igfn1  Ighmbp2
## 1  5.091163 -0.8752735  3.477311 -0.6669935 -3.0545033  3.9726310
## 2  1.691697  0.1926648  10.194676 -1.8456210 -3.6519623  3.5361827
## 3  3.599276  6.1658335  4.435932  0.3033916 -3.8841215 -0.6195262
## 4  5.617726  0.7872256  1.965283  6.2906778 -3.8841215  2.5358078
## 5  2.965052 -3.8841215  2.707288  7.7622891 -3.8841215 -2.8071174
## 6  7.729812 -1.2980289  3.342757  0.4844872 -2.2885695  4.4215205
##      Igj  Igln5  Igsf1  Igsf10  Igsf11  Igsf21
## 1  -2.7689074  5.8196239  2.1118725  4.6307536  4.5082279  6.4338797
## 2  -2.2769649 -1.5891766 -0.3511167  0.5230762 -1.8891850 -0.6290619

```

```

## 3 -3.8841215 -0.6195262 6.8375219 -0.2425151 5.4336732 -1.9317392
## 4 -0.7325412 0.7360877 2.1828413 3.8603947 5.4886022 2.3628123
## 5 -3.8841215 0.8449942 -2.8071174 0.7189210 6.4544507 2.2637547
## 6 -1.7179752 4.6419061 6.4226232 5.0428244 6.5831932 4.5353051
##      Igsf3      Igsf5      Igsf6      Igsf8      Igsf9      Igsf9b
## 1  3.1904812 -2.8676703 -0.08197210 7.284137 1.26184143 5.648135
## 2  0.5873773 5.8048847 -1.43766251 4.864184 -1.01777439 -3.884122
## 3  7.7485850 -1.9317392 0.51442825 2.119096 3.91029476 -3.884122
## 4  8.1140439 -1.1232380 3.06200792 6.298655 4.14884856 -3.144449
## 5  7.8546523 4.3261459 -0.04458439 7.447696 0.65149678 -2.807117
## 6  5.9774512 -2.0273800 1.25330175 6.207001 -0.07368873 -2.372644
##      Igtp      Ihh      Ik      Ikbip      Ikbkap      Ikbkb      Ikbke
## 1  0.5595954 -2.870311 6.301238 4.225753 5.807862 5.419066 0.1043592
## 2  3.6045936 -2.948662 6.709637 4.743916 4.749375 6.355639 0.8343639
## 3  0.8617169 -3.884122 5.877063 6.920890 5.472088 3.965193 -1.1313170
## 4  4.1088706 -1.730870 7.222598 5.176131 6.279913 5.418514 -0.1908871
## 5  5.5557751 -3.884122 6.814711 6.105032 5.219893 4.405030 -1.7701038
## 6  1.1509870 -1.895442 6.527537 5.675021 6.202133 6.691388 2.8315554
##      Ikbkg      Ikzf1      Ikzf2      Ikzf3      Ikzf4      Ikzf5
## 1  5.169445 1.6649345 3.30417841 -3.6128580 2.1817923 5.512550
## 2  5.328127 -0.3398165 0.77204417 -1.5186703 -2.4601722 5.485372
## 3  5.091076 -1.9317392 1.57701280 -3.8841215 -0.2425151 6.106020
## 4  5.998581 0.9288500 4.50015449 -2.6123086 3.0148483 6.027153
## 5  4.927410 -2.1973739 3.93061746 -3.8841215 -1.1730114 5.142198
## 6  5.583441 -2.6160795 3.77117535 -3.2372533 2.9719164 4.971056
##      Il10      Il10ra      Il10rb      Il11      Il11ra1      Il12a
## 1  -3.7235669 2.3060121 2.6907613 -0.7052794 3.632908 -3.4789689
## 2  -3.2515854 -0.6592125 6.7052126 -2.1562509 6.514220 -3.8841215
## 3  -3.8841215 0.5144282 8.1530381 -3.8841215 6.623828 -3.8841215
## 4  -3.8841215 2.8623007 4.2809175 -0.8258829 4.932847 -3.0823831
## 5  -2.8071174 -0.1609828 3.8577022 -3.8841215 5.694137 3.5318445
## 6  -2.4391309 -1.3268693 3.7564047 -1.0179658 5.567160 -2.6783180
##      Il12b      Il12rb1      Il12rb2      Il13ra1      Il13ra2      Il15
## 1  -3.568090 0.47740149 -0.1773245 1.4358851 -2.8909019 -1.9613035
## 2  -3.424345 -2.05976639 -1.8532775 6.7708575 -3.2277824 3.5195868
## 3  -3.884122 -1.93173924 -1.9317392 4.4229170 -1.1313170 5.2094937
## 4  -2.876652 0.17642243 -0.4367811 3.0849344 0.4409073 0.8601172
## 5  -3.884122 1.01558177 -2.8071174 0.7189210 3.5129733 3.5596964
## 6  -2.478408 -2.84857827 0.4520731 4.1211404 -3.6744822 -0.8538039
##      Il15ra      Il16      Il17b      Il17c      Il17d      Il17ra
## 1  0.2663536 -0.1962778 -2.29411237 -1.9914940 4.48919156 4.078063
## 2  2.5288493 0.1444430 -3.47660817 -1.1298480 -1.90984315 2.410258
## 3  2.1190956 7.4074084 -1.93173924 -3.8841215 -1.93173924 6.517645
## 4  1.3091295 3.0132583 -0.95630963 -3.8841215 0.34427515 1.053458
## 5  -0.2876030 -0.7519471 2.26375475 -3.8841215 -3.88412153 2.512034
## 6  4.1214516 -0.4516524 -3.45113945 -2.9479702 3.28384204 2.649087
##      Il17rb      Il17rc      Il17rd      Il17re      Il18      Il18bp
## 1  0.3577301 -0.8862858 3.2578562 -3.79498311 5.10391591 1.7109212
## 2  0.7766774 4.6045768 5.5300318 0.42360542 -0.08841955 1.3409767
## 3  -1.1313170 -0.6195262 -1.1313170 -0.61952623 8.90866127 -1.1313170
## 4  1.3261016 -0.3726498 1.5048708 -2.59569213 6.61167449 1.3675994
## 5  5.5763722 2.0182291 -2.8071174 -2.80711744 7.38356292 0.1633391
## 6  -0.5567069 2.3228486 6.9844562 -2.97217796 7.28051967 3.4502775
##      Il18r1      Il18rap      Il19      Il1a      Il1b      Il1f5

```

```

## 1 -3.884122 -3.8841215 -3.794983 1.71602095 -1.5822530 -3.8841215
## 2 -2.270963 -0.2595839 -2.470541 -1.65511146 -1.3480299 -3.8841215
## 3 -3.884122 -3.8841215 -3.884122 -0.61952623 -3.8841215 3.2619268
## 4 -3.029652 -3.8841215 -3.884122 -0.70891324 -0.9058225 0.1152127
## 5 -3.884122 -3.8841215 -3.884122 -1.44088555 -2.1973739 1.2155742
## 6 -3.884122 -1.5205505 -3.352813 -1.52055053 -3.3528132 -3.8841215
##      Il1f9      Il1r1      Il1r2      Il1rap      Il1rapl1      Il1rapl2
## 1 -3.8841215 -1.2185625 -2.3601103 7.964919 2.3615963 -3.474135
## 2 -3.4766082 6.5026996 -0.2749195 4.939434 -3.4837445 -3.076231
## 3 0.5144282 6.9731632 1.1414140 2.356639 -3.8841215 -3.884122
## 4 -1.9918332 2.1958523 -0.8212120 5.349823 1.5230779 -3.381881
## 5 -1.4408855 2.9510998 -0.2876030 3.568862 2.1943824 -3.884122
## 6 -3.8841215 1.7581618 -3.6744822 4.940208 1.6156791 -3.674482
##      Il1r1l      Il1r1l2      Il1rn      Il20rb      Il21      Il21r
## 1 -2.857033 -1.9263061 -3.5282697 -0.03821056 -3.495736 0.3985840
## 2 -2.728557 2.0496633 -2.8174159 2.89297224 -3.884122 -1.6703085
## 3 -3.884122 -1.1313170 -0.6195262 2.30081861 -3.884122 1.7537270
## 4 -1.719923 -0.9523799 -1.6702572 -0.40450326 -3.884122 -0.1223638
## 5 -3.884122 -2.8071174 -1.1730114 -0.16098275 -3.884122 -3.8841215
## 6 -3.674482 -3.8841215 -3.8841215 1.31213570 -2.185085 -3.1186116
##      Il22ra1      Il23a      Il25      Il27      Il27ra      Il2ra
## 1 -3.8841215 1.8890360 -1.5209186 -3.794983 -0.6425939 -3.1997754
## 2 -3.8841215 -1.8532775 -3.6519623 -3.884122 4.7951836 -2.3414404
## 3 1.1414140 -3.8841215 -3.8841215 -3.884122 -3.8841215 -3.8841215
## 4 -1.5359716 -1.3983040 -1.4571086 -3.884122 -0.2949716 0.1679928
## 5 -0.9471720 4.8692438 -2.8071174 -3.884122 -3.8841215 -3.8841215
## 6 -3.8841215 -2.3524456 -0.9589225 -3.884122 -1.5085551 -3.4511394
##      Il2rb      Il2rg      Il31ra      Il33      Il34      Il3ra
## 1 -3.040775 -1.9697638 -2.2881040 1.08414705 1.6557513 0.002565362
## 2 -0.874151 7.6426045 -3.6519623 -1.28969346 3.2434172 4.357825914
## 3 -3.884122 -1.9317392 -3.8841215 -3.88412153 6.5298365 -3.884121530
## 4 -2.563525 1.7025667 -1.5996973 4.80320002 3.7378130 -1.326876326
## 5 -3.884122 2.6217964 -3.8841215 6.07960676 5.6144935 1.431943519
## 6 -2.786374 0.2242542 -3.2808450 4.65837978 0.4748918 -0.165697594
##      Il4      Il4i1      Il4ra      Il5      Il6      Il6ra
## 1 -3.458592 -3.2224136 2.7164491 -3.767000 -3.3171931 2.09321441
## 2 -3.884122 -2.1043103 6.5865108 -3.651962 0.6050707 2.65148564
## 3 -3.884122 -3.8841215 7.6886775 -3.884122 -3.8841215 0.30339162
## 4 -2.436594 -2.9159774 2.8826921 -2.828528 -1.8612783 0.49436315
## 5 -3.884122 -3.8841215 0.1633391 -3.884122 -3.8841215 -1.17301144
## 6 -3.027614 -3.0859991 4.3248760 -3.674482 -1.5965104 0.03079686
##      Il6st      Il7      Il7r      Ildr1      Ildr2      Ilf2      Ilf3
## 1 6.877799 -3.8841215 -0.9538786 -1.511034 2.687363 6.800680 7.220145
## 2 7.926686 -0.4283426 -2.2862805 -1.759105 7.251206 6.223902 6.551676
## 3 2.607316 -3.8841215 5.3604744 -3.884122 1.375592 8.724026 4.000664
## 4 4.958194 -3.8841215 0.3329963 -3.287822 5.267286 8.515190 8.763356
## 5 5.076238 -3.8841215 -3.8841215 -2.197374 4.522906 8.852801 8.190389
## 6 7.607444 -3.4511394 -3.8841215 -1.562151 6.488418 5.794179 6.997373
##      Ilk      Ilkap      Ilvbl      Imp1l      Imp2l      Immt      Imp3
## 1 7.165051 5.595654 5.725612 3.113277 1.3380897 6.834673 5.186669
## 2 7.117322 6.077157 5.174064 3.755697 1.3028244 7.085917 5.996079
## 3 8.366062 5.593217 7.869834 6.598006 -0.2425151 3.667075 4.461615
## 4 7.020649 4.132763 5.583077 5.297062 2.4377870 7.746305 3.788679
## 5 7.321199 4.013514 4.460254 6.469211 4.0466955 6.628915 5.299135

```

```

## 6 6.542911 5.691137 6.108799 2.514339 -0.8707218 6.873701 4.078002
##      Imp4      Impa1      Impa2      Impact      Impad1      Impdh1      Impdh2
## 1 5.121597 5.731698 1.2354384 5.637911 7.533600 4.929668 2.902537
## 2 5.286799 5.532826 3.1509484 4.466175 6.644336 7.898156 3.372381
## 3 6.660329 4.134422 -1.1313170 10.141652 4.629632 -1.931739 1.911138
## 4 6.500759 7.075084 -0.1523004 8.728832 5.760576 2.246417 3.415918
## 5 6.916049 6.674209 -2.1973739 8.675083 5.869427 1.688930 3.683003
## 6 4.149228 5.750800 4.0960077 7.549167 7.145963 2.965887 5.881705
##      Impg2      Ina      Inadl      Inca1      Incenp      Inf2
## 1 -0.4000588 3.5219529 2.46582137 0.6565279 3.7519473 5.6925066
## 2 -0.1421452 -0.6342708 1.74536834 0.4220351 4.1567231 6.7694980
## 3 -3.8841215 -3.8841215 0.05610664 -3.8841215 0.8617169 -0.6195262
## 4 0.2268999 3.0386325 2.37557289 2.7764080 3.9041583 3.7862194
## 5 -3.8841215 2.1215049 2.81905543 1.9069861 -1.1730114 2.4929006
## 6 1.9337821 -1.2824799 3.33554484 2.5242186 4.6829937 4.8927770
##      Ing1      Ing2      Ing3      Ing4      Ing5      Inha      Inhba
## 1 5.2330161 3.943369 4.828829 5.971484 3.3122530 2.2984844 -2.9102256
## 2 6.1215781 5.481320 5.459443 5.460259 4.6645549 -2.6273383 -3.6565043
## 3 0.6984974 1.008333 1.008333 7.336304 0.3033916 -0.2425151 -1.9317392
## 4 5.2583955 2.412199 6.296237 6.379421 5.4886321 0.5218957 3.5381526
## 5 4.6142748 -3.884122 5.400157 6.494684 5.2198928 -2.8071174 3.9657381
## 6 4.7052928 4.518632 6.032385 5.851569 4.2025281 3.0447979 -1.2627741
##      Inhbb      Inhbc      Inmt      Ino80      Ino80b      Ino80c      Ino80d
## 1 4.4873777 -1.152589 -2.9076427 4.925774 4.4293725 4.352858 5.555532
## 2 2.9037618 -3.884122 -3.8841215 5.522064 4.9414622 5.475273 5.737619
## 3 0.3033916 -3.884122 -3.8841215 1.141414 -1.9317392 1.008333 1.263249
## 4 2.7201494 -3.287822 0.8456545 3.781944 0.7415278 5.522902 4.633787
## 5 4.2311979 -3.884122 -3.8841215 1.906986 1.8777815 6.068341 5.007118
## 6 5.2370305 -3.490484 -3.8841215 6.189408 3.4228268 3.927557 6.917244
##      Ino80e      Inpp1      Inpp4a      Inpp4b      Inpp5a      Inpp5b
## 1 4.1004986 3.4738129 6.326634 -0.5436396 4.6031195 5.92278461
## 2 3.8641808 4.9945452 4.301151 3.2620113 5.9964884 5.32601413
## 3 -0.6195262 -0.6195262 7.318845 -1.9317392 -0.6195262 0.05610664
## 4 4.5613736 4.1489841 6.518515 2.7629957 2.5885003 5.01700966
## 5 3.8725830 3.7887709 7.126994 -1.7701038 3.7965946 5.13295742
## 6 3.7242432 4.7125765 5.249088 1.6371547 4.8233750 6.21590963
##      Inpp5d      Inpp5e      Inpp5f      Inpp5j      Inpp5k      Inpp1l
## 1 3.5787445 4.4685129 6.361381 2.0548853 4.994001 8.3821562
## 2 5.6859847 4.1108637 6.323540 -0.9756618 7.182983 7.0102626
## 3 1.3755916 -0.2425151 2.935229 -0.2425151 6.480440 0.3033916
## 4 2.6612252 3.9690031 8.362310 2.4689785 6.787045 2.7246875
## 5 -0.7519471 4.0401199 7.626777 -0.7519471 7.126218 1.4715792
## 6 3.4841338 5.1153460 6.534215 4.7582893 4.849167 7.9966833
##      Ins2      Insc      Insig1      Insig2      Ins13      Ins15      Ins16
## 1 -3.8841215 3.44772125 8.033888 4.329854 -3.790167 -3.408703 -2.5075543
## 2 -3.3356546 -1.12876348 6.416665 5.023188 -1.455183 -3.884122 -2.9369560
## 3 -3.8841215 0.05610664 7.775713 6.274882 -3.884122 -3.884122 -1.1313170
## 4 -2.9426158 5.01956330 5.956792 5.641054 -3.884122 -2.585308 1.7720813
## 5 -3.8841215 6.52207610 7.283420 6.168210 -3.884122 -3.884122 1.9069861
## 6 -3.8841215 -3.51224876 9.634353 4.914103 -3.451139 -2.409427 -3.1186116
##      Insm1      Insm2      Insr      Insr1      Ints1      Ints10      Ints12
## 1 1.4805853 -2.3154905 6.180549 -3.090321 7.151052 6.048515 3.61720596
## 2 -2.9956232 -2.6793155 8.532254 -2.766249 5.728038 5.102517 4.84283676
## 3 1.0083330 -3.8841215 1.263249 -3.884122 1.008333 7.470436 0.05610664

```

```

## 4  4.9546608 -3.6749365 4.490143 -3.884122 4.431312 6.421561 4.91704469
## 5  4.6621657 -3.8841215 5.114298 -3.884122 3.559696 3.958782 3.53184450
## 6  -0.7399636 -3.5122488 7.160948 -3.674482 7.024344 6.043424 3.71024193
##      Ints2      Ints3      Ints4      Ints5      Ints6      Ints7      Ints8
## 1  5.385941 6.302675 5.808993 4.2691228 4.582157 4.662100 4.7962811
## 2  4.822970 6.001722 5.087832 4.2719021 5.896538 4.294643 5.3220454
## 3  1.008333 6.687792 6.056316 0.3033916 2.696541 3.872500 0.3033916
## 4  5.726081 5.474606 6.963863 3.5779860 4.252574 5.966815 4.3958838
## 5  5.010485 4.460254 6.058614 3.4248580 4.248414 4.059758 3.2761057
## 6  6.112486 6.288527 5.909463 4.2321611 5.723252 4.948253 5.8350441
##      Ints9      Intu      Invs      Ip6k1      Ip6k2      Ip6k3      Ipcef1
## 1  4.229715 2.5895687 3.851368 7.674833 5.915975 -2.376959 -0.8541088
## 2  4.327018 0.2689993 4.278620 7.871667 5.089152 -2.461040 -1.2529222
## 3  3.928827 -1.9317392 -3.884122 7.857795 5.704958 -3.884122 -1.1313170
## 4  6.112564 2.9906614 2.580628 6.548919 5.882895 -1.822069 -1.1503387
## 5  5.997135 -3.8841215 0.718921 5.548843 5.831850 -3.884122 -3.8841215
## 6  3.801998 4.3503892 3.945068 7.598444 6.063462 -1.030667 -2.3726443
##      Ipmk      Ipo11      Ipo13      Ipo4      Ipo5      Ipo7      Ipo8
## 1  5.568879 5.245264 7.665351 6.175723 7.527128 6.3361714 6.167866
## 2  7.481128 6.753018 4.786634 5.858271 7.085771 7.5629830 5.761920
## 3  6.782541 8.396341 6.169734 1.753727 5.808664 4.8104064 5.066179
## 4  3.388647 5.919694 5.920919 6.048903 7.076282 5.3084823 5.198559
## 5  -1.440886 4.276659 7.096421 5.323708 6.027371 2.6736968 5.618913
## 6  5.299685 5.203476 6.596922 6.343270 7.001152 6.8568060 6.022494
##      Ipo9      Ipp      Ippk      Iqca      Iqcb1      Iqcc      Iqcd
## 1  7.246871 3.8581659 4.1388757 -1.797470 4.10313151 2.770092 -0.3606637
## 2  7.749654 3.1771409 5.0069561 -1.677771 4.11649334 2.578877 -0.1726889
## 3  3.261927 0.3033916 0.8617169 -3.884122 0.05610664 3.853225 -3.8841215
## 4  6.587469 3.3399325 3.6677523 1.202902 5.46867145 5.001843 1.1203719
## 5  5.412937 2.6217964 4.6664416 4.148023 5.44564725 4.450369 -2.1973739
## 6  7.462165 3.5602027 3.5231766 -1.821514 4.72099638 2.847912 2.0956101
##      Iqce      Iqcg      Iqch      Iqcj      Iqck      Iqgap1
## 1  4.7775964 -1.4596124 -1.5219045 -2.638228 0.07069651 4.931917
## 2  4.7157339 5.4411034 -3.6565043 -3.884122 0.80277526 9.131886
## 3  0.3033916 -1.1313170 -3.8841215 -3.884122 -1.13131698 3.891521
## 4  4.7101069 3.3004781 -2.4474669 -3.884122 2.14793116 7.222672
## 5  3.7570449 -3.8841215 -3.8841215 -3.884122 4.39475776 5.961040
## 6  5.9526362 1.5527492 -2.1683174 -3.884122 1.52989675 6.945231
##      Iqgap2      Iqgap3      Iqsec1      Iqsec2      Iqsec3      Iqub
## 1  2.5048741 2.6063949 6.052893 5.210747 2.0672116 -2.47406242
## 2  3.3822201 4.5048471 7.061409 4.402268 -0.1920925 -3.34446937
## 3  -0.2425151 7.0639901 1.911138 1.141414 -3.8841215 -1.13131698
## 4  2.8028935 3.3879168 5.036208 2.752955 1.1001169 1.93142229
## 5  -2.1973739 3.7650420 4.662166 1.847973 -1.7701038 -0.75194706
## 6  4.5400468 4.3026595 6.968453 4.968465 -1.3133961 0.58662029
##      Irak1      Irak1bp1      Irak2      Irak3      Irak4      Ireb2      Irf1
## 1  6.5643626 3.4601898 3.336766 -0.7761568 2.2971453 6.665472 4.263795
## 2  7.1554644 1.2161466 6.096483 1.3156906 2.7951225 7.141720 6.128493
## 3  0.5144282 5.8865750 1.911138 -1.9317392 3.3192428 4.018078 4.511649
## 4  5.3303933 2.6171297 2.859271 -2.1434181 3.0866028 6.003237 4.892025
## 5  5.9150626 -0.4264149 2.604073 -2.8071174 0.5063887 4.657877 4.363496
## 6  6.7346516 3.8023490 7.180470 -2.8376544 1.8134769 6.987739 5.726132
##      Irf2      Irf2bp1      Irf2bp2      Irf3      Irf4      Irf5      Irf6
## 1  4.143923 6.028484 5.947206 5.084532 0.5871848 1.5448621 -2.8426541

```



```

## 2 5.884269 5.301626 5.463603 5.902027 -0.3311522 3.6639581 -1.0492592
## 3 1.479815 1.141414 5.843269 1.008333 -3.8841215 7.2056131 1.0083330
## 4 5.379150 3.318722 6.400635 4.745871 -0.9271316 2.3202705 -0.6739831
## 5 3.708108 1.654903 6.992969 3.424858 -2.8071174 -0.4264149 -0.4264149
## 6 4.407678 4.860697 8.727217 5.621109 -0.7158181 -0.9830425 -2.5459558
##      Irf7      Irf8      Irf9      Irg1      Irgc1      Irgm1
## 1 -1.0436268 2.0369583 3.280203 -3.492412 -3.069641 2.5413819
## 2 4.2453770 2.3094160 5.867974 -2.960717 -3.656504 4.8287655
## 3 -0.6195262 6.5892947 2.300819 -3.884122 -3.884122 0.5144282
## 4 1.9044397 1.3511690 5.072066 -3.884122 -3.884122 5.2827506
## 5 4.1602026 2.8036091 6.015688 -3.884122 -3.884122 4.4846740
## 6 1.2944050 -0.7960014 4.625140 -3.660779 -3.674482 4.3015661
##      Irgm2      Irgq      Irs1      Irs2      Irs4      Irx1
## 1 -2.2844373 6.06669040 5.739640 6.0855079 -2.147556 2.264241412
## 2 2.9011082 5.50524163 -1.157633 1.3363461 -3.027715 -3.884121530
## 3 0.5144282 0.51442825 1.375592 1.9838395 -3.884122 -1.931739237
## 4 2.4202186 3.83565384 5.763097 2.4572609 -2.982136 -2.652875408
## 5 -1.7701038 -0.04458439 4.996968 1.1190407 -3.884122 -2.807117436
## 6 -2.4657816 5.57680406 6.035305 8.3239278 -1.894268 -3.379886552
##      Irx2      Irx3      Irx4      Irx5      Irx6      Isca1
## 1 -1.95812073 -2.3696768 -3.8841215 -3.5839065 -2.588677 5.032401
## 2 -3.88412153 2.9894783 -3.8841215 -2.1828345 -3.884122 5.987446
## 3 2.65261808 0.8617169 1.1414140 -0.6195262 -3.884122 6.913930
## 4 -0.04983749 -2.5766000 -1.5177141 -3.0786368 -3.884122 5.736897
## 5 1.16811471 -1.1730114 -0.1609828 -1.7701038 -3.884122 6.137737
## 6 -2.33738216 -1.7145191 -3.8841215 -3.4904843 -3.884122 4.705374
##      Isca2      Iscu      Isg15      Isg20      Isg2012      Isl1      Islr
## 1 4.846994 3.8741642 -0.7684641 1.2633726 4.8841971 -3.790167 1.8765782
## 2 5.051275 5.1900207 3.3613805 3.2337646 5.3814287 -3.344469 3.0792315
## 3 7.304725 0.3033916 6.5115104 8.5260033 0.6984974 -1.931739 7.3153282
## 4 6.541405 2.2990266 1.7816496 0.6137013 5.0137967 -3.884122 6.2987420
## 5 6.941854 3.6314419 4.8163506 -1.7701038 5.1574675 -3.884122 5.4580331
## 6 4.706845 3.3474123 1.0532440 -1.8794630 5.1210183 -3.512249 4.4335298
##      Islr2      Ism1      Isoc1      Isoc2a      Isoc2b      Ispd
## 1 1.5220254 -0.2488801 6.050950 4.358164 0.730822066 3.568552
## 2 3.3459436 5.4077296 5.265375 3.711131 -0.741952836 1.239254
## 3 -0.6195262 -1.9317392 2.182248 -1.931739 -1.931739237 -3.884122
## 4 3.5706091 -2.5435784 4.359617 0.334650 3.198270298 2.832654
## 5 4.8913319 -3.8841215 4.368753 1.817536 3.835089072 2.879238
## 6 0.7488981 -1.9241560 4.808828 3.982495 0.002904134 2.713977
##      Isy1      Isyna1      Itch      Itfg1      Itfg2      Itfg3      Itga1
## 1 4.304164 3.133575 6.684033 7.978894 4.612275 6.891929 -0.8251342
## 2 5.186846 9.074318 7.377715 7.356240 4.347841 4.992879 8.1076638
## 3 3.773441 6.937001 1.008333 7.318845 1.141414 7.748585 -3.8841215
## 4 5.164768 3.666646 5.705170 5.375220 5.961930 7.209683 3.2079338
## 5 3.253546 5.254388 4.117116 7.415668 4.219605 7.721260 2.8938999
## 6 4.389609 3.301217 6.494046 7.477002 4.580498 5.940488 3.1353016
##      Itga10      Itga11      Itga2      Itga2b      Itga3      Itga4
## 1 0.7664268 -0.72802011 -1.1529544 0.7388401 3.7274479 0.8923830
## 2 0.9995556 -0.08022808 1.4357895 3.1410756 5.3191489 8.2276712
## 3 -1.9317392 -3.88412153 -1.1313170 -1.1313170 0.8617169 -0.2425151
## 4 0.3050703 0.59462155 -0.7290199 0.4439993 2.1545974 3.5026026
## 5 -3.8841215 -0.42641489 -1.7701038 1.9069861 0.2570463 3.9726608
## 6 1.6481284 -1.52611726 3.5598913 0.1640966 2.1827300 1.6200039

```

##	Itga5	Itga6	Itga7	Itga8	Itga9	Itgad	
## 1	-0.1038961	2.325070	1.829079	3.5817776	6.1286145	-0.9649079	
## 2	7.9163508	7.351077	3.656046	2.2254005	3.1911897	-3.6565043	
## 3	-1.9317392	2.560544	5.747339	6.5207025	-0.6195262	4.3560197	
## 4	-2.3696433	4.059193	2.409950	0.6633678	1.8080686	0.8475515	
## 5	-3.8841215	3.424858	3.276106	2.9788711	-1.1730114	3.1351297	
## 6	6.1089445	8.215401	8.046194	-1.5756625	-1.9377275	-3.8841215	
##	Itgae	Itgal	Itgam	Itgav	Itgax	Itgb1	Itgb1bp1
## 1	-0.8234548	1.132426	5.7220216	8.185438	-1.929195	8.629913	4.880870
## 2	-0.4494390	0.255650	-0.2251356	5.924539	-1.954017	10.850640	5.359413
## 3	-1.9317392	-1.931739	4.3422598	7.481463	-1.931739	8.898707	5.773209
## 4	0.5292145	-1.488556	2.7162730	5.251836	-3.186080	7.326042	5.170629
## 5	2.7562522	-3.884122	-0.1609828	6.140813	-3.884122	7.554216	6.224393
## 6	-1.4841902	-1.772420	-0.4165000	8.069069	-3.490484	8.561203	4.146021
##	Itgb1bp2	Itgb2	Itgb2l	Itgb3	Itgb3bp	Itgb4	
## 1	-0.3949845	2.5515289	-3.723567	2.9960050	1.2426205	2.3833242	
## 2	-3.4766082	2.0299141	-1.239249	3.0121810	2.9346427	1.1732915	
## 3	-3.8841215	0.8617169	-3.884122	-3.8841215	-0.2425151	2.6965413	
## 4	-1.0163385	2.1434905	-3.884122	-1.9560081	4.6608927	3.4320766	
## 5	-3.8841215	-0.4264149	-3.884122	-3.8841215	4.1295581	0.6514968	
## 6	0.6085871	-2.3305508	-3.660779	-2.0228653	0.9224764	-0.2567530	
##	Itgb5	Itgb6	Itgb7	Itgb8	Itgb1l	Itih2	
## 1	4.717941	-3.8841215	2.3903934	6.5590683	-1.954987	-0.2498528	
## 2	3.813111	-3.6519623	0.1980400	-0.9930847	-3.127369	-2.8888941	
## 3	7.676392	-1.9317392	5.8674882	6.2157390	-3.884122	-3.8841215	
## 4	5.067821	-3.2897395	-0.9798505	4.0907791	-1.283356	4.4483621	
## 5	5.865713	-2.8071174	-3.8841215	4.2878034	-3.884122	-2.1973739	
## 6	7.916204	-3.0447446	-2.5244447	6.4184454	-3.156544	-3.1565438	
##	Itih3	Itih4	Itih5	Itk	Itm2a	Itm2b	Itm2c
## 1	2.441632	-3.0492800	5.581102	-2.7575658	5.160415	9.434302	8.874163
## 2	-0.215984	-0.5316519	6.565038	-0.3209297	12.207683	10.092467	9.172119
## 3	7.423834	-3.8841215	5.346757	-3.8841215	12.157451	11.089538	9.377766
## 4	8.363314	-3.8841215	6.731990	-1.3605492	7.533405	8.880412	7.169095
## 5	8.121593	-3.8841215	5.843226	-3.8841215	9.155089	10.316249	8.558277
## 6	8.420522	-2.1248458	6.570664	-3.3528132	4.341484	9.609855	8.751415
##	Itpa	Itpk1	Itpka	Itpkb	Itpkc	Itpr1	Itpr2
## 1	4.424581	6.100096	1.1837721	6.05410477	4.482929	3.6435390	8.182274
## 2	4.780398	3.089017	0.6698015	8.47837159	3.981606	7.3459083	6.196596
## 3	6.802777	1.008333	-1.9317392	0.05610664	2.053052	0.3033916	4.685192
## 4	5.999669	4.461580	-0.6081928	1.46870034	3.671983	3.7673958	3.127732
## 5	7.098796	3.622666	-2.1973739	1.30605160	1.847973	-0.7519471	3.772995
## 6	3.583251	5.348472	0.8123005	6.31278139	4.360584	2.5209249	7.299584
##	Itpr3	Itpr1p1	Itpr1p2	Itsn1	Itsn2	Ivd	
## 1	0.54866771	0.2484401	0.1762257	6.090109	5.3445098	5.759060	
## 2	6.30629626	3.9301457	5.9708241	5.579771	7.4192352	4.491799	
## 3	2.89809000	8.9919872	-3.8841215	1.008333	0.8617169	8.005882	
## 4	-0.02315266	5.7447611	2.1532302	6.331760	3.4367218	6.996901	
## 5	0.71892097	6.1682101	3.2648698	5.920443	3.6660196	6.243122	
## 6	0.36326901	-0.2942067	3.2919710	7.755360	6.3368000	6.308901	
##	Ivl	Ivns1abp	Iws1	Iyd	Izumo1	Izumo4	Jag1
## 1	-3.8841215	7.459049	5.167686	-1.1836418	-2.0671097	0.2857273	4.456383
## 2	-3.8841215	8.190038	6.033003	-3.8841215	-0.4603943	2.0367698	7.232878
## 3	2.6526181	4.820366	1.983840	-3.8841215	-3.8841215	-3.8841215	6.130244
## 4	-1.0900097	7.017193	4.600480	-3.8841215	-2.3331817	2.7066419	6.083565

```

## 5 0.2570463 5.658089 3.631442 -3.8841215 -3.8841215 3.0061180 6.845207
## 6 -3.8841215 7.379438 6.103501 0.9243003 -2.6921454 2.6676196 5.259818
##      Jag2      Jagn1      Jak1      Jak2      Jak3      Jakmip1      Jakmip2
## 1 2.4316173 4.621315 6.467897 6.3975407 1.131696 2.3862588 5.2148867
## 2 8.1296398 4.368806 7.780828 8.3777159 6.948422 -0.9354535 -1.0422068
## 3 1.4798145 8.006972 7.135542 0.6984974 -1.131317 -1.9317392 -1.9317392
## 4 -0.4006630 6.256187 6.620117 4.5207975 -2.584420 3.1133425 5.1450167
## 5 3.3942483 6.411790 7.186263 3.9932318 -3.884122 2.6217964 -0.7519471
## 6 2.1655289 4.473064 7.338846 6.3385281 1.482951 2.1775928 3.9909987
##      Jakmip3      Jam2      Jam3      Jarid2      Jazf1      Jdp2      Jkamp
## 1 2.15011994 8.172151 7.601833 5.693842 4.2079649 4.7372884 5.365500
## 2 -2.63172738 8.676647 3.922700 6.442553 2.4941351 4.5696488 5.353223
## 3 -3.88412153 7.006262 9.833397 4.511649 -1.9317392 -3.8841215 8.461435
## 4 2.70542507 6.131427 8.119404 6.069283 3.2200415 -1.4029330 7.029636
## 5 4.27665857 6.478968 8.732545 5.358480 -2.8071174 -0.4264149 7.980616
## 6 -1.97714571 8.466296 5.214779 6.291183 2.2712370 4.7256696 5.164410
##      Jmjd1c      Jmjd4      Jmjd6      Jmjd7      Jmjd8      Jmy      Josd1
## 1 7.443544 4.1488718 5.561378 3.45021505 5.378941 7.087132 5.719571
## 2 8.241035 3.4398959 6.722972 4.30614944 5.060250 8.007201 6.095307
## 3 4.728149 -1.9317392 1.753727 0.05610664 1.008333 6.307114 2.410380
## 4 5.827301 3.3694891 4.583089 4.31330395 5.987416 5.619644 4.184614
## 5 5.234366 2.6736968 2.864426 3.58702079 4.996968 6.093964 4.405030
## 6 8.604843 4.8940597 5.039774 3.88382514 4.659828 6.777813 6.222924
##      Josd2      Jph1      Jph2      Jph3      Jph4      Jrk
## 1 5.788024 2.0274643 -2.1900518 6.2545603 4.3708178 2.59169169
## 2 4.186572 2.7349060 -0.0439398 -0.0427883 0.4870363 1.14656256
## 3 7.101231 0.5144282 -3.8841215 -1.9317392 5.6047884 0.05610664
## 4 5.711324 1.9836760 -3.4989245 2.4291629 3.5732275 4.16723044
## 5 7.422005 1.9069861 -3.8841215 2.8343382 2.0707909 5.24584123
## 6 3.163919 1.1362546 0.4443336 -0.7644884 2.1713753 2.43268094
##      Jsrbp1      Jtb      Jun      Junb      Jund      Jup      Kalrn
## 1 -2.2124144 5.547250 9.678419 5.6969049 8.714923 4.557826 4.803153
## 2 -3.6519623 5.087906 11.441502 10.5329353 10.247290 7.690351 4.107790
## 3 -1.9317392 6.968692 5.955982 1.4798145 2.739167 7.446519 1.141414
## 4 -2.5737626 5.646052 5.955718 1.7891291 4.692941 4.970452 4.201825
## 5 -3.8841215 5.850761 5.117424 -0.5800187 5.175581 5.640809 3.916326
## 6 -2.5470980 5.428805 12.215564 9.6774357 10.122871 4.105612 6.243071
##      Kank1      Kank2      Kank3      Kank4      Kars      Kat2a      Kat2b
## 1 8.596398 3.568563 2.301919 -0.7003139 6.584192 6.5070675 5.339644
## 2 6.747236 5.185916 8.187499 6.3137613 7.195780 5.6784251 6.017124
## 3 2.859970 6.973163 8.067812 -3.8841215 7.443300 0.8617169 1.375592
## 4 3.794043 1.839538 2.855422 -0.3379190 8.212887 4.3336602 4.271654
## 5 2.194382 -1.770104 4.154126 -3.8841215 8.255698 4.4203018 2.879238
## 6 7.766713 4.915695 3.335261 -0.3200649 5.389889 7.0437371 5.689428
##      Kat5      Katna1      Katna11      Katna12      Katnb1      Kazald1      Kazn
## 1 5.310297 3.769156 6.2419292 0.5109774 5.517877 0.5807574 8.115552
## 2 5.645264 5.217677 2.4803960 -1.8954318 5.166889 1.2009289 4.592905
## 3 8.214753 6.941571 0.3033916 -3.8841215 7.399125 -3.8841215 1.577013
## 4 4.658449 5.641000 5.5077692 4.0570296 6.387017 -0.6212075 3.407371
## 5 5.683628 6.289601 4.0067846 4.7494015 7.212087 -1.1730114 5.978341
## 6 5.872385 4.615896 5.4385867 1.4533469 4.949988 -0.3204676 5.632276
##      Kbtbd11      Kbtbd12      Kbtbd13      Kbtbd2      Kbtbd3      Kbtbd4      Kbtbd7
## 1 6.475622 -3.4842167 -1.306183 5.737807 2.6983614 4.696935 4.178257
## 2 7.147420 -3.2277824 -2.627338 7.426795 3.1594400 4.300307 4.631900

```

```

## 3  5.964989 -1.9317392 -3.884122 4.849841 -0.6195262 8.101896 -1.131317
## 4  5.562544 -0.8366633 -3.197812 5.387694 4.8809320 6.494070 4.433189
## 5  3.993232 -3.8841215 -3.884122 5.050296 5.8545135 7.323909 3.264870
## 6  7.130201 -3.0276140 -3.660779 5.530127 2.7959316 4.145675 4.350503
##      Kbtbd8      Kcmf1      Kcna1      Kcna2      Kcna3      Kcna4
## 1  3.2075033 5.8202886 6.356101 6.9374599 1.93885050 1.5908537
## 2 -0.1283656 7.4282622 -1.044143 -0.2254011 -3.65650428 -3.4243451
## 3 -1.1313170 -0.6195262 7.504812 5.7473394 -1.93173924 -1.1313170
## 4  2.6405410 4.0828703 4.753407 4.3741017 0.38430254 -1.5693371
## 5 -2.1973739 5.5418784 5.749601 3.0849008 -3.88412153 -3.8841215
## 6  4.2129004 5.9205957 -3.156544 8.4086588 1.34014692 -0.0132938
##      Kcna5      Kcna6      Kcna7      Kcnab1      Kcnab2      Kcnab3
## 1  0.06954466 7.2269180 -2.9574008 2.6409679 4.41892472 3.0759015
## 2  3.68073524 5.3240902 -0.6048664 -0.1281929 0.59833070 0.5735437
## 3 -3.88412153 0.5144282 -1.9317392 -0.2425151 0.05610664 -1.1313170
## 4 -3.88412153 4.3707914 -3.8841215 2.7107213 3.81010900 0.9044684
## 5 -3.88412153 5.6751653 -3.8841215 -2.8071174 2.12150494 -2.8071174
## 6 -1.78394473 6.3107430 -3.0447446 -0.3901884 1.11377368 2.4814374
##      Kcnb1      Kcnb2      Kcnc1      Kcnc2      Kcnc3      Kcnc4
## 1  5.2567508 0.9112842 4.665175 1.2667912 5.4054681 1.564151
## 2  0.2299579 -3.1165114 -2.191909 -2.3040431 0.7898791 -1.709813
## 3  1.6680739 -1.1313170 1.008333 -1.9317392 3.8532250 -1.931739
## 4  5.5061048 3.0348376 3.071806 -0.1784278 1.8198631 -0.160286
## 5  6.5018800 -2.8071174 -3.884122 -2.8071174 3.1227355 -2.197374
## 6  5.3344831 -2.3726443 3.678979 0.7450483 3.6766251 5.397282
##      Kcnd1      Kcnd2      Kcnd3      Kcne1      Kcne11      Kcne2
## 1  1.9586995 5.95570366 6.5285584 -3.028858 1.6491062 -3.583907
## 2 -3.4766082 -0.83122576 -0.5772731 -3.884122 -0.1016480 -2.888894
## 3  3.7938044 7.35012090 -1.1313170 -3.884122 1.7537270 6.568762
## 4  1.8748642 2.79690479 3.6329610 -3.287822 5.5119739 -1.551284
## 5 -0.7519471 1.72217194 0.5807664 -3.884122 6.1891646 -2.197374
## 6  3.3783456 5.68891649 6.6933425 -3.884122 5.7955024 -2.692145
##      Kcne3      Kcne4      Kcnf1      Kcng1      Kcng2      Kcng3
## 1 -3.794983 4.05631340 2.499511 -2.10904853 -1.309516 -3.6626903
## 2  3.070996 5.01667265 -1.518670 -1.54169963 2.030592 -3.6565043
## 3 -3.884122 -3.88412153 4.328367 -3.88412153 -3.884122 -3.8841215
## 4 -1.248619 2.44299216 0.761434 -2.79630959 -2.825573 -3.8841215
## 5 -3.884122 3.01955087 -1.770104 -3.88412153 -3.884122 -3.8841215
## 6 -3.884122 0.63765215 1.489266 -2.84055141 -3.288906 -3.4511394
##      Kcng4      Kcnh1      Kcnh2      Kcnh3      Kcnh4      Kcnh5
## 1 -0.0626094 -0.1672642 4.4132167 2.1371875 1.7611958 2.747084
## 2 -3.8841215 -1.6677008 -1.8456210 -2.2943879 -3.6565043 -3.651962
## 3 -3.8841215 0.8617169 -1.9317392 -1.9317392 -3.8841215 -1.931739
## 4 -2.8337366 0.3410785 -3.0274059 -3.1416164 -1.6202657 -3.884122
## 5 -3.8841215 -2.8071174 -3.8841215 -3.8841215 -3.8841215 -3.884122
## 6  2.8417841 -2.4025666 0.9624899 -0.8862383 0.7084665 3.825310
##      Kcnh6      Kcnh7      Kcnh8      Kcnip1      Kcnip2      Kcnip3
## 1 -3.2602578 -0.04716365 2.0952403 4.839598 3.6805800 7.81846036
## 2 -3.6565043 -2.59327260 -3.6565043 -0.808609 -1.7595499 -0.08222124
## 3 -3.8841215 -3.88412153 -3.8841215 7.034345 -1.1313170 6.42276912
## 4 -2.4161164 2.67374022 -0.3681176 3.713801 -1.1886211 7.66217172
## 5 -3.8841215 2.87923839 -2.1973739 1.906986 -2.8071174 6.51734943
## 6  0.6673776 -0.38321369 -1.3268693 2.277473 0.1359864 7.26093738
##      Kcnip4      Kcnj1      Kcnj10      Kcnj11      Kcnj12      Kcnj13

```

```

## 1  0.7688531 -3.884122  9.125348  1.7572077  0.8115122 -1.352843639
## 2  -0.4708369 -1.109113  1.724992 -2.4823940 -0.0896333 -1.155266342
## 3  -1.9317392 -3.884122  8.589990 -1.9317392 -1.9317392  6.805286980
## 4  0.9759971 -3.884122  8.338300  2.6740726  0.2771269  2.733341901
## 5  1.5477262 -3.884122  7.802669  0.0631199 -1.7701038  3.242132024
## 6  1.8956329 -3.884122 10.210369  0.5088086 -3.8841215  0.002583832
##      Kcnj14      Kcnj15      Kcnj16      Kcnj2      Kcnj3      Kcnj4
## 1  -1.0318271 -3.884122  3.6588330  2.702028  2.88351328  1.47156816
## 2  1.6918157  2.611913 -2.4194830  8.260386 -2.16308956 -1.24985855
## 3  -3.8841215 -1.931739  4.7801068  6.892846  0.86171687  0.05610664
## 4  -3.2991483 -3.444759  5.6636792  1.672082  0.57717468 -3.02965221
## 5  -3.8841215 -2.807117  3.6745361 -1.770104 -1.77010377 -3.88412153
## 6  0.1305745 -3.288906  3.8583949  1.277711 -1.45685291 -2.05766223
##      Kcnj5      Kcnj6      Kcnj8      Kcnj9      Kcnk1      Kcnk10
## 1  -2.122521 -0.09332588 -1.8731988  1.3655958  4.7494346  3.494747
## 2  -2.246723 -3.48374455  6.2830859 -1.6065316 -1.3081756 -2.716134
## 3  -3.884122 -1.93173924  0.5144282 -1.9317392  1.6680739  1.263249
## 4  -3.884122 -2.04110165  4.2820832  0.7496584  5.2243173  3.658362
## 5  -3.884122 -2.80711744  6.9515223 -1.7701038  6.1576176 -1.440886
## 6  -2.986249 -0.76030464  0.7627040 -1.3828263  0.7777804  3.738713
##      Kcnk12      Kcnk13      Kcnk2      Kcnk3      Kcnk4      Kcnk5
## 1  0.4469212  3.4940463  5.1840911  0.57541042 -1.97717638  0.14792121
## 2  -3.4243451 -3.4243451  0.1729518 -1.94140577 -3.07623119  4.19160764
## 3  -3.8841215  1.2632490  8.0865031 -3.88412153 -3.88412153 -3.88412153
## 4  -3.3818813  2.5714115  5.5209425  0.21794398 -3.65394437  0.08787387
## 5  -3.8841215  5.3018860  1.9069861 -3.88412153 -3.88412153 -0.16098275
## 6  -3.1186116 -0.2310917  6.5799541 -1.32809255  0.28206944  2.25696467
##      Kcnk6      Kcnk7      Kcnk9      Kcnma1      Kcnmb1      Kcnmb2
## 1  0.68385181 -2.67033388 -2.8565195  4.514137784 -3.663981 -0.2187801
## 2  1.15199734 -1.33830057 -3.8841215 -1.561977150  1.714825 -0.9203015
## 3  0.51442825 -0.61952623 -3.8841215  4.212131980 -1.931739 -1.9317392
## 4  -0.72345728 -2.27291713 -3.6749365  1.234141438  1.225837 -0.8103103
## 5  -1.77010377  2.96505227 -3.8841215  3.512973288  3.901892 -3.8841215
## 6  -3.04474463 -2.48414116 -3.2889060  5.532122510 -1.145405 -3.4904843
##      Kcnmb4      Kcnn1      Kcnn2      Kcnn3      Kcnn4      Kcnq1
## 1  4.1748575  4.4516176  1.2334060  2.8824015 -2.0635187 -3.3526786
## 2  -0.3249486 -2.0999208 -2.1919090 -1.2019022 -2.3414404  6.3913183
## 3  3.8138844 -3.8841215  4.5238915 -1.9317392 -3.8841215 -3.8841215
## 4  0.5691555  1.8306178  5.2714748  1.7484106 -1.3731172 -1.0105875
## 5  2.8938999  3.2421320  5.0665642 -3.8841215 -3.8841215 -3.8841215
## 6  -0.1028940  4.1320433  5.2805173  7.7673478 -3.0097167 -1.2819779
##      Kcnq2      Kcnq3      Kcnq4      Kcnq5      Kcnrg      Kcns1
## 1  4.3690884  3.78401467  2.44130741  2.889132  0.1253141 -1.62521658
## 2  -1.0141519 -2.80708155  3.18708848 -1.042560  1.6592584 -1.38212913
## 3  -0.2425151 -3.88412153  0.05610664 -1.931739 -3.8841215 -1.93173924
## 4  2.4397273 -0.09840218  1.99928016  1.360986  0.5571711 -3.52964612
## 5  -0.9471720 -1.44088555  3.69978792  1.963680 -2.1973739 -3.88412153
## 6  -0.6926466  0.03701806  4.62935337 -1.372462  0.2803186 -1.67452322
##      Kcns2      Kcns3      Kcnt1      Kcnt2      Kcnu1      Kcnv1
## 1  -2.147846 -0.9567744  3.3050128  2.381477  1.6295443 -0.1813606
## 2  -3.248991 -1.2493908 -1.2500389 -1.608358 -2.8070815 -1.8022195
## 3  -3.884122 -1.9317392 -3.8841215 -3.884122 -1.9317392 -1.1313170
## 4  -2.560856  0.5619217  0.7896017  1.125546  2.6910190 -1.0856911
## 5  -3.884122 -2.8071174 -3.8841215 -3.884122 -3.8841215 -1.1730114

```

```

## 6 -3.660779 -0.9545252 4.1784524 -1.037428 0.4336333 -2.6923620
##      Kcp      Kctd1      Kctd10      Kctd11      Kctd12      Kctd13      Kctd14
## 1 -0.7489903 2.9514633 5.196838 1.787980 5.637400 5.153775 -1.1538442
## 2 7.6752600 2.0016943 8.022395 1.996040 7.736477 2.564464 -2.6781408
## 3 -3.8841215 0.6984974 3.575949 3.171443 6.968692 6.854585 -1.1313170
## 4 0.2369829 5.2336651 4.933727 3.297522 5.042839 5.070542 3.4074776
## 5 -3.8841215 5.5113018 3.772995 4.379211 4.254107 4.861805 1.8777815
## 6 1.9755521 4.4975439 6.339368 1.878818 5.160391 3.069218 1.8728845
##      Kctd15      Kctd16      Kctd17      Kctd18      Kctd19      Kctd2      Kctd20
## 1 5.2547930 -1.9291127 5.9800761 3.804427 -2.929995 4.826698 5.894116
## 2 -0.4086876 -3.2515854 7.2503868 3.347746 -2.337770 5.027610 6.859557
## 3 1.8345785 -3.8841215 -0.2425151 -1.131317 -3.884122 1.141414 1.375592
## 4 4.0976322 -0.7917945 2.9911164 3.554546 -3.603681 3.499711 4.415516
## 5 5.3344968 -2.8071174 4.6918343 4.033514 -3.884122 3.183669 3.110234
## 6 4.4764671 -3.3798866 6.4202585 4.444473 -2.877778 5.176889 5.566180
##      Kctd21      Kctd3      Kctd4      Kctd5      Kctd6      Kctd7
## 1 3.8403451 6.4692423 3.6443020 6.102676 3.6046305 4.2514712
## 2 0.4708981 6.4984752 -0.2352188 5.643491 3.5862921 3.3006954
## 3 0.8617169 0.6984974 7.3310888 4.435932 -0.6195262 -0.6195262
## 4 5.0401163 4.0138624 7.1110497 4.365082 3.2299398 4.0403302
## 5 4.3529226 3.7650420 7.6832570 4.026878 1.7546656 4.8008750
## 6 3.4234294 5.6546750 2.5740462 7.192446 5.0627221 3.5483173
##      Kctd8      Kctd9      Kdelc1      Kdelc2      Kdelr1      Kdelr2      Kdelr3
## 1 0.7989610 3.202267 4.46612876 3.5510902 6.584723 5.991614 1.2259403
## 2 -3.2177929 4.603044 5.78608431 5.5356993 7.379954 6.303019 2.9541671
## 3 -3.8841215 -1.931739 0.05610664 0.5144282 7.373986 9.900073 -0.6195262
## 4 -3.8841215 2.338914 4.58373394 3.5517387 5.417736 7.596795 2.0441771
## 5 -3.8841215 2.937011 5.12676427 -0.7519471 7.072454 9.299046 5.1360440
## 6 -1.3931204 4.026882 5.56438832 4.4605449 6.190635 6.141517 2.0444775
##      Kdm1a      Kdm1b      Kdm2a      Kdm2b      Kdm3a      Kdm3b      Kdm4a
## 1 6.539718 5.439823 6.380067 5.268471 6.275362 6.610864 6.486191
## 2 6.688100 4.130036 6.837692 4.380289 7.673064 6.207891 6.291012
## 3 1.263249 2.119096 2.935229 1.577013 7.353554 1.668074 3.552239
## 4 5.924694 4.109734 5.897607 4.164346 5.419354 5.027217 3.608042
## 5 6.339993 1.431944 4.518182 5.089036 4.304361 6.202476 3.084901
## 6 6.500963 4.657525 6.865386 4.321891 7.177685 7.099986 6.664425
##      Kdm4b      Kdm4c      Kdm4d      Kdm5a      Kdm5b      Kdm5c      Kdm5d
## 1 6.624593 5.164800 -1.2195489 5.954701 5.863237 6.751052 4.6312007
## 2 6.134976 6.383649 -2.4194830 7.467216 6.804991 6.545233 4.2332210
## 3 1.668074 2.780569 -1.9317392 6.073075 7.620485 2.242751 -0.2425151
## 4 4.315510 5.242985 -0.1995013 7.569970 6.575159 5.418450 4.6818212
## 5 3.454832 4.331541 4.0268781 6.418144 6.397714 6.295135 4.5039166
## 6 6.563531 5.712178 -2.0287916 7.010155 7.016883 6.818494 5.8957610
##      Kdm6a      Kdm6b      Kdr      Kdsr      Keap1      Ke1      Khdrbs1
## 1 5.471530 6.609492 1.5926043 5.368995 5.830515 -3.492412 6.995548
## 2 7.032778 7.364949 11.3595742 5.048693 5.580972 -2.372912 6.942355
## 3 1.141414 1.668074 5.4401471 8.492135 1.008333 -3.884122 1.983840
## 4 4.442597 6.956294 2.0387475 7.427476 5.084427 -3.884122 5.368426
## 5 4.854328 7.009052 -2.1973739 7.760790 4.952138 -3.884122 5.653788
## 6 6.293974 7.633256 4.2186603 5.405376 5.002264 -3.884122 6.447099
##      Khdrbs2      Khdrbs3      Khk      Khnyn      Khsrp      Kidins220
## 1 3.0325197 6.03710417 2.8863745 4.255440 6.625327 7.996180
## 2 -3.4766082 1.50317207 4.0676241 5.913581 4.669372 7.201878
## 3 -3.8841215 0.05610664 -0.6195262 -1.131317 7.306497 5.661295

```

```

## 4 3.0008189 5.04685409 4.5941612 2.458991 7.598207 7.052638
## 5 -2.8071174 4.07270233 5.2515447 -1.770104 8.743211 6.806016
## 6 -1.2877943 4.24491545 2.4167627 5.714076 6.363181 9.109296
##      Kif11      Kif13a      Kif13b      Kif14      Kif15      Kif16b
## 1 3.0233421 6.894231 5.195341 1.6924171 2.7612913 2.9991405
## 2 4.1137536 5.744572 5.001463 1.1682694 3.4565248 4.5690068
## 3 1.7537270 2.696541 -1.131317 -1.1313170 1.0083330 -1.9317392
## 4 5.1714631 4.394113 3.296315 3.0445888 4.7776318 2.8847731
## 5 5.3452052 5.139124 -2.197374 0.5063887 4.3634957 0.9609302
## 6 4.1697785 6.198318 4.577491 2.9062384 3.9376389 3.0114130
##      Kif17      Kif18a      Kif18b      Kif19a      Kif1a      Kif1b      Kif1c
## 1 0.777107 1.4864033 2.6076365 5.8646582 9.581482 9.503912 7.189782
## 2 -2.548285 3.5370232 2.4180743 -2.0252565 2.479408 6.997416 8.568440
## 3 -3.884122 0.3033916 0.3033916 -0.6195262 7.397463 5.872284 2.935229
## 4 1.347487 4.8195918 1.6878200 -1.0900011 8.261152 8.386431 2.865362
## 5 -2.197374 -1.7701038 3.4646862 2.9510998 7.084487 8.396201 2.549557
## 6 1.312367 4.3189046 2.6398296 1.5959576 8.971743 10.154372 7.962010
##      Kif20a      Kif20b      Kif21a      Kif21b      Kif22      Kif23      Kif24
## 1 2.738377 1.6088434 5.0455123 8.264070 3.2574382 2.6129837 2.7624041
## 2 3.908062 2.8919049 0.5376710 1.128207 4.3876050 4.9311391 1.7288250
## 3 1.479815 1.0083330 2.6073156 1.263249 1.7537270 1.4798145 0.3033916
## 4 5.705395 4.7061012 7.2325097 5.956461 6.1011972 5.6180677 1.9875032
## 5 3.986407 0.1633391 5.5944372 1.068238 4.2933437 0.7189210 -1.4408855
## 6 2.943829 3.5458867 7.6249064 8.442637 3.6357901 3.8352580 4.0699385
##      Kif26a      Kif26b      Kif27      Kif2a      Kif2c      Kif3a      Kif3b
## 1 6.3874811 3.783593 -1.321429 5.583130 1.8180221 7.349585 5.3224051
## 2 8.5560580 -2.193106 -2.553203 6.229529 2.9045500 5.307654 6.0783935
## 3 1.1414140 -1.931739 -3.884122 4.640917 1.1414140 5.115550 3.7938044
## 4 -1.5545451 1.560183 -2.331868 6.241760 5.6705659 7.651286 4.0462456
## 5 -1.4408855 -1.440886 -3.884122 6.903425 5.3291126 6.206887 4.4454014
## 6 3.2266405 -1.381622 0.913037 6.045228 2.6389624 7.011446 6.1761071
##      Kif3c      Kif4      Kif5a      Kif5b      Kif5c      Kif6      Kif7
## 1 7.0556512 2.3222480 8.415147 7.234704 6.700764 -0.4554128 4.4874548
## 2 4.5302744 3.6853802 1.677702 8.693779 1.875169 -3.0392407 2.4334578
## 3 0.5144282 1.4798145 2.182248 5.261596 2.119096 -3.8841215 -0.2425151
## 4 5.7533573 4.9532454 6.719852 6.873493 6.803360 3.0750878 1.8500187
## 5 5.4993668 1.5843436 3.559696 5.936465 5.271331 -2.8071174 3.8198143
## 6 6.5977221 3.4694527 4.274055 7.079794 4.936518 -0.2822765 5.0730369
##      Kif9      Kifap3      Kifc1      Kifc2      Kifc3      Kifc5b
## 1 -0.06328915 7.186465 2.6555794 5.3938808 7.37317060 2.6932263
## 2 0.60604067 5.407310 2.6436696 2.0789067 6.68899869 1.6559277
## 3 -1.93173924 3.347069 -0.2425151 -1.9317392 0.05610664 -3.8841215
## 4 2.53263770 6.445262 1.5945302 3.2997426 2.50733964 1.1690048
## 5 -2.19737395 6.992118 3.5504721 -1.4408855 -3.88412153 -3.8841215
## 6 0.94761950 5.837369 2.9809824 5.3976803 8.36389720 3.2548704
##      Kin      Kirrel      Kirrel2      Kirrel3      Kiss1r      Kit
## 1 2.5402787 0.24807084 -0.03874826 6.3944318 0.3413826 4.00502732
## 2 4.6481049 2.82933832 -3.48374455 -0.1437451 -1.3422152 6.44421023
## 3 -0.2425151 0.05610664 -3.88412153 3.9288271 -3.8841215 0.05610664
## 4 4.9124789 2.39676000 -2.31653055 2.8984231 -1.6258610 2.60898229
## 5 2.1943824 -0.58001868 -3.88412153 4.5323076 3.3942483 0.78333430
## 6 3.8335460 4.12044637 3.36693909 6.8380467 -1.1693643 1.34635603
##      Kit1      K1      K1b      K1c1      K1c2      K1c3
## 1 -0.1814365 -1.235530 -2.0559761 7.805610 5.3721270 1.04333710

```

```

## 2  9.6283100 -1.529228 -2.4610404  7.383561  4.9578291 -3.88412153
## 3  6.0135476  4.000664 -3.8841215  4.943954  3.6222316 -0.61952623
## 4  5.5638046  2.180644 -2.4804506  4.097948  2.1935083 -1.85992213
## 5  5.5113018 -2.197374 -3.8841215  4.614275 -1.7701038 -0.94717201
## 6  4.2699411 -3.280845 -1.6726522  6.906458  5.1803551  0.30764989
##      Klf4      Klf1      Klf10      Klf11      Klf12      Klf13
## 1  4.8360759 -1.8775763 5.501881  5.6785509  4.76482914 7.220635
## 2  5.3975530 -3.8841215 6.868883  7.4741909  5.08214242 7.319378
## 3  0.8617169 -1.9317392 8.838720  0.8617169  5.38080886 9.115941
## 4  4.6361121  0.3611064 5.423565  3.2012540  4.83223455 8.858223
## 5  4.6098412 -3.8841215 5.759642  0.7189210  2.97887114 8.937503
## 6  5.0336663 -2.0695252 7.311185  6.3175674  5.53609305 6.628337
##      Klf14      Klf15      Klf16      Klf2      Klf3      Klf4      Klf5
## 1  -3.7949831  3.881361 4.078949  4.4207351 4.498742  5.920631 -1.15442394
## 2  -3.4243451 -1.115386 5.349578  9.2550982 6.880855  8.995137 -0.41068101
## 3  -3.8841215  3.731831 1.141414  6.0478635 5.857849  4.523891  1.47981450
## 4  -2.9388957  3.505237 3.245134  2.3402457 4.377297  3.302801 -0.09493957
## 5  -3.8841215  1.391188 3.613837  0.5807664 1.991212  4.135739  1.78644346
## 6  0.5532644  6.301906 4.224668  8.5197535 6.011976 10.115456  2.62800581
##      Klf6      Klf7      Klf8      Klf9      Klhdc1      Klhdc10      Klhdc2
## 1  7.406192  3.2573989  2.7438533  5.874259  2.583573  6.9028901  6.2106470
## 2  10.780343 4.2045532 -0.1467705  6.651564  1.536653  6.1989821  5.7157887
## 3  6.571713  0.3033916 -3.8841215  6.586379 -1.131317  2.5605442 -0.2425151
## 4  6.956495  5.4744984  1.0339828  5.971033  1.110948  5.3042077  5.3801549
## 5  5.082651  4.8543283  4.1295581  5.814616 -3.884122  3.4938520  6.2714698
## 6  10.548384 5.3611006 -0.1150249  7.111380  2.590150  6.7662789  5.4524285
##      Klhdc3      Klhdc4      Klhdc7a      Klhdc8a      Klhdc8b      Klhdc9      Klh11
## 1  6.559802 4.616635  0.36423275  0.4872084 3.9100765  2.752742 -2.761390
## 2  6.943352 4.260056 -2.99562320 -1.7048570 4.3689358  1.510430 -2.482394
## 3  3.074902 3.710567 -1.93173924 -1.9317392 0.8617169 -1.931739 -3.884122
## 4  6.289583 4.502515  0.04007934  1.6918564 5.7046065  3.672572 -3.884122
## 5  6.228737 5.228594 -3.88412153  2.5495573 6.3847968  3.522440 -3.884122
## 6  5.858646 4.976418  1.48992725 -0.4704738 4.6308670  1.948940 -3.660779
##      Klh110      Klh111      Klh112      Klh113      Klh114      Klh115
## 1  -1.0893686 4.3855415  4.0057911 5.999289 -3.723567  2.9728668
## 2  -3.0392407 3.1895798  3.0504316 4.949434 -3.483745  2.6587673
## 3  -3.8841215 7.2958284 -0.6195262 1.263249 -3.884122 -3.8841215
## 4  0.6871488 1.4104176  3.5950692 5.590614 -3.884122  0.2995618
## 5  2.8343382 0.1633391  2.4538543 4.455320 -3.884122 -3.8841215
## 6  -0.3651070 3.8850777  4.5114154 4.912320 -3.674482  2.8023317
##      Klh117      Klh118      Klh12      Klh120      Klh121      Klh122      Klh123
## 1  6.3955162 5.0129815 6.965989  4.2807853 4.4130007 5.214913 5.2502342
## 2  4.5648181 4.9600052 6.346170  5.0944013 3.9739571 4.549721 5.2648913
## 3  -0.6195262 0.6984974 5.937798 -0.2425151 -1.9317392 1.141414 0.6984974
## 4  3.7882273 3.8084429 4.765008  4.9919181 1.8287310 6.143909 5.6559262
## 5  -2.8071174 0.5063887 6.326546  2.5495573 -2.8071174 5.601154 4.6274944
## 6  6.4197705 4.5095944 4.143373  5.1061193 3.8740651 5.376518 5.4463926
##      Klh124      Klh125      Klh126      Klh128      Klh129      Klh13
## 1  6.012655 4.4601514 4.34934830 3.7131762 2.42474783 1.5557225
## 2  7.105633 4.3130764 4.02306797 3.8821160 0.02976312 1.7888878
## 3  8.387156 0.5144282 0.05610664 7.0018921 -1.93173924 -3.8841215
## 4  6.737939 3.6547239 4.28753709 5.3701230 0.31325471 -2.3744851
## 5  6.445770 5.3820711 4.92741003 0.9609302 0.90412645 -3.8841215
## 6  6.720500 5.7822881 4.82811827 4.4528653 -0.14927311 1.0493973

```


##	Klh130	Klh132	Klh133	Klh134	Klh135	Klh136	
## 1	-1.7386155	3.5200191	-2.5983199	-0.5215824	-1.1089566	2.772726192	
## 2	-2.3729121	-0.3305488	-3.8841215	-3.6565043	-1.3422152	3.257224470	
## 3	-3.8841215	-0.2425151	-3.8841215	-3.8841215	-3.8841215	-3.884121530	
## 4	-2.0291499	2.6069047	-2.8478743	-1.7228425	0.1733707	-0.002924526	
## 5	-3.8841215	3.7887709	-3.8841215	-3.8841215	1.9636795	-3.884121530	
## 6	-3.6744822	3.2020754	-3.4904843	-3.5122488	-2.2885695	2.794038625	
##	Klh138	Klh14	Klh15	Klh16	Klh17	Klh18	Klh19
## 1	-3.612858	2.60661396	8.735129	0.1057138	6.198340	3.635822	5.909122
## 2	-3.039241	7.67953538	8.391722	6.6436382	5.428417	3.788453	7.220676
## 3	-3.884122	0.05610664	1.141414	-0.2425151	7.734169	1.008333	11.545889
## 4	-3.674937	3.73845591	6.880522	2.4150073	7.106102	3.998579	9.713675
## 5	-2.807117	-2.19737395	5.775563	-1.7701038	7.002302	5.523139	10.902263
## 6	-3.884122	-0.78221972	8.273481	-0.2758178	6.427913	4.069750	6.752185
##	Klk10	Klk11	Klk13	Klk5	Klk6	Klk7	
## 1	-1.8452614	-2.7148824	-3.060414	-3.8841215	-0.2071243	-3.88412153	
## 2	-3.6565043	-3.6519623	-3.651962	-3.8841215	-3.8841215	-2.64980479	
## 3	0.6984974	1.4798145	-1.931739	2.2427509	4.2121320	3.64482765	
## 4	-1.9343177	-2.0003345	-2.256436	-1.3510708	0.0281689	0.07295961	
## 5	-0.4264149	3.1227355	-2.807117	-0.4264149	-0.9471720	3.84266622	
## 6	-3.6744822	-3.8841215	-3.884122	-3.8841215	-3.8841215	-3.88412153	
##	Klk8	Klk9	Klrb1b	Klrb1c	Klrb1f	Klrd1	
## 1	1.08276851	-1.3561736	-3.723567	-3.6296120	-3.8841215	-3.376626	
## 2	5.35207432	-3.2277824	-2.960717	-3.1273690	-3.8841215	-2.935278	
## 3	6.19674832	1.3755916	-3.884122	-1.9317392	-3.8841215	-3.884122	
## 4	-0.17714307	-1.8674031	-2.092614	-2.3251294	-0.8658609	-2.876652	
## 5	2.67369676	-1.4408855	-3.884122	-3.8841215	-3.8841215	-3.884122	
## 6	-2.94797020	-3.8841215	-3.884122	-3.8841215	-3.8841215	-3.660779	
##	Klrg1	Klrg2	Kmo	Kncn	Kndc1	Kng2	
## 1	-3.7901666	-1.21287003	-3.8841215	-3.723567	7.0318105	-3.6639813	
## 2	0.3784255	1.54726568	-2.8888941	-3.884122	-1.8043136	-3.8841215	
## 3	-3.8841215	2.18224770	-3.8841215	-3.884122	0.5144282	-3.8841215	
## 4	-3.1978120	-0.42375804	-2.0408102	-3.884122	4.2457879	-3.8841215	
## 5	-3.8841215	0.90412645	-2.8071174	-3.884122	4.3207304	-3.8841215	
## 6	-3.8841215	-1.34865083	-3.2372533	-3.674482	1.2326013	-3.8841215	
##	Kntc1	Kpna1	Kpna2	Kpna3	Kpna4	Kpna6	Kpnb1
## 1	2.4753149	6.409964	1.1817394	6.048558	6.111627	6.421547	8.217814
## 2	3.0743357	7.000984	0.2023483	6.394258	7.057234	5.690471	8.328060
## 3	-0.6195262	5.919381	-0.6195262	2.859970	7.410708	2.739167	4.595239
## 4	3.4750186	5.388547	3.8623685	7.359591	5.305619	3.925713	6.344139
## 5	1.7221719	3.850204	2.6566033	6.830039	2.978871	4.368753	5.767625
## 6	3.1423530	6.545104	2.1015474	6.266464	6.303973	6.339438	7.849460
##	Kprp	Kptn	Kras	Krba1	Kremen1	Kremen2	
## 1	-3.8841215	4.227116	5.792228	5.0846610	4.9399365	-1.7643818	
## 2	-3.8841215	4.910257	6.596813	4.1271291	6.5771628	-2.7161344	
## 3	3.5992759	6.990910	6.285706	0.5144282	1.1414140	1.1414140	
## 4	0.1176569	4.805078	5.344172	4.5084490	3.7923220	-3.1880405	
## 5	1.2155742	5.007118	6.612388	4.2196053	2.1215049	-1.4408855	
## 6	-3.8841215	4.156772	5.737488	6.3504358	6.7066992	-0.9895314	
##	Kri1	Krit1	Krr1	Krt1	Krt10	Krt12	
## 1	3.70153476	5.0336811	4.451975	3.3083146	2.6664037	-2.5798530	
## 2	3.39352261	5.5681525	5.287661	-2.5482845	1.6928447	-3.4243451	
## 3	-0.61952623	0.6984974	1.577013	9.2003573	9.5733930	-1.1313170	
## 4	2.87741610	5.4727890	5.881605	6.0728258	6.7098802	-1.9279214	

```

## 5 3.97266084 2.9084139 5.911464 7.2424773 7.7552806 -1.7701038
## 6 4.47159050 6.2460198 4.933588 -0.4087914 2.5897767 -3.6607788
##      Krt14      Krt15      Krt16      Krt17      Krt18      Krt19
## 1 -3.884122 -3.8841215 -3.88412153 -1.2952131 -3.756645 -3.8841215
## 2 -3.884122 -3.0277153 -3.88412153 -3.8841215 -1.579592 -3.8841215
## 3 6.130244 4.2568248 3.13997517 3.7734409 6.706709 -1.9317392
## 4 2.704175 0.8790337 -0.04119016 0.6177166 -1.632920 -3.8841215
## 5 6.337314 6.0140110 0.25704632 8.6668371 -2.807117 -3.8841215
## 6 -3.884122 -3.6744822 -3.88412153 -2.0287916 -3.512249 -2.8653806
##      Krt2      Krt20      Krt22      Krt23      Krt25      Krt26
## 1 -3.884122 -3.555392 1.5300521 -3.6013384 -3.8841215 -3.884122
## 2 -3.884122 -3.335655 4.3682728 -2.9901757 -3.8841215 -3.476608
## 3 -3.884122 -1.931739 -3.8841215 1.3755916 1.6680739 -3.884122
## 4 -2.847874 -3.884122 -0.3148169 -1.5907407 -1.7561106 -3.249205
## 5 -3.884122 -3.884122 -3.8841215 -0.1609828 -0.5800187 -3.884122
## 6 -3.451139 -3.884122 -2.2309101 -3.8841215 -3.6744822 -3.674482
##      Krt27      Krt28      Krt4      Krt5      Krt6a      Krt6b
## 1 -3.8841215 -0.7890876 -3.884122 -3.884122 -3.8841215 -3.8841215
## 2 -3.8841215 -2.4880632 -3.884122 -3.217793 -3.8841215 -3.8841215
## 3 -0.2425151 -0.2425151 -3.884122 6.802777 1.4798145 2.8599701
## 4 -2.1964548 -1.4831620 -2.180317 3.321124 -1.7192933 -0.8810587
## 5 -0.4264149 -1.4408855 -3.884122 5.462958 5.5534682 -0.4264149
## 6 -3.8841215 -0.0255751 -3.884122 -3.884122 -3.8841215 -3.8841215
##      Krt71      Krt73      Krt77      Krt78      Krt79      Krt8
## 1 -3.8841215 -3.5094377 -2.39531607 -3.767000 -3.8841215 -3.6540045
## 2 -3.8841215 -3.8841215 -3.65196234 -3.651962 -3.6565043 -3.4243451
## 3 2.9714350 -0.2425151 0.05610664 4.085705 4.0522874 -1.9317392
## 4 -0.8833115 -2.5766000 -2.30486689 1.591574 0.4750409 -2.6119174
## 5 -0.5800187 -1.7701038 -0.75194706 2.512034 6.1081790 -3.8841215
## 6 -3.8841215 -3.8841215 -3.45113945 -3.884122 -3.8841215 -2.6544356
##      Krt80      Krt83      Krt9 Krtcap2 Krtcap3 Krtcap
## 1 -2.14958953 -1.779070 -2.760752 5.307871 -0.2852459 -3.8841215
## 2 -2.67931547 -3.884122 -3.884122 5.928002 0.2150403 -3.8841215
## 3 2.41038029 -1.931739 -1.931739 9.229147 3.2022392 4.5360305
## 4 -0.31866938 -3.884122 -3.141616 7.869032 -2.0171770 0.9612628
## 5 0.25704632 -1.770104 -3.884122 8.760815 -2.8071174 7.5685665
## 6 -3.26808737 -3.884122 -3.884122 4.648535 1.1407808 -3.8841215
##      Ksr1      Ksr2      Kti12      Ktn1      Ky      L1cam
## 1 4.25191005 1.7935635 3.26432875 7.139183 2.40619151 4.1220348
## 2 4.74963652 -3.1165114 7.09013222 7.422384 -3.65650428 0.8189636
## 3 -1.13131698 -3.8841215 5.13163785 3.688985 -3.88412153 -0.2425151
## 4 -0.04189911 -1.9787063 1.80078275 7.252503 -0.71672127 4.3535465
## 5 -2.80711744 -3.8841215 -1.44088555 5.869427 -2.80711744 1.0155818
## 6 3.84642622 -3.0447446 3.33597384 7.801452 2.03004253 1.0910805
##      L2hgdh      L3mbt11 L3mbt12 L3mbt13 L3mbt14 L7Rn6 Lacc1
## 1 3.076673 -0.6100189 4.718231 2.7320098 -2.953160 4.454501 4.95170876
## 2 2.069790 -2.7161344 3.964380 4.7696716 -3.884122 4.675156 4.20311757
## 3 -1.131317 -3.8841215 1.375592 -0.2425151 -3.884122 8.466201 0.05610664
## 4 3.404686 -3.8841215 5.472622 4.0947488 -1.022153 6.813408 5.93868651
## 5 3.424858 -3.8841215 6.017363 2.3299438 -3.884122 7.683784 5.81654067
## 6 4.747251 -1.7919785 4.448280 5.3984243 -2.254522 3.556413 4.48924432
##      Lactb      Lactb2      Lad1      Lag3      Lage3      Lair1
## 1 4.0436577 3.0057205 5.0438226 3.33321215 4.616856 2.99097461
## 2 5.2563679 3.3524668 -3.2489909 1.42499368 5.065162 -2.28496435

```

```

## 3 -3.8841215 6.0178820 2.6073156 -3.88412153 6.122214 9.16072760
## 4 2.2669837 3.7125543 -0.4489384 -0.89352391 6.207684 2.14235031
## 5 3.9018920 1.1190407 1.3492478 -2.80711744 7.217925 3.69141965
## 6 4.3223771 4.0438636 -1.4120071 0.90093454 3.411322 4.44037058
##      La1ba      Lama1      Lama2      Lama3      Lama4      Lama5
## 1 -3.274262 3.5183650 4.3315040 -1.39098411 4.43881319 0.7253166
## 2 1.185298 6.7490317 4.9385139 2.64333216 10.29898217 8.1259115
## 3 -3.884122 -3.8841215 0.8617169 1.75372696 0.05610664 2.8599701
## 4 -3.884122 2.2715281 6.0012212 -0.65833124 1.88265647 2.1692832
## 5 -3.884122 -2.8071174 5.4654139 -0.75194706 3.13512972 0.7833343
## 6 -2.874450 1.6673027 6.6329859 1.05128305 5.97253789 6.8964038
##      Lamb1      Lamb2      Lamb3      Lamc1      Lamc2      Lamc3
## 1 2.0579505 1.341851 -0.42643271 7.897767 -1.802113223 1.09877220
## 2 9.3077787 8.898998 -2.81741594 10.201965 0.008798328 4.91638299
## 3 1.1414140 3.947124 1.75372696 8.059426 2.607315562 1.66807388
## 4 5.1453942 4.388574 -0.03814093 4.971266 0.015456913 3.07896457
## 5 5.6056140 4.582950 -0.94717201 5.856386 0.063119896 3.46468620
## 6 2.8807919 7.925740 -0.49835746 7.427769 -1.192568119 0.85518545
##      Lamp1      Lamp2      Lamp3      Lamtor2      Lamtor3      Lanc11      Lanc12
## 1 10.166829 7.601594 0.7552681 4.563777 3.841656 6.404398 4.8331113
## 2 9.193725 8.300930 0.8639334 5.122917 4.443950 4.861138 4.7902415
## 3 8.213808 10.034495 3.2908694 6.792695 7.082731 6.565805 6.0222034
## 4 7.498798 8.784816 3.1707912 6.827095 5.340417 5.318167 5.7646630
## 5 8.751788 8.427400 3.0061180 7.692197 5.539549 6.475317 3.3942483
## 6 9.430758 7.865333 1.2496131 3.410376 4.191374 4.784355 3.7758332
##      Lanc13      Lap3      Laptm4a      Laptm4b      Laptm5      Large      Larp1
## 1 -1.1353163 6.719084 8.327305 6.775620 5.819517 6.960526 6.439327
## 2 2.4164845 5.644631 9.905236 7.101735 3.702933 5.265632 5.818379
## 3 -3.8841215 8.298193 10.129686 8.315021 9.164642 5.946919 1.479815
## 4 -2.9676349 7.578029 8.661154 5.457140 6.298554 4.179680 5.212560
## 5 2.6040729 7.171297 10.301977 6.258782 4.135739 4.484674 2.723795
## 6 0.9020496 7.144853 8.550831 5.566360 1.742431 5.666398 7.166395
##      Larp1b      Larp4      Larp4b      Larp6      Larp7      Lars      Lars2
## 1 2.699493 5.331791 5.054445 4.198356 3.661758 6.160433 11.518047
## 2 3.880935 5.951568 5.709878 -1.008167 5.308533 6.028495 11.402209
## 3 -1.131317 7.492406 1.668074 -1.931739 2.560544 5.387524 14.086262
## 4 1.323690 6.291660 5.730452 1.591371 6.079270 6.533243 10.883229
## 5 3.230627 6.640916 6.312973 5.415480 4.993568 6.485033 12.471222
## 6 3.081147 6.111302 5.929687 0.741616 4.934298 6.181951 9.616506
##      Las11      Lasp1      Lat      Lat2      Lats1      Lats2      Lax1
## 1 4.497197 6.763816 -0.8029220 1.966050 6.075762 5.9082814 -2.3494387
## 2 4.784462 6.933441 -0.5558140 1.812866 5.832309 6.9976227 -2.4601722
## 3 1.375592 3.374368 -3.8841215 6.790163 1.911138 0.5144282 -3.8841215
## 4 5.873494 5.870947 -2.0454540 1.972424 5.520509 4.0267528 -3.0301832
## 5 4.196137 5.725213 -3.8841215 3.691420 4.160203 3.7409163 -3.8841215
## 6 5.238936 7.185082 -0.9192705 1.685718 6.546679 5.3831004 -0.8609611
##      Layn      Lbh      Lbp      Lbr      Lbx1      Lbx2      Lca5
## 1 -0.4466306 8.277905 -1.9220431 5.847956 -3.433864 -2.975991 2.8913395
## 2 4.9404789 4.643528 1.9542889 6.504268 -3.884122 -1.331655 4.0433046
## 3 -3.8841215 5.872284 6.4741448 7.910031 -3.884122 5.731592 -1.1313170
## 4 1.1728796 4.186637 2.6436016 7.459701 -3.884122 -3.674937 4.2966692
## 5 -2.8071174 5.053564 0.4279671 7.602435 -3.884122 -3.884122 3.7887709
## 6 1.2993038 6.482395 -0.9058051 6.058903 -3.884122 -3.352813 5.0130530
##      Lca51      Lcat      Lck      Lclat1      Lcmt1      Lcmt2      Lcn2

```

```

## 1  0.3951274 3.175004 -2.0489944 4.9961282 4.915339 2.477975 -2.669709
## 2  -0.7410718 1.888542 -0.1736586 4.6639193 4.503880 3.655815 2.551980
## 3  -1.9317392 9.694089 -3.8841215 0.6984974 8.608789 -1.131317 -3.884122
## 4  -0.2410106 7.113420 0.8595862 5.1332149 6.326413 2.992449 -3.884122
## 5  0.7833343 6.915151 -3.8841215 4.3261459 6.831944 2.549557 -3.884122
## 6  0.6154571 6.687189 -0.5031969 5.6412275 4.103281 3.223643 -3.288906
##      Lcor      Lcor1      Lcp1      Lcp2      Lct      Lct1
## 1  2.68179364 5.705410 4.1990864 1.3622556 -0.2834055 -1.922329
## 2  2.84497314 6.032204 8.3411700 6.3433213 -3.1165114 -3.884122
## 3  -0.61952623 1.008333 7.8136024 1.5770128 -1.9317392 -3.884122
## 4  2.71349325 4.509544 4.9598735 2.8785001 0.6500355 -3.884122
## 5  -0.04458439 4.653576 1.6549031 -1.1730114 -2.1973739 -3.884122
## 6  3.27354776 4.494163 0.9727575 -1.8044498 0.6481400 -3.674482
##      Ldb1      Ldb2      Ldb3      Ldha      Ldha16b      Ldha      Ldhd
## 1  6.367267 2.1268899 0.9495850 6.884724 -2.788265 6.285832 2.6933144
## 2  7.080641 3.1455388 -2.0325413 9.375759 -3.476608 3.565153 0.9694792
## 3  4.859533 -0.2425151 -3.8841215 9.919895 -3.884122 9.690700 -1.9317392
## 4  4.544817 3.8756868 0.5937314 7.497343 -3.884122 8.731290 2.7596080
## 5  5.318284 4.5601506 4.3634957 7.858862 -3.884122 8.700065 -2.8071174
## 6  7.073620 1.0272554 0.1346287 7.002258 -2.467943 7.469679 2.3680474
##      Ldlr      Ldlrad3      Ldlrap1      Ldoc1      Ldoc11      Leap2
## 1  7.432614 6.1060274 3.6146268 -3.72356689 5.883833 -3.017609
## 2  6.015535 7.9926538 6.2825342 -2.89520984 2.506979 -2.490774
## 3  6.362697 7.6832300 -1.1313170 -3.88412153 6.252986 -3.884122
## 4  4.802016 5.2038021 0.6038946 0.09478892 4.809974 -3.299469
## 5  4.884007 5.0104855 3.5870208 -3.88412153 4.098249 -3.884122
## 6  8.390098 6.2232014 1.4123361 0.35744774 4.314632 -3.156544
##      Lect1      Lef1      Lefty1      Lefty2      Lekr1      Lemd1
## 1  1.5824201 -1.3643536 -1.4424691 -3.343346 1.4525001 -3.8841215
## 2  -2.1630896 6.1470127 -3.8841215 -3.884122 0.9415798 -3.8841215
## 3  0.6984974 0.6984974 -1.1313170 -3.884122 -1.9317392 -3.8841215
## 4  4.5901029 3.6538006 -0.1910651 -3.884122 3.0476387 0.7199103
## 5  6.1832086 4.2484140 2.2861569 -3.884122 0.7189210 -3.8841215
## 6  0.7664507 3.3566455 -1.0550325 -2.865381 2.1264415 -3.8841215
##      Lemd2      Lemd3      Lenep      Leng1      Leng8      Leng9      Leo1
## 1  5.9205389 4.97442320 1.8896480 3.128829 7.607505 1.563893 4.289816
## 2  6.1564115 5.92555699 -1.1641936 2.903342 4.766809 3.145166 4.522664
## 3  0.5144282 0.05610664 -1.1313170 -1.931739 2.410380 -1.131317 2.410380
## 4  3.2687530 3.58757151 2.7802142 2.980150 4.689012 2.575565 5.843805
## 5  2.7879955 4.58294962 -3.8841215 -2.807117 2.922783 -2.807117 2.879238
## 6  5.9846563 5.07331941 2.8612808 4.110172 10.155753 4.044759 5.256649
##      Lepr      Lepre1      Lepre11      Lepre12      Lepre14      Leprot
## 1  0.4543374 4.85001419 1.8736307 4.783711 4.9932818 6.606006
## 2  4.7536662 5.75297866 -0.1385286 3.760440 5.0652892 7.908612
## 3  -3.8841215 0.05610664 -3.8841215 -1.931739 -0.2425151 8.510707
## 4  1.1657883 2.23956397 -2.7016953 2.548309 3.3076338 6.769119
## 5  -1.4408855 -1.17301144 -1.7701038 -2.807117 5.0922184 7.765282
## 6  -1.3700011 5.10452526 0.5008032 5.925866 4.4636192 5.115197
##      Leprot11      Letm1      Letm2      Letmd1      Lfng      Lgals1      Lgals12
## 1  5.930111 6.3631057 2.679412 5.871924 2.35589367 1.634281 -3.4741348
## 2  5.202030 5.8356838 1.929082 3.355550 4.61588049 3.866589 -3.8841215
## 3  7.404101 0.8617169 -1.931739 7.764149 0.05610664 7.788453 -3.8841215
## 4  5.851722 4.5400363 3.097127 6.624780 3.20172694 6.041034 -1.6964081
## 5  6.804077 3.8577022 3.493852 6.140813 4.72090499 7.657174 -3.8841215

```

```

## 6 4.931791 5.9057445 3.094571 6.005349 7.31716005 2.129198 0.9667056
##      Lgals2      Lgals3 Lgals3bp      Lgals4      Lgals7      Lgals8
## 1 -0.6825406 -0.8453395 1.0654900 -2.4040447 -3.7156978 5.370920
## 2 -0.9416278 0.7697379 4.9096646 -1.1937439 -3.8841215 6.147389
## 3 -3.8841215 2.9352286 7.6804986 -3.8841215 4.9070418 6.815282
## 4 -1.6534153 2.8002676 6.0364693 0.2560503 1.7716874 5.700062
## 5 -3.8841215 3.4449096 6.6667580 -3.8841215 6.2488367 -0.287603
## 6 -1.7025440 2.2635479 3.7250327 -0.2779465 -3.6744822 4.930559
##      Lgals9      Lgi1      Lgi2      Lgi3      Lgi4      Lgm1      Lgr4
## 1 2.496341 2.0277464 2.5347464 7.175662 1.3488569 8.353683 3.039761
## 2 8.157443 -0.7187060 -2.4823940 -1.580542 -0.5167036 7.012064 1.537770
## 3 7.814848 4.3143399 -3.8841215 4.227184 -0.2425151 11.619396 9.821668
## 4 4.052268 6.0390863 -2.2470368 4.988245 4.9235195 7.782638 6.261174
## 5 5.781489 5.2256996 -3.8841215 6.685840 6.1346541 8.033714 7.953316
## 6 1.065822 -1.3453560 -1.1084820 3.590834 6.0656599 6.847413 6.424950
##      Lgr5      Lgr6      Lhb      Lhcgr      Lhfp      Lhfp11
## 1 2.1771120 -1.1568243 -3.884122 -2.309401 3.2009916 -3.8841215
## 2 -3.4766082 0.3349752 -3.656504 -3.884122 5.0058813 -3.6519623
## 3 -0.6195262 0.6984974 -3.884122 -3.884122 5.4465921 -1.9317392
## 4 -3.3818813 -2.1701374 -2.666771 -2.653393 5.2231987 -3.6539444
## 5 -2.8071174 -0.9471720 2.723795 -3.884122 6.0106517 -3.8841215
## 6 -2.5965351 6.5820002 -3.674482 1.088716 5.6152945 -1.5558563
##      Lhfp12      Lhfp14      Lhfp15      Lhpp      Lhx1      Lhx2      Lhx5
## 1 7.557905 6.1093163 -3.1587910 4.232428 -3.8841215 4.196174 -3.8841215
## 2 8.724601 -0.9756618 -3.4837445 4.655929 -3.4837445 0.194735 -3.3356546
## 3 3.074902 0.3033916 -3.8841215 1.008333 -1.9317392 6.324715 0.6984974
## 4 6.138147 3.6162720 0.9730290 6.243846 -2.5111429 7.332588 -3.6036807
## 5 3.951792 0.7833343 0.0631199 6.244553 -3.8841215 7.044801 -3.8841215
## 6 6.773172 4.8554627 -3.8841215 4.096112 -2.8485783 7.108420 -2.7863740
##      Lhx6      Lhx8      Lhx9      Lias      Lif      Lifr      Lig1
## 1 -2.1689823 -3.756645 -3.7669998 4.286088 -2.3353909 4.780384 4.8806180
## 2 2.4594090 -2.627338 -3.2515854 4.944752 -0.3927838 4.992218 4.9683087
## 3 -3.8841215 -3.884122 -0.6195262 6.712069 -3.8841215 7.641705 1.8345785
## 4 -2.7388210 -3.884122 4.4721988 5.853438 -0.2029980 5.599353 6.3477004
## 5 -3.8841215 -3.884122 3.9091272 5.601154 -0.4264149 2.372441 6.4630792
## 6 -2.1841298 -3.512249 -3.4904843 4.714122 2.5316195 6.781784 4.2924200
##      Lig3      Lig4      Lilra5      Lilra6      Lilrb4      Lima1      Limch1
## 1 5.764990 2.8152581 -3.3526786 -3.2721197 -1.7611928 7.279963 6.507815
## 2 5.072155 1.8989277 -3.1080374 -3.8841215 -2.9901757 6.386121 7.540150
## 3 2.053052 -1.1313170 -0.6195262 -3.8841215 0.3033916 3.853225 5.503337
## 4 4.955680 3.5752172 0.9037948 -3.2492053 1.6204614 7.629538 7.387340
## 5 3.276106 -0.7519471 -1.7701038 -3.8841215 -2.8071174 5.666653 6.850854
## 6 5.806383 3.2705991 -3.8841215 -3.8841215 -3.4511394 4.213456 8.797187
##      Limd1      Limd2      Lime1      Limk1      Limk2      Lims1      Lims2
## 1 6.6412234 4.483994 5.6937983 4.793655 6.043527 6.279036 8.2280709
## 2 5.6693251 5.854954 4.1454987 3.935210 6.812265 8.850079 6.0353225
## 3 0.6984974 5.171091 -1.9317392 -1.131317 3.139975 4.916359 8.4186402
## 4 5.1622417 3.933030 3.7328394 1.530039 5.815806 6.115434 4.4235633
## 5 5.7272612 3.716380 -0.9471720 4.219605 4.804760 5.003742 3.2648698
## 6 6.2759548 3.801549 6.2225644 4.532353 6.813570 6.925843 -0.6603506
##      Lin28b      Lin37      Lin52      Lin54      Lin7a      Lin7b      Lin7c
## 1 -3.5960906 2.589909 3.735026 4.6007369 3.2447185 1.3208215 6.208574
## 2 -0.9683782 3.046450 3.440951 4.8067836 2.4183614 -0.4948779 6.737553
## 3 -3.8841215 6.271256 8.411245 0.3033916 -0.2425151 -1.9317392 5.710325

```

```

## 4 -3.6036807 5.082019 6.137489 3.2168168 3.2299277 0.3536740 8.464474
## 5 -3.8841215 5.967986 4.347607 -1.1730114 -2.1973739 -3.8841215 7.773730
## 6 -3.2680874 3.031343 4.350230 3.8838964 -0.7349995 0.2496368 7.080053
##      Lin9      Lingo1      Lingo2      Lingo3      Lingo4      Lins
## 1 3.0161742 5.7588837 3.28319831 5.0871543 0.4404391 4.1874925
## 2 3.9991291 0.1729318 -1.15734768 -1.7588932 -3.6519623 2.3201269
## 3 -0.6195262 0.6984974 0.05610664 -0.6195262 -0.6195262 -0.2425151
## 4 4.4226832 3.3266728 2.00322419 -0.7851860 2.0388335 4.1854309
## 5 -0.1609828 -0.4264149 2.87923839 3.4248580 -1.1730114 1.6889296
## 6 3.3442485 3.0361441 -3.15654382 -0.2644690 2.4125115 4.5996105
##      Lipa      Lipc      Lipe      Lipg      Liph      Lipm
## 1 5.195229 -3.1894475 3.529862 -2.4753318 -1.6635126 -3.8841215
## 2 9.104004 4.9613029 5.657852 -0.5872537 -3.1080374 -3.8841215
## 3 7.111407 -3.8841215 1.263249 -1.9317392 -0.6195262 3.2323916
## 4 5.674094 -2.9259520 3.272630 -3.6539444 -1.1007390 0.6232613
## 5 5.494565 -3.8841215 2.849461 -2.8071174 -1.7701038 1.8777815
## 6 4.811740 -2.9862494 4.742510 4.0443112 -2.3395529 -3.8841215
##      Lipo1      Lipt1      Lipt2      Litaf      Lix1      Lix11
## 1 -0.1395644 -0.2636818 0.82422367 6.016452 1.7631843 5.4728014
## 2 3.7300070 0.3350472 2.85629347 8.177567 0.1193311 5.7752293
## 3 3.4011610 -0.6195262 -1.13131698 8.698601 6.5509267 -0.2425151
## 4 2.8818733 3.2608476 1.11699536 7.431809 7.8919626 2.0077484
## 5 3.2421320 0.2570463 2.21787909 8.153548 7.8181253 3.6745361
## 6 0.2146276 2.0201424 0.96383073 5.707614 5.2974333 5.4127168
##      Llg11      Llg12      Llph      Lman1      Lman11      Lman2      Lman21
## 1 8.208125 -1.9155185 2.4287848 5.587734 -2.454540 7.226519 5.572240
## 2 6.698695 1.9713971 3.1184155 7.127331 -3.251585 7.591373 4.116325
## 3 2.512206 0.6984974 0.3033916 4.422917 -3.884122 1.834579 1.375592
## 4 5.890879 -1.9181296 4.6777567 4.870127 -3.884122 6.002718 5.516666
## 5 6.128468 -1.7701038 4.2254133 4.430394 -3.884122 6.924107 5.915063
## 6 7.305161 -2.2938670 2.1464664 6.417542 -2.424867 6.816734 5.027692
##      Lmbr1      Lmbr11      Lmbrd1      Lmbrd2      Lmcd1      Lmf1      Lmf2
## 1 4.900353 3.92135421 7.746082 4.7053441 4.1045096 6.102457 5.522927
## 2 6.697904 4.26807159 7.510896 3.9580051 3.4406247 5.046684 6.552648
## 3 4.196921 2.05305205 7.086862 -0.2425151 6.8545853 6.792695 3.773441
## 4 4.141925 2.08740248 7.880597 2.5823795 6.2479123 5.810170 5.759183
## 5 4.662166 -0.04458439 7.347402 0.8449942 6.3743793 6.574211 5.532539
## 6 4.476082 4.78557360 7.197373 4.5078717 4.3141904 4.984408 6.444403
##      Lmln      Lmna      Lmnb1      Lmnb2      Lmo1      Lmo2
## 1 2.5407228 5.562442 5.727379 5.02631475 3.1715533 3.5694199
## 2 2.0132465 6.981505 6.254808 4.73804321 0.7972780 8.8924553
## 3 -0.2425151 6.073075 1.263249 -0.61952623 0.6984974 4.3965292
## 4 0.1443068 4.279060 3.288721 3.03530286 0.2744070 1.8470135
## 5 -3.8841215 6.595670 3.404524 0.34503644 -0.9471720 0.3450364
## 6 3.2412102 6.756149 4.965145 4.59166918 -1.0625202 1.4251249
##      Lmo3      Lmo4      Lmo7      Lmod1      Lmod3      Lmtk2
## 1 2.9173131 5.797064 1.3924235 -0.04932814 -3.884122 6.1925692
## 2 -0.8606961 5.279088 4.0912814 -1.78314385 -3.248991 6.0784103
## 3 7.2541839 6.943850 1.1414140 -3.88412153 -3.884122 0.8617169
## 4 3.9323446 3.839173 1.2326503 -0.33327373 -3.884122 3.8387124
## 5 2.2637547 4.979890 0.2570463 -2.80711744 -3.884122 1.8175364
## 6 2.1997466 5.481135 2.0782494 0.40475534 -3.884122 5.2637362
##      Lmtk3      Lmx1a      Lnp      Lnpep      Lnx1      Lnx2
## 1 7.1191519 -3.8841215 5.089921 4.1282642 6.3326845 2.4925462

```

```

## 2  0.3335992 -3.6519623 2.624842 5.4619039 1.9223926 5.6670284
## 3  -1.9317392 -1.1313170 6.632334 0.3033916 -0.2425151 -0.6195262
## 4  0.8989372 0.4072389 6.375263 3.5039058 3.2603609 1.1371718
## 5  -2.8071174 -3.8841215 5.470313 3.9447685 1.9636795 -2.1973739
## 6  6.4974874 -3.6744822 5.391027 6.5841554 4.2684647 2.6298152
##      Loh12cr1      Lonp1      Lonp2      Lonrf1      Lonrf2      Lonrf3      Lox
## 1  4.3566361 6.612534 5.931076 3.910989 4.9147982 3.9159906 1.9930323
## 2  2.2364818 6.102937 5.821365 2.829579 -0.7452336 5.1342458 0.5773118
## 3  -0.2425151 2.859970 4.897664 1.753727 5.5932166 -0.2425151 -3.8841215
## 4  3.3342663 4.735746 7.054005 2.598294 5.3274717 4.2137335 -2.4466218
## 5  2.3724409 5.664516 5.331807 4.700200 4.3582188 3.4744738 -3.8841215
## 6  2.4501683 6.642991 6.190688 4.061006 2.9750840 7.6340707 -2.5216411
##      Loxl1      Loxl2      Loxl3      Loxl4      Lpar1      Lpar2
## 1  -0.3749983 1.04627426 4.9322151 -0.8002142 5.8042799 2.35681579
## 2  -0.1248278 5.69612595 2.7374352 2.2036308 1.8233443 -0.71109498
## 3  -3.8841215 -1.13131698 0.3033916 -3.8841215 8.9540391 0.05610664
## 4  1.3660054 -0.06952882 4.6438617 -2.0031977 8.7546476 3.31084459
## 5  2.0447493 -0.04458439 2.0447493 -3.8841215 9.6235224 4.17828166
## 6  4.9394083 1.15123322 5.0613277 -2.2632704 3.4439481 1.21695018
##      Lpar3      Lpar4      Lpar5      Lpar6      Lpcat1      Lpcat2      Lpcat3
## 1  2.7238637 1.2970016 -2.7553192 1.189304 6.660101 4.4982056 5.524952
## 2  -3.1273690 4.7615027 -3.8841215 6.157544 5.084649 -0.2690258 7.156366
## 3  -3.8841215 5.2761432 -0.6195262 7.638893 -1.131317 8.9775952 7.821062
## 4  0.1976183 4.3959657 -2.9559032 5.410298 2.884461 1.4529716 6.218088
## 5  -2.8071174 2.3082165 -3.8841215 5.863853 2.413722 -0.2876030 6.117579
## 6  0.2511785 3.6944984 -3.1565438 4.220079 6.892070 -2.1942889 6.754706
##      Lpcat4      Lpgat1      Lphn1      Lphn2      Lphn3      Lpin1      Lpin2
## 1  4.1752360 5.432924 8.046197 2.6454664 7.0529374 5.3469217 6.011918
## 2  3.9089309 4.652440 5.603506 8.7032743 6.3080636 6.2382048 5.073525
## 3  0.5144282 1.375592 2.356639 2.1190956 0.6984974 1.1414140 1.911138
## 4  0.2805592 4.823578 6.315921 2.9315381 4.1519605 6.3384850 5.277960
## 5  2.4929006 3.865162 5.537216 1.3911881 -1.4408855 3.7490031 4.336916
## 6  3.3183128 3.421044 8.805258 6.7365939 7.2140123 5.6271019 6.363560
##      Lpin3      Lpl      Lpo      Lpp      Lpxn      Lrat
## 1  -2.32840904 2.55832764 2.5237422 3.2415876 0.78466744 -2.9034020
## 2  0.58041395 1.95151758 -0.3786572 6.1103677 -1.28969346 0.6993709
## 3  -0.24251506 0.05610664 -3.8841215 1.5770128 0.51442825 -3.8841215
## 4  1.56543347 2.24992982 -1.1263982 5.3522738 2.02416651 -2.7729512
## 5  -1.17301144 -1.17301144 -3.8841215 3.9657381 -0.75194706 -3.8841215
## 6  2.02876202 -0.17333426 2.5851123 6.7367577 0.10165127 -1.9859471
##      Lrba      Lrch1      Lrch2      Lrch3      Lrfn1      Lrfn2
## 1  5.238163 4.4750280 4.952513 6.271941 4.8423554 3.61193799
## 2  6.308921 6.6487414 1.675213 6.617287 1.6416766 -1.63946853
## 3  7.027913 -0.2425151 3.622232 -1.131317 -3.8841215 4.03528398
## 4  2.638935 1.4996594 3.431629 3.527704 -0.1877354 -1.76017248
## 5  4.166254 -0.2876030 2.707288 2.656603 -3.8841215 2.17049661
## 6  5.769883 3.9730339 4.935923 6.096662 3.2192771 0.24564846
##      Lrfn3      Lrfn4      Lrfn5      Lrg1      Lrguk      Lrig1
## 1  3.8089407 5.4924510 2.8719235 -2.8788176 -2.0315879 5.236605
## 2  -0.3305488 4.0505265 -1.3947094 0.3018713 -2.4880632 6.586443
## 3  -1.9317392 -1.1313170 -1.1313170 -3.8841215 -3.8841215 7.375676
## 4  -0.3388554 2.3613173 -1.4432837 -3.6749365 0.1007659 4.838966
## 5  3.2421320 1.6200547 -2.8071174 -3.8841215 -3.8841215 5.692042
## 6  3.4721491 6.2577217 -2.4657816 -3.6607788 -1.2570015 9.875466

```

##	Lrig2	Lrig3	Lrit3	Lrmp	Lrp1	Lrp10	Lrp11
## 1	5.253389	4.57394171	-3.545526	0.40068054	10.792839	6.739026	5.534696
## 2	5.804424	3.04014568	-3.227782	-0.48942251	5.042980	7.889467	2.227669
## 3	1.577013	-0.24251506	-3.884122	-1.93173924	8.099853	2.512206	1.141414
## 4	4.965573	0.03275095	-3.197812	0.01446659	6.756219	4.537381	4.299558
## 5	4.854328	-2.19737395	-3.884122	-2.80711744	6.373072	5.166553	3.404524
## 6	5.648771	2.48180927	-3.027614	-3.67448218	10.748019	7.247038	4.191866
##	Lrp12	Lrp1b	Lrp2	Lrp2bp	Lrp3	Lrp4	Lrp5
## 1	5.744299	6.104750	-1.4995922	-1.45678571	7.1827365	7.330999	4.9873604
## 2	2.640867	-2.341440	-3.4837445	0.35948465	1.1470979	6.400290	7.1062580
## 3	3.107806	3.347069	-3.8841215	-3.88412153	0.8617169	4.979944	2.3008186
## 4	5.375603	1.473496	-2.0182657	-2.59569213	3.8419477	6.687400	1.4261018
## 5	6.255948	-2.197374	-3.8841215	-3.88412153	5.0890365	7.069228	0.0631199
## 6	5.173345	6.228100	-2.0142124	-0.02020344	6.7034932	8.618419	5.9479027
##	Lrp6	Lrp8	Lrpap1	Lrpprc	Lrr1	Lrrc1	Lrrc10b
## 1	6.473317	4.822757	7.191676	5.445869	-1.5815459	4.3868816	-0.2265956
## 2	6.508850	9.475201	7.324550	5.173310	-0.1150212	1.2015942	-2.2769649
## 3	2.119096	1.911138	8.896355	5.699572	-1.1313170	3.9102948	-1.9317392
## 4	5.485199	6.770551	9.474845	4.283832	2.7305630	4.9902567	-0.4285927
## 5	3.979550	5.562674	9.779453	2.908414	-2.1973739	5.2343662	-3.8841215
## 6	7.305049	6.992575	7.093811	5.944160	-0.6116798	3.2197126	0.7910463
##	Lrrc14	Lrrc14b	Lrrc15	Lrrc16a	Lrrc16b	Lrrc17	
## 1	4.0488620	0.89203263	-3.8841215	6.300978	5.584230	-1.71395125	
## 2	3.6636693	0.25761501	-0.9358728	2.246318	-1.019329	-0.33054884	
## 3	0.6984974	-3.88412153	-0.6195262	5.346757	-3.884122	-3.88412153	
## 4	3.2400160	0.05585283	-3.1643186	3.476275	1.567999	-3.14161637	
## 5	3.9795505	1.81753643	-2.8071174	1.306052	-2.807117	-2.80711744	
## 6	4.0608787	1.10534807	-3.6744822	7.146077	6.081199	-2.78637397	
##	Lrrc18	Lrrc19	Lrrc2	Lrrc20	Lrrc23	Lrrc24	
## 1	-1.9035207	-2.9663982	-0.6478687	3.6407745	-2.23582451	2.7544445	
## 2	1.1627042	-3.3356546	-1.1153858	3.6812086	-0.02502254	0.5808893	
## 3	-3.8841215	-1.9317392	-1.9317392	0.3033916	-3.88412153	0.8617169	
## 4	-0.6420225	-0.3666851	1.0212151	2.3293807	2.83649835	2.3092440	
## 5	-3.8841215	2.6393048	-3.8841215	0.7189210	3.09762292	3.8651618	
## 6	-1.7198143	-2.2885695	0.4343695	2.9009922	2.71882187	2.9350100	
##	Lrrc25	Lrrc26	Lrrc27	Lrrc28	Lrrc29	Lrrc3	
## 1	-0.16531203	-3.323662	1.0013399	4.490642	0.24987237	1.9489690	
## 2	-1.71337854	-3.039241	1.6460889	3.935829	0.60865397	-1.6944177	
## 3	0.05610664	5.515649	7.0827308	7.790988	-3.88412153	4.8787247	
## 4	1.71463767	-3.884122	3.3256369	5.380270	0.08431052	1.7221692	
## 5	3.12273548	-3.884122	-3.8841215	5.941767	-3.88412153	-2.1973739	
## 6	-2.76580247	-3.490484	2.9600307	2.952785	0.42402639	-0.8962158	
##	Lrrc32	Lrrc34	Lrrc36	Lrrc38	Lrrc39	Lrrc3b	
## 1	-0.3745364	-3.67786142	-3.8841215	-1.6897540	-0.6891651	-2.577565	
## 2	4.4487014	-1.95401704	-2.2716306	-2.4610404	0.9354105	-3.108037	
## 3	-1.9317392	-3.88412153	-3.8841215	-1.9317392	-3.8841215	-3.884122	
## 4	1.4328282	0.07165224	0.7849411	-1.5729788	1.5398589	-2.988339	
## 5	-3.8841215	-3.88412153	-3.8841215	-3.8841215	-2.8071174	-2.807117	
## 6	0.5799922	-0.73146862	-0.4250638	2.3043986	0.5639558	-2.569123	
##	Lrrc4	Lrrc40	Lrrc41	Lrrc42	Lrrc43	Lrrc45	Lrrc46
## 1	6.2211015	4.601150	5.594272	5.5353006	-3.629612	5.80171633	-0.74318883
## 2	0.1442554	4.561148	5.800665	4.4155565	-2.341440	4.79189494	-0.17008561
## 3	1.8345785	3.599276	7.121513	0.8617169	-3.884122	0.05610664	-0.61952623
## 4	2.9251791	6.219181	5.443854	4.7242992	-3.042922	4.18204366	1.58522613


```

## 5 0.0631199 6.333285 5.763639 5.6815170 -3.884122 -1.77010377 -3.88412153
## 6 4.6137784 4.699486 5.427653 5.5675246 -1.273364 6.28502295 -0.24452251
##      Lrrc47      Lrrc48      Lrrc49      Lrrc4b      Lrrc4c      Lrrc52
## 1 5.49896157 -1.1593386 5.444992 7.57071378 5.9959239 -3.884122
## 2 5.08872441 0.7716200 6.583281 0.09161946 0.9834432 -3.884122
## 3 0.05610664 -3.8841215 1.141414 7.64731099 6.1852328 -3.884122
## 4 1.50170505 2.6801717 6.029210 6.28970303 5.4769047 -3.884122
## 5 3.24213202 2.9788711 4.555547 8.28275786 6.4219421 -3.884122
## 6 4.93190296 2.0839608 5.458965 6.88780636 4.5096091 0.149789
##      Lrrc55      Lrrc56      Lrrc57      Lrrc58      Lrrc59      Lrrc6      Lrrc61
## 1 1.4630888 2.2744151 5.178353 7.528978 6.741382 -3.2323697 3.7879080
## 2 6.2456524 1.9071603 5.238928 7.779187 7.730401 -2.9352776 2.4751523
## 3 -3.8841215 7.3739860 3.074902 9.146942 5.297693 -1.9317392 0.5144282
## 4 -2.1712401 3.3186009 6.392674 9.404248 4.209018 -1.1478813 3.6207028
## 5 -2.8071174 5.0502955 6.295135 8.833441 4.749401 -3.8841215 3.8502038
## 6 -0.9915919 2.6900229 4.458726 8.164035 6.293851 -1.6302803 2.9309868
##      Lrrc63      Lrrc66      Lrrc7      Lrrc8a      Lrrc8b      Lrrc8c      Lrrc8d
## 1 -2.5335362 -2.884701 3.3024353 5.188460 5.8454736 3.62200223 6.344951
## 2 -3.4837445 -3.884122 -1.0081672 6.788313 5.6104498 6.88447971 5.372389
## 3 -3.8841215 -3.884122 1.9111385 8.288359 -1.1313170 0.05610664 1.375592
## 4 -1.7412690 -2.862578 0.9278269 8.315683 2.3257155 1.56275229 4.857705
## 5 -3.8841215 -3.884122 -3.8841215 8.881591 3.0061180 1.26152207 5.961040
## 6 -3.8841215 -3.156544 2.3729861 6.538802 2.7534697 4.00041303 4.742995
##      Lrrc8e      Lrrc9      Lrrcc1      Lrrfip1      Lrrfip2      Lrriq1
## 1 -3.0991083 -0.9088969 4.2589457 5.152579 5.0393197 -2.1337255
## 2 -3.8841215 -3.6519623 5.6162423 7.341615 5.1990988 -2.5614538
## 3 1.1414140 -3.8841215 -0.6195262 1.577013 0.5144282 -3.8841215
## 4 -0.7618301 -1.0191363 5.0908532 3.072505 3.6805525 0.4855728
## 5 -1.1730114 -3.8841215 3.5129733 2.656603 4.1722804 -2.1973739
## 6 -3.1713129 3.6219606 5.8058516 4.984688 5.1311412 0.2582007
##      Lrriq3      Lrrk1      Lrrk2      Lrrn1      Lrrn2      Lrrn3
## 1 -0.8366334 0.8401405 2.2430362 8.574303 6.1404248 6.027666
## 2 -1.2416912 5.9174197 4.2448390 1.333631 -1.4551832 2.209157
## 3 -3.8841215 -3.8841215 -3.8841215 7.972774 6.4614713 8.098831
## 4 -1.5668183 2.7896766 2.5024128 5.710688 2.0062780 5.815732
## 5 -3.8841215 1.6889296 4.3999029 6.181716 -0.5800187 5.199383
## 6 -0.4087914 0.7803606 6.1854596 3.607148 5.6789058 3.950988
##      Lrrn4      Lrrn4c1      Lrrtm1      Lrrtm2      Lrrtm3      Lrrtm4
## 1 -2.071507 -0.6876058 5.30360881 6.79032140 5.9368083 4.6551242
## 2 -3.651962 -0.5010646 -1.81873231 -0.08438733 -1.8010665 -2.0150420
## 3 -3.884122 -3.8841215 3.89152124 4.65211349 7.0597922 7.1960821
## 4 -3.884122 0.5677422 4.53623864 5.86962943 2.4168927 6.6060961
## 5 -3.884122 -2.8071174 5.53253907 5.26005786 -1.7701038 6.3743793
## 6 -3.237253 -0.7004399 -0.06155983 5.66717136 -0.5693676 -0.8643966
##      Lrsam1      Lrtm1      Lrtm2      Lrwd1      Lsmp      Lsg1
## 1 4.796161 -3.402276638 4.3841607 3.82431274 6.63874863 4.743395
## 2 4.233735 -3.884121530 -1.7545378 4.21316027 -0.08864631 5.418321
## 3 -1.931739 -1.131316983 4.4993027 0.05610664 6.03936074 1.577013
## 4 4.160655 -1.250653515 0.9082029 4.94902434 6.53260166 5.981886
## 5 -1.770104 -3.884121530 -2.8071174 5.09856133 6.67527009 5.350530
## 6 5.091501 -3.512248764 6.9594138 4.03216424 6.91909953 5.167989
##      Lsm1      Lsm10      Lsm11      Lsm12      Lsm14a      Lsm14b      Lsm2
## 1 4.0216088 2.379577 3.90101491 4.034839 6.659910 6.547774 3.8066069
## 2 4.6814969 2.674455 3.24183084 3.446117 7.799448 5.368295 4.2247466

```

```

## 3 0.3033916 5.453008 -0.24251506 4.571847 4.356020 3.644828 6.3728840
## 4 4.5365972 5.582268 0.07819035 4.104756 5.050149 5.235548 4.1924787
## 5 6.5911783 6.948014 -1.44088555 3.110234 4.820194 6.835746 5.3924334
## 6 3.4124036 2.128776 3.97732698 3.981853 6.285771 5.821084 2.8756648
##      Lsm3      Lsm4      Lsm5      Lsm6      Lsm7      Lsp1      Lsr
## 1 4.219490 5.198740 0.7018735 5.207523 1.24744910 0.5678616 0.2303381
## 2 4.247583 5.957083 1.8711148 4.390561 -0.58871536 0.4383079 9.1576809
## 3 6.779991 5.973941 4.0690927 7.059792 3.57594910 -1.1313170 7.2778696
## 4 6.940758 3.139547 2.4651771 6.778573 1.75004064 2.6201760 0.7261099
## 5 7.924598 6.454451 3.3734750 7.340728 2.14620872 -1.1730114 2.2178791
## 6 2.790988 3.762873 -0.3008110 5.460569 0.43763161 2.0665799 2.0657028
##      Lss      Lst1      Lta      Lta4h      Ltb      Ltb4r1      Ltb4r2
## 1 6.614084 -0.9325525 -1.7646844 5.133477 -2.9232800 -3.0667561 -2.598709
## 2 1.686786 -0.3996386 -0.9647092 6.942718 0.9718845 -0.3601819 -2.766249
## 3 1.008333 4.7386914 -3.8841215 5.099280 -1.9317392 -3.8841215 -1.931739
## 4 5.542819 1.6059934 -3.2091840 6.698335 -3.4277009 -2.9075996 -3.394496
## 5 4.315294 1.5101550 -3.8841215 6.833846 -3.8841215 -2.8071174 -2.197374
## 6 7.623298 -3.1565438 -0.2830753 5.742358 -3.2889060 -2.8485783 -3.143174
##      Ltbp1      Ltbp2      Ltbp3      Ltbp4      Ltbr      Ltc4s
## 1 2.4928038 -0.2035328 6.65883002 5.304349 5.091943 1.8461311
## 2 2.9089865 -0.8054885 3.07586430 9.089291 7.193517 1.7851084
## 3 4.9530358 -3.8841215 0.05610664 6.142205 -1.131317 7.6913936
## 4 3.8466519 1.9938601 3.39008849 3.458908 3.656109 3.6944208
## 5 1.2615221 -3.8841215 2.75625220 3.640164 4.326146 0.7833343
## 6 6.2552075 -2.6160795 7.12733622 3.807439 5.315017 -2.1730096
##      Ltf      Ltk      Ltn1      Ltv1      Luc7l      Luc7l2      Luc7l3
## 1 -1.7201628 1.13145995 6.165026 4.3500742 7.043037 6.907577 6.536039
## 2 -0.5280177 -2.13749325 6.254536 4.9637998 6.139014 7.091769 5.432218
## 3 -3.8841215 -3.88412153 1.141414 4.9888036 2.300819 4.916359 7.252346
## 4 -3.6749365 -1.58941491 5.508719 4.4800834 7.304002 5.578244 7.968243
## 5 -3.8841215 -3.88412153 4.920266 3.8725830 5.787390 4.474956 6.151530
## 6 -3.8841215 -0.39217827 6.288597 4.9484962 7.894234 8.060480 8.196239
##      Lum      Luzp1      Luzp2      Lxn      Ly6d      Ly6e      Ly6g5b
## 1 0.8835157 4.832426 8.921859 2.609118 -3.4212015 5.422654 -0.256406716
## 2 -1.5372498 7.798790 1.809779 6.864736 -1.1266656 9.695979 -1.561977150
## 3 0.5144282 2.607316 3.752786 6.138229 4.1660102 10.205984 -3.884121530
## 4 5.5431104 4.091351 7.404329 7.770083 0.7116868 7.555676 -1.521423757
## 5 5.8987996 3.531845 6.614603 7.187751 6.3886841 8.273677 -3.884121530
## 6 -2.1287936 6.321517 9.820529 7.356968 -3.8841215 2.867054 0.168962711
##      Ly6g5c      Ly6g6c      Ly6g6d      Ly6g6e      Ly6g6f      Ly6h
## 1 -3.7949831 -2.9018221 -0.7041187 -1.5681345 -1.0579559 5.45853286
## 2 -0.6939603 -2.4601722 -0.6129450 -0.9306696 -3.8841215 1.86163216
## 3 -3.8841215 2.8599701 -1.9317392 6.2270146 -3.8841215 -0.61952623
## 4 -1.5096959 -0.1710441 -0.1283599 2.9629022 0.1452409 -0.02558367
## 5 -3.8841215 4.1602026 -3.8841215 5.3182835 -2.8071174 -0.42641489
## 6 -3.8841215 -2.2857506 -3.1431739 -2.6783180 -3.6744822 0.77235308
##      Ly6k      Ly75      Ly86      Ly9      Ly96      Lyar
## 1 -3.2067702 -1.8549410 3.3060110 -2.6385752 -0.6478685 3.309206
## 2 -1.8899718 8.6385909 -2.1037807 -1.4442471 2.0217385 4.571875
## 3 -1.9317392 -3.8841215 10.2432494 -3.8841215 5.3942077 -3.884122
## 4 -0.2018265 -1.3718637 4.2771179 -2.4729918 1.9906345 3.599057
## 5 3.1102338 -3.8841215 1.9356113 -3.8841215 2.6393048 2.329944
## 6 -3.4511394 1.5415498 -2.4679430 -3.4904843 0.2618400 3.340408
##      Ly11      Lyn      Lypd1      Lypd2      Lypd3      Lypd5

```

```

## 1 -0.02763332 4.054079 3.1061565 -3.884122 -0.47358166 -3.5146428
## 2 4.42275979 7.615569 2.5880493 -0.338273 -3.12736903 -3.8841215
## 3 -1.13131698 7.613342 -1.9317392 -3.884122 4.48684930 1.5770128
## 4 1.11958507 4.883300 -0.5665069 -1.155696 1.87067153 -1.6402672
## 5 1.34924776 2.070791 2.3513488 -3.884122 2.87923839 -0.7519471
## 6 -1.91358655 4.285853 -0.2152317 -3.884122 0.07626373 -3.8841215
##      Lypd6      Lypd6b      Lypla1      Lypla2      Lypla11      Lyrml      Lyrml2
## 1 5.3095866 1.10834307 4.174160 5.566130 3.89588596 1.3349349 4.142667
## 2 2.7746957 -0.38371488 7.182382 5.501027 3.93600743 1.9741848 4.277229
## 3 0.3033916 0.05610664 3.575949 6.632334 0.05610664 6.3762639 6.185233
## 4 2.4756924 -1.16206716 6.269191 4.516263 4.54238468 4.4663943 6.647468
## 5 3.9657381 -1.77010377 6.421942 4.609841 4.71265866 5.6962299 7.546117
## 6 3.2098305 -2.98624936 4.927367 6.093729 3.05746763 1.2833924 3.421251
##      Lyrml4      Lyrml5      Lyrml7      Lysmd1      Lysmd2      Lysmd3      Lysmd4
## 1 3.140608 3.713322 -0.1107663 0.2401064 3.767183 4.0027657 3.774201
## 2 3.129238 3.903817 -1.4070472 0.8219708 4.824700 6.4297323 2.967130
## 3 7.731532 4.971031 -3.8841215 4.5718465 6.223266 -0.6195262 5.006360
## 4 7.133633 5.613691 3.1520409 2.8336493 4.229495 4.4171413 4.577648
## 5 8.253213 6.233068 3.6914197 3.5870208 5.430643 4.1541256 5.151379
## 6 4.854328 4.286304 0.2873025 -0.3436751 4.232207 4.1996622 3.898566
##      Lyst      Lyve1      Lyz1      Lyz2      Lyz14      Lzic
## 1 4.6771042 -0.5023054 -3.67786142 1.8859617 -3.8841215 4.945800
## 2 5.7389594 -1.5202297 -3.88412153 2.1127713 -3.8841215 4.151777
## 3 0.8617169 2.8980900 -3.88412153 9.0045999 -0.6195262 1.008333
## 4 3.5759915 4.7231721 -2.90563956 7.3284578 -2.3310042 5.801861
## 5 -1.1730114 1.7864435 -3.88412153 6.9480140 -3.8841215 6.573072
## 6 6.0107866 -3.3528132 -3.88412153 -2.5459558 -3.8841215 5.050668
##      Lztf11      Lztr1      Lzts1      Lzts2      M6pr      Mab2111      Mab2112
## 1 3.878244 7.012696 -0.8631984 5.379653456 6.871719 -1.0439113 -3.677861
## 2 4.592444 6.234945 4.2131461 5.565452679 8.456567 -0.1325587 -2.270963
## 3 2.242751 2.512206 -1.9317392 1.141413971 7.696810 -3.8841215 -3.884122
## 4 5.128427 6.373029 2.4492343 1.416581784 6.858144 -3.3944957 -1.170337
## 5 2.707288 4.876644 -0.2876030 2.787995530 7.013255 -2.8071174 -3.884122
## 6 3.758989 6.720948 1.9524055 5.235772880 6.386537 -0.2925287 -3.118612
##      Mab2113      Macf1      Macrod1      Macrod2      Mad111      Mad211      Mad211bp
## 1 -2.637873 8.312254 2.8977008 3.8223077 5.328177 3.027222 2.3371924
## 2 -3.112310 9.732911 0.3587733 2.7334391 5.259564 4.659528 3.7528585
## 3 -1.931739 4.474287 -3.8841215 -1.9317392 1.479815 4.369650 -0.2425151
## 4 -3.884122 7.066445 1.5419064 2.9420080 6.120222 5.612847 4.5345151
## 5 -3.884122 4.522906 2.8036091 3.7081079 5.601154 6.187678 5.5442039
## 6 -2.980940 11.207414 1.5389783 3.2493429 4.157845 2.950652 2.2756438
##      Mad212      Madcam1      Madd      Maea      Maf      Maf1      Mafa
## 1 4.952315 -3.5648661 5.84465163 5.811791 2.178281 6.760491 -1.8645572
## 2 4.581420 6.3862434 4.57308227 6.979838 3.020749 7.405866 -2.0647642
## 3 7.368905 -3.8841215 0.86171687 2.119096 7.047125 4.849841 -1.9317392
## 4 6.441616 -3.8841215 3.41600367 6.514665 5.724794 5.196219 -3.8841215
## 5 6.981003 -3.8841215 -0.04458439 6.334630 5.376862 6.056986 -3.8841215
## 6 4.063269 -2.5429387 5.62447973 6.018528 2.058398 5.576360 -1.7198143
##      Mafb      Maff      Mafg      Mafk      Mag      Mageb3
## 1 4.059457 4.3084918 4.927437 5.92424013 8.3807765 -3.434315
## 2 4.063798 9.2835157 4.662981 8.77165674 -1.9986392 -2.246723
## 3 2.462191 2.7391666 -1.131317 0.05610664 8.6351258 -3.884122
## 4 2.835760 0.1867449 3.160227 2.00044243 7.0776080 -2.912643
## 5 2.018229 2.4735096 1.471579 -1.17301144 9.3868538 -3.884122

```

```

## 6 3.851604 7.8073307 5.534858 6.43179022 -0.5598481 -2.356144
##      Maged1  Maged2  Magee1  Magee2  Mageh1  Magel2  Magi1
## 1 9.546108 6.958307 6.043988 1.5396691 6.503772 -2.922450 6.096436
## 2 8.213525 7.336400 2.233847 -1.7747533 5.830123 -2.578902 6.159214
## 3 8.656133 4.383152 5.380809 6.4390214 5.194255 -3.884122 2.119096
## 4 10.152930 7.993487 4.564247 3.5656748 6.776806 -3.884122 7.679580
## 5 9.348283 8.193355 4.455320 4.2254133 7.987895 -3.884122 7.102745
## 6 8.344052 6.766312 4.621891 -2.1533838 6.050628 -2.786374 7.691732
##      Magi3  Magix  Magoh  Magohb  Magt1  Mak  Mak16
## 1 3.5600182 -3.589593 4.686029 2.0457647 6.302599 -3.1671241 4.082836
## 2 6.9538046 3.194524 6.236070 2.4033555 7.288248 -3.8841215 4.304710
## 3 -0.6195262 -3.884122 7.151410 6.7227287 5.655743 -3.8841215 1.008333
## 4 4.3663867 -2.915977 6.564662 5.1209988 7.120589 -2.2000098 5.517828
## 5 0.7833343 -3.884122 7.761290 6.0257077 6.807953 -3.8841215 5.240115
## 6 5.9234364 -3.280845 4.442759 1.9599333 6.558771 -1.7340567 3.824408
##      Mal  Mal2  Mall  Malt1  Mamdc2  Mamdc4
## 1 7.4025841 0.96895161 -3.6128580 3.7602478 -2.1520267 2.5880696
## 2 6.7717576 0.02884057 2.7978300 6.0324879 -1.1564358 1.0526805
## 3 9.9852662 7.70489766 1.9111385 -0.6195262 -0.6195262 -1.9317392
## 4 9.1723270 1.03970818 -1.3705299 1.3298336 3.8925830 0.8981462
## 5 10.1117583 2.72379468 -0.5800187 -1.7701038 -1.7701038 -2.8071174
## 6 0.7850729 -1.63028026 -2.9017848 3.3243175 5.0106098 4.0785725
##      Maml1  Maml2  Maml3  Mamld1  Mamstr  Man1a
## 1 4.87901458 5.611831 1.9560491 4.197512 -2.8643316 5.3903529
## 2 6.17550732 4.643472 4.6404158 5.085402 2.8603256 6.5786522
## 3 0.05610664 6.916254 0.3033916 -3.884122 -1.9317392 1.0083330
## 4 3.08732235 7.187304 3.1658189 0.371667 1.8075999 2.7432745
## 5 -0.75194706 6.331940 1.5843436 -3.884122 -3.8841215 -0.7519471
## 6 4.85754454 6.622399 0.1500269 3.448044 0.2404920 2.7294917
##      Man1a2  Man1b1  Man1c1  Man2a1  Man2a2  Man2b1  Man2b2
## 1 7.314795 7.353960 5.830535 3.35320198 8.351850 6.865733 5.722458
## 2 6.568317 6.979795 5.879013 7.03935497 5.826484 6.138883 5.517527
## 3 2.119096 1.479815 4.717529 4.95303578 1.911138 6.520703 2.739167
## 4 4.976154 4.960142 3.384592 1.70079002 5.232362 5.293380 3.828755
## 5 4.959127 3.596015 3.732784 -0.04458439 3.352398 2.096371 4.793075
## 6 5.965511 6.950849 3.946364 4.00269939 8.254979 5.258227 5.336737
##      Man2c1  Manba  Manbal  Manea  Maneal  Manf  Mansc1
## 1 6.160366 3.920426 4.951583 5.108288 5.8988379 6.746016 -0.01403279
## 2 5.662779 6.427231 4.974153 4.991375 -1.4117417 6.982593 4.50817962
## 3 1.753727 8.761988 7.435221 5.304805 0.8617169 8.388831 6.60378416
## 4 5.795046 3.670468 6.175189 5.073184 3.8357520 6.699081 4.04943374
## 5 4.757441 -0.287603 7.282027 5.632090 -0.9471720 7.633345 3.68300256
## 6 6.412256 3.722219 4.394100 5.825668 4.1389251 6.766234 3.52699624
##      Maoa  Maob  Map1lc3a  Map1lc3b  Map2k1  Map2k2  Map2k3
## 1 5.700770 2.1999693 6.582209 7.534889 6.555436 6.683763 4.431451
## 2 9.562234 3.4465951 6.751991 7.782448 6.425801 6.690774 6.461894
## 3 7.687318 6.3351732 7.365508 9.845945 1.911138 5.521766 1.141414
## 4 5.622685 5.4519364 5.081793 9.963798 4.639355 4.455116 3.557386
## 5 5.683628 3.6138373 6.234508 10.455415 6.184700 5.076238 5.392433
## 6 6.154143 4.6844921 6.443372 6.084892 5.687703 5.822428 4.411814
##      Map2k4  Map2k5  Map2k6  Map2k7  Map3k1  Map3k10  Map3k11
## 1 5.978629 5.835229 1.24071361 6.197269 5.5559496 6.4832929 5.334234
## 2 6.483871 5.428525 4.30002505 6.200974 6.7227154 5.2742710 8.236165
## 3 4.830258 1.008333 0.05610664 5.446592 4.2420805 -3.8841215 1.008333

```

```

## 4 4.784568 4.531608 4.75028517 4.540548 7.2710354 0.8387756 1.322072
## 5 4.996968 4.098249 2.84946071 2.351349 5.3264129 -1.1730114 1.306052
## 6 5.520470 4.742765 4.49481856 6.691172 5.6961212 5.4034627 4.501456
##      Map3k12      Map3k13      Map3k14      Map3k15      Map3k2      Map3k3      Map3k4
## 1 4.9549930 3.3831140 3.1612459 -0.3652147 6.127356 5.409388 5.555846
## 2 3.3659622 1.1610699 3.0647507 -0.7049882 6.409088 8.017479 5.407331
## 3 -0.2425151 -0.2425151 -0.2425151 -3.8841215 1.008333 4.300175 1.668074
## 4 3.9031206 3.6937132 3.5732434 -2.3971629 4.399144 4.015878 3.809361
## 5 3.4349186 2.9227833 1.2155742 -3.8841215 3.454832 2.604073 4.623101
## 6 5.3685697 2.7262314 5.0057864 2.4111062 6.762227 5.766098 5.594535
##      Map3k5      Map3k6      Map3k7      Map3k8      Map3k9      Map4k1
## 1 3.2556129 -1.16899952 6.606839 0.04144055 4.7150697 1.1112823
## 2 2.0956691 1.41462300 7.038668 5.89458517 -1.3407515 1.6486937
## 3 1.2632490 0.05610664 4.118365 -1.93173924 1.0083330 -3.8841215
## 4 0.4240717 0.50464961 4.212374 0.68612827 2.1782496 -0.8025988
## 5 -0.4264149 -0.75194706 4.465171 -2.80711744 1.3911881 -3.8841215
## 6 3.0360426 -2.22008339 6.545994 0.85677635 -0.2942067 0.9727422
##      Map4k2      Map4k3      Map4k4      Map4k5      Map6d1      Mapk1      Mapk10
## 1 4.9835513 5.506015 9.510593 6.3371442 6.662456 7.505470 5.2693260
## 2 8.0077042 7.227218 8.935025 7.6502077 -1.455183 7.570202 0.2523951
## 3 -1.9317392 7.143498 2.119096 0.6984974 6.550927 8.311495 6.9642071
## 4 2.1675102 4.244026 6.368480 4.4387947 3.054897 6.342984 6.5870622
## 5 -1.7701038 4.098249 5.871280 4.1045651 3.587021 7.115312 3.0328598
## 6 5.8178541 5.816195 8.943806 5.8493806 2.076967 7.094794 4.7445459
##      Mapk11      Mapk12      Mapk13      Mapk14      Mapk15      Mapk1ip1
## 1 1.7917684 0.9758503 -3.72356689 6.054754 -1.1006333 4.2686580
## 2 5.0031114 5.6778221 -3.02771532 6.522196 0.2740778 3.6894302
## 3 -3.8841215 6.5328683 1.98383951 1.753727 -1.9317392 0.6984974
## 4 2.9742049 1.3558779 0.36545532 4.487107 -3.0732255 5.2060954
## 5 -1.1730114 1.8777815 0.58076638 2.329944 -2.8071174 5.8545135
## 6 3.1533483 3.1678946 -1.83537643 5.697928 1.3957245 5.0006080
##      Mapk1ip11      Mapk3      Mapk4      Mapk6      Mapk7      Mapk8      Mapk8ip1
## 1 5.495425 7.127482 2.707784 6.547743 6.3640427 5.5472184 8.5939445
## 2 5.983554 8.275765 -1.042560 8.140513 5.2163447 6.3896823 3.8290679
## 3 4.618259 6.520703 4.422917 7.057689 0.6984974 0.5144282 -0.2425151
## 4 6.227857 6.348500 5.307972 6.539237 5.4029912 5.1806860 4.0363700
## 5 6.162167 6.847092 5.160502 6.168210 4.5738732 6.2531075 4.5229059
## 6 5.855527 5.478765 6.614628 7.563535 5.5729042 5.7524230 7.0702475
##      Mapk8ip2      Mapk8ip3      Mapk9      Mapkap1      Mapkapk2      Mapkapk3      Mapkapk5
## 1 6.0698907 8.518464 6.4838171 6.014893 6.339766 0.3399967 5.5974902
## 2 0.6768741 6.403749 6.1679718 6.366694 7.101597 0.4597380 6.0520552
## 3 4.1503027 7.256020 0.5144282 1.375592 2.512206 1.3755916 5.3048049
## 4 3.6079824 5.688108 4.7148095 4.688414 3.199729 1.3678106 3.2950717
## 5 3.9018920 3.732784 4.6009329 4.948632 3.484195 -1.4408855 2.2637547
## 6 3.9889644 8.295393 6.3030039 5.584962 6.310973 3.0278901 5.9265486
##      Mapkbp1      Mapre1      Mapre2      Mapre3      Mapt      Marcks      Marcks11
## 1 5.3500002 8.033406 7.724710 6.3536797 8.349680 10.149936 9.232533
## 2 7.0962421 8.197702 6.375694 4.7128682 2.688597 6.225901 6.617114
## 3 0.3033916 6.093753 6.514581 -0.6195262 7.049244 11.052915 1.263249
## 4 3.1784850 8.448363 8.564130 3.9683912 8.297482 10.748735 6.597755
## 5 3.4045239 8.261716 7.198126 4.2311979 7.978898 11.403652 7.420740
## 6 6.3586070 7.802086 6.292227 6.0359083 6.714920 8.628621 6.946653
##      Mark1      Mark2      Mark3      Mark4      Mars      Mars2      Marveld1
## 1 5.846598 6.215446 7.136362 5.4189642 6.966516 3.696897 4.78793031

```

```

## 2 2.945758 5.931343 7.677699 5.866611 6.163837 3.190535 4.82013411
## 3 5.380809 2.182248 5.339849 0.6984974 5.254267 4.907042 0.51442825
## 4 2.986644 4.247835 5.335484 -2.1830893 5.573965 3.431762 0.07589421
## 5 3.819814 4.379211 2.937011 -2.8071174 3.958782 4.420302 -2.19737395
## 6 6.012405 6.062127 7.561986 5.2813384 7.763273 5.091105 3.05387496
##      Marveld2  Marveld3      Mas1      Masp1      Masp2      Mast1
## 1 -1.8036756 -1.141919 -1.9567730 5.033998 2.4129843 4.9870681
## 2 6.6085185 -3.656504 -3.4837445 -1.000435 -3.4837445 0.1729518
## 3 -0.6195262 -3.884122 -0.6195262 1.141414 -3.8841215 -0.6195262
## 4 0.3603002 -3.674937 -0.4171575 3.293631 -0.7739500 3.0355095
## 5 -2.8071174 -2.807117 -1.7701038 4.854328 -3.8841215 -2.8071174
## 6 -0.2708505 -3.660779 -2.0395320 4.967081 4.5424192 2.4984359
##      Mast2      Mast3      Mast4      Mast1      Mat2a      Mat2b      Matk
## 1 6.4435307 6.511981 4.891023 1.6168397 7.073679 5.027128 4.61865353
## 2 5.6135423 3.193517 6.897661 2.8321464 7.548162 6.474649 0.25958896
## 3 0.3033916 4.212132 1.479815 -1.1313170 6.517645 7.346679 -1.93173924
## 4 5.4196881 4.195966 3.989549 3.5051170 8.548730 6.785558 2.46568144
## 5 5.2343662 4.976450 2.965052 -2.1973739 7.468660 6.851793 -0.58001868
## 6 6.4671452 5.353541 6.182954 2.6861937 7.577298 4.806128 1.52797142
##      Matn1      Matn2      Matn4      Matr3      Mau2      Mavs      Max
## 1 3.908302 3.8893236 9.46328321 7.789409 7.452014 4.587201 5.495785
## 2 -3.884122 -0.8054885 -1.20190217 8.077902 6.818593 3.988966 7.411111
## 3 1.577013 -0.2425151 -3.88412153 8.993088 7.010618 3.688985 1.577013
## 4 -3.884122 2.1075321 -2.57098527 9.604136 6.818337 5.556695 5.658489
## 5 -3.884122 2.5495573 0.25704632 9.524241 6.885196 3.414727 7.147787
## 6 -3.660779 1.0486952 0.73857003 7.575261 7.248229 5.018521 5.561481
##      Maz      Mb      Mbd1      Mbd2      Mbd3      Mbd4      Mbd5
## 1 7.573484 -3.678732 5.0215546 5.041108 6.701958 2.9381256 4.735910
## 2 6.658643 -2.372912 5.5965523 6.693646 6.611690 2.3388376 4.907795
## 3 6.238203 -3.884122 1.1414140 2.356639 1.753727 0.3033916 -1.131317
## 4 4.404630 -2.828528 5.2300201 3.576473 4.329744 4.6672994 3.680082
## 5 3.887312 -3.884122 0.1633391 3.183669 5.053564 5.8933376 2.286157
## 6 6.896599 -3.379887 5.4174921 4.983473 5.739635 4.0077158 5.149348
##      Mbd6      Mbip      Mblac1      Mblac2      Mbnl1      Mbnl2      Mbnl3
## 1 5.8658005 4.769166 0.3735429 3.677828 6.075192 6.414498 -3.3083826
## 2 5.2797197 4.630683 1.2462603 1.640566 7.423265 7.606377 0.7681883
## 3 0.3033916 -1.131317 -3.8841215 1.263249 7.600394 8.434128 0.3033916
## 4 3.1983027 4.379893 0.6752670 4.003715 7.245359 6.207082 0.3396343
## 5 3.3417432 5.076238 -0.9471720 3.749003 6.945377 6.810853 -3.8841215
## 6 6.4953664 4.889930 0.7975541 3.619369 6.093386 6.433656 -2.0228653
##      Mboat1      Mboat2      Mboat4      Mboat7      Mbp      Mbtd1      Mbtps1
## 1 3.4896838 5.6108036 -3.794983 6.164603 12.818458 5.549773 7.157473
## 2 2.5206782 4.3394968 -2.807082 4.937089 1.150185 6.851131 7.507506
## 3 6.5922043 3.1399752 -3.884122 5.201894 8.423549 1.375592 8.183261
## 4 1.6837832 3.5887136 -1.954173 4.516102 10.117208 5.441385 6.916637
## 5 -1.4408855 3.6745361 -3.884122 4.979890 9.470540 5.445647 5.995437
## 6 0.6319073 6.6592330 -3.280845 6.534822 1.985766 6.035350 6.846244
##      Mbtps2      Mc1r      Mc2r      Mc3r      Mc4r      Mc5r
## 1 4.742430 -2.5640200 -3.7669998 -3.8841215 1.8353902 2.5561578
## 2 4.707727 -2.2943879 -3.8841215 -3.8841215 -3.8841215 -1.3184583
## 3 5.551968 -1.9317392 -0.2425151 -3.8841215 -1.1313170 1.2632490
## 4 4.785780 -0.7378647 -3.8841215 -3.8841215 -1.4888128 2.0475986
## 5 3.894620 -2.8071174 -3.8841215 -3.8841215 -2.1973739 -2.1973739
## 6 4.945504 -3.2808450 -1.4908625 -3.8841215 -3.4511394 -3.6744822

```

##	Mcam	Mcat	Mcc	Mccc1	Mccc2	Mcee	Mcf2
## 1	6.226145	3.97047852	1.36723810	4.8007962	4.784453	3.553940	1.62374364
## 2	8.777049	3.83569517	5.17821859	3.4044009	3.420667	5.222809	0.46671719
## 3	6.130244	0.05610664	1.47981450	7.4955175	1.479815	7.553395	-3.88412153
## 4	4.376017	2.26975115	4.68613002	6.3330520	6.228791	6.026479	-0.01852638
## 5	6.329246	4.87664412	-0.04458439	5.6516333	6.233068	7.571419	-3.88412153
## 6	5.449112	3.29903556	6.40630410	5.5504117	5.099382	3.063866	-0.29144751
##	Mcf21	Mcfd2	Mchr1	Mc11	Mcm10	Mcm2	Mcm3
## 1	6.008883	5.562385	0.5494348	7.226816	1.4468847	4.8524515	4.188720
## 2	8.200224	7.357418	-3.8841215	9.993006	2.2340703	5.8572006	5.429919
## 3	1.911138	8.701972	-3.8841215	4.629632	1.0083330	4.7175291	2.820816
## 4	5.214966	5.952116	-2.6011071	5.590583	4.3459304	6.1736627	6.459908
## 5	5.092218	6.541993	-3.8841215	4.955637	2.5861290	4.0067846	5.405283
## 6	5.456022	4.783468	1.3475480	8.597501	2.2469210	4.0416573	4.517628
##	Mcm3ap	Mcm4	Mcm5	Mcm6	Mcm7	Mcm8	Mcm9
## 1	6.0083195	5.039223	5.100808	5.100630	4.947441	2.5116547	3.7629720
## 2	5.5444372	4.685979	5.792578	5.254266	4.325303	1.5035981	3.7501341
## 3	0.5144282	3.006755	3.833689	1.479815	2.512206	-1.9317392	0.3033916
## 4	4.8793864	7.012272	6.954417	5.738351	7.155466	3.3191696	2.4431489
## 5	1.4319435	6.514980	5.202331	6.098718	6.047182	0.2570463	-1.7701038
## 6	6.0756658	5.657838	4.215125	4.398577	4.055448	1.9819394	4.7514864
##	Mcmbp	Mcoln1	Mcoln2	Mcph1	Mcrs1	Mctp1	
## 1	5.598770	5.887517	-3.884122	2.9356310	4.3357373	-0.05268481	
## 2	5.861686	6.432162	-1.334269	3.6092640	3.9538380	0.62308884	
## 3	7.796044	1.668074	-3.884122	-1.9317392	-0.2425151	-0.61952623	
## 4	7.523454	2.918684	-3.884122	3.6439941	4.4884942	3.67612572	
## 5	8.002767	1.754666	-3.884122	-1.7701038	4.4798230	-1.17301144	
## 6	5.829612	5.671454	-3.451139	3.8889260	4.1288092	-0.64478096	
##	Mctp2	Mcts1	Mcts2	Mdc1	Mdfi	Mdfic	
## 1	-3.33007494	4.291735	2.6527946	5.2260185	-1.07094026	1.3931447	
## 2	-0.12161245	5.269409	3.9184334	3.6623024	3.75631690	4.5267702	
## 3	-1.93173924	6.916254	-0.6195262	0.3033916	0.05610664	-1.9317392	
## 4	-3.21848365	6.634001	4.3430858	3.8503005	-2.05168206	0.7798278	
## 5	-2.80711744	7.671605	5.4027219	2.4538543	-2.19737395	-2.1973739	
## 6	-3.88412153	4.152393	2.8381373	5.9777841	0.43193258	3.9400297	
##	Mdga1	Mdga2	Mdh1	Mdh1b	Mdh2	Mdk	
## 1	1.66290084	5.2987342	7.384110	-2.7681845	7.606512	5.140039	
## 2	0.61206586	4.0071319	6.603688	-3.3356546	7.734101	2.699443	
## 3	0.30339162	5.4593963	10.861652	-3.8841215	9.483797	6.073075	
## 4	5.34876774	2.4538055	9.235668	0.9598895	9.633154	8.472190	
## 5	3.93771032	3.8577022	9.456411	-3.8841215	10.238237	9.275620	
## 6	3.81369078	5.4881554	6.907105	-2.5429387	6.930445	5.539130	
##	Mdm1	Mdm2	Mdm4	Mdn1	Mdp1	Me1	Me2
## 1	3.522366	6.353453	5.81346223	5.5849833	5.337085	6.0157779	5.2847864
## 2	3.735370	6.423501	5.78229611	4.5895916	5.858845	0.6327993	5.1305400
## 3	-3.884122	6.712069	-1.13131698	0.8617169	7.465684	5.6668255	4.3696496
## 4	4.288866	4.522161	4.11602634	4.5096023	6.042184	3.0749622	3.2234799
## 5	-1.173011	4.546296	3.68300256	-0.9471720	6.603496	3.2535457	-0.5800187
## 6	3.330182	6.318741	7.20473357	7.2338227	4.698484	6.2917527	4.0702446
##	Me3	Mea1	Meaf6	Mecom	Mecp2	Mecr	Med1
## 1	4.8351491	5.235442	4.439020	-2.7957726	6.300037	3.817483	5.863375
## 2	0.9211061	6.326002	3.768237	7.4109111	6.096681	4.179828	6.271356
## 3	-1.9317392	6.043618	5.497141	-3.8841215	1.263249	6.550927	5.872284
## 4	2.5022380	6.862743	5.807905	-1.2669050	5.892708	5.338029	7.931234

```

## 5 4.0067846 8.098439 6.112887 -3.8841215 5.282517 5.700406 7.868173
## 6 -0.9827110 3.377227 4.176626 0.6067644 6.494925 3.991735 6.408812
## Med10 Med11 Med12 Med12l Med13 Med13l Med14
## 1 4.971115 2.198713 6.5212435 5.2018921 6.639036 6.594453 5.367898
## 2 6.153156 3.767729 6.1793306 -1.5891883 7.045344 5.989666 5.794511
## 3 6.317700 1.141414 0.3033916 -0.2425151 7.440074 4.606795 1.375592
## 4 7.005714 4.819143 4.5351539 2.6335730 5.792427 5.871729 4.424190
## 5 7.617973 5.685736 3.3310089 -2.8071174 4.670705 4.231198 2.121505
## 6 4.217269 1.028740 7.8899516 7.3444623 7.282030 6.298189 5.700309
## Med15 Med16 Med17 Med18 Med19 Med20 Med21
## 1 5.643944 4.999866 5.353731 1.0246111 4.235136 5.486231 4.315036
## 2 5.735535 5.681486 5.160817 -0.5497624 3.779066 5.431571 5.491559
## 3 1.008333 -1.931739 6.097854 -0.6195262 6.580531 7.338039 7.261513
## 4 5.153421 3.118594 3.876811 5.1021340 5.746344 5.737630 6.656651
## 5 5.060079 4.465171 5.027207 5.1391241 6.349332 5.940002 7.536806
## 6 5.985525 4.469138 5.697913 1.5646802 3.760388 4.710251 3.641450
## Med22 Med23 Med24 Med25 Med26 Med27 Med28
## 1 6.054134 5.229311 6.079396 6.8713616 4.246970 4.394924 5.680766
## 2 6.377108 4.935378 5.689868 5.5903304 3.689768 4.732216 6.392620
## 3 7.594603 7.334568 5.332908 -0.2425151 -1.131317 1.479815 9.675348
## 4 7.203046 5.667518 6.453936 3.0283403 2.324449 5.992583 7.151150
## 5 7.173552 1.847973 5.971446 0.4279671 -2.807117 6.791408 8.633645
## 6 5.318409 6.237035 6.062320 7.2047165 4.327049 3.536595 4.544785
## Med29 Med30 Med31 Med4 Med6 Med7 Med8
## 1 3.683755 4.886161 3.459729 4.304706 3.7897502 3.7782081 4.714615
## 2 4.270165 4.417249 3.893467 4.229402 4.5429781 4.1987232 4.441859
## 3 1.141414 2.119096 6.470987 5.563874 0.3033916 -0.2425151 1.911138
## 4 4.120258 1.721483 5.643583 6.134466 5.4378249 5.1804020 5.843995
## 5 5.136044 4.196137 6.992118 6.464308 5.2936168 6.0796068 6.690047
## 6 3.521833 2.472687 3.509437 4.515821 3.8507786 5.5049311 4.349486
## Med9 Mef2a Mef2b Mef2c Mef2d Mefv
## 1 4.773861 5.40318490 -0.9235085 3.471096 5.5547567 -3.4111480
## 2 5.131614 7.99665612 -1.7588932 7.109816 6.1329688 -3.6565043
## 3 -1.931739 4.56000638 -3.8841215 7.400786 1.7537270 -3.8841215
## 4 2.883553 2.86733257 -1.2302357 5.925815 2.1517146 -3.8841215
## 5 4.104565 -0.04458439 -3.8841215 4.969546 2.7237947 -3.8841215
## 6 4.067855 5.56299335 0.5274052 3.468281 6.1956066 -3.8841215
## Megf10 Megf11 Megf6 Megf8 Megf9 Meil
## 1 4.244716 7.32402531 -0.5835434 7.056664 5.6189969 -3.4741348
## 2 -1.889972 1.80650057 9.4564855 5.940123 3.9436407 -3.8841215
## 3 7.651501 0.05610664 1.5770128 1.577013 1.3755916 -3.8841215
## 4 5.229930 3.72861892 1.1193022 3.937731 3.6183608 -3.8841215
## 5 4.976450 3.76504202 2.7879955 4.716788 1.0682384 -3.8841215
## 6 7.837632 1.66169338 2.8049949 6.877299 4.6671099 -3.8841215
## Meil4 Meig1 Meis1 Meis2 Meis3 Melk
## 1 -1.77304334 -2.0509468 3.6426517 4.6184803 5.350901 1.6304518
## 2 -3.88412153 -3.1165114 -2.6793155 0.1660561 0.801116 2.9809775
## 3 -1.93173924 -0.6195262 -3.8841215 0.3033916 -3.884122 1.2632490
## 4 1.47813671 1.5798250 2.0498860 -1.0474719 2.721107 5.0514611
## 5 -2.19737395 3.4147268 0.6514968 -2.8071174 1.935611 5.3155635
## 6 -2.52164107 -1.3459643 5.5131638 6.7543457 5.564564 2.1539190
## Memo1 Men1 Meox1 Mep1a Mepce Mertk Mesdc1
## 1 4.933644 5.656525 1.23138564 -3.884122 5.476863 4.102198 3.0444991
## 2 5.830320 5.637671 7.50356532 -1.340017 6.626690 4.850261 6.6332222

```



```

## 3 1.008333 1.479815 -1.93173924 -3.884122 6.722729 3.041231 0.8617169
## 4 4.252173 6.143737 0.02247195 -2.899225 4.334309 5.242951 1.2903750
## 5 5.962780 5.681517 3.25354570 -3.884122 4.609841 3.454832 2.0963708
## 6 5.279952 5.839201 -1.45685291 -3.884122 4.767523 7.748767 2.5324743
##      Mesdc2      Mesp1      Mesp2      Mest      Met      Metap1      Metap1d
## 1 6.455228 -3.209135 -1.5674758 4.60543102 0.4544460 5.052179 3.7441871
## 2 6.356068 -3.884122 -3.8841215 5.71844445 1.7586126 5.511416 2.7394863
## 3 8.249263 -3.884122 -3.8841215 0.05610664 -1.1313170 1.008333 6.6008979
## 4 7.347416 -3.653944 0.2744421 4.87936600 -0.5966027 5.413344 4.2155648
## 5 8.059141 -3.884122 1.6200547 5.77556341 0.7833343 4.420302 5.7394892
## 6 5.706194 -2.986249 -2.8198778 6.31574070 0.6708108 5.148025 4.8150320
##      Metap2      Metrnl      Mett11      Mett110      Mett111b      Mett113
## 1 6.370257 7.860636 2.7567287 2.832099 3.338904 -2.38176265 3.5764655
## 2 6.939469 3.060075 1.8617438 2.918588 3.681701 -3.88412153 3.0799598
## 3 7.145480 5.472088 0.3033916 1.141414 7.220733 -3.88412153 0.6984974
## 4 7.623506 3.403361 1.3029723 5.412289 6.553972 0.06775988 3.8473758
## 5 6.702593 6.086005 3.7246054 6.365202 7.055437 -3.88412153 -1.7701038
## 6 6.397865 7.336356 4.8806941 2.426589 3.877285 0.45190072 3.6518249
##      Mett114      Mett115      Mett116      Mett117      Mett12      Mett121a      Mett122
## 1 4.2757842 2.155473 3.999497 4.19945644 4.264705 3.053240 4.209405
## 2 4.1509281 3.018036 3.792394 2.84703035 4.494214 2.729809 2.538234
## 3 0.8617169 7.080660 1.375592 0.05610664 7.433600 1.008333 -1.931739
## 4 5.1968128 4.799957 5.806128 5.14249073 4.448182 5.432635 4.733570
## 5 5.3846686 5.448133 4.499130 -1.17301144 3.923490 6.292371 5.922232
## 6 5.0658696 2.513344 4.401735 5.05426430 4.065815 3.737000 3.405218
##      Mett13      Mett14      Mett15      Mett16      Mett17a1      Mett17a3      Mett18
## 1 4.539951 3.4840812 2.621736 3.920126 2.7791401 -3.884122 3.939453
## 2 3.501760 2.3643464 3.746024 4.673807 1.9360755 -3.884122 3.124360
## 3 1.008333 5.3189249 5.991678 1.141414 0.5144282 4.888226 -1.131317
## 4 5.610229 4.5184586 4.951560 4.929217 4.3617162 -3.603681 4.528053
## 5 5.412937 4.5601506 5.508923 5.312838 4.7812943 -2.807117 4.079131
## 6 5.259932 3.3330916 2.505445 4.352440 3.8519805 -3.280845 3.722576
##      Mett19      Mex3a      Mex3b      Mex3c      Mex3d      Mfap1a      Mfap1b
## 1 6.723385 4.4637043 5.947669 6.033893 5.6749149 3.142781 2.4390111
## 2 6.500590 5.4475000 4.470244 6.723985 5.4386580 3.543400 2.3844671
## 3 4.878725 2.1822477 6.435786 5.163286 -0.6195262 6.230754 3.3743684
## 4 4.849175 7.0042691 4.858929 5.105992 3.3216790 5.079444 3.2974553
## 5 6.821437 6.5149803 4.508687 4.578419 4.2254133 4.541648 -0.7519471
## 6 6.251708 4.8614345 3.093623 6.321546 4.7259847 3.029316 2.0614209
##      Mfap2      Mfap3      Mfap31      Mfap4      Mfap5      Mff      Mfge8
## 1 3.8221104 5.803719 4.8250080 1.21977247 -2.4323546 7.007424 6.616951
## 2 1.9310964 6.028037 3.4409072 -2.41221304 -3.1123102 7.934247 8.533781
## 3 4.0006639 7.594603 7.1255349 2.24275094 -3.8841215 6.245614 11.832932
## 4 8.8544857 6.966232 5.9140724 7.58289540 0.1570165 5.223677 11.814924
## 5 9.2077471 5.876826 5.9204431 8.22305016 2.0963708 5.920443 11.751622
## 6 2.7621649 6.083906 7.5741334 0.46992865 -2.8405514 6.553553 11.043558
##      Mfhas1      Mfi2      Mfn1      Mfn2      Mfng      Mfsd1      Mfsd10
## 1 4.1809878 -1.3184125 6.423756 6.264075 2.2958862 7.021162 3.6410750
## 2 6.3397993 -1.9540170 6.326187 6.341954 7.9550583 6.809166 5.2026226
## 3 0.6984974 -3.8841215 2.462191 5.224573 7.3535545 4.571847 0.8617169
## 4 4.6156435 -2.5780185 5.235233 6.419148 5.8795588 4.449456 4.6613193
## 5 3.4744738 -3.8841215 2.723795 5.983491 6.7294074 5.504153 1.6889296
## 6 6.7413212 -2.4248666 7.287531 6.357757 0.8087939 5.909883 4.6178948
##      Mfsd11      Mfsd2a      Mfsd2b      Mfsd3      Mfsd4      Mfsd5      Mfsd6

```

```

## 1 5.445627 8.888004 -0.3955143 3.254550 3.7081849 5.296051 5.7752983
## 2 5.440600 10.385383 0.6699255 2.103548 4.2299633 4.307748 3.1300959
## 3 1.834579 7.691394 -1.1313170 6.646399 6.6295040 5.604788 1.4798145
## 4 6.350339 3.112855 -0.9798505 4.026457 2.9159752 3.918311 4.2101912
## 5 4.363496 3.541188 -2.8071174 4.696023 0.6514968 6.199529 2.6040729
## 6 5.772768 6.566458 0.9838221 2.860271 3.9344067 5.024369 2.2570425
##      Mfsd6l      Mfsd7a      Mfsd7b      Mfsd7c      Mfsd8      Mfsd9
## 1 -3.884122 0.4767748 3.9965219 -0.08821695 4.9423294 2.6863926
## 2 1.745259 -0.7817304 3.0467106 8.21999401 3.4672727 3.6768886
## 3 -3.884122 -0.2425151 -0.6195262 0.05610664 0.5144282 -0.6195262
## 4 -3.884122 1.8641488 3.3017225 1.98113591 4.8680150 3.4218908
## 5 -2.807117 -1.1730114 0.2570463 -1.17301144 5.2256996 3.7809046
## 6 -3.379887 1.2941213 4.4320804 1.84167323 4.8576578 2.9558186
##      Mga      Mgat1      Mgat2      Mgat3      Mgat4a      Mgat4b      Mgat4c
## 1 5.953918 6.190402 4.676961 7.473314 4.8047795 5.519077 -2.5314543
## 2 6.360164 6.827013 6.620731 1.137224 7.7366303 6.980332 -2.5267147
## 3 2.119096 3.503617 1.008333 7.610475 2.5122057 2.242751 5.5815513
## 4 6.625574 5.150836 3.709194 4.469962 2.0578630 1.030153 0.4213719
## 5 5.733388 5.971446 3.958782 5.826128 0.4279671 1.654903 4.4152290
## 6 7.705808 6.233867 4.987471 6.202295 1.6981842 4.833112 2.6292832
##      Mgat5      Mgat5b      Mgea5      Mgl1      Mgmt      Mgp      Mgrn1
## 1 4.5553659 6.6199985 7.525135 7.849863 -1.0727816 -0.3410552 7.324588
## 2 3.4730978 -0.9751080 8.151887 8.207298 1.6146302 4.7065969 6.593752
## 3 -0.2425151 -1.1313170 7.365508 7.346679 -0.6195262 7.9274152 4.314340
## 4 1.9509197 2.5280198 6.876502 7.493387 2.7595941 4.5321107 6.985289
## 5 1.2155742 1.2155742 5.166553 6.827178 4.1357393 6.8769176 6.789449
## 6 5.9839203 -0.1951322 7.859926 7.405895 -1.0451218 -1.4593084 6.828435
##      Mgst1      Mgst2      Mgst3      Mib1      Mib2      Mical1      Mical2
## 1 -0.7491151 -3.7566452 3.472456 5.6016659 6.154834 5.887662 2.8545034
## 2 3.8960620 0.2121006 4.589814 5.6609135 5.237555 5.054553 2.3325478
## 3 9.4822295 -1.1313170 6.854585 1.4798145 4.256825 -1.131317 1.1414140
## 4 7.0179675 -2.7981959 6.200663 2.1718107 3.165487 5.325501 4.7925502
## 5 8.0187414 3.0591149 7.550173 0.0631199 3.522440 4.653576 0.9041264
## 6 4.3051881 -3.2808450 1.861103 6.3290147 6.053966 6.860227 6.0366071
##      Mical3      Micalcl      Mical1l      Mical12      Micu1      Mid1      Mid1ip1
## 1 5.4885198 -1.88886505 6.907087 2.6904241 6.833709 5.3044424 7.391136
## 2 3.9711714 -2.80009807 5.637028 4.7261300 6.156021 5.0362918 4.542215
## 3 -0.6195262 -1.93173924 6.093753 -0.6195262 2.607316 0.5144282 7.652896
## 4 -0.4014465 1.94220607 3.592140 -0.3566006 7.227765 3.5650888 7.032068
## 5 -2.1973739 -3.88412153 1.935611 3.3092977 7.795854 3.8873120 7.109827
## 6 3.4410477 2.62096203 5.034300 5.0196851 5.520676 6.5289370 7.869347
##      Mid2      Midn      Mier1      Mier2      Mier3      Mif      Mif4gd
## 1 0.5590023 7.016259 5.196304 5.17637339 4.568271 5.287026 6.619020
## 2 4.7877601 7.160412 7.308330 2.25880771 4.883778 4.409552 5.826565
## 3 0.3033916 4.085705 2.739167 0.05610664 3.171443 6.930118 8.048875
## 4 2.9914870 4.922564 6.594419 2.85886086 6.865837 7.238007 5.886153
## 5 1.5843436 6.566223 7.880188 2.26375475 5.804951 7.684839 6.430767
## 6 5.2189357 7.183156 6.497724 5.42695445 6.321943 3.928935 5.046735
##      Miip      Mill1      Mill2      Mina      Mink1      Minos1      Minpp1
## 1 3.2523335 -3.884122 -2.71872369 3.2829553 7.692263 6.053259 5.1433242
## 2 4.1673771 -3.884122 4.21607138 3.1803674 6.925379 7.068049 5.0135264
## 3 -0.2425151 -3.884122 -3.88412153 -1.1313170 3.347069 8.815254 0.5144282
## 4 4.8419075 -3.884122 0.08141777 3.5686681 3.984485 7.770145 3.3402570
## 5 -0.4264149 1.847973 2.39322898 4.6578771 2.834338 8.817668 5.7455646

```

```

## 6 4.6765527 -3.884122 -3.66077880 3.1419787 7.986126 5.655146 3.9948153
##      Mios      Mip      Mipep      Mipol1      Mis12      Mis18bp1
## 1 4.4781849 -1.962184 4.2497122 1.70413112 3.873840 2.067847048
## 2 4.8302416 -2.103781 4.6964947 2.90653455 4.045494 2.496208860
## 3 0.8617169 -3.884122 0.5144282 -1.93173924 1.668074 1.263249019
## 4 4.3703260 -2.472992 3.2736626 3.26945931 4.767697 4.673180670
## 5 5.1452645 -3.884122 4.4943274 -2.80711744 2.787996 3.287254754
## 6 4.8605082 -3.660779 3.7105107 1.82560382 3.916890 3.543438428
##      Mitd1      Mitf      Mki67      Mkks      Mk11      Mk12      Mkl1n1
## 1 2.0963704 3.4063125 4.1169770 4.442374 3.989346 4.198828 5.311213
## 2 3.9068348 0.8472859 5.6491700 4.886002 4.476230 7.104924 6.183412
## 3 0.8617169 -0.2425151 2.8599701 6.505350 1.008333 6.085518 6.215739
## 4 4.6636859 2.2279654 6.1653641 6.345888 3.312775 5.132887 6.787462
## 5 5.5966795 -2.8071174 4.1961369 5.101722 3.804376 5.000359 5.205273
## 6 3.7785468 2.3874412 6.3549211 3.816689 4.473412 4.969344 6.140456
##      Mknk1      Mknk2      Mkrn1      Mkrn2      Mkrn3      Mks1      Mkx
## 1 5.478344 5.615702 6.961620 4.666265 2.7053512 3.6751434 2.0319829
## 2 6.048080 7.463354 6.046696 4.798734 -0.1689669 2.1871287 -0.7058111
## 3 6.712069 2.410380 6.345556 8.061527 -3.8841215 -1.1313170 -1.9317392
## 4 5.339886 4.412985 5.876655 5.980653 0.5502762 3.5052923 0.6657633
## 5 5.443157 4.644934 5.450614 6.758740 -1.4408855 2.1704966 -3.8841215
## 6 5.347038 6.369619 5.238649 4.208930 1.8967064 4.6058559 -3.3798866
##      Mlc1      Mlec      Mlf1      Mlf2      Mlh1      Mlh3      Mlk1
## 1 4.231339 7.787672 1.8234020 8.790965 3.8750871 3.9259719 -0.4924560
## 2 2.640480 6.513932 2.9163052 7.930144 3.7432760 4.2756427 3.5789904
## 3 8.332526 4.696052 0.6984974 5.843269 0.6984974 5.0577840 -3.8841215
## 4 9.171699 5.934991 2.3022553 6.246698 4.1425954 5.1057880 -1.8513499
## 5 9.685800 4.831662 3.7163802 6.980145 2.9925589 2.7722112 -3.8841215
## 6 10.128148 7.185007 3.2650211 7.755820 4.9891044 3.9874484 -1.7115899
##      Mllt1      Mllt10      Mllt11      Mllt3      Mllt4      Mllt6      Mlph
## 1 6.2237784 4.9502403 5.451655 4.542866 5.400079 6.371806 0.7559156
## 2 6.0040635 6.4306532 4.681888 6.216170 8.579784 5.329879 3.2931618
## 3 2.8980900 0.5144282 8.441407 1.141414 3.622232 1.479815 -1.9317392
## 4 4.8359101 5.3301899 8.401424 6.076987 5.659714 3.661115 -2.3982880
## 5 3.0720655 4.2137739 9.025436 6.435785 4.916681 4.196137 -3.8841215
## 6 5.6449219 6.3855466 3.960962 5.015894 6.554515 6.279499 -2.8744502
##      Mlst8      Mlx      Mlxip      Mlxip1      Mlycd      Mmaa      Mmab
## 1 4.809520 4.517493 5.8521440 0.8133336 4.762375 3.887277 4.4742097
## 2 4.433451 4.797085 1.3270948 -3.1123102 5.658412 3.581762 4.1735061
## 3 1.577013 2.300819 0.6984974 0.6984974 6.668623 -1.131317 -0.6195262
## 4 5.186916 5.390271 3.6788748 1.2136184 2.914801 4.591156 4.5952916
## 5 5.339861 6.450737 -0.9471720 -3.8841215 4.983322 3.568862 3.1474184
## 6 4.878502 4.251654 6.1521843 2.8387724 4.435092 4.060593 5.1324381
##      Mmachc      Mmadhc      Mmd      Mmd2      Mme      Mmel1      Mmgt1
## 1 3.180721 5.501849 5.109496 8.422132 -0.9054095 -0.9382037 6.980206
## 2 1.867711 5.902020 7.583188 2.897430 1.1664709 -2.0999208 5.844950
## 3 2.053052 6.612408 1.983840 11.795317 -1.9317392 -3.8841215 5.862677
## 4 5.002013 5.830080 3.909924 11.478052 -2.4111125 -0.4319131 6.448512
## 5 2.992559 6.405409 4.716788 11.752030 -2.1973739 -3.8841215 6.285437
## 6 2.988086 5.035063 7.004662 9.481799 -3.5122488 -2.4094269 6.302154
##      Mmgt2      Mmp11      Mmp12      Mmp13      Mmp14      Mmp15      Mmp16
## 1 1.5536380 0.1474890 -3.056607 -2.245215 4.4484552 9.119746 5.811969
## 2 2.0422017 1.0159304 -3.884122 -3.884122 6.4248993 7.503817 -2.217782
## 3 4.2121320 -1.9317392 -3.884122 -1.131317 2.3008186 1.375592 7.422200

```

```

## 4 3.8451131 2.3412780 -3.197524 -2.982136 4.9023364 2.481218 4.354548
## 5 4.1602026 3.0591149 -3.884122 -2.807117 4.7930746 3.084901 4.781294
## 6 3.0755014 1.5353401 -3.884122 -3.451139 7.9472641 5.984702 3.823579
##      Mmp17      Mmp19      Mmp2      Mmp23      Mmp24      Mmp25
## 1 5.570272 -0.001824669 6.0146665 -0.1941185 3.3243299 -2.8063818
## 2 4.729778 0.882003050 2.2307765 -1.1767254 -1.6703085 6.6820504
## 3 -1.131317 -1.931739237 -0.2425151 -3.8841215 -1.9317392 -3.8841215
## 4 2.574474 1.232186916 1.0266328 -1.6174247 1.5765089 -3.8841215
## 5 1.847973 -3.884121530 -0.7519471 -3.8841215 3.4449096 -3.8841215
## 6 3.184905 0.264672096 -1.4943232 -0.5693676 0.3216875 -1.5565902
##      Mmp28      Mmp3      Mmp8      Mmp9      Mmrn1      Mmrn2
## 1 0.3008328 -3.7669998 -2.8814108 -0.6310348 -3.794983 -1.6390827
## 2 5.3912741 -3.8841215 -2.9607165 1.5628249 5.981800 8.4685752
## 3 -3.8841215 -0.6195262 -3.8841215 2.3008186 -3.884122 6.6209815
## 4 -3.3278129 -2.6751768 -3.8841215 2.5531295 -3.884122 1.8749214
## 5 -2.1973739 6.1331101 -3.8841215 1.1681147 -3.884122 -1.4408855
## 6 0.7023675 -3.8841215 -3.8841215 -1.7577899 -0.793054 1.4363832
##      Mms19      Mms22l      Mn1      Mnat1      Mnd1      Mnda      Mnda1
## 1 5.929853 3.0765798 3.367952 4.241372 -2.92287278 -3.5680897 -3.7010282
## 2 5.776239 3.5383575 2.011420 5.453820 -0.41047851 -3.2515854 -2.9956232
## 3 6.603784 -0.6195262 1.911138 1.141414 -0.24251506 0.8617169 4.3965292
## 4 6.158976 1.8847119 6.495379 5.391837 2.84427817 -1.5306511 3.4584161
## 5 4.166254 -1.7701038 5.458033 6.220037 4.12335036 -1.7701038 -0.5800187
## 6 6.381941 3.9746018 4.048598 3.283758 -1.57566247 -3.8841215 -3.8841215
##      Mns1      Mnt      Moap1      Mob1a      Mob1b      Mob2
## 1 1.4381975 5.2369141 -1.3419805 4.4962660 3.7272161 4.222811
## 2 -1.1971367 5.0469635 -1.2756702 5.8747304 4.1431824 6.042514
## 3 -0.2425151 -0.2425151 -3.8841215 -1.1313170 0.3033916 8.282066
## 4 3.2109906 3.9457938 -2.3923272 0.7599303 2.0161852 5.674801
## 5 -0.9471720 3.9587821 -2.1973739 -0.7519471 -0.5800187 6.519715
## 6 2.3454352 5.7233157 -1.0766778 4.5063671 4.6011250 4.149171
##      Mob3a      Mob3b      Mob3c      Mob4      Mobp      Moccos      Moccs1
## 1 4.7274016 4.4177580 2.253789 4.890013 8.486975 -2.01247926 3.4765625
## 2 4.3934914 3.4278975 4.863088 6.040002 -2.766249 1.88515527 4.4426836
## 3 0.5144282 0.5144282 -3.884122 9.087355 8.292837 0.05610664 -0.6195262
## 4 5.5170769 5.1245785 2.116320 7.453531 7.784077 0.35888904 1.9046503
## 5 5.6299023 4.3261459 -2.197374 7.552485 8.552224 -1.77010377 2.1704966
## 6 4.3171612 0.6664268 3.473368 5.229064 -2.628015 0.20398913 4.0181965
##      Moccs2      Moccs3      Mog      Mogat1      Mogat2      Mogs
## 1 5.964104 1.7239428 6.217575 -1.9274010 -3.4278034 4.65603978
## 2 5.278893 2.7791695 -3.251585 -2.4880632 0.1365354 4.26533850
## 3 2.242751 -1.9317392 11.061338 -3.8841215 -3.8841215 0.05610664
## 4 7.020506 -0.6560351 8.471929 1.2394281 -3.8841215 2.90284517
## 5 7.479028 -0.4264149 10.684028 1.2155742 -3.8841215 3.19555231
## 6 5.414536 2.2481896 -2.524445 -2.8485783 -3.6744822 5.03015314
##      Mon1a      Mon1b      Mon2      Morc1      Morc2a      Morc2b      Morc3
## 1 3.7743531 5.0650947 7.997846 -3.448615 6.019422 -3.794983 4.579984
## 2 3.7529484 3.4679488 7.338464 -2.935278 6.336596 -3.884122 5.187271
## 3 -0.6195262 6.7977448 7.263340 -3.884122 1.983840 -3.884122 1.668074
## 4 2.0552212 4.6260984 5.170992 -2.787141 4.581618 -3.418218 5.724539
## 5 0.5063887 4.5919693 4.271054 -3.884122 3.135130 -3.884122 4.006785
## 6 3.1426456 4.5976646 7.351536 -3.451139 6.724913 -3.660779 6.207658
##      Morc4      Morf411      Morf412      Morn1      Morn2      Morn3      Morn4
## 1 2.2610068 4.015403 7.947601 1.4660977 2.14631402 -0.8151340 5.338665

```

```

## 2 2.6181007 3.438787 8.282044 1.4776912 1.50973830 0.3205871 2.914522
## 3 -1.1313170 5.290545 7.550406 -0.6195262 0.05610664 -3.8841215 1.834579
## 4 1.2191733 5.240502 7.713691 2.6385042 5.18390637 -0.3068954 7.101137
## 5 1.7864435 5.482490 7.137043 2.7072879 4.90225036 2.2178791 7.028284
## 6 0.7198829 3.780681 7.059279 1.8426987 1.64410102 0.4500044 3.922873
## Morn5 Mospd1 Mospd2 Mospd3 Mov10 Mov1011 Moxd1
## 1 -2.741969 3.108683 4.452948 4.924634 2.1019763 -3.291855 2.6604846
## 2 -1.518367 6.513926 5.660872 4.563528 3.9774187 -3.884122 0.5549538
## 3 5.683292 1.141414 6.785086 4.102127 -1.1313170 -3.884122 -0.6195262
## 4 3.186564 5.580826 3.981351 3.766101 2.6277442 -3.884122 -2.1465398
## 5 4.489509 6.777639 -2.197374 5.108024 1.2615221 -3.884122 1.5101550
## 6 -1.312793 3.156351 5.021970 3.996219 3.8014397 -3.674482 0.5910710
## Mpdu1 Mpdz Mpeg1 Mpg Mphosph10 Mphosph6 Mphosph8
## 1 6.328717 5.6660081 5.4073395 3.1314830 3.8604671 4.368203 4.409602
## 2 6.288898 6.0988822 0.5415481 5.1100739 4.4059616 4.548094 5.200566
## 3 7.664000 0.6984974 4.2271840 0.5144282 0.8617169 1.263249 1.008333
## 4 6.159803 4.4296159 1.3725941 4.1809634 5.7554764 5.507674 6.332828
## 5 7.492337 2.6905901 -0.1609828 5.3924334 5.1174244 5.906050 5.668785
## 6 5.761675 6.5502277 1.3339056 3.6586395 4.7167541 4.355318 5.512418
## Mphosph9 Mpi Mpl Mpnd Mpo Mpp1 Mpp2
## 1 5.126604 5.554921 -2.046051 5.9330475 -3.72356689 3.662015 6.483419
## 2 4.922729 5.177646 -2.935278 6.1652963 -3.88412153 6.620763 5.021289
## 3 5.838376 5.828540 -3.884122 -0.6195262 -3.88412153 5.891307 6.609539
## 4 5.151468 5.509029 -3.884122 4.2292752 -3.88412153 4.663829 5.172205
## 5 4.781294 6.531483 -3.884122 4.6960233 2.65660325 5.254388 1.754666
## 6 5.375954 4.768906 -3.884122 5.3128342 -3.51224876 3.597192 6.040139
## Mpp3 Mpp4 Mpp5 Mpp6 Mpp7 Mppe1 Mpped1
## 1 3.699755 -1.1068344 6.090519 4.1547856 0.4478926 2.8505420 4.4013144
## 2 1.606352 -1.6777711 6.916341 4.8469628 4.8342870 3.2629774 0.7766123
## 3 5.955982 -3.8841215 2.182248 0.5144282 2.0530520 0.3033916 -1.9317392
## 4 4.773882 -2.2491952 6.164806 3.9987888 3.5164934 2.1963699 3.1063517
## 5 5.472757 -3.8841215 5.371634 5.0762381 2.8494607 0.8449942 0.4279671
## 6 4.117057 -1.2980289 6.908506 5.7007558 0.4042621 3.8235377 3.6648371
## Mpped2 Mprip Mpst Mpv17 Mpv17l Mpv17l2 Mpz
## 1 4.492648 7.280608 5.4779309 6.284047 4.727965 4.1463638 -3.421201
## 2 3.477356 9.524050 4.4490982 5.598363 2.303368 4.2154242 -2.679315
## 3 -1.131317 4.052287 -0.2425151 5.261596 7.239412 0.8617169 -3.884122
## 4 3.857337 6.372279 3.1124925 7.572700 4.812474 3.2778375 -3.884122
## 5 3.812116 6.512607 4.5416484 7.903470 4.582950 1.6549031 -3.884122
## 6 3.753748 8.149260 5.6906413 5.256348 3.485050 4.1106575 -2.765802
## Mpz11 Mpz12 Mpz13 Mr1 Mrap Mrap2
## 1 8.854934 -3.09311235 0.0510683 0.7700401 -3.884122 -2.5253979
## 2 10.246386 -2.22108290 1.1963334 4.4805078 -3.039241 -2.6793155
## 3 6.864246 1.83457854 -0.2425151 1.4798145 -1.131317 -3.8841215
## 4 5.306214 1.57785008 0.2235844 6.2829642 -2.076133 -3.8841215
## 5 5.484913 0.65149678 -2.8071174 5.8896848 -2.807117 -2.8071174
## 6 6.347662 -3.88412153 -0.6075669 4.2384968 -3.884122 -2.7776757
## Mras Mrc1 Mrc2 Mre11a Mreg Mrfap1 Mrgpra4
## 1 6.201040 1.6112250 1.6558454 3.6641518 1.8352279 8.044817 -3.723567
## 2 2.979600 0.2855065 3.8303054 3.7135691 -3.6565043 7.350809 -3.884122
## 3 5.928619 5.8722836 -0.6195262 0.3033916 2.4621911 10.378114 -3.884122
## 4 5.430677 5.8718112 2.0857924 4.2344059 1.4682235 7.835560 -1.768286
## 5 4.898620 4.7614440 -0.1609828 4.8354644 2.3513488 9.827499 -3.884122
## 6 8.397919 -1.6262615 2.8253941 3.9774474 -1.0522738 6.572682 -3.884122

```

##	Mrgprb1	Mrgpre	Mrgprf	Mrgprx2	Mri1	Mrm1		
## 1	-3.88412153	4.067562	-1.051677	-3.884122	3.5290318	3.0520035		
## 2	-3.88412153	2.678886	-2.817416	-3.884122	3.9569164	2.8975014		
## 3	-3.88412153	-1.931739	7.072349	-3.884122	-0.2425151	-1.9317392		
## 4	-0.05147425	2.499575	2.186357	-2.215611	1.2267548	0.8880218		
## 5	-3.88412153	2.217879	3.559696	-3.884122	-1.7701038	-1.4408855		
## 6	-3.88412153	1.326284	-2.848578	-3.884122	2.9793495	2.6263335		
##	Mro	Mrpl1	Mrpl10	Mrpl11	Mrpl12	Mrpl13	Mrpl14	
## 1	5.0041720	2.672111	5.012227	4.632427	5.060288	4.381799	3.556117	
## 2	-0.9729436	4.306033	5.114123	5.416274	6.309586	5.726093	4.315942	
## 3	5.5638745	1.375592	7.040749	8.022155	6.114140	8.382122	6.635158	
## 4	7.0428423	5.729313	6.135634	6.907333	6.431180	6.597488	6.297231	
## 5	6.9418539	6.093964	6.209819	7.885242	6.887945	7.481457	7.440848	
## 6	5.9372758	3.386474	4.573400	3.691458	4.332603	4.146272	2.466938	
##	Mrpl15	Mrpl16	Mrpl17	Mrpl18	Mrpl19	Mrpl2	Mrpl20	Mrpl21
## 1	4.512166	3.661756	4.898297	4.799901	4.132561	4.872962	5.150259	3.466455
## 2	4.975603	4.550125	6.276274	4.849443	4.365381	5.399646	6.504753	3.665199
## 3	8.033973	7.373986	8.190959	8.269398	1.911138	6.068904	7.654288	7.004079
## 4	6.822410	5.618878	7.344264	7.356506	5.782689	5.878152	7.280221	5.504421
## 5	7.241761	6.749700	8.167568	8.137081	5.863853	6.453214	8.533620	6.240257
## 6	3.937829	4.035346	4.509696	4.656959	3.874314	4.193836	3.608642	2.982318
##	Mrpl22	Mrpl23	Mrpl24	Mrpl27	Mrpl28	Mrpl3	Mrpl30	
## 1	2.4381692	-0.42601730	4.835395	4.173623	5.259784	5.8900613	4.821871	
## 2	2.8801991	-1.48036070	5.247740	5.181752	5.597093	5.8138270	5.518254	
## 3	-0.6195262	0.30339162	7.801083	1.577013	8.360100	0.6984974	7.327601	
## 4	4.8601544	-0.04289854	5.838061	6.357644	8.112683	4.0329630	7.191308	
## 5	5.3264129	2.09637076	7.068421	6.998916	8.935733	3.8274719	7.999805	
## 6	2.6357758	-0.95029354	3.995432	3.478195	4.655711	5.1712450	4.401908	
##	Mrpl32	Mrpl33	Mrpl34	Mrpl35	Mrpl36	Mrpl37	Mrpl38	
## 1	4.220803	4.064131	3.822947	3.990562	4.171832	5.176905	4.4520391	
## 2	4.396302	5.516783	4.696340	3.889642	4.697470	5.486779	4.6101658	
## 3	5.928619	7.826014	7.933164	8.660298	7.938889	7.844434	-0.2425151	
## 4	6.342673	6.922898	6.757164	6.981656	7.236009	5.787789	4.2176533	
## 5	7.157693	8.050169	7.733030	6.808920	8.495374	5.976620	5.5136770	
## 6	3.671654	3.565434	2.206175	3.539833	2.860633	4.971494	4.4365534	
##	Mrpl39	Mrpl4	Mrpl40	Mrpl41	Mrpl42	Mrpl43	Mrpl44	
## 1	4.5015802	5.299323	4.282272	4.591656	3.903735	4.883269	3.886207	
## 2	4.8044194	5.934960	4.518154	5.238979	4.595382	5.207206	3.904958	
## 3	0.5144282	7.798566	5.946919	7.566769	8.597973	8.299083	6.580531	
## 4	5.3329483	6.756783	6.007592	7.046415	7.125021	6.329332	5.223819	
## 5	6.2854374	7.172800	6.812783	7.923258	7.557098	7.588983	4.729104	
## 6	4.1132042	4.790404	3.508647	3.697628	3.929568	4.193694	3.526862	
##	Mrpl45	Mrpl46	Mrpl47	Mrpl48	Mrpl49	Mrpl50	Mrpl51	Mrpl52
## 1	4.355589	3.605255	2.644776	4.033144	4.733327	4.349500	4.089018	4.636385
## 2	4.454657	4.044940	2.403087	4.266165	5.212461	4.675542	4.740399	4.833458
## 3	7.367208	1.668074	6.307114	7.174890	7.203712	6.026512	7.254184	8.076149
## 4	6.712673	6.016828	5.062728	6.033465	6.582993	6.683195	6.188896	6.853701
## 5	7.043980	7.400989	6.415606	7.108257	7.348733	6.224393	6.477752	7.837216
## 6	4.171077	3.011340	2.583180	3.394886	4.089306	4.472352	3.780024	3.444728
##	Mrpl53	Mrpl54	Mrpl55	Mrpl9	Mrps10	Mrps11	Mrps12	Mrps14
## 1	4.235922	3.847159	3.460834	5.766083	3.443074	4.644916	4.653366	4.237224
## 2	4.944761	5.114627	3.953838	5.741338	2.719735	5.422907	3.331646	5.513690
## 3	8.387994	6.735944	6.825209	6.256659	5.666826	7.139525	7.360397	9.596036
## 4	6.403629	4.537342	6.306054	5.717217	4.532691	6.516175	5.602636	7.793669

```

## 5 7.998109 7.372482 7.098005 6.660341 5.889685 7.591234 6.228737 8.624608
## 6 3.310660 2.291453 3.090091 5.145937 3.135509 3.525906 3.302281 4.106963
##      Mrps15      Mrps16      Mrps17      Mrps18a      Mrps18b      Mrps18c      Mrps2      Mrps21
## 1 4.094185 4.073424 4.844002 4.306323 3.177890 3.479812 4.590642 4.550642
## 2 4.269248 5.104275 4.651372 4.649114 2.542349 4.241812 3.867901 5.369970
## 3 1.668074 6.990910 8.158937 3.232392 5.575683 7.068176 1.141414 8.315021
## 4 3.439831 6.013880 7.358149 6.988342 3.988019 6.164395 4.753181 6.915982
## 5 4.683420 7.126994 8.554822 7.811866 4.315294 6.718123 4.869244 7.584471
## 6 3.936977 3.056096 4.565492 3.968907 2.826259 2.432838 4.563995 3.493414
##      Mrps22      Mrps23      Mrps24      Mrps25      Mrps26      Mrps27      Mrps28
## 1 3.5120448 4.874311 4.3599497 4.794937 5.1037111 3.501390 3.520518
## 2 2.7243600 5.307454 5.1925111 4.108139 4.7877040 5.002850 4.383279
## 3 0.5144282 6.448686 2.1822477 7.905360 0.3033916 1.577013 7.304725
## 4 3.4451225 6.018869 2.2985241 6.811235 2.2750436 5.960119 5.842281
## 5 5.0697960 8.120424 4.2654270 7.131641 1.8175364 6.581022 6.029032
## 6 3.9413228 4.166177 3.4974129 4.076835 4.3616177 3.353857 2.594229
##      Mrps30      Mrps31      Mrps33      Mrps34      Mrps35      Mrps36      Mrps5
## 1 4.55201027 3.567606 3.412399 4.241694 3.511147 0.9893903 4.7048513
## 2 4.51454766 3.845156 3.519079 4.597847 4.657153 1.5797251 4.6012117
## 3 0.30339162 4.595239 7.145480 5.353632 1.834579 1.9838395 0.3033916
## 4 2.43101474 5.244522 5.810932 2.024810 2.880340 1.7672343 5.5594005
## 5 -0.04458439 5.410390 6.656047 3.264870 2.864426 2.8190554 5.2880776
## 6 4.90754210 3.876227 2.142618 3.564723 3.769077 0.6519836 4.6939514
##      Mrps6      Mrps7      Mrps9      Mrrf      Mrs2      Mrto4      Mrvi1
## 1 3.407924 6.708480 4.258941 3.2090162 5.0254530 4.129838 0.5161606
## 2 4.442805 5.519915 4.689990 4.7048099 4.3864190 3.307955 2.0253811
## 3 4.166010 6.517645 6.403022 0.6984974 -0.2425151 4.300175 -1.9317392
## 4 4.929954 5.753350 6.005338 5.4643924 0.6155723 5.077237 1.3147775
## 5 5.716991 6.393851 5.962780 6.0586135 -1.4408855 5.824216 -3.8841215
## 6 4.022661 4.419589 4.606392 2.8972030 5.7084204 3.920834 -1.7503875
##      Ms4a1      Ms4a6b      Ms4a6c      Ms4a6d      Ms4a7      Msc
## 1 -3.7949831 -0.5790619 -1.2048597 -1.36845875 -1.633483 -0.2904355
## 2 -1.4747565 -0.2049825 -1.2795810 -3.65650428 -3.884122 -2.1122046
## 3 -1.9317392 6.4804400 4.3560197 1.37559158 6.260322 -3.8841215
## 4 -3.5296461 3.6456169 3.0809280 3.21200073 4.248288 -0.6278917
## 5 -2.8071174 4.7331868 3.0976229 -0.04458439 1.306052 -3.8841215
## 6 -3.8841215 -3.6744822 -3.8841215 -3.88412153 -3.660779 -2.7173925
##      Msh2      Msh3      Msh4      Msh5      Msh6      Msi1
## 1 4.679758 4.1582903 -3.4955576 1.0303093 4.5770945 4.07394416
## 2 5.385219 4.6548826 -3.8841215 0.4267554 4.9064626 -1.88997179
## 3 2.410380 6.9232024 -3.8841215 -3.8841215 0.5144282 -3.88412153
## 4 5.986810 4.1840031 -3.8841215 0.4318762 3.9906420 0.02872649
## 5 2.121505 4.7167877 -3.8841215 -2.8071174 4.5601506 1.34924776
## 6 3.855444 4.5040530 -1.2424541 2.0455673 4.9257364 5.96473289
##      Msi2      Msi11      Msi12      Msi13      Msi1312      Msi1n      Msi1n1
## 1 6.078356 6.615744 6.0984928 5.117569 3.5617257 -3.794983 -3.478034
## 2 6.403813 6.247504 6.3563695 5.517139 1.9268977 -3.248991 -2.995623
## 3 6.393046 1.668074 0.6984974 1.375592 -0.6195262 -3.884122 -3.884122
## 4 6.695816 5.373159 4.0248868 6.589306 2.2815390 -3.674937 -3.427701
## 5 6.374379 2.070791 4.1045651 4.839257 4.4553202 -3.884122 -3.884122
## 6 8.393290 6.862462 6.1413513 4.897550 4.3362703 -3.451139 -3.288906
##      Msn      Msr1      Msra      Msrb2      Msrb3      Mst1      Mst1r
## 1 4.850150 -2.879349 3.181452 3.489959 2.8206555 -2.858483 -1.5510786
## 2 10.063032 -3.884122 3.958859 4.889852 6.8564689 -3.651962 -2.8070815

```

```

## 3  3.528133 -1.931739 6.412929 6.439021 2.1822477 -3.884122 -0.2425151
## 4  7.242509 1.971964 6.139971 4.945294 0.4507111 -3.082383 -1.5042712
## 5  5.003742 -1.770104 6.550115 5.301886 -2.8071174 -2.807117 -2.8071174
## 6  5.972979 -3.884122 2.498181 3.652973 0.6036787 -2.194289 -1.5965104
##      Mstn      Msto1      Msx1      Msx2      Mt1      Mt2      Mt3
## 1  -3.096489 4.2297995 -1.7722462 -3.790167 6.188226 4.955596 5.408351
## 2  -3.651962 4.5719355 2.4992984 -3.227782 5.177838 4.043758 2.495917
## 3  1.008333 5.9286188 -3.8841215 -1.931739 11.081408 8.562808 11.043778
## 4  -3.209184 4.4097634 -2.5742678 -3.884122 10.785152 8.600801 10.102149
## 5  -3.884122 0.0631199 -0.7519471 -3.884122 10.781924 8.698239 10.641899
## 6  -3.884122 3.8602793 -0.6218062 1.499008 7.126615 6.235526 7.624856
##      Mta1      Mta2      Mta3      Mtap      Mtap7d3      Mtbp      Mtch1
## 1  6.404330 7.152867 5.563965 5.251036 -2.304308 3.156192 7.970202
## 2  6.305181 8.621534 4.890091 5.742036 -1.590203 4.210222 8.313712
## 3  1.577013 5.731592 1.008333 1.141414 -3.884122 -3.884122 8.537370
## 4  4.722784 4.379478 4.355499 5.011548 -1.425647 4.043296 5.757207
## 5  4.761444 4.394758 1.306052 5.806889 -3.884122 -1.440886 6.632198
## 6  6.559138 7.088056 4.318369 3.997045 2.383536 4.202743 7.154143
##      Mtch2      Mtcp1      Mtdh      Mterfd1      Mterfd2      Mterfd3      Mtf1
## 1  6.368551 3.139107 7.222052 3.674907 4.0128410 2.3579588 5.5049355
## 2  6.016135 3.171983 7.137410 4.635113 2.9989993 2.7553169 4.6954975
## 3  9.403668 5.621974 5.996079 6.671377 -0.6195262 0.3033916 0.5144282
## 4  7.234837 4.520851 5.982522 5.903014 5.4211463 4.3490004 4.8070140
## 5  7.985758 5.242981 6.511419 6.317059 5.8107576 4.4846740 5.3690126
## 6  6.366938 3.307236 7.187829 4.583964 5.1770069 3.3271827 5.0688313
##      Mtf2      Mtfmt      Mtfp1      Mtfr1      Mtg1      Mthfd1      Mthfd11
## 1  4.5027064 2.977062 1.4297040 3.273056 4.2638945 6.182949 3.774593
## 2  5.5964504 2.417449 0.2023483 5.473831 4.2639135 4.935980 4.437730
## 3  0.3033916 4.962061 6.7645983 2.053052 -0.6195262 1.479815 6.687792
## 4  5.9066469 3.852187 4.8200472 5.385188 4.9536444 6.303659 1.876048
## 5  5.2741358 3.424858 5.5831731 3.972661 4.6053939 4.569314 2.372441
## 6  5.4857564 3.508652 2.3835364 4.287910 3.6415111 6.703879 2.712757
##      Mthfd2      Mthfd21      Mthfr      Mthfs      Mthfsd      Mtif2      Mtif3
## 1  3.815950 2.8778561 5.8334792 1.6512724 4.073803 4.557700 2.963979
## 2  2.084043 2.2044225 5.8509112 2.4605198 4.206475 4.834732 3.038592
## 3  7.213193 -1.9317392 0.6984974 6.2157390 -1.931739 1.141414 5.593217
## 4  6.047874 2.0300495 3.8816316 3.5959385 4.160445 5.501427 4.983294
## 5  1.015582 -1.1730114 3.1596033 3.6138373 4.700200 3.352398 5.117424
## 6  2.812510 3.1468777 5.0350620 1.4137540 4.494311 4.981243 2.677642
##      Mt15      Mtmr1      Mtmr10      Mtmr11      Mtmr12      Mtmr14      Mtmr2
## 1  -0.5734904 5.370151 6.973135 3.197516 4.512821 4.992037 6.068872
## 2  1.4994042 5.283915 5.501781 4.079261 6.054089 5.435935 7.367986
## 3  -1.9317392 2.242751 1.008333 6.547933 2.119096 6.134242 7.435221
## 4  -2.7319081 3.476816 5.370387 4.101237 3.373401 2.464361 6.709335
## 5  -3.8841215 1.620055 2.707288 3.097623 3.622666 2.908414 7.435221
## 6  2.6328078 5.410623 6.191580 6.994546 5.044769 4.320801 5.682412
##      Mtmr3      Mtmr4      Mtmr6      Mtmr7      Mtmr9      Mto1      Mtor
## 1  6.999186 6.196750 6.625472 3.5741945 5.8688341 4.308549 6.649364
## 2  7.424148 5.385156 8.630735 0.6565812 5.2363774 3.819883 6.160359
## 3  2.053052 3.006755 9.453318 1.0083330 0.6984974 -1.131317 4.820366
## 4  4.805090 5.462243 6.758293 2.6141912 3.4652392 2.516502 4.595330
## 5  2.263755 2.723795 5.995437 3.4349186 -0.1609828 1.068238 5.237244
## 6  6.627526 6.491625 6.544559 1.0039505 5.1356196 4.304247 7.477691
##      Mtpap      Mtpn      Mtr      Mtrf1      Mtrf11      Mtrr      Mtss1

```



```

## 1 4.751449 7.675452 3.5235682 1.964188 1.8027509 3.79297272 6.691214
## 2 6.242452 8.612406 4.4047941 2.685159 2.9760777 3.06217267 7.644474
## 3 5.533923 6.746430 0.5144282 -1.931739 -1.1313170 0.05610664 3.773441
## 4 6.302539 6.636629 3.6401112 3.980260 1.4639903 4.55524264 6.662730
## 5 6.555889 7.014094 -1.7701038 2.908414 -2.1973739 4.70851776 7.204756
## 6 5.671811 7.431960 4.4593376 1.901194 3.3076037 3.36926586 4.670515
##      Mtss11      Mttp      Mtus1      Mtus2      Mtx1      Mtx2      Mtx3
## 1 9.239077 3.683404 5.383015 2.1823493 5.349425 4.4607654 5.1664246
## 2 5.385048 1.737172 7.694649 1.6709158 5.044356 5.4836333 2.9275510
## 3 3.478677 2.119096 8.028613 -3.8841215 1.375592 0.8617169 -0.6195262
## 4 6.006719 4.960497 6.495913 1.2172449 6.129524 2.8233177 4.1097873
## 5 6.098718 2.787996 5.621117 -2.8071174 7.087679 4.9730020 3.5779700
## 6 9.862597 3.685021 5.182492 0.0800959 5.152621 4.4523889 7.0603946
##      Muc1      Muc13      Muc15      Muc5b      Muc6      Mul1      Mum1
## 1 -0.193209 -3.884122 -3.794983 -3.723567 -2.468747 4.887354 4.531441
## 2 -1.681862 2.045654 -3.884122 -3.884122 -1.453892 4.747420 5.756746
## 3 -3.884122 -1.931739 -3.884122 -3.884122 -1.931739 6.807792 1.668074
## 4 -1.305436 -2.912643 -3.674937 -3.884122 -2.601512 5.134732 5.195167
## 5 -3.884122 3.788771 -3.884122 -3.884122 -3.884122 6.557041 3.596015
## 6 4.453664 -3.118612 -2.175786 -3.451139 -1.926196 5.043148 5.649728
##      Mum111      Murc      Mus81      Musk      Mustn1      Mut
## 1 1.877766 1.778849 4.4577870 -1.3224242 -2.17758994 5.012130
## 2 2.800194 1.580517 4.4251716 -2.0967683 1.75266239 5.107638
## 3 -1.131317 -3.884122 0.3033916 -3.8841215 6.86905222 8.671346
## 4 2.871058 -3.186080 4.6070111 -0.1327441 2.21859579 6.662657
## 5 -2.197374 -3.884122 3.7246054 -3.8841215 -1.77010377 5.683628
## 6 2.579393 1.465799 4.9231962 -1.4247850 -0.62779792 5.632453
##      Mutyh      Mvd      Mvk      Mvp      Mx1      Mx2
## 1 1.6805974 6.458926 5.630782 3.26127989 -2.89644880 2.1402429
## 2 1.1136111 4.356843 5.474998 5.71868794 -3.65650428 2.6847546
## 3 -1.1313170 6.101943 6.565805 0.05610664 -3.88412153 -3.8841215
## 4 3.0005351 5.328455 5.204664 2.09726915 -0.66293947 0.8488954
## 5 0.7189210 5.929366 5.546526 1.96367954 -2.19737395 -2.1973739
## 6 2.4467031 6.902747 6.437368 2.90369627 -3.26808737 2.3241943
##      Mxd1      Mxd3      Mxd4      Mxi1      Mxra7      Mxra8      Myadm
## 1 5.545206 1.2518381 5.5607518 6.240489 2.168022 3.9622692 3.805949
## 2 5.987200 2.2593554 6.5580220 6.960903 4.783671 5.0176111 6.654700
## 3 1.479815 0.3033916 -1.9317392 8.135194 -1.931739 0.6984974 7.958188
## 4 3.818603 3.7095460 2.0058355 5.357856 2.328528 5.1464386 5.478961
## 5 5.184553 5.2227991 -3.8841215 4.117116 3.850204 4.3098380 6.003909
## 6 6.124310 1.5893330 4.9947704 6.496835 1.326284 5.1904002 3.259675
##      Myadm12      Myb      Mybbp1a      Mybl1      Mybl2      Mybpc1
## 1 -0.1986233 2.1358257 6.964449 2.9924368 1.49701941 0.1637954
## 2 -3.1123102 -0.8948347 7.012108 1.2838767 2.21748843 -3.8841215
## 3 -1.9317392 -1.9317392 2.607316 -1.1313170 -1.13131698 -3.8841215
## 4 -3.6749365 2.3067491 6.637440 1.0120004 0.49916216 -3.1283151
## 5 -3.8841215 -2.1973739 4.059758 -3.8841215 2.12150494 -2.8071174
## 6 -3.6607788 2.4004741 6.841075 2.9335663 2.13615996 -3.2808450
##      Mybpc2      Mybpc3      Mybph      Mybph1      Myc      Mycbp      Mycbp2
## 1 -1.9644049 -1.398697 -2.2834683 -3.884122 4.2662749 2.8455031 7.490755
## 2 -2.6498048 -2.895210 -3.8841215 -2.960717 3.3856063 4.2774160 6.922247
## 3 -3.8841215 -3.884122 -3.8841215 -3.884122 0.6984974 0.3033916 4.810406
## 4 -3.4182176 -3.884122 -2.7162757 -3.884122 3.1162777 4.0707005 6.663836
## 5 -3.8841215 -3.884122 -3.8841215 -3.884122 1.9069861 3.8577022 5.098561

```

```

## 6 -1.2819779 -3.884122 -1.7878577 -2.848578 5.9376187 2.0363795 7.936796
##      Mycbpap      Mycn      Myct1      Myd88      Myef2      Myeov2      Myg1
## 1 -1.5651224 3.8335531 -3.1471093 2.89294816 5.422525 5.097790 4.219504
## 2 -1.4747565 4.2058997 7.3969773 4.83577969 4.903088 6.004625 4.557931
## 3 -1.9317392 1.0083330 -3.8841215 0.30339162 6.827680 8.726676 6.073075
## 4 0.6123333 5.5805264 -2.4460890 3.37450279 7.100101 7.857505 6.851975
## 5 4.2822417 5.6144935 -2.8071174 -0.04458439 7.545537 9.168340 7.249620
## 6 -0.3333731 0.7038069 -1.1053566 3.20567151 5.306141 4.007013 4.053421
##      Myh1      Myh10      Myh11      Myh13      Myh14      Myh15
## 1 -3.536883 6.369392 -1.7911660 -2.984041 5.8620239 -2.375968
## 2 -3.651962 9.608491 1.7527025 -3.656504 -2.1919090 -2.960717
## 3 -3.884122 1.911138 0.6984974 -3.884122 0.3033916 -3.884122
## 4 -3.884122 6.999956 1.7365165 -3.884122 1.9694484 -3.381881
## 5 -3.884122 4.865529 -1.7701038 -3.884122 -1.7701038 -3.884122
## 6 -3.451139 6.587334 -0.7960014 -3.884122 6.4408908 2.237684
##      Myh3      Myh4      Myh6      Myh7      Myh7b      Myh8
## 1 -0.81415590 -3.514643 3.0160189 -1.30735864 0.5700054 -3.512200
## 2 -1.72369526 -3.884122 -0.4575900 -2.82026903 -2.0647642 -3.884122
## 3 -3.88412153 -3.884122 -3.8841215 -3.88412153 -3.8841215 -3.884122
## 4 -3.88412153 -3.884122 1.7747371 0.02968114 -2.0773435 -3.674937
## 5 -3.88412153 -3.884122 -1.7701038 -3.88412153 -3.8841215 -3.884122
## 6 -2.28575063 -3.884122 5.7527601 0.03723791 0.2625454 -3.674482
##      Myh9      Myl12a      Myl12b      Myl12      Myl14      Myl16      Myl16b
## 1 6.036259 5.006719 5.969506 -2.5711203 0.07671145 5.711266 1.7575744
## 2 9.758860 9.631661 8.810229 -3.6565043 5.13353812 8.123852 0.6709020
## 3 5.091076 9.030572 8.201476 -3.8841215 -3.88412153 8.499902 -1.9317392
## 4 5.722973 7.120345 7.925759 -0.7756118 -0.05881538 6.466880 1.2116305
## 5 6.569652 8.289011 8.603300 -3.8841215 -3.88412153 7.726389 1.6889296
## 6 6.171086 5.591571 4.958109 -3.4511394 1.01643735 5.947583 0.4068765
##      Myl19      Mylip      Mylk      Mylk2      Mylk3      Mylk4
## 1 1.416324 2.7233704 1.88817220 -3.884122 -0.6187939 -3.7235669
## 2 6.174554 4.9400368 5.05640833 -3.251585 -3.4243451 -0.8014081
## 3 9.854452 0.3033916 0.05610664 -3.884122 -3.8841215 -3.8841215
## 4 6.801496 1.9050155 2.66398196 -3.884122 0.2202409 -3.6749365
## 5 7.797317 -0.4264149 5.15746752 -3.884122 -3.8841215 -3.8841215
## 6 4.115624 3.8851987 2.26264298 2.911087 -1.7838833 -1.1812984
##      Mylpf      Mynn      Myo10      Myo15      Myo16      Myo18a
## 1 -0.3172625 5.182248 6.662752 -2.60792436 4.8361672 7.445698
## 2 2.5060558 6.007334 9.209142 -1.70485700 -0.7952439 7.001059
## 3 -1.1313170 7.799825 3.503617 -3.88412153 -3.8841215 3.006755
## 4 1.5806815 6.009320 7.315693 -2.46283932 1.1668467 5.655905
## 5 3.1227355 4.800875 7.483882 -3.88412153 -1.4408855 6.123811
## 6 -1.7919785 5.810167 8.824598 -1.75066496 4.4550501 8.091610
##      Myo18b      Myo19      Myo1a      Myo1b      Myo1c      Myo1d
## 1 2.323560901 3.7227667 -0.92349209 2.8871957 3.549104 3.74410132
## 2 -1.057858776 3.6629166 -3.10803735 9.6899050 8.337934 6.23155198
## 3 -3.884121530 0.3033916 -3.88412153 1.2632490 4.674250 0.05610664
## 4 -2.764278550 2.5320597 2.42400076 4.3865299 3.303094 2.97348851
## 5 -3.884121530 -0.9471720 -3.88412153 5.5395493 3.059115 4.33154113
## 6 -2.010360985 5.2686582 0.02193087 3.2238459 4.639151 -1.28197788
##      Myo1e      Myo1f      Myo1g      Myo1h      Myo3b      Myo5a
## 1 3.2738382 1.3707839 -0.8764522 -2.5954319 -2.974851 7.820514
## 2 7.8132801 -0.9680492 -1.4298743 -0.6213924 -3.424345 1.542828
## 3 0.3033916 0.6984974 7.4400741 -3.8841215 -3.884122 1.753727

```

```

## 4 4.2209943 2.2738541 -1.4435435 -2.4804506 -1.832344 5.338857
## 5 0.7833343 -1.4408855 -3.8841215 -3.8841215 -3.884122 2.819055
## 6 5.0536190 -2.9479702 -1.6600747 -1.3365704 0.422311 6.062136
##      Myo5b      Myo5c      Myo6      Myo7a      Myo7b      Myo9a
## 1 -0.56221379 -0.4104442 7.315152 -0.26867163 -0.6016088 5.8917245
## 2 -0.74195284 -3.6519623 7.608476 -0.57048310 -2.0578217 6.4453578
## 3 1.26324902 -3.8841215 3.644828 -1.13131698 -3.8841215 1.2632490
## 4 1.09880765 -2.7527634 5.761828 3.22370088 -3.8841215 5.4517032
## 5 -0.16098275 -3.8841215 5.924019 2.01822905 -3.8841215 0.2570463
## 6 -1.30874296 -0.7795710 9.289322 -0.05729153 -3.1713129 7.3615214
##      Myo9b      Myoc      Myocd      Myof      Myom1      Myom3
## 1 6.823059 -2.5863270 -3.8841215 -0.81215890 -0.731549062 -1.2028911
## 2 6.000937 -1.1003172 -2.8000981 4.42206890 -0.469297578 -2.0252565
## 3 1.375592 -1.9317392 -3.8841215 1.14141397 -1.931739237 -3.8841215
## 4 3.699872 0.7306021 -3.1978120 0.31104610 0.005688312 -0.9103584
## 5 2.819055 3.3838991 -3.8841215 -0.04458439 -2.197373949 -2.8071174
## 6 6.604320 -0.8895267 -2.9479702 -2.25206838 1.175077274 5.1192607
##      Myoz2      Mypn      Mypop      Myrip      Mysm1      Myt1
## 1 -3.767000 0.1989917 4.0054377 3.319643 4.994838 7.29016285
## 2 -3.884122 -3.8841215 2.1708348 3.069012 4.956991 -1.44424714
## 3 -3.884122 -3.8841215 1.3755916 -1.931739 7.895971 0.05610664
## 4 -1.920421 -2.4824751 0.8618806 1.452082 6.423357 5.33704728
## 5 -3.884122 -3.8841215 3.2983183 -2.197374 5.251545 2.65660325
## 6 -3.268087 -1.9261960 2.7660547 5.697266 6.260676 -0.86724004
##      Myt11      Myzap      Mzf1      Mzt1      Mzt2      N28178      N4bp1
## 1 3.38103815 -0.4275395 1.2994867 4.223824 4.543982 2.1542481 4.577281
## 2 -1.08507235 4.3736540 1.2083335 6.261084 4.742257 1.7918165 6.708501
## 3 1.26324902 0.3033916 -3.8841215 6.439021 6.646399 -1.1313170 4.314340
## 4 6.46504389 -1.1527660 -0.9085135 6.791900 5.689661 0.1793642 4.474110
## 5 3.78090459 2.4735096 2.2409993 6.258782 5.632090 -3.8841215 4.225413
## 6 0.04242896 -2.9809405 2.2303407 4.091058 4.045349 -0.1514648 5.100671
##      N4bp2      N4bp211      N4bp3      N6amt1      N6amt2      Naa10      Naa15
## 1 4.71843017 3.1246361 0.9710558 3.2900615 3.892186 5.008504 5.821330
## 2 4.50087242 2.3393654 8.6825626 3.9923564 3.145647 5.634577 6.196185
## 3 0.05610664 -0.6195262 1.0083330 0.3033916 7.493963 6.984281 3.928827
## 4 3.09573820 2.5179624 1.6927761 4.3273725 6.529694 6.399154 5.294413
## 5 2.28615688 4.3739918 -0.9471720 3.7327839 7.831515 7.138583 2.864426
## 6 6.03398377 3.6556105 2.2121181 2.8411414 2.813778 4.018105 6.578570
##      Naa16      Naa20      Naa25      Naa30      Naa35      Naa38      Naa40
## 1 3.5449806 4.446084 4.823485 4.751064 5.522823 4.252126 4.900868
## 2 4.4079117 5.495267 4.821979 5.006946 5.716837 5.169330 4.048709
## 3 -0.2425151 6.682341 5.107438 4.212132 6.695929 1.983840 6.603784
## 4 4.5952495 4.965160 6.174574 4.401093 6.621462 6.569343 4.046811
## 5 3.0720655 6.747684 3.341743 5.290850 6.565079 7.619076 1.015582
## 6 5.0935130 3.857662 5.269409 5.303456 5.678446 3.807449 5.505185
##      Naa50      Naaa      Naalad2      Naalad11      Nab1      Nab2      Naca
## 1 6.123108 3.406531 -1.40017129 -0.6872338 5.025609 2.7731851 5.436211
## 2 6.590353 2.408721 3.95218601 -2.3729121 6.216785 5.0450797 6.731528
## 3 2.356639 8.082370 -3.88412153 -3.8841215 1.668074 -0.2425151 6.957453
## 4 5.893729 8.349373 1.77526817 -2.3296522 3.668692 0.7032184 6.316236
## 5 5.980060 7.954191 -3.88412153 -3.8841215 3.414727 -2.8071174 6.939206
## 6 6.261941 6.163720 0.45491438 0.5559938 5.079151 4.1735713 5.860528
##      Nacad      Nacc1      Nacc2      Nadk      Nadsyn1      Nae1      Naf1
## 1 6.1705980 7.093928 7.332201 6.802548 2.4849767 4.874786 4.405900

```

```

## 2 -0.7326983 6.825760 4.199742 6.774406 3.3383778 5.247164 4.163393
## 3 6.1181825 1.008333 1.141414 4.356020 -1.1313170 5.973941 -3.884122
## 4 2.9070548 3.808287 5.799766 6.095624 3.9814899 6.685425 2.439533
## 5 4.1418942 3.331009 5.511302 5.948805 -2.8071174 7.238175 3.965738
## 6 1.5632277 6.538317 7.966162 7.141926 3.6935660 5.188718 5.280333
##      Naga      Nagk      Naglu      Nagpa      Naif1      Naip1      Naip2
## 1 4.831619 3.936119 4.204511 3.8971970 1.1877831 -3.2355569 -0.8158342
## 2 5.174231 4.415348 4.910329 4.6121425 1.8776610 0.7577312 -0.1438850
## 3 8.163835 2.053052 6.632334 0.5144282 3.8725002 -3.8841215 -3.8841215
## 4 6.338283 5.800230 2.420871 1.9956096 1.5991276 -3.4277009 -0.1255323
## 5 5.714929 6.450737 4.627494 1.2155742 2.2409993 -3.8841215 -2.8071174
## 6 5.730182 3.353531 4.162130 3.0243467 0.8078826 -3.0501908 -3.2808450
##      Naip5      Naip6      Nalcn      Nampt      Nanos1      Nanos2
## 1 -1.1297551 -2.292183 6.93368357 6.039122 2.81212330 -2.2732621
## 2 -1.3383006 -2.716134 0.30651336 10.777005 2.06737070 -0.2306731
## 3 -3.8841215 -3.884122 0.05610664 7.857795 -1.93173924 -3.8841215
## 4 -1.0301153 -3.884122 2.13535544 5.902483 5.34562331 -2.7967295
## 5 -3.8841215 -3.884122 4.57387322 5.082651 5.80688922 -3.8841215
## 6 -3.1565438 -3.674482 1.15581678 5.335608 -0.05403707 -1.8755740
##      Nanos3      Nanp      Nans      Nap111      Nap112      Nap113      Nap114
## 1 -1.1448130 -2.25038359 5.063518 6.830863 3.25582221 3.642838 7.704285
## 2 -0.5764245 -3.65196234 5.914535 7.032839 0.02584595 2.061123 8.297150
## 3 -3.8841215 0.05610664 6.303568 3.910295 7.04712486 1.008333 7.385772
## 4 -1.2032111 -0.98577271 5.008256 6.375333 3.90698282 2.493364 7.361846
## 5 -3.8841215 0.06311990 6.068341 6.297894 -1.77010377 3.613837 7.958556
## 6 -2.0287916 -2.43415660 3.255606 6.107788 -0.30772672 3.193979 6.930701
##      Nap115      Napa      Napb      Napepld      Napg      Naprt1      Napsa
## 1 7.3000621 6.875946 3.5341784 2.2777719 5.259797 2.6826322 -2.0490451
## 2 2.0826591 6.970235 1.8519587 3.9909113 5.308299 2.3301704 1.1610699
## 3 1.7537270 9.061869 0.8617169 6.2493047 1.008333 6.8077923 7.8432137
## 4 4.5115048 8.387390 5.4175360 3.6818379 5.716138 5.1927810 1.1709699
## 5 4.7372576 8.875832 3.0591149 4.7372576 5.860124 3.7809046 -2.8071174
## 6 7.6046747 6.950452 4.6631609 2.2057227 5.967382 5.3403598 -3.8841215
##      Narf      Narf1      Narg2      Nars      Nars2      Nasp      Nat1
## 1 5.268123 4.558271 4.155089 6.923968 4.0616257 6.306994 -2.352835
## 2 5.861303 4.360784 4.304144 6.788298 4.3036618 6.354156 -2.297781
## 3 7.239412 6.204375 1.008333 8.363510 -0.6195262 1.668074 -1.131317
## 4 5.790097 5.291507 4.690016 8.020199 2.2971583 7.077343 1.923224
## 5 6.257366 4.894981 3.097623 6.607949 -0.2876030 6.517349 4.287803
## 6 4.656103 4.856565 5.405748 6.418523 3.4312328 6.576077 1.975926
##      Nat10      Nat14      Nat2      Nat6      Nat8      Nat8l      Nat9
## 1 5.3008084 3.693003 -1.05609529 3.065732 -1.980162 6.0827772 3.293333
## 2 4.2844676 1.622846 1.84816549 4.461534 -3.112310 0.3218361 4.141419
## 3 -0.6195262 2.820816 -1.93173924 1.375592 5.955982 4.1969213 -1.131317
## 4 5.3031578 2.848187 1.93746543 5.039433 1.210694 3.3138161 4.249859
## 5 -0.1609828 4.389594 -0.75194706 4.948632 -3.884122 1.6549031 3.850204
## 6 5.4867502 2.756166 1.61517124 5.427311 2.944888 6.5563013 1.540946
##      Nav1      Nav2      Nav3      Nbas      Nbea      Nbea1l      Nbea12
## 1 7.742239 6.959041 5.8108015 6.018751 6.442758 4.141225 3.0792700
## 2 6.547922 1.640188 0.2052906 5.972481 5.814355 6.075528 5.4732096
## 3 2.971435 1.577013 -3.8841215 8.299083 2.053052 5.139615 1.8345785
## 4 8.027329 5.881998 1.4630539 5.119454 4.851653 4.391943 0.6845101
## 5 7.547857 5.000359 -2.1973739 5.423081 3.708108 2.978871 0.4279671
## 6 7.423222 7.687376 1.9331982 6.151472 6.179418 6.258387 4.3686277

```

##		Nb11	Nbn	Nbr1	Ncald	Ncam1	Ncam2	Ncan
## 1	4.3381794	3.942069	8.044939	8.372442	9.785727	6.3404526	7.562016	
## 2	5.2728051	5.090419	7.567035	3.769753	1.673807	-1.3400166	3.200408	
## 3	0.3033916	-1.131317	7.088924	9.001867	9.177776	-0.6195262	8.276651	
## 4	3.9138911	3.376441	7.986693	6.490917	10.712926	3.5232990	8.937766	
## 5	4.2988628	-1.770104	7.635527	5.382071	10.646912	4.5919693	9.447121	
## 6	4.1360117	5.056310	7.475628	5.010261	10.088415	5.6176560	11.509440	
##		Ncapd2	Ncapd3	Ncapg	Ncapg2	Ncaph	Ncaph2	Ncbp1
## 1	4.957123	5.0534249	1.6171506	3.721703	2.953959	6.174180	6.434322	
## 2	4.689658	5.2228402	2.5702094	3.810975	7.258929	7.154560	6.799773	
## 3	3.171443	0.8617169	0.6984974	1.375592	2.053052	6.883375	1.983840	
## 4	6.141399	5.3239449	5.0882524	4.860103	5.896573	6.884031	5.259173	
## 5	5.154426	3.3734750	1.8175364	2.864426	5.407839	6.863945	3.424858	
## 6	5.673238	6.0006108	3.2643783	4.435800	3.651923	5.673263	5.936488	
##		Ncbp2	Nccrp1	Ncdn	Nceh1	Ncf1	Ncf2	
## 1	5.931124	-0.02350365	7.737649	5.718176	3.00178911	1.9740758		
## 2	5.274775	-3.42434508	4.676431	5.853772	2.40361164	1.8069067		
## 3	7.014961	2.97143505	5.843269	7.654288	0.30339162	-0.6195262		
## 4	7.066239	-0.27648928	5.111282	4.632094	1.51093245	1.4211017		
## 5	7.030774	0.65149678	5.163531	4.687633	-0.94717201	3.6830026		
## 6	4.518450	-3.00971670	5.144558	3.571592	0.44441760	-1.7990744		
##		Ncf4	Nck1	Nck2	Nckap1	Nckap11	Nckap5	
## 1	0.2853168	2.869257	3.6402950	8.202062	4.3018105	5.45668783		
## 2	-1.7539003	6.246548	5.3609938	8.563333	-0.6092034	1.86942467		
## 3	6.5115104	5.049340	6.3863563	7.004079	1.0083330	0.05610664		
## 4	-0.5190686	4.594546	5.9046675	5.710145	2.5126621	5.60742824		
## 5	-0.1609828	3.219030	7.1847736	5.931144	-0.5800187	5.04701965		
## 6	-3.1376752	4.306534	2.7947692	7.853460	0.1078300	6.87749236		
##		Nckap51	Nckipsd	Ncl	Ncln	Ncoa1	Ncoa2	Ncoa3
## 1	5.4243893	4.2904498	7.806794	6.952257	6.391800	6.485483	6.125195	
## 2	7.0987209	3.9802290	8.919159	6.487101	6.716886	6.128688	5.484518	
## 3	-1.1313170	0.8617169	4.571847	1.983840	2.820816	1.008333	4.150303	
## 4	1.6582526	2.8367534	8.573404	3.794753	7.454664	4.434863	5.411813	
## 5	-0.1609828	3.7490031	7.542051	5.955809	7.577676	4.460254	4.564739	
## 6	5.1591971	4.8306995	7.573044	6.908150	7.257337	6.487631	5.642571	
##		Ncoa4	Ncoa5	Ncoa6	Ncoa7	Ncor1	Ncor2	Ncr1
## 1	4.953592	5.452400	6.32743371	3.661296	7.283296	8.213818	-3.884122	
## 2	5.576610	4.961006	5.52316433	5.278832	7.660034	6.292504	-3.651962	
## 3	3.752786	2.119096	0.05610664	-1.931739	4.888226	4.696052	-1.931739	
## 4	3.332260	4.462528	4.95078945	4.631925	6.609311	4.267783	-2.026766	
## 5	2.044749	3.979550	4.10456510	4.231198	6.418144	3.171686	-3.884122	
## 6	3.909948	5.759673	7.07716450	4.001178	7.956886	7.735486	-3.884122	
##		Ncs1	Ncstn	Ndc80	Nde1	Ndel1	Ndfip1	Ndfip2
## 1	4.5742419	6.568410	1.3470731	6.208368	5.695380	8.410136	6.563031	
## 2	0.6993709	7.135666	3.5790566	5.898349	7.221564	8.291324	7.309074	
## 3	8.2802635	3.290869	0.6984974	3.478677	7.407408	5.268888	4.035284	
## 4	7.5098277	7.599882	4.3802899	7.146995	4.875256	4.572313	4.982356	
## 5	6.7617403	6.506657	3.7729951	5.886023	5.455564	5.967986	5.092218	
## 6	6.1128026	6.848621	2.1809151	6.642141	6.344089	6.667940	5.698921	
##		Ndn	Ndor1	Ndp	Ndr1	Ndr2	Ndr3	Ndr4
## 1	7.281300	5.506298	3.0299663	4.672061	7.783464	7.134185	5.417671	
## 2	4.294682	4.268151	-1.2838038	5.876676	3.896034	5.824821	3.423227	
## 3	4.342260	1.141414	7.1979934	7.507897	9.377344	9.821668	6.245614	
## 4	7.082724	4.153215	6.7759665	6.103340	10.085332	8.197150	6.632996	

```

## 5 8.140543 3.444910 7.4264234 7.521544 9.624072 7.166021 5.945290
## 6 5.633131 5.823015 5.2903500 1.497525 10.280664 5.986556 4.538220
##      Ndst1      Ndst2      Ndst3      Ndst4      Ndufa1      Ndufa10      Ndufa11
## 1 7.289466 4.508441 -1.3852843 -0.4994137 4.617881 6.350719 5.540011
## 2 6.948155 4.392811 2.3290247 -3.2489909 5.737696 6.623212 6.087737
## 3 3.232392 1.263249 -3.8841215 -3.8841215 8.985916 2.242751 9.607586
## 4 4.603925 3.366264 0.3168404 -2.5745102 7.201924 5.917966 7.684316
## 5 4.435414 4.700200 -3.8841215 -3.8841215 8.567738 6.940089 8.920598
## 6 6.835959 5.571995 0.4220400 -3.0859991 3.367841 5.466927 4.593560
##      Ndufa12      Ndufa13      Ndufa2      Ndufa3      Ndufa4      Ndufa412      Ndufa5
## 1 2.647979 6.134031 5.557649 5.500422 6.868932 -1.510677150 4.507612
## 2 2.767677 6.272596 6.549661 5.575682 7.671314 4.924545914 4.692213
## 3 7.606163 10.173570 9.403668 9.890945 9.928554 1.008332988 9.349672
## 4 6.493054 8.477054 7.983492 8.516664 9.034269 4.996043646 7.796379
## 5 7.327963 9.604289 8.978705 9.479681 10.173335 6.907043305 8.774002
## 6 1.769172 4.947736 4.697477 4.359867 5.831440 0.005253709 3.591570
##      Ndufa6      Ndufa7      Ndufa8      Ndufa9      Ndufab1      Ndufaf1      Ndufaf2
## 1 5.324654 5.562066 5.859602 6.519948 2.3911592 3.301686 3.633747
## 2 6.987144 6.305341 6.452685 6.799900 2.6736921 2.237260 2.983567
## 3 9.709579 9.557105 9.720590 9.359097 -3.8841215 6.589295 7.857795
## 4 8.195706 8.263967 7.938430 8.008297 -0.3232095 5.269601 5.821170
## 5 9.388311 9.168340 8.927963 8.739411 1.1681147 6.299271 6.529137
## 6 4.685396 4.591670 4.323816 5.536456 2.3818421 3.766577 2.165626
##      Ndufaf3      Ndufaf4      Ndufb10      Ndufb11      Ndufb2      Ndufb3      Ndufb4
## 1 3.763584 3.744107 6.063996 6.228433 5.194571 4.836584 0.1407534
## 2 3.960714 4.099242 6.502652 7.421976 6.439956 5.680969 0.5491348
## 3 7.336304 7.619059 10.005051 9.484580 7.135542 8.266669 6.0478635
## 4 5.638481 5.689592 8.058063 8.243326 5.404993 6.615382 5.0385499
## 5 6.325195 5.166553 8.777959 9.686458 7.978468 7.808484 6.1438834
## 6 2.903601 4.891084 5.221358 5.126835 4.210075 3.777576 -0.3966426
##      Ndufb5      Ndufb6      Ndufb7      Ndufb8      Ndufb9      Ndufc1      Ndufc2
## 1 5.892228 5.283935 5.632318 6.322658 6.645877 3.923542 5.757216
## 2 6.765150 6.000250 6.092393 6.926003 6.688661 4.470674 6.686119
## 3 9.807655 8.487454 9.013852 10.353889 10.506463 7.325854 10.373682
## 4 8.136031 7.010325 7.676169 8.476565 8.086270 6.990974 9.876001
## 5 9.428832 8.532156 8.800749 9.912194 9.291279 7.865851 10.642984
## 6 5.064234 4.413885 4.175860 4.661856 5.391737 3.027759 5.091883
##      Ndufs1      Ndufs2      Ndufs3      Ndufs4      Ndufs6      Ndufs7      Ndufs8      Ndufv1
## 1 6.483405 7.556274 4.448033 5.474538 4.646510 5.564513 5.909939 6.653502
## 2 6.219539 7.749870 4.688082 6.588195 5.244642 5.523393 6.931759 7.730662
## 3 4.916359 9.022506 5.704958 8.936402 7.833411 8.569467 9.683897 9.333245
## 4 7.122454 6.896935 4.759123 7.806092 7.034727 8.092371 8.087806 7.657749
## 5 5.248696 7.245339 6.052092 8.740932 7.767274 8.768791 8.858184 8.581672
## 6 6.565006 6.709710 4.084688 4.562920 3.586052 4.992155 4.762889 6.062477
##      Ndufv2      Ndufv3      Neb      Neb1      Necab1      Necab2
## 1 6.374408 5.934357 -0.7663281 3.885695 0.94692667 5.6445648
## 2 6.752039 6.144816 -0.5515643 5.947049 0.09492096 -0.5015213
## 3 10.163335 8.613092 -3.8841215 5.015059 -3.88412153 -3.8841215
## 4 8.342236 7.564888 0.9665063 1.823739 0.81664986 2.0179021
## 5 9.294218 8.389427 0.5807664 -1.770104 2.53091789 3.2190301
## 6 5.352189 4.851693 1.0543240 5.328868 -0.03529122 1.1659649
##      Necab3      Necap1      Necap2      Nedd1      Nedd4      Nedd41      Nedd8
## 1 0.5757295 6.318741 5.563463 3.3880993 9.087930 4.464126 5.922950
## 2 -0.6449599 5.379894 7.288604 4.7014070 10.264795 5.357839 6.798415

```

```

## 3 -1.1313170 7.610475 6.934710 1.1414140 9.165131 2.182248 7.867434
## 4 5.0026981 6.952107 5.946405 5.3301659 10.162641 6.894197 8.254508
## 5 4.3369163 5.636456 6.392561 5.1905031 8.681436 6.289601 9.078543
## 6 3.5031063 5.896910 5.555932 4.5888275 9.597650 6.409011 4.760227
##      Nedd9      Nefh      Nefl      Nefm      Negr1      Neil1
## 1 3.6867362 -0.1228955 2.5349952 1.93876971 5.35282716 3.235270
## 2 7.4513809 -1.7545378 1.5748544 -0.02038688 1.46182320 3.388452
## 3 1.0083330 -3.8841215 1.2632490 -3.88412153 7.62617426 -1.131317
## 4 5.2874935 -1.1412035 2.2478189 0.04941168 4.65917570 3.572518
## 5 1.5843436 -3.8841215 -0.7519471 -2.19737395 4.48950878 5.050296
## 6 7.4350198 -1.7340567 -0.6616235 -0.19723796 5.26743355 4.124926
##      Neil2      Neil3      Nek1      Nek10      Nek11      Nek2
## 1 -0.2653577 0.99226291 3.8790037 -3.3849709 -2.05257886 2.1457391
## 2 -2.7161344 2.58230581 4.2728610 -2.9369560 -2.93695601 3.0514134
## 3 -3.8841215 0.86171687 -0.2425151 -1.1313170 -3.88412153 -0.2425151
## 4 -1.3333784 4.32746453 4.4876540 -2.8314011 0.65581619 1.1946565
## 5 -2.8071174 -1.17301144 -2.8071174 -3.8841215 -3.88412153 2.5679590
## 6 0.2002265 3.10426761 5.3220744 -2.1889762 0.08881684 2.6003225
##      Nek3      Nek4      Nek5      Nek6      Nek7      Nek8      Nek9
## 1 3.089250 3.6478026 -2.010993720 4.2039851 5.204497 3.0384830 6.963008
## 2 2.408620 2.6156619 -2.154317187 6.0818181 6.531673 3.4708546 7.296983
## 3 5.813659 4.3965292 -1.931739237 0.3033916 5.400861 1.7537270 1.263249
## 4 4.093552 4.4963973 0.009801996 4.2509300 5.067096 2.6677527 5.101981
## 5 -1.440886 4.9238425 -3.884121530 4.6876331 5.369013 -1.1730114 4.484674
## 6 1.738807 4.0498274 -0.770139779 5.9125701 5.179557 5.4609199 6.902728
##      Nell1      Nell2      Nemf      Nenf      Neo1      Nes      Net1
## 1 -1.2688676 6.729299 4.734994 5.181018 9.068782 2.6394878 1.5610096
## 2 -0.4879996 1.581712 5.808020 5.473482 6.418230 9.1321881 7.4135979
## 3 -3.8841215 5.891307 1.263249 1.141414 4.571847 -0.6195262 8.0978075
## 4 2.0313079 5.752542 7.033003 3.722043 6.744524 3.7961859 2.9704288
## 5 -2.8071174 4.347607 6.704673 4.541648 7.366581 4.3315411 0.4279671
## 6 -2.1730096 2.441500 6.102469 3.272801 8.613032 6.8479817 2.8163557
##      Neto1      Neto2      Neu1      Neu2      Neu3      Neu4
## 1 5.1317396 6.14388833 5.818659 -3.3132526 -0.19706895 9.2610009
## 2 -0.5322509 2.09872903 5.836320 -3.6519623 1.56820886 -2.5932726
## 3 -3.8841215 6.08964147 4.383152 -1.9317392 5.56387449 7.8272498
## 4 -0.4077484 3.47132965 4.719739 1.2239847 3.06946565 2.0819045
## 5 -3.8841215 3.64883436 5.010485 -2.8071174 -0.94717201 -1.4408855
## 6 -1.7838833 5.26487219 5.745199 -1.8375411 1.73591424 -2.7658025
##      Neurl1a      Neurl1b      Neurl2      Neurl3      Neurl4      Neurod1
## 1 4.4075593 2.4566788 0.1011548 -0.6142414 6.501010 -2.746339
## 2 1.9117160 -0.5364203 3.5760092 4.0477623 5.520617 -2.553203
## 3 -0.6195262 0.3033916 -1.9317392 -3.8841215 1.141414 4.422917
## 4 1.3329649 3.8562301 2.1814208 -0.4274589 4.574109 10.231720
## 5 -1.4408855 1.7864435 3.6401644 -2.1973739 6.042254 10.231669
## 6 -1.0327951 2.7210026 0.7641491 -1.6609227 6.414826 -3.674482
##      Neurod2      Neurod4      Neurod6      Neurog1      Neurog2      Nexn
## 1 -0.9970172 -3.8841215 -0.2016098 -3.568090 1.0037308 -0.1199934
## 2 -1.2116823 -3.2277824 0.2449255 -3.884122 -3.4837445 -1.3422152
## 3 6.8738425 1.4798145 0.8617169 -3.884122 -0.6195262 -3.8841215
## 4 4.2781804 6.3869494 5.5837088 -2.688446 3.9309698 0.4181463
## 5 4.3207304 5.8860226 7.0266218 -3.884122 4.0466955 -2.8071174
## 6 -2.0459504 -3.8841215 -1.9252699 -2.356144 -0.7079748 1.7929705
##      Nf1      Nf2      Nfam1      Nfasc      Nfat5      Nfatc1

```

```

## 1 7.2215589 7.18608729 0.6622205 10.5819590 6.615023 4.3641102
## 2 5.8258852 6.65615114 3.1096085 -0.3586928 7.910844 4.3484883
## 3 0.8617169 0.05610664 1.1414140 1.8345785 3.374368 1.1414140
## 4 5.7902642 4.88137855 3.0444120 6.2823892 4.291179 3.4752748
## 5 5.9834911 4.93805986 0.1633391 6.9169470 3.404524 3.7650420
## 6 7.7479159 6.51600064 -2.4391309 6.1397482 8.093688 5.0732432
##      Nfatc2  Nfatc2ip  Nfatc3  Nfatc4  Nfe2  Nfe2l1  Nfe2l2
## 1 6.0844654 4.0496267 5.1390832 -2.0535915 -2.937329 6.933276 3.103814
## 2 0.5135749 4.3054595 6.1845689 3.9662778 -2.041819 7.842248 7.633404
## 3 -0.6195262 0.5144282 1.9838395 -0.6195262 -3.884122 2.512206 7.082731
## 4 0.4505900 2.3922780 3.7620476 -0.2088254 -2.129788 4.750945 7.192044
## 5 2.9370110 1.6549031 0.6514968 -3.8841215 -3.884122 4.824026 5.911464
## 6 5.9269099 3.8345542 5.4455317 3.1719159 -1.016654 7.094481 5.466428
##      Nfe2l3  Nfia  Nfib  Nfic  Nfil3  Nfix
## 1 1.8770810967 6.009286 6.1069852 6.047911 5.5846394 5.883554
## 2 -1.7048569972 6.271581 7.0799650 6.365004 5.3587335 2.725684
## 3 -1.1313169829 8.991987 7.2706230 2.300819 -0.6195262 5.768072
## 4 -0.0002522798 11.890768 11.2905948 6.554397 2.0324056 10.375851
## 5 -0.7519470624 11.817629 10.4127834 6.251685 4.1782817 9.296806
## 6 -0.1667043724 7.550099 8.1221108 6.136428 6.6019483 6.651428
##      Nfkb1  Nfkb2  Nfkb1a  Nfkb1b  Nfkb1d  Nfkb1e  Nfkb1l1
## 1 4.695091 3.555731 5.334237 5.7409268 1.0635497 4.1691711 3.3056916
## 2 7.705085 6.291545 10.092706 4.3133494 4.3720286 2.9340136 4.8759187
## 3 1.263249 -1.931739 8.812762 0.5144282 2.4103803 -0.6195262 -3.8841215
## 4 3.989233 1.035424 6.153654 4.6664220 1.5126267 2.7016293 -0.4236811
## 5 4.154126 3.097623 6.818558 4.5229059 -1.7701038 2.7237947 -1.4408855
## 6 5.588869 4.575491 6.855830 4.0529405 2.0887565 2.4616925 3.3503320
##      Nfkb1z  Nfrkb  Nfs1  Nfu1  Nfx1  Nfx1l1  Nfya
## 1 4.7786111 5.7456858 5.281527 3.949233 6.337958 4.5165637 5.22086703
## 2 7.5623876 5.8029093 4.850854 4.022923 5.871435 5.2246224 5.89147262
## 3 1.7537270 0.8617169 6.706709 8.232577 6.013548 0.5144282 0.05610664
## 4 3.4298100 5.0141759 5.506836 6.067887 6.616710 2.8930611 3.87114912
## 5 -0.9471720 4.3261459 6.065106 7.304149 4.465171 -1.4408855 2.49290061
## 6 7.9116060 6.3263006 4.962566 3.324760 7.111924 5.9279110 4.49970037
##      Nfyb  Nfyc  Ngb  Ngdn  Ngef  Ngf  Ngfr
## 1 3.857620 4.10151851 2.1271893 4.708983 4.176404 0.6199287 -1.1802216
## 2 4.519282 3.74128025 -1.5884105 5.405213 1.318884 -1.1576328 -1.8183758
## 3 7.680499 0.05610664 6.7093913 7.932016 3.813884 -3.8841215 -3.8841215
## 4 6.591021 3.84224770 2.2667806 6.492389 3.815447 -2.7729512 -3.8841215
## 5 6.504271 3.90189204 2.8792384 6.693193 3.724605 -3.8841215 -2.8071174
## 6 4.728273 4.54037812 0.1454136 4.723958 8.578364 -3.8841215 -0.7946269
##      Ngfrap1  Ngly1  Ngrn  Nhej1  Nhlh1  Nhlh2  Nhlrc1
## 1 6.884921 4.255389 3.538996 0.90832147 -3.884122 -3.884122 3.5815492
## 2 6.129091 5.730592 4.142878 0.96844761 -3.039241 -2.461040 -0.5157294
## 3 5.209494 1.479815 6.918574 6.45828552 6.064720 1.479815 -1.1313170
## 4 7.359254 4.124046 5.001779 2.64755279 5.155121 3.937507 1.9770322
## 5 8.212854 4.326146 4.213774 3.07206548 5.779517 4.536986 4.1418942
## 6 5.342657 5.340078 3.752854 0.89205216 -3.512249 -1.734057 3.9454996
##      Nhlrc2  Nhlrc3  Nhlrc4  Nhp2  Nhp2l1  Nhs  Nhs1l1
## 1 5.03005686 2.752601 -3.174415 4.981590 5.373094 -0.4574841 5.747050
## 2 5.25004587 3.570033 -3.656504 5.534209 5.927649 3.1720137 6.852276
## 3 0.05610664 4.212132 -3.884122 8.038246 6.535894 -3.8841215 1.983840
## 4 3.08450028 3.046919 -2.663247 6.762886 5.580204 -1.7527794 6.039476
## 5 -2.80711744 3.159603 -2.807117 7.808968 6.526787 -2.1973739 4.952138

```



```

## 6 5.30772631 3.518730 -3.884122 3.722485 4.306274 0.4470586 8.883480
##      Nhs12      Nicn1      Nid1      Nid2      Nif311      Nin      Ninj1
## 1 3.2156815 5.446028 4.0920080 2.4874731 4.790842 5.592957 5.111168
## 2 4.7351501 4.675440 10.2212009 9.0719613 4.389492 6.307587 5.798112
## 3 0.3033916 7.885336 0.5144282 -0.6195262 6.986494 2.356639 6.211961
## 4 2.3393273 7.299494 5.0032972 2.3503030 6.778954 4.159982 4.857098
## 5 -1.4408855 6.747684 6.2965148 3.0460471 7.251756 3.812116 6.526787
## 6 -0.1113142 4.529840 5.0453452 5.7345333 3.884312 5.950062 3.193079
##      Ninj2      Nin1      Nip7      Nipa1      Nipa2      Nipa11
## 1 2.957671 3.3602360 5.174620 5.743051 4.8802897 -3.3659735
## 2 -3.884122 -2.2923224 5.501354 2.029917 5.0046338 0.6765472
## 3 6.097854 -0.2425151 1.911138 5.683292 4.7068304 1.4798145
## 4 4.001921 3.6515815 6.341071 4.785539 2.8768008 -2.5861060
## 5 6.123811 -0.9471720 7.311676 4.479823 4.1782817 -0.7519471
## 6 -2.464057 4.6219484 4.762784 4.568304 5.0246392 1.0689671
##      Nipa12      Nipa13      Nipa14      Nipb1      Nipsnap1      Nipsnap3b      Nisch
## 1 1.59332774 7.153452 3.2359487 5.887455 4.594370 4.983111 8.910594
## 2 2.09401043 7.301703 -3.0762312 7.418869 4.611530 4.441536 8.400875
## 3 0.05610664 6.376264 1.2632490 2.652618 1.753727 8.057322 6.979844
## 4 -0.25238325 3.745936 3.2876371 6.645411 6.734701 6.346085 7.037016
## 5 -1.77010377 4.394758 4.5874665 4.909484 6.616814 7.994713 7.509099
## 6 -0.67759764 2.087082 -3.1186116 7.248714 2.850262 4.151331 8.982857
##      Nit1      Nit2      Nkain1      Nkain2      Nkain3      Nkain4      Nkap
## 1 4.6715156 4.841904 7.2565769 3.928617799 0.6669617 5.210008 4.288535
## 2 4.0862230 5.292206 -0.1784895 -0.542384947 -3.6519623 3.073726 4.258760
## 3 0.5144282 7.387448 2.4103803 4.888225602 -3.8841215 9.097117 2.300819
## 4 4.8745313 6.093739 5.7433829 2.245434642 0.0424413 8.137982 5.745290
## 5 4.7413169 6.607949 7.6614652 3.699787920 -3.8841215 9.449449 4.117116
## 6 4.1249357 4.176253 4.2746497 4.300971868 -1.9632495 6.023190 3.869736
##      Nkap1      Nkd1      Nkd2      Nkg7      Nkiras1      Nkiras2
## 1 -2.654661 6.1591011 3.1209604 -3.7949831 4.335521 3.8450456
## 2 -2.032541 8.1783277 4.3742439 -2.8202690 3.153397 4.5579847
## 3 -3.884122 4.2568248 -3.8841215 6.0222034 6.649196 -0.2425151
## 4 2.221989 0.9294795 1.3921326 -0.7679474 5.411333 4.0931478
## 5 -3.884122 4.1842580 -1.1730114 2.6393048 6.050457 4.5784186
## 6 -1.063541 5.1701278 1.1984151 -3.8841215 4.836239 2.4299017
##      Nkpd1      Nkrf      Nktr      Nle1      Nlgn1      Nlgn2
## 1 -1.7673436 3.54475380 7.113208 3.8776148 6.386145 8.957268
## 2 -3.6565043 3.45362224 6.371860 3.5689253 -0.808609 3.812179
## 3 0.3033916 0.05610664 1.983840 1.2632490 7.063990 1.577013
## 4 -1.8904969 3.64310538 4.861789 3.9296711 5.736569 5.274657
## 5 -1.4408855 1.47157920 -0.947172 4.8278492 3.812116 4.618695
## 6 -3.2680874 3.55292415 8.619896 3.8788001 6.311785 7.677517
##      Nlgn3      Nlk      Nln      Nlrc3      Nlrc4      Nlrc5
## 1 7.58944289 6.397736 4.032261 -1.6932296 -2.5740825 -2.4419250
## 2 -0.02547554 5.458699 3.130830 5.0928324 -3.8841215 -1.0838042
## 3 5.64457400 6.679608 7.047125 -3.8841215 -1.1313170 1.9111385
## 4 6.98103171 4.785399 5.512769 -0.5300488 -0.4842468 -0.6283418
## 5 5.13912409 3.362975 4.053241 -3.8841215 -2.1973739 -3.8841215
## 6 6.55691619 5.080342 5.910787 -0.2340164 -3.0276140 -1.2095356
##      Nlrp10      Nlrp12      Nlrp1a      Nlrp1b      Nlrp3      Nlrp4f
## 1 -3.5895933 -3.7949831 -2.175862 -2.50377510 0.4813553 -3.884122
## 2 -3.6565043 -3.8841215 -3.884122 -1.95401704 -2.3597589 -3.656504
## 3 0.6984974 -3.8841215 -3.884122 -3.88412153 -1.9317392 -3.884122

```

```

## 4 -1.3191074 -3.8841215 -1.972746 -2.87908191 -0.3271455 -1.915580
## 5 -1.7701038 -3.8841215 -3.884122 -3.88412153 -1.1730114 -3.884122
## 6 -3.4511394 -3.8841215 -3.674482 -3.67448218 -1.5968038 -3.280845
##      Nlrp6      Nlrp1      Nmb      Nmb1      Nmd3      Nme1      Nme2
## 1 -2.864766 2.8381581 1.0917214 -2.7613138 4.404765 6.721047 5.214895
## 2 -2.877422 2.3025687 2.0216985 -3.2489909 5.894787 6.296611 7.597993
## 3 -3.884122 0.5144282 -1.1313170 -3.8841215 6.769748 8.521431 8.998581
## 4 -2.671669 3.0135271 3.0921552 -0.1874345 5.029607 8.395878 7.673831
## 5 -3.884122 4.0268781 3.1102338 -3.8841215 5.541878 9.557284 9.018971
## 6 -3.674482 3.9983080 4.1362548 -2.2520684 4.771653 4.598637 4.203031
##      Nme3      Nme4      Nme5      Nme6      Nme7      Nmi      Nmnat1
## 1 4.377603 2.69693936 -1.0690779 1.7247281 2.720014 -0.1767094 1.845562
## 2 3.848733 1.98877875 2.2151210 1.5656799 4.415639 5.1605706 2.929207
## 3 5.459396 5.62765721 -1.1313170 6.1775043 4.859533 0.6984974 -3.884122
## 4 6.186966 3.24710901 3.6598443 5.5912585 6.138095 4.1899337 2.849910
## 5 7.701603 5.00035891 3.7570449 5.4027219 5.530195 3.7965946 4.831662
## 6 3.489035 0.55599383 0.8337168 1.4754186 5.055854 2.6140907 3.467537
##      Nmnat2      Nmnat3      Nmr1      Nmt1      Nmt2      Nmu      Nmur1
## 1 6.50635609 0.84650584 4.777810 6.016485 4.0478209 -3.794983 -3.884122
## 2 0.31707041 -2.65774812 2.314254 6.761403 5.1504114 -3.884122 -3.335655
## 3 0.05610664 -1.93173924 7.638893 4.448831 2.6526181 -3.884122 -3.884122
## 4 4.45693429 1.92879015 7.202436 6.562740 3.1209186 -1.841136 -1.980261
## 5 4.87294871 -1.77010377 7.282723 6.282655 3.6745361 -3.884122 -3.884122
## 6 3.51294136 0.01783622 2.226545 5.537273 5.7272798 -2.175786 -3.884122
##      Nnat      Nnmt      Nnt      Noa1      Nob1      Noc3l      Noc4l
## 1 8.062925 -2.8918198 5.521072 5.1198971 5.293792 4.9568018 4.129705
## 2 5.067286 -2.9352776 5.548940 4.0870118 4.794160 3.5338090 3.876916
## 3 7.921644 -3.8841215 3.752786 -3.8841215 4.878725 -3.8841215 1.263249
## 4 7.769170 -3.8841215 7.009628 2.7149232 6.163123 3.9739194 5.593429
## 5 10.325236 -2.8071174 6.591178 0.5063887 6.339993 4.2933437 5.477632
## 6 6.953713 -2.8744502 6.425157 4.2556578 4.974651 4.8737225 4.382961
##      Nod1      Nod2      Nodal      Nog      Nol10      Nol11
## 1 2.537736 -0.2106830 -3.5735519 2.2607256 4.0058717 5.019115
## 2 6.549573 1.8835738 1.9479159 -0.1249982 4.5371365 4.738322
## 3 1.008333 -1.9317392 -3.8841215 -3.8841215 0.8617169 2.356639
## 4 2.338043 -1.9769000 1.6287750 -1.9204211 4.3985046 6.272281
## 5 1.877781 1.8175364 2.5861290 1.1190407 4.2254133 5.967986
## 6 3.356541 -1.1035019 -3.6607788 4.1690274 5.3340022 4.843021
##      Nol12      Nol3      Nol4      Nol6      Nol7      Nol8
## 1 3.3255433 3.6260669 4.44141202 6.430078 5.379809 3.9180489
## 2 4.2179923 -0.1089701 -0.41455615 4.799923 6.567894 4.4482875
## 3 -0.2425151 -1.9317392 1.57701280 1.834579 7.235696 0.8617169
## 4 5.7443455 2.7489444 6.91735656 5.808788 5.937556 5.6806952
## 5 6.2909867 5.1845526 6.15609802 5.692042 6.840484 3.7809046
## 6 3.4978071 -1.9043579 3.58529768 6.029826 4.999116 4.7768933
##      Nol9      Nolc1      Nom1      Nomo1      Nono      Nop10      Nop14
## 1 4.8258409 6.109637 4.3151975 6.855381 7.416625 4.144631 4.1650039
## 2 4.5768164 5.614064 4.6803814 10.590689 7.800478 5.099647 4.8364081
## 3 1.0083330 3.290869 0.6984974 1.479815 7.171003 8.802121 0.5144282
## 4 3.8545868 6.744113 3.1625709 4.981522 8.042090 8.032348 5.2839639
## 5 3.4548318 4.141894 0.2570463 4.489509 7.478420 8.940375 1.6889296
## 6 4.9491888 5.896820 4.8364371 6.361011 6.313652 2.919218 5.2950247
##      Nop16      Nop2      Nop56      Nop58      Nos1      Nos1ap      Nos2
## 1 4.192215 4.810695 5.968332 4.919685 -2.5081566 1.49391817 -2.036341

```

```

## 2 4.513676 4.836655 4.841076 5.775068 -0.4459294 -0.08222124 5.817857
## 3 2.652618 7.593151 6.230754 5.091076 -1.9317392 -3.88412153 -3.884122
## 4 7.011722 5.994353 7.212761 6.812774 -2.2000098 -0.12250695 -3.884122
## 5 7.405472 5.037147 6.384797 5.268521 -3.8841215 -2.80711744 3.424858
## 6 3.193072 4.940358 5.739342 5.492488 -2.6259093 3.00645426 -1.055032
##      Nos3      Nosip      Nostrin      Notch1      Notch2      Notch3      Notch4
## 1 -0.4195500 5.377418 -2.44959699 7.577755 3.926102 1.073743 1.011631
## 2 9.2237278 6.126035 8.16175548 8.508385 4.552000 5.682862 7.906768
## 3 -1.1313170 7.190333 -3.88412153 7.292254 7.332829 2.607316 -1.931739
## 4 1.5539629 6.820925 2.44872782 7.191145 8.519988 2.972882 -0.268824
## 5 2.2409993 7.277841 4.85807164 6.975844 9.649810 4.405030 2.772211
## 6 2.4072858 4.539310 0.08199194 9.240918 8.079397 8.525466 3.470530
##      Notum      Nov      Nova1      Nova2      Nox1      Nox3
## 1 -0.6231428 0.5350210 6.5029947 5.329645 -3.336611 -3.7949831
## 2 7.4857169 1.7229303 -0.6516180 5.432065 -2.820269 -3.6519623
## 3 -1.9317392 -1.1313170 0.6984974 6.060524 -3.884122 -3.8841215
## 4 -0.1058271 -0.4310840 6.1242471 4.674423 -3.884122 -3.6036807
## 5 3.3523982 1.2155742 6.2686600 3.454832 -3.884122 0.9041264
## 6 3.4871927 1.6394681 7.1464300 3.991605 -2.356144 -3.8841215
##      Nox4      Noxo1      Npas1      Npas2      Npas3      Npas4
## 1 -0.7231685 2.3557873 5.1909382 0.83821874 5.0903307 1.6343647
## 2 5.8290233 4.7266150 -0.2499704 -1.47453522 -0.2786744 0.1947350
## 3 -3.8841215 -1.1313170 -3.8841215 -3.88412153 5.1155495 -3.8841215
## 4 -2.2404208 0.8412605 -2.6528754 -0.01779246 6.3583416 -2.7411259
## 5 -2.8071174 -2.8071174 -3.8841215 1.65490310 7.0740642 -3.8841215
## 6 -1.3258021 2.7203930 0.4372396 4.08826026 7.1630560 3.1553826
##      Npat      Npb      Npbwr1      Npc1      Npc1l1      Npc2      Npdc1
## 1 5.118219 0.04085231 -1.39811805 8.878850 -0.1330546 8.145603 7.469963
## 2 5.171232 -1.84562099 -3.88412153 5.779247 -3.2489909 8.238890 6.392353
## 3 1.008333 -3.88412153 -3.88412153 7.877009 -3.8841215 10.095491 6.654773
## 4 5.668219 -2.63553658 -3.88412153 5.898938 -3.1978120 8.934845 5.567639
## 5 5.345205 -3.88412153 -2.80711744 6.604610 -3.8841215 9.962723 6.516165
## 6 5.573627 -1.76200770 -3.67448218 8.238643 1.2005536 7.250524 7.020711
##      Npepl1 Npepps      Npff      Npffr1      Nphp1      Nphp3
## 1 6.078018 6.665144 -0.2512867 -3.1422580 3.64060461 4.0645181
## 2 7.058523 5.567428 0.9332384 -3.4837445 4.39232040 3.8658818
## 3 4.800377 1.753727 -1.9317392 -3.8841215 -0.24251506 -3.8841215
## 4 3.227257 6.390645 0.6725155 -3.8841215 2.50524076 2.6553480
## 5 2.639305 5.670915 -2.8071174 -3.8841215 -1.44088555 3.5596964
## 6 6.473754 7.440064 3.1236852 -2.0395320 4.51183091 7.0649681
##      Nphp4      Nphs1      Nphs2      Npl      Nploc4      Npm1      Npm2
## 1 2.3882172 -2.255772 -2.953160 2.902500 6.552564 5.127979 -0.79626717
## 2 -0.2332700 -3.884122 -3.217793 4.359573 6.324998 6.930291 -0.48428580
## 3 -3.8841215 -3.884122 -3.884122 3.622232 2.182248 7.631841 -3.88412153
## 4 1.1154620 -3.884122 -2.655274 4.413503 4.740127 8.390721 0.01950336
## 5 -2.8071174 -3.884122 -3.884122 5.178578 6.241690 8.893723 -3.88412153
## 6 3.6888195 1.580840 -0.339501 4.089020 6.172664 5.255237 -0.67628659
##      Npm3      Npnt      Nppa      Nppc      Npr1      Npr2
## 1 2.3112525 1.5323673 -0.85939122 -0.5488406 1.4792588 6.793446
## 2 1.7482264 4.6875836 -2.04181913 -2.3597589 5.8329157 3.264894
## 3 -3.8841215 1.6680739 -3.88412153 -0.2425151 -1.9317392 -1.931739
## 4 1.1111167 0.4885896 -0.42161931 0.7291000 -1.4864961 4.139102
## 5 2.0707909 -0.7519471 2.56795903 -2.8071174 -2.8071174 3.550472
## 6 1.8770420 2.2297362 -1.36333280 -0.1789422 3.0064153 6.887475

```

##	Npr3	Npr12	Npr13	Nps	Npsr1	Nptn	
## 1	-2.5658726	4.4560344	4.4548998	-3.409318	0.6461220	7.292327	
## 2	4.1188789	4.3691058	4.5050447	-3.651962	-3.8841215	7.224286	
## 3	-1.9317392	-0.2425151	0.6984974	-3.884122	-3.8841215	8.892229	
## 4	-0.9543061	6.1098391	4.9758956	-3.114158	1.5863048	7.333976	
## 5	-1.4408855	6.1995289	3.4045239	-3.884122	-3.8841215	6.547799	
## 6	1.1902450	4.3254990	5.0611788	-1.296972	-3.6607788	7.289614	
##	Nptx1	Nptx2	Nptxr	Npy	Npy1r	Npy2r	
## 1	5.5267536	5.70356221	0.6373432	2.0241250	-0.9868537	-2.8656149	
## 2	-0.1508156	-0.89328883	-2.5340902	0.8244048	0.7568656	-3.3444694	
## 3	7.1826321	-1.13131698	-3.8841215	-1.1313170	5.9694720	8.6720334	
## 4	2.5853885	-0.72893996	-3.8841215	0.5165917	2.2249612	1.1611912	
## 5	1.5101550	-3.88412153	-3.8841215	-2.8071174	3.1716861	-0.5800187	
## 6	4.6648094	5.64397123	-1.2135483	-1.0888602	1.1537825	-0.9379202	
##	Npy5r	Nqo1	Nqo2	Nr1d1	Nr1d2	Nr1h2	Nr1h3
## 1	-1.6783095	0.7797959	3.4633066	8.061127	6.378178	6.087283	0.1251760
## 2	-3.8841215	1.5728550	5.1487668	7.156261	7.722906	6.377326	3.5742991
## 3	-1.1313170	5.2320540	-0.6195262	6.081382	6.598006	1.577013	-0.6195262
## 4	-0.3204369	4.7433774	5.0276754	6.951358	4.894820	5.525763	3.6806545
## 5	-1.7701038	5.7045704	1.5477262	4.207919	5.818463	4.938060	3.5596964
## 6	-3.6744822	2.7234645	4.2984529	9.637279	7.595568	6.287627	2.5712128
##	Nr1h4	Nr1i3	Nr2c1	Nr2c2	Nr2c2ap	Nr2e1	Nr2f1
## 1	-2.7308387	-2.698661	4.23724102	5.444599	0.8201741	5.0602462	4.569789
## 2	-2.8888941	-2.817416	4.38722754	4.989136	0.3995656	-0.6845674	1.075498
## 3	-3.8841215	-3.884122	0.05610664	5.115550	-1.1313170	0.3033916	5.677824
## 4	-0.6867478	-2.222281	4.27396274	4.934405	3.1945883	5.0466505	6.400963
## 5	-3.8841215	-3.884122	3.68300256	3.550472	4.3207304	5.2285943	6.587801
## 6	-3.8841215	-2.600305	4.21573302	5.819164	1.0889307	7.1337214	6.811911
##	Nr2f2	Nr2f6	Nr3c1	Nr3c2	Nr4a1	Nr4a2	
## 1	1.072831	4.5846683	6.985924	2.69159438	7.0377309	2.7741506	
## 2	4.208999	6.1407274	7.965295	2.36455189	9.3035746	6.4578619	
## 3	8.214753	-0.2425151	5.942365	0.05610664	0.3033916	-3.8841215	
## 4	7.150678	1.8136273	6.416695	2.39307978	3.1734955	-0.1816766	
## 5	7.711982	2.9227833	6.306138	-2.80711744	-0.2876030	-3.8841215	
## 6	3.080431	4.1907581	7.724283	4.96549375	11.4734218	7.8761890	
##	Nr4a3	Nr5a1	Nr5a2	Nr6a1	Nrap	Nrarp	
## 1	3.0883119	-3.662690	-2.9456498	1.38190390	0.7453406	5.272169	
## 2	4.2302734	-1.520230	-0.2128735	1.81304670	-1.8595970	7.275490	
## 3	-3.8841215	-3.884122	-3.8841215	-0.61952623	-3.8841215	1.577013	
## 4	-3.2994690	-3.029652	-3.8841215	0.22600043	-1.4365478	3.815826	
## 5	-3.8841215	-3.884122	-3.8841215	2.17049661	-3.8841215	4.649261	
## 6	7.0875083	-3.660779	-3.2889060	3.28665090	-2.2216202	8.424494	
##	Nras	Nrbf2	Nrbp1	Nrbp2	Nrcam	Nrd1	Nrf1
## 1	7.228739	2.7843131	6.059583	6.500508	7.942048	7.124910	4.997324
## 2	7.145158	2.5906294	7.958931	2.242816	3.347876	7.801923	5.362220
## 3	8.691157	-3.8841215	2.780569	1.577013	5.346757	3.401161	7.123525
## 4	9.090683	0.8214321	6.477063	5.012528	6.551167	5.549693	5.465996
## 5	9.391381	2.4339276	5.555775	4.872949	5.506540	5.214063	4.373992
## 6	6.706867	3.1578811	6.701953	7.901022	8.905776	7.060426	5.489087
##	Nrg1	Nrg2	Nrg3	Nrg4	Nrgn	Nrip1	
## 1	2.2251550	3.4030744	1.9366884	-0.06332486	5.310890	4.159096	
## 2	-3.4243451	-3.6565043	-2.5768592	-1.32852816	3.813386	6.911367	
## 3	6.7040216	-3.8841215	-1.9317392	-1.13131698	5.099280	5.353632	
## 4	3.6036668	-3.4989245	-0.9585844	-2.62657754	3.475523	3.786809	

```

## 5  4.3422715 -3.8841215 -2.1973739 -3.88412153 1.935611 3.757045
## 6  4.5541714 0.6867795 -0.8465097 1.56124697 1.638832 4.989389
##      Nrip2      Nrip3      Nrk      Nrm      Nrn1      Nrn1l      Nrp1
## 1  2.1384308 1.2029265 -3.090321 5.041079 3.1861673 -0.8101360 2.651154
## 2  0.3208846 0.3874812 -2.103781 3.651136 0.1653163 -3.6565043 9.078879
## 3  -3.8841215 0.5144282 -3.884122 8.148104 9.4180875 5.5459784 7.606163
## 4  2.5937177 5.1590782 -3.884122 5.552862 6.8846419 -0.1271288 7.731825
## 5  3.7327839 4.5229059 -3.884122 6.365202 7.0868819 -3.8841215 7.558824
## 6  1.6791566 1.5701014 -3.268087 2.325488 3.6772568 -1.2980289 6.012167
##      Nrp2      Nrsn1      Nrsn2      Nrtn      Nrnx1      Nrnx2
## 1  4.863132 4.8131583 0.6466550 0.2763008 7.778940 9.22647319
## 2  7.409156 0.5467905 -1.9082266 -1.7048570 1.172236 2.61135800
## 3  1.753727 6.7040216 -1.1313170 -1.9317392 7.318845 0.05610664
## 4  4.196433 3.7083404 0.4586907 -1.7027048 10.264226 2.95280867
## 5  2.096371 3.2983183 -1.7701038 -2.8071174 9.528652 2.74011471
## 6  3.203784 -0.8238000 -2.4679430 -3.2680874 9.993404 7.77761410
##      Nrnx3      Nsa2      Nsd1      Nsdh1      Nsf      Nsfl1c      Nsg1
## 1  3.6264054 4.175349 7.050160 6.110583 6.073307 5.372358 6.763483
## 2  0.0206512 6.209153 7.277616 4.898003 6.319298 5.198542 4.691236
## 3  0.3033916 4.196921 4.536031 7.865030 7.460917 1.668074 4.878725
## 4  2.4584372 4.272699 7.315975 7.046426 7.000337 6.390405 7.305398
## 5  -0.5800187 5.136044 5.527847 7.984046 5.837549 6.592302 8.517437
## 6  3.5210451 3.645329 8.218954 7.418197 5.043984 5.346994 3.931458
##      Nsg2      Nsl1      Nsmaf      Nsmce1      Nsmce2      Nsmce4a      Nsun2
## 1  6.822750 1.33954044 5.7971762 4.827315 4.058197 5.129727 6.045610
## 2  3.452205 2.18232309 6.1309330 6.817469 4.166382 6.210466 6.181157
## 3  8.538879 0.05610664 4.2568248 8.210025 1.263249 5.387524 5.459396
## 4  7.763136 4.34217218 3.8408235 7.054571 6.042824 4.433422 4.463825
## 5  8.023333 3.96573815 1.1190407 7.893929 6.274274 5.887855 4.384412
## 6  3.840392 1.82529603 6.4377031 3.991953 3.472154 5.108310 5.512892
##      Nsun3      Nsun5      Nsun6      Nsun7      Nt5c      Nt5c1a      Nt5c2
## 1  2.263149 3.266586 2.945170 1.7120145 4.358245 -1.809227 5.546373
## 2  2.374886 3.050876 3.399473 -2.8888941 4.944872 -3.884122 5.350696
## 3  -3.884122 -1.931739 4.618259 -3.8841215 5.446592 -3.884122 4.560006
## 4  2.687591 3.450914 4.390012 -2.8981380 5.955300 -3.427701 4.936251
## 5  -2.197374 3.046047 5.425606 -3.8841215 7.206225 -3.884122 3.444910
## 6  2.498860 3.903449 3.869345 2.5097058 4.341023 -1.875574 5.958525
##      Nt5c3      Nt5dc1      Nt5dc2      Nt5dc3      Nt5e      Nt5m      Ntan1
## 1  5.153716 1.0777610 4.2950669 4.8616274 4.6954212 4.8552645 4.478355
## 2  5.424805 4.7993069 4.8188172 5.2825482 0.5762574 4.6394421 5.956320
## 3  7.105310 7.2338340 0.6984974 -0.6195262 -3.8841215 -0.6195262 6.646399
## 4  5.097938 2.9016600 4.6025114 2.2440536 1.0643978 4.3186433 6.116152
## 5  6.444526 -1.7701038 5.1111641 2.6905901 -2.8071174 5.4849133 7.597965
## 6  4.587829 2.9552149 3.6612629 6.3404633 0.3075006 4.5437656 4.595707
##      Ntf3      Ntf5      Nthl1      Ntm      Ntn1      Ntn3
## 1  -3.555392 -3.8841215 2.2718687 4.979652 7.2028511 3.6662857
## 2  -2.409009 -3.8841215 2.1449795 3.267490 4.6181587 2.2907287
## 3  1.834579 -1.9317392 -0.6195262 6.722729 -1.1313170 -3.8841215
## 4  2.657666 -3.2492053 3.0782984 6.755992 1.9419387 0.4565353
## 5  4.326146 -3.8841215 4.5416484 6.234508 1.4319435 -2.1973739
## 6  -3.884122 -3.6607788 2.5308887 6.284090 3.3574466 3.9915848
##      Ntn4      Ntn5      Ntn1      Ntn2      Ntn3      Ntn4
## 1  3.7953959 -3.6265594 0.5920129 3.4288146 3.650732 -3.139354
## 2  2.0248264 -3.8841215 -2.7198557 2.5060062 3.928230 -3.476608

```

```

## 3 -1.1313170 -3.8841215 1.8345785 -0.6195262 6.289296 -3.884122
## 4 -1.3336282 -3.8841215 -1.0317188 0.0225346 4.638675 -3.884122
## 5 -2.1973739 -3.8841215 -2.1973739 1.8175364 5.670915 -3.884122
## 6 4.4475094 -0.7329793 3.3716961 2.6169949 2.680101 -3.660779
##      Ntrk2      Ntrk3      Nts      Ntsr1      Ntsr2      Nuak1
## 1 9.073228 6.1358038 -3.5122000 -1.5034940 3.5721426 4.5203035
## 2 3.132838 -0.5118912 2.6053455 -3.2515854 -0.5431146 4.7322763
## 3 9.211280 7.3790490 -1.9317392 -3.8841215 8.8714222 0.8617169
## 4 9.940248 3.9425129 2.7894989 0.3430865 7.4502685 4.1085875
## 5 9.702813 3.8198143 3.6049537 -3.8841215 7.7010818 5.3950124
## 6 10.646788 8.6860428 -2.7367790 1.7202440 7.0378781 4.9596556
##      Nuak2      Nub1      Nubp1      Nubp2      Nubp1      Nucb1      Nucb2
## 1 -0.10626511 5.637982 3.587549 5.071602 0.9743449 7.359731 2.4447553
## 2 2.33873176 6.434071 4.368210 5.191741 3.0955661 8.717282 4.6525227
## 3 0.05610664 3.074902 -1.931739 7.329346 -1.9317392 7.954801 -0.6195262
## 4 1.99712109 6.814243 1.320585 6.614060 2.7391401 6.657502 3.7816458
## 5 1.58434365 7.216468 3.559696 6.565079 -2.8071174 6.943617 -2.1973739
## 6 1.27114715 5.256573 3.545707 4.703099 1.4995641 6.917385 3.0095039
##      Nucks1      Nudc      Nudcd1      Nudcd2      Nudcd3      Nudt1      Nudt10
## 1 6.418553 5.903980 3.6664552 4.924941 6.659906 2.42598747 3.9194413
## 2 5.774763 5.749184 4.0303161 5.248074 6.976897 2.91203911 1.2400084
## 3 9.145457 1.375592 7.2724381 7.569724 3.599276 0.05610664 -0.2425151
## 4 7.680379 4.726780 5.2198386 5.786590 6.771982 4.96055692 4.6357965
## 5 7.563990 5.553468 0.8449942 5.307373 7.350062 5.49936682 2.7879955
## 6 5.821088 4.952732 3.3962950 4.839634 6.148568 2.09944429 2.4200656
##      Nudt11      Nudt12      Nudt13      Nudt14      Nudt15      Nudt16      Nudt16l1
## 1 4.6888560 1.1029974 4.085761 2.711430 0.402376388 4.563001 5.415023
## 2 1.2705579 3.1583978 4.044151 5.866318 -0.337869232 4.186328 4.714485
## 3 5.9054125 -3.8841215 4.738691 6.122214 -3.884121530 2.119096 7.788453
## 4 2.7580788 2.1774692 4.685176 4.067653 -0.002230958 2.194790 6.525351
## 5 3.0460471 -2.8071174 4.729104 5.079448 -3.884121530 4.631874 7.167531
## 6 3.7303387 2.6419380 4.270968 1.377989 0.336915483 2.342143 4.298196
##      Nudt17      Nudt18      Nudt19      Nudt2      Nudt21      Nudt22      Nudt3
## 1 2.4143940 4.222491 4.687070 3.528028 3.113921 2.760991 7.466277
## 2 0.8784318 3.262777 3.148370 2.879835 3.278649 2.372087 6.482640
## 3 6.3997039 -1.131317 6.252986 5.677824 2.607316 6.200567 9.240783
## 4 2.7085022 2.933480 4.810806 5.861317 3.678244 3.902482 7.606615
## 5 -2.8071174 3.253546 6.007284 6.760741 5.017197 4.219605 8.858418
## 6 0.7049997 3.547073 4.110549 3.987933 2.552077 2.829247 7.764438
##      Nudt4      Nudt5      Nudt6      Nudt7      Nudt8      Nudt9      Nuf2
## 1 7.238050 4.556215 1.5171426 -0.7053563 3.0457025 5.592041 2.5119842
## 2 5.860698 4.934106 1.7770266 2.2577563 2.6669748 6.451478 3.5514599
## 3 7.014961 7.454536 -1.9317392 7.2018083 -1.9317392 1.668074 1.2632490
## 4 5.061438 5.474909 0.7760221 2.8042709 -0.3515997 4.855843 5.5259769
## 5 6.218581 6.101878 -3.8841215 4.4303941 3.4349186 3.464686 6.4028485
## 6 5.906812 3.755130 2.7185787 0.7507587 2.7964398 5.442705 3.2947292
##      Nufip1      Nufip2      Numa1      Numb      Numb1      Nup107      Nup133
## 1 4.05691917 5.890185 7.462808 4.2213132 4.7461730 3.907794 5.111870
## 2 4.80278854 7.035448 7.170099 5.5964339 1.0401291 4.144853 4.991593
## 3 0.05610664 6.292878 5.833466 -0.2425151 -0.6195262 6.249305 6.529836
## 4 3.20447928 8.152294 6.188078 3.3688054 2.0781886 6.338804 5.427057
## 5 1.34924776 6.289601 5.329113 3.1955523 0.4279671 4.948632 5.310108
## 6 3.97220743 7.156834 7.995979 4.6413710 4.1261229 4.241303 4.741485
##      Nup153      Nup155      Nup160      Nup188      Nup205      Nup210      Nup2101

```

```

## 1 6.340988 4.674800 4.5885047 5.350711 6.0294809 6.4379920 -1.42010144
## 2 6.786175 4.387875 5.0451584 5.371290 5.6695920 6.2221486 0.43279380
## 3 1.668074 5.563874 2.6526181 2.300819 0.8617169 0.8617169 -3.88412153
## 4 5.075727 5.193247 5.2755602 5.702717 5.4808319 4.8442288 -1.04492763
## 5 4.148023 2.864426 4.5462963 3.032860 5.9988318 4.1842580 0.65149678
## 6 6.952174 5.617886 5.1177694 5.524635 5.9133498 5.1485869 1.19461741
##      Nup214      Nup35      Nup37      Nup43      Nup50      Nup54      Nup62
## 1 5.568676 2.133653 1.4149758 1.42590964 6.291060 3.58822248 5.553137
## 2 5.210153 2.617783 3.2978303 1.73714319 6.503846 4.40718131 5.659163
## 3 4.738691 3.667075 6.6266687 0.05610664 1.577013 0.05610664 1.834579
## 4 5.584458 2.912333 5.5797993 5.01952798 4.495317 5.70919012 5.407129
## 5 3.352398 3.944768 5.0762381 6.78944908 1.119041 5.16353053 6.163680
## 6 6.038282 1.870128 2.3267655 1.98197460 5.968784 4.91410275 4.915355
##      Nup62c1      Nup85      Nup88      Nup93      Nup98      Nup11      Nup12
## 1 -3.6064452 5.422429 5.739030 4.801771 5.1269405 4.92091069 3.226168
## 2 -3.3444694 5.463114 6.039366 5.664598 6.1963337 6.01073488 1.923641
## 3 -3.8841215 6.637976 6.701329 5.049340 -0.2425151 0.05610664 -1.931739
## 4 -0.4054118 6.453527 6.213896 5.671386 3.1769928 3.20579560 2.094135
## 5 -3.8841215 4.674956 6.432023 4.973002 -2.1973739 4.07913143 -1.173011
## 6 -0.5059810 5.213391 5.939882 6.689230 5.9795131 4.89598960 3.775801
##      Nupr1      Nus1      Nusap1      Nutf2      Nv1      Nwd1      Nxf1
## 1 -0.09034161 5.999115 2.26210569 3.490260 5.301393 4.3318685 6.859993
## 2 1.13901049 7.555068 3.96873861 2.545082 4.188094 -0.7672695 6.990217
## 3 3.73183091 5.521766 2.18224770 2.607316 2.242751 0.6984974 6.950668
## 4 5.80484950 4.587697 6.16731587 5.128666 6.031819 5.6766293 6.875107
## 5 6.67950739 5.199383 2.01822905 4.969546 5.366387 2.4538543 3.887312
## 6 1.57714284 5.943421 3.21915184 1.827380 6.416236 9.4378350 7.791418
##      Nxf2      Nxf3      Nxn      Nxn11      Nxn12      Nxph1      Nxph2
## 1 -3.156084 -2.071140 4.790767 -3.790167 -3.387166 6.8615259 -3.200357
## 2 -1.119639 -3.884122 6.944023 -3.884122 -1.157633 -1.6052043 -2.960717
## 3 -3.884122 -3.884122 1.375592 -3.884122 -3.884122 -1.9317392 -3.884122
## 4 -1.035072 -3.884122 4.309636 -3.418218 -3.498924 0.4738434 -3.884122
## 5 -3.884122 -3.884122 4.605394 -3.884122 -3.884122 -3.8841215 -3.884122
## 6 -2.616080 -3.884122 4.022531 -2.521641 -2.301824 -1.6680565 -3.660779
##      Nxph3      Nxph4      Nxt1      Nxt2      Nynrin      Nyx      Oaf
## 1 -0.0523424 -2.1426090 3.234642 5.312315 5.291093 -3.0668329 2.10796006
## 2 -0.7969141 1.4918572 3.891964 4.302929 5.379555 -2.3718013 5.17777141
## 3 -1.9317392 5.1475488 6.844860 7.738115 1.008333 -3.8841215 7.18841175
## 4 -0.3637393 1.9077023 5.483629 7.524905 3.431869 -0.6365558 3.34978591
## 5 2.0963708 4.5693135 6.756736 6.627819 4.618695 -2.8071174 5.49456505
## 6 -0.7952343 -1.7839447 2.879130 5.131600 5.523822 -0.3238920 5.22236727
##      Oas1a      Oas1b      Oas1c      Oas1g      Oas2      Oas3
## 1 -2.7974999 -2.4850810 -2.8376439 -3.8841215 -3.0240171 -3.317479
## 2 3.0994226 1.5466251 3.1698989 -2.2134552 -2.0418191 -3.884122
## 3 4.9348138 -1.9317392 -1.9317392 -3.8841215 5.5756831 -3.884122
## 4 0.6734477 -0.8404807 -2.9886270 -1.8452876 0.1320595 -3.209184
## 5 3.2983183 -3.8841215 -2.8071174 -3.8841215 1.2155742 -3.884122
## 6 -3.6607788 -2.3334194 -2.8485783 -3.8841215 -1.7809320 -3.884122
##      Oas11      Oat      Oaz3      Obfc1      Obscn      Obs11
## 1 -3.4050582 5.732647 2.153102 2.6680611 1.90707731 4.86184487
## 2 -1.2023572 5.891294 -2.807082 4.7688769 0.14078926 3.66250713
## 3 -3.8841215 8.426813 -1.131317 0.6984974 -3.88412153 0.05610664
## 4 -0.9582310 8.789307 1.642519 5.4438841 -2.37243458 2.25904744
## 5 -3.8841215 7.848550 -2.197374 5.2600579 -3.88412153 1.93561130

```

```

## 6 -2.6280150 7.825053 1.943481 2.3419679 -0.05032727 5.61964808
##      Oc90      Oca2      Ocel1      Ociad1      Ociad2      Ocln
## 1 -3.471030 -1.805006 2.9439838 7.385834 2.06507950 -1.9234581
## 2 -3.116511 -3.884122 5.2672933 7.640221 -0.56206282 8.7215657
## 3 -3.884122 -3.884122 -1.9317392 8.817742 0.05610664 6.5509267
## 4 -3.884122 -3.287822 0.3490893 7.695676 3.36631758 3.5752576
## 5 -3.884122 -3.884122 1.8777815 8.831539 3.59601511 4.0401199
## 6 -3.352813 -3.674482 1.7534776 6.772214 -1.52207689 0.8163873
##      Ocr1      Odc1      Odf2      Odf2l      Odf3      Odf3b      Odf3l1
## 1 5.0867580 5.103155 5.866657 3.4171230 -3.274262 -3.4111480 -2.288964
## 2 5.2459877 8.234695 6.023888 3.8437749 -3.884122 2.2904200 -3.217793
## 3 0.5144282 4.629632 6.800263 -1.1313170 -3.884122 -3.8841215 -3.884122
## 4 3.8680120 4.761514 6.460336 4.0247431 -2.749504 0.4871394 -3.141616
## 5 -0.5800187 5.913265 3.909127 3.5960151 -3.884122 1.7864435 -3.884122
## 6 6.7537931 6.011938 7.154115 4.8805538 1.230113 -0.4520764 -1.336570
##      Odf3l2      Odf4      Ofd1      Ogdh      Ogdh1      Ogfod1      Ogfod2
## 1 0.3953555 -3.7949831 3.436074 6.987980 5.2134597 4.915591 4.4099867
## 2 -3.8841215 -3.4243451 5.545856 7.618800 0.2477041 4.235962 4.0687167
## 3 -3.8841215 -3.8841215 -1.931739 8.516845 4.5116495 1.479815 -0.2425151
## 4 -3.8841215 -3.8841215 2.771432 8.224875 1.4871996 4.832354 4.1202079
## 5 -3.8841215 -3.8841215 -1.440886 7.917440 -1.7701038 3.276106 5.3716337
## 6 -3.8841215 -3.8841215 4.247863 7.162876 6.2113069 5.320189 4.2714625
##      Ogfr      Ogfrl1      Ogg1      Ogn      Ogt      Oip5      Oit3
## 1 6.818254 3.891433 2.967102 -1.4273222 7.358502 -0.5056137 -2.5216254
## 2 6.831885 4.139532 2.938225 2.3983974 6.983363 1.3905109 -1.8187323
## 3 1.263249 3.599276 -1.131317 0.5144282 6.169734 -3.8841215 -3.8841215
## 4 4.589402 4.329248 3.189556 3.3661214 7.666644 2.3592900 -3.4182176
## 5 4.040120 4.614275 2.740115 4.9969675 6.108179 -2.8071174 -3.8841215
## 6 6.284736 2.791103 2.467367 -0.3843300 8.650401 -0.1733343 -0.4128175
##      Ola1      Olfm1      Olfm2      Olfm3      Olfm4      Olfm11
## 1 5.423831 6.868811 7.3948648 1.7543632 -2.8974816 1.8778327
## 2 6.194509 3.577368 0.2234923 -1.4272679 -2.5254901 -1.1091130
## 3 1.911138 9.180195 6.6266687 -3.8841215 -3.8841215 7.8370946
## 4 6.322435 5.777606 6.0613606 -0.2766224 -2.4167775 6.4150514
## 5 6.007284 5.947049 6.2445531 -3.8841215 -3.8841215 6.9515223
## 6 4.643463 4.694431 3.1845033 0.5940711 -2.1850851 5.6027840
##      Olfm12a      Olfm12b      Olfm13      Olfr110      Olfr111      Olfr1373
## 1 -0.72436659 2.7936136 4.1071857 -3.209629 -2.869763 -3.135038
## 2 2.89763069 1.7071428 1.7717563 -3.884122 -3.884122 -1.713379
## 3 -3.88412153 0.5144282 10.7033109 3.710567 -3.884122 -3.884122
## 4 0.07125592 4.9239237 5.9306801 -3.884122 -3.884122 -3.884122
## 5 1.65490310 4.2878034 6.9007054 -3.884122 -3.884122 -3.884122
## 6 3.71131471 3.8600574 -0.1581151 -3.884122 -3.884122 -3.512249
##      Olfr1392      Olfr1420      Olfr267      Olfr287      Olfr288      Olfr317      Olfr520
## 1 -3.884122 -3.596091 -3.677861 -1.8383767 -3.884122 -3.794983 -3.8841215
## 2 -2.990176 -3.884122 -1.909843 -3.8841215 -3.884122 -3.884122 -0.1283656
## 3 -3.884122 -3.884122 -3.884122 -3.8841215 -3.884122 -3.884122 -3.8841215
## 4 -3.884122 -3.427701 -3.529646 0.7294713 -1.631225 -2.491455 -3.8841215
## 5 -3.884122 -3.884122 -3.884122 -2.8071174 -3.884122 -3.884122 -3.8841215
## 6 -3.143174 -1.985947 -3.490484 0.4458887 -3.137675 -3.884122 -3.8841215
##      Olfr558      Olfr56      Olfr658      Olfr78      Olfr878      Olig1
## 1 -3.512200 -3.88412153 -3.794983 -3.884122 -3.884122 11.2638703
## 2 -1.996355 0.08278627 -3.884122 -2.766249 -3.884122 0.9146658
## 3 -3.884122 -3.88412153 -3.884122 -3.884122 -3.884122 6.8904841

```



```

## 4 -2.559477 -3.88412153 -2.338306 -3.884122 -2.416299 4.4890111
## 5 -3.884122 -3.88412153 -3.884122 -3.884122 -3.884122 5.8203832
## 6 -3.660779 -3.88412153 -2.188976 -3.660779 -3.884122 8.0597089
##      Olig2      Olr1      Oma1      Omd      Omg      Omp      Onecut1
## 1  8.9588112 -3.794983  3.1276401 -2.233544  7.6285502  1.261937 -3.662647
## 2 -1.4408698 -3.884122  4.0938266 -1.318014  0.1649972 -3.884122 -3.884122
## 3  4.4359321 -3.884122 -0.2425151 -3.884122  9.2564576 -3.884122 -3.884122
## 4  2.6496441 -3.884122  4.2602202  1.938239  7.9840105 -2.201715 -2.800006
## 5  4.3315411 -3.884122  3.2306273  5.301886  8.3461024 -3.884122 -3.884122
## 6  7.5508649 -3.884122  3.3382156 -1.572928  6.0801801 -2.736779 -3.674482
##      Onecut2  Onecut3      Ooep      Opa1      Opa3      Opalin      Opcml
## 1  1.4796776 -3.478969 -3.8841215  6.854214  5.5540501  3.2617031  7.2147645
## 2 -3.8841215 -3.884122 -3.8841215  6.429657  5.0439194 -3.8841215  0.5386095
## 3  0.6984974 -3.884122 -3.8841215  1.375592  0.6984974  9.0816725  5.9469187
## 4  3.6189956 -3.042922 -0.7258587  6.121309  5.2324144  7.5167102  4.0120612
## 5 -0.9471720 -3.884122 -3.8841215  3.865162  5.0922184  9.5960467  3.5960151
## 6 -1.8358027 -3.027614 -3.8841215  6.610124  4.8893127 -3.8841215  2.7560845
##      Ophn1      Oplah      Opnlsw      Opn3      Opn4      Opn5
## 1  5.2581826  5.071928 -3.2552647  1.0122909 -2.3816755 -3.7669998
## 2  6.1010656  5.035890 -0.2933244  0.9492708 -3.8841215 -3.8841215
## 3  0.6984974  1.008333 -1.1313170 -1.1313170 -3.8841215 -3.8841215
## 4  5.0973722  4.609711  3.3452282 -0.7623420 -3.6539444 -3.8841215
## 5  2.1943824  1.847973  4.8803301 -3.8841215 -3.8841215 -3.8841215
## 6  5.9968583  6.600905 -0.5251602  1.5156437 -3.8841215 -0.8535437
##      Oprd1      Oprk1      Oprl1      Oprm1      Optc      Optn
## 1 -2.8068412 -3.1986110  5.2533375 -3.8841215 -2.5356047  4.365781
## 2 -3.8841215 -3.2515854 -0.7672695 -3.8841215 -3.4243451  4.067623
## 3 -3.8841215 -3.8841215 -0.2425151 -3.8841215 -3.8841215 -1.131317
## 4 -3.8841215  1.0383176  1.1852196 -3.8841215 -0.8120932  2.894137
## 5 -3.8841215 -3.8841215  4.6664416 -3.8841215 -3.8841215  4.219605
## 6 -3.4511394 -1.5794421 -1.0549551 -3.8841215  0.5808558  4.501258
##      Orail      Orail2      Orail3      Oraov1      Orc1      Orc2      Orc3
## 1  4.927575  4.7895441  3.917084  4.142090  1.0867865  5.563931  5.831659
## 2  5.384181  3.4370131  4.941809  3.879801  2.5140134  5.023819  6.056568
## 3  6.812790  1.6680739  8.146125  6.101943 -1.9317392  1.577013  2.242751
## 4  1.935050  3.9003452  4.378542  4.577859  2.8956056  5.334247  6.670999
## 5  1.688930  4.1108541  4.219605  4.733187 -2.1973739  3.110234  6.359931
## 6  5.132132  0.6691627  3.843773  3.580575  1.5192957  4.969745  6.052607
##      Orc4      Orc5      Orc6      Orm1      Orm2      Orm3      Ormdl1
## 1  4.636876  4.669243  4.241622 -3.7949831 -1.5382201 -3.4572575  4.676200
## 2  5.342256  5.212990  4.137755 -2.6781408 -0.7544303 -3.0762312  4.378115
## 3  5.074526  2.652618  5.798623 -0.2425151 -3.8841215 -3.8841215  8.610225
## 4  5.893021  5.930285  6.523546 -2.7162757 -3.8841215 -3.8841215  5.325417
## 5  4.745365  5.943530  7.388748 -3.8841215 -3.8841215 -3.8841215  4.846812
## 6  5.331080  4.503881  4.826194 -3.6607788  1.5697248 -1.6699262  3.700404
##      Ormdl2  Ormdl3      Os9      Osbp      Osbp2      Osbp110  Osbp111
## 1  2.4717359  6.080752  8.562164  5.7967559  2.8690545  3.8971086  4.930261
## 2  3.2148573  7.470520  7.275188  6.3208741 -0.9683782  3.7489863  5.810236
## 3  5.2833622  1.263249  4.934814  6.7516441 -3.8841215 -3.8841215  4.790278
## 4  4.4835179  4.781875  6.775555  4.2712696  1.4427815 -1.7731530  4.094722
## 5  5.5372163  5.640809  6.481397  3.4938520 -1.7701038 -3.8841215  3.207339
## 6  2.2315938  5.809306  7.650729  5.9339238 -0.8422693  0.2679072  5.825474
##      Osbp11a  Osbp12      Osbp13  Osbp15      Osbp16      Osbp17      Osbp18
## 1  7.472800  5.359364  2.1182426  4.355396  4.5631465  4.764069  5.505337

```

```

## 2 6.368835 5.176758 1.6198148 1.951334 3.0435901 3.940794 6.786041
## 3 4.461615 3.202239 -0.6195262 1.834579 -1.1313170 5.387524 1.008333
## 4 5.361786 4.492950 0.4565612 6.042005 3.0722826 4.319292 5.246506
## 5 6.288215 3.622666 2.5120345 5.664516 0.9609302 4.298863 5.132957
## 6 6.803584 5.274337 2.5035312 3.440568 5.3052206 5.231441 5.652740
##      Osbpl9      Oscar      Oscp1      Osgcp      Osgcp11      Osgin1
## 1 4.973458 -1.3578010 3.116587 4.780644 3.5570657 -1.169666340
## 2 7.225745 -3.6565043 2.337857 4.349787 4.3982191 6.720766963
## 3 8.149092 -3.8841215 5.621974 7.668143 -0.2425151 -0.619526232
## 4 5.886328 -1.7147224 5.174101 4.019452 5.2665578 2.161348676
## 5 2.567959 -3.8841215 6.338654 6.183209 5.7313487 4.824026497
## 6 5.994017 -0.2591907 4.136648 4.897045 3.9305498 -0.707522041
##      Osgin2      Osm      Osmr      Osr1      Osr2      Ost4
## 1 4.90237672 0.9104589 -1.9751975 -2.9133399 -2.0229552 4.287568
## 2 3.22620994 -3.2489909 7.2870359 -3.6519623 -2.6317274 5.532750
## 3 0.05610664 -1.1313170 7.3153282 -3.8841215 -3.8841215 7.163198
## 4 2.97228574 -1.1453737 1.7811369 0.1939997 -3.8841215 6.274322
## 5 4.17228045 -3.8841215 -0.5800187 -1.1730114 -3.8841215 6.868591
## 6 5.30714240 -1.3724620 4.9307606 -3.8841215 0.4175689 3.448690
##      Ostc      Ostf1      Ostm1      Otc      Otoa      Otof      Otog
## 1 5.726664 6.199251 6.255872 -3.7235669 -2.3009494 -2.0964310 -1.756576
## 2 7.266486 7.879215 5.768124 -3.8841215 -3.2515854 -3.3356546 -3.884122
## 3 9.615472 7.372294 1.263249 -3.8841215 -3.8841215 -3.8841215 -3.884122
## 4 7.489512 3.051290 4.473149 -2.2694640 -1.4383976 -2.4824751 -3.884122
## 5 9.109493 1.620055 6.308876 -3.8841215 -2.8071174 -3.8841215 -3.884122
## 6 4.967854 3.701625 5.776953 -0.2310917 -0.9058051 -2.5244447 -3.884122
##      Otogl      Otop2      Otop3      Otor      Otos      Otub1
## 1 -3.8841215 -3.291843 -3.4407838 -3.526440 -0.5012767 5.998598
## 2 -2.6981583 -3.884122 -3.8841215 -3.884122 0.6776923 5.871484
## 3 -3.8841215 -1.931739 4.3831520 -3.884122 -3.8841215 8.553881
## 4 -3.8841215 -2.433321 -2.8204672 -1.476847 -2.3433427 8.768231
## 5 -3.8841215 -2.807117 -3.8841215 -3.884122 -3.8841215 9.498690
## 6 -3.6744822 -3.674482 -3.8841215 -3.884122 -3.5122488 5.637101
##      Otub2      Otud1      Otud3      Otud4      Otud5      Otud6b      Otud7a
## 1 4.4059762 3.1745691 2.981049 6.085564 5.7640308 5.3763782 4.1951399
## 2 2.6521443 4.5087622 2.941131 6.948877 6.2464065 5.4917825 -1.5407288
## 3 6.6850687 -1.1313170 -3.884122 2.182248 0.8617169 0.6984974 -3.8841215
## 4 3.6514225 2.1877329 -2.003496 5.110175 3.7254935 6.0178548 -0.4435011
## 5 2.8644264 3.2306273 -3.884122 3.804376 4.6362406 4.7167877 -2.8071174
## 6 3.0466003 5.9841962 3.754866 7.139387 6.5351030 5.3076141 1.0717580
##      Otud7b      Otx1      Otx2      Ovca2      Ovgp1      Ovot1
## 1 6.905319 0.2909977 -3.8841215 3.6388309 0.3995155 -0.5661092
## 2 5.951490 -3.2277824 -3.03924074 3.4069046 -0.4320556 -0.7289543
## 3 1.983840 0.6984974 -3.8841215 -0.2425151 -1.9317392 1.9111385
## 4 5.052935 4.2728490 -0.22254241 3.4963125 1.2340770 -0.2148787
## 5 0.718921 4.4354139 -1.77010377 3.6830026 -3.8841215 -0.2876030
## 6 5.576463 6.1059209 -1.46812302 4.6276359 3.6391300 1.6476141
##      Ovot2      Oxa11      Oxct1      Oxct2b      Oxnad1      Oxr1      Oxsm
## 1 -3.794983 5.747436 7.914063 -2.8910990 4.128320 6.085018 1.166077
## 2 -3.651962 6.129072 5.720609 -3.8841215 3.739939 6.257767 1.878186
## 3 -1.131317 5.610540 6.997509 -3.8841215 6.973163 5.297693 -1.931739
## 4 -3.884122 6.704249 7.563204 -3.0823831 4.856865 6.332139 2.349709
## 5 -3.884122 6.910653 7.352718 -3.8841215 5.369013 6.779614 4.091904
## 6 -3.280845 5.862051 7.580253 -3.2680874 4.480271 6.174810 2.749705

```

##	Oxsr1	Oxt	Oxtr	P2rx1	P2rx2	P2rx3	
## 1	5.740815	-3.387046	-3.2431587	-1.1438531	0.1394784	-0.84246337	
## 2	6.403598	-3.039241	-3.4243451	1.8521375	-3.4766082	-1.88918503	
## 3	1.008333	-3.884122	-3.8841215	2.1190956	-3.8841215	-3.88412153	
## 4	4.174970	-3.603681	-1.7541182	0.1319806	-3.8841215	-1.58979180	
## 5	2.473510	-3.884122	0.5807664	-3.8841215	-3.8841215	-3.88412153	
## 6	6.155233	-2.848578	-2.0913233	-3.1431739	-2.6212192	-1.16936426	
##	P2rx4	P2rx5	P2rx6	P2rx7	P2ry1	P2ry10	
## 1	3.819204	-2.384122	-0.5288705	5.680524	3.2656575	-3.4298924	
## 2	2.971557	2.449711	-3.2489909	2.414459	-1.4747565	-0.7723561	
## 3	6.455093	-3.884122	-3.8841215	7.268806	-0.6195262	-3.8841215	
## 4	3.626114	-1.472328	3.2312267	4.327280	1.5478320	-2.2860068	
## 5	-0.947172	-3.884122	1.7864435	5.342536	3.5224398	-3.8841215	
## 6	3.485066	-1.638619	2.9823726	4.761317	2.2825728	-3.6744822	
##	P2ry12	P2ry13	P2ry14	P2ry2	P2ry4	P2ry6	
## 1	5.18219733	3.3418906	-2.14765984	2.5145041	-3.8841215	-0.1767439	
## 2	0.04413758	-1.9023480	4.43807904	1.0526805	-3.6565043	-2.8000981	
## 3	11.80882443	10.0641371	8.08133525	-1.9317392	-1.1313170	8.5848863	
## 4	5.25454564	4.3460265	5.85106623	1.0826244	-3.0274059	3.7224747	
## 5	2.96505227	1.6889296	7.30140251	-2.8071174	-0.5800187	1.2615221	
## 6	0.46397865	-1.5059683	-0.29711762	-0.1358942	-2.9862494	-2.4068900	
##	P4ha1	P4ha2	P4ha3	P4hb	P4htm	Pa2g4	Pabpc11
## 1	6.828119	-1.4497830	-1.9748745	9.063329	5.665616	6.967583	-1.0198196
## 2	6.084472	0.3447256	-1.9986392	10.028150	0.539024	7.084858	0.3774282
## 3	1.983840	-0.6195262	-1.9317392	9.694089	6.888118	8.077188	-3.8841215
## 4	6.643001	4.0720126	0.9947343	8.677085	4.433932	8.106015	0.3862206
## 5	6.165192	-2.1973739	2.2861569	8.919703	4.518182	8.401982	-3.8841215
## 6	7.131326	4.3138888	5.8708693	8.742714	4.695133	5.893927	-0.2092978
##	Pabpc4	Pabpc41	Pabpc5	Pabpn1	Pabpn11	Pacrg	
## 1	4.0587531	-1.2111410	-0.06282461	7.483180	-3.884122	2.7475160	
## 2	4.8053548	0.7408597	-3.88412153	6.759612	-3.656504	-1.1972874	
## 3	1.8345785	-1.9317392	-3.88412153	1.577013	-3.884122	6.9461266	
## 4	2.1499508	3.7406301	-0.67203812	5.741724	-3.884122	4.7242266	
## 5	0.7833343	2.2861569	-3.88412153	4.160203	2.473510	5.4406630	
## 6	3.9833419	2.2411156	0.25325689	8.558577	-3.884122	3.6109921	
##	Pacrg1	Pacs1	Pacs2	Pacsin1	Pacsin2	Pacsin3	
## 1	2.5562210	5.6282554	8.52000318	3.2060389	5.9289958	5.6673234	
## 2	3.5929801	6.4645328	4.98616889	-0.0439398	5.9181091	0.9226972	
## 3	-3.8841215	0.5144282	0.05610664	-0.6195262	7.3672076	2.7805686	
## 4	3.2330858	4.1248180	4.16080199	2.9942034	4.0101109	5.2241105	
## 5	4.8278492	2.7562522	3.37347502	-0.1609828	0.6514968	4.2988628	
## 6	3.0854602	5.2583488	6.43510675	3.3483853	5.0188366	6.5900101	
##	Padi1	Padi2	Padi3	Padi4	Padi6	Paf1	Pafah1b1
## 1	-3.8841215	4.7882741	-3.884122	-3.790167	-3.662647	6.2436584	8.418925
## 2	-3.8841215	-2.0418191	-2.716134	-2.825432	-3.108037	5.7781569	8.156992
## 3	-0.2425151	6.2344829	-1.931739	-3.884122	-3.884122	4.6409166	8.000416
## 4	-3.4447594	6.7767496	-3.674937	-1.654724	-3.884122	4.6757618	6.680647
## 5	-3.8841215	6.0389602	-2.807117	-2.807117	-3.884122	0.8449942	7.156933
## 6	-3.6744822	3.4134914	-3.884122	-3.660779	-3.171313	5.8674147	8.450073
##	Pafah1b2	Pafah1b3	Pafah2	Pag1	Paics	Paip1	Paip2
## 1	7.026424	4.417579	1.332650	5.8188711	6.540201	6.341000	6.401154
## 2	7.426055	3.519723	3.600031	1.3837579	7.576432	6.676255	8.134269
## 3	7.596053	6.911602	2.119096	0.6984974	8.287462	9.263319	7.290464
## 4	6.674350	6.306820	3.487820	3.8301556	8.316280	8.237227	8.620123

```

## 5 6.868591 7.204021 3.006118 -0.1609828 8.069672 9.274745 9.393156
## 6 6.554914 2.046481 3.578346 7.5154213 6.637835 5.978152 6.085569
##      Paip2b      Pak1      Pak1ip1      Pak2      Pak3      Pak4      Pak6
## 1 6.53754299 6.934536 5.092342 6.766379 5.5880962 5.816123 3.1606514
## 2 5.23253244 2.843030 6.774362 7.723577 0.1105367 5.176078 0.2164449
## 3 1.00833299 5.783428 7.910031 1.375592 2.4103803 1.375592 0.3033916
## 4 4.62415178 6.528677 6.718713 5.190489 5.8393004 3.147053 1.9007914
## 5 5.62771108 6.762739 7.209159 5.129864 5.2256996 3.894620 -1.1730114
## 6 5.28669741 4.528367 5.527122 6.309137 1.5197960 4.837015 1.8549441
##      Pak7      Palb2      Palld      Palm      Palm3      Palmd
## 1 3.99974477 0.28393504 1.1790211 5.774556 -0.1823631 0.43193488
## 2 -2.27096282 0.59237801 -0.4648741 7.680311 -1.3405594 8.93194256
## 3 5.13163785 0.05610664 -1.1313170 1.577013 -3.8841215 0.05610664
## 4 6.06877512 3.15525491 2.8582613 4.405350 -2.5732316 4.66303947
## 5 6.03896025 0.96093015 -2.1973739 4.373992 -3.8841215 4.60984117
## 6 -1.60565678 2.20427860 5.4512146 4.735045 -0.8250137 1.22793563
##      Pam      Pam16      Pamr1      Pan2      Pan3      Pank1      Pank2
## 1 5.793287 1.07582710 2.8108941 5.6846722 5.558340 3.9588580 4.714962
## 2 7.692519 0.67632285 -0.9006787 5.5689147 7.101842 3.4080319 5.833778
## 3 7.778270 3.17144305 6.0308076 0.3033916 3.910295 0.5144282 5.006360
## 4 6.332874 1.51645438 3.4916026 5.2888740 6.415500 4.9178950 3.543529
## 5 7.590672 1.51015501 2.8938999 0.0631199 6.025708 4.6142748 3.666020
## 6 5.744263 1.10541081 7.1752879 6.1868998 6.773525 5.1542499 5.932734
##      Pank3      Pank4      Panx1      Panx2      Paox      Papd4      Papd5
## 1 7.414521 5.232704 6.286218 2.98128308 0.9692454 3.406417 5.467048
## 2 7.352994 5.332307 3.732976 -2.42856060 1.4918427 4.420410 5.763416
## 3 1.753727 2.780569 6.292878 -1.13131698 2.3008186 -1.131317 1.263249
## 4 5.420181 4.485519 3.721510 0.94693367 -0.3762248 1.807624 4.097617
## 5 4.636241 4.425357 4.640594 1.81753643 -0.2876030 1.306052 4.945116
## 6 7.118132 5.375269 2.291441 0.02316556 1.7532163 4.304310 6.086606
##      Papd7      Papln      Papola      Papolb      Papolg      Pappa      Pappa2
## 1 5.8654698 -1.6831897 6.744334 -1.8043929 3.519345 -1.8882411 -3.1427229
## 2 4.8193030 3.2339532 8.041731 -2.9607165 3.842849 -3.8841215 -3.6565043
## 3 0.3033916 1.0083330 2.607316 -3.8841215 1.008333 -1.1313170 -0.2425151
## 4 3.9170850 -1.0724655 6.606045 -0.6182853 5.659266 -2.5231581 -0.8700388
## 5 4.2196053 -0.7519471 6.477752 -1.4408855 5.013845 -3.8841215 -3.8841215
## 6 5.4406959 0.1059397 6.737433 -2.6334403 3.895796 -0.6614017 -1.7003695
##      Papss1      Papss2      Paqr3      Paqr4      Paqr5      Paqr6      Paqr7
## 1 8.852323 -0.6601202 2.1097029 6.507547 -2.54516516 -0.6662681 3.521027
## 2 7.135881 3.5034326 0.9073408 3.923960 3.84953098 -2.6793155 6.003910
## 3 4.356020 4.6851920 -3.8841215 6.310652 5.08282436 0.5144282 8.408772
## 4 8.019089 4.2497953 0.3506266 3.946452 2.49948100 5.6638472 6.246786
## 5 7.035740 -1.7701038 -1.7701038 4.670705 1.81753643 6.1712223 6.378295
## 6 6.941350 4.4496548 2.8052919 6.362895 -3.28890603 5.6927696 8.040012
##      Paqr8      Paqr9      Pard3      Pard3b      Pard6a      Pard6b      Pard6g
## 1 6.744183 1.8933137 5.748073 1.1119467 4.314141 0.88982020 4.4359376
## 2 4.016146 -1.8551503 5.987811 4.0780885 3.716353 -2.35975889 6.1798496
## 3 8.350681 -1.1313170 2.820816 -0.2425151 6.296450 5.94691874 4.5718465
## 4 6.663853 -1.9427912 5.134611 4.0686456 5.679994 0.04494335 4.1825315
## 5 5.504153 -3.8841215 4.013514 3.1351297 4.796980 -2.19737395 4.7930746
## 6 8.545290 -2.1313321 5.850993 5.3370802 4.990275 2.43019129 3.9757762
##      Parg      Park2      Park7      Parl      Parm1      Parn      Parp1
## 1 4.951117 2.614307 6.460798 5.172244 4.06992419 4.938770 7.607941
## 2 5.753590 -1.084319 6.328037 4.966481 -0.38978824 5.400128 6.169721

```

```

## 3 6.730672 3.599276 9.763166 7.360397 0.05610664 8.370306 3.074902
## 4 3.902830 3.109484 9.090057 5.114784 3.24587158 5.737512 6.829523
## 5 4.166254 1.471579 9.691974 6.042254 -0.04458439 4.508687 5.852638
## 6 6.165355 2.106291 5.143123 4.779265 -0.67048292 5.017846 5.940848
##      Parp10      Parp11      Parp12      Parp14      Parp16      Parp2
## 1 -0.1718256 4.2439085 3.4302133 -1.2467814 1.1157506 4.257967
## 2 5.0625139 2.2069681 4.8563729 4.6592000 3.6532634 4.651874
## 3 1.0083330 0.6984974 -0.2425151 -1.1313170 -1.9317392 1.263249
## 4 0.8861585 5.9012186 3.2758616 1.6125937 1.9165697 6.413484
## 5 -1.7701038 4.8729487 -1.1730114 -2.1973739 -0.7519471 5.392433
## 6 0.1295009 4.8321170 4.3340950 0.2983569 2.3011450 5.055660
##      Parp3      Parp4      Parp6      Parp8      Parp9      Pars2      Parva
## 1 -0.2224268 3.056693 5.2556556 5.250548 1.2161554 1.3421149 3.779406
## 2 1.4144341 4.866871 5.4998139 1.674341 5.3079133 0.4064629 6.943203
## 3 -1.1313170 -1.131317 0.5144282 -1.131317 -1.1313170 0.6984974 1.668074
## 4 3.3905005 3.303895 5.8322959 2.561963 3.7854901 4.2212614 5.712924
## 5 -2.1973739 1.654903 6.6311047 -1.440886 -1.1730114 -1.7701038 4.503917
## 6 3.2695816 4.304327 5.3745558 6.196152 2.9683445 1.8307030 6.122686
##      Parvb      Parvg      Pask      Pate2      Pate4      Patl1
## 1 6.721778 3.53821647 3.2120657 -2.6488382 -3.293779 5.0830363
## 2 9.070579 3.75538320 2.5876987 -3.3356546 -3.476608 5.9436775
## 3 3.041231 7.23569586 0.3033916 -3.8841215 -3.884122 0.3033916
## 4 4.618601 0.02383037 3.9560328 -1.9257762 -3.128315 4.8323536
## 5 3.749003 -0.75194706 -0.1609828 -3.8841215 -3.884122 4.4943274
## 6 4.837916 -0.04825006 3.5973448 -0.6044216 -2.947970 6.2358138
##      Patl2      Patz1      Pawr      Pax4      Pax6      Pax7      Pax9
## 1 -3.612858 5.853803 2.1598516 -3.8841215 1.2411378 -3.884122 -3.884122
## 2 -3.076231 4.980898 4.5817625 -3.8841215 -0.8325671 -3.884122 -3.884122
## 3 -3.884122 6.643597 0.3033916 -3.8841215 3.6889850 -3.884122 -3.884122
## 4 -3.884122 4.867633 3.3473399 0.4927447 6.3466547 -3.884122 -3.884122
## 5 -3.884122 3.195552 1.7221719 -3.8841215 6.6223272 -3.884122 -3.884122
## 6 -3.884122 6.148996 1.9799742 1.0659874 6.7743097 -3.884122 -1.201141
##      Paxip1      Pbk      Pbld1      Pbrm1      Pbx1      Pbx2      Pbx3
## 1 5.456260 3.3331426 -2.552582 6.045897 6.213856 4.875854 3.188397
## 2 4.837898 3.2544421 -3.251585 7.377700 6.053375 6.044156 5.108271
## 3 7.334568 6.2119608 -3.884122 4.830258 6.477296 3.139975 -3.884122
## 4 4.202410 7.5026712 -2.795323 7.672814 8.721157 2.388426 -0.940937
## 5 3.550472 7.5215444 -3.884122 7.563417 8.813578 3.373475 3.568862
## 6 5.209142 3.5772887 -1.026062 7.103751 7.949830 5.185019 3.389066
##      Pbx4      Pbxip1      Pcbd1      Pcbd2      Pcbp1      Pcbp2      Pcbp3
## 1 2.4041842 4.428728 2.5477036 1.6464766 7.655144 7.517012 4.720465
## 2 -3.0762312 5.776955 1.2208441 3.3407046 8.224653 8.153441 4.645608
## 3 -1.9317392 2.512206 6.3106517 -0.6195262 6.000466 7.006262 2.119096
## 4 1.3495705 6.171609 4.7205054 0.8767692 5.948744 6.477739 2.577979
## 5 -2.1973739 5.779517 5.0470197 2.0963708 7.347402 7.192948 4.326146
## 6 3.1890768 8.837178 0.7555935 1.1584542 7.110879 6.790242 3.089968
##      Pcbp4      Pcca      Pccb      Pcdh1      Pcdh10      Pcdh11x      Pcdh12
## 1 8.153015 5.0174123 6.483216 5.633617 8.135445 5.030518 -2.7355507
## 2 4.238351 6.1202570 5.313203 8.281550 1.335179 -1.946903 8.0186199
## 3 6.988704 1.0083330 4.166010 5.896024 3.644828 -1.931739 -1.9317392
## 4 5.071245 5.5008935 6.980951 2.494565 5.935566 2.580660 -1.9554985
## 5 6.478968 5.5854330 6.951522 0.718921 6.093964 -1.440886 -2.8071174
## 6 6.032081 5.3732029 5.927841 6.102613 9.072298 3.549495 -0.4369619
##      Pcdh15      Pcdh17      Pcdh18      Pcdh19      Pcdh20      Pcdh7

```

##	1	7.4817837	7.69630575	1.43401608	4.6203684	5.1108288	7.1495585
##	2	-2.4601722	4.42632090	3.73436478	6.5318832	-2.6607198	0.3887363
##	3	-3.8841215	6.22701456	0.05610664	7.0192913	8.8874997	3.4011610
##	4	1.7722502	4.42139175	4.02112496	1.9865851	3.3727647	3.0713136
##	5	-2.8071174	4.48950878	3.79659463	3.5779700	0.1633391	-1.7701038
##	6	-0.2695968	7.44369641	4.86482989	5.1386884	4.1661638	7.0825363
##		Pcdh8	Pcdh9	Pcdha10	Pcdhb1	Pcdhb10	Pcdhb11
##	1	4.7072536	7.4526252	2.08697163	-3.518903	4.3082879	1.88538507
##	2	-0.5008222	0.8230232	-1.81837581	-3.884122	2.3163911	3.25970236
##	3	5.2394965	5.6723352	-1.93173924	-3.884122	-1.1313170	-3.88412153
##	4	2.5376724	6.8872768	-1.13480529	-3.884122	2.8638957	2.41757157
##	5	4.2541073	6.9801446	-3.88412153	-3.884122	-1.4408855	2.51203447
##	6	5.2693530	5.9357066	-2.10680442	-3.884122	0.3773036	1.12640957
##		Pcdhb12	Pcdhb13	Pcdhb15	Pcdhb16	Pcdhb17	Pcdhb18
##	1	1.4310446	1.9775730	2.1454532	2.8275416	3.5442253	3.7994315
##	2	0.7053633	2.2187287	2.3179510	4.5873383	4.5552531	3.5117705
##	3	-3.8841215	-3.8841215	-3.8841215	4.9163586	-0.6195262	-1.9317392
##	4	2.8499794	2.1570953	2.2543961	3.3891125	3.7829988	2.3685499
##	5	4.5323076	1.3060516	-2.8071174	-1.7701038	2.4137218	-3.8841215
##	6	-0.1957541	-0.2965840	0.3124087	1.2235698	2.6274459	2.6194615
##		Pcdhb19	Pcdhb2	Pcdhb20	Pcdhb22	Pcdhb3	Pcdhb4
##	1	3.122608	2.7415640	4.173056	3.215023	2.7811188	1.6600738
##	2	3.411073	0.1188938	4.949328	3.453373	1.6048347	1.8729837
##	3	-1.931739	-1.9317392	3.983037	-1.131317	-1.9317392	-1.1313170
##	4	2.599806	1.3501458	3.292353	1.962855	3.1176805	2.4718384
##	5	4.777346	-2.8071174	-2.807117	3.320194	-2.8071174	3.7246054
##	6	2.012327	-0.6137478	2.214752	2.403839	1.1177170	0.5509400
##		Pcdhb5	Pcdhb6	Pcdhb7	Pcdhb8	Pcdhb9	Pcdhga12
##	1	2.33166656	1.3678843	3.077984	2.1407174	4.5293161	4.8630518
##	2	1.69122305	1.3466549	3.463439	0.2679672	1.5592797	3.6128980
##	3	-1.93173924	-3.8841215	5.099280	-3.8841215	3.7938044	-3.8841215
##	4	2.12768623	1.2135927	5.432145	2.8708864	5.0656953	2.8643744
##	5	-2.19737395	-2.8071174	4.059758	2.6905901	4.2710537	-2.8071174
##	6	-0.09053495	-0.5299662	1.640676	1.2131597	0.1536455	4.6636653
##		Pcf11	Pcgf1	Pcgf2	Pcgf3	Pcgf5	Pcgf6
##	1	5.786417	2.037565	3.91658540	5.5209396	3.480293	3.4819264
##	2	7.470667	1.975035	3.85979736	5.2542866	3.387525	2.2500046
##	3	1.141414	-3.884122	0.05610664	0.6984974	-1.131317	-3.8841215
##	4	5.528202	3.758743	3.41469540	3.4405561	1.996777	3.3770817
##	5	2.351349	4.394758	3.45483176	2.0182291	-1.770104	-1.1730114
##	6	6.758136	2.734308	4.43496604	5.4820073	3.107634	4.5854528
##		Pcif1	Pck2	Pclo	Pcm1	Pcmt1	Pcmt1
##	1	6.029262	2.875561	5.3077831	7.000773	5.830468	5.8493428
##	2	5.884070	5.570596	-0.9445582	7.018012	6.164567	6.8403558
##	3	2.182248	7.310036	0.3033916	1.834579	8.773569	0.3033916
##	4	6.284244	5.411620	4.0241749	6.839781	7.480484	5.5143368
##	5	5.462958	4.259778	3.8577022	6.880603	7.307575	4.1842580
##	6	5.590443	3.681263	6.5035052	7.651245	5.354128	6.6562881
##		Pcna	Pcnp	Pcnt	Pcnx	Pcnx12	Pcnx13
##	1	5.396752	5.737031	4.93246404	7.198068	3.8368317	6.764798
##	2	6.771865	6.024439	4.85626084	8.202035	-1.8043136	5.530466
##	3	7.149436	6.957453	0.05610664	5.304805	-3.8841215	1.834579
##	4	5.952734	7.367721	3.95469069	4.604363	-2.5742678	3.976939
##	5	6.421942	7.498945	-0.58001868	3.796595	-3.8841215	2.922783

```

## 6 5.313825 5.401043 5.41874164 7.192656 -2.5244447 7.194425 0.6507923
##      Pcolce2      Pcp2      Pcp4      Pcp4l1      Pcsk1      Pcsk1n
## 1 3.1640903 -2.4151905 4.9764722 1.4916747 -0.3239026 7.7446841
## 2 -3.1123102 -3.6565043 1.8633519 6.1195485 -2.2467233 0.9014986
## 3 2.0530520 -3.8841215 8.4235491 6.7253815 -3.8841215 1.8345785
## 4 -0.3876589 -3.4989245 7.3751405 3.3062587 -1.5820023 2.4780860
## 5 2.3299438 -0.7519471 8.2392871 4.7043649 -3.8841215 2.8036091
## 6 -0.4243963 -2.9862494 -0.7500971 0.1020197 -2.0734315 3.8811339
##      Pcsk2      Pcsk4      Pcsk5      Pcsk6      Pcsk7      Pcsk9
## 1 5.6121738 0.1346238 2.569221 6.7263369 5.2607820 -1.270069
## 2 0.1847937 -2.2057178 1.139142 3.5423430 6.2379634 -2.995623
## 3 6.6209815 -3.8841215 -1.131317 3.2323916 0.6984974 -3.884122
## 4 2.6962375 1.2203719 1.306533 5.8745323 4.2575763 -3.047372
## 5 0.4279671 -3.8841215 2.044749 6.3238420 4.8840067 -0.947172
## 6 -1.2189130 2.2572706 1.801456 4.8957463 5.7539461 3.086591
##      Pctp      Pcx      Pcyox1      Pcyox1l      Pcyt1a      Pcyt1b      Pcyt2
## 1 -0.3878843 6.552457 7.570137 3.856733 6.861094 5.6439986 7.254921
## 2 -0.4336497 8.431622 6.993570 2.063812 6.757484 -0.6342708 4.008372
## 3 -0.6195262 3.374368 5.465756 5.914740 4.859533 0.5144282 6.854585
## 4 2.0534352 8.193162 7.693637 4.606688 6.102803 5.2348302 6.965292
## 5 -0.9471720 7.644767 6.208354 4.777346 4.880330 3.0976229 7.147787
## 6 -0.5907073 7.654753 7.729948 4.323006 6.170282 5.0082031 8.130186
##      Pdap1      Pdcd1      Pdcd10      Pdcd11      Pdcd1lg2      Pdcd2      Pdcd2l
## 1 6.108031 -3.284246 3.660877 5.423532 -3.4407838 3.2461468 4.018660
## 2 6.441440 -3.884122 5.796503 4.610166 -2.5340902 3.2101410 4.141870
## 3 5.877063 -3.884122 6.483577 4.706830 -3.8841215 -1.9317392 6.230754
## 4 6.449577 -3.029652 5.522003 4.381410 -3.2994690 2.3544319 4.261979
## 5 6.536164 -3.884122 6.499485 1.817536 -3.8841215 1.9912121 6.137737
## 6 5.015284 -3.884122 3.921400 5.947046 -3.6607788 2.8390497 3.225891
##      Pdcd4      Pdcd5      Pdcd6      Pdcd6ip      Pdcd7      Pdcl      Pdcl3
## 1 5.992712 2.629632 6.064232 7.019537 3.4937686 4.866641 4.716947
## 2 5.736670 3.254721 6.327544 7.944484 3.7573941 5.954451 6.111525
## 3 8.300863 2.607316 8.129197 5.919381 5.1788537 7.001892 6.192920
## 4 7.358090 4.350191 7.195657 4.906438 2.7298586 6.700538 6.752040
## 5 7.920576 5.098561 8.109866 2.473510 4.0791314 7.340728 7.503135
## 6 7.158582 2.854578 5.592214 6.542982 3.7500576 4.815108 4.488509
##      Pddc1      Pde10a      Pde11a      Pde12      Pde1a      Pde1b      Pde1c
## 1 4.264542 4.848530 -3.7669998 3.810628 2.2717958 3.6905809 4.619681
## 2 3.179352 4.792879 -3.8841215 5.218039 0.9765647 2.0135678 1.188132
## 3 8.334265 -1.131317 -3.8841215 6.930118 -0.2425151 0.3033916 -1.131317
## 4 6.229571 2.916171 -2.1918207 2.502551 4.4784608 4.5482573 3.969635
## 5 6.331940 5.315564 -3.8841215 2.433928 3.8946204 -1.1730114 -1.770104
## 6 3.441913 4.127818 -2.8744502 4.368086 -1.1643874 7.0171949 3.570035
##      Pde2a      Pde3a      Pde3b      Pde4a      Pde4b      Pde4c      Pde4dip
## 1 6.175579 2.8298755 5.2745709 4.2578167 7.263595 -1.8155927 8.009001
## 2 8.630296 3.2062817 2.1776047 1.4591029 8.981797 -0.0896333 3.657975
## 3 4.840083 -3.8841215 0.5144282 0.6984974 5.726305 -3.8841215 2.512206
## 4 4.203617 1.0333754 3.8342735 4.9559711 6.467647 0.1570277 6.554158
## 5 5.240115 3.5504721 1.3911881 3.5318445 6.758740 1.1681147 6.980145
## 6 2.582131 4.5996393 2.9671883 3.8293556 8.800894 -2.5546909 6.506080
##      Pde5a      Pde6d      Pde6g      Pde7a      Pde7b      Pde8a
## 1 1.42595746 6.1028471 -3.382762 5.2367704 3.7158209 3.2651668
## 2 6.08514468 5.6454081 -3.476608 4.3622785 6.5393704 7.1528936
## 3 -1.13131698 0.8617169 -3.884122 1.5770128 3.1714430 -3.8841215

```

```

## 4 2.70379314 3.7722192 -2.641215 3.9907778 2.9190064 2.3721779
## 5 2.96505227 2.2178791 -3.884122 2.2861569 4.4050297 4.2484140
## 6 2.33200864 4.8841021 -3.490484 5.0114806 4.2869919 2.8944004
##      Pde8b      Pde9a      Pdf      Pdgfa      Pdgfb      Pdgfc      Pdgfd
## 1 5.299542 4.695131 4.2123272 4.886306 1.4374688 3.5511522 -2.115690
## 2 4.161077 2.990479 4.7909033 1.724992 7.2914542 -1.0176151 6.040839
## 3 5.937798 -1.131317 0.5144282 6.937001 0.6984974 -0.6195262 -1.931739
## 4 5.938366 5.184795 3.3104061 2.352913 1.0270427 2.1497923 4.423575
## 5 5.706648 5.911464 4.7812943 4.373992 -0.4264149 0.7189210 3.850204
## 6 4.299198 7.020287 3.8248285 1.760606 1.0156006 4.8254513 1.620260
##      Pdgfra      Pdgfrb      Pdgfrl      Pdha1      Pdhb      Pdhx      Pdia3
## 1 11.00060277 1.494657 3.2375946 6.410428 6.088278 5.581014 9.039627
## 2 2.06253377 7.110092 1.3967568 6.871273 5.933354 4.936879 9.831294
## 3 6.00483953 5.677824 -0.6195262 7.241267 7.862622 1.375592 8.583425
## 4 4.62437911 6.093284 3.9399348 6.992639 6.852732 5.961069 6.190601
## 5 5.85451346 7.065995 2.0707909 6.371763 7.035740 5.506540 8.002767
## 6 -0.02732102 7.695774 4.0870646 7.112336 6.046876 5.446190 8.692582
##      Pdia4      Pdia5      Pdia6      Pdik1l      Pdk1      Pdk2      Pdk3
## 1 6.552639 2.9143336 8.072132 2.7743467 5.018192 6.271779 4.997474
## 2 7.127922 6.6313450 8.436170 3.0690614 5.619411 4.456593 4.693924
## 3 8.245572 -3.8841215 10.133187 -0.6195262 2.053052 7.850523 2.820816
## 4 8.580687 0.2369270 9.612058 5.4998351 3.173230 6.841516 2.745553
## 5 8.439318 -0.4264149 9.598147 5.1483250 1.068238 7.006525 3.503444
## 6 7.436835 2.9283191 7.476246 3.2400562 5.040336 5.781300 3.508094
##      Pdk4      Pdlim1      Pdlim2      Pdlim3      Pdlim4      Pdlim5      Pdlim7
## 1 1.311774 -1.44472396 4.517680 -2.43630533 1.370515 6.171352 1.531980
## 2 6.286033 2.06423871 4.304795 -0.52347175 -0.711095 7.973597 6.756807
## 3 -3.884122 -0.24251506 8.339469 0.05610664 5.644574 6.200567 1.577013
## 4 3.508136 3.28003985 6.657960 4.40043412 6.224560 6.676226 5.751709
## 5 1.068238 1.16811471 8.374803 5.96971661 5.660235 5.541878 6.212746
## 6 8.166092 0.50555375 1.399757 -0.49274604 5.451793 7.483181 3.813800
##      Pdp1      Pdp2      Pdpk1      Pdpn      Pdpr      Pdrg1      Pds5a
## 1 3.237174 3.312283 5.934787 4.0793725 4.11886859 5.541120 5.813119
## 2 5.316581 1.378227 5.804724 -0.4953661 3.89655295 4.984824 7.067983
## 3 6.800263 7.593151 6.126234 7.4384582 -0.24251506 1.668074 2.182248
## 4 5.695915 6.755040 4.920345 7.8741109 1.93052731 6.622620 4.108391
## 5 6.201003 4.384412 4.098249 8.7454867 2.69059010 7.113747 3.631442
## 6 4.723143 5.160870 6.179732 6.1817211 4.54701646 4.743266 6.523177
##      Pds5b      Pdss1      Pdss2      Pdxdc1      Pdxk      Pdyn      Pdzd11
## 1 6.139303 2.5996392 2.284025 6.801044 6.170241 -1.5647262 4.845871
## 2 6.857195 2.0434596 2.983822 7.538461 6.952549 -2.5340902 5.448179
## 3 1.479815 -3.8841215 -3.884122 1.577013 3.891521 0.6984974 3.478677
## 4 6.018719 1.4852383 3.411529 5.815424 6.324812 -1.9252952 7.054623
## 5 6.397714 4.5086874 4.013514 5.342536 6.477752 -2.8071174 7.853246
## 6 6.675637 3.6969660 3.028321 6.070484 5.018936 2.4605376 4.525211
##      Pdzd2      Pdzd3      Pdzd4      Pdzd7      Pdzd8      Pdzd9      Pdzk1
## 1 5.241469 -2.9324182 5.355485 1.5549194 6.543955 -3.158068 3.5407425
## 2 6.708938 -3.6565043 1.088156 1.6000959 7.161134 -3.116511 2.2816278
## 3 1.911138 -3.8841215 -1.131317 -1.9317392 3.171443 -3.884122 5.6219739
## 4 2.730858 -3.8841215 2.800518 -1.2784988 6.393605 -1.832344 2.9425923
## 5 2.922783 -3.8841215 -2.197374 -3.8841215 6.710897 -3.884122 -0.7519471
## 6 3.570387 -0.9263122 3.191561 0.6240789 6.398251 -2.837654 2.9308488
##      Pdzk1ip1      Pdzn3      Pdzn4      Pea15a      Pear1      Pebp1      Pecam1
## 1 -3.198611 3.4815289 4.2147072 9.448443 -0.2765231 7.144459 0.8050058

```



```

## 2  1.595195 0.6793594 -2.4090094 10.089053 6.7393963 6.579659 10.8435146
## 3  3.503617 0.6984974 -0.6195262 10.087780 -0.6195262 7.869834 0.8617169
## 4  1.200034 4.0184536 3.1533470 9.266837 2.0756708 7.198339 2.3000559
## 5  3.865162 3.9932318 -1.7701038 8.765307 3.2648698 7.794878 3.1716861
## 6  -3.660779 6.0455086 0.6635564 9.634165 0.7717670 6.091039 3.4122087
##      Pecr      Pef1      Peg10      Peg3      Peli1      Peli2      Peli3
## 1  2.3110503 4.943013 4.774589 5.2358525 6.531045 5.237903 -0.57775892
## 2  1.1870874 5.928958 3.375958 2.9723568 6.537073 4.750127 -3.47660817
## 3  -0.6195262 6.181374 -3.884122 1.8345785 6.592204 5.246901 5.44014712
## 4  4.2057766 6.313948 2.510925 5.2444976 5.740326 5.054782 -0.50498365
## 5  4.7250105 6.805047 2.978871 1.3492478 5.871280 4.178282 3.99323182
## 6  1.6166250 4.682153 3.769215 5.7619302 6.316547 6.007532 -0.95580112
##      Pelo      Pelp1      Pemt      Penk      Peo1      Pepd      Per1
## 1  3.160389 4.9770077 1.2384579 -0.5575305 4.378334 5.449354 7.232544
## 2  5.703655 4.6233684 2.3401412 -0.2851978 4.075238 4.931509 8.423409
## 3  6.406332 0.8617169 -1.1313170 4.8104064 4.997609 8.494469 1.141414
## 4  2.376514 3.6747970 2.9454711 1.1182358 4.865937 6.755216 2.921389
## 5  1.963680 3.3523982 3.8121159 -0.1609828 4.696023 6.708825 -1.440886
## 6  4.103469 4.7781968 1.1977674 -0.9749757 4.327237 4.374396 9.630522
##      Per2      Per3      Perp      Pes1      Pex1      Pex10      Pex11a
## 1  5.7048469 5.659629 0.9574039 5.389013 4.663078 3.54433040 2.1987442
## 2  3.9159908 4.412420 1.7356589 5.734359 4.219972 3.11807362 0.5886403
## 3  -0.6195262 1.141414 7.1275418 1.753727 1.753727 0.05610664 -1.9317392
## 4  3.1038835 5.858088 3.2620556 5.760998 4.459934 3.44000347 3.7429859
## 5  -1.1730114 2.393229 5.8010672 6.278471 3.331009 4.08553200 3.2648698
## 6  6.6608662 7.800083 1.5556631 4.415803 5.128992 2.76236162 3.2724936
##      Pex11b      Pex12      Pex13      Pex14      Pex16      Pex19      Pex26
## 1  4.562425 3.148079 5.002314 4.866916 4.3384910 6.901257 3.5450424
## 2  4.796439 2.661376 4.677396 5.102576 4.6567450 6.819973 3.1604241
## 3  7.483031 6.660329 7.283281 3.853225 0.8617169 7.839545 1.1414140
## 4  6.022129 4.599634 4.223930 4.725961 5.3517197 7.529635 2.7829310
## 5  6.649582 4.271054 4.141894 6.136196 6.1876779 7.544957 4.2484140
## 6  4.083033 3.432432 5.649712 4.608665 4.4413897 6.206759 3.1427364
##      Pex3      Pex5      Pex51      Pex6      Pex7      Pf4      Pfas
## 1  4.878400 6.174489 5.47772216 5.8162311 4.988677 -0.8983239 5.574950
## 2  5.075000 5.980749 0.83937592 5.6437056 3.882980 0.7053633 3.862866
## 3  7.428725 6.695929 5.28336221 -0.2425151 1.479815 8.3719995 6.774879
## 4  4.986444 4.459059 4.03088990 3.3868588 2.518119 5.5873718 7.377498
## 5  4.923843 4.708518 1.65490310 4.5647394 3.309298 4.4503693 7.517408
## 6  4.756719 5.932854 0.07079654 5.6671523 4.827293 -3.8841215 6.298652
##      Pfdn1      Pfdn2      Pfdn4      Pfdn5      Pfkfb1      Pfkfb2      Pfkfb3
## 1  5.312992 5.163764 3.739608 5.533388 -1.8652729 5.7779471 5.3630390
## 2  6.422262 4.439761 4.705608 7.269205 0.5247593 4.7613163 6.0416742
## 3  8.387994 5.736860 7.557866 9.829087 -3.8841215 0.6984974 1.9838395
## 4  7.365545 5.747658 6.287343 8.411522 -0.5062712 5.0821506 4.6284921
## 5  8.746749 6.642002 7.639339 9.662174 -3.8841215 4.5601506 5.1421976
## 6  4.797688 4.261010 3.034135 4.371933 0.5055538 7.4137979 8.7157305
##      Pfkfb4      Pfk1      Pfk2      Pfk3      Pfk4      Pfn1      Pfn2      Pfn4
## 1  3.45042175 6.367030 6.828878 6.050131 7.617789 8.281654 2.312381
## 2  1.19554363 7.580595 6.401105 7.065254 9.191517 3.920982 -2.079547
## 3  0.05610664 7.405756 7.732851 1.263249 6.535894 7.281479 -1.931739
## 4  3.82908429 6.582018 7.322582 5.189572 5.154836 7.514169 2.274877
## 5  -0.28760302 6.525611 5.361120 4.905872 6.993820 7.337380 3.916326
## 6  5.90832820 6.087812 8.418487 5.647149 6.364366 6.954942 2.917388

```

##	Pgam1	Pgam2	Pgam5	Pgap1	Pgap2	Pgap3	Pgbd1
## 1	5.036088	2.12721332	5.0690515	6.217437	3.966150	3.025653	0.8172769
## 2	4.136780	0.02884057	5.2457368	4.162498	3.656611	3.279987	-1.5802861
## 3	4.511649	6.01354758	0.5144282	1.263249	6.081382	3.006755	-3.8841215
## 4	2.673702	0.50000722	4.3848243	6.187328	5.340620	2.312866	3.4113217
## 5	2.803609	-3.88412153	3.6138373	5.169568	5.696230	-1.440886	-2.8071174
## 6	4.003341	1.96403006	4.7928689	5.716416	3.198115	2.536476	2.4822039
##	Pgbd5	Pgc	Pgd	Pgf	Pggt1b	Pgk1	Pgls
## 1	3.31878988	-3.370365	6.508012	-1.062258	3.8093465	4.582606	5.334416
## 2	0.81896358	-3.884122	6.587600	3.403718	5.5429175	4.314228	6.168928
## 3	4.32836738	-3.884122	5.987264	-1.131317	-0.2425151	6.263976	1.668074
## 4	6.03779496	-2.251603	6.098586	1.537996	4.6905432	4.048635	2.726812
## 5	6.39385089	-3.884122	6.510230	4.455320	-1.1730114	4.536986	4.098249
## 6	0.01626291	-3.884122	6.266388	1.277765	4.9938231	3.790003	4.443967
##	Pglyrp1	Pglyrp2	Pgm1	Pgm2	Pgm2l1	Pgm3	Pgm5
## 1	-1.4825602	-3.794983	4.3042812	5.732224	3.544037	4.4335757	1.3894346
## 2	9.2305870	-3.656504	7.4633051	5.338308	4.641162	3.0986788	7.5132398
## 3	8.0875344	-3.884122	0.8617169	7.452936	6.839972	-1.9317392	-1.9317392
## 4	4.0138374	-1.959346	4.5120570	6.748203	4.970059	5.0464220	1.6827403
## 5	6.0618632	-3.884122	4.9486317	7.272942	1.015582	0.6514968	3.0061180
## 6	1.8352325	-3.884122	4.3473798	6.537533	3.461453	4.4411213	0.7147187
##	Pgp	Pgpep1	Pgr	Pgrmc1	Pgrmc2	Pgs1	Phactr1
## 1	6.182825	5.530491	-0.05282218	6.722033	6.276039	5.3660034	6.638136
## 2	5.203814	4.598343	-2.72104427	7.770595	5.408591	5.2066084	3.662813
## 3	-1.131317	2.739167	3.91029476	8.835040	7.226362	0.5144282	7.685956
## 4	2.815679	7.019698	-1.90070648	7.438765	4.647775	3.1204485	7.645755
## 5	3.331009	7.267323	-2.80711744	7.029944	5.282517	2.1943824	6.106606
## 6	4.596900	4.566191	1.02236085	5.629727	5.472974	4.8817008	4.920774
##	Phactr2	Phactr3	Phactr4	Phax	Phb	Phb2	Phc1
## 1	3.822764	7.8370388	4.9599091	5.293654	3.907870	6.637278	7.0083675
## 2	6.702963	0.3400815	6.8731843	5.377152	4.088807	7.400006	6.1881391
## 3	5.006360	1.0083330	0.8617169	2.410380	4.035284	2.820816	0.8617169
## 4	3.710455	5.6646741	5.4873571	7.139817	5.970630	4.016404	6.0209516
## 5	3.287255	5.8488809	4.3844122	7.558824	6.717093	5.733388	5.1544264
## 6	4.970113	6.7758638	5.5383626	4.929166	2.950853	5.979973	6.6147437
##	Phc2	Phc3	Phex	Phf1	Phf10	Phf12	
## 1	7.191488	6.5476103	-2.2266883	4.074954	5.4310889	5.99903285	
## 2	8.106892	5.7768384	-3.2177929	4.967285	5.9741386	5.91891504	
## 3	5.353632	-0.2425151	-3.8841215	-1.931739	-0.2425151	0.05610664	
## 4	4.894102	4.7069510	-3.2878217	1.000145	2.1398606	4.82976627	
## 5	4.969546	5.5557751	-3.8841215	-0.287603	-1.1730114	4.37399182	
## 6	6.336270	7.1156712	-0.2376998	4.989800	5.0490713	6.37079082	
##	Phf13	Phf14	Phf19	Phf2	Phf20	Phf20l1	Phf21a
## 1	4.2052650	5.766582	2.8461083	6.306304	5.567749	6.0351721	5.914527
## 2	5.0507161	6.776537	2.3160812	6.017602	5.770819	7.6346918	5.375171
## 3	0.5144282	7.066084	-3.8841215	1.263249	2.182248	0.3033916	1.141414
## 4	2.6349206	5.240506	2.7045481	3.273175	6.940371	5.3179741	5.535515
## 5	2.5120345	5.382071	-1.1730114	3.454832	5.513677	4.6009329	3.253546
## 6	4.8928109	6.182751	4.2032455	6.442099	5.974370	7.0025821	6.732864
##	Phf21b	Phf23	Phf3	Phf5a	Phf6	Phf7	Phf8
## 1	4.5625912	5.205889	6.194796	4.802956	5.731222	2.53223224	5.407524
## 2	3.0591625	6.830378	6.869627	5.322799	5.398727	4.55344648	5.262181
## 3	-1.1313170	1.008333	1.983840	7.105310	7.563807	0.05610664	1.375592
## 4	3.4944313	4.726156	5.690333	6.692157	6.793597	1.47610986	4.972216

```

## 5 5.5136770 5.511302 2.690590 7.224465 6.048820 3.60495371 5.007118
## 6 6.6879166 5.742363 6.790764 4.292059 5.134597 2.31370048 5.515447
##      Phgdh      Phip      Phka1      Phka2      Phkb      Phkg1      Phkg2
## 1 5.810040 5.610287 6.06480533 4.4771835 5.128696 1.4452896 4.5266702
## 2 2.126976 6.739041 4.39158365 3.9476208 5.260132 -0.0807727 4.0672783
## 3 7.768014 2.410380 0.05610664 -0.6195262 1.753727 6.8642460 0.3033916
## 4 7.550406 6.539540 4.62106040 3.8458805 5.949687 4.7926347 5.0423367
## 5 7.460064 5.797173 4.73318676 -0.1609828 4.854328 4.9591265 -0.9471720
## 6 6.861710 7.315654 7.58983430 5.5771658 7.227549 6.7761466 4.6465028
##      Phlda1      Phlda2      Phlda3      Phldb1      Phldb2      Phldb3      Phlpp1
## 1 6.5531026 -3.111064 5.5409090 9.969555 3.5075222 -0.1716393 7.773679
## 2 7.0043373 -1.639469 1.7262195 6.500856 6.8041864 -2.7285573 5.654822
## 3 0.8617169 -3.884122 -0.6195262 5.115550 4.9070418 0.6984974 7.107346
## 4 3.1055240 -3.653944 0.7654598 4.676880 4.4096097 -1.8586020 6.329775
## 5 4.3687533 -3.884122 1.3060516 6.010652 2.4929006 -0.4264149 6.053725
## 6 4.7398328 -3.451139 1.7178050 5.160397 4.7079669 -2.1942889 8.034586
##      Phlpp2      Phospho1      Phospho2      Phpt1      Phrf1      Phtf1      Phtf2
## 1 5.7154645 0.4684655 3.458713 5.737520 6.030014 4.162082 3.881599
## 2 4.0557357 0.4335192 3.598607 5.912007 6.181891 4.792788 3.667773
## 3 -3.8841215 -3.8841215 7.389122 8.068856 1.141414 1.479815 -1.131317
## 4 3.8065691 -3.6749365 3.933062 7.576061 5.273100 3.296967 4.791118
## 5 -0.4264149 -3.8841215 2.549557 8.457630 4.315294 5.601154 1.688930
## 6 5.8618575 -2.0659542 4.155133 5.204943 6.444226 5.036117 4.591331
##      Phyh      Phyhd1      Phyhip      Phyhip1      Pi15      Pi16      Pi4k2a
## 1 5.039554 3.303041 2.8554373 7.453255 -3.626559 -3.3359375 5.718819
## 2 3.727630 1.849485 0.2448054 1.203227 -2.807082 0.5400385 4.926754
## 3 6.009200 7.868634 4.2271840 7.097140 -1.931739 -3.8841215 4.181549
## 4 7.132357 3.929500 3.8347591 4.824647 -2.438104 -2.6857920 4.723683
## 5 6.512607 4.555547 3.2872548 5.418018 -2.807117 -3.8841215 4.059758
## 6 4.657309 3.433003 1.0677404 8.576583 -3.171313 -2.7863740 6.235991
##      Pi4k2b      Pi4ka      Pi4kb      Pias1      Pias2      Pias3      Pias4
## 1 1.9912341 7.253318 5.904618 5.099514 6.1783751 4.912550 4.4268467
## 2 3.6684939 6.404172 6.365219 5.168105 6.7455697 4.826051 4.0255077
## 3 0.8617169 2.053052 6.321212 7.341501 0.6984974 4.499303 -1.9317392
## 4 2.6778792 5.823381 3.965193 7.930472 5.4561955 5.359030 2.2675103
## 5 3.9795505 5.438164 5.202331 6.177228 5.7536254 2.146209 -1.7701038
## 6 4.2112753 7.149804 6.216443 5.777724 6.3699098 5.899373 4.1598917
##      Pibf1      Picalm      Pick1      Pid1      Pif1      Piga
## 1 3.23676005 8.240186 5.2698753 6.334495 1.01756073 4.11674610
## 2 4.58169891 9.361094 3.4885520 2.798962 -0.04682626 3.91010097
## 3 0.05610664 6.663099 0.6984974 1.263249 -1.93173924 0.05610664
## 4 5.35921789 6.563844 2.8247442 2.213046 2.03810968 4.30287871
## 5 3.37347502 6.896161 1.8479734 3.757045 -2.80711744 -0.75194706
## 6 3.84864628 7.494379 5.6201318 5.285785 2.10757934 4.95184539
##      Pigb      Pigc      Pigf      Pigg      Pigh      Pigk      Pigl
## 1 3.447530 4.358014 3.921389 4.193800 3.422798 4.979081 2.646826
## 2 1.337446 4.912131 2.799716 4.030543 2.716289 6.132080 2.821828
## 3 5.353632 3.041231 6.899908 5.311882 6.574658 8.104955 -1.931739
## 4 3.593981 5.266736 5.271205 2.776903 4.471032 5.610322 2.766494
## 5 -1.770104 5.225700 6.271470 3.923490 5.339861 5.990329 3.531845
## 6 3.780204 4.758922 2.832580 4.809388 3.183220 5.138246 3.843632
##      Pigm      Pign      Pigo      Pigp      Pigq      Pigs      Pigt
## 1 4.840945 5.5804444 5.2731037 4.238600 7.176338 6.946491 7.543460
## 2 4.746865 5.2331349 4.5587166 4.776917 6.335450 5.207271 5.868441

```

```

## 3 2.356639 -0.2425151 0.5144282 7.360397 5.699572 6.245614 4.629632
## 4 4.795080 3.5607867 4.2106137 5.690048 6.008911 7.223207 4.361864
## 5 5.400157 2.8036091 -0.9471720 6.576485 6.868591 5.806889 5.988623
## 6 6.538365 5.9750147 5.9698038 4.244713 6.607612 7.911524 7.452492
##      Pigu      Pigv      Pigw      Pigx      Pigyl      Pigz      Pih1d1
## 1 5.525815 3.37293794 1.288803 4.109726 4.673969 3.072921 4.009372
## 2 4.860177 2.58358138 2.224054 5.085713 3.577440 -2.561454 5.161203
## 3 4.790278 0.05610664 -1.931739 6.093753 7.857795 4.769864 7.934311
## 4 6.436007 3.64776123 1.024590 3.785940 6.007766 4.508399 5.549088
## 5 6.783556 4.24841396 1.015582 5.082651 7.856993 6.456921 6.813747
## 6 5.174847 4.06315852 1.552453 4.219718 3.609291 -0.518089 3.754213
##      Pih1d2      Pik3ap1      Pik3c2a      Pik3c2b      Pik3c2g      Pik3c3      Pik3ca
## 1 -0.4775237 1.2048250 5.897571 5.079656 -3.7566452 5.277331 5.552657
## 2 0.5746040 -0.7635805 7.825621 3.520713 -3.6519623 5.494143 6.494644
## 3 -3.8841215 -0.2425151 1.375592 1.668074 -3.8841215 1.008333 2.182248
## 4 2.4369606 0.6745590 5.313005 4.151099 -2.4417173 6.338254 6.297257
## 5 2.9788711 -1.4408855 2.567959 4.484674 -2.1973739 5.537216 6.742630
## 6 1.1287825 -2.8485783 6.936713 2.941056 -3.5122488 4.641593 6.397092
##      Pik3cb      Pik3cd      Pik3cg      Pik3ip1      Pik3r1      Pik3r2      Pik3r3
## 1 4.81895562 2.18706508 0.2097673 5.467132 7.380911 7.645050 7.349380
## 2 5.46446444 3.28204208 5.5730011 6.098451 5.723808 3.921833 7.367325
## 3 0.05610664 4.13442232 1.2632490 1.008333 2.512206 2.300819 1.911138
## 4 0.97506127 2.08913724 2.1395207 4.853729 6.186027 4.384806 6.436013
## 5 1.11904070 3.47447377 0.4279671 4.955637 4.781294 5.706648 5.871280
## 6 4.88097669 0.01845044 -0.1787066 6.152174 6.787800 6.477190 6.782985
##      Pik3r4      Pik3r5      Pik3r6      Pikfyve      Pilra      Pilrb1
## 1 5.389654 0.3448932 -1.6721320 5.454191 -1.6989882 -3.6778614
## 2 5.042036 0.4069770 6.9266020 5.592663 -1.8207316 -3.8841215
## 3 5.131638 -3.8841215 -0.2425151 1.983840 -0.6195262 -3.8841215
## 4 4.601757 -3.4989245 0.1739800 5.236612 -0.1169107 -2.8182625
## 5 4.384412 -2.1973739 -1.4408855 4.757441 -3.8841215 -2.8071174
## 6 5.808122 -2.0273800 -1.5099303 6.468737 -3.6607788 -3.8841215
##      Pilrb2      Pim1      Pim2      Pim3      Pin1      Pin4      Pink1
## 1 -3.1954037 2.68963540 3.654436 7.233651 5.367604 -1.7339984 7.370279
## 2 -3.2515854 7.05888841 2.731433 8.762747 5.598900 -3.1080374 7.189557
## 3 -3.8841215 0.51442825 6.741196 2.935229 7.890072 1.2632490 5.539963
## 4 -1.5409315 1.64687335 3.395525 3.522425 6.975553 -0.3291299 5.046852
## 5 -3.8841215 -0.04458439 3.7490033 3.812116 7.728436 -2.8071174 6.007284
## 6 -3.8841215 5.83816799 4.288680 6.388091 4.483812 -0.8793360 6.397663
##      Pinx1      Pip4k2a      Pip4k2b      Pip4k2c      Pip5k1a      Pip5k1b      Pip5k1c
## 1 2.771430 6.4262525 6.27022927 6.208733 5.2542183 3.6582355 6.9851597
## 2 3.606350 4.7580352 5.20253749 5.258765 7.1552945 6.1469449 7.4669901
## 3 -3.884122 0.6984974 0.05610664 6.064720 2.8599701 5.9514577 0.8617169
## 4 4.397247 5.3225788 3.01246063 4.141274 4.6551586 1.5067238 4.9108983
## 5 3.986407 5.3690126 4.21960533 4.631874 -0.4264149 0.5807664 3.0591149
## 6 3.499518 5.7468685 5.77805169 5.682115 5.2879285 1.0204406 6.6083024
##      Pip5k1l      Pipox      Pir      Pirt      Pitpna      Pitpnb      Pitpnc1
## 1 -0.3168249 -1.7450795 0.7300094 -2.754349 7.149202 6.031864 5.124281
## 2 -3.2489909 -2.8174159 4.7076320 -3.884122 8.808775 6.802527 6.257588
## 3 -3.8841215 -1.9317392 6.4162166 -3.884122 7.711603 6.230754 7.288672
## 4 -1.4389654 3.6131964 5.2199764 -3.884122 5.361252 7.065129 8.837390
## 5 -3.8841215 3.0591149 6.0987177 -3.884122 4.522906 7.682729 8.237492
## 6 -3.1565438 4.1704224 1.6327004 -1.856981 6.217057 5.672776 7.575574
##      Pitpnm1      Pitpnm2      Pitpnm3      Pitrm1      Pitx3      Piwil1      Piwil2

```

```

## 1  5.6620808 5.086911 2.5380674 5.776907 -2.056778 -3.756645 -2.0940111
## 2  1.9791633 5.620117 -0.8367858 5.974336 -3.656504 -3.884122 -3.4243451
## 3  -0.6195262 6.812790 -0.6195262 3.731831 -3.884122 -3.884122 -1.9317392
## 4  2.3569932 3.880717 0.2051748 6.518577 -3.884122 -3.884122 -3.2991483
## 5  2.4137218 2.621796 -2.8071174 4.662166 -3.884122 -3.884122 -3.8841215
## 6  5.4934557 7.050525 3.1222050 6.353649 -3.884122 -3.660779 -0.8088352
##      Piwil4      Pja1      Pja2      Pkd1      Pkd1l3      Pkd2      Pkd2l1
## 1  -3.3171931 6.696190 7.251002 7.131599 1.6394732 5.575083 -1.185764
## 2  -0.1021518 6.361178 7.426641 6.805218 1.8620639 5.534013 -3.884122
## 3  4.6067949 8.131199 7.019291 2.300819 -3.8841215 2.119096 -3.884122
## 4  -0.1786630 7.791335 7.675266 4.664374 -1.1690567 4.394858 -2.414144
## 5  -3.8841215 7.487511 6.434532 4.962608 -3.8841215 3.559696 -3.884122
## 6  -3.8841215 5.938514 7.066237 8.006378 2.2861835 6.113512 -2.848578
##      Pkd2l2      Pkdcc      Pkdrej      Pkhd1l1      Pkia      Pkib
## 1  1.9513675 3.71316651 0.4905278 -1.900633 7.310795 -1.2129798
## 2  1.9061210 2.13702818 -2.4770451 -3.884122 5.552665 -3.8841215
## 3  -1.9317392 0.05610664 -3.8841215 -3.884122 7.643108 0.5144282
## 4  1.9850099 -0.13721130 -2.1204672 -2.980889 7.600078 2.2303614
## 5  2.8036091 1.96367954 -3.8841215 -3.884122 7.078082 -2.8071174
## 6  3.4843506 3.42255077 2.1084839 -1.374171 5.646409 -0.5025568
##      Pkig      Pklr      Pkmyt1      Pkn1      Pkn2      Pkn3      Pknx1
## 1  4.034588 -2.0506408 3.0102718 6.3550058 5.397919 -1.8163936 4.226567
## 2  6.046679 -3.8841215 2.4545442 7.1827548 7.310816 4.9337413 4.511898
## 3  7.355268 -3.8841215 -1.9317392 -0.6195262 2.607316 -1.9317392 1.668074
## 4  5.820459 -1.4396393 0.2078238 3.0209468 4.867899 0.7839621 4.689219
## 5  6.177228 -3.8841215 1.0155818 1.6200547 1.991212 -2.1973739 4.399903
## 6  3.447780 -2.5470980 2.7031921 5.8276043 6.283260 1.7511480 4.011347
##      Pknx2      Pkp1      Pkp2      Pkp3      Pkp4      Pla1a Pla2g12a
## 1  5.290224 -3.790167 -1.66124536 -3.386313 7.096181 -2.6714187 4.530954
## 2  2.887552 -3.884122 0.54148263 -2.099921 8.031851 3.0050218 5.090587
## 3  3.427465 5.638957 -1.93173924 4.396529 4.342260 -0.6195262 4.820366
## 4  4.260557 2.014797 1.67529832 1.668802 4.909505 2.5804686 2.007453
## 5  2.217879 3.559696 3.07206548 4.166254 1.431944 -2.8071174 4.326146
## 6  3.959877 -3.884122 1.98220607 -3.884122 5.233259 -2.8744502 4.033830
##      Pla2g15 Pla2g16 Pla2g2c Pla2g2d Pla2g2f Pla2g3
## 1  4.2972675 4.18600236 -2.501342 -2.73055980 -3.6730449 1.4904991
## 2  3.4367739 4.67199068 -1.753900 -2.57685923 2.5564599 -1.2019022
## 3  2.2427509 7.22073289 -3.884122 1.37559158 3.5522389 -0.6195262
## 4  4.2583116 6.94270708 -2.693203 2.84685767 0.4444824 1.0621509
## 5  0.5807664 8.05262166 -3.884122 0.34503644 1.4715792 4.2484140
## 6  4.1020911 4.17825993 -3.512249 -3.66077880 -3.8841215 7.7473011
##      Pla2g4a Pla2g4b Pla2g4c Pla2g4d Pla2g4e Pla2g4f
## 1  4.551235 3.326534 -0.9542848 -3.330223 1.5404347 -2.9116273
## 2  3.496499 2.722915 -2.5614538 -3.884122 -1.2839737 -3.2489909
## 3  5.440147 -1.931739 -3.8841215 -3.884122 -1.1313170 1.1414140
## 4  2.184317 2.574773 -0.7779536 -2.048299 1.1107239 -1.4757139
## 5  3.923490 -0.947172 -3.8841215 -3.884122 -2.1973739 -0.2876030
## 6  0.388737 4.112081 -0.9214488 -3.490484 -2.1740556 -3.3798866
##      Pla2g5 Pla2g6 Pla2g7 Pla2r1 Plaa Plac8
## 1  -2.40124282 5.519240 4.596367 -1.211161 5.084264 -2.4666549
## 2  -2.21778244 5.617761 3.958593 1.596365 6.290642 -0.5167036
## 3  -0.61952623 6.941571 11.468732 -3.884122 7.533855 7.7550904
## 4  -0.11086185 5.356677 10.589809 -0.781068 4.668488 -3.2185159
## 5  -2.80711744 4.789158 10.321936 -1.173011 6.025708 -2.1973739

```

```

## 6 0.06405793 5.247531 8.711588 -1.509930 5.803139 -3.6744822
##      Plag1      Plag11      Plag12      Plat      Plau      Plaur
## 1 -1.77486934 2.1236669 4.0514858 7.582503 3.8907339 0.99737959
## 2 2.13803037 4.1295494 3.3462899 9.545961 1.6823671 7.29083883
## 3 -1.93173924 0.3033916 2.7805686 8.322925 2.8980900 -3.88412153
## 4 -0.09975064 3.6519040 3.8435050 6.220334 2.3136709 0.90809689
## 5 -3.88412153 5.1205444 3.1227355 7.437099 -0.7519471 2.69059010
## 6 -0.61847485 6.7376345 4.1944664 8.896710 1.2422549 0.52373104
##      Plb1      Plbd1      Plbd2      Plcb1      Plcb2      Plcb3
## 1 -2.57439625 -0.8019641 5.601464 6.01342285 0.69914594 5.8700781
## 2 -1.24263879 -2.4090094 6.318223 5.60301024 -0.08545888 7.0532455
## 3 -0.61952623 1.0083330 6.110085 0.86171687 -3.88412153 0.6984974
## 4 0.47243158 -0.5744677 4.483500 5.31631352 -2.52950502 2.6214412
## 5 -2.80711744 -1.7701038 3.699788 5.20527282 -3.88412153 -0.4264149
## 6 -2.23091014 -1.1245953 6.474147 4.49472231 -2.36284849 7.0506272
##      Plcb4      Plcd1      Plcd3      Plcd4      Plce1      Plcg1
## 1 2.6154821 4.2020701 0.72224357 1.51602725 4.59239818 6.3303616
## 2 6.2005379 1.3554482 1.46694873 -0.06732316 3.83612242 7.9018810
## 3 -0.6195262 0.5144282 0.05610664 6.51764498 -1.93173924 0.5144282
## 4 3.3701224 6.0363538 0.67607348 6.02325150 3.19270507 4.7999719
## 5 -0.1609828 6.3075079 -2.19737395 4.05324132 3.51297329 3.4646862
## 6 5.7123383 5.4475226 1.84007409 7.06682971 6.51400875 7.6046976
##      Plcg2      Plch1      Plch2      Plcl1      Plcl2      Plcxd1
## 1 4.4991105 -0.19138180 3.81932731 5.257426 4.04827753 0.3575453
## 2 2.3020859 0.01940464 -1.95401704 5.994809 2.47904838 -0.6519716
## 3 3.0749023 -1.93173924 0.69849743 5.996079 6.21950732 -1.1313170
## 4 0.7339539 2.95421179 0.87456766 4.728412 2.14960718 0.1653770
## 5 -3.8841215 1.16811471 -1.77010377 6.002219 -0.04458439 -2.1973739
## 6 2.3463989 4.58108101 -0.11995412 4.090024 4.97675766 0.5079406
##      Plcxd2      Plcxd3      Plcz1      Pld1      Pld2      Pld3      Pld4
## 1 4.6888901 -2.0682849 -3.7669998 5.803656 5.967082 7.038445 3.4913838
## 2 1.2807061 -3.6519623 -3.8841215 4.087014 5.199443 6.797079 -1.0193291
## 3 0.6984974 -3.8841215 -3.8841215 1.479815 1.008333 6.185233 9.7776165
## 4 5.1416003 -0.7155497 -3.8841215 4.683949 4.726357 8.128771 5.1491543
## 5 5.9505594 -2.8071174 -3.8841215 5.922232 3.352398 7.587856 3.9864074
## 6 2.9806361 -3.1713129 -3.8841215 6.172341 8.485970 6.770867 -0.8538208
##      Pld5      Pld6      Plec      Plek      Plek2      Plekha1      Plekha2
## 1 -1.181133 0.7781031 4.734494 4.4819967 -3.122238 7.177672 5.7393376
## 2 -3.108037 -3.0277153 6.103054 1.4174795 -2.936956 7.509424 3.7273394
## 3 -3.884122 4.3143399 7.684594 6.7850861 -1.131317 2.462191 2.0530520
## 4 -3.444759 -0.5832609 5.167175 4.2044930 -1.395178 5.599389 4.3550595
## 5 -3.884122 -3.8841215 6.220037 0.0631199 -2.807117 5.516048 4.9935682
## 6 -1.791979 -0.3618664 5.964169 2.0985850 -3.512249 6.385178 0.2790326
##      Plekha3      Plekha4      Plekha5      Plekha6      Plekha7      Plekha8
## 1 4.303867 0.0218115 4.3949014 6.203662482 1.8015033 4.2353511
## 2 4.986767 0.3888700 4.3729212 -0.005054663 2.6318432 4.9637145
## 3 1.911138 -1.9317392 4.2568248 1.141413971 0.5144282 -1.1313170
## 4 4.478811 -0.5335785 2.9234283 3.310509407 2.0471721 4.3739151
## 5 5.060079 -3.8841215 3.4646862 -0.287603017 -0.9471720 4.3947578
## 6 4.670961 0.8875835 5.1502976 3.141228843 4.9146472 4.9079535
##      Plekha1      Plekha2      Plekha3      Plekha4      Plekha5      Plekha6      Plekha7      Plekha8
## 1 9.481684 6.935948 3.3798281 4.016755 4.7947194 3.84609484
## 2 1.404666 4.128323 0.3173657 6.182259 8.1178931 6.10699576
## 3 9.256916 6.895204 -0.6195262 5.575683 0.6984974 0.05610664

```

```

## 4 7.851333 7.244654 2.6681248 4.420014 4.1224320 3.64831380
## 5 7.889820 6.749700 -2.8071174 5.013845 1.6200547 2.87923839
## 6 5.312188 5.740797 3.3435973 6.235207 7.5084505 6.13666533
##      Plekhg3      Plekhg4      Plekhg5      Plekhg6      Plekhh1      Plekhh2
## 1 5.36945895 0.02063356 3.9003601 -2.129733 5.2763366 2.34507518
## 2 2.54248646 -1.86038612 8.1408851 -1.128763 5.0976234 5.22407906
## 3 0.05610664 -3.88412153 6.6124085 -1.931739 -3.8841215 -0.24251506
## 4 2.86226024 -3.88412153 2.3347641 -2.358351 3.1224816 1.46590842
## 5 3.07206548 -3.88412153 -0.7519471 -2.197374 4.6142748 -0.94717201
## 6 3.07278831 -0.77957100 4.5648688 -2.777676 2.6875033 3.75196929
##      Plekhh3      Plekhj1      Plekxm1      Plekxm2      Plekxm3      Plekhn1
## 1 4.47070964 4.801458 5.0752242 5.885295 4.91479581 3.95626740
## 2 4.52002519 3.557347 5.3859098 6.005704 3.96888161 1.37545477
## 3 0.05610664 6.586379 1.1414140 1.983840 0.05610664 0.05610664
## 4 0.76981125 4.966076 4.6548811 2.576732 3.77355216 0.89764336
## 5 1.87778149 6.177228 0.6514968 1.306052 -0.28760302 -1.17301144
## 6 5.17631747 4.295843 4.6568139 7.110568 3.12843160 3.97108602
##      Plekho1      Plekho2      Plg      Plin1      Plin2      Plin3      Plin4
## 1 5.0748187 3.925354 -3.037396 -1.993244 4.222117 3.512352 -1.8781861
## 2 3.4903607 5.927510 -3.656504 -3.884122 7.644676 5.911169 -3.4243451
## 3 -0.2425151 1.141414 -3.884122 -3.884122 1.911138 7.937746 -3.8841215
## 4 4.1683639 6.062245 -3.884122 -3.381881 6.212402 7.021747 -0.1160197
## 5 3.4744738 5.795222 -3.884122 -3.884122 6.087600 7.657174 -3.8841215
## 6 6.7067813 6.261969 -2.874450 -3.512249 4.409236 4.773866 -0.5796342
##      Plin5      Plk1      Plk2      Plk3      Plk4      Plk5
## 1 -2.35648828 2.30894633 5.637883 5.2870662 2.3337826 2.76630465
## 2 -2.93527762 2.86388168 11.104190 6.6987277 3.7116198 -3.88412153
## 3 -3.88412153 2.18224770 7.440074 -0.2425151 -0.2425151 -3.88412153
## 4 -2.32622229 5.29301400 5.852759 2.2632046 2.9613336 -0.07121048
## 5 -3.88412153 4.42535676 5.831850 4.3476069 -1.1730114 -2.80711744
## 6 -1.56437475 2.65585185 7.564205 4.9688816 3.3422536 -3.67448218
##      Pllp      Pln      Plod1      Plod2      Plod3      Plp1
## 1 9.7398307 -1.71490247 7.254069 5.5038474 6.727743 10.81257327
## 2 6.4374483 -1.34802986 9.388868 5.1699451 6.944583 -0.08840948
## 3 8.6116593 8.23908912 5.497141 -3.8841215 1.375592 12.59438486
## 4 6.6561817 1.96643205 7.286788 2.9449217 4.722315 12.59561988
## 5 9.0497805 -1.44088555 7.054622 4.6142748 5.443157 13.02378936
## 6 0.1454136 1.62340706 7.186903 7.0017336 6.520000 3.59109175
##      Plp2      Plrg1      Pls1      Pls3      Plscr1      Plscr2      Plscr3
## 1 -0.88218771 5.389052 3.878531 5.454402 1.2494910 -1.6783758 4.209268
## 2 3.20771814 5.642096 -1.946903 9.370509 1.4848368 0.4501715 5.946192
## 3 0.05610664 6.973163 7.520170 7.949139 5.9240073 7.4908478 1.479815
## 4 3.63059853 6.804721 5.427420 6.900262 4.0451302 2.1154435 5.441808
## 5 3.92348954 7.400989 6.202476 6.000526 5.2198928 -2.8071174 3.850204
## 6 0.24487334 5.072942 5.959008 6.145972 4.3536787 0.7215469 4.891012
##      Plscr4      Pltp      Plvap      Plxdc1      Plxdc2      Plxna1      Plxna2
## 1 1.6633098 2.184742 -0.57045913 -0.2280340 5.098344 6.125899 4.569708
## 2 -0.6473130 11.114552 3.92082946 4.1411687 4.142997 5.247548 7.443141
## 3 -0.6195262 9.457712 0.05610664 -1.1313170 1.479815 2.560544 2.410380
## 4 4.4510699 7.107543 0.94415850 1.1757290 4.048506 3.839357 7.410569
## 5 -2.1973739 6.845207 -2.80711744 3.8873120 2.707288 1.935611 6.261611
## 6 3.2242085 4.635962 -1.13272089 -0.8011591 5.274036 6.869802 6.141775
##      Plxna3      Plxna4      Plxnb1      Plxnb2      Plxnb3      Plxnc1      Plxnd1
## 1 7.2720264 4.031232 7.869468 7.141027 8.93275158 4.5895528 4.458927

```

```

## 2 0.6624768 5.267269 5.823872 5.513929 -1.52001524 1.1423898 9.613438
## 3 2.6965413 1.263249 3.290869 6.733311 7.38409428 0.3033916 4.314340
## 4 5.7297780 4.644360 6.536310 6.588295 3.19028966 5.1769704 1.643019
## 5 5.5831731 4.513442 6.451976 6.582154 5.17257754 5.2572257 1.431944
## 6 7.0614890 5.083035 10.132187 7.716365 0.08955091 6.0245025 4.205141
##      Pm20d1      Pm20d2      Pmaip1      Pmch      Pmel      Pmepa1
## 1 0.1381637 3.6103872 0.03641353 -3.087653 4.6652070 5.586347
## 2 -2.1074481 -1.2147490 7.88093184 -3.884122 1.0345749 6.970134
## 3 6.6491960 0.8617169 -1.93173924 -3.884122 1.5770128 4.663224
## 4 1.7567787 2.4900924 0.04350062 -2.161402 -0.3828037 5.199935
## 5 -1.7701038 -3.8841215 -2.19737395 -3.884122 -1.1730114 5.978341
## 6 4.1561708 3.9013689 2.23100552 -3.118612 1.1812453 4.912962
##      Pmf1      Pmfbp1      Pml      Pmm1      Pmm2      Pmp22      Pmpca
## 1 3.278077 -3.166173 3.7624593 5.550464 4.8736826 5.337821 6.112404
## 2 4.460123 -3.039241 4.6064256 3.203975 5.2756357 6.838915 5.734600
## 3 6.511510 -3.884122 0.6984974 9.073367 0.6984974 8.885129 6.285706
## 4 5.802656 -3.884122 4.7938666 7.114626 6.0705235 6.629269 5.690788
## 5 6.920532 -3.884122 2.1943824 7.976317 6.7314496 6.704673 5.418018
## 6 2.710282 -2.986249 3.9010779 7.210271 4.9791048 6.742768 6.263212
##      Pmpcb      Pms1      Pms2      Pmvk      Pnck      Pnkd      Pnkp
## 1 5.677651 2.9925237 3.5156583 5.913244 4.547460 6.484359 4.988086
## 2 6.434761 2.2131767 4.2511711 4.690809 1.002831 6.146408 5.839356
## 3 7.809858 0.3033916 -0.2425151 7.934311 6.995313 6.118182 2.512206
## 4 7.135464 4.1954631 5.2870545 6.917347 5.720942 5.937584 4.554850
## 5 7.965514 -0.4264149 3.5779700 7.278540 5.904241 6.597910 5.783459
## 6 5.585918 3.3583745 3.6979873 6.575034 1.304108 6.120054 4.734974
##      Pnlcdc1      Pnlip      Pnliprp1      Pnliprp2      Pnma1      Pnma2
## 1 -1.94741727 4.42350139 -3.884122 -3.884122 0.82368443 2.2989172
## 2 -2.58497278 -3.65196234 -3.108037 -3.884122 -0.08477526 -0.7672695
## 3 -3.88412153 -3.88412153 -3.884122 -3.884122 -3.88412153 -0.6195262
## 4 -0.01205595 -3.67493655 -3.884122 1.079372 -0.78180959 4.1566207
## 5 -3.88412153 -3.88412153 -3.884122 3.424858 -1.77010377 -1.7701038
## 6 0.17447613 -3.45113945 -3.884122 -3.884122 -0.16495709 -1.6726522
##      Pnma3      Pnma5      Pnma11      Pnma12      Pnmt      Pnn      Pno1
## 1 3.4936126 -3.528270 4.349777 7.115541 -3.790167 6.439233 4.6144328
## 2 -1.7591046 -3.651962 -0.818777 1.662654 -3.884122 6.350038 4.2242960
## 3 -1.1313170 -3.884122 4.212132 2.119096 -3.884122 2.300819 1.9111385
## 4 1.8964313 -2.671669 4.238452 4.830250 -3.884122 6.735501 4.6527362
## 5 -2.8071174 -3.884122 3.930617 5.023878 -3.884122 3.930617 5.7656329
## 6 2.5517838 -2.848578 2.535538 4.236461 -3.884122 7.937954 4.0817473
##      Pnoc      Pnp      Pnp2      Pnpla1      Pnpla2      Pnpla3
## 1 -2.0939447 3.858401 -1.52078764 -3.4255043 4.645923 3.84434023
## 2 -2.0325413 7.058530 -0.93046143 -3.6519623 7.064951 0.02715752
## 3 -3.8841215 6.911602 0.30339162 -0.2425151 6.154067 -0.61952623
## 4 -1.7689700 5.151221 0.14950013 -2.3429159 6.184033 0.77401611
## 5 -3.8841215 5.733388 -2.80711744 -0.9471720 4.691834 -2.19737395
## 6 -2.0273800 5.888705 0.89268349 -3.3798866 5.107039 5.79869570
##      Pnpla6      Pnpla7      Pnpla8      Pnpo      Pnpt1      Pnrc1      Pnrc2
## 1 5.834634 4.086815 5.79856684 3.0472587 4.8063593 5.329213 6.356986
## 2 7.651431 3.699098 6.72981491 3.7778345 5.3462781 8.310938 8.218487
## 3 7.131547 5.581551 0.05610664 8.4243657 0.3033916 5.023706 8.443020
## 4 5.635037 6.352553 5.16500937 4.5190056 3.7591891 5.096418 7.648839
## 5 5.482490 4.309838 5.67940286 4.6834196 3.5504721 6.255948 7.985331
## 6 6.733065 5.404953 6.49470033 0.2790326 5.5492606 7.433752 6.839950

```


##	Poc1a	Poc1b	Poc5	Podn	Podn11	Podx1		
## 1	1.42460745	4.1737886	4.9369816	2.167111	-2.7726069	1.8389577		
## 2	2.54355210	4.3379788	4.1744468	-2.561454	-3.6565043	9.8474691		
## 3	-0.61952623	-0.6195262	0.3033916	-3.884122	-3.8841215	0.6984974		
## 4	3.33929859	4.0767751	5.2862002	-1.091056	-1.9014564	1.5111884		
## 5	-0.04458439	0.0631199	2.0447493	-3.884122	-3.8841215	2.4735096		
## 6	1.42024997	3.8043893	4.2398600	1.162214	-3.8841215	3.3159873		
##	Podx12	Pof1b	Pofut1	Pofut2	Pogk	Poglut1	Pogz	
## 1	6.6320273	-3.12693326	6.0870282	5.529342	6.800186	5.789798	6.119533	
## 2	4.6171620	-2.21345523	6.2594692	6.236319	4.764276	5.497260	5.653342	
## 3	-1.9317392	2.30081861	-1.1313170	4.717529	2.053052	6.857007	4.971031	
## 4	0.2962352	0.06679126	4.3314871	5.352903	5.901858	7.081881	5.924391	
## 5	1.0682384	1.81753643	4.4798230	5.366387	5.010485	6.547799	6.008969	
## 6	4.3531422	-2.26327041	5.8959784	5.733568	6.171834	5.284630	6.844907	
##	Pola1	Pola2	Polb	Pold1	Pold2	Pold3	Pold4	
## 1	2.489702	3.72484120	5.113573	4.1509080	5.158608	3.756162	3.8373738	
## 2	4.093092	4.78581073	5.687092	3.9206894	4.780747	5.352077	5.5802470	
## 3	-1.131317	0.05610664	6.559872	0.3033916	6.890484	1.263249	-0.2425151	
## 4	4.678254	4.48336487	6.654364	4.5335634	5.968047	5.826373	4.4510843	
## 5	3.965738	1.26152207	6.201003	4.1045651	6.092375	4.800875	5.8987996	
## 6	3.975806	4.11225270	4.982985	4.1409905	4.027995	4.708346	2.7020407	
##	Poldip2	Poldip3	Pole	Pole2	Pole3	Pole4	Polg	
## 1	6.3338150	6.427201	3.276219373	1.1524197	4.3072108	4.492666	6.990259	
## 2	5.8158177	6.117037	3.142064123	2.7032339	4.5919425	5.772985	6.323359	
## 3	0.3033916	8.805885	1.141413971	-1.9317392	0.5144282	7.501720	6.499162	
## 4	4.8472130	8.587698	3.742352454	3.7845051	5.4712448	5.955512	3.332164	
## 5	5.5301948	8.623509	3.298318320	2.9227833	5.4078387	7.197387	4.225413	
## 6	5.9882052	6.201582	4.770304667	1.9660926	3.3908167	4.715491	7.136496	
##	Polg2	Polh	Poli	Polk	Poll	Polm	Poln	
## 1	2.5878225	3.572177	2.933520	2.4909312	4.103116	3.760975	-2.1707736	
## 2	2.6809067	2.472765	1.634704	6.0161739	4.127604	1.484364	-0.5313286	
## 3	-1.9317392	-1.931739	-1.131317	-0.2425151	6.880998	-1.131317	-3.8841215	
## 4	3.2682325	3.136938	3.741932	4.0450370	5.852693	3.205460	0.2295783	
## 5	2.7072879	-0.287603	3.454832	1.1190407	4.905872	2.263755	-3.8841215	
## 6	3.7879447	3.812875	3.306607	3.4483708	3.392059	3.676891	0.7811882	
##	Polq	Polr1a	Polr1b	Polr1c	Polr1d	Polr1e	Polr2a	
## 1	1.8060361	5.146420	4.553604	5.367485	5.581289	3.086351	6.956100	
## 2	1.6788455	4.636598	3.265932	5.701444	6.281221	3.271968	7.128404	
## 3	-1.1313170	6.663099	1.008333	7.863827	7.727568	1.008333	5.186575	
## 4	2.3260017	5.188255	5.043573	6.968406	6.123225	4.373755	5.332935	
## 5	-1.7701038	3.812116	5.231483	7.340728	7.300027	4.555547	4.154126	
## 6	2.9041887	5.345494	4.335642	4.926355	4.012726	3.454948	6.750049	
##	Polr2b	Polr2c	Polr2d	Polr2e	Polr2f	Polr2g	Polr2h	Polr2i
## 1	6.183160	3.304876	5.803490	5.442971	5.101921	5.914835	3.813623	4.170246
## 2	6.400150	4.193927	5.645727	6.183163	4.768839	6.388229	4.164749	4.675187
## 3	7.629010	5.115550	6.230754	7.538387	6.177504	8.977595	6.106020	7.119497
## 4	7.222281	4.937861	7.496887	7.621637	7.201837	7.496261	5.368637	6.545516
## 5	6.109750	5.689943	8.377414	8.212123	8.177713	8.622959	7.221562	7.140121
## 6	5.607126	2.898139	4.307559	4.499974	3.794085	4.900371	4.265761	3.273210
##	Polr2j	Polr2k	Polr2l	Polr2m	Polr3a	Polr3b	Polr3c	
## 1	4.989206	0.6883016	2.579531	6.748315	5.0217645	4.8834512	4.391590	
## 2	5.460076	1.9203722	2.706886	7.566165	4.8243585	4.8699283	5.611255	
## 3	2.300819	3.5522389	1.834579	2.512206	0.8617169	0.5144282	6.234483	
## 4	6.807135	2.8182930	4.309520	5.373954	4.7742521	4.8656667	5.056651	

```

## 5 7.471717 2.6040729 5.384669 6.145416 -0.2876030 1.5843436 5.242981
## 6 3.699236 0.1963787 1.681260 6.312166 5.6220930 4.8585826 4.649739
##      Polr3d  Polr3e  Polr3f  Polr3g  Polr3gl  Polr3h  Polr3k
## 1 4.8065828 5.444013 4.6171649 1.7047009 3.8272973 6.725723 4.821894
## 2 4.1699441 4.494279 4.6261281 1.5226313 4.6887920 4.431061 4.357731
## 3 -0.2425151 5.886575 0.6984974 6.5145809 0.3033916 7.343229 8.518375
## 4 3.1496149 4.814871 5.3414829 2.3110690 4.2003995 6.135673 7.576292
## 5 2.5861290 6.261611 2.3299438 2.0182291 2.7562522 7.447696 7.701603
## 6 4.9369819 5.085104 5.3083238 3.4207849 3.4480104 7.572570 3.606960
##      Polrmt  Pom121  Pomc  Pomgnt1  Pomp  Pomt1  Pomt2
## 1 4.6540416 6.259729 0.2066894 6.695826 6.003298 5.426250 6.151535
## 2 4.2445144 4.791500 4.9499536 5.984112 8.279859 3.963945 5.012650
## 3 -0.6195262 3.853225 -0.6195262 -1.131317 8.995288 1.141414 5.163286
## 4 3.4019493 4.256883 2.2985054 3.863454 8.054656 4.661353 4.572367
## 5 4.6664416 2.372441 3.9091272 5.423081 8.874909 4.450369 6.073180
## 6 5.0632507 6.019659 1.4016537 5.929824 4.983085 5.985747 6.771047
##      Pon2  Pon3  Pop1  Pop4  Pop5  Pop7  Popdc2
## 1 4.987361 0.1774901 2.7815819 4.220964 4.7430612 3.303248 -2.719401
## 2 8.042089 3.8937567 2.7408276 4.202891 7.2986856 4.162500 -1.776096
## 3 8.655437 1.9838395 0.5144282 1.263249 0.3033916 7.113434 -3.884122
## 4 6.587601 2.8482003 3.2138321 6.254225 3.2517313 5.733736 -1.259817
## 5 5.793268 2.9650523 3.9163262 6.131564 5.3155635 5.957555 -3.884122
## 6 7.826516 2.4728773 3.4328952 4.110066 3.1150614 2.576212 -2.106804
##      Popdc3  Por  Porcn  Postn  Pot1a  Pot1b
## 1 -3.31047514 6.671768 6.147103 1.5729187 4.83650152 2.6949896
## 2 -3.65650428 7.219497 3.430706 3.6576967 5.10974273 2.9567226
## 3 -1.93173924 2.560544 5.515649 5.8578492 6.87861684 -1.9317392
## 4 -2.90759965 7.575395 5.820683 2.3587253 6.00038052 2.6053744
## 5 -2.19737395 7.551329 6.288215 1.3060516 4.78523173 1.8777815
## 6 -1.42479257 7.033501 5.566878 0.1166231 4.47765334 3.6304670
##      Pou2af1  Pou2f1  Pou2f2  Pou2f3  Pou3f1  Pou3f2
## 1 -3.2246602 4.9824694 1.3156463 -3.7901666 5.25148378 4.1069845
## 2 1.9343573 4.5887439 -2.9352776 -0.8233976 -0.12161245 -1.8456210
## 3 -3.8841215 -0.2425151 -1.9317392 2.9714350 0.86171687 2.1822477
## 4 -2.9877299 6.1235636 1.0052532 1.0352901 0.49185961 7.0376252
## 5 -3.8841215 1.0155818 -2.8071174 1.0682384 1.21557422 6.1832086
## 6 -3.5122488 6.8128254 -2.1942889 -3.2808450 -0.06700443 7.0474524
##      Pou3f3  Pou3f4  Pou4f1  Pou4f2  Pou4f3  Pou5f2
## 1 6.8786116 1.0420695 -0.8831790 -3.767000 -2.316506 -3.4242222
## 2 -0.5322509 -2.8202690 -1.2891799 -3.884122 -3.884122 -2.9352776
## 3 1.3755916 3.9288271 -1.9317392 -3.884122 -3.884122 -3.8841215
## 4 6.5180044 3.0697992 -1.7071706 -3.884122 -3.884122 -0.7197838
## 5 7.1215542 2.1462087 -3.8841215 -3.884122 -3.884122 -3.8841215
## 6 8.1820891 4.0114450 -3.8841215 -1.941891 -3.884122 -2.2349732
##      Pou6f1  Pou6f2  Ppa1  Ppa2  Ppan  Ppap2a  Ppap2b
## 1 6.4485972 -1.276861 5.032485 4.988656 4.722571 3.460824 7.916775
## 2 4.1362151 -3.483745 5.325170 3.986655 5.551177 5.380577 4.632005
## 3 1.6680739 -3.884122 7.169055 3.006755 6.245614 7.430352 10.087007
## 4 5.3923402 -1.863672 6.903228 4.210246 4.099829 2.444785 9.648787
## 5 4.1108541 -0.947172 8.163414 5.285300 2.329944 -2.197374 9.583665
## 6 6.6087192 -3.118612 4.558878 4.222871 5.278905 4.986671 11.013298
##      Ppap2c  Ppapdc1a  Ppapdc1b  Ppapdc2  Ppapdc3  Ppara
## 1 3.9416547 5.4378507 4.522292 3.7810863 3.4366087 2.68198170
## 2 0.5385688 -2.2549010 5.658482 7.0789484 1.6998895 1.43121714

```

```

## 3 -0.6195262 -3.8841215 5.115550 -0.2425151 0.3033916 -3.88412153
## 4 3.3229622 -0.3602711 4.870157 1.5940226 3.9596744 2.59864360
## 5 5.5672542 2.1462087 5.837549 0.7189210 5.4306425 3.69978792
## 6 -1.2131885 2.9997832 4.328493 2.6867499 2.7157357 4.87913345
##      Ppard      Pparg      Ppargc1a      Ppargc1b      Ppat      Ppbp
## 1 5.203763 -3.4957364 3.1949857 0.1503222 3.3353788 -2.3500372
## 2 7.408148 -1.2124512 -0.5405951 0.4037231 4.1182173 -0.1016480
## 3 1.141414 -3.8841215 -1.1313170 -1.1313170 6.7774372 -3.8841215
## 4 2.091743 -2.8465733 4.5158650 -0.4159503 4.7125710 -1.6973220
## 5 3.464686 -3.8841215 3.8274719 -3.8841215 -0.1609828 -3.8841215
## 6 4.540342 -1.9632495 6.5407868 0.6091708 3.7367274 -3.8841215
##      Ppcdc      Ppcs      Ppdpf      Ppef1      Ppef2      Ppfia1      Ppfia2
## 1 3.5270001 1.7491109 5.780287 -2.997928 -3.32581627 6.1451435 4.2546057
## 2 3.4714516 3.0621369 5.895046 2.447911 -3.11231018 6.5182664 2.3548598
## 3 0.8617169 6.4194966 6.081382 -3.884122 -3.88412153 0.6984974 0.5144282
## 4 5.3157965 1.9173417 6.160210 -3.076750 -0.34098625 4.0985917 4.4586528
## 5 4.1722804 4.6098412 6.960256 -3.884122 -3.88412153 3.1227355 -0.1609828
## 6 4.9422914 1.9777353 4.461460 -3.674482 0.41408119 7.0498902 0.9650367
##      Ppfia3      Ppfia4      Ppfibp1      Ppfibp2      Pphln1      Ppia      Ppib
## 1 5.6748467 3.1931371 7.995100 3.9199079 5.080904 0.7503814 7.127668
## 2 0.2756502 0.1506350 8.510786 1.3404044 5.518562 1.6133972 8.010683
## 3 0.6984974 0.5144282 5.107438 0.6984974 1.911138 2.0530520 9.075968
## 4 1.8901752 2.2756348 2.906754 4.4180252 5.780164 1.9949391 7.740123
## 5 2.7879955 -0.1609828 3.765042 1.0155818 5.178578 3.2306273 8.783383
## 6 3.6512676 1.5799146 3.383679 4.8982591 5.112310 0.5857199 6.132077
##      Ppic      Ppid      Ppie      Ppif      Ppig      Ppih      Ppil1
## 1 0.6661005 4.763052 4.538270 2.8455568 4.628193 1.3780185 4.385719
## 2 8.9956236 4.961969 5.556301 1.5680531 6.704861 1.8604038 4.217466
## 3 -0.6195262 6.623828 2.182248 4.2714200 2.607316 -1.9317392 6.505350
## 4 2.9914410 6.786929 6.727440 1.9991399 6.882849 2.4442926 6.715919
## 5 5.1815682 6.686893 7.402912 0.3450364 4.605394 0.9609302 7.042336
## 6 4.7017333 5.262409 3.771877 3.6799578 6.108796 2.2507096 3.818352
##      Ppil2      Ppil3      Ppil4      Ppil6      Ppip5k1      Ppip5k2      Ppl
## 1 6.044001 3.7131657 4.146496 -0.1883146 4.8816886 4.7081973 -3.3627000
## 2 6.260328 4.1032721 5.066735 0.9280863 4.1757161 5.7231707 -2.8952098
## 3 7.922800 0.8617169 1.668074 -1.9317392 -0.2425151 0.6984974 4.3696496
## 4 7.035581 5.6579234 6.543536 2.5073253 3.0960099 4.9990230 1.5316215
## 5 7.124665 6.6900465 4.741317 3.4938520 0.2570463 2.7072879 2.4339276
## 6 5.728951 3.5971896 5.222006 3.4387755 5.3629419 4.7959155 -2.9862494
##      Ppm1a      Ppm1b      Ppm1d      Ppm1e      Ppm1f      Ppm1g      Ppm1h
## 1 6.831845 5.624045 4.658405 5.2940640 6.083530 6.306912 4.217331
## 2 7.710657 5.319218 4.369818 1.4592211 8.411704 6.772794 6.060931
## 3 2.560544 1.263249 1.577013 0.3033916 2.300819 1.577013 8.128195
## 4 5.264419 4.343465 3.632959 3.9896465 5.364998 4.807710 5.280070
## 5 5.578643 5.366387 3.757045 3.3942483 5.532539 5.111164 5.936465
## 6 6.253670 6.093598 4.564352 5.3388893 5.240615 5.648591 3.310398
##      Ppm1j      Ppm1k      Ppm1l      Ppm1m      Ppm1n      Ppme1      Ppox
## 1 -1.8799271 4.748765 5.9481345 3.3241430 -3.1587910 6.329786 5.2190855
## 2 4.4302132 3.699497 4.6077692 5.7742869 -2.0335011 6.107643 4.2527110
## 3 -3.8841215 7.631841 0.5144282 -0.2425151 -3.8841215 5.099280 0.5144282
## 4 -3.8841215 6.741263 3.4596780 2.5275329 -3.8841215 5.853292 5.5035879
## 5 -3.8841215 4.670705 3.2073390 -1.7701038 -3.8841215 5.735425 5.5695391
## 6 -2.5244447 5.755315 3.6300930 5.2001905 -1.5059683 6.650379 6.0881195
##      Ppp1ca      Ppp1cb      Ppp1cc      Ppp1r10      Ppp1r11      Ppp1r12a      Ppp1r12b

```

```

## 1 7.920451 7.622762 3.6341000 5.100730 4.526697 5.862200 4.0822656
## 2 9.151418 8.481409 5.6391306 7.171302 5.804037 6.683067 2.0826994
## 3 8.816499 9.783674 -1.9317392 7.274251 8.152053 5.672335 -1.9317392
## 4 8.524330 8.576768 1.1300172 5.714542 7.155759 5.718810 1.3423801
## 5 9.474508 9.273695 0.4279671 5.443157 8.093684 3.757045 -3.8841215
## 6 6.262888 7.059408 4.5043186 5.680535 3.129073 8.095333 4.4053044
## Ppp1r12c Ppp1r13b Ppp1r13l Ppp1r14a Ppp1r14b Ppp1r14c Ppp1r15a
## 1 6.638994 3.839173 2.1618274 2.524751 5.629909 5.38816238 6.8113670
## 2 7.139700 7.946532 2.0737428 1.728605 4.599354 0.09990743 9.9888774
## 3 1.141414 1.008333 2.3008186 6.409634 1.479815 0.86171687 0.5144282
## 4 3.563640 4.673233 0.9171660 3.296021 3.884587 3.51117107 5.4623788
## 5 4.865529 5.376862 0.8449942 5.848881 5.475197 4.71265866 3.6314419
## 6 7.536749 2.574287 0.8250231 -3.143174 3.877923 4.57900726 9.1024692
## Ppp1r15b Ppp1r16a Ppp1r16b Ppp1r17 Ppp1r18 Ppp1r1a Ppp1r1b
## 1 7.466077 5.5103473 8.608370 -1.2519969 6.173028 3.1853029 0.8232445
## 2 7.593855 4.4678911 6.972395 -3.2277824 7.287409 1.4729293 0.8242318
## 3 5.910084 4.5835903 7.244970 -3.8841215 2.971435 -0.6195262 4.4359321
## 4 5.033294 3.2889140 7.107276 -2.5780185 3.234946 3.5035384 2.4526828
## 5 4.835464 2.6393048 8.455160 -3.8841215 3.512973 2.4538543 2.6217964
## 6 7.446982 5.7056243 1.832550 -2.6921454 3.733290 5.6204294 0.4592180
## Ppp1r2 Ppp1r26 Ppp1r27 Ppp1r32 Ppp1r35 Ppp1r36
## 1 4.944334 4.6049294 -3.356638 -2.1409984 3.6650531 -1.9297197
## 2 7.892442 -2.3713762 -3.335655 -2.3377699 3.7894888 -2.4122130
## 3 4.181549 2.0530520 -3.884122 -3.8841215 6.3386424 -1.1313170
## 4 3.646722 3.2932173 -3.209184 0.7879892 0.6792815 3.3633506
## 5 4.202040 -0.4264149 -3.884122 -3.8841215 -0.4264149 4.6876331
## 6 5.329870 3.7507423 -1.687397 1.3581997 3.1298213 0.2511785
## Ppp1r37 Ppp1r3b Ppp1r3c Ppp1r3d Ppp1r3e Ppp1r3f
## 1 6.9597301 -1.0369864 1.796708 1.6676243 2.5445642 3.4166856
## 2 6.3479748 -0.3397543 1.256023 -0.7531268 -0.1560398 0.9880516
## 3 0.8617169 0.6984974 6.709391 -1.9317392 -3.8841215 -3.8841215
## 4 0.5326187 0.8966797 5.676056 -1.1485098 -1.1807341 1.5301669
## 5 -1.1730114 -0.1609828 5.043736 -2.8071174 -2.8071174 2.2178791
## 6 6.1897928 -2.7658025 8.659282 4.7547854 0.3753396 3.5086423
## Ppp1r3g Ppp1r42 Ppp1r7 Ppp1r8 Ppp1r9a Ppp1r9b Ppp2ca
## 1 0.8336128 -3.0944487 5.053999 5.683970 6.493894 7.936283 8.627529
## 2 -3.2489909 -2.8952098 4.905375 5.432623 5.413978 7.331571 8.386197
## 3 0.5144282 -3.8841215 1.983840 6.751644 2.512206 5.539963 7.654288
## 4 -3.4277009 -0.5393401 6.737060 5.443508 6.467195 4.272423 6.460631
## 5 -2.8071174 -3.8841215 6.024043 6.272873 5.347870 4.513442 7.693769
## 6 6.2403186 -1.4619868 4.436473 4.972290 7.476654 7.301063 7.395790
## Ppp2cb Ppp2r1a Ppp2r1b Ppp2r2a Ppp2r2b Ppp2r2c Ppp2r2d
## 1 6.670118 9.042053 5.7919271 6.995048 5.932579 7.2065053 5.893677
## 2 7.334964 8.161401 5.7643010 6.602324 1.083469 1.6696189 6.839814
## 3 5.808664 8.789501 3.3743684 6.687792 5.914740 4.9710305 7.222612
## 4 4.324817 9.343337 6.0093781 5.509368 6.459209 3.5655136 4.680031
## 5 4.293344 8.976123 0.5807664 5.822301 5.924019 0.5807664 5.369013
## 6 5.764946 7.636769 5.3366946 6.008235 7.003262 1.2520421 5.894358
## Ppp2r3a Ppp2r3c Ppp2r4 Ppp2r5a Ppp2r5b Ppp2r5c Ppp2r5d
## 1 6.755670 4.412926 7.475317 4.8193222 6.490475 7.169917 6.686295
## 2 5.047998 4.805527 7.395120 6.0252207 5.706978 7.535730 6.413336
## 3 4.583590 3.910295 8.327297 1.0083330 1.263249 7.012791 1.577013
## 4 5.752645 5.739618 6.655566 2.8380859 2.563484 7.496894 4.737044
## 5 5.993736 5.443157 7.152367 4.1108541 2.621796 7.557673 4.532308

```

```

## 6 5.782978 4.247855 6.444787 6.5027661 6.232444 6.408438 7.432486
## Ppp2r5e Ppp3ca Ppp3cb Ppp3cc Ppp3r1 Ppp3r2 Ppp4c
## 1 6.413110 6.768021 6.409861 4.5740015 7.218932 0.7188749 5.557587
## 2 6.462786 6.409868 6.300008 5.3314340 7.416283 -3.6519623 6.625189
## 3 1.375592 5.833466 7.728891 6.4096342 6.338642 -3.8841215 3.171443
## 4 4.704495 6.389579 5.592066 0.9876860 4.966942 -3.8841215 5.620648
## 5 4.948632 6.150004 5.539549 1.8479734 4.445401 -3.8841215 7.235299
## 6 5.879526 6.830602 6.107277 3.9357480 6.401770 0.6158186 5.492356
## Ppp4r1 Ppp4r2 Ppp4r4 Ppp5c Ppp6c Ppp6r1 Ppp6r2
## 1 6.105569 4.848875 3.94152328 6.312433 5.260794 7.615118 6.5688678
## 2 6.431002 5.761001 -1.04697767 6.875660 6.282149 7.583106 5.3673809
## 3 4.979944 5.736860 -3.88412153 1.753727 7.687318 1.141414 0.5144282
## 4 5.491689 3.914809 0.05326493 6.392376 6.597330 1.954275 3.2150575
## 5 4.716788 3.965738 -2.80711744 5.477632 6.400283 3.171686 2.4538543
## 6 6.253704 4.860856 1.62702950 6.547834 5.012373 7.294817 6.2340587
## Ppp6r3 Pprc1 Ppt1 Ppt2 Pptc7 Ppwd1 Pqbp1
## 1 7.095282 5.163816 7.992595 5.573915 4.261146 2.6627496 6.133504
## 2 7.951519 4.527631 7.269317 6.449328 4.636868 3.8083691 6.402646
## 3 4.780107 1.375592 8.990334 1.577013 4.118365 1.1414140 2.935229
## 4 6.154273 3.469642 8.716347 5.462119 4.799608 4.0783784 7.138590
## 5 5.629902 2.351349 8.462556 4.941592 4.430394 4.5647394 7.509099
## 6 7.305976 5.262334 7.256153 5.060859 4.388318 4.4385714 5.758439
## Pqlc1 Pqlc2 Pqlc3 Praf2 Pram1 Prap1 Prc1
## 1 4.018601 3.245155 -1.0449929 5.929543 0.7281131 -2.655829 3.6007708
## 2 7.003045 2.309214 1.5982140 4.648060 -0.5345223 -3.656504 4.5582521
## 3 1.834579 4.523891 -0.6195262 7.339771 -3.8841215 -3.884122 4.2271840
## 4 5.098321 3.417879 1.2788827 7.023296 0.1700155 -3.653944 7.4725015
## 5 4.831662 4.979890 -0.9471720 8.000652 -3.8841215 -3.884122 6.6068368
## 6 3.319453 3.766905 0.8726290 4.002357 1.9313781 -1.835376 4.3365344
## Prcc Prcp Prdm1 Prdm10 Prdm11 Prdm12
## 1 5.8734642 3.903494 -0.5913820 2.5891755 0.9906319 -3.7010282
## 2 5.9513845 8.521310 6.4997630 3.1262779 2.0295033 -3.8841215
## 3 -0.2425151 8.170664 0.5144282 -1.1313170 0.3033916 -3.8841215
## 4 3.1591621 4.844784 -0.7008397 1.8462881 -0.9815437 -3.8841215
## 5 4.8729487 4.379211 -0.9471720 -1.1730114 -3.8841215 -3.8841215
## 6 5.1057995 4.525242 1.3158082 3.5630269 1.4657167 -3.8841215
## Prdm15 Prdm16 Prdm2 Prdm4 Prdm5 Prdm6
## 1 4.4095062 -1.3475414 6.482782 4.9796155 3.0865283 -3.484217
## 2 4.1315100 4.0929144 6.657236 5.0508678 4.5087076 -3.884122
## 3 0.6984974 -0.2425151 1.263249 1.4798145 -0.2425151 -3.884122
## 4 3.6358411 5.1840511 5.951848 4.0654467 4.3670362 -2.212172
## 5 -1.7701038 3.7650420 5.397587 0.1633391 3.1596033 3.219030
## 6 4.9308374 6.8911355 6.580944 5.4432809 4.8765890 -3.884122
## Prdm8 Prdm9 Prdx1 Prdx2 Prdx3 Prdx4 Prdx5
## 1 -1.4420465 2.3008110 7.045473 8.000505 5.351781 4.806715 6.386271
## 2 -1.8899718 2.4465278 8.407770 8.342173 5.960697 6.410096 6.279514
## 3 -0.2425151 -0.6195262 11.928550 7.829717 9.201787 8.355826 9.543265
## 4 4.7355250 1.6600784 9.961204 9.834132 7.313965 7.179568 7.013821
## 5 6.3224878 -3.8841215 11.148383 10.922906 7.547857 8.494172 8.495674
## 6 -1.7620077 2.7427195 6.977959 6.582585 4.706037 4.576516 5.498041
## Prdx6 Preb Prelid1 Prelid2 Prelp Prep Prepl
## 1 7.234996 6.538598 5.577913 -1.8527137 0.8476336 5.2103425 6.312414
## 2 6.596332 6.365621 7.353334 1.9271013 -0.6448898 6.9484972 4.877730
## 3 11.532603 2.119096 3.928827 0.6984974 2.6965413 0.6984974 6.245614

```

```

## 4 10.976067 5.593811 5.819970 1.9755168 8.1447148 3.5206457 6.079604
## 5 10.801253 4.541648 6.581022 3.5129733 7.0398659 2.7072879 5.160502
## 6 8.849750 7.313807 4.402126 -2.4463908 2.8521305 4.3553252 5.683326
##      Prex1      Prex2      Prf1      Prg2      Prg3      Prg4 Prickle1
## 1 9.1490227 3.2764231 -3.528270 -3.884122 -3.8841215 -2.2989337 5.903264
## 2 7.6735667 7.7559871 -2.371376 -2.825432 -3.2277824 -0.8485644 6.136702
## 3 0.5144282 3.2619268 -3.884122 -3.884122 -3.8841215 -3.8841215 5.545978
## 4 5.0446581 6.3870396 -2.876652 -3.884122 -3.8841215 0.9622143 3.860535
## 5 2.2409993 6.5639333 -3.884122 -3.884122 -3.8841215 -2.8071174 5.605614
## 6 9.5273264 6.0845735 -3.884122 -3.884122 -3.8841215 -0.3562452 4.133612
##      Prickle2 Prickle3      Prim1      Prim2      Prima1      Prkaa1
## 1 5.822557 -0.4557394 3.0788212 4.503204 1.48953947 4.6284253
## 2 3.531141 3.9616413 3.2950357 4.394281 -3.88412153 5.9683585
## 3 8.235372 -0.6195262 1.3755916 3.688985 0.05610664 -0.2425151
## 4 4.954160 -0.1136437 6.1481224 5.726033 0.82251569 5.1165853
## 5 5.085848 -2.1973739 6.3493319 6.053725 3.85770217 5.0502955
## 6 4.987755 0.3116379 2.7102534 3.709896 -0.50207925 5.2516512
##      Prkaa2      Prkab1      Prkab2      Prkaca      Prkacb      Prkag1      Prkag2
## 1 3.7554164 4.8404817 4.6504838 6.793480 7.245711 5.628513 3.777147
## 2 -1.2266841 7.1826816 3.5376630 5.525380 6.979065 6.697204 5.377897
## 3 1.0083330 0.8617169 -1.1313170 4.790278 9.037527 6.852160 7.220733
## 4 3.0458196 2.9119198 3.6618012 5.844649 7.334426 6.686493 4.973084
## 5 1.5843436 4.8163506 0.3450364 6.728385 6.587801 6.654971 5.181568
## 6 4.7320986 5.0293137 5.7354357 5.608295 6.162628 5.466239 5.543778
##      Prkag3      Prkar1a      Prkar1b      Prkar2a      Prkar2b      Prkca      Prkcb
## 1 -2.7034792 8.945973 5.729332 6.083305 5.7329568 5.5578329 8.001850
## 2 -3.8841215 9.614298 2.926814 5.524407 3.6258036 1.3350979 5.576132
## 3 -3.8841215 9.757346 6.975394 3.171443 -3.8841215 -0.2425151 5.147549
## 4 -3.8841215 8.866632 5.974709 4.098053 3.1245425 4.0966623 6.243291
## 5 -3.8841215 8.862151 4.184258 2.070791 -0.2876030 4.5738732 6.010652
## 6 -0.4909281 8.100457 1.593430 6.280743 3.4686266 4.0381265 5.588555
##      Prkcd      Prkcdbp      Prkce      Prkch      Prkci      Prkcq      Prkcsh
## 1 2.0818445 3.060998 4.581008 0.2874010 5.737591 7.9396280 7.559734
## 2 4.4584488 5.958178 5.615095 7.6647866 5.757910 -0.3713425 7.204835
## 3 7.6626168 5.346757 5.715671 2.1822477 6.720071 -1.1313170 7.101231
## 4 2.7500111 4.725190 5.239252 1.2928347 4.232689 3.2475920 6.097244
## 5 0.0631199 6.134654 4.708518 2.5309179 5.023878 1.3911881 5.985204
## 6 7.2287406 4.787656 3.975039 -0.1571138 5.453091 -2.2216202 6.894876
##      Prkcz      Prkd1      Prkd2      Prkd3      Prkdc      Prkg1
## 1 6.6111005 4.3168487 2.90067598 6.671498 5.129102 3.6709452
## 2 0.9796743 3.2501693 7.62483771 7.563687 4.412862 3.5571109
## 3 7.5785538 6.3830000 0.05610664 2.182248 1.141414 -1.9317392
## 4 4.7141676 4.3523972 2.09405576 5.901671 3.677516 1.3537019
## 5 3.8198143 0.1633391 -0.42641489 3.909127 2.965052 -2.8071174
## 6 -0.2599445 5.8766932 3.63896015 6.882528 6.317592 2.6330318
##      Prkg2      Prkra      Prkrip1      Prkrir      Prkx      Prlhr      Prlrr
## 1 4.13967667 4.475026 3.602561 6.881252 4.699324 -3.794983 -3.6778614
## 2 -3.65650428 5.311628 4.118889 7.076444 5.855771 -3.884122 -3.2515854
## 3 -1.13131698 6.260322 7.061893 2.119096 2.053052 -3.884122 -1.1313170
## 4 -1.52763355 6.113682 5.695555 5.444521 4.895136 -3.884122 -1.3093946
## 5 -3.88412153 6.458155 6.635474 6.112887 5.154426 -2.807117 -2.8071174
## 6 -3.28890603 4.744658 3.842578 6.618564 4.723763 -3.237253 -3.3528132
##      Prmt1      Prmt10      Prmt2      Prmt3      Prmt5      Prmt6      Prmt7
## 1 6.792024 4.4838200 5.726528 5.1690444 5.905784 5.0657318 5.048569

```

```

## 2 6.903218 4.4173983 4.663395 3.8975859 5.439366 4.7421842 4.601881
## 3 7.218852 5.3467571 8.320295 1.6680739 3.622232 -0.2425151 8.554627
## 4 5.957918 2.8908706 7.785205 3.2915710 7.539310 3.0435885 6.691741
## 5 7.019118 -0.7519471 8.021665 4.2822417 7.441472 5.6983196 7.029114
## 6 5.325083 5.0853442 5.548923 4.8287536 5.450742 5.1495736 4.546568
##      Prmt8      Prnd      Prnp      Proca1      Procr      Prodh
## 1 1.9581448 -1.7716354 8.580113 0.8322413 -2.6482231 2.701222
## 2 -0.1739868 8.9788928 10.024768 0.8948188 6.2601683 3.442847
## 3 6.7568398 -3.8841215 10.665997 -1.1313170 -3.8841215 8.455056
## 4 4.7928699 -0.9349647 8.983660 4.0409796 -0.8025988 5.423510
## 5 5.4654139 4.3582188 9.440114 4.6405939 -3.8841215 4.474956
## 6 -1.0616900 1.1039731 9.739565 3.6714739 1.2363413 6.028017
##      Prok2      Prokr1      Prokr2      Prom1      Prom2      Prop1
## 1 -1.5083104 -0.56476336 -2.142988 5.3445269 -2.6135876 -3.884121530
## 2 -3.6565043 -3.88412153 -2.548285 9.8803685 -3.8841215 0.004328713
## 3 -3.8841215 -3.88412153 -3.884122 1.3755916 1.7537270 -3.884121530
## 4 -3.8841215 2.21777051 -1.655099 6.5136912 0.4101477 -3.884121530
## 5 -3.8841215 -3.88412153 -3.884122 4.2137739 -0.1609828 -3.884121530
## 6 0.4990733 0.03351171 -2.478408 6.1819611 -0.6150163 -3.884121530
##      Pros1      Prosc      Prox1      Prox2      Proz      Prpf18      Prpf19
## 1 4.104827 5.725092 4.496103 1.1785790 0.25210153 5.051325 7.933728
## 2 7.542340 5.385827 1.863423 0.8652245 -2.79600245 6.010581 7.191892
## 3 8.682992 2.119096 4.166010 -1.9317392 -3.88412153 2.410380 6.331696
## 4 4.347048 5.918309 6.790095 1.3407580 -0.31838790 6.168978 4.338900
## 5 3.666020 6.086005 6.069956 -3.8841215 -3.88412153 5.216981 5.329113
## 6 4.351196 5.758175 4.197104 1.2325430 -0.01831509 5.066829 6.747298
##      Prpf3      Prpf31      Prpf38a      Prpf38b      Prpf39      Prpf4      Prpf40a
## 1 4.2127106 5.377704 4.814615 6.014008 5.457598 4.874865 5.614765
## 2 4.7484522 5.192421 5.489782 6.807017 6.020405 6.336815 6.573521
## 3 -0.6195262 7.476747 7.588787 7.367208 1.263249 4.409783 2.356639
## 4 5.5239527 6.727115 6.342327 4.635262 6.428803 5.928323 7.343208
## 5 4.2710537 6.424469 6.994671 1.963680 5.374250 4.347607 5.407839
## 6 5.0058808 4.526802 4.697156 7.649913 7.231672 5.390201 6.382781
##      Prpf40b      Prpf4b      Prpf6      Prpf8      Prph      Prps1      Prps111
## 1 5.7129126 6.577383 5.554705 8.176425 -2.1278955 3.423207 -3.568090
## 2 4.9370288 7.033127 6.005217 8.055076 -2.3597589 4.839022 -2.341440
## 3 -0.6195262 1.911138 1.834579 7.459324 0.3033916 7.459324 -3.884122
## 4 4.8007187 6.302271 6.896947 7.030562 -3.8841215 5.891305 -3.884122
## 5 2.9788711 4.555547 3.909127 6.691096 -3.8841215 4.384412 -3.884122
## 6 6.7300745 8.003114 5.683989 8.014060 -1.6600747 4.101055 -3.451139
##      Prps113      Prps2      Prpsap1      Prpsap2      Prr11      Prr12      Prr14
## 1 4.286928 5.425800 6.4541578 4.705143 3.21397045 5.344437 5.2973648
## 2 5.403465 1.429794 6.1079275 3.872114 2.67108209 4.480846 5.8521952
## 3 3.710567 4.717529 0.6984974 1.141414 1.14141397 1.375592 0.8617169
## 4 5.824341 6.980684 4.6109379 4.559950 4.21607050 3.349972 5.6037406
## 5 5.475197 5.262884 5.1785775 5.320998 -0.75194706 3.916326 4.5555473
## 6 4.825425 4.741198 5.6929405 4.161312 3.03293359 5.800054 5.8863223
##      Prr15      Prr151      Prr16      Prr18      Prr19      Prr22
## 1 0.6135295 -3.794983 1.20928518 6.51283421 -3.462117 -1.2902328
## 2 0.8639853 -3.884122 -3.88412153 4.86300424 -3.656504 -3.4243451
## 3 -3.8841215 -3.884122 -3.88412153 5.64457400 -3.884122 -3.8841215
## 4 -3.6036807 -3.653944 -0.32918240 2.74432744 -1.129598 -2.3265767
## 5 -3.8841215 -3.884122 -3.88412153 2.56795903 3.183669 -3.8841215
## 6 -3.6744822 -3.884122 -0.03464995 3.54319035 -3.451139 -0.9448801

```

##	Prr24	Prr3	Prr5	Prr51	Prr7	Prr9	
## 1	3.7596119	5.024785	2.7619379	3.2756964	3.9032538	-3.88412153	
## 2	3.9938145	3.058311	5.4732417	5.9005089	4.2246389	-3.88412153	
## 3	-0.2425151	5.757743	-1.9317392	7.4845979	-3.8841215	0.05610664	
## 4	2.0662470	5.686481	2.8446938	4.6370874	-2.8597861	-3.07863675	
## 5	3.7246054	5.178578	3.9587821	4.9695456	1.1190407	-1.44088555	
## 6	4.3055346	5.493493	5.4554386	0.7548173	4.0511560	-3.88412153	
##	Prrc1	Prrc2a	Prrc2b	Prrc2c	Prrg1	Prrg2	Prrg3
## 1	4.720818	8.991563	8.008564	7.538584	3.720179	3.4169222	4.08753440
## 2	5.399508	7.477558	7.548152	7.653795	4.886495	6.0931998	5.26947620
## 3	6.612408	2.780569	3.528133	2.560544	8.392173	-0.6195262	0.05610664
## 4	4.770788	4.305905	7.042212	7.174267	4.888548	3.4425995	1.47430068
## 5	5.329113	3.541188	6.392561	5.527847	5.445647	3.7246054	-2.19737395
## 6	5.104162	8.719386	7.918295	8.861152	2.504653	3.1073613	1.88399434
##	Prrg4	Prrt1	Prrt2	Prrt3	Prrt4	Prrx1	
## 1	-2.5692410	3.5804590	3.5567014	2.6146385	1.9458209	4.9261511	
## 2	-2.2716306	-1.7098134	1.2161466	0.9807361	2.9321704	1.7590070	
## 3	0.3033916	-1.9317392	0.5144282	-1.9317392	-3.8841215	0.6984974	
## 4	-0.1731208	2.6774999	3.2740893	0.9292671	-2.4467428	1.7970479	
## 5	-2.8071174	1.5843436	2.1215049	2.9084139	-3.8841215	4.5647394	
## 6	-0.1240532	0.7057294	5.3629898	-2.1850851	-0.8856587	6.5156663	
##	Prrx2	Prrx11	Prss12	Prss23	Prss27	Prss35	
## 1	-1.7575062	-3.4407838	1.47387198	4.5981227	-2.636297	1.8334427	
## 2	0.2418941	-3.8841215	-1.04220679	6.0025506	-3.651962	-2.1037807	
## 3	-3.8841215	-0.6195262	-3.88412153	5.5579338	-1.931739	7.3773633	
## 4	-0.7918655	-3.8841215	-2.51977555	4.1834507	-2.644986	-0.2263631	
## 5	-1.1730114	-3.8841215	-2.80711744	4.0855320	-1.770104	-0.4264149	
## 6	2.9582238	-3.8841215	0.04242896	0.9596018	-3.512249	4.2335417	
##	Prss36	Prss38	Prss45	Prss48	Prss50	Prss53	Prss56
## 1	2.860865	-2.565731	-3.3802541	-2.803431	0.7421234	1.4342739	2.975290
## 2	2.540438	-3.884122	-3.6519623	-3.656504	-3.8841215	0.7389227	-2.490774
## 3	3.347069	-3.884122	-3.8841215	-3.884122	-3.8841215	-1.9317392	-3.884122
## 4	4.611455	-3.427701	-3.2991483	-3.884122	-3.8841215	0.3775992	-3.884122
## 5	4.231198	-3.884122	-3.8841215	-3.884122	-3.8841215	-3.8841215	-3.884122
## 6	2.476190	-2.169461	-0.1486437	-3.884122	1.0199275	0.6744440	8.270538
##	Prss57	Prss8	Prtg	Prtn3	Prune	Prune2	Prx
## 1	-3.884122	-3.8841215	2.5571907	-3.174733	4.552986	5.299830	1.5776993
## 2	-3.251585	-3.8841215	0.3294660	-3.656504	5.647408	-1.373008	3.2077763
## 3	-3.884122	0.3033916	-1.9317392	-3.884122	6.722729	7.698161	-0.2425151
## 4	-2.685792	-2.9075996	0.3295812	-2.230200	5.081453	5.324601	-0.8836439
## 5	-3.884122	-0.5800187	-3.8841215	2.018229	3.276106	3.872583	-2.1973739
## 6	-3.674482	-3.4511394	-1.6657853	-2.616080	4.006434	3.664271	2.7143471
##	Psap	Psap11	Psat1	Psd	Psd2	Psd3	
## 1	10.776296	-3.33600055	8.878524	5.657255	4.2559027	6.962585	
## 2	9.999870	-3.88412153	6.281027	4.028600	-0.9162605	5.879960	
## 3	9.903883	3.55223891	8.672721	2.935229	3.9288271	6.026512	
## 4	8.613654	-0.01735303	8.678467	4.102784	4.7231467	4.909334	
## 5	9.242530	3.27610569	8.478754	3.879966	2.4339276	3.320194	
## 6	11.195921	-3.11861158	8.464352	3.907802	7.7022748	7.696185	
##	Psd4	Psen1	Psen2	Psenen	Psip1	Pskh1	Psma1
## 1	-1.07860701	6.619047	3.857194	2.614475	6.808363	4.7153295	5.842771
## 2	-1.64002499	6.505580	3.973960	2.833636	5.844915	4.9814016	7.146210
## 3	1.00833299	3.347069	3.872500	5.838376	2.053052	0.8617169	8.739855
## 4	0.93886283	7.397797	4.688266	4.463392	6.368636	3.1269023	7.969641


```

## 5 -1.17301144 6.793364 6.061863 5.757639 3.979550 2.9925589 8.960103
## 6 -2.17405558 6.142130 4.024595 1.899420 6.522768 4.5238313 5.476190
##      Psma2      Psma3      Psma4      Psma5      Psma6      Psma7      Psma8
## 1 6.216799 4.697353 5.380854 3.348196 6.360802 6.527103 -2.4400760
## 2 7.046328 5.068269 6.018599 4.128536 7.694311 7.718537 3.4877693
## 3 8.138184 6.146170 7.006262 7.441688 9.759612 9.663293 -1.9317392
## 4 7.961329 5.915035 7.215065 6.586813 8.628525 8.722916 -2.3175108
## 5 8.890071 6.081209 7.831991 7.449558 9.847761 9.788553 -0.5800187
## 6 5.024202 4.551581 4.970713 2.987679 5.582976 5.273857 -1.4795962
##      Psmb1      Psmb10      Psmb11      Psmb2      Psmb3      Psmb4      Psmb5
## 1 7.223834 4.174815 -3.276367 6.317621 4.264792 6.934416 5.085572
## 2 8.154660 5.338936 -3.217793 6.743942 5.291081 8.163183 5.613681
## 3 9.826309 7.294043 -3.884122 9.791923 7.718276 8.364361 6.565805
## 4 9.026641 5.689301 -2.079608 8.979219 7.008649 6.616367 5.620367
## 5 9.869947 6.699466 -3.884122 9.611237 8.058327 7.907991 7.039042
## 6 5.858379 3.646240 -2.786374 5.191678 3.095843 5.944380 3.548142
##      Psmb6      Psmb7      Psmb8      Psmb9      Psmc1      Psmc2      Psmc3
## 1 6.805773 6.955522 1.2382786 -0.3466921 6.394301 6.187580 7.229650
## 2 7.258972 7.502537 4.1243087 3.6887592 6.937182 6.625048 7.991795
## 3 10.050186 9.348382 7.5353672 -3.8841215 8.501451 8.519140 9.496665
## 4 8.853044 7.657188 4.1452167 2.4531896 8.007508 8.021873 8.282316
## 5 10.137687 8.867964 4.3582188 3.8198143 8.434625 8.890528 8.995584
## 6 5.483603 5.679983 -1.1818612 -1.1374717 5.662221 5.967713 6.112617
##      Psmc3ip      Psmc4      Psmc5      Psmc6      Psmd1      Psmd10      Psmd11
## 1 1.28102114 6.517795 6.355164 5.952019 6.981820 3.797020 4.838406
## 2 3.98704173 7.009058 6.639207 6.778977 7.589663 4.157201 4.879246
## 3 0.30339162 8.647067 8.403812 9.034856 6.349001 8.984809 4.907042
## 4 5.31829794 8.405196 8.077271 7.929211 7.960757 6.209964 6.590030
## 5 6.16367999 8.717685 8.510318 8.483306 7.460680 6.705712 6.160652
## 6 1.34031776 6.047880 5.996978 6.173093 6.796895 2.721364 4.667279
##      Psmd12      Psmd13      Psmd14      Psmd2      Psmd3      Psmd4      Psmd5      Psmd6
## 1 5.768220 6.596498 5.849621 7.778992 7.478615 6.592418 5.018217 6.402724
## 2 6.180366 7.285658 6.313032 7.560743 7.642454 7.118056 5.275360 6.667216
## 3 7.410708 7.288672 9.299818 9.132524 2.182248 8.352398 1.008333 6.941571
## 4 7.217122 6.721225 8.029088 7.758246 3.457453 7.255748 4.451173 7.298925
## 5 6.919636 7.736593 8.714849 7.888906 5.160502 8.353414 5.371634 8.148971
## 6 5.679055 5.807616 5.764509 7.031983 6.725946 5.956497 5.211206 5.996102
##      Psmd7      Psmd8      Psmd9      Psme1      Psme2      Psme3      Psme4      Psmf1
## 1 6.551438 6.866491 5.211639 4.498933 2.220328 6.267694 6.227506 5.404284
## 2 6.729951 7.916863 5.495574 6.660270 3.044734 5.871289 6.720686 5.202750
## 3 8.670658 9.047631 6.538913 7.459324 5.896024 7.324105 3.688985 2.182248
## 4 7.517491 7.559566 6.245615 6.860860 3.842686 4.582785 5.169229 6.841945
## 5 7.978468 8.416017 6.119139 7.554793 3.930617 3.640164 5.721108 6.887945
## 6 6.219115 5.945165 4.245029 4.162913 2.026113 5.750635 7.332458 4.811740
##      Psmg1      Psmg2      Psmg3      Psmg4      Psors1c2      Pspc1      PspH
## 1 3.891368 4.642128 3.599319 3.069748 -3.7949831 6.0015920 5.525975
## 2 4.163158 4.810062 3.396175 3.313025 2.6067930 5.5930111 4.257887
## 3 6.355865 7.377363 7.103272 6.663099 -0.2425151 -0.6195262 7.748585
## 4 4.218070 6.722988 6.153570 5.392220 -2.3716524 3.7138947 7.798578
## 5 4.683420 7.676383 7.241045 6.581022 -2.1973739 1.8777815 8.856548
## 6 3.379915 4.401521 2.779354 2.601550 -0.8668292 5.5337601 6.027163
##      Pspn      Psrc1      Pstk      Pstpip1      Pstpip2      Ptafr
## 1 -1.7677134 1.08861262 3.201416 -0.07845119 4.7375648 0.2921796
## 2 -2.3587360 2.07502271 3.619296 -2.10378074 -2.7161344 -2.9369560

```

```

## 3 -3.8841215 0.05610664 -1.931739 -1.13131698 -1.9317392 -1.1313170
## 4 -3.1726963 4.70541889 3.045190 -0.51560936 2.2711336 0.5054727
## 5 -3.8841215 4.49432739 3.972661 4.64059395 0.5063887 -1.4408855
## 6 -0.8962158 1.92545025 3.823739 0.99815826 -0.5193315 -2.7776757
##      Ptar1      Ptbp1      Ptbp2      Ptc1d1      Ptc1d2      Ptc1d3      Ptc1h1
## 1  3.12384726 6.646382 6.809720 4.346987 3.978960 5.030271 5.555634
## 2  4.48561760 8.777384 5.242458 4.562934 4.635194 4.890448 4.382338
## 3  0.05610664 3.202239 7.996029 2.560544 1.753727 1.263249 2.820816
## 4  2.92710239 6.423240 7.651134 4.775400 5.925472 6.255781 3.888150
## 5  4.24841396 5.288078 7.262388 5.389850 6.717093 5.874980 4.129558
## 6  6.08491409 7.771229 6.965588 4.247187 3.898384 5.379526 8.609576
##      Ptc1h2      Ptc1hd1      Ptc1hd2      Ptc1ra      Ptc1ss1      Ptc1ss2      Ptc1ten
## 1 -1.7508250 -0.85838441 5.4651029 -1.955428 7.130871 6.179162 6.170988
## 2  1.6740478 -1.40910979 -1.0776772 -3.656504 6.805265 5.835439 7.032640
## 3  1.0083330 0.30339162 0.6984974 -3.884122 7.958188 6.950668 4.618259
## 4  0.7282833 -0.04178835 5.0191902 -1.214665 6.142781 4.864215 5.896960
## 5 -1.4408855 -2.19737395 4.6009329 -3.884122 6.387390 5.806889 6.087600
## 6  2.5707008 -2.26327041 6.0205873 -3.027614 6.662521 6.417864 6.439342
##      Pter      Ptgdr      Ptgsd      Ptger1      Ptger2      Ptger3
## 1  3.2970606 -2.9104705 5.645476 4.418988 -0.7302556 -2.677928
## 2  2.6775158 -3.8841215 3.840894 6.021414 -3.1165114 -1.830789
## 3  2.3008186 -3.8841215 13.076383 -1.931739 -3.8841215 -3.884122
## 4  4.8797723 0.1878623 11.277690 1.509838 -3.6539444 -3.603681
## 5  0.6514968 -2.1973739 12.357355 2.864426 -3.8841215 -3.884122
## 6  3.1830301 -3.8841215 1.138918 3.910663 -3.2680874 -3.143174
##      Ptger4      Ptges      Ptges2      Ptges3      Ptgfr      Ptgfrn
## 1 -0.28800621 2.0234992 4.5597881 5.394516 -3.0327979 5.7925821
## 2  0.04371992 7.4844324 4.1733115 5.443216 -1.6306540 8.6356181
## 3 -1.93173924 1.0083330 -0.2425151 11.080372 -0.6195262 2.6073156
## 4 -1.29272171 4.4718630 2.7209554 9.159889 1.4065650 2.5795277
## 5 -1.77010377 4.5462963 3.0720655 10.804713 5.4027219 0.5063887
## 6  1.21310810 5.0621967 4.4220436 5.625695 -0.1314597 6.4349868
##      Ptgir      Ptgis      Ptgr1      Ptgr2      Ptgs1      Ptgs2
## 1 -3.3624323 -0.1266761 -0.0690809 5.564038 2.5978317 1.5384152
## 2 -1.1576328 6.9525178 0.1733349 5.716526 0.8909759 6.9076742
## 3 -3.8841215 -1.9317392 1.2632490 1.141414 8.1181368 -1.9317392
## 4 -3.8841215 0.8139215 4.2679829 6.057030 3.8901975 -1.8406303
## 5 -3.8841215 4.6664416 5.3046319 5.976620 1.2615221 -2.1973739
## 6 -2.9479702 -0.4818751 1.9679592 5.691993 6.1715840 4.9440396
##      Pth1r      Pth2r      Pth1h      Ptk2      Ptk2b      Ptk6      Ptk7
## 1  2.90197349 -3.323492 -2.2162025 7.019814 1.857227 -3.107918 5.8538528
## 2  3.70322195 -3.651962 0.2912660 7.974669 1.145205 -2.276965 4.2218547
## 3  3.62223156 -3.884122 -1.9317392 2.512206 7.172948 -1.931739 1.5770128
## 4  2.50991341 -3.884122 -2.9126426 7.028550 3.661776 -3.144449 1.9783285
## 5  5.32099842 -3.884122 -2.1973739 6.946257 4.259778 -1.440886 0.2570463
## 6  3.39613430 -3.674482 -1.5276440 7.626393 -1.958398 -3.660779 5.8535654
##      Ptma      Ptn      Ptov1      Ptp4a1      Ptp4a2      Ptp4a3      Ptpdc1
## 1  7.709219 9.122906 7.784214 3.98891435 7.440706 4.633045 6.5422287
## 2  9.298442 8.068933 6.649966 4.29982004 8.563229 8.109915 3.4301089
## 3  7.884149 9.695443 2.512206 0.05610664 9.863512 1.753727 0.6984974
## 4  8.947019 9.374116 5.315656 5.15262477 8.714918 4.137512 3.9642213
## 5  9.392511 9.781918 6.224393 6.21858136 8.791970 2.240999 5.3975868
## 6  6.633200 11.233617 7.147063 5.46886663 6.779511 4.725903 6.2287089
##      Ptpla      Ptplad1      Ptplad2      Ptplb      Ptpn1      Ptpn11      Ptpn12

```

```

## 1 3.686229 7.659379 -0.01094701 4.540618 6.313194 8.189954 5.0240329
## 2 2.763985 6.322355 2.34468068 4.325973 6.541707 8.140515 8.0839475
## 3 1.834579 8.463820 -0.61952623 5.969472 5.808664 5.394208 0.6984974
## 4 2.931663 8.150982 4.49693119 3.574464 4.537212 4.629153 5.4679328
## 5 4.040120 8.212489 4.14189416 4.309838 2.240999 2.512034 5.0858475
## 6 2.426000 8.993790 2.32603717 7.087631 6.077373 7.022384 6.6941644
##      Ptpn13      Ptpn14      Ptpn18      Ptpn2      Ptpn20      Ptpn21
## 1 4.5256097 5.4899523 -0.1949504 3.6800103 -1.34396287 3.28035922
## 2 1.8328550 5.3819068 4.1200895 5.7041373 -3.65196234 4.35145570
## 3 2.5605442 2.3008186 4.9799444 0.8617169 -3.88412153 2.18224770
## 4 4.2033802 1.7476431 0.2508405 5.7038848 -3.88412153 3.73677500
## 5 3.1227355 0.4279671 1.3060516 5.5831731 -3.88412153 2.74011471
## 6 7.2501235 1.7084695 -2.2885695 5.1137671 -3.66077880 4.68045331
##      Ptpn22      Ptpn23      Ptpn3      Ptpn4      Ptpn5      Ptpn6
## 1 -2.1302163 6.57733671 0.2795685 4.808134 5.6423247 1.9417562
## 2 1.3496193 5.40325749 -0.3777236 4.695329 0.4102242 -0.2112785
## 3 -3.8841215 0.69849743 0.5144282 -1.931739 1.0083330 5.9054125
## 4 -0.3180712 4.19411656 0.4492825 2.413853 3.2701411 2.5892187
## 5 -3.8841215 3.61383726 -0.5800187 -2.807117 3.5129733 0.4279671
## 6 0.9819300 7.00870090 2.1151363 5.892534 5.5492954 -0.7734029
##      Ptpn7      Ptpn9      Ptpn10      Ptpn11      Ptpn12      Ptpn13      Ptpn14
## 1 -3.322880 5.5850259 7.314767 4.010102 1.3056393 -0.85939997 8.296556
## 2 -1.591255 5.2835683 7.139024 10.880132 0.8945464 0.01003635 6.464945
## 3 -3.884122 0.5144282 8.309728 -1.931739 6.8857489 -3.88412153 3.710567
## 4 -2.655274 3.9927016 6.959600 3.136145 2.3183118 -2.92546068 6.926993
## 5 -3.884122 -0.9471720 7.101956 3.444910 -1.1730114 -2.80711744 6.952398
## 6 -3.044745 6.6724018 7.927571 3.596914 -3.6744822 -1.72985835 5.974095
##      Ptpn15      Ptpn16      Ptpn17      Ptpn18      Ptpn19      Ptpn20      Ptpn21
## 1 6.8161936 7.038018 7.932950 -3.7010282 6.5864822 6.0038215 5.636594
## 2 3.4607978 4.241043 10.044022 -3.2177929 4.2111626 7.9869736 9.117956
## 3 6.6796076 3.928827 1.911138 -3.8841215 3.4011610 1.0083330 -1.131317
## 4 2.4765063 6.023901 6.751334 -3.8841215 2.4201685 2.6984667 2.606698
## 5 4.7291044 4.976450 6.662483 -3.8841215 -0.4264149 0.5807664 -3.884122
## 6 -0.9214488 8.632582 7.809064 -3.8841215 5.7792255 3.6745267 6.143897
##      Ptpn22      Ptpn23      Ptpn24      Ptpn25      Ptpn26      Ptpn27      Ptpn28
## 1 7.9739941 6.3415981 8.2298698 -1.4847620 2.836727 9.290113
## 2 0.7053633 0.8742602 -0.7751457 -3.8841215 3.531855 6.240473
## 3 1.0083330 -1.9317392 8.3307854 -3.8841215 -1.931739 7.907697
## 4 2.3895812 1.6404565 4.2184858 -0.6670067 1.042961 9.962314
## 5 2.6393048 2.5120345 4.9969675 -2.8071174 -1.770104 10.857851
## 6 0.9037799 5.5410088 1.0960039 -1.4759464 1.373599 9.223682
##      Ptpn29      Ptpn30      Ptpn31      Ptpn32      Ptpn33      Ptpn34      Ptpn35
## 1 6.33423097 4.7958522 10.908388 0.9606364 1.5804308 3.585613 4.127092
## 2 -0.09261412 1.2245455 3.191552 8.5878381 0.9624092 3.816350 3.977012
## 3 0.69849743 -0.6195262 8.059426 9.1240051 -1.9317392 1.479815 6.888118
## 4 3.09482333 1.2704364 9.854106 5.9939553 1.5610128 5.762139 6.399315
## 5 -0.94717201 1.1681147 8.621308 6.6581953 -3.8841215 6.404129 7.952879
## 6 6.66835234 1.6286936 13.403632 3.6619771 1.9785190 3.501280 5.040768
##      Ptpn36      Ptpn37      Ptpn38      Ptpn39      Ptpn40      Ptpn41      Ptpn42
## 1 1.933416 7.165717 -2.1450091 -3.639524 7.800006 6.868831 7.297512
## 2 3.418399 9.327847 -1.5416996 -3.656504 7.546596 6.930967 8.431199
## 3 7.719608 9.692395 1.1414140 -1.131317 8.289256 8.690479 3.107806
## 4 6.681065 8.880627 5.1135543 -2.557719 8.276828 7.457328 7.333115
## 5 7.386806 8.776724 6.4307667 -3.884122 8.772267 6.162167 6.530311

```

##	6	2.659704	7.443804	5.6752386	-2.947970	6.807257	7.001669	7.170355
##		Pura	Purb	Purg	Pus1	Pus10	Pus3	Pus7
##	1	4.086433	8.064353	4.473969	3.83665441	3.638645	3.6551417	5.873329
##	2	3.229697	8.159098	4.064155	4.26475941	4.516053	3.5149935	4.188497
##	3	3.731831	4.256825	-3.884122	0.05610664	-1.131317	-0.6195262	1.141414
##	4	3.614903	7.177446	3.419901	4.32269930	4.520503	4.3666516	3.144002
##	5	1.847973	5.662377	3.298318	2.81905543	-1.440886	2.8190554	1.817536
##	6	4.695593	7.961949	4.493143	3.68643587	4.814448	4.0324802	4.891109
##		Pus71	Pus11	Pvalb	Pvr	Pvr11	Pvr12	
##	1	3.21925689	4.1209538	0.1714899	4.182546	6.141690	5.268919	
##	2	2.13527497	3.2929301	-1.6760136	6.963168	2.216321	7.242926	
##	3	-1.93173924	-0.6195262	-3.8841215	-1.131317	3.427465	5.891307	
##	4	3.03942591	4.6709081	-1.0726994	2.452112	5.066079	3.384850	
##	5	-0.04458439	4.4700718	-3.8841215	2.908414	3.819814	4.213774	
##	6	2.92492055	4.7515223	-3.6607788	3.505530	3.461536	4.842923	
##		Pvr13	Pvr14	Pwp1	Pwp2	Pwvp2a	Pwvp2b	Pxdn
##	1	5.4653253	2.898124	5.259504	4.609600	4.598072	1.2726451	5.3381487
##	2	4.7099112	-3.884122	5.198466	4.176046	4.862029	5.2431550	7.7628148
##	3	0.5144282	2.739167	5.346757	1.479815	4.118365	-1.1313170	6.6181295
##	4	3.6132378	1.100928	6.522202	4.719568	5.012714	1.1883195	5.0655923
##	5	4.6535756	4.020211	5.955809	3.474474	5.397587	2.0447493	-1.1730114
##	6	5.8280778	1.807922	4.443974	4.426748	4.960794	1.8606950	7.9169086
##		Pxk	Pxmp2	Pxmp4	Pxn	Pycard	Pycr1	Pycr2
##	1	5.1980801	1.0278310	2.814789	6.6747620	1.2066740	4.25749371	5.507639
##	2	6.2443575	0.8148878	4.856437	7.7518597	2.2143020	1.29881270	4.771551
##	3	2.2427509	8.0004162	1.375592	0.6984974	8.2511051	0.05610664	1.375592
##	4	4.0399756	5.7591044	5.418657	3.7712147	4.1040471	4.63183856	4.008078
##	5	0.0631199	6.2127458	6.222943	2.4538543	5.0171972	3.03285981	6.285437
##	6	4.6939049	3.2101281	4.115639	5.8016780	-0.1234365	-0.05087342	4.573573
##		Pycr1	Pygb	Pygl	Pygm	Pygo1	Pygo2	Pyroxd1
##	1	4.514521	6.164198	-0.8150928	2.432939	3.66137780	5.750853	1.6276917
##	2	4.323454	7.018353	0.7823651	3.178484	-0.44943896	5.309041	2.1098885
##	3	8.047816	8.848487	1.0083330	-1.131317	-3.88412153	1.141414	-0.6195262
##	4	6.771931	8.764154	4.5876400	3.127706	2.24597622	4.095819	3.3971324
##	5	6.704673	8.262423	2.3082165	4.309838	-2.80711744	4.494327	2.9925589
##	6	3.935987	9.336417	4.0490433	4.498150	3.09104158	6.435399	3.2334895
##		Pyroxd2	Qars	Qdpr	Qk	Qpct	Qpct1	Qprt
##	1	3.31160550	6.175236	7.324371	10.395873	5.8483269	4.346395	-2.999808
##	2	1.41108463	7.213559	6.249903	9.238349	1.9346359	5.052529	-3.884122
##	3	-1.93173924	6.106020	10.542259	10.989086	8.6344203	1.911138	-3.884122
##	4	3.23630563	6.728050	7.821413	9.887919	5.3545815	4.821828	-3.029652
##	5	3.67453608	6.574211	9.863094	10.072524	6.0005263	4.969546	-2.807117
##	6	2.32714400	6.300309	5.025741	10.886851	-0.8674409	4.291994	-3.288906
##		Qrfp	Qrich1	Qrich2	Qrs11	Qser1	Qsox1	Qsox2
##	1	-1.1974402	6.635653	-3.512200	3.449574	5.120232	5.972805	4.2217943
##	2	-2.2057178	6.860653	-2.807082	3.190135	5.862463	7.119392	4.1648727
##	3	-3.8841215	5.672335	-3.884122	7.045003	1.479815	7.021451	0.5144282
##	4	-2.5178578	6.655092	-3.884122	4.101584	5.912104	6.106971	2.3928736
##	5	-3.8841215	6.778627	-3.884122	-2.197374	4.435414	6.183209	1.0155818
##	6	-1.6435726	6.296885	-3.490484	4.274946	6.002817	6.297899	4.1611175
##		Qtrt1	Qtrtd1	R3hcc1	R3hdm1	R3hdm2	R3hdm1	Rab1
##	1	4.1711465	4.2942581	4.55768496	6.657749	6.813799	-3.514643	7.185777
##	2	3.5279840	3.2893721	4.99454509	5.626208	6.220498	-3.884122	8.304397
##	3	-0.2425151	0.6984974	0.05610664	2.182248	1.375592	-3.884122	8.787598

```

## 4 5.2925409 6.0873469 4.71867903 6.788915 4.536391 -1.356195 6.822431
## 5 5.7676245 5.8582563 3.78877094 6.068341 4.287803 -3.884122 8.205894
## 6 3.7257233 5.4416811 4.28430169 7.012979 6.546589 -3.884122 7.002664
##      Rab10      Rab11a      Rab11b      Rab11fip1      Rab11fip2      Rab11fip3      Rab11fip4
## 1 8.548362 7.166872 6.128087 -1.9466758 5.290873 6.398367 4.0927607
## 2 7.578935 8.034298 5.935746 6.4295898 3.918754 5.147192 -0.2667366
## 3 7.849307 5.186575 7.881773 0.3033916 1.479815 1.668074 -1.9317392
## 4 6.290726 6.065698 7.826211 -0.3177349 4.449048 4.385809 0.2870810
## 5 6.941854 7.195909 7.549015 -0.5800187 3.631442 4.315294 -3.8841215
## 6 7.950799 5.815711 6.141208 -1.7025440 5.194337 6.428822 6.1805137
##      Rab11fip5      Rab12      Rab13      Rab14      Rab17      Rab18      Rab19
## 1 5.1992530 5.870350 2.457541 7.952279 -3.382741 6.952697 -2.8891802
## 2 5.9796574 8.143257 5.225745 7.448707 -3.884122 7.810520 -0.2950408
## 3 -0.2425151 1.753727 -1.131317 5.503337 -3.884122 7.594603 -3.8841215
## 4 3.1684221 4.947351 4.321672 7.220632 -2.818263 7.882326 -1.7313517
## 5 2.2861569 4.248414 5.812688 8.010776 -3.884122 8.258179 -3.8841215
## 6 5.2343603 5.841902 4.064230 7.197705 -3.884122 6.319990 -3.6744822
##      Rab1b      Rab20      Rab21      Rab22a      Rab23      Rab24      Rab25
## 1 7.575199 1.95602615 5.864710 5.301149 5.196529 5.595995 -3.6787318
## 2 8.025598 1.11398467 5.469249 6.072860 3.294347 5.685064 -1.9943912
## 3 8.710031 -3.88412153 3.910295 2.356639 1.479815 5.123616 1.7537270
## 4 6.926430 0.25492263 4.180411 3.345027 4.794310 3.095374 -1.7053710
## 5 7.406751 -2.19737395 5.079448 4.219605 2.263755 4.110854 -0.9471720
## 6 6.443536 0.09157933 5.346938 4.945818 4.859665 5.979160 -2.1384252
##      Rab26      Rab27a      Rab27b      Rab28      Rab2a      Rab2b      Rab30
## 1 -0.1961066 1.8799016 3.5727104 5.095969 7.570282 5.501561 2.9158999
## 2 -0.8670606 2.4286717 -0.7034115 6.084067 7.687434 4.406715 3.4621989
## 3 -3.8841215 -1.1313170 0.3033916 5.099280 7.119497 7.315328 -0.6195262
## 4 1.0862962 1.6735863 -0.6517709 5.218458 6.254137 7.027655 4.8142263
## 5 -2.8071174 -2.1973739 -0.7519471 5.551158 6.329246 6.426991 5.5580782
## 6 -0.9533576 -0.5736634 0.2679212 5.072587 7.161665 4.661391 5.1777329
##      Rab31      Rab32      Rab33a      Rab33b      Rab34      Rab35      Rab36
## 1 8.983627 3.2169828 5.1903948 5.084037 5.631995 5.701822 3.566044
## 2 7.095924 1.8981167 -1.0422068 4.907657 4.526460 6.543908 -0.874151
## 3 8.788867 -0.6195262 7.0660844 3.599276 6.004840 1.008333 -1.131317
## 4 7.805143 2.9444210 5.2281983 6.520368 4.614032 3.739145 5.256238
## 5 8.267005 1.0155818 6.5466401 5.831850 3.788771 3.930617 4.489509
## 6 8.004386 0.8975669 2.3098011 5.336715 7.640202 5.626322 5.276649
##      Rab37      Rab38      Rab39      Rab39b      Rab3a      Rab3b
## 1 0.845284643 -1.49736352 -0.06418175 5.1409982 6.142451 1.3580108
## 2 -0.007587947 -1.24169121 -2.09992075 -0.1920925 4.446406 0.1113202
## 3 -3.884121530 0.69849743 -1.93173924 6.8594238 7.542906 -0.2425151
## 4 -0.050135497 -1.65341527 1.28413993 4.3095009 5.398329 3.1753671
## 5 2.413721803 -1.17301144 -1.77010377 4.0662445 7.234580 4.1171157
## 6 -0.254550255 -0.08343242 1.37218447 3.4892951 3.937643 -0.1449409
##      Rab3c      Rab3d      Rab3gap1      Rab3gap2      Rab3i11      Rab3ip      Rab40b
## 1 3.8496017 2.7910600 5.440736 6.929631 3.5934084 4.995773 1.9064469
## 2 0.6541176 2.7270303 6.549342 6.337354 4.0559069 4.483854 0.9185666
## 3 0.3033916 2.7391666 8.699951 1.668074 0.6984974 5.006360 -1.9317392
## 4 4.7674511 4.8324809 5.881364 4.914560 3.7885536 3.304850 1.1077975
## 5 6.0667240 5.3924334 5.704570 4.704365 -0.4264149 -1.440886 -3.8841215
## 6 -0.4250638 0.6335689 6.113382 7.928002 2.7588185 3.692179 0.8311946
##      Rab40c      Rab43      Rab44      Rab4a      Rab4b      Rab5a      Rab5b
## 1 5.8924609 4.1094540 -0.2645946 5.5152348 5.508281 6.583958 6.653278

```

```

## 2  5.3625533  6.9826976 -3.1165114  5.3999187  5.945417  7.064845  6.945984
## 3  0.6984974  0.3033916 -3.8841215  0.3033916  1.263249  1.141414  6.303568
## 4  3.7331547  2.7595397 -1.7747126  5.1890735  5.645224  3.083392  5.902726
## 5  4.2933437 -1.7701038 -2.8071174  5.6516333  6.488660  3.993232  4.494327
## 6  4.8692894  4.5331758 -3.8841215  3.8939069  5.439608  6.333703  5.262517
##      Rab5c      Rab6a      Rab6b      Rab7      Rab8a      Rab8b      Rab9
## 1  8.093544  7.983511  6.446229  6.108641  5.707486  6.307243  5.180466
## 2  8.554369  7.999969  2.101181  6.520183  6.530427  5.899346  5.575220
## 3  7.226362  7.559354  1.834579  4.652113  7.692750  4.674250  9.407390
## 4  5.126451  6.511705  5.677895  5.619544  7.121678  6.488632  6.973534
## 5  6.747684  7.385510  6.290987  4.720905  7.310994  5.219893  7.343401
## 6  6.944442  7.480731  4.673572  5.440535  4.747401  5.450837  5.882222
##      Rab9b      Rabac1      Rabep1      Rabep2      Rabepk      Rabgap1      Rabgap11
## 1  2.329358  6.346901  6.3402877  4.01282852  3.247796  6.262138  6.099833
## 2 -1.480361  7.777198  6.4188881  5.57940822  3.802219  6.733832  5.584375
## 3 -1.931739  9.414804  0.6984974  7.31180230  6.274882  2.462191  6.529836
## 4  2.089018  7.408401  5.4908677  3.48946749  5.669525  6.715558  4.697840
## 5 -1.173011  8.678263  4.3315411  2.77221117  6.523255  6.861149  5.642980
## 6 -1.799292  5.095659  7.2149249  4.94588411  3.741721  6.711152  5.481525
##      Rabgef1      Rabggtb      Rabggtb      Rabif      Rabl2      Rabl3      Rac1
## 1  4.480705  4.926876  5.553552  4.387047  3.8959762  2.7994630  9.228938
## 2  6.661666  4.069794  6.104058  4.747504  3.0177548  3.3058277  9.119460
## 3  1.263249  7.634666  7.263340  7.867434  1.0083330  0.8617169  8.476473
## 4  5.108377  6.340636  6.080308  6.064594  5.3300351  4.1792077  7.177793
## 5  5.027207  5.803010  5.496968  5.496968  5.2169807  2.0182291  8.053846
## 6  5.084440  6.363242  6.267563  3.656787  3.5622832  3.7308418  7.868614
##      Rac2      Rac3      Racgap1      Rad1      Rad17      Rad18
## 1  1.93742760  4.383681  4.9602391  2.2468833  4.159614  1.32759731
## 2 -0.06523829  2.094697  4.7730471  1.6752129  4.894870  3.22375120
## 3  0.69849743 -3.884122  0.3033916  7.7680138  5.881827  0.51442825
## 4  3.47009913 -1.058830  5.5255311  4.9158353  4.967562  4.56908101
## 5  3.64883436  1.068238  5.5763722  5.4103903  3.958782 -0.94717201
## 6 -2.52991203  3.284454  4.4561771  1.8795155  4.667236  2.16009396
##      Rad21      Rad211      Rad23a      Rad23b      Rad50      Rad51      Rad51ap1
## 1  7.273166 -3.235953  5.391362  7.597790  3.3773842  1.8277464  1.1883570
## 2  7.970983 -3.884122  5.160045  7.985437  3.6572742  2.3469733  4.8741674
## 3  2.780569 -3.884122  2.859970  2.971435  1.0083330  1.4798145  0.5144282
## 4  6.779924 -2.738821  5.713596  4.039548  5.3776212  4.6966617  4.2936455
## 5  6.886113 -3.884122  5.076238  3.512973  0.9041264  3.1836685  2.7401147
## 6  6.653040 -3.156544  4.889655  6.385767  4.4312559  2.3372043  1.7981741
##      Rad51ap2      Rad51c      Rad52      Rad54b      Rad54l      Rad54l2
## 1 -2.6234557  1.4619424  3.4633975  1.1535161  1.65700454  5.5386889
## 2 -3.6565043  2.2985418  3.8477393  3.0727273  1.17539769  5.6510653
## 3 -3.8841215  6.5568963 -0.6195262  1.0083330  0.30339162  3.5036165
## 4 -3.8841215  3.4691430  5.0730767  3.7818373  5.25833648  3.2147511
## 5 -3.8841215  4.4553202  2.7072879 -0.5800187  2.39322898  0.3450364
## 6 -3.1186116  0.6588706  4.6812909  2.9627556  2.16731496  5.9790709
##      Rad9b      Radil      Rae1      Raf1      Rag1      Rai1
## 1  2.2706328  0.96019743  5.336485  7.515246 -2.319724  6.1717738
## 2  1.2468857 -0.29206808  5.141256  7.363935 -2.800098  6.2646480
## 3 -1.9317392 -3.88412153  1.263249  3.401161 -1.931739  0.6984974
## 4  2.6112342 -0.16613646  4.554357  5.239193 -2.707289  2.6870379
## 5 -2.8071174 -1.17301144  4.737258  6.037310 -3.884122  3.3838991
## 6  3.3202040  0.91817378  5.452533  7.402500 -3.884122  7.2443497

```

##	Rai14	Rai2	Rala	Ralb	Ralbp1	Ralgapa1	Ralgapa2
## 1	0.45908260	1.1458926	6.3580317	4.865705	5.747235	6.161680	4.85497321
## 2	8.40926535	-1.2625190	6.9576096	7.620298	6.460545	7.101650	4.50114776
## 3	0.05610664	-1.1313170	0.5144282	7.379049	4.830258	6.930118	0.05610664
## 4	2.73209922	3.2624977	4.7710400	4.880044	5.008968	4.831472	3.25178479
## 5	3.57797005	4.3422715	4.9415924	5.907857	4.745365	4.379211	-0.58001868
## 6	3.30901728	-1.9608878	5.4818814	5.150338	5.271310	7.132556	6.13998051
##	Ralgapb	Ralgds	Ralgps1	Ralgps2	Raly	Raly1	Ramp1
## 1	6.418754	8.201120	4.865347	5.409239	7.042442	3.2129632	6.5929080
## 2	6.505510	6.954316	1.492087	5.677116	8.893859	-0.5897398	0.4431957
## 3	6.797745	2.462191	-1.131317	1.479815	4.749157	-0.2425151	8.7594013
## 4	4.092208	5.481530	4.338370	4.685084	2.785194	5.0659541	6.5926278
## 5	5.079448	6.014011	4.609841	4.455320	4.231198	5.4993668	8.3387534
## 6	6.907786	7.678415	4.119169	5.046634	6.249671	-1.5525868	5.8052514
##	Ramp2	Ramp3	Ran	Ranbp1	Ranbp10	Ranbp17	Ranbp2
## 1	4.314041	-0.3963594	6.763998	5.812353	5.738625	3.477064	6.279724
## 2	8.833349	3.1763853	7.229730	6.077505	6.220941	3.094864	7.645023
## 3	6.859424	6.5863793	8.587805	6.797745	5.683292	-3.884122	6.093753
## 4	5.029468	0.1193568	7.573564	6.561700	4.191500	2.614234	5.171736
## 5	4.902250	-2.8071174	8.731525	8.058327	4.865529	4.315294	4.745365
## 6	4.089198	-2.2520684	5.877179	5.088513	6.047593	3.911065	7.471085
##	Ranbp3	Ranbp31	Ranbp6	Ranbp9	Rangap1	Rangrf	Rap1a
## 1	6.570904	-0.6573848	4.8309427	6.247161	6.691119	1.3352696	5.813627
## 2	6.222358	-1.7039440	4.2317986	6.300699	6.047368	-0.4420967	6.154864
## 3	1.983840	-3.8841215	7.5429060	6.321212	2.410380	3.8336888	4.118365
## 4	5.998694	4.0178476	5.3097361	4.697055	6.376171	2.4893935	4.578526
## 5	6.488660	3.7490031	2.3299438	3.622666	6.171222	1.7221719	6.240257
## 6	6.130406	4.3789751	6.1089258	6.156972	5.313675	2.0881946	4.325820
##	Rap1b	Rap1gap	Rap1gap2	Rap1gds1	Rap2a	Rap2b	Rap2c
## 1	6.378283	9.0103212	6.08391220	7.988223	8.399158	5.428374	5.505593
## 2	9.196526	0.8002637	0.01318542	7.461180	6.184828	3.342686	6.160757
## 3	9.145953	-3.8841215	-1.13131698	2.820816	7.101231	8.473320	1.008333
## 4	5.489643	1.7982038	1.47030851	5.296966	4.654265	6.214010	4.199217
## 5	5.882351	1.3492478	-1.77010377	5.513677	3.183669	7.220108	3.944768
## 6	6.576933	6.8522519	5.29085296	6.348507	5.762224	6.187759	5.397511
##	Rapgef1	Rapgef2	Rapgef3	Rapgef4	Rapgef5	Rapgef6	Rapgef11
## 1	8.320206	6.215425	5.661354	5.701077	4.8693435	4.746809	4.1082170
## 2	7.725516	6.995249	6.752030	7.416630	8.2336945	7.430577	0.8239647
## 3	5.360474	6.685069	-1.931739	1.008333	0.8617169	1.577013	2.7391666
## 4	5.088386	4.082954	3.787241	3.358448	1.6447882	5.307117	3.0638327
## 5	2.690590	4.129558	1.722172	2.673697	-2.1973739	3.046047	1.4319435
## 6	6.666561	6.040171	7.498603	2.988108	1.4182099	5.231881	2.9002357
##	Raph1	Rapsn	Rara	Rarb	Rarg	Rarres1	
## 1	4.8895186	-1.7540699	3.1494397	0.7301735	3.73552884	-0.2965572	
## 2	6.7475418	-3.2277824	5.2657923	1.1129769	5.10993419	2.6686153	
## 3	0.6984974	-1.9317392	1.0083330	-1.9317392	1.98383951	0.8617169	
## 4	3.9964010	-0.4294196	-0.6366108	1.6729837	1.63648194	-0.9267623	
## 5	1.5843436	-3.8841215	-1.4408855	-3.8841215	0.06311990	-2.8071174	
## 6	4.6186492	-1.7838833	5.0023354	1.2556943	3.98181491	3.5087268	
##	Rarres2	Rars	Rars2	Rasa1	Rasa2	Rasa3	Rasa4
## 1	-1.1007161	5.532090	3.606127	5.390525	4.809705	7.424750	0.6306734
## 2	2.4755613	6.008295	3.586605	6.925258	4.807292	4.880229	2.4083114
## 3	5.1865749	7.344955	1.479815	1.375592	3.644828	5.742109	-0.6195262
## 4	5.1776675	6.705090	5.212118	6.032886	5.137402	6.444650	-0.4647281

```

## 5 6.5967902 7.309627 4.470072 5.567254 4.326146 6.086005 -1.7701038
## 6 2.3181878 5.632917 4.351229 6.552724 8.175006 8.362437 -0.8906926
##      Rasal1      Rasal2      Rasal3      Rasd1      Rasd2      Rasef
## 1 3.758933882 5.4716533 1.2735105 0.1190306 3.4807854 -3.3234918
## 2 -0.006588728 6.9598586 -1.5802861 6.6051416 2.6690514 -3.0392407
## 3 -3.884121530 0.6984974 -3.8841215 6.7280293 -3.8841215 -3.8841215
## 4 1.329591057 5.4079499 -3.6539444 1.8952144 -0.3555469 -2.8731982
## 5 -1.770103772 5.1048765 -3.8841215 -0.5800187 -3.8841215 -3.8841215
## 6 -1.298028856 6.3805069 -3.0276140 2.3843772 0.3898709 -3.0447446
##      Rasgef1a Rasgef1b Rasgef1c Rasgrf1 Rasgrf2 Rasgrp1
## 1 2.6097769 7.633799 0.9170727 5.6523302 2.98720576 2.0502232
## 2 1.0527092 2.304211 -2.9369560 -0.7666628 -0.24565149 0.3811364
## 3 -0.2425151 7.715611 -3.8841215 5.5519685 0.05610664 -0.6195262
## 4 0.9836504 7.448461 0.2472511 3.6605846 0.33908990 3.7039361
## 5 -1.4408855 7.792924 -2.8071174 0.5063887 -1.17301144 -0.5800187
## 6 -0.6616235 5.601147 -3.0097167 4.3640094 0.43283425 5.9661009
##      Rasgrp2 Rasgrp3 Rasgrp4 Rasip1 Rasl10a Rasl10b
## 1 2.760329 2.6759796 1.84552658 2.2756045 -0.42796044 5.5644828
## 2 5.289960 9.2522794 4.97786015 9.2576558 -0.09025001 0.3242687
## 3 -1.931739 2.5605442 -1.93173924 5.6389571 6.37963585 -0.2425151
## 4 2.358560 4.3059853 -0.01086978 4.0234961 -1.01304478 2.3340047
## 5 3.019551 4.6274944 -1.77010377 0.5807664 -3.88412153 -0.5800187
## 6 2.295753 2.0331905 1.07941893 2.7188911 -0.24073965 6.2036706
##      Rasl11a Rasl11b Rasl12 Rassf1 Rassf10 Rassf2 Rassf3
## 1 1.975296 3.4394660 3.6650205 4.5697980 2.95249222 7.160048 2.981265
## 2 2.457121 2.0208264 2.4115285 7.6731256 -2.29232239 6.383377 8.486468
## 3 -1.931739 -0.6195262 6.2270146 0.3033916 0.30339162 4.422917 5.099280
## 4 2.103754 2.0592168 3.9871059 5.5104370 0.03790474 6.363393 1.244230
## 5 -1.173011 3.7809046 5.1205444 3.1227355 -1.17301144 6.172726 2.018229
## 6 5.009115 6.2309421 -0.9354519 6.0246896 5.31569679 7.114006 3.023866
##      Rassf4 Rassf5 Rassf6 Rassf7 Rassf8 Rassf9
## 1 4.4348544 1.9584317 -3.884122 -0.8695391 4.5364603 -3.4298924
## 2 3.4629648 0.7100988 -2.716134 0.1105367 5.9353941 7.0910148
## 3 4.8003771 5.4074832 -1.931739 0.8617169 -1.9317392 4.7902775
## 4 3.1641738 1.8772524 -1.232239 2.4281639 -0.6696348 -0.8237671
## 5 -1.1730114 -0.1609828 -2.807117 -1.1730114 -2.8071174 -3.8841215
## 6 -0.1273633 0.4798962 -2.434157 -1.0176448 3.7506677 -0.7952343
##      Raver1 Raver2 Rb1 Rb1cc1 Rbak Rbbp4 Rbbp5
## 1 4.8412338 3.1501822 5.648021 5.561642 4.02203176 7.851076 5.476021
## 2 4.3982474 2.9031958 5.219708 6.567444 4.02740924 8.464171 4.851683
## 3 0.8617169 -3.8841215 1.834579 1.911138 0.05610664 9.865918 1.375592
## 4 3.9831236 2.3550125 4.760004 5.505571 3.55807703 8.757066 5.461029
## 5 4.4798230 -2.8071174 5.733388 5.915063 2.19438236 9.403440 3.183669
## 6 4.5421425 6.8452269 8.043356 6.040421 5.10400099 6.753095 5.630339
##      Rbbp6 Rbbp7 Rbbp8 Rbbp9 Rbck1 Rbfa Rbfox1
## 1 6.331851 5.841769 3.6985468 5.056704 6.479547 4.4836816 3.10595389
## 2 7.379496 7.474953 5.3630609 5.115209 6.929191 4.0602658 0.55559279
## 3 7.368905 5.638957 1.0083330 2.898090 5.773209 0.3033916 1.75372696
## 4 5.961540 6.611620 4.2909729 7.417882 4.687643 2.0428835 5.29135830
## 5 4.653576 6.546640 4.1233504 6.222943 5.384669 -1.1730114 4.47007178
## 6 7.523236 5.860242 4.3640400 5.007794 6.171686 4.3012734 0.02176622
##      Rbfox2 Rbfox3 Rbks Rb11 Rb12 Rbm10
## 1 5.865955 2.0428707 0.5657546 3.20149503 5.858722 4.882312
## 2 6.448235 1.1310318 2.0189651 4.89305285 5.066016 4.418564

```



```

## 3 1.008333 -0.2425151 -3.8841215 0.05610664 2.356639 5.339849
## 4 5.381318 5.0247816 2.2637662 3.23258497 4.383521 4.744413
## 5 5.242981 4.0727023 4.0532413 -1.44088555 4.135739 4.541648
## 6 6.389100 -0.1612034 0.9607038 4.45021153 5.544844 4.891229
##      Rbm11      Rbm12      Rbm14      Rbm15      Rbm15b      Rbm17      Rbm18
## 1 3.37321369 4.739391 5.776456 4.037166 5.733215 5.476831 5.565586
## 2 -1.56197715 4.792057 4.234379 4.579251 5.492124 5.778600 6.381740
## 3 -1.13131698 3.478677 1.753727 4.790278 1.008333 4.979944 2.356639
## 4 -0.01874012 4.925402 5.148300 4.955779 3.307652 4.175709 7.069122
## 5 -2.80711744 5.548843 5.196429 5.955809 4.000024 4.046696 7.079686
## 6 -1.46610613 5.312822 5.354375 4.797005 5.527250 5.453732 5.774131
##      Rbm19      Rbm20      Rbm22      Rbm24      Rbm25      Rbm26      Rbm27
## 1 4.2390973 2.7713966 6.351498 -0.3957744 6.817887 5.849620 4.865261
## 2 4.3684253 4.1377010 6.378589 -1.5255932 7.219036 5.276549 5.529480
## 3 -0.6195262 1.2632490 2.053052 -1.1313170 5.246901 5.877063 3.290869
## 4 3.1169796 3.8485592 7.045398 3.7616503 7.995201 5.901741 5.259471
## 5 3.2306273 2.3724409 6.261611 2.0447493 4.450369 5.142198 1.935611
## 6 3.7353357 5.1686733 5.744629 2.9227644 8.167973 7.178938 5.674493
##      Rbm28      Rbm3      Rbm33      Rbm34      Rbm38      Rbm39      Rbm4
## 1 5.783038 4.346338 6.715468 3.99358834 3.713205 7.659096 4.379367
## 2 5.285630 4.875443 6.726068 3.49838015 3.524758 8.703194 4.272415
## 3 1.577013 1.668074 1.668074 0.05610664 -3.884122 4.396529 3.575949
## 4 6.057273 3.491150 4.761046 4.16056652 2.657837 7.324032 5.764115
## 5 3.772995 3.986407 2.393229 2.97887114 3.740916 6.984432 5.725213
## 6 6.314248 5.135067 7.596665 4.28433699 2.793553 9.020869 4.090117
##      Rbm41      Rbm42      Rbm43      Rbm44      Rbm45      Rbm46      Rbm47
## 1 4.1168533 6.390525 1.836229 -3.236678 5.101294 -1.9781127 -1.2953411
## 2 5.2284591 6.612879 3.897505 -1.164769 4.937180 -2.8952098 -2.8952098
## 3 -0.6195262 7.648709 5.818636 -3.884122 -1.131317 -1.9317392 1.3755916
## 4 3.7815246 4.439698 3.370383 -3.884122 3.646190 2.3678191 2.8173426
## 5 -3.8841215 6.461850 2.819055 -3.884122 3.264870 4.3369163 -0.5800187
## 6 4.5617951 5.097716 2.073047 -3.660779 4.556208 0.9235999 -3.6607788
##      Rbm4b      Rbm5      Rbm6      Rbm7      Rbm8a      Rbms1      Rbms2
## 1 4.252121 6.916373 4.724857 5.524653 4.890452 1.556672 4.068633
## 2 3.518924 6.988077 5.360520 6.551461 5.422839 6.929411 6.435613
## 3 6.665864 3.552239 1.375592 8.399666 7.658459 7.475172 1.479815
## 4 6.198753 8.682672 5.849632 6.416002 7.115746 3.312975 5.043170
## 5 6.895251 5.196429 5.262884 6.630010 7.757788 4.725011 5.151379
## 6 4.797503 7.915331 6.303632 6.050902 4.837592 1.904500 4.506420
##      Rbms3      RbmX      RbmX2      RbmX11      Rbp1      Rbp2      Rbp4
## 1 1.214863 6.798393 2.556201 4.220722 1.120060 -3.8841215 1.12188192
## 2 5.077004 6.499891 2.636040 4.615598 6.171215 -2.0325413 -2.72855734
## 3 7.585871 6.017882 4.328367 4.717529 7.536878 0.5144282 -3.88412153
## 4 4.963645 8.077977 4.485339 5.282847 3.939515 -1.0005579 0.04087956
## 5 5.527847 7.752769 4.033514 5.898800 6.658195 -1.7701038 4.23119791
## 6 1.607333 7.091915 2.546620 4.295877 4.255822 -3.8841215 -0.40564413
##      Rbp7      Rbpj      Rbpj1      Rbpms      Rbpms2      Rbx1      Rc3h1
## 1 -3.7949831 5.057427 3.888987 0.1375306 -1.9909339 5.477519 6.173472
## 2 -0.5881064 3.345345 -3.335655 6.7818678 1.3052505 5.680214 7.139847
## 3 -3.8841215 2.053052 -3.884122 -1.9317392 5.4530084 9.268785 7.430352
## 4 -3.6749365 5.127911 -1.674413 0.6109513 0.8377570 8.210650 6.043904
## 5 -3.8841215 3.159603 -3.884122 3.6660196 -3.8841215 9.150708 4.934519
## 6 -2.8405514 4.737722 -1.575662 -0.2664976 3.6842380 4.644669 6.055373
##      Rc3h2      Rcan1      Rcan2      Rcan3      Rcvtb1      Rcvtb2      Rcc1

```

```

## 1 5.952109 5.804497 5.4875829 5.7587234 6.081512 4.987087 4.5356453
## 2 5.820730 5.852403 3.0085358 6.6830593 5.737093 4.907948 4.4447318
## 3 1.753727 1.668074 4.7068304 0.6984974 6.169734 1.263249 1.2632490
## 4 5.490622 3.641735 5.9857479 4.4077316 5.258981 5.886206 3.8369554
## 5 5.296379 4.207919 4.8201936 4.2254133 5.363756 6.439538 -0.2876030
## 6 6.394425 4.852456 0.2931532 4.3627256 5.376563 5.655252 4.7235972
##      Rcc2      Rccd1      Rce1      Rchy1      Rcl1      Rcn1      Rcn2
## 1 7.285978 3.279041 4.7129570 5.061624 3.6303599 6.885687 6.630849
## 2 6.907204 2.295717 5.8342314 5.349345 5.0825195 6.187112 6.722258
## 3 3.041231 -1.131317 0.3033916 7.201808 -0.2425151 1.479815 8.969226
## 4 6.021918 2.690739 3.5612469 5.424879 3.2330642 3.845609 7.170415
## 5 6.181716 3.097623 1.6549031 7.173552 5.3046319 4.930969 7.835318
## 6 6.913596 4.076846 4.9246212 5.019858 2.9362431 5.615728 8.176293
##      Rcn3      Rcor1      Rcor2      Rcor3      Rcsd1      Rcvrn
## 1 5.434821 4.0693735 4.6188028 3.4820400 1.7887561 -2.0807721
## 2 6.007425 5.1251935 1.4275893 3.5420501 6.3382567 -3.8841215
## 3 2.462191 0.3033916 -1.1313170 -0.6195262 -1.9317392 -3.8841215
## 4 6.775036 3.7842679 2.7272576 3.1037125 2.0115530 -3.2878217
## 5 7.195169 -1.7701038 5.2314831 0.9041264 0.5807664 -3.8841215
## 6 2.959832 4.7870691 3.1300520 4.6506260 -0.3467747 -2.8653806
##      Rd3      Rdh1      Rdh10      Rdh11      Rdh12      Rdh13
## 1 -0.9111405 -2.4869346 3.60497646 6.2139874 1.1371630 4.384190
## 2 2.8777800 -2.3810719 4.24733134 4.9420679 0.9502224 3.098990
## 3 -3.8841215 0.3033916 0.05610664 0.6984974 0.3033916 6.432542
## 4 0.9429647 -1.8590775 3.15651206 5.7653626 1.5813119 6.462663
## 5 1.1190407 -0.9471720 -0.04458439 5.6211174 3.6997879 6.227291
## 6 -2.5299120 -1.4154842 4.50207661 5.9492210 -2.5216411 5.274386
##      Rdh14      Rdh5      Rdh9      Rdm1      Rdx      Rec8      Reck
## 1 3.849214 0.4879931 -0.97191946 2.5646794 7.857044 -3.3153630 3.9253623
## 2 3.745572 0.9902392 0.07895966 4.6967861 7.803382 1.6137409 5.1909298
## 3 6.489832 7.4352211 1.00833299 6.3455561 6.154067 -1.9317392 0.8617169
## 4 4.041280 4.6744388 -0.99782044 6.1839663 7.045161 0.1861747 2.6280652
## 5 2.512034 5.5557751 2.90841386 7.1862633 6.407965 -3.8841215 -2.8071174
## 6 4.368340 4.4845055 -1.13747167 2.7981631 7.629087 -2.2216202 5.1722865
##      Recq1      Recq14      Recq15      Reep1      Reep2      Reep3      Reep4
## 1 4.2621345 1.9578430 4.6100999 7.218776 5.6182093 7.939126 1.8778967
## 2 3.3778610 1.3600567 3.9486824 7.783768 2.4183133 7.859505 2.9783875
## 3 0.5144282 -3.8841215 -0.2425151 3.453298 0.6984974 6.790163 1.4798145
## 4 4.5298168 0.2190952 4.4481864 4.358165 5.2606880 6.755815 1.4248909
## 5 3.0976229 -3.8841215 2.0182291 5.160502 4.7413169 7.063565 4.0727023
## 6 3.9403634 3.0065053 5.3001239 3.703833 5.8402149 7.605473 3.6326690
##      Reep5      Reep6      Rel      Rela      Relb      Rel11      Rel12
## 1 8.875859 2.4703159 3.1322691 5.840000 3.4855516 6.563119 1.0526016
## 2 7.320227 -2.4122496 5.0498085 7.233983 5.6959405 8.361622 -0.2957706
## 3 9.438844 -3.8841215 5.5756831 2.410380 -0.6195262 5.666826 -3.8841215
## 4 8.092463 0.2918194 -0.6214034 6.485586 1.4591677 4.878459 -3.3735035
## 5 9.147461 -2.1973739 -3.8841215 5.967986 0.1633391 4.796980 -3.8841215
## 6 7.022946 2.7090391 3.4521224 6.326011 3.4345193 4.579843 -0.2164386
##      Reln      Relt      Rem1      Rem2      Renbp      Rep15
## 1 1.0130664 4.624773 -2.430660 1.60066104 2.1319747 0.98129560
## 2 3.2617061 2.481136 1.451448 0.59160172 4.5286359 0.09138673
## 3 2.7391666 -3.884122 -3.884122 -3.88412153 0.5144282 -3.88412153
## 4 1.7127477 1.017037 -1.010913 -0.39048348 4.9076656 -2.23328926
## 5 0.5807664 -2.807117 -3.884122 -3.88412153 3.5960151 -3.88412153

```

```

## 6 4.2894295 4.465417 -3.512249 -0.07321323 2.5417677 -3.15654382
##      Repin1  Reps1      Reps2      Rer1      Rere      Rerg      Resp18
## 1 5.323998 5.774711 4.2676726 6.510839 7.217676 0.04336014 3.2889455
## 2 3.422601 3.862094 0.2552304 6.780268 7.187206 1.15672071 -0.4877179
## 3 2.739167 1.375592 -1.1313170 8.802749 1.834579 -0.61952623 5.6557427
## 4 4.973624 3.900048 1.4386146 6.316620 5.751032 4.99947035 1.4699833
## 5 5.315564 4.704365 1.7864435 7.377055 4.006785 4.41013838 2.9370110
## 6 5.434284 6.255517 -0.4500387 5.769638 7.380179 -1.75066496 -2.4094269
##      Rest      Ret      Retn      Retnla      Retnlg      Retsat
## 1 4.1203656 0.8087207 -3.790167 -3.723567 -2.3640842 3.644215
## 2 4.8020399 5.6266458 -3.884122 -3.884122 -0.5541019 5.476054
## 3 0.6984974 -3.8841215 -1.931739 -3.884122 -3.8841215 5.610540
## 4 2.9968284 -2.6312926 -3.884122 -3.287822 -3.8841215 5.361798
## 5 -1.1730114 -2.8071174 -3.884122 -3.884122 -3.8841215 4.761444
## 6 5.1425119 -0.3758939 -3.884122 -3.884122 -3.8841215 4.469558
##      Rev1      Rev3l      Rexo1      Rexo2      Rexo4      Rfc1      Rfc2
## 1 4.74979088 6.912373 6.306483 5.827055 5.163650 5.324298 5.378981
## 2 5.06449510 6.161086 5.950250 6.275364 5.062911 5.660119 5.987715
## 3 -3.88412153 1.141414 1.375592 1.375592 1.008333 5.407483 6.820254
## 4 2.94428919 4.671758 3.313337 4.918977 5.240372 6.886096 7.088207
## 5 1.01558177 3.827472 3.657453 6.366516 3.559696 5.318284 6.876918
## 6 5.46968998 7.496507 6.082914 4.441398 5.471840 6.512851 4.775978
##      Rfc3      Rfc4      Rfc5      Rfesd      Rffl      Rfk      Rfng
## 1 3.670115 2.734631 3.23274279 2.703810 4.1440927 5.951171 5.8633082
## 2 3.874880 3.332329 4.27494583 2.815860 4.4489009 5.599278 3.9475798
## 3 6.687792 6.618130 0.05610664 -3.884122 5.8334663 7.766727 -0.2425151
## 4 5.910179 6.665767 2.66887432 4.086185 3.3205334 5.775340 3.6486847
## 5 5.769613 7.423268 4.32073037 4.596458 0.7189210 6.119139 3.9306175
## 6 3.349921 2.089822 2.57859260 2.886760 2.4675113 5.108367 5.8694081
##      Rfpl4      Rft1      Rftn1      Rftn2      Rfwd2      Rfwd3      Rfx1
## 1 -3.884122 4.081119 3.211818 6.278662 4.402158 3.9203877 4.4038369
## 2 -3.651962 4.554699 4.596664 5.075573 4.735893 4.8662288 3.5401419
## 3 -3.884122 1.008333 -1.131317 6.292878 4.342260 2.5122057 -0.2425151
## 4 -3.030183 4.280121 2.462176 8.034292 4.098542 4.3276911 2.0679382
## 5 -3.884122 2.170497 1.688930 7.354707 4.657877 3.5779700 2.0707909
## 6 -3.674482 4.519003 -1.422350 7.102085 4.065741 4.6138049 4.8769655
##      Rfx2      Rfx3      Rfx4      Rfx5      Rfx7      Rfx8      Rfxank
## 1 0.9155973 4.503076 3.78214357 4.6752640 5.9828458 -2.8139229 3.437852
## 2 2.6008627 3.983974 -2.12066954 4.1103161 5.5583149 1.3547374 3.738463
## 3 -1.9317392 5.731592 0.05610664 0.3033916 0.8617169 -3.8841215 6.600898
## 4 3.1421778 6.681418 6.27523912 2.9079549 5.2082708 0.2752557 5.668536
## 5 2.1943824 6.438288 3.14741838 1.9912121 4.1418942 -3.8841215 6.181716
## 6 3.7728660 6.285263 7.13984491 6.1780106 6.6521734 0.3226210 4.449598
##      Rfxap      Rgag1      Rgag4      Rgl1      Rgl2      Rgl3      Rgma
## 1 4.8326203 0.4254983 4.433473 3.708430 5.73289069 3.7034223 5.859411
## 2 4.0411383 -2.5789021 1.782776 7.974393 7.18293261 1.3468144 2.588190
## 3 -1.9317392 -1.9317392 -1.131317 1.375592 0.05610664 -1.9317392 6.511510
## 4 2.7075980 -2.5257155 1.890996 3.877228 3.61130690 0.4221723 4.818444
## 5 0.9609302 -3.8841215 3.812116 2.772211 3.04604710 -3.8841215 5.178578
## 6 4.0658092 2.1929101 4.303337 5.855309 6.56156088 4.7199756 8.662210
##      Rgmb      Rgn      Rgp1      Rgr      Rgs1      Rgs10      Rgs11
## 1 3.396514 -2.568966 5.6359517 -2.2095909 2.4733772 3.571316 2.2742377
## 2 3.827893 -3.424345 5.5842259 -3.8841215 -1.8183758 2.249337 -2.4122496
## 3 3.006755 -1.931739 1.7537270 -3.8841215 0.3033916 8.714711 -1.1313170

```

```

## 4 3.794549 -2.056860 2.6485346 -0.4458231 2.3358041 3.971187 1.6763412
## 5 3.708108 -2.807117 3.2535457 -3.8841215 -2.1973739 4.720905 -3.8841215
## 6 3.252776 -2.600305 6.2755728 -3.6744822 -2.3395529 -1.262774 0.1495131
##      Rgs12      Rgs13      Rgs14      Rgs16      Rgs17      Rgs18
## 1 4.603606 -3.8841215 -0.3537319 4.4398540 3.1642875 -3.0254568
## 2 8.402162 -3.8841215 -0.4824081 7.3212415 -0.9665571 -2.4601722
## 3 5.360474 -3.8841215 -1.1313170 -1.9317392 -0.2425151 -0.2425151
## 4 4.683370 0.6965919 -0.1495895 1.7890654 4.9672457 1.7260007
## 5 4.644934 -3.8841215 -2.8071174 -0.2876030 5.1845526 -2.1973739
## 6 7.084329 -3.8841215 -3.1565438 5.2676427 3.5958830 -3.8841215
##      Rgs19      Rgs2      Rgs20      Rgs22      Rgs3      Rgs4      Rgs5
## 1 2.929337 4.333616 2.5549162 -1.1397193 4.7748102 3.228941 1.1694533
## 2 4.816379 6.275540 -0.9665571 -1.9963549 7.6903039 6.343481 8.8507708
## 3 6.173625 2.356639 1.9111385 -1.9317392 -1.1313170 9.255999 8.6877608
## 4 4.866109 4.703571 6.1040503 0.3470545 3.3833456 6.392216 8.4241927
## 5 5.098561 3.986407 6.3006470 -3.8841215 -0.5800187 6.063485 8.8391344
## 6 2.705147 6.216766 6.7780103 1.1213714 4.2229708 4.599728 4.0981827
##      Rgs6      Rgs7      Rgs7bp      Rgs8      Rgs9      Rgs9bp
## 1 0.425359350 4.4577707 4.5243336 -0.9616683 5.225526 -2.548469
## 2 3.697277849 -0.7768374 1.2647488 -0.8621400 3.257244 -2.270963
## 3 -3.884121530 1.5770128 -0.2425151 -0.6195262 -1.931739 -1.131317
## 4 -1.598530237 -0.2161477 3.4916385 1.8384777 2.506262 -1.749858
## 5 1.261522068 -3.8841215 0.8449942 1.6200547 -2.807117 -3.884122
## 6 4.026849150 7.1151254 4.7101938 -1.7139657 6.670548 -1.078053
##      Rgs11 Rhbdd1 Rhbdd2 Rhbdd3 Rhbdf1 Rhbdf2 Rhbd11
## 1 -3.310794 4.287666 6.108457 4.236842 6.047132 -0.7654437 3.753185
## 2 -1.889972 5.480302 4.181674 2.682206 7.267712 5.9828247 1.204613
## 3 -3.884122 6.052096 1.008333 -1.131317 1.479815 1.0083330 -3.884122
## 4 -2.655274 4.845088 4.674845 4.564179 2.427791 0.1506150 1.519884
## 5 -3.884122 2.170497 5.023878 4.231198 3.059115 -0.9471720 -1.173011
## 6 -1.772420 4.270790 5.579093 4.685283 7.716764 0.5279489 5.237151
##      Rhbd12 Rhbd13 Rhbg Rhcg Rhd Rheb
## 1 2.593011 3.5337393 -2.7140325 1.2935308 -1.8613569 5.912711
## 2 3.950910 -2.4350840 -3.8841215 -3.6565043 -3.1080374 7.065324
## 3 -3.884122 -0.6195262 -0.6195262 -3.8841215 -1.9317392 8.314141
## 4 2.805603 2.9632741 -0.6052704 2.8592283 0.3799034 5.107376
## 5 3.207339 2.3082165 -1.1730114 4.3207304 -3.8841215 6.367830
## 6 2.470140 3.3037339 -0.4360673 3.3389744 -2.8744502 6.440710
##      Rheb11 Rho Rhob Rhobtb1 Rhobtb2 Rhobtb3
## 1 2.3237204 -1.1489691 8.708373 1.59801141 5.494025 5.9300938
## 2 3.3938456 -2.2177824 10.748726 6.81908679 4.209151 4.6613290
## 3 -0.2425151 -3.8841215 8.985363 0.05610664 3.290869 0.3033916
## 4 3.9144863 -3.8841215 7.143706 1.24045075 4.115724 5.4997781
## 5 5.0697960 -3.8841215 8.184810 -2.19737395 4.880330 5.0404455
## 6 1.7578182 -0.9240919 9.823852 0.41597888 6.175252 6.0751611
##      Rhoc Rhod Rhof Rhog Rhoh Rhoj
## 1 5.886201 0.4026659 2.42260585 6.127576 0.18120970 1.1795695
## 2 9.640353 5.9873849 0.04121968 5.726438 -0.17848950 8.3534869
## 3 6.687792 -3.8841215 -1.13131698 7.830949 4.74915723 3.2022392
## 4 5.416087 1.1716847 1.96755919 6.107847 1.60760194 3.4974702
## 5 6.429509 4.0268781 -1.44088555 6.045541 4.20203992 5.0953934
## 6 5.585594 0.1995296 0.27815787 3.925662 -2.86538056 3.4606925
##      Rhoq Rhot1 Rhot2 Rhou Rhov Rhpn1
## 1 5.7257991 6.2363186 5.3113874 5.02234900 -1.45477328 3.6797359

```

```

## 2 5.7725998 6.9346183 4.7555135 -0.07113505 -0.46219614 -0.3977176
## 3 0.8617169 0.6984974 0.3033916 1.14141397 0.05610664 -1.1313170
## 4 4.3517481 4.1487416 3.8316121 4.20173731 -1.02007839 3.3966474
## 5 2.0447493 3.9234895 3.3310089 1.62005470 -0.75194706 4.4651713
## 6 7.7313557 6.4562003 6.4558295 4.22338512 -3.26808737 4.5943634
##      Rhpn2      Ribc1      Ribc2      Ric3      Ric8      Ric8b
## 1 2.0274855 -0.95788257 -2.4565761 5.7793883 5.977414 5.0982119
## 2 2.5644979 0.06266582 -2.7161344 0.5975397 6.467955 5.5513017
## 3 -3.8841215 3.89152124 -3.8841215 0.3033916 3.427465 -1.1313170
## 4 2.9424919 2.27356019 1.6604246 5.0677205 5.784550 3.5076848
## 5 -3.8841215 -3.88412153 -3.8841215 -0.5800187 3.666020 -0.4264149
## 6 0.7925768 0.10574878 -0.7683762 5.7122957 5.864229 5.4334567
##      Rictor      Rif1      Riiad1      Rilp      Rilpl1      Rilpl2
## 1 6.948961 5.111670 -2.1526566 0.01676917 4.6232622 4.6754456
## 2 7.093535 6.130679 -1.2813770 2.00766879 6.0593769 4.4790259
## 3 1.834579 1.753727 -0.2425151 -3.88412153 -0.6195262 0.6984974
## 4 5.117262 6.318599 5.5857663 -0.41500111 3.2153952 4.8699127
## 5 5.023878 2.240999 7.1121805 -3.88412153 0.3450364 4.9202662
## 6 6.907293 6.552013 0.1521101 2.40469616 4.0923531 4.4144137
##      Rimbp2      Rimbp3      Rimkla      Rimklb      Rims1      Rims2
## 1 3.6098335 0.4559827 4.1284819 5.86142911 4.6529934 6.0535925
## 2 -1.1417088 -2.8000981 -2.5789021 0.22055495 -0.8474504 0.5841215
## 3 -1.9317392 -1.9317392 -1.9317392 1.91113848 -3.8841215 2.1190956
## 4 -2.4027567 -1.2533987 2.4907206 5.97602358 0.1281212 3.9205091
## 5 -3.8841215 -3.8841215 -2.8071174 6.95239800 -3.8841215 4.6791938
## 6 0.5302067 -2.1757859 2.0638713 7.65870650 -0.8156774 5.1098391
##      Rims3      Rims4      Rin1      Rin2      Rin3      Ring1
## 1 0.9950560 1.010304 1.721034 6.836022 0.39439629 5.0888773
## 2 -2.8070815 -2.820269 3.099084 5.757026 5.85884224 4.5718795
## 3 -3.8841215 -3.884122 -1.931739 7.476747 -3.88412153 -1.9317392
## 4 -1.5217984 -3.884122 -1.167699 5.427734 0.91433991 1.5658137
## 5 -3.8841215 -3.884122 -3.884122 4.704365 -3.88412153 0.6514968
## 6 1.2963850 -3.118612 0.674669 6.180056 -0.53448596 5.6230280
##      Rinl      Rint1      Riok1      Riok3      Ripk1      Ripk2      Ripk3
## 1 3.1415968 3.673403 4.055957 6.411833 3.8921024 2.5193132 -1.957204
## 2 3.7204235 4.017199 5.000573 7.094464 7.2121571 4.5439473 2.608407
## 3 -0.6195262 2.935229 4.166010 4.052287 0.3033916 -3.8841215 -3.884122
## 4 1.3349914 5.299011 5.662733 5.741434 2.9241202 1.2991257 -2.455615
## 5 3.7490031 -0.287603 2.121505 5.222799 1.2155742 2.2409993 -2.807117
## 6 -0.4885856 4.233377 4.992168 6.708473 5.4370629 2.8452218 -1.674523
##      Ripk4      Ripply2      Ripply3      Rit1      Rit2      Rlbp1      Rlf
## 1 -3.6778614 0.2916293 -3.6064452 5.436286 3.3627847 7.580250 5.472230
## 2 -2.4907738 -3.4766082 2.6332293 5.831577 -0.2920681 1.096949 6.362841
## 3 1.1414140 -3.8841215 -1.9317392 6.651987 5.6219739 7.935457 -1.131317
## 4 -1.6090099 -1.7844340 -3.8841215 6.259727 2.6922517 7.530275 3.346175
## 5 1.4715792 -3.8841215 -3.8841215 6.791408 -0.7519471 6.458155 -1.173011
## 6 -1.1620655 -2.9862494 -2.8744502 5.025912 -0.4337394 6.825526 6.379339
##      Rlim      Rln1      Rln3      Rltpr      Rmi1      Rmnd1      Rmnd5a
## 1 5.825741 -0.1561608 -3.583907 2.0989302 4.088512 -3.387734 6.633361
## 2 7.435211 -2.8174159 -3.884122 1.6793027 3.500313 -3.656504 6.995744
## 3 3.478677 -1.1313170 -3.884122 -3.8841215 2.607316 -3.884122 2.356639
## 4 6.402997 0.4988988 -2.240855 0.3151168 4.350263 -3.137777 4.708764
## 5 5.472757 -3.8841215 -3.884122 -0.7519471 3.531845 -3.884122 6.274274
## 6 6.665496 1.9242245 -3.660779 1.2556943 4.468389 -3.118612 6.768625

```

##	Rmnd5b	Rnase1	Rnase10	Rnase12	Rnase13	Rnase4	
## 1	5.216628	-3.79498311	-2.1787760	-3.6265594	-3.8841215	4.286958	
## 2	7.241452	0.11188363	-3.4837445	-3.8841215	-3.8841215	2.436959	
## 3	1.911138	-0.61952623	-3.8841215	-3.8841215	-1.9317392	10.053621	
## 4	5.257351	1.47011858	-2.3262223	-3.6539444	-3.0330206	5.009849	
## 5	5.789352	-1.77010377	-3.8841215	-2.8071174	-3.8841215	4.876644	
## 6	6.005920	0.06960917	-0.1231144	-3.8841215	-3.1431739	1.008979	
##	Rnase6	Rnaseh1	Rnaseh2a	Rnaseh2b	Rnaseh2c	Rnasek	Rnase1
## 1	-2.7509592	3.582089	4.036249	4.237628	3.317482	6.310195	-0.4968223
## 2	-2.6577481	3.064417	4.074961	3.688262	5.508027	6.270733	-0.9559900
## 3	-1.1313170	-1.131317	5.367284	7.019291	5.704958	8.542644	4.1021273
## 4	-0.1470732	3.662128	5.833659	5.432576	3.679869	7.884754	4.7040431
## 5	-3.8841215	4.066244	6.333285	6.090786	4.712659	9.077339	0.1633391
## 6	-3.8841215	3.737801	3.331715	3.294625	2.024412	4.549238	-3.1565438
##	Rnaset2b	Rnd1	Rnd2	Rnd3	Rnf10	Rnf103	Rnf11
## 1	-0.7753797	2.8458504	7.557326	2.8770115	7.929261	5.408270	6.593173
## 2	0.7053633	4.8015922	3.364377	4.0844484	8.113770	5.641819	7.228734
## 3	3.0067551	5.7103247	5.627657	6.8102933	7.023608	5.677824	1.983840
## 4	0.8600520	-0.8283065	4.648824	6.0725535	5.542396	4.028891	5.144146
## 5	2.0707909	-3.8841215	6.050457	6.2658448	6.354641	4.271054	5.181568
## 6	0.1946551	3.7732464	5.198583	4.2893123	6.941462	5.883658	5.909968
##	Rnf111	Rnf112	Rnf113a1	Rnf113a2	Rnf114	Rnf115	Rnf121
## 1	5.373892	5.6784974	2.355443	2.902428	5.767453	5.370674	5.076065
## 2	5.962395	0.2531696	1.134727	3.899878	6.614689	6.182752	5.358102
## 3	1.008333	-1.9317392	-1.931739	6.787627	7.422200	6.864246	4.907042
## 4	5.104683	1.2396010	2.430228	4.836359	7.445014	4.637088	4.896602
## 5	3.740916	-3.8841215	2.893900	5.673042	6.330594	4.959127	5.148325
## 6	5.963660	0.2505748	1.443338	4.219967	4.870350	5.347535	5.024949
##	Rnf122	Rnf123	Rnf125	Rnf126	Rnf128	Rnf13	Rnf130
## 1	6.816438	6.0064528	-1.9048917	5.10306376	4.6895042	7.678928	6.221986
## 2	5.366162	5.4774555	5.4456423	4.88142147	-0.6172845	6.447170	6.665220
## 3	1.753727	0.6984974	-3.8841215	0.05610664	-1.1313170	10.452648	6.897558
## 4	6.147490	4.3704440	1.7239588	0.03731428	-0.9607895	8.951148	3.929159
## 5	6.768718	0.8449942	-3.8841215	1.47157920	-1.7701038	9.138447	5.465414
## 6	5.669689	6.3458264	-0.7123658	4.64607522	1.9734444	6.918199	5.400915
##	Rnf135	Rnf138	Rnf139	Rnf14	Rnf141	Rnf144a	Rnf144b
## 1	2.3349643	4.8284301	5.835130	6.962745	4.255605	7.1855362	5.522091
## 2	3.3623722	5.9660127	6.375237	7.052662	3.456902	5.6823158	8.195494
## 3	-0.6195262	0.8617169	5.049340	8.596525	5.627657	2.1822477	1.834579
## 4	3.5409193	5.7166817	4.970772	7.447953	3.842749	5.1661100	1.152106
## 5	4.0335142	6.5535823	6.166702	7.004837	2.951100	4.1782817	3.887312
## 6	2.5120027	5.2751600	6.430539	6.541107	3.256462	6.2780977	3.555294
##	Rnf145	Rnf146	Rnf149	Rnf150	Rnf151	Rnf152	Rnf157
## 1	7.178486	5.177768	4.500958	3.46334902	-3.338665	2.76097305	5.9123670
## 2	5.495563	6.138246	5.471581	0.55164989	-3.127369	1.36970349	0.6900473
## 3	5.433673	1.263249	5.297693	-1.13131698	-3.884122	0.05610664	4.6067949
## 4	4.380508	5.257607	4.862029	2.11245916	-3.653944	3.98508255	4.7183483
## 5	5.166553	6.120698	5.687841	-0.75194706	-3.884122	3.23062733	1.8479734
## 6	6.841903	5.159191	5.280123	-0.08829676	-3.352813	-0.13315868	4.6592174
##	Rnf165	Rnf166	Rnf167	Rnf168	Rnf169	Rnf17	Rnf170
## 1	3.7359141	4.1039036	6.002098	4.6321641	3.7895842	-2.955829	3.857005
## 2	1.0350709	4.8081343	5.802333	5.3099797	4.8380754	-2.995623	3.779951
## 3	-1.1313170	-1.9317392	8.841168	0.6984974	0.6984974	-3.884122	4.663224
## 4	5.0001885	2.9811208	7.450180	3.9068765	4.5256145	-2.449270	2.788628

```

## 5 4.8876739 0.3450364 7.483276 3.6488344 4.5369856 -3.884122 2.351349
## 6 0.3551873 4.4025748 5.787828 4.4820642 5.1599157 -3.288906 4.655752
##      Rnf180      Rnf181      Rnf182      Rnf183      Rnf185      Rnf187      Rnf19a
## 1 4.26909749 6.108295 3.3045894 -3.884122 5.208335 7.746703 5.202767
## 2 -1.75582911 5.265774 -1.2795810 1.376997 6.887605 7.252328 7.932526
## 3 0.05610664 6.047863 1.4798145 -3.884122 4.780107 3.793804 2.696541
## 4 4.92337831 7.278454 6.3659325 -3.884122 5.922117 5.555836 4.531111
## 5 4.09824859 7.263094 6.2587824 -3.884122 5.199383 6.420677 4.894981
## 6 6.24182737 4.843483 5.2045049 -3.674482 5.386195 5.966247 5.463875
##      Rnf19b      Rnf2      Rnf20      Rnf207      Rnf208      Rnf214      Rnf215
## 1 5.395134 4.812064 6.559382 -2.8648916 5.5262765 5.764522 4.4971983
## 2 5.175968 6.971191 6.886038 -2.8952098 -0.5212506 5.093468 6.1541422
## 3 1.263249 5.599014 7.334568 -3.8841215 3.9102948 1.668074 -0.6195262
## 4 2.256653 6.776737 7.019620 -3.8841215 3.5770900 5.686457 3.4539222
## 5 1.547726 6.254528 5.276935 -3.8841215 4.4454014 5.231483 2.7237947
## 6 4.821176 5.357302 7.080550 -2.1248458 2.3737190 5.703354 8.0082725
##      Rnf216      Rnf217      Rnf219      Rnf220      Rnf222      Rnf24      Rnf25
## 1 5.951437 3.23568794 3.268099 6.731494 -3.88412153 5.489682 4.422947
## 2 6.484942 3.38560657 1.621713 6.201210 -2.15850610 3.405863 4.336797
## 3 7.843214 0.86171687 1.008333 2.300819 0.05610664 2.652618 -1.131317
## 4 4.947049 1.58075722 5.199556 4.342025 -3.39449572 4.309999 3.409001
## 5 3.046047 -0.94717201 4.700200 5.871280 -2.80711744 3.159603 5.142198
## 6 5.941533 4.15657837 2.895967 5.166528 -3.15654382 7.283010 4.604961
##      Rnf26      Rnf31      Rnf32      Rnf34      Rnf38      Rnf39      Rnf4
## 1 4.5912317 4.433935 2.8028908 5.382042 5.392354 -0.9282447 6.747847
## 2 3.7323516 4.977059 1.1800944 4.328117 6.075643 -2.0150420 6.966973
## 3 -0.6195262 5.793576 -1.9317392 6.968692 1.834579 0.3033916 7.712940
## 4 2.2090031 3.423456 3.7824127 5.909777 5.583605 -2.3576426 7.203996
## 5 3.6830026 3.474474 -0.9471720 6.516165 5.222799 -2.8071174 5.237244
## 6 3.7192145 5.314906 2.7342167 4.773433 5.874912 -2.5244447 6.702780
##      Rnf40      Rnf41      Rnf43      Rnf44      Rnf5      Rnf6      Rnf7
## 1 6.294908 5.186656 6.0708240 6.941648 5.968988 3.627476 6.130467
## 2 6.496680 5.563153 -1.9439463 6.587910 2.601228 5.178092 6.630966
## 3 1.375592 1.577013 0.5144282 2.356639 8.227908 6.260322 9.119474
## 4 5.167603 6.194024 3.3642378 4.925414 7.012101 6.809940 7.785628
## 5 4.555547 5.066564 4.1662542 5.076238 7.518000 5.501762 8.845512
## 6 6.810721 5.454877 1.4251249 6.612005 4.961788 5.256335 4.865008
##      Rnf8      Rnft1      Rnft2      Rngtt      Rnh1      Rnls      Rnmt
## 1 4.3240972 4.096563 6.3732617 4.33649071 5.662388 1.7753487 5.176491
## 2 4.4753413 4.710743 1.3117593 4.66109517 7.006579 1.0703022 5.031662
## 3 -0.2425151 7.789721 -1.9317392 0.05610664 8.230711 6.0478635 1.008333
## 4 3.6860701 5.161038 2.6561506 5.69019259 7.597712 3.3711566 6.580234
## 5 3.7729951 5.337181 3.4045239 3.28725475 7.375097 3.8799663 6.103456
## 6 5.1405845 5.409641 6.2835305 4.41848255 5.889426 0.6477777 5.444125
##      Rnmt11      Rnpc3      Rnpep      Rnpep11      Rnps1      Robo1      Robo2
## 1 2.1790758 4.39911807 5.871399 6.896330 4.629964 5.873659 3.41520332
## 2 1.9221875 4.38502914 7.381297 5.953943 4.171969 2.291768 -0.44232351
## 3 -0.6195262 0.05610664 6.885749 2.410380 2.607316 5.304805 0.05610664
## 4 4.0404331 3.95169814 3.764425 4.028367 5.600671 4.592199 4.85820568
## 5 3.5034443 5.45556441 3.503444 5.612279 4.536986 4.415229 -0.94717201
## 6 2.4478820 5.35041839 5.566337 5.693327 4.251693 4.628681 3.71058010
##      Robo3      Robo4      Rock1      Rock2      Rogdi      Rom1      Romo1
## 1 -0.9871121 -0.9198351 5.480369 5.820562 5.655763 1.6438919 4.427250
## 2 0.7631010 8.9824941 6.984502 7.795390 4.223500 2.7437703 5.119066

```

```

## 3 -3.8841215 3.4011610 5.380809 6.805287 7.459324 5.8136588 8.362658
## 4 -3.8841215 1.0863788 6.983525 5.455111 6.458967 1.5158422 6.898142
## 5 -3.8841215 -3.8841215 6.037310 5.187531 6.209819 1.8175364 7.877885
## 6 -2.3334194 2.3033960 6.362821 6.640266 4.386374 2.6645883 3.302310
##      Ropn11      Ror1      Ror2      Rora      Rorb      Rorc
## 1 -0.1903589 1.1615984 -0.5205569 2.42615286 2.5114635 -2.7367493
## 2 1.4116654 3.0534119 0.2740839 4.68980508 -0.5423849 -3.2277824
## 3 -3.8841215 -1.9317392 -1.9317392 1.14141397 7.9514064 -0.6195262
## 4 2.2449512 -1.5017160 -2.1160958 2.92974263 5.9687813 4.3320362
## 5 2.8343382 1.5101550 -1.4408855 0.65149678 2.1704966 2.0182291
## 6 0.4193388 0.5429032 2.8546635 4.76409321 6.6892999 -0.6926466
##      Rp1      Rp11      Rp2h      Rp9      Rpa1      Rpa2      Rpa3
## 1 -3.8841215 -3.884122 3.930049 4.072401 5.734119 4.145842 3.605867
## 2 0.2990869 -1.497145 3.984413 5.377599 5.739571 4.540703 4.487824
## 3 -3.8841215 -3.884122 1.479815 6.324715 3.891521 6.827680 7.562324
## 4 -3.1141576 -3.653944 5.090682 3.497555 7.694832 7.016459 5.907458
## 5 -3.8841215 -3.884122 4.213774 3.887312 7.193689 7.630612 6.800191
## 6 -1.1035019 -3.674482 4.550620 3.454265 6.240535 3.788228 3.127555
##      Rpain      Rpap1      Rpap2      Rpap3      Rpe      Rpe65      Rpf1
## 1 3.589236 5.4366006 3.571614 4.190239 4.982833 -3.122562 2.957235
## 2 4.519767 4.8641030 4.281711 6.671470 4.863363 -3.884122 4.986067
## 3 5.914740 7.2922545 6.227015 4.629632 4.461615 -3.884122 7.199902
## 4 5.629952 5.2212666 5.089427 5.447362 3.921966 -3.884122 5.140523
## 5 6.652818 0.6514968 3.541188 4.691834 3.894620 -3.884122 5.000359
## 6 4.393508 5.3840786 4.226136 4.251698 4.064163 -1.846064 3.831126
##      Rpf2      Rpgr      Rpgrip1 Rpgrip1l      Rph3a      Rph3al
## 1 3.568555 2.4316642 -1.36173030 3.4923446 5.3362049 -2.049864
## 2 3.327091 2.1055557 -2.27096282 2.8293614 0.9430626 3.128252
## 3 8.416179 -0.2425151 -3.88412153 3.3743684 -1.1313170 -3.884122
## 4 6.484213 4.0730307 -0.02202873 3.6026307 2.3826899 -1.163009
## 5 7.164511 4.3476069 -3.88412153 0.6514968 -1.4408855 -3.884122
## 6 3.531430 4.0639096 -1.61103464 4.5533048 -0.3348926 -1.837541
##      Rpia      Rpl10      Rpl10a      Rpl11      Rpl12      Rpl13      Rpl13a
## 1 3.736444 3.202436 4.0650564 2.0087747 3.9437353 4.101383 7.542842
## 2 3.504835 4.136242 3.1538888 1.7452160 4.2302091 4.757998 9.705270
## 3 -1.131317 -1.931739 -0.6195262 -0.6195262 1.6680739 6.138229 9.546269
## 4 2.233960 3.416617 2.1518677 1.5171786 2.0875414 4.447786 8.182156
## 5 1.510155 3.972661 -0.2876030 1.6200547 1.9912121 6.277073 9.320063
## 6 4.005395 4.355343 4.5776357 1.6375592 4.5669672 3.288197 5.992114
##      Rpl14      Rpl15      Rpl18      Rpl18a      Rpl19      Rpl21      Rpl22      Rpl22l1
## 1 5.391741 4.836715 4.590975 4.512491 4.259395 2.522831 7.130755 4.014668
## 2 7.288905 5.753632 5.830750 6.394671 5.126864 4.560976 8.531008 6.633941
## 3 9.949126 7.066084 6.362697 7.936602 6.695929 5.115550 8.337737 6.982064
## 4 8.790761 6.478613 5.673803 7.078664 5.813788 5.217825 7.921495 6.419584
## 5 9.564462 7.458216 6.764735 8.105149 6.817597 5.694137 8.370550 7.261681
## 6 3.080049 3.977517 3.552543 2.748076 2.797148 2.599180 5.577713 5.024397
##      Rpl23      Rpl23a      Rpl24      Rpl27      Rpl27a      Rpl29      Rpl3
## 1 3.715386 2.3259497 1.9060937 2.638959 4.599276 -0.1571760 5.712517
## 2 5.994905 1.5749058 2.0460585 4.088185 6.044434 0.6826566 3.175950
## 3 6.458286 2.6526181 -1.9317392 2.462191 6.089641 3.7734409 7.788453
## 4 6.550292 1.6196269 2.1231382 2.494095 4.932457 4.4383844 7.019211
## 5 7.455130 0.2570463 1.6889296 2.834338 5.950559 4.6621657 7.660394
## 6 2.694524 5.3101459 2.3105168 2.104857 3.440281 -0.9201815 5.261594
##      Rpl30      Rpl31      Rpl32      Rpl34      Rpl35      Rpl35a      Rpl36

```



```

## 1 -0.9828532 1.9351058 6.584808 0.08855326 1.5863093 2.596673 2.729730
## 2 0.1221381 2.8009311 9.012773 0.65647583 4.1325964 4.650833 3.464345
## 3 1.4798145 3.0749023 10.093182 3.92882712 2.3566392 6.073075 6.583458
## 4 0.6658610 2.3182459 9.259408 0.68241413 3.6382700 4.414757 5.251607
## 5 1.7546656 1.7546656 10.513830 1.84797341 4.7002001 5.487332 5.773583
## 6 -1.9658348 0.7293521 5.108759 0.63099180 0.7841869 1.828640 2.350795
##      Rpl36a Rpl36a1 Rpl37 Rpl37a Rpl38 Rpl39l Rpl31
## 1 1.4350243 4.549141 2.105449 1.682082 2.945066 -3.7949831 -2.84427794
## 2 2.2121712 5.940407 2.938199 2.752033 6.760469 0.7787451 -1.21168227
## 3 2.8980900 6.982064 7.473595 7.766727 5.209494 -3.8841215 -3.88412153
## 4 2.0660440 5.542627 6.604646 6.452667 3.508606 -3.0073809 -3.88412153
## 5 2.4735096 6.555889 7.724340 7.611889 4.202040 -2.8071174 -3.88412153
## 6 0.8530325 3.388033 2.289502 1.029927 1.689761 -3.8841215 -1.59551094
##      Rpl4 Rpl5 Rpl6 Rpl7 Rpl7a Rpl7l1 Rpl8
## 1 8.982953 1.8714189 4.306857 6.662882 4.732276 5.458911 8.767438
## 2 10.531816 1.3708026 6.078246 8.701548 5.229548 6.049208 10.257548
## 3 9.675690 -3.8841215 6.429292 8.951209 7.127542 8.685038 10.282732
## 4 10.180493 1.5031904 6.169807 8.310326 6.368169 7.782127 9.791516
## 5 10.596614 0.7189210 7.315085 9.274745 7.230975 8.056699 10.711768
## 6 7.717952 2.2894768 3.463483 5.254548 4.608472 4.690779 7.255420
##      Rplp0 Rplp1 Rplp2 Rpn1 Rpn2 Rpp14 Rpp21
## 1 7.489771 7.792915 4.762530 7.888548 8.376075 4.555249 3.203428
## 2 9.448671 8.981210 6.017521 8.265160 8.602940 4.083787 4.192750
## 3 10.390493 9.760906 7.948003 8.116117 9.078045 1.753727 1.141414
## 4 9.442339 8.422216 6.582522 7.383692 8.687680 6.712379 6.150069
## 5 10.649614 9.722326 7.491734 7.932608 8.704230 5.299135 6.327897
## 6 5.855971 6.123485 3.561636 7.805707 8.169402 4.685749 2.129963
##      Rpp25 Rpp30 Rpp38 Rpp40 Rprd1a Rprd1b Rprd2
## 1 1.8866298 4.303453 0.8062683 1.6687953 5.416911 4.301612 5.173871
## 2 -2.3414404 3.775495 0.5400640 0.4158881 3.241728 5.163681 5.384029
## 3 -3.8841215 8.547149 4.1344223 2.2427509 3.528133 1.577013 1.479815
## 4 -3.0190281 6.519782 5.0434855 4.0573795 4.251287 5.129534 5.156233
## 5 -3.8841215 7.041513 5.4129375 1.3911881 2.908414 4.489509 3.804376
## 6 -1.4908625 3.224217 2.2347731 1.4772918 5.314869 4.445851 5.653565
##      Rprm Rprm1 Rps10 Rps11 Rps13 Rps14
## 1 5.4627066 -0.45419415 2.113094 7.419219 1.50936279 6.974346
## 2 0.2755720 -0.34317551 3.970331 9.855422 2.47706804 9.650441
## 3 -0.2425151 -3.88412153 3.752786 10.740668 0.05610664 10.021603
## 4 4.1620314 -3.20918405 2.820797 9.217467 0.99383823 8.851676
## 5 3.8426662 -3.88412153 3.772995 10.204084 0.71892097 10.258560
## 6 1.7428630 -2.71739246 2.004483 5.846265 3.05752365 5.564993
##      Rps15 Rps15a Rps16 Rps17 Rps18 Rps19 Rps19bp1
## 1 6.940008 6.228713 1.572809 5.886985 1.9706927 4.870819 3.9318984
## 2 9.000810 7.433044 1.749590 7.609201 1.9079144 6.875813 3.3746542
## 3 9.177776 7.755090 3.853225 5.325933 7.6598460 8.590717 -0.6195262
## 4 8.077024 6.796822 2.337709 4.129839 6.5833774 7.834370 2.5805617
## 5 9.213968 7.839111 2.879238 4.839257 7.9370390 8.709938 3.1596033
## 6 5.499883 5.546793 1.363000 4.736728 2.4914946 3.756860 2.9153772
##      Rps20 Rps21 Rps23 Rps24 Rps25 Rps26 Rps27
## 1 6.178715 6.418430 1.2042864 5.860216 4.628632 5.370055 0.9378613
## 2 8.740628 8.731034 1.6240932 8.028162 6.652522 6.967724 3.4228829
## 3 8.215696 8.082370 4.0352840 8.069900 8.333396 8.262109 -3.8841215
## 4 7.288744 6.921832 2.6319591 7.470019 6.966028 7.828988 0.4621353
## 5 7.964212 8.121203 3.6138373 8.548465 8.113394 8.932852 1.9356113

```

```

## 6 4.874790 5.024351 0.6957058 4.891030 3.509236 3.707562 0.5957640
##      Rps27a  Rps27l  Rps28      Rps29      Rps3      Rps4x      Rps5
## 1 2.685851 4.765596 2.153019 0.8578621 8.728056 6.819874 8.129548
## 2 2.886481 6.098398 4.786586 0.9144115 10.713144 8.770101 10.295174
## 3 5.407483 7.874621 5.311882 0.6984974 11.313872 8.984809 11.099286
## 4 3.394412 7.225046 4.753791 0.5856600 10.488605 7.596479 10.233785
## 5 3.986407 8.053438 5.683628 1.3060516 11.770707 8.565164 11.418740
## 6 2.138750 3.432430 1.929053 0.3580162 6.986826 5.411503 6.311550
##      Rps6  Rps6ka1  Rps6ka2  Rps6ka3  Rps6ka4  Rps6ka5
## 1 3.364474 4.311698 3.6742905 3.7770430 4.7904919 3.7896282
## 2 4.899310 5.895826 5.5150996 7.5522316 5.3758346 3.6360405
## 3 4.749157 1.479815 -1.1313170 0.6984974 0.6984974 -1.1313170
## 4 4.887337 3.920577 2.6317369 1.5528353 1.3914733 3.4644080
## 5 5.467866 -1.173011 -0.5800187 -0.7519471 3.1474184 3.9163262
## 6 2.354028 0.786972 3.7223316 4.3995747 4.4504113 4.5524923
##      Rps6ka6 Rps6kb1  Rps6kb2  Rps6kc1  Rps6kl1  Rps7  Rps8
## 1 3.7994317 5.713233 4.8544607 5.6086811 4.3876209 2.172675 3.882153
## 2 0.3218361 6.183100 4.5571325 4.6172703 2.6947677 4.057655 6.219324
## 3 -0.6195262 1.479815 -0.6195262 0.8617169 -3.8841215 5.224573 7.926263
## 4 2.9404824 6.766851 4.1220344 3.9698844 2.5219361 4.213356 6.616246
## 5 1.4715792 5.169568 3.3629751 5.8107576 2.7722112 4.683420 7.632799
## 6 3.8516400 6.205829 5.6488537 5.0227343 -0.8536868 1.542269 3.206695
##      Rps9  Rpsa  Rptn  Rptor  Rpsd1  Rpsd2  Rpsd3
## 1 7.848962 5.818155 -3.8841215 5.783010 3.497262 2.479065 2.0189588
## 2 9.698865 7.790536 -3.8841215 5.208046 2.372070 0.952326 2.1230822
## 3 11.080631 7.155350 1.2632490 1.375592 5.297693 4.085705 -3.8841215
## 4 9.778435 6.810616 -1.6285368 4.941977 4.703885 2.915157 2.6516638
## 5 11.026699 7.663071 -0.1609828 3.613837 4.696023 2.756252 -1.7701038
## 6 6.313704 2.971162 -3.8841215 5.811531 3.225918 2.305963 2.7270447
##      Rpsd4  Rqcd1  Rrad  Rraga  Rragb  Rragc  Rragd
## 1 3.3103558 5.458536 0.8124858 6.177837 5.4519009 6.570111 5.6192566
## 2 3.4521685 4.883329 3.1447013 6.436148 0.2239802 6.595764 1.8431497
## 3 0.3033916 5.742109 -1.9317392 6.663099 -1.1313170 5.960493 0.3033916
## 4 4.3449436 6.696563 -0.6967226 5.047946 2.7295155 4.087222 4.2007145
## 5 3.2761057 6.597910 2.5679590 6.916049 3.1351297 1.168115 4.2933437
## 6 3.2839230 5.135640 1.1033330 6.164127 4.9091826 5.849237 6.4812320
##      Rras  Rras2  Rrbp1  Rreb1  Rrh  Rrm1  Rrm2
## 1 3.459308 5.862159 7.141002 1.93701357 -3.0406408 5.849020 3.3540199
## 2 7.008838 6.830724 8.045987 5.68373458 -3.6565043 6.105630 4.0399566
## 3 4.629632 1.753727 1.263249 1.75372696 -3.8841215 3.965193 4.1021273
## 4 2.451874 2.159567 4.799192 2.49981338 -3.8841215 7.892587 7.9119578
## 5 3.122735 2.937011 5.181568 -0.04458439 -3.8841215 7.795366 6.6234273
## 6 3.441767 1.886399 8.359483 6.61373468 -3.1565438 5.657766 4.0639691
##      Rrm2b  Rrn3  Rrnad1  Rrp1  Rrp12  Rrp15  Rrp1b
## 1 3.976656 5.877779 4.3330143 7.517497 4.853461 3.465175 4.15415176
## 2 4.108096 5.866414 3.6109187 7.631171 3.516166 3.930844 4.56518119
## 3 -1.131317 8.882755 -0.6195262 7.095091 3.552239 7.042878 0.05610664
## 4 3.709523 7.928535 4.7921758 7.284142 4.241918 4.990903 5.54741347
## 5 4.761444 8.487541 2.2409993 6.177228 -0.287603 4.489509 0.42796713
## 6 3.557166 5.592805 4.8341591 7.395976 4.774888 3.458097 4.61971248
##      Rrp36  Rrp7a  Rrp8  Rrp9  Rrs1  Rs1  Rsad1
## 1 4.242378 4.329570 4.0719905 4.774626 4.895463 -1.762165 3.298064
## 2 3.733046 4.939038 4.4231413 3.785540 3.239378 -2.341440 2.016068
## 3 7.099187 1.141414 0.3033916 7.690036 5.699572 -3.884122 -1.931739

```

```

## 4 4.913965 4.340732 4.7136897 4.382842 3.171013 -1.827988 2.245825
## 5 5.558078 5.516048 3.7490031 5.350530 3.147418 -2.807117 2.018229
## 6 3.836231 3.343355 4.9609593 4.406654 5.651888 -3.512249 4.837085
##      Rsad2      Rsbn1      Rsbn1l      Rsf1      Rsl1d1      Rsl24d1      Rsph1
## 1 0.9098144 3.960341 4.27843010 5.628319 6.227387 4.407533 -2.8779636
## 2 2.5536146 4.828794 5.74803681 6.583698 6.570617 4.314444 -2.4122130
## 3 5.0063603 3.622232 0.05610664 2.300819 8.728661 7.915849 -1.1313170
## 4 1.4872474 3.163538 4.13191987 6.240678 7.655762 6.579942 2.7603716
## 5 -2.1973739 -1.173011 3.34174318 4.781294 7.310311 7.350062 3.2648698
## 6 0.9905904 4.598961 5.55015221 7.349539 6.190830 4.205694 0.6368818
##      Rsph3a      Rsph3b      Rsph4a      Rsph9      Rspo1      Rspo2
## 1 2.040528 1.790996 -1.47862670 3.25101370 -1.612612 -1.229390
## 2 1.812433 -1.301097 -1.57576229 -0.08841955 -2.006233 -3.884122
## 3 4.560006 4.052287 -3.88412153 7.16710549 -3.884122 -3.884122
## 4 3.372261 2.278243 -0.09635713 6.41155392 -3.653944 -3.884122
## 5 3.559696 1.215574 -2.80711744 7.68008842 -3.884122 -3.884122
## 6 1.773376 1.687970 0.09897442 2.98936989 1.220962 -3.674482
##      Rspo3      Rspo4      Rspry1      Rsrc1      Rsrc2      Rsu1      Rtbdn
## 1 -1.11764011 -3.7235669 5.3607315 4.556846 6.509221 5.887426 -1.407348
## 2 -3.25158535 -3.6565043 5.8266052 3.987882 6.904881 7.721160 -3.656504
## 3 -3.88412153 -3.8841215 0.6984974 1.263249 4.196921 7.862622 -1.931739
## 4 -1.95880615 -3.8841215 5.1154211 5.579859 7.516641 6.837918 -3.498924
## 5 -3.88412153 -3.8841215 5.2825170 4.765436 6.247410 6.738574 -3.884122
## 6 -0.03201632 -3.8841215 4.7448548 4.189159 7.294571 5.093919 -2.337382
##      Rtdr1      Rtel1      Rtf1      Rtkn      Rtkn2      Rtl1
## 1 -3.7669998 5.0101061 5.1971899 7.536039 4.61308659 -3.089597
## 2 -3.6519623 4.2685390 6.1037662 4.211560 0.11592769 -3.884122
## 3 -3.8841215 0.5144282 1.2632490 1.668074 0.05610664 -3.884122
## 4 -0.2692243 4.4011956 4.6829665 5.405396 4.57064741 -3.884122
## 5 -2.8071174 2.4137218 3.8946204 6.439538 2.01822905 -3.884122
## 6 -3.1565438 5.9787404 5.5483586 4.358989 0.85594790 -3.118612
##      Rtn1      Rtn2      Rtn3      Rtn4      Rtn4ip1      Rtn4r      Rtn4r1l
## 1 8.974561 5.552735 9.275554 8.805550 3.666179 1.9333416 0.58508482
## 2 3.382975 2.042284 7.807910 7.863448 2.456161 -2.0647642 1.75329862
## 3 10.104180 7.420564 8.063625 8.046755 6.535894 -0.2425151 0.05610664
## 4 8.604918 5.098238 7.517985 6.687764 4.665664 0.8331724 0.11284946
## 5 9.632429 6.047182 8.877217 7.551329 3.550472 2.4538543 -1.77010377
## 6 6.807444 4.222101 9.053485 7.388654 4.188917 1.3825431 -1.26594902
##      Rtn4r1l2      Rtp3      Rtp4      Rttm      Rufy1      Rufy2      Rufy3
## 1 -0.55949849 -3.8841215 0.1421021 3.220186 5.325068 5.352062 6.863901
## 2 -3.24899092 2.9742206 3.8427607 3.636121 4.932490 4.846020 4.212476
## 3 -3.88412153 -3.8841215 7.6162035 -1.131317 1.263249 3.833689 8.045694
## 4 -3.28973950 -3.4277009 3.6772053 2.605899 4.506677 4.865894 7.862129
## 5 -1.77010377 -3.8841215 5.2458412 -3.884122 5.003742 3.640164 7.464368
## 6 -3.28890603 -3.5122488 1.8840485 3.946851 4.817234 6.251336 5.370062
##      Rufy4      Rundc1      Rundc3a      Rundc3b      Runx1      Runx1t1
## 1 -3.0462676 4.97737246 7.3703579 4.31604626 -0.6811718 1.7220411
## 2 -3.8841215 4.68732234 2.9029250 1.93333363 -1.0081672 -0.1283656
## 3 -3.8841215 6.83752186 -0.6195262 -1.93173924 0.6984974 -1.1313170
## 4 -3.8841215 4.01975584 4.1669279 2.00583064 -0.3509524 3.5653472
## 5 -3.8841215 -0.04458439 3.7650420 -2.19737395 -1.4408855 1.1681147
## 6 0.9009345 5.54938815 6.7578651 -0.07820227 -2.7863740 0.8782985
##      Runx2      Runx3      Rusc1      Rusc2      Ruvb1l      Ruvb12      Rwdd1
## 1 0.7296113 -3.302416 4.77270408 7.0599081 2.794604 5.764280 4.051128

```

```

## 2 -1.1972874 -3.656504 5.62636359 6.5179673 3.297965 5.495365 4.455630
## 3 -3.8841215 -1.931739 0.05610664 0.6984974 5.720998 2.242751 -1.931739
## 4 0.1026459 -2.022298 3.32438029 2.5547322 4.721922 6.606402 2.340982
## 5 -3.8841215 -3.884122 -2.80711744 3.6488344 4.741317 6.492277 3.772995
## 6 0.3671418 -3.674482 3.81350594 5.3351188 2.185154 4.985004 3.085212
##      Rwdd2a      Rwdd2b      Rwdd3      Rwdd4a      Rxfp1      Rxfp2
## 1 1.6440945 3.2601597 1.3004592 4.920480 -3.492412 -3.601338
## 2 1.8327898 3.1580252 -1.5292281 4.746199 -2.948662 -2.337770
## 3 -0.6195262 -1.1313170 0.3033916 4.181549 -3.884122 -3.884122
## 4 3.4887843 3.1934206 5.2061130 4.355063 -3.884122 -2.862578
## 5 3.5318445 -3.8841215 6.8916026 5.397587 -3.884122 -3.884122
## 6 1.0899400 2.6027477 2.5136441 4.541339 -3.118612 -3.674482
##      Rxfp3      Rxfp4      Rxra      Rxrb      Rxrg      Rybp      Ryk
## 1 -1.9815644 -3.8841215 5.030299 6.010089 3.0465082 4.515316 5.574245
## 2 -2.8202690 -0.6213924 5.139528 6.397056 -1.1551748 5.675452 6.403945
## 3 -3.8841215 -3.8841215 3.261927 4.640917 -3.8841215 2.859970 7.055582
## 4 -3.6036807 -3.4989245 3.625323 3.626860 0.9574133 3.012031 5.180219
## 5 -3.8841215 -3.8841215 3.183669 4.541648 -2.8071174 -0.947172 5.242981
## 6 -3.6744822 -3.8841215 3.424109 4.854530 3.1537973 4.303461 6.030692
##      Ryr1      Ryr2      Ryr3      S100a1      S100a10      S100a11      S100a13
## 1 -0.4951211 3.9036370 4.6600943 8.291603 -0.1930368 -1.463489 6.687445
## 2 -3.1273690 0.3468706 -1.2946460 4.789838 2.5764344 4.991088 6.923025
## 3 -1.1313170 3.5522389 -3.8841215 10.057047 5.6887390 5.655743 8.463026
## 4 4.1708114 1.1278663 -1.2407710 8.377990 6.7532324 5.080130 6.640774
## 5 4.3687533 0.5807664 -3.8841215 9.362683 8.3544082 6.698423 7.806064
## 6 3.6897419 1.6501865 -0.6686223 5.578493 -0.7427411 -1.538129 3.957918
##      S100a14      S100a16      S100a3      S100a4      S100a6      S100a7a
## 1 -0.3310110 9.328871 3.25993962 3.84389356 6.483620 -0.4734012
## 2 -1.2891799 8.709844 -3.88412153 0.04371992 1.188154 -3.8841215
## 3 4.1021273 10.747698 0.05610664 5.10743755 7.315328 -3.8841215
## 4 0.9087360 9.103963 -2.19902350 2.37458333 7.012641 -2.7195582
## 5 4.8278492 9.946333 -1.44088555 3.52243975 8.066844 -3.8841215
## 6 -1.2015893 7.302745 -0.78548990 1.68662418 4.488535 -0.0132938
##      S100a8      S100a9      S100b      S100pbp      S1pr1      S1pr2
## 1 -1.9131514 -1.227962 8.4990060 2.904742 4.864345 3.9690725
## 2 0.7175415 1.256422 0.9605277 3.418334 9.407162 1.8173687
## 3 -3.8841215 -1.931739 8.2372316 -3.884122 9.920474 -0.2425151
## 4 -3.6749365 -3.603681 5.2436400 2.522803 8.357416 1.1215081
## 5 -3.8841215 -2.197374 4.5601506 -3.884122 8.287277 0.9041264
## 6 -3.2889060 -3.660779 6.1272705 4.159452 10.055617 2.7562889
##      S1pr3      S1pr4      S1pr5      Saal1      Sac3d1      Sacm11      Sacs
## 1 1.2218056 -2.4985007 3.9380317 4.303790 3.161175 5.164007 1.8724075
## 2 5.4590276 3.2140364 -2.9901757 3.537863 3.593734 6.404201 2.5313999
## 3 0.8617169 -3.8841215 5.4008607 1.141414 2.462191 7.332829 -1.9317392
## 4 6.0780190 -1.6627848 2.3923385 5.579410 1.417233 6.066034 1.1189196
## 5 5.1513789 -2.1973739 5.0470197 6.504271 3.732784 4.420302 -2.8071174
## 6 4.4593373 -3.4511394 -2.7658025 3.819430 2.377516 6.024289 2.8306334
##      Sae1      Safb      Safb2      Sag      Sall1      Sall2
## 1 6.160273 6.467499 6.18480239 -2.3966527 4.5401991 5.5269411
## 2 6.564430 5.791103 5.24432644 -0.8010600 0.1314486 -0.3233658
## 3 7.768014 1.375592 0.86171687 -3.8841215 1.7537270 0.6984974
## 4 7.193776 3.891546 3.95166479 -3.1141576 5.8471738 5.7227614
## 5 7.171297 3.414727 -0.04458439 -3.8841215 4.6578771 5.0104855
## 6 5.507407 7.264193 7.24613841 -1.8273815 6.5270783 7.1289620

```

##	Sall3	Samd1	Samd10	Samd12	Samd14	Samd3	
## 1	5.4549458	5.379223	2.6219320	1.0491392	5.9515886	-3.5094377	
## 2	-1.1155203	4.494900	3.4610806	1.8421802	1.1465216	-3.8841215	
## 3	-1.1313170	-1.131317	0.5144282	-0.2425151	-0.6195262	-0.6195262	
## 4	1.9708224	3.164660	4.1047622	1.5843152	3.4812433	-1.6012114	
## 5	-2.1973739	3.622666	4.9626079	-3.8841215	4.9695456	-3.8841215	
## 6	7.4799387	4.350250	0.8386984	-2.9862494	5.7281555	-3.6744822	
##	Samd4	Samd5	Samd8	Samd91	Samhd1	Samm50	
## 1	4.673626	1.9314567	7.084815	-0.2322933	4.2162976	5.939415	
## 2	2.651002	2.8302396	6.433127	5.9901329	5.9512088	6.632089	
## 3	-1.131317	-0.6195262	5.217053	3.5759491	5.7368603	5.006360	
## 4	3.292543	3.0707267	7.067292	1.9760993	3.8852226	5.024033	
## 5	4.450369	1.9912121	7.060320	-0.9471720	-0.7519471	5.350530	
## 6	4.657205	1.6265561	6.630369	-0.6277979	4.3888187	5.802322	
##	Samsn1	Sap130	Sap18	Sap30	Sap30bp	Sap301	Sar1a
## 1	-0.43650787	5.292039	4.549628	3.8131615	5.352680	4.5570778	7.585757
## 2	6.06352092	5.764918	4.292916	3.4170840	5.367280	4.1533567	8.321792
## 3	8.45665385	2.182248	1.141414	0.5144282	5.297693	-1.9317392	8.875608
## 4	-0.03014237	4.362794	5.809739	3.0636535	6.739490	2.4088603	7.628619
## 5	-2.19737395	1.547726	4.800875	3.7729951	6.761740	0.1633391	6.558192
## 6	-1.71451907	5.972669	3.284317	4.4697745	4.443971	3.9841191	6.877732
##	Sar1b	Sardh	Sarm1	Sarnp	Sars	Sars2	Sart1
## 1	6.644277	3.803374	4.9757268	2.177474	7.284263	4.1318820	5.7342584
## 2	6.857997	5.005403	-0.6748536	3.216220	7.563934	3.5011130	5.8118946
## 3	9.335851	-1.931739	-0.2425151	6.426034	8.236302	-0.6195262	0.6984974
## 4	8.177464	4.372586	3.7820205	5.217333	8.576041	4.0348533	3.6185401
## 5	9.174733	4.541648	-0.9471720	6.516165	8.459479	3.7081079	3.1351297
## 6	5.710709	6.637104	4.0989727	2.133649	6.175188	3.6782222	5.9009404
##	Sart3	Sash1	Sash3	Sass6	Sat1	Sat2	Satb1
## 1	5.758487	8.113201	0.6919322	1.8278050	5.569749	3.605554	6.159139
## 2	4.954079	7.939887	-1.1576328	2.9234257	8.968560	2.128952	3.074057
## 3	1.008333	5.163286	1.2632490	0.5144282	6.961959	4.988804	1.911138
## 4	3.749297	3.998879	-0.3805969	4.8702683	7.164706	3.895164	5.946385
## 5	2.217879	4.546296	-2.1973739	4.8430396	7.506120	5.846998	5.455564
## 6	6.124991	9.316251	-2.6003052	2.4510091	8.323992	3.653028	6.385483
##	Satb2	Sav1	Sbds	Sbf1	Sbf2	Sbk1	Sbk2
## 1	0.679487241	4.220490	6.219425	8.268369	7.346714	7.726931	-2.773104
## 2	0.230656041	6.558107	6.838024	6.118430	7.476180	1.158881	-3.127369
## 3	-3.884121530	-1.931739	2.410380	2.119096	1.141414	1.577013	-3.884122
## 4	0.001621445	2.391158	7.396938	5.021975	5.279049	5.948235	-2.980889
## 5	-3.884121530	4.640594	7.123111	4.287803	4.282242	6.603496	-3.884122
## 6	0.094749752	5.465387	5.178255	7.437045	6.958581	6.051489	-3.660779
##	Sbno1	Sbno2	Sbsn	Sc5d	Scaf1	Scaf11	Scaf4
## 1	6.230534	4.5438703	0.4636993	6.469918	6.845123	6.389632	4.9864516
## 2	6.451645	6.2289540	0.4923811	4.452993	6.180420	7.123957	4.9356739
## 3	3.074902	0.6984974	5.8432690	8.192877	1.753727	2.560544	6.2005665
## 4	7.180246	2.5737272	3.7615598	7.076797	4.002363	5.872671	2.3977585
## 5	6.268660	2.0182291	6.1576176	7.683784	3.019551	5.307373	0.0631199
## 6	7.431601	6.1436421	1.4533415	7.506303	6.558414	6.901316	5.9490420
##	Scaf8	Scai	Scamp1	Scamp2	Scamp3	Scamp4	Scamp5
## 1	6.140976	5.105405	6.931878	6.874697	5.901453	5.736663	8.843651
## 2	6.369246	5.813022	7.593976	5.284646	5.349985	5.198349	2.367286
## 3	4.314340	2.607316	8.078226	7.782097	7.562324	8.575360	7.652896
## 4	4.799191	5.317768	6.953442	7.359560	6.741952	7.395131	5.004759

```

## 5 4.600933 4.315294 6.418144 7.337380 6.524434 6.834796 5.950559
## 6 6.911722 6.577367 6.319926 6.288253 6.033342 4.637227 7.457517
##      Scand1      Scap      Scaper      Scara3      Scara5      Scarb1      Scarb2
## 1 4.7536537 7.284799 4.720029 3.6561698 -1.457520 5.814566 7.998751
## 2 5.1808219 6.333810 5.312041 -0.2907149 -3.112310 9.100765 6.831717
## 3 -0.6195262 4.728149 1.753727 1.2632490 -3.884122 6.890484 7.915849
## 4 -0.9898959 4.079182 5.573262 4.5901345 -1.619337 4.367112 4.340751
## 5 0.1633391 5.632090 2.908414 5.6189128 -1.770104 5.430643 5.511302
## 6 3.1692675 7.306749 5.342786 6.5584730 -3.143174 6.902680 6.936387
##      Scarf1      Scarf2      Sccpdh      Scd1      Scd2      Scd3
## 1 -1.8450978 0.331231460 7.010926 7.844787 11.985700 -0.1041545
## 2 7.5999321 3.632218929 5.590575 1.235252 9.062905 -2.9956232
## 3 -3.8841215 -1.931739237 8.738543 4.271420 10.223916 -3.8841215
## 4 0.6383293 -0.009647556 6.391938 6.199883 10.993424 2.2117993
## 5 -2.1973739 -0.160982752 7.324585 6.734507 10.636597 3.2761057
## 6 0.7686351 1.889551004 6.014367 8.937625 12.489431 -0.7559581
##      Scd4      Scel      Scfd1      Scfd2      Scg2      Scg3      Scg5
## 1 -1.5308795 3.0667853 4.936337 5.2968595 2.0186588 7.366760 7.145561
## 2 -1.3221866 -2.7161344 5.716929 3.7885622 1.1471271 2.488672 2.696988
## 3 -3.8841215 0.6984974 2.560544 0.6984974 5.6612947 7.220733 8.178429
## 4 -1.8931283 -0.7939962 6.271950 4.4900264 2.6848382 9.193234 8.530016
## 5 -3.8841215 0.9041264 6.289601 1.2155742 5.3637559 8.436191 9.585078
## 6 -1.1374717 2.7778974 5.140939 4.0574338 4.5665123 10.105023 5.038160
##      Scgb1c1      Scgb3a1      Scgn      Schip1      Scin      Sclt1
## 1 -2.811307 -3.5895933 -2.8035954 2.534740 -3.296746 2.7246718982
## 2 -3.656504 4.6214829 -3.8841215 1.024621 -2.935278 4.2323338508
## 3 -3.884122 -3.8841215 -3.8841215 3.232392 -3.884122 -0.2425150616
## 4 -3.884122 -2.4237117 -1.1154072 3.521396 -3.078637 2.4695707164
## 5 -3.884122 -3.8841215 -3.8841215 3.362975 -3.884122 -1.7701037725
## 6 -2.986249 -3.5122488 -3.2808450 2.199180 -2.733018 4.2044511275
##      Scly      Scmh1      Scml2      Scml4      Scn10a      Scn11a      Scn1a
## 1 4.156395 5.2266532 2.0076363 -1.332766 -2.914147 -3.7949831 4.3367545
## 2 4.568657 5.5061049 0.3920916 -1.002418 -3.884122 -1.5233009 -0.7447507
## 3 4.328367 0.6984974 -3.8841215 -1.931739 -3.884122 -3.8841215 -1.9317392
## 4 4.459177 5.1598173 0.7238252 -1.566167 -3.884122 -3.0429216 0.2109678
## 5 3.596015 2.4137218 -2.1973739 -3.884122 -3.884122 -3.8841215 1.2615221
## 6 3.479709 5.4382530 3.0924526 2.917911 -3.884122 -3.5122488 -2.0659542
##      Scn1b      Scn2a1      Scn2b      Scn3a      Scn3b      Scn4a
## 1 3.7542166 5.168529 3.63730369 5.8346158 5.116730 -3.2468621
## 2 2.7796699 1.230544 -0.08022808 -1.5902032 3.947543 0.4690352
## 3 -1.9317392 6.060524 7.63889342 6.7799914 1.668074 -3.8841215
## 4 -0.8925232 4.288288 4.88737679 5.3719213 4.589261 -3.8841215
## 5 -3.8841215 4.627494 3.85020378 4.3529226 2.707288 -3.8841215
## 6 2.1604403 3.275700 -0.36751909 -1.5133069 2.770404 -2.2200834
##      Scn4b      Scn5a      Scn7a      Scn8a      Scn9a      Scnm1
## 1 0.08257996 -0.4153801 -1.2830438 6.188159 -0.2856242 3.429843
## 2 -0.65898078 -3.4243451 -3.4243451 1.962021 -3.2489909 4.272435
## 3 2.65261808 -1.9317392 -3.8841215 1.668074 1.1414140 6.386356
## 4 -3.49892448 -3.6539444 -2.3175108 4.563014 -0.9756865 6.384655
## 5 -2.80711744 -3.8841215 -3.8841215 4.066244 -3.8841215 6.438288
## 6 -0.61847485 -1.1693643 -3.1713129 7.173016 -3.0859991 3.236893
##      Scnn1a      Scnn1b      Scnn1g      Sco1      Scoc      Scp2      Scpep1
## 1 -1.33388376 -3.8841215 -3.8841215 3.261210 3.631886 6.555132 4.233466
## 2 -1.28969346 -3.2489909 -3.4837445 4.084975 5.406019 6.167951 4.911950

```

```

## 3  0.05610664 -1.1313170 -1.9317392 1.479815 8.127192 7.849307 7.512511
## 4  -0.04445983 -1.4838897 -2.5608561 3.933633 6.198391 7.762104 6.489937
## 5  -0.42641489 -3.8841215 -2.8071174 3.522440 6.116016 7.728436 5.985204
## 6  0.75187242 -3.8841215 -3.8841215 3.684585 3.171283 5.886646 4.933067
##      Scrg1      Scrb      Scrn1      Scrn2      Scrn3      Scrt1      Scrt2
## 1  7.7146906 6.8814809 6.466515 3.272778 4.3101064 3.714115 -0.4470736
## 2  -0.6905857 5.9990450 2.566500 3.369623 2.5578299 -1.909843 -3.2177929
## 3  9.8743090 1.6680739 1.141414 -1.931739 -0.2425151 -3.884122 -1.9317392
## 4  8.2960479 2.2663567 5.861733 3.418319 4.4901479 -1.632144 3.9290658
## 5  9.0145754 0.7833343 1.471579 3.072065 4.6009329 -3.884122 4.4991300
## 6  5.6719991 7.0590333 5.832050 3.503529 3.0267746 -1.799074 -2.8198778
##      Sct      Sctr      Scube1      Scube2      Scube3      Scx
## 1  -3.317193 -3.180845 2.797517 -2.37424452 -1.3219084 0.5145161
## 2  -3.884122 -1.376017 2.445707 2.29821750 -2.4601722 -2.0150420
## 3  -3.884122 -1.931739 -1.131317 -1.13131698 -0.6195262 -1.9317392
## 4  -2.212172 1.108886 0.419227 -3.42770090 -2.2714871 -1.9709707
## 5  -3.884122 -2.197374 -2.807117 -2.80711744 -2.8071174 -2.8071174
## 6  -2.733018 5.154681 4.712317 -0.04251902 -1.3021138 -1.2507276
##      Scyl1      Scyl2      Scyl3      Sdad1      Sdc1      Sdc2
## 1  6.0549171 4.4928435 4.4715732 4.6483000 3.57742206 5.7569852
## 2  6.8205429 6.0248794 4.4222077 5.1263468 3.92038375 4.8852076
## 3  0.6984974 -0.2425151 -0.6195262 2.1190956 3.00675508 9.2421727
## 4  4.5953278 2.1919917 3.2739241 5.4387114 2.19667467 8.0289820
## 5  5.0404455 3.5129733 3.5411883 1.8777815 3.97266084 7.5233136
## 6  6.0087499 4.8603931 5.2658248 5.4334928 2.04802434 6.6105981
##      Sdc3      Sdc4      Sdcbp      Sdcbp2      Sdccag3      Sdccag8      Sdf2
## 1  10.035964 2.701593 6.998547 -0.6308392 6.704548 4.1790444 6.157444
## 2  7.586042 3.441875 9.801552 4.1964769 6.171273 4.0544354 6.819722
## 3  7.681865 9.484972 10.467777 1.5770128 6.802777 0.6984974 9.767999
## 4  5.750256 9.356657 8.440258 0.8883966 4.395567 5.5326781 7.722411
## 5  6.042254 9.974303 8.745992 0.7833343 2.992559 4.4203018 8.816226
## 6  8.118836 7.615283 6.950884 0.7356261 6.803105 4.0375536 6.512196
##      Sdf2l1      Sdf4      Sdha      Sdhaf1      Sdhaf2      Sdhb      Sdhc
## 1  5.319312 7.780965 7.584487 4.182708 4.484209 7.022292 6.346053
## 2  3.363339 8.246471 7.276360 4.781626 5.248705 7.124154 6.744962
## 3  4.271420 9.325398 10.077695 6.342103 6.975394 9.767356 8.938690
## 4  2.904455 8.095955 8.835848 1.846743 6.246782 8.545919 7.890274
## 5  3.604954 8.623784 8.404544 -1.770104 6.934781 9.481957 8.590981
## 6  2.473341 6.739702 7.409401 3.337825 4.582031 5.781804 5.922807
##      Sdhd      Sdk1      Sdk2      Sdpr      Sdr16c5      Sdr39u1
## 1  6.475589 4.3810594 0.5006079 2.3584112 -3.88412153 3.157463
## 2  7.128698 1.4628291 1.5041517 8.3324498 -3.88412153 4.994440
## 3  9.284610 -1.1313170 -1.1313170 -1.1313170 0.05610664 6.657554
## 4  8.032359 -0.5040831 -1.9671199 2.9429504 -2.34671108 5.265161
## 5  8.875602 0.1633391 -1.7701038 -2.8071174 -0.42641489 5.418018
## 6  6.117281 2.7815695 4.0648903 0.9290456 -3.88412153 4.344379
##      Sdr42e1      Sdr9c7      Sds      Sdsl      Sebox      Sec11a
## 1  3.4558190 -3.8841215 -1.1216198 -0.04952517 -3.40508515 5.581322
## 2  1.4830607 -3.8841215 -1.9690256 -3.65196234 -1.70394405 6.761388
## 3  2.3566392 0.6984974 -3.8841215 -0.61952623 -3.88412153 9.481837
## 4  2.6101278 -1.3718637 -3.8841215 2.40902105 -0.07864751 7.702065
## 5  0.2570463 -1.4408855 -3.8841215 3.85020378 -2.80711744 8.624333
## 6  1.7683657 -3.8841215 1.4937576 1.59856854 -3.45113945 5.981859
##      Sec11c      Sec13      Sec14l1      Sec14l2      Sec14l3      Sec14l5      Sec16a

```

```

## 1 5.938683 6.576178 6.495621 5.3279192 -3.0154281 0.900382 6.716606
## 2 6.683073 6.866499 7.922391 1.1722530 -3.6565043 -3.884122 6.540639
## 3 9.259664 9.250484 5.569791 -0.2425151 -3.8841215 -3.884122 5.246901
## 4 6.603077 7.251804 4.386401 2.7714711 -1.3530915 1.333343 5.155374
## 5 7.953316 8.825576 4.720905 2.6393048 -3.8841215 -1.770104 5.069796
## 6 5.438723 5.755608 7.115352 6.6701734 -2.2885695 -3.660779 7.056343
##      Sec16b  Sec22a  Sec22b  Sec22c  Sec23a  Sec23b  Sec23ip
## 1 -1.5984471 4.327030 5.390521 5.209133 6.340794 6.471322 5.338347
## 2 -3.2515854 5.093761 5.972423 3.001337 5.932469 5.951568 5.615880
## 3 -3.8841215 7.801083 4.422917 -1.131317 2.739167 8.836881 5.848145
## 4 -1.1603277 6.198672 6.374519 3.389799 6.809607 7.029813 6.241726
## 5 -3.8841215 7.443342 6.405409 1.168115 6.716062 4.248414 7.039866
## 6 0.4797733 4.108182 5.315957 4.836829 6.048277 5.763414 5.670984
##      Sec24a  Sec24b  Sec24c  Sec24d  Sec31a  Sec31b  Sec61a1
## 1 5.332484 5.725494 7.303899 4.304589 6.571937 -1.04209278 8.147077
## 2 5.353591 6.205091 6.765926 6.464613 7.543864 -0.06492611 8.540666
## 3 7.080660 4.897664 4.840083 1.141414 3.453298 -3.88412153 10.348952
## 4 4.954039 4.553389 6.705162 3.924137 5.889472 -0.23185244 8.474904
## 5 5.076238 3.622666 6.333285 3.699788 5.747584 -3.88412153 8.719229
## 6 5.930669 6.320459 7.102178 3.929847 6.622988 -2.47840842 7.703771
##      Sec61a2  Sec61b  Sec61g  Sec62  Sec63  Secisbp2  Secisbp2l
## 1 6.263139 3.895477 1.3167733 6.968303 6.7271661 4.7642563 8.162908
## 2 4.593259 5.711236 2.0994224 7.593725 7.4482680 5.0918435 6.570609
## 3 3.074902 6.448686 1.8345785 8.501451 0.3033916 0.6984974 2.820816
## 4 5.954939 6.206160 1.9745703 8.394611 5.6524522 4.2301419 6.711593
## 5 6.816636 7.632252 1.9356113 8.618000 4.1480228 2.9510998 7.785572
## 6 6.532658 2.653167 0.2547865 7.209973 7.5520091 5.2412496 6.778874
##      Sectm1a  Seh1l  Sel1l  Sel1l2  Sel1l3  Sele  Selenbp1
## 1 -3.794983 5.169459 8.301789 -3.884122 4.0213444 -3.34334630 2.0592491
## 2 2.369697 5.403880 7.152840 -3.884122 -1.4815464 3.27633235 2.5357997
## 3 -1.131317 7.684594 5.720998 -3.884122 0.5144282 -3.88412153 1.4798145
## 4 -3.209184 6.618692 6.259417 -3.884122 5.2369014 -3.88412153 5.3558098
## 5 -3.884122 4.913087 5.527847 -3.884122 4.0135136 -3.88412153 3.7163802
## 6 -3.884122 5.320786 7.736355 -1.714768 5.4666366 0.03175843 4.0889678
##      Selenbp2  Selk  Sell  Selm  Selp  Selplg
## 1 -2.2911824 6.459901 -3.1247913 5.366918 -3.189876 5.1064587
## 2 -1.3215856 6.963747 -0.6263851 6.690744 2.337457 3.1903207
## 3 -3.8841215 10.562799 6.2639757 8.207181 -3.884122 9.1504010
## 4 -0.5381800 8.964182 -3.2994690 7.765492 -3.529646 3.1515400
## 5 0.7833343 10.240659 -3.8841215 8.672694 -3.884122 0.9609302
## 6 -0.1105961 6.417567 -3.8841215 4.377846 -3.085999 1.4409955
##      Sema3a  Sema3b  Sema3c  Sema3d  Sema3e  Sema3f
## 1 -0.29993693 0.5200348 0.5621567 7.47557773 3.5360521 -0.5112779
## 2 0.07219271 -0.5118912 7.1338288 -2.20571778 -1.5912547 2.6754596
## 3 0.69849743 -0.6195262 6.2493047 0.05610664 0.3033916 1.0083330
## 4 4.74743504 2.0688340 6.5638831 2.00249894 4.2073664 -1.7991802
## 5 3.58702079 -2.8071174 7.1607269 1.47157920 1.2155742 -1.1730114
## 6 -1.29841064 2.0016170 1.1519943 -1.94189097 -0.8933323 -0.9394982
##      Sema3g  Sema4a  Sema4b  Sema4c  Sema4d  Sema4f
## 1 -1.0323983 5.510146 3.3767983 5.5548386 8.1042702 5.5740867
## 2 7.0019309 -0.691105 -0.2745439 7.5246565 0.2239802 -1.7591046
## 3 -3.8841215 7.023608 5.7885109 0.3033916 1.9111385 -3.8841215
## 4 -2.4865898 4.217439 4.6492548 0.8291802 5.3461240 2.4405083
## 5 -3.8841215 1.877781 5.6342747 3.6997879 5.9920338 -1.7701038

```



```

## 6 -0.1411159 7.693780 7.7656073 4.8274798 6.4251889 -0.7960014
##      Sema4g      Sema5a      Sema5b      Sema6a      Sema6b      Sema6c
## 1  6.2497041 8.99537433 7.2366213 7.6798319 5.979480 3.9071026
## 2  2.5589557 2.12712714 -0.5366012 7.4769938 5.271793 1.8741660
## 3 -0.6195262 2.89809000 6.8027773 4.1021273 -1.131317 -1.9317392
## 4  3.8082757 6.11063867 5.0137005 5.1152358 1.091786 -1.4391050
## 5  3.5688622 5.79717278 4.5276144 5.9575551 2.723795 -0.7519471
## 6  5.8578374 0.02545518 8.1293333 7.9869204 2.936270 2.8325730
##      Sema6d      Sema7a      Senp1      Senp2      Senp3      Senp5      Senp6
## 1  7.554219 5.404472 4.4711925 5.5119599 6.0857289 5.728167 6.593586
## 2  8.244108 10.035234 5.4813210 5.8995175 6.2576560 5.886602 6.818682
## 3  4.717529 5.297693 0.6984974 0.8617169 0.5144282 4.150303 4.052287
## 4  6.097694 1.423734 5.0432191 4.6440537 4.1108783 3.827310 5.614029
## 5  5.400157 3.394248 5.0762381 4.3947578 4.8086335 1.168115 4.363496
## 6  9.405637 3.811989 6.0463873 6.1260024 5.6537861 5.796065 7.053084
##      Senp7      Senp8      Sephs1      Sephs2      Sepn1      Sepp1      Sepsecs
## 1  4.921737 1.76681978 6.284259 4.832494 6.708506 7.102643 2.6595373
## 2  4.897601 0.11658288 6.186357 5.078057 6.660837 12.864057 2.7839953
## 3  6.492949 0.05610664 2.242751 6.695929 5.420638 11.412744 -3.8841215
## 4  5.291345 4.95274999 6.439487 5.120321 4.374057 8.768828 2.5174674
## 5  3.219030 6.07639685 4.884007 6.299271 6.261611 8.565736 -0.1609828
## 6  5.255284 2.06142092 5.756802 3.482678 5.897866 7.763440 3.3589070
##      Sepw1      Serac1      Serbp1      Serf1      Sergef      Serhl      Serinc1
## 1  7.830840 3.95641569 7.300653 3.6612620 3.4073809 1.240714 9.190590
## 2  7.154500 2.26625790 8.539124 3.3319807 -0.7810685 4.927993 8.917328
## 3  11.431345 -0.61952623 7.304725 0.8617169 -0.2425151 6.632334 10.593071
## 4  10.287410 4.37177762 7.504984 6.7993968 4.1041528 4.039346 9.157158
## 5  11.427978 1.75466558 6.907946 7.6431409 5.7045704 3.006118 8.997918
## 6  6.421831 5.14352676 6.798806 2.6985616 2.1825840 4.192001 8.754804
##      Serinc2      Serinc3      Serinc4      Serinc5      Serp1      Serp2
## 1  3.20213522 8.271662 1.01084543 9.657322 6.952794 3.2775259
## 2 -3.24899092 9.928717 1.85323632 8.232899 7.630055 4.3843159
## 3  0.05610664 10.541131 -3.88412153 6.106020 6.502259 -1.9317392
## 4  4.05951172 7.022488 0.37825880 5.605120 5.006539 1.8392391
## 5  3.46468620 7.105897 -3.88412153 6.808920 5.069796 2.7237947
## 6  1.24155481 7.912594 3.14736192 4.891728 5.861998 0.9645221
##      Serpina10      Serpina12      Serpina3c      Serpina3f      Serpina3g      Serpina3i
## 1 -3.450968 -3.88412153 -3.884122 -3.6675068 -3.884122 -3.884122
## 2 -3.884122 -3.88412153 -3.884122 2.7303997 3.003045 1.445337
## 3 -3.884122 2.56054423 -1.931739 -3.8841215 -1.131317 -1.931739
## 4 -3.884122 -0.35485160 -1.382938 -1.5180974 -3.164319 -3.498924
## 5 -3.884122 1.30605160 -3.884122 -3.8841215 -3.884122 -2.807117
## 6 -3.884122 -3.88412153 -3.884122 -3.4511394 -3.884122 -2.980940
##      Serpina3m      Serpina3n      Serpina9      Serpinb12      Serpinb1a      Serpinb1b
## 1 -0.6092207 4.2831755 -3.884122 -3.8841215 -1.8271536 -3.7901666
## 2 -3.8841215 -0.4145561 -3.651962 -3.8841215 1.1895896 -3.4243451
## 3 -1.1313170 1.9838395 -1.131317 2.6526181 9.0749282 -0.6195262
## 4 -0.5120033 5.2023844 -2.217766 -1.0486100 5.9490877 1.1567499
## 5 -2.8071174 1.9636795 -3.884122 0.0631199 7.0940420 -2.8071174
## 6 -0.8273494 4.6055975 -3.674482 -3.8841215 -0.8674409 -0.4311328
##      Serpinb1c      Serpinb2      Serpinb3a      Serpinb3b      Serpinb3c      Serpinb5
## 1 -3.8841215 -3.5512555 -3.8841215 -3.88412153 -3.8841215 -3.8841215
## 2 -3.6565043 -3.4837445 -3.8841215 -3.88412153 -3.8841215 -3.8841215
## 3 -0.6195262 1.0083330 3.1714430 0.05610664 0.5144282 2.5605442

```

```

## 4 -3.8841215 -1.7027048 0.0762341 -2.82191784 -2.8640082 -0.3331611
## 5 -2.8071174 -0.5800187 1.3060516 -0.94717201 -1.7701038 3.6314419
## 6 -1.2023577 -3.8841215 -3.8841215 -3.88412153 -3.8841215 -3.8841215
## Serpinb6a Serpinb6b Serpinb6c Serpinb7 Serpinb8 Serpinb9
## 1 4.326359 -2.6464986 -3.767000 -3.8841215 -2.23695483 0.4700749
## 2 6.916243 7.0798315 -3.027715 -3.8841215 -3.25158535 6.1794354
## 3 5.633318 1.1414140 -3.884122 0.5144282 0.05610664 7.1533813
## 4 6.501132 1.0403651 -3.042922 -1.7636960 2.64526721 3.9853465
## 5 6.192133 -3.8841215 -2.807117 -0.7519471 -0.28760302 0.7189210
## 6 3.689087 0.1745211 -3.674482 -3.8841215 -1.70760082 1.4635109
## Serpinb9b Serpinc1 Serpind1 Serpine1 Serpine2 Serpine3
## 1 -3.7949831 -2.8186404 2.1951646 -0.0117294 9.048869 -1.63462440
## 2 0.5672117 -1.7122704 -2.1585061 6.7266724 8.884407 -1.69441766
## 3 -3.8841215 -3.8841215 -1.9317392 -1.1313170 9.544392 -3.88412153
## 4 -3.8841215 0.8989698 2.9445973 -2.4510723 7.833766 0.08042707
## 5 -3.8841215 1.2155742 5.3209984 -3.8841215 8.959885 0.84499419
## 6 -3.3528132 -1.4224988 -2.1740556 -0.7495479 9.409694 -1.29802886
## Serpinf1 Serpinf2 Serping1 Serpinh1 Serpini1 Sertad1 Sertad2
## 1 2.616749 -2.539150110 0.6333788 4.236359 3.007707 3.6939078 5.933714
## 2 4.431336 -1.893109649 0.3487730 10.539290 2.548278 7.3150239 6.087097
## 3 7.412356 -3.884121530 7.1194972 8.550893 1.263249 6.3796359 3.891521
## 4 4.615410 -3.884121530 7.1160936 6.569698 5.306496 3.5440539 4.681904
## 5 5.166553 -3.884121530 7.2882833 8.297996 6.142349 0.5807664 4.850575
## 6 4.534506 0.007730485 1.1289536 7.720019 2.013093 3.4880528 6.060257
## Sertad3 Sertad4 Sesn1 Sesn2 Sesn3 Sestd1 Set
## 1 3.244259 2.487613920 4.683140 4.4939806 5.737783 5.840499 6.265360
## 2 4.118920 0.212594831 7.169455 4.5298750 6.636256 7.016026 6.053037
## 3 6.307114 0.303391622 8.828886 0.5144282 5.339849 2.053052 9.326272
## 4 4.225152 3.491858388 6.437902 0.6679095 3.394536 5.027794 8.974149
## 5 4.474956 4.298862752 6.052092 -3.8841215 3.276106 4.712659 9.661237
## 6 3.303487 -0.096733148 5.445812 3.9904110 6.230957 6.290831 5.369028
## Setbp1 Setd1a Setd2 Setd3 Setd4 Setd5 Setd6
## 1 5.2579167 6.046261 6.552817 5.930479 2.250191 7.186724 2.6739442
## 2 3.5277526 5.822325 7.573781 6.343852 1.448868 7.610866 1.1583895
## 3 1.9838395 1.141414 2.560544 3.478677 -1.131317 5.394208 -1.9317392
## 4 5.9830470 3.879319 5.776897 4.813115 2.425888 4.595092 1.9372634
## 5 5.3237082 2.621796 3.373475 5.242981 2.937011 3.512973 3.0460471
## 6 6.5405135 6.744442 7.324323 6.035954 2.845082 8.015744 2.8362306
## Setd7 Setd8 Setdb1 Setdb2 Setmar Setx Sez6
## 1 6.990398 6.125023 5.909513 3.404252 0.8512580 5.452851 6.1797975
## 2 5.970307 5.238629 5.294518 4.544260 1.8447454 7.296555 0.1793672
## 3 1.911138 1.479815 7.111407 -3.884122 6.4325424 5.163286 -1.9317392
## 4 4.618655 5.458071 5.474723 2.658205 2.6088924 4.979051 4.2620146
## 5 3.454832 5.824216 3.072065 -3.884122 -2.1973739 4.494327 3.0976229
## 6 6.384057 4.925416 6.340160 2.097957 0.8976113 6.475125 3.9956243
## Sez6l1 Sez6l2 Sf1 Sf3a1 Sf3a2 Sf3a3 Sf3b1
## 1 9.0418951 5.849533 7.656830 6.378210 5.0712829 5.033864 8.418725
## 2 0.3418119 1.794036 7.554655 6.844730 4.8363313 5.543010 9.258035
## 3 5.8334663 6.461471 2.560544 6.835068 0.6984974 2.356639 7.538387
## 4 3.5134145 5.564015 5.631080 7.185684 4.2435135 6.493445 8.601819
## 5 2.4339276 6.439538 6.220037 5.993736 5.0305278 5.993736 6.719153
## 6 8.3241656 1.118704 8.026935 7.060844 4.2716328 5.095685 9.145536
## Sf3b2 Sf3b3 Sf3b4 Sf3b5 Sfi1 Sfmbt1 Sfmbt2
## 1 7.981961 6.826311 4.429214 4.874302 4.8727056 4.720732 2.511766

```

```

## 2 7.700054 7.043011 3.684531 5.272351 3.5205426 4.305916 1.942325
## 3 4.548068 6.517645 4.196921 7.919329 7.5682472 4.979944 -1.931739
## 4 8.776433 7.404797 5.137299 7.115973 3.8515855 4.602253 0.677125
## 5 7.463754 6.424469 3.757045 7.642598 2.0182291 2.453854 -3.884122
## 6 7.211167 6.596187 3.838785 3.564298 5.8728555 5.162683 4.198087
##      Sfn      Sfpq      Sfr1      Sfrp1      Sfrp2      Sfrp4
## 1 -2.37140416 8.389563 6.181102 3.7566843 0.06167445 0.9714584
## 2 -0.74523361 8.249501 7.578007 -0.4774480 2.72455137 -1.6306540
## 3 5.17109089 7.078587 6.134242 1.7537270 -3.88412153 -0.6195262
## 4 2.60307314 7.524075 7.713955 7.0104457 -0.66339245 2.5178422
## 5 4.92384254 7.352055 7.932608 7.3540442 2.30821647 4.1418942
## 6 -2.10680442 8.650680 5.541328 6.8213940 2.53391620 3.6129026
##      Sfrp5      Sfswap      Sft2d1      Sft2d2      Sft2d3      Sftpc      Sfxn1
## 1 -1.0477915 6.2121978 3.536310 4.650052 3.7804483 -1.6789187 5.276489
## 2 -3.1165114 5.8030378 5.136483 7.059896 3.8315789 -3.8841215 4.845031
## 3 -3.8841215 1.2632490 6.733311 6.995313 -0.2425151 6.0478635 2.053052
## 4 -2.9559032 4.3292449 3.638508 6.191903 1.7806680 -0.9835023 7.258130
## 5 -3.8841215 0.0631199 4.282242 6.330594 4.4798230 -2.8071174 6.469211
## 6 3.1660371 7.2194634 3.616559 6.025584 3.1310946 -1.5198098 7.294941
##      Sfxn2      Sfxn3      Sfxn4      Sfxn5      Sgca      Sgcb      Sgcd
## 1 2.2821900 4.986685 3.276137 6.015651 -3.3083217 6.7657095 1.67584118
## 2 -0.5163518 4.885876 2.483777 3.080656 -2.0597664 3.6229518 -3.88412153
## 3 1.1414140 7.167105 6.550927 7.764149 -3.8841215 0.5144282 -3.88412153
## 4 4.5421866 6.739077 5.439281 8.901297 -1.1094981 5.1577336 -2.90563956
## 5 -0.5800187 5.925804 6.646338 9.243425 -3.8841215 4.9935682 -3.88412153
## 6 4.6973541 5.677051 3.386274 9.145556 -0.9064325 6.8762102 0.79714450
##      Sgce      Sgcg      Sgcz      Sgip1      Sgk1      Sgk2      Sgk3
## 1 5.920677 -3.8841215 0.8871906 5.0717096 8.169083 0.8554614 4.461027
## 2 5.328803 -3.8841215 -2.5614538 0.7599333 10.038364 -3.6565043 5.763832
## 3 3.202239 -3.8841215 -3.8841215 0.3033916 10.485882 -0.6195262 6.859424
## 4 6.925976 -2.8285276 -2.9259520 5.4831033 8.010192 3.3176508 3.413564
## 5 6.970667 -3.8841215 -3.8841215 3.3629751 7.245339 4.0466955 4.315294
## 6 4.808739 -0.8716209 -2.9862494 6.3895822 5.175692 -3.8841215 3.346506
##      Sgms1      Sgms2      Sgol1      Sgol2      Sgpl1      Sgpp1
## 1 4.824476 2.21965612 1.1083549 1.7524769 7.635517 6.397646
## 2 9.146845 6.31547965 1.6691441 2.2800723 5.482449 4.216085
## 3 9.621181 3.81388444 1.2632490 5.0237060 7.515580 7.515580
## 4 4.901282 2.29657178 4.7319820 4.0483839 6.374880 4.217765
## 5 4.347607 -1.17301144 4.2079189 4.3152945 6.231626 5.610061
## 6 4.959664 1.98816109 1.9817516 3.2551222 7.431730 5.418732
##      Sgpp2      Sgsh      Sgsm1      Sgsm2      Sgsm3      Sgta      Sgtb
## 1 -1.7473207 3.621946 4.8929777 5.6519787 5.284517 7.157259 4.0363776
## 2 5.7803276 3.963274 0.6240102 3.5382956 5.660701 6.668606 4.7317575
## 3 -3.8841215 -1.131317 -1.9317392 0.3033916 1.834579 7.514047 4.1344223
## 4 0.8706145 2.834276 3.6972815 3.3155596 5.973939 8.295414 2.9510499
## 5 -1.1730114 3.298318 4.4203018 4.5784186 6.089194 8.834629 -3.8841215
## 6 -1.8691971 3.463733 1.7492322 5.9160859 4.713426 6.385108 4.5514820
##      Sh2b1      Sh2b2      Sh2b3      Sh2d2a      Sh2d3c      Sh2d4a      Sh2d4b
## 1 6.489984 2.5371354 4.4562055 -3.177016 1.6945312 -1.429177 -2.4724982
## 2 5.834721 2.5096663 5.7647766 -1.520015 6.9919803 -2.936956 1.3821141
## 3 4.769864 -3.8841215 0.6984974 -3.884122 0.8617169 1.008333 -3.8841215
## 4 3.642659 1.9380946 0.5459946 -3.884122 3.5942527 -1.762236 -3.4182176
## 5 4.812497 -1.7701038 1.5101550 -3.884122 3.6049537 -1.770104 -3.8841215
## 6 6.213829 4.0118497 3.0730443 -3.490484 2.8156154 -1.458667 -0.8191107

```

##	Sh2d5	Sh3bgr	Sh3bgr1	Sh3bgr12	Sh3bgr13	Sh3bp1	Sh3bp2
## 1	1.3677127	-1.2540712	5.403719	2.594814	5.355558	2.8901493	4.290513
## 2	-2.3270769	1.5908267	8.322375	5.510949	6.737554	0.1107334	1.568728
## 3	-3.8841215	-1.9317392	7.906529	1.668074	9.041790	-0.6195262	-1.931739
## 4	0.1991439	2.2466665	8.864163	4.980387	7.522205	1.6826927	3.202811
## 5	-3.8841215	1.0155818	8.736872	5.117424	8.304183	-1.7701038	2.756252
## 6	3.4593998	-0.6238184	6.409585	2.142573	3.573574	4.2204452	2.477484
##	Sh3bp4	Sh3bp5	Sh3bp5l	Sh3d19	Sh3gl1	Sh3gl2	Sh3gl3
## 1	8.7323447	6.1558592	6.106590	6.6728948	6.281393	5.3958557	7.1702152
## 2	8.3108162	7.6290815	4.687963	5.3783018	7.186640	1.3091445	-0.4648741
## 3	2.8208155	-0.2425151	6.307114	0.3033916	5.545978	0.8617169	-1.9317392
## 4	3.7631416	3.8918850	4.182315	3.4765156	4.728845	4.5890588	3.5106984
## 5	0.9609302	3.3092977	3.341743	3.9234895	4.405030	2.3082165	5.0437363
## 6	3.6627807	1.8424571	5.104031	3.1695204	5.858790	4.2765376	-0.2967490
##	Sh3glb1	Sh3glb2	Sh3kbp1	Sh3pxd2a	Sh3pxd2b	Sh3rf1	Sh3rf2
## 1	7.558116	6.756927	4.864461	3.8186717	5.045207	5.766487	-3.8841215
## 2	9.072975	5.743091	6.132192	6.4094139	5.522638	4.976962	-3.2515854
## 3	6.930118	7.055582	1.753727	6.6713769	1.141414	6.422769	2.0530520
## 4	5.911997	5.594100	5.114370	1.4298252	4.704879	6.275302	-1.2437515
## 5	5.995437	6.533825	5.527847	0.3450364	4.309838	7.270135	0.0631199
## 6	6.769745	7.186611	4.481569	3.4060605	8.285342	5.181304	-3.2372533
##	Sh3rf3	Sh3tc1	Sh3tc2	Sh3yl1	Shank1	Shank2	
## 1	3.0879656	0.2684259	2.4205166	2.4753208	5.18095486	3.492437	
## 2	-1.7568249	6.5189691	6.3015144	2.7626621	-0.75454086	-2.412250	
## 3	0.3033916	0.5144282	5.3672844	-0.2425151	0.05610664	-3.884122	
## 4	5.2898911	-1.6781059	1.2614907	3.8260965	4.42448167	1.260857	
## 5	3.9657381	-2.8071174	1.2615221	4.9521384	2.37244086	-1.440886	
## 6	3.7326612	-0.5615714	-1.4824211	1.5707174	2.85825158	3.396203	
##	Sharpin	Shb	Shbg	Shc1	Shc2	Shc3	
## 1	5.253250	3.58545186	-2.4172327	4.1428474	5.2304013	3.8121612	
## 2	5.125522	5.34761111	-3.6519623	6.6840154	0.8597286	3.0860186	
## 3	1.375592	-1.13131698	6.2157390	0.3033916	-1.9317392	-1.9317392	
## 4	3.507656	2.86335017	0.1387572	3.4875606	2.6648473	1.2947885	
## 5	4.425357	-0.28760302	-3.8841215	0.7189210	1.3060516	-3.8841215	
## 6	5.059435	0.02682415	-3.0276140	5.3061231	2.0062351	5.4833048	
##	Shc4	Shcbp1	Shd	She	Shf	Shh	
## 1	6.443840	1.1263879	5.2355575	-1.3869830	3.5708917	0.7871015	
## 2	-0.279038	2.8166499	1.3957889	7.7042478	4.7244681	-3.6519623	
## 3	-1.131317	1.0083330	-0.6195262	-1.1313170	-1.1313170	0.3033916	
## 4	2.012657	4.8284134	4.7015355	-0.6011160	1.8917845	-3.6036807	
## 5	-3.884122	3.2306273	4.9969675	-3.8841215	4.2766586	-2.1973739	
## 6	-1.260056	2.1986028	4.7944854	0.9222531	2.1348605	-3.6744822	
##	Shisa2	Shisa3	Shisa4	Shisa5	Shisa6	Shisa7	
## 1	1.915516132	-2.60749944	7.938644	4.547629	4.198681488	6.7422818	
## 2	-0.904769204	-3.21779292	1.061148	7.397629	-2.412213045	-0.9866708	
## 3	6.932415849	-3.88412153	8.732622	8.386318	-0.619526232	-0.6195262	
## 4	3.453283221	-3.88412153	6.053510	6.226934	0.008619304	1.3161856	
## 5	4.733186758	-3.88412153	8.156211	6.227291	-1.770103772	-1.7701038	
## 6	1.114052559	-3.28890603	6.599803	5.079202	2.631136842	0.5984783	
##	Shisa9	Shkbp1	Shmt1	Shmt2	Shoc2	Shpk	Shprh
## 1	5.9203058	4.959296	3.35777924	5.829167	4.591514	2.0549800	5.3398654
## 2	-1.3400166	5.254780	3.29538332	5.447754	6.909713	3.1630534	3.9276180
## 3	0.5144282	6.461471	1.26324902	2.512206	6.474145	-3.8841215	0.5144282
## 4	0.5202341	3.860776	5.25710478	6.938526	5.869640	0.9621564	4.4473415

```

## 5 -1.7701038 3.362975 -0.58001868 6.937438 5.129864 -3.8841215 3.0849008
## 6 6.5605056 3.712486 2.56893947 5.247443 5.891839 2.9065536 5.7307210
##      Shq1      Shroom1 Shroom2      Shroom3      Shroom4      Siae      Siah1a
## 1 1.53634343 3.41076621 6.492524 1.2394981 1.6129364 3.940077 4.456231
## 2 3.33009459 5.89786633 7.408255 1.4000953 6.4087950 3.568581 5.416826
## 3 6.59800584 -3.88412153 4.285869 1.3755916 -0.2425151 1.479815 6.787627
## 4 4.01434241 0.69607002 5.982066 4.0161613 -0.1429882 5.881505 4.193728
## 5 4.89862004 -3.88412153 5.290850 2.9084139 -2.1973739 5.307373 4.996968
## 6 0.40026963 0.09946379 6.822243 1.5667529 3.3971162 4.108108 4.934232
##      Siah1b      Siah2      Siah3      Sidt1      Sidt2      Sigirr
## 1 2.8225229 5.066541 1.9272380 0.48944858 6.987649 -2.632239
## 2 3.3352956 5.560379 -3.6565043 -0.45904307 7.155126 6.690527
## 3 -3.8841215 -1.931739 -0.6195262 -0.24251506 8.245572 7.074432
## 4 1.9684240 2.132111 3.4568629 -0.22013082 5.346777 1.176846
## 5 -1.1730114 3.404524 2.8036091 -0.94717201 6.186190 -1.770104
## 6 3.7216814 5.082543 -2.2938670 -1.52611726 8.163789 -2.039532
##      Siglec1      Siglece      Siglecg      Siglech      Sigmar1      Sik1
## 1 -1.3452788 -0.8084080 -2.676649 3.4016991 6.539191 4.074509
## 2 -3.4837445 -3.6565043 -3.424345 -1.6551115 5.518750 8.765170
## 3 -1.1313170 2.1190956 -3.884122 8.6400549 6.937001 3.752786
## 4 -0.1686687 2.5240887 -2.982136 1.9368881 6.713809 2.909815
## 5 -1.4408855 -0.5800187 -3.884122 -0.9471720 7.102745 2.834338
## 6 -3.6607788 -2.6783180 -3.884122 -2.6003052 6.220045 7.937543
##      Sik2      Sik3      Sike1      Sil1      Sin3a      Sin3b      Sipal
## 1 4.61161057 7.258162 5.2979584 4.685785 5.2244257 6.502077 4.2278942
## 2 4.31235735 6.636520 6.0860654 5.908412 6.6586520 7.056313 8.4372553
## 3 3.13997517 1.479815 -0.2425151 7.462508 1.6680739 5.928619 0.8617169
## 4 0.02056462 4.455347 3.1113964 6.769357 5.5032847 6.717176 2.4637586
## 5 -2.19737395 4.091904 3.1351297 7.109042 5.2023309 6.957641 -2.1973739
## 6 4.22963567 7.248177 5.2606712 4.955207 6.0664472 6.720849 4.6694850
##      Sipal11      Sipal12      Sipal13      Sirpa      Sirpb1a      Sirt1      Sirt2
## 1 5.348700 7.4780185 4.449017 6.772460 -3.8841215 4.382338 10.412901
## 2 5.721627 8.5460601 5.580468 6.761296 -2.1591032 5.366162 6.447428
## 3 2.410380 -0.6195262 1.479815 8.985916 -3.8841215 1.375592 6.932416
## 4 5.370196 2.2121653 2.468752 6.847709 -2.9676349 3.444495 8.137796
## 5 4.104565 3.4349186 4.666442 6.748692 -2.8071174 4.410138 7.907088
## 6 5.640307 6.2590820 5.496708 8.839272 -3.8841215 5.468289 6.636640
##      Sirt3      Sirt4      Sirt5      Sirt6      Sirt7      Sis      Sit1
## 1 4.3139933 3.73945215 2.6297718 3.652389 5.2134509 -0.5481512 -3.884122
## 2 3.7874745 2.90541134 2.6978486 3.481987 5.7952189 -3.8841215 -3.344469
## 3 0.6984974 0.05610664 -0.6195262 6.317700 0.5144282 -3.8841215 -3.884122
## 4 6.0580500 4.89845109 4.9352402 4.955412 3.1856806 -3.8841215 -3.884122
## 5 5.7252131 4.07270233 5.7066480 5.603386 3.7327839 -3.8841215 -3.884122
## 6 4.7710963 4.04644820 3.1463152 4.205588 5.4139216 -3.8841215 -3.884122
##      Siva1      Six1      Six2      Six3      Six4      Six5
## 1 3.130561 -3.253818 -2.963100 -2.1767231 1.4742774 -0.5498752
## 2 3.550077 -2.888894 -2.336517 -3.1123102 -2.2716306 3.6535395
## 3 5.304805 -3.884122 -3.884122 -3.8841215 -3.8841215 -1.1313170
## 4 5.005805 -1.831505 -3.674937 -3.8841215 -3.4989245 1.3651643
## 5 6.314336 -3.884122 -3.884122 -0.5800187 -3.8841215 -2.1973739
## 6 1.189075 -3.660779 -3.512249 0.3016001 -0.5736237 5.0810453
##      Ska1      Skap1      Skap2      Ski      Skil      Skiv21      Skiv212
## 1 0.7942549 -2.72560341 2.276847 6.655025 6.507175 6.471178 5.590558
## 2 2.1372721 -1.47475653 2.878004 7.373279 8.292824 6.210156 5.897938

```

```

## 3  0.8617169 -3.88412153 3.965193 3.575949 8.272122 1.008333 6.580531
## 4  3.9850417 -0.54167425 4.496144 5.082104 6.148459 5.358975 6.570071
## 5  3.9864074 -3.88412153 4.887674 5.268521 6.458155 5.366387 4.276659
## 6  1.9036036 -2.86538056 3.123562 7.407916 7.151457 6.956262 6.248933
##      Skor1      Skp1a      Skp2      Sla      Sla2      Slain1
## 1  -1.37808653  7.680110  2.9412228  1.5932473 -3.723567  6.6804060
## 2  -2.46104042  7.812288  2.0164031 -0.5686796 -2.191909 -1.0790769
## 3  -3.88412153  11.264796  1.2632490  7.6542883 -3.884122  1.9111385
## 4  -3.88412153  10.166476  5.2233596  2.9178442 -3.444759  4.9251134
## 5  -3.88412153  10.919607  4.1171157 -1.4408855 -3.884122  6.5776201
## 6  -2.25936936  6.805369  4.1719440 -0.8479410 -2.633440  3.5697275
##      Slain2      Slamf1      Slamf6      Slamf7      Slamf8      Slamf9
## 1  5.1876674 -3.258724 -2.6132507 -3.528270 -1.5972338 -1.7973221
## 2  6.9405926 -3.424345 -1.5912547 -3.884122 -2.8899073 -3.4243451
## 3  0.8617169 -3.884122 -3.8841215 -3.884122 -1.1313170 -3.8841215
## 4  4.2983597 -3.884122 -2.6510570 -2.626578 -2.7394012  0.6970933
## 5  1.4319435 -3.884122 -3.8841215 -3.884122 -3.8841215 -3.8841215
## 6  5.2346169 -3.884122 -3.8841215 -3.884122 -3.8841215 -3.4511394
##      Slbp      Slc10a1      Slc10a3      Slc10a4      Slc10a5      Slc10a6
## 1  3.9962980 -2.402290  0.09983353 -2.465962 -3.723567 -3.3540881
## 2  5.1763116 -0.975108  4.38520167 -1.893110 -3.884122 -0.8446873
## 3  0.8617169 -3.884122  5.85300549 -3.884122 -3.884122  0.6984974
## 4  6.0700705 -1.214007  3.57439211 -3.884122 -2.982136  0.4215820
## 5  4.4943274 -3.884122 -0.94717201 -3.884122 -3.884122 -0.2876030
## 6  4.3605328  1.080194  0.26372189 -3.137675 -2.424867 -0.8565809
##      Slc10a7      Slc11a1      Slc11a2      Slc12a1      Slc12a2      Slc12a3      Slc12a4
## 1  3.3947750  0.8842268  5.950901 -3.337973  8.249157 -3.14015917  7.291002
## 2  4.6821851 -2.4770451  6.568201 -3.884122  6.257528 -3.48374455  6.018960
## 3  -0.6195262 -0.2425151  8.047816 -3.884122  8.337737 -3.88412153  4.988804
## 4  4.3202356  2.0123462  5.073103 -3.884122  6.870487 -2.58530773  5.320882
## 5  4.0135136 -0.5800187  4.609841 -3.884122  8.046073 -3.88412153  3.993232
## 6  3.8119746 -2.1082842  5.910795 -2.545956  5.289569 -2.33341938  8.367124
##      Slc12a5      Slc12a6      Slc12a7      Slc12a8      Slc12a9      Slc13a1      Slc13a2
## 1  3.927156  6.077848  1.9231153 -1.0665994  7.248980 -3.5365050 -3.884122
## 2  2.575437  6.178282  6.6205035  0.9146658  4.774982 -3.8841215 -3.884122
## 3  5.704958  1.375592  1.1414140 -3.8841215  5.023706 -1.9317392 -3.884122
## 4  0.494105  5.153580  3.9807334  0.8396979  3.970930 -3.3278129 -2.899225
## 5  -2.807117  3.772995  5.5854330 -3.8841215  3.666020 -3.8841215 -3.884122
## 6  2.140790  5.988032  5.7559896 -1.0787002  6.986618  1.7080520 -3.237253
##      Slc13a3      Slc13a4      Slc13a5      Slc14a1      Slc14a2      Slc15a1      Slc15a2
## 1  2.714819 -0.9189828  5.039425  2.3944961 -2.9814443 -3.6730449  4.701505
## 2  1.569920 -0.5648466 -1.401240 -0.8233976 -2.8774220 -2.5614538  4.174024
## 3  5.581551  0.3033916  5.527858  6.8952039 -1.9317392  2.6965413  7.799825
## 4  5.946969  5.1758670  4.548628  8.1293311  1.9596424  0.3269884  6.681430
## 5  7.721260  3.9795505  4.789158  7.1892381  2.6393048  1.4715792  6.720182
## 6  8.072100 -1.0766778  8.121997  7.9828902  4.1306061 -3.2889060  9.574957
##      Slc15a3      Slc15a4      Slc15a5      Slc16a1      Slc16a10      Slc16a11
## 1  2.7937402  6.301473 -3.087480  5.654134  0.1567348  0.6688952
## 2  0.5631792  4.437854 -3.884122  12.537859 -1.2485167  4.5524390
## 3  -0.6195262  4.271420 -3.884122  7.281479  0.8617169 -3.8841215
## 4  -2.4729918  3.432656 -3.884122  5.103648  1.3614606 -1.0013529
## 5  0.6514968  4.373992 -3.884122  5.863853 -2.8071174 -3.8841215
## 6  -1.0033063  4.735208 -3.674482  6.495394 -1.5643748  0.6461932
##      Slc16a12      Slc16a13      Slc16a14      Slc16a2      Slc16a3      Slc16a4

```

```

## 1  2.2550174 3.8574765 1.7686705 5.556061 2.5230287 -0.4111566
## 2  3.1966591 6.2197808 -2.0252565 7.718662 0.8397859 8.4480711
## 3  -3.8841215 0.3033916 -1.1313170 6.474145 -1.9317392 7.2468171
## 4  3.1174886 4.3565755 1.4776130 5.679651 -1.3564601 2.4920504
## 5  4.1171157 4.8278492 0.4279671 6.794342 -3.8841215 -2.8071174
## 6  -0.5027604 2.9428063 -1.0812221 6.583474 -0.9502935 1.6290886
##      Slc16a5 Slc16a6 Slc16a7 Slc16a8 Slc16a9 Slc17a5 Slc17a6
## 1  -3.427916 2.514892 3.777502 1.9868478 0.03710728 4.607492 -2.0798398
## 2  -3.656504 5.322863 -2.371376 -2.4907738 5.96411773 4.881466 -0.1226487
## 3  -3.884122 1.375592 -1.931739 -3.8841215 2.69654125 7.243120 -0.2425151
## 4  -1.884932 2.523797 0.858710 -3.2878217 1.10743537 4.951648 4.9648314
## 5  -3.884122 1.349248 1.654903 -3.8841215 1.47157920 5.151379 4.0401199
## 6  -3.490484 3.642577 -1.669926 -0.4721738 2.45474791 4.688180 -0.8446083
##      Slc17a7 Slc17a8 Slc17a9 Slc18a1 Slc18a2 Slc18a3 Slc19a1
## 1  4.5933162 -3.000494 -1.6273631 -2.9354942 1.910070 -3.473862 4.126362
## 2  2.2809879 -2.294388 -2.3729121 -3.1123102 2.779608 -3.884122 4.933469
## 3  5.1236161 -3.884122 -3.8841215 -3.8841215 2.560544 -3.884122 7.732851
## 4  1.6274724 -2.085745 -2.8319398 -0.2240078 5.220066 -3.884122 6.594902
## 5  -0.7519471 -3.884122 -2.8071174 -1.1730114 2.740115 -3.884122 6.485033
## 6  0.7478011 -1.041365 -1.5612557 -1.1860616 1.715385 -3.674482 4.651474
##      Slc19a2 Slc19a3 Slc1a1 Slc1a2 Slc1a3 Slc1a4
## 1  3.9848586 -1.131353 8.81466299 9.123754 7.816141 6.735315
## 2  2.6051070 7.097509 8.23415222 4.770460 4.656600 9.017013
## 3  0.5144282 -1.931739 6.30001361 10.198127 11.575688 5.414075
## 4  2.9455289 2.627407 3.85742677 11.365888 13.170903 5.938265
## 5  1.1681147 2.146209 -0.04458439 10.491862 12.372381 6.924107
## 6  4.3786735 -0.424151 0.92779768 12.995483 12.580751 10.650918
##      Slc1a5 Slc1a6 Slc1a7 Slc20a1 Slc20a2 Slc22a12
## 1  2.6440986 3.381190459 -3.444800 6.194784 5.858203 0.2685030
## 2  4.2550051 -1.331292433 -3.884122 6.339024 4.721935 -3.6519623
## 3  -1.9317392 1.008332988 -3.884122 8.026463 4.907042 -3.8841215
## 4  2.3794521 -0.422493504 -3.884122 6.758104 6.425092 -2.3383061
## 5  2.8644264 -3.884121530 -3.884122 4.379211 6.282655 -3.8841215
## 6  3.4884443 0.007730485 -3.512249 8.818604 7.635494 1.6969127
##      Slc22a13 Slc22a15 Slc22a17 Slc22a18 Slc22a2 Slc22a21
## 1  -3.884122 3.5180572 10.083910 -2.74896634 -3.7235669 4.206729
## 2  -2.490774 2.7791695 4.336026 1.20983660 -3.6519623 1.390694
## 3  -3.884122 0.8617169 8.212864 0.51442825 -1.9317392 -3.884122
## 4  -3.884122 1.9402189 6.598093 0.95938090 -0.6260307 1.897618
## 5  -3.884122 3.8274719 7.382264 3.43491864 -2.1973739 1.547726
## 6  -2.862656 1.8704842 8.709541 -2.21013289 -3.6744822 3.254528
##      Slc22a23 Slc22a3 Slc22a4 Slc22a5 Slc22a6 Slc22a8
## 1  9.022443 2.53157910 1.4082483 5.9689769 0.08459732 0.1292102
## 2  5.810359 -2.46104042 -0.9304614 5.4479064 -0.76449142 10.0798873
## 3  3.006755 -3.88412153 1.9838395 6.5687619 -1.93173924 7.4830312
## 4  4.561779 -1.81905274 5.7664065 3.3566269 4.40271386 6.3863020
## 5  4.489509 -3.88412153 5.6836281 3.7650420 5.06979604 6.3834988
## 6  8.167734 -3.67448218 3.7121445 5.5302714 -2.84857827 2.8479515
##      Slc23a1 Slc23a2 Slc23a3 Slc24a1 Slc24a2 Slc24a3
## 1  -0.1830390 7.361634 -3.1818093 -2.309647 5.0702219 6.1245862
## 2  0.9332904 7.330280 0.7260051 1.349575 -0.6259755 0.7963888
## 3  -3.8841215 7.493963 -1.1313170 -3.884122 0.6984974 -1.1313170
## 4  0.1844411 5.244207 -3.8841215 -3.299148 2.0996084 2.5511348
## 5  -3.8841215 1.119041 -3.8841215 -3.884122 4.0067846 2.2178791

```

```

## 6 0.5500356 7.384746 -3.4904843 -2.692362 -0.7075220 5.5573073
## Slc24a4 Slc24a5 Slc25a1 Slc25a10 Slc25a11 Slc25a12 Slc25a13
## 1 1.5753785 0.8409050 6.987002 3.868892 6.127655 6.271913 2.54148849
## 2 -2.1585061 -0.5886506 6.415664 5.460708 6.216514 5.533673 2.47984597
## 3 -3.8841215 3.2022392 2.780569 1.479815 7.250505 6.932416 0.05610664
## 4 0.5862797 1.3727797 4.036683 5.113176 5.843246 6.456447 2.79615988
## 5 -2.8071174 -3.8841215 5.329113 4.796980 7.308944 5.704570 2.67369676
## 6 -0.8979817 1.4049048 5.814796 4.558968 5.406250 6.053224 0.29324460
## Slc25a14 Slc25a15 Slc25a16 Slc25a17 Slc25a18 Slc25a19 Slc25a2
## 1 3.8211183 5.5380887 3.9723435 5.593842 3.0955290 4.991640 -2.5123328
## 2 2.6849442 5.0409496 4.2090041 5.711385 0.8909759 3.584101 -0.2790380
## 3 0.5144282 0.5144282 0.8617169 9.444893 7.2688057 1.479815 -3.8841215
## 4 4.8827621 3.2524102 3.8312208 7.862976 8.5109249 6.121864 -1.0639294
## 5 3.4248580 3.4248580 3.8274719 8.258533 8.3113686 6.101878 -3.8841215
## 6 3.5855350 3.9434807 4.9398645 5.024165 7.7969889 4.260038 -1.4792370
## Slc25a20 Slc25a21 Slc25a22 Slc25a23 Slc25a24 Slc25a25
## 1 4.903384 -3.39845726 4.7856739 8.035614 1.51064352 5.3343990
## 2 6.884577 -2.99017567 2.8771545 4.664452 5.30466064 8.8772242
## 3 7.507897 -3.88412153 -0.6195262 4.706830 -3.88412153 -0.2425151
## 4 4.907530 -1.22266800 5.5644547 5.818647 -0.56412931 3.8847339
## 5 5.501762 -2.80711744 5.2458412 5.585433 -2.19737395 2.1215049
## 6 5.108217 -0.08609421 5.0645298 7.687012 1.64603326 7.2751546
## Slc25a26 Slc25a27 Slc25a28 Slc25a29 Slc25a3 Slc25a30 Slc25a31
## 1 3.4025215 4.4158937 4.4312345 4.589000 8.047583 2.9639895 -3.884122
## 2 3.0170750 1.7400706 4.3497093 1.256927 8.445613 4.2344481 -2.412213
## 3 -1.9317392 0.5144282 -0.6195262 -1.131317 7.654288 -1.1313170 -3.884122
## 4 3.6533065 4.9198572 2.6567197 2.267501 6.446191 2.8271211 -1.864440
## 5 3.8426662 4.4943274 1.7221719 -2.807117 7.805095 2.9788711 -2.807117
## 6 2.9727929 3.9752858 5.5565427 3.870795 8.914330 2.3093686 -3.268087
## Slc25a32 Slc25a33 Slc25a34 Slc25a35 Slc25a36 Slc25a37
## 1 2.9788122 4.0746250 -0.4587365 2.3720580 5.6081986 4.8858930
## 2 4.5101348 6.4881083 1.3967238 0.9904533 5.1890161 3.7979637
## 3 7.1275418 0.6984974 -3.8841215 -1.9317392 2.6965413 6.6066647
## 4 1.6406653 3.1544873 -3.8841215 2.7079122 3.9725359 3.7031141
## 5 -1.7701038 4.2597782 -3.8841215 -2.1973739 -1.7701038 0.0631199
## 6 3.7034647 5.5852096 5.9813394 3.1978755 6.5031876 5.7476725
## Slc25a38 Slc25a39 Slc25a4 Slc25a40 Slc25a41 Slc25a42
## 1 5.400641 6.441683 8.624632 3.5281708 -3.654004 3.96862975
## 2 5.073745 7.074325 8.122541 4.0382840 -3.884122 4.24353863
## 3 -1.931739 7.327601 10.410000 6.9069360 -3.884122 0.05610664
## 4 3.843481 5.069012 9.812090 3.1877487 -3.884122 3.11606280
## 5 4.720905 5.172578 10.429862 2.4735096 -3.884122 1.81753643
## 6 5.512060 5.314832 7.764302 4.2182922 -3.674482 6.08860451
## Slc25a43 Slc25a44 Slc25a45 Slc25a46 Slc25a47 Slc25a48
## 1 -1.9976379 6.856765 2.5855495 5.470473 -0.06214879 -3.88412153
## 2 -2.3040431 5.424983 5.1647014 5.421880 -1.32852816 -3.88412153
## 3 -3.8841215 7.591698 -0.2425151 5.484669 -1.93173924 -0.24251506
## 4 -3.4277009 6.549412 2.5503561 4.927062 0.03419589 -1.05568868
## 5 -3.8841215 5.299135 3.5411883 4.587467 3.14741838 -1.17301144
## 6 -0.9214488 6.155008 0.8471230 5.918855 0.70344463 0.03545328
## Slc25a5 Slc26a1 Slc26a10 Slc26a11 Slc26a2 Slc26a3
## 1 7.576417 2.7199987 -1.7810349 3.6735474 2.873343 -2.917544
## 2 8.869235 -2.7285573 3.5034667 2.7989291 4.152406 -3.884122
## 3 11.364421 -1.9317392 -1.1313170 0.5144282 1.008333 -3.884122

```



```

## 4 9.261589 3.4460348 -0.6599644 4.0694278 1.478378 -2.982136
## 5 10.066469 3.7327839 -2.8071174 1.7221719 -1.440886 -3.884122
## 6 7.404509 3.0930214 -1.6673532 4.5749597 3.199841 -3.044745
##      Slc26a4      Slc26a5      Slc26a6      Slc26a7      Slc26a9      Slc27a1
## 1 -2.9334164 -2.3938685 3.376593 -3.0720638 -3.1909959 5.243749
## 2 -3.6565043 -3.8841215 2.638240 -2.9956232 -3.8841215 4.138391
## 3 -3.8841215 -3.8841215 3.731831 -3.8841215 -0.6195262 8.561324
## 4 0.5269376 -2.6932032 3.532794 -3.8841215 -2.3163428 7.623780
## 5 -3.8841215 -3.8841215 -1.173011 -3.8841215 -1.7701038 7.709912
## 6 -3.3798866 0.7655376 5.777943 -1.4314494 -3.4511394 9.320340
##      Slc27a2      Slc27a3      Slc27a4      Slc27a5      Slc27a6      Slc28a1
## 1 -2.512088 2.9141954 7.346755 -2.28692793 3.0022060 -3.1176764
## 2 -3.424345 1.4556722 5.458533 -2.88889413 1.6429784 -3.6565043
## 3 -3.884122 0.6984974 5.539963 -3.88412153 -0.6195262 -3.8841215
## 4 -3.603681 3.2350837 4.433898 -1.08934854 0.5272847 -3.8841215
## 5 3.219030 1.4715792 1.068238 -3.88412153 -1.7701038 -3.8841215
## 6 -3.674482 2.0182486 5.960467 -1.50855509 -1.7115899 -2.4679430
##      Slc28a2      Slc28a3      Slc29a1      Slc29a2      Slc29a3      Slc29a4      Slc2a1
## 1 -3.6778614 -3.8841215 4.488887 3.3145922 6.062567 4.2234881 5.815870
## 2 -0.6297003 -3.1273690 7.444800 0.6677656 3.169883 5.6044921 11.768266
## 3 -3.8841215 2.1190956 7.230103 0.6984974 7.068176 0.5144282 10.555178
## 4 -3.8841215 -0.2654077 6.735866 5.2017174 5.030756 3.3996365 6.837716
## 5 -3.8841215 1.3492478 7.666811 3.7081079 4.700200 4.0135136 6.661412
## 6 -3.8841215 -3.2889060 5.053447 4.8519066 4.667505 1.3776081 7.577179
##      Slc2a10      Slc2a12      Slc2a13      Slc2a2      Slc2a3      Slc2a4
## 1 -0.4756975 3.0311162 4.84663323 -3.794983 5.520177 -1.4008718
## 2 0.5961771 3.0089161 1.89811667 -3.127369 2.475795 -1.3957006
## 3 -3.8841215 -3.8841215 4.25682483 -3.884122 5.833466 -1.1313170
## 4 4.8308370 2.8979947 3.28966930 -3.884122 4.725342 3.4781013
## 5 2.5861290 4.8201936 4.23695945 -3.884122 4.741317 2.8036091
## 6 4.4158488 4.6406933 4.32999076 -3.674482 3.028739 3.3087222
##      Slc2a5      Slc2a6      Slc2a8      Slc2a9      Slc30a1      Slc30a10
## 1 2.83493871 3.938881 4.86240005 0.604103732 4.902920 1.03945047
## 2 -3.34446937 1.188546 4.34186273 2.634264756 8.435445 3.17968069
## 3 9.51095741 -3.884122 0.05610664 -1.131316983 4.849841 7.03006014
## 4 0.86657729 2.254879 2.42681503 2.434862306 3.482997 3.85890249
## 5 3.64016435 -1.440886 0.16333909 4.373991818 4.460254 3.76504202
## 6 -0.43345055 2.894189 5.03855513 0.004280495 5.798680 8.81859220
##      Slc30a2      Slc30a3      Slc30a4      Slc30a5      Slc30a6      Slc30a7      Slc30a9
## 1 -2.5079548 0.1390336 5.864344 6.178295 3.622399 5.826842 6.622991
## 2 -3.2277824 -2.4285606 6.819072 6.092152 3.998424 6.124586 6.928759
## 3 -3.8841215 6.8177704 2.356639 1.668074 6.064720 2.607316 2.462191
## 4 -2.7910333 0.7048389 4.638666 4.378199 5.495581 5.408903 4.943936
## 5 -3.8841215 -1.1730114 4.379211 5.050296 5.596679 4.564739 5.347870
## 6 -3.4511394 -1.8980101 5.602450 6.336288 4.463240 6.295517 6.623671
##      Slc31a1      Slc31a2      Slc32a1      Slc33a1      Slc34a2      Slc34a3      Slc35a1
## 1 6.103952 3.500298 -0.0340839 4.917517 -3.4373012 -0.7604655 4.614597
## 2 9.550396 5.517011 0.3119286 4.390407 -3.8841215 -3.8841215 5.325137
## 3 7.265164 7.123525 -3.8841215 8.002605 0.6984974 6.7333106 1.753727
## 4 6.406722 4.270204 -3.2878217 4.256221 -0.2850508 -0.2889715 5.917246
## 5 5.282517 4.662166 -3.8841215 3.923490 -0.2876030 -3.8841215 6.126918
## 6 6.627397 2.569507 -1.4370268 5.818728 -3.8841215 -3.2808450 4.462778
##      Slc35a2      Slc35a3      Slc35a4      Slc35a5      Slc35b1      Slc35b2      Slc35b3
## 1 6.077569 4.5702845 6.712508 5.948363 6.391349 7.741909 3.933570

```

```

## 2 4.735072 5.7821644 5.804950 2.752656 6.604283 5.788496 5.621156
## 3 6.657554 4.5116495 8.215696 3.891521 6.817770 8.275746 4.943954
## 4 5.737474 2.0820619 7.508166 6.725328 7.448893 6.388300 3.620599
## 5 6.090786 1.1190407 7.381614 6.754729 8.453305 7.482064 3.276106
## 6 5.634884 6.1944148 5.822006 5.615454 6.380389 6.141249 4.513796
## Slc35b4 Slc35c1 Slc35c2 Slc35d1 Slc35d2 Slc35d3 Slc35e1
## 1 5.490757 4.0069898 5.162808 4.950999 -0.07367422 -1.167291 6.262945
## 2 4.577018 2.0479438 4.236468 3.342693 3.80911924 -2.120670 6.314557
## 3 5.616268 0.5144282 7.004079 6.022203 -0.61952623 -1.931739 1.753727
## 4 5.637654 4.0140261 6.429850 4.913886 2.04589804 -3.674937 4.213169
## 5 5.687841 2.6566033 6.809887 4.489509 -1.77010377 -3.884122 4.315294
## 6 5.591561 4.0943362 5.117927 5.371889 0.69398069 -2.372644 6.330078
## Slc35e2 Slc35e3 Slc35e4 Slc35f1 Slc35f2 Slc35f3
## 1 5.6524231 5.679599 5.851677 7.75474632 2.90504381 2.7209490
## 2 4.9630327 2.497905 4.953506 0.39563962 8.47342522 -3.1273690
## 3 0.5144282 3.710567 5.147549 0.05610664 4.66322415 -0.2425151
## 4 5.1852841 3.446204 3.071558 4.83517919 0.20350637 -0.4441517
## 5 4.3895942 4.865529 4.793075 2.07079093 -2.80711744 2.2861569
## 6 5.8191506 3.969889 5.737965 5.85604311 1.10649782 0.6655914
## Slc35f4 Slc35f5 Slc36a1 Slc36a2 Slc36a4 Slc37a1
## 1 -1.7344970 5.1815230 5.342372 -2.63822785 3.847083 0.922037671
## 2 -3.8841215 6.5808620 4.858168 -2.99562320 4.960153 -0.005054663
## 3 -1.9317392 0.3033916 7.119497 -1.13131698 6.657554 -3.884121530
## 4 -3.4447594 3.8275217 2.128693 -1.08984933 2.664244 1.545756752
## 5 -3.8841215 6.2229426 2.787996 -3.88412153 2.908414 -2.807117436
## 6 -3.2680874 5.3259807 5.768712 0.04831693 3.530644 -0.403506291
## Slc37a2 Slc37a3 Slc37a4 Slc38a1 Slc38a10 Slc38a11 Slc38a2
## 1 1.5463581 6.083475 5.198585 6.136982 7.243312 -2.4738768 8.562877
## 2 -2.8899073 5.251451 4.053456 4.007648 7.733886 3.4647789 10.915427
## 3 5.2905452 1.479815 5.217053 2.300819 1.577013 -1.9317392 9.034856
## 4 1.8210781 6.194142 5.865595 7.739948 4.832046 1.3589932 7.621443
## 5 -0.4264149 5.530195 4.166254 6.721210 4.363496 2.6393048 7.001456
## 6 2.8563718 5.338649 4.777474 3.845542 6.481905 -2.2162448 7.849681
## Slc38a3 Slc38a4 Slc38a5 Slc38a6 Slc38a7 Slc38a8
## 1 6.986907 -1.8849094 -2.0636661 3.107253 4.847194 -3.654004
## 2 10.287282 -2.8174159 9.9387530 3.548033 3.648564 -3.656504
## 3 9.287754 2.0530520 7.3310888 -1.931739 -1.131317 -3.884122
## 4 5.915780 -0.6515796 2.6014049 2.415271 4.313410 -3.529646
## 5 5.873132 0.3450364 3.0460471 2.690590 -1.440886 3.865162
## 6 10.578239 -3.4511394 2.6265494 4.181551 3.990043 -3.660779
## Slc38a9 Slc39a1 Slc39a10 Slc39a11 Slc39a12 Slc39a13 Slc39a14
## 1 4.39673901 6.703047 6.013775 4.0768752 2.682315 4.7597859 5.3834314
## 2 4.13513580 7.507443 10.676269 4.5668863 1.344242 4.2293209 0.7549573
## 3 0.05610664 8.234441 3.041231 -1.1313170 9.421363 -0.2425151 -0.6195262
## 4 5.21392876 6.265259 6.703773 4.6506818 5.912551 3.9387209 2.1337072
## 5 3.82747192 8.140159 5.896981 5.6815170 6.281261 4.8655293 -1.1730114
## 6 4.71816069 6.702091 6.380338 4.1575690 8.737084 4.9417623 7.0410970
## Slc39a2 Slc39a3 Slc39a4 Slc39a5 Slc39a6 Slc39a7 Slc39a8
## 1 0.2642981 6.664002 -1.972190 -1.5705171 6.760585 7.607335 0.4494432
## 2 -3.8841215 5.429872 1.471668 -2.9369560 4.201020 7.593807 9.8380791
## 3 -0.2425151 6.751644 -3.884122 -3.8841215 7.074432 7.311802 1.7537270
## 4 -0.6277831 4.055843 -0.506823 -1.1359488 5.318354 6.735528 0.3323286
## 5 -3.8841215 5.347870 -3.884122 -2.8071174 5.775563 7.312359 -0.5800187
## 6 2.1147110 5.246305 -3.451139 -0.5483193 5.994015 7.431393 3.2419795

```

	Slc39a9	Slc3a1	Slc3a2	Slc40a1	Slc41a1	Slc41a2	Slc41a3
## 1	6.756429	-2.025081	7.395851	1.4631427	5.998223	4.1607616	3.4680859
## 2	5.708093	-2.025257	11.132531	9.3748199	6.140174	-0.9439217	0.2147156
## 3	4.085705	-3.884122	8.062576	5.8626767	4.943954	-0.2425151	-1.1313170
## 4	6.006239	-3.287822	6.788108	2.7695733	5.572602	2.0121641	0.8210507
## 5	5.361120	-3.884122	7.563417	5.1725775	4.969546	-2.1973739	1.5843436
## 6	6.257525	-1.924156	9.600205	2.2027444	8.019008	3.3817023	4.0992167
	Slc43a1	Slc43a2	Slc43a3	Slc44a1	Slc44a2	Slc44a3	Slc44a4
## 1	-2.0721134	6.594384	-1.7655704	9.273179	6.467142	-3.7949831	-3.345434
## 2	2.3709815	7.495406	6.1848508	6.533853	6.903481	-3.6519623	-3.335655
## 3	-1.1313170	1.577013	-3.8841215	7.167105	8.006972	-3.8841215	-3.884122
## 4	0.6154271	5.372225	0.8862097	5.260491	6.613790	-0.2227770	-3.603681
## 5	-2.8071174	5.887855	-2.1973739	6.626723	6.787487	-3.8841215	-3.884122
## 6	-0.4258079	4.840977	2.6862363	6.163344	6.552052	0.5703648	-3.674482
	Slc44a5	Slc45a1	Slc45a2	Slc45a3	Slc45a4	Slc46a1	
## 1	4.9783709	4.503606	-3.884122	2.3255118	5.4657001	3.8188599	
## 2	5.9331759	-1.382129	-2.889907	-2.8774220	4.5583967	-0.3377319	
## 3	6.1852328	-1.931739	-1.131317	-1.1313170	0.5144282	7.2922545	
## 4	0.7693948	2.928641	-3.498924	1.9520203	1.6402518	6.9685126	
## 5	-1.7701038	1.431944	-3.884122	4.3687533	-0.1609828	6.5102303	
## 6	2.3243887	-1.854338	-3.143174	-3.1565438	4.8499313	5.2840669	
	Slc46a2	Slc46a3	Slc47a1	Slc48a1	Slc4a1	Slc4a10	
## 1	-3.19097699	3.3541936	-2.994650	7.479707	0.22790926	5.0159286	
## 2	-3.88412153	6.6370370	-3.884122	5.846096	0.61282287	-0.5008222	
## 3	0.86171687	-1.1313170	-1.931739	9.178260	-3.88412153	8.2185236	
## 4	-2.16453046	3.4996732	-1.826900	6.631232	-3.88412153	1.8699853	
## 5	1.47157920	1.9356113	2.656603	8.089312	-3.88412153	-0.4264149	
## 6	-3.67448218	2.7855928	-2.424867	6.746031	-3.51224876	-0.2728297	
	Slc4a11	Slc4a1ap	Slc4a2	Slc4a3	Slc4a4	Slc4a5	Slc4a7
## 1	-1.4472390	4.15304462	6.122980	5.895558	5.374002	-3.197032	5.9126833
## 2	-1.6944177	4.37561804	5.805434	0.540064	2.772657	-3.227782	5.7046107
## 3	-1.9317392	0.05610664	6.835068	4.810406	7.155350	-1.931739	-0.2425151
## 4	0.6454134	3.37392909	3.756925	3.692012	5.741359	-2.362624	4.5054727
## 5	-2.8071174	4.00678464	5.548843	3.879966	5.651633	-3.884122	1.8777815
## 6	1.1198139	4.52067173	6.292781	7.107039	11.169060	-3.027614	6.3728234
	Slc4a8	Slc4a9	Slc50a1	Slc5a1	Slc5a10	Slc5a11	Slc5a12
## 1	6.669176	-3.4957364	5.206346	-3.884122	-2.206818	0.6625098	-3.285155
## 2	-1.551600	-3.6519623	6.359723	-2.995623	-1.630654	-0.7224940	-3.884122
## 3	-1.131317	-0.6195262	2.696541	-1.131317	-3.884122	-3.8841215	-3.884122
## 4	3.044416	-3.1643186	6.007872	-2.714496	-2.485490	0.3306992	-2.847711
## 5	-1.770104	-2.8071174	7.581078	-2.807117	-3.884122	-3.8841215	-3.884122
## 6	5.644423	-2.1036624	5.055054	-3.884122	-3.027614	-0.8402430	-3.884122
	Slc5a2	Slc5a3	Slc5a5	Slc5a6	Slc5a7	Slc5a8	
## 1	-3.509438	4.379201	-0.44296900	3.9188576	1.616177	-2.1450765	
## 2	-3.656504	4.329335	2.81428156	6.8660904	-1.941406	-3.6565043	
## 3	-3.884122	3.622232	-1.93173924	-0.6195262	-3.884122	-0.2425151	
## 4	-2.525716	5.456505	0.90197023	3.9414857	-3.529646	-3.6539444	
## 5	-3.884122	5.634275	3.85770217	-0.5800187	-3.884122	-3.8841215	
## 6	-3.027614	5.412190	-1.99643136	4.3666799	-3.288906	-3.4511394	
	Slc5a9	Slc6a1	Slc6a11	Slc6a12	Slc6a13	Slc6a15	
## 1	-3.7949831	9.163522	6.131170	-3.161799	0.6193132	3.77598685	
## 2	-1.7098134	1.992190	2.567881	-1.376017	0.8448167	-0.26283412	
## 3	-0.6195262	9.331504	8.535860	-3.884122	7.4123557	7.90652887	
## 4	-2.7469651	8.183616	6.659056	1.772886	6.4426985	1.97427342	

```

## 5 -2.1973739 8.265949 7.704724 -3.884122 7.7816351 -0.04458439
## 6 -3.2808450 11.111844 11.466363 -3.674482 -2.7330183 -0.78604047
##      Slc6a17      Slc6a19      Slc6a2      Slc6a20a      Slc6a20b      Slc6a3
## 1 3.1915449 2.11903438 -3.157679 -0.2789366 -3.3090839 0.9889862
## 2 4.6692931 -3.88412153 -3.884122 4.4478575 -2.8000981 -2.8125900
## 3 -0.6195262 0.86171687 -3.884122 6.3796359 -3.8841215 -3.8841215
## 4 2.0894771 0.13120248 -3.674937 5.8232735 -2.6030672 -2.2219627
## 5 2.0963708 0.42796713 -3.884122 6.2840467 -3.8841215 -3.8841215
## 6 3.0052910 -2.86265641 -3.884122 -1.1000968 -3.2808450 -2.9479702
##      Slc6a4      Slc6a5      Slc6a6      Slc6a7      Slc6a8      Slc6a9      Slc7a1
## 1 -3.224660 -3.8841215 6.617129 0.1202151 7.502289 6.0749864 5.645504
## 2 -3.076231 -3.8841215 10.622035 -1.5884105 5.139100 0.5438786 10.969950
## 3 -3.884122 -3.8841215 8.477260 -3.8841215 1.753727 8.1832609 7.840769
## 4 -3.128315 -3.8841215 6.243777 -2.6757125 4.756445 6.3013825 3.833916
## 5 -3.884122 -3.8841215 5.334497 -2.8071174 4.884007 5.5301948 3.835089
## 6 -3.884122 -3.2808450 3.692216 -1.5724608 6.252419 8.3888879 5.774447
##      Slc7a10      Slc7a11      Slc7a14      Slc7a2      Slc7a3      Slc7a4
## 1 4.41301587 2.178776 3.1423197 3.5123435 5.4657851 3.8276793
## 2 0.05409556 5.912940 -2.4090094 2.6335999 6.5102608 -0.5461695
## 3 6.91625358 9.128020 7.3135663 6.0730752 -1.9317392 7.4172860
## 4 3.75044985 6.916199 3.0065348 3.9691805 0.9307419 6.4680100
## 5 4.63624062 8.268764 2.1943824 3.6914197 -2.8071174 6.1921334
## 6 9.78335405 8.177236 -2.4262406 8.3270234 3.1622993 3.8495112
##      Slc7a5      Slc7a6      Slc7a6os      Slc7a7      Slc7a8      Slc8a1
## 1 6.402906 5.658029 5.06860686 1.1468691 4.661504 5.55525657
## 2 11.706524 5.248129 5.08468367 4.9696170 7.631150 2.04317487
## 3 6.577598 1.375592 -1.13131698 -3.8841215 7.446519 -0.61952623
## 4 4.504327 4.191269 2.57067568 2.6596213 4.797505 4.40082598
## 5 4.712659 2.473510 3.51297329 2.1215049 3.147418 -0.04458439
## 6 8.522929 4.245389 5.06250234 1.9120505 1.457114 2.76201123
##      Slc8a2      Slc8a3      Slc9a1      Slc9a2      Slc9a3      Slc9a3r1
## 1 6.40222937 4.8728763 5.8778516 -0.1118503 -2.147348 4.348724
## 2 0.52047319 -1.2425318 5.3884138 2.3918028 -3.248991 4.833686
## 3 -1.93173924 -3.8841215 0.6984974 -1.9317392 -3.884122 4.422917
## 4 -0.06011692 2.0641405 3.5201794 -3.8841215 -3.076750 6.617495
## 5 0.42796713 -2.1973739 5.3128384 -3.8841215 -3.884122 6.767723
## 6 6.02242848 0.8902619 5.3844287 -2.1942889 -2.865381 8.160582
##      Slc9a3r2      Slc9a4      Slc9a5      Slc9a6      Slc9a7      Slc9a8      Slc9a9
## 1 5.604724 -3.51464276 3.9879869 6.609810 4.0771771 5.294743 5.929887
## 2 9.079629 -0.05911078 4.0172788 4.654024 0.3735852 4.450501 3.352811
## 3 -1.931739 -1.93173924 -1.9317392 6.685069 -3.8841215 5.593217 1.668074
## 4 3.572400 -2.01409744 1.2041478 4.613178 0.2215148 4.638608 4.475304
## 5 4.066244 -3.88412153 -3.8841215 5.108024 -2.1973739 4.700200 5.645148
## 6 3.286234 -3.88412153 3.8887739 5.990424 4.2971353 6.034192 4.948067
##      Slco1a1      Slco1a4      Slco1a5      Slco1b2      Slco1c1      Slco2a1
## 1 -3.884122 -1.0515877 -3.376626 -3.411148 2.605795 -2.04055938
## 2 -3.248991 9.9959212 -1.155175 3.418236 12.439034 5.18315396
## 3 -3.884122 8.8922291 -3.884122 -3.884122 8.879186 0.51442825
## 4 -3.884122 5.0162567 -1.096457 -3.884122 7.142929 3.02673637
## 5 -3.884122 5.8242156 -3.884122 -3.884122 5.450614 2.89389987
## 6 -1.876164 2.2433720 1.280923 1.537563 10.547124 -0.03275595
##      Slco2b1      Slco3a1      Slco4a1      Slco4c1      Slco5a1      Slfn1
## 1 3.554782 5.0126550 -1.6236644 -3.528270 1.7829698 -3.7235669
## 2 9.528726 3.0799537 1.0830035 -3.884122 3.3684646 -2.4194830

```

```

## 3  8.478833 6.5863793 -1.9317392 -3.884122 -1.1313170 -3.8841215
## 4  4.463700 3.0396712 -1.1342791 -3.884122 3.6440548 -2.9388957
## 5  2.723795 5.7107943 -2.1973739 -3.884122 2.3299438 -3.8841215
## 6  2.082292 0.2251920 -2.0977731 -3.884122 -0.9865471 -3.8841215
##      Slfn2      Slfn3      Slfn4      Slfn5      Slfn8      Slfn9
## 1 -1.4217751 -3.4529047 -3.612858 -1.8960201 -1.6724386 -0.06342078
## 2  0.2524678 1.7909195 -2.627338 7.9565362 -2.5789021 2.15535836
## 3  1.5770128 -3.8841215 -3.884122 -1.1313170 -1.1313170 0.05610664
## 4  2.9680177 -2.1358588 -3.884122 1.2502071 -0.1778266 2.93040536
## 5  3.8198143 -2.8071174 -3.884122 2.5679590 -3.8841215 -0.75194706
## 6 -3.2808450 -3.5122488 -3.884122 0.4330283 -3.2889060 1.70713668
##      Slfn11      Slit1      Slit2      Slit3      Slitrk1      Slitrk2
## 1 -3.322880 3.8607680 3.814680 0.1139434 5.6322814 6.0485943
## 2 -3.116511 -2.2210829 3.949007 1.0710289 -1.8187323 -1.8832078
## 3 -3.884122 -3.8841215 -1.931739 0.3033916 -0.6195262 8.3779127
## 4 -3.884122 -0.9001538 1.476184 -1.2601252 2.4831550 6.4057957
## 5 -3.884122 -1.1730114 2.146209 -1.1730114 -1.4408855 6.7697115
## 6 -3.660779 3.8329307 1.762653 -1.9632495 -0.8559150 7.4750250
##      Slitrk3      Slitrk4      Slitrk5      Slitrk6      Slk      Slmap
## 1 5.7991291 2.9446569 5.67409067 2.32056233 6.391909 5.3936025
## 2 -2.4090094 -3.4243451 -0.91626053 -2.71613440 8.089007 6.2992479
## 3 4.2271840 -1.9317392 3.68898503 -1.13131698 2.182248 1.9838395
## 4 2.6632965 0.9281820 2.00946001 -1.81679332 4.411778 4.2240051
## 5 -1.4408855 -1.4408855 2.75625220 -2.80711744 2.530918 0.5063887
## 6 -0.9263122 -2.4657816 4.08977638 -3.28890603 6.777829 5.8873047
##      Slmo1      Slmo2      Slpi      Sltm      Slu7      Slurp1      Slx1b
## 1 2.9479890 4.829104 2.3938515 5.968163 5.734315 -3.8841215 4.148957
## 2 -1.4538919 5.296042 -2.5532032 5.977106 6.029832 -3.4243451 4.444574
## 3 7.1592791 2.182248 5.4271702 1.911138 6.419497 0.5144282 -1.131317
## 4 5.3293588 5.748327 -0.2433915 6.023051 7.398447 -2.3645454 4.797643
## 5 -0.1609828 5.702490 4.0466955 1.906986 6.491072 -2.8071174 5.410390
## 6 5.0439578 4.879304 -3.8841215 6.954966 5.528518 -3.8841215 4.394328
##      Slx4      Smad1      Smad2      Smad3      Smad4      Smad5      Smad6
## 1 4.92293998 4.993376 5.784956 6.055469 5.816832 6.808034 -1.8351581
## 2 4.23859068 7.069333 6.209276 6.924656 6.879158 7.236930 5.1300157
## 3 0.05610664 6.767175 1.668074 1.141414 7.209408 3.202239 0.3033916
## 4 4.08070096 5.968664 5.431675 4.071787 5.715912 6.274543 -1.8116755
## 5 -0.94717201 6.087600 4.166254 1.754666 5.537216 6.084408 -3.8841215
## 6 5.26466477 5.427482 6.153509 5.880720 5.923473 7.605937 2.1254279
##      Smad7      Smad9      Smagp      Smap1      Smap2      Smarca1
## 1 5.958889 2.3873082 -0.269797021 5.8341858 6.746010 4.090797375
## 2 4.865805 -0.1836822 5.851826813 5.6449827 5.706016 -0.006588728
## 3 3.872500 -3.8841215 -1.131316983 0.5144282 2.300819 -0.619526232
## 4 2.900873 1.5253923 -0.253454100 3.9961797 4.352832 4.706737336
## 5 4.368753 2.5861290 -3.884121530 4.1357393 4.072702 3.901892036
## 6 5.045779 3.6129086 -0.339501046 4.9254743 4.705221 3.124340573
##      Smarca2      Smarca4      Smarca5      Smarcad1      Smarcal1      Smarcb1      Smarcc1      Smarcc2
## 1 6.643447 7.757976 5.062432 5.097842 5.300666 6.813244 5.938831 7.727449
## 2 7.491017 7.444580 5.043552 5.599365 4.968623 6.357544 5.323134 6.790039
## 3 4.511649 2.696541 5.032301 1.263249 1.911138 4.840083 5.427170 2.607316
## 4 7.181246 6.974187 5.701753 5.364207 5.710000 8.444102 6.818623 6.467369
## 5 6.583285 4.745365 7.500742 5.397587 4.555547 8.272977 6.002219 5.428126
## 6 6.854652 6.980720 5.709042 6.037083 5.686958 6.006923 5.987408 8.571613
##      Smarcd1      Smarcd2      Smarcd3      Smarce1      Smc1a      Smc1b      Smc2

```

```

## 1 7.195709 4.168800 5.378300 5.455245 6.367299 -3.22450267 4.411990
## 2 5.555270 6.358939 2.370793 6.061083 7.411287 -1.24939083 5.355267
## 3 5.268888 1.577013 -1.131317 1.983840 3.503617 -3.88412153 3.107806
## 4 5.999195 3.960174 3.712439 6.294881 7.824910 0.81369606 6.959608
## 5 5.407839 4.503917 1.654903 5.882351 6.478968 -2.19737395 5.361120
## 6 5.629522 5.853354 6.407547 4.460099 6.924451 0.07864139 5.258961
##      Smc3      Smc4      Smc5      Smc6  Smchd1      Smcr8      Smek1
## 1 5.707414 4.158104 4.938509 5.174512 5.101980 5.5387211 5.771080
## 2 6.561681 6.099970 5.666011 6.249704 6.810336 6.4697576 6.046177
## 3 2.119096 1.983840 1.263249 2.119096 1.008333 -0.2425151 7.415644
## 4 7.429248 6.343480 5.712241 6.407830 4.769531 3.9835181 6.269101
## 5 4.410138 3.827472 3.006118 5.320998 5.721108 2.4137218 6.325195
## 6 6.484070 6.879614 7.160050 5.829406 6.326079 5.9407497 6.662966
##      Smek2      Smg1      Smg5      Smg6      Smg7      Smn1      Smndc1
## 1 5.767538 6.836106 6.6989147 5.5661599 6.836737 3.972173 5.8498142
## 2 7.027137 7.135778 6.9492636 6.3886505 6.391886 4.264453 6.1745440
## 3 7.813602 2.410380 0.6984974 0.8617169 6.541926 1.263249 0.5144282
## 4 6.271790 5.612851 3.7842557 4.8560061 7.037631 5.218905 4.2552418
## 5 5.053564 5.123658 1.8777815 4.7291044 7.291055 5.489747 4.9556367
## 6 6.354324 8.161935 7.1252335 6.0077268 7.196248 3.470218 5.8240864
##      Smo      Smoc1      Smoc2      Smox      Smpd1      Smpd2      Smpd3
## 1 4.229217 6.75072626 -1.84146707 7.742880 6.875187 6.348285 3.4623403
## 2 5.784302 -1.43766251 6.08587321 8.765840 6.110451 6.042794 0.6362447
## 3 7.281479 -1.13131698 0.05610664 7.779547 9.441266 8.570943 2.5122057
## 4 4.096852 3.97095964 1.43831952 5.264830 6.956614 6.057897 4.2673603
## 5 4.773387 4.04669554 -0.94717201 4.123350 7.083688 6.221490 2.9650523
## 6 6.844451 3.63135129 -2.77767574 7.369257 6.661125 6.945017 4.1246867
##      Smpd4 Smpdl3a Smpdl3b      Sms      Smtn      Smtnl2      Smu1
## 1 5.604637 4.275050 0.3193976 3.3603348 3.87724476 2.9867586 6.186342
## 2 5.084435 8.306000 3.0079810 2.8244737 8.13709624 -0.5603120 6.681935
## 3 1.753727 7.487726 -1.1313170 -0.6195262 1.14141397 -0.2425151 9.233813
## 4 5.760480 6.258711 2.7241706 3.6730994 2.47095208 -0.3045725 7.513938
## 5 5.342536 6.965471 3.6914197 1.2155742 5.50892269 0.6514968 7.459448
## 6 6.036507 7.864312 1.2499132 3.8563064 4.02164355 -0.9869210 5.704123
##      Smug1      Smurf1      Smurf2      Smyd1      Smyd2      Smyd3      Smyd4
## 1 3.685941 6.7701486 6.093270 0.04842974 5.979375 3.939387 3.2224172
## 2 3.695102 6.9552381 7.647284 -2.93695601 6.921627 3.673069 2.2069762
## 3 1.008333 1.3755916 1.911138 -1.93173924 1.141414 6.022203 6.7227287
## 4 3.652969 3.4950702 5.066438 -3.14161637 3.554184 5.894775 3.8661900
## 5 4.657877 5.1080237 5.342536 -3.88412153 3.631442 3.788771 3.3417432
## 6 3.827941 6.2037588 6.255846 2.57060234 4.608484 2.310477 3.5631185
##      Smyd5      Snail      Snai2      Snai3      Snap23      Snap25      Snap29
## 1 3.706096 -1.2897174 -2.5382277 -3.794983 4.984315 4.991728 5.5111897
## 2 3.410043 1.3460619 3.4334703 -3.424345 6.561283 2.704673 5.1069167
## 3 6.712069 -3.8841215 -0.2425151 -3.884122 6.733311 9.145457 -0.2425151
## 4 5.843650 -0.6592089 -0.6194781 -3.884122 6.254288 7.598303 4.2133009
## 5 6.339993 2.9084139 -3.8841215 -3.884122 5.098561 6.809887 4.8201936
## 6 3.691617 -0.4995079 0.1803290 -3.884122 5.100833 2.328193 4.2743809
##      Snap47      Snap91      Snapc1      Snapc2      Snapc3      Snapc4      Snapc5
## 1 6.361892 6.430761 3.37808686 4.725234 3.3848764 5.1786553 2.906250
## 2 4.650643 1.422761 3.66230238 5.230105 3.6316307 3.4030448 4.233076
## 3 7.038618 1.479815 0.05610664 6.352437 1.1414140 0.6984974 5.788511
## 4 8.297137 3.899831 3.90097908 4.342652 4.8743899 4.7861734 5.829612
## 5 8.774992 5.363756 4.14189416 4.800875 4.6449342 -1.7701038 6.834796

```

```

## 6 4.858905 4.610524 4.88282259 4.462450 4.2739101 6.1239963 2.087240
##      Snapin      Snca      Sncaip      Sncb      Sncg      Snd1      Sned1
## 1 6.099410 4.127866 3.2308960 3.0778247 -3.32523426 6.927449 2.6572711
## 2 4.966054 3.910373 1.5557819 1.6792635 0.75440743 7.389401 2.0245863
## 3 6.698632 9.000225 1.3755916 -0.6195262 6.69592940 3.374368 -0.2425151
## 4 5.850425 4.964654 6.2779084 2.7837572 0.63916824 6.180569 1.3987174
## 5 7.429572 3.666020 5.2908499 0.4279671 -0.04458439 6.131564 -1.7701038
## 6 5.678098 3.053382 6.0651702 0.3902833 -2.98624936 6.362509 5.1553138
##      Snf8      Snip1      Snn      Snph      Snrk      Snrnp200      Snrnp25
## 1 4.563267 4.023997 6.516320 4.563826 4.470037 7.233308 3.710099
## 2 4.492101 4.735648 7.091647 -0.222365 8.536585 7.351339 3.597234
## 3 5.297693 -3.884122 5.459396 -1.131317 1.911138 3.401161 6.324715
## 4 3.258609 2.473258 4.869405 2.719965 4.330100 6.858688 5.567955
## 5 3.362975 -1.770104 5.677286 1.906986 4.196137 5.499367 6.717093
## 6 3.543695 4.039382 7.229255 5.264564 7.302380 6.830232 2.557928
##      Snrnp27      Snrnp35      Snrnp40      Snrnp48      Snrnp70      Snrpa      Snrpa1
## 1 4.633105 2.6519280 5.155263 3.9843589 7.930281 5.136448 5.092950
## 2 4.998935 2.4676082 5.550578 4.5219671 7.233602 4.801727 5.124792
## 3 8.644967 0.3033916 3.813884 -0.6195262 2.356639 6.249305 6.422769
## 4 7.045580 3.4937827 5.584387 4.2809682 5.268880 6.466870 6.990531
## 5 7.691673 1.4319435 5.443157 3.7163802 3.414727 6.825267 7.591796
## 6 3.944108 2.1553816 4.725289 4.8172061 9.022633 4.526758 4.750188
##      Snrpb      Snrpb2      Snrpc      Snrpd1      Snrpd2      Snrpd3      Snrpe
## 1 6.794830 3.998131 2.619523 4.680698 5.312818 5.843059 3.498486
## 2 7.896880 5.715442 3.348682 5.181483 6.027070 6.158117 5.557016
## 3 6.709391 7.918170 4.571847 6.577598 7.167105 7.235696 7.197993
## 4 7.619800 7.054357 4.639600 7.270262 7.397160 7.705992 6.574445
## 5 8.213585 8.305897 5.729306 8.009935 8.276478 8.800263 7.744704
## 6 5.924577 4.022944 2.130763 4.264682 3.725176 4.704769 3.040568
##      Snrpf      Snrpg      Snrpn      Snta1      Sntb1      Sntb2      Sntg1
## 1 1.3292650 2.071573 -1.1226813 3.239190 -2.7549961 1.3204262 4.2846978
## 2 2.1776997 3.955461 -3.4837445 1.231818 -0.1831363 5.8268748 -2.4610404
## 3 1.2632490 6.419497 -3.8841215 3.453298 -1.1313170 -0.2425151 -1.1313170
## 4 0.7670569 6.578358 -0.7185323 3.189099 0.4163990 0.9956857 0.1802222
## 5 3.7246054 7.667877 1.1681147 4.320730 -3.8841215 -2.8071174 -3.8841215
## 6 0.2668023 1.616421 -3.2808450 6.181186 3.0743193 1.5938431 -3.4511394
##      Sntg2      Sntn      Snupn      Snw1      Snx1      Snx10      Snx11
## 1 -2.23150768 -3.884122 3.3047137 5.696363 7.298927 4.231957 4.9808694
## 2 -2.48239396 -3.651962 2.0513596 6.042030 6.878412 3.906219 4.9081740
## 3 -3.88412153 -1.931739 0.3033916 8.234441 7.489288 7.607602 0.3033916
## 4 -1.74870162 1.412873 5.5014989 8.222781 7.170038 6.312859 4.0952689
## 5 -3.88412153 2.756252 5.4555644 7.847609 6.120698 5.775563 -0.1609828
## 6 -0.05175013 -3.451139 3.1528836 5.374901 5.424180 4.439572 5.0968895
##      Snx12      Snx13      Snx14      Snx15      Snx16      Snx17      Snx18
## 1 5.711667 6.256941 6.092807 5.341366 3.1188402 6.977907 6.313431
## 2 5.588747 7.107991 4.975942 5.082367 2.8203794 7.387982 6.772104
## 3 6.077235 1.008333 4.674250 6.927817 -0.6195262 7.793518 6.756840
## 4 5.798706 4.611136 5.118551 5.301834 4.1820472 7.925905 6.069957
## 5 5.518416 3.309298 4.657877 5.947049 3.3201941 7.363951 5.985204
## 6 4.862808 6.460048 6.557961 3.707592 3.2827305 5.716762 5.918069
##      Snx19      Snx2      Snx20      Snx21      Snx22      Snx24      Snx25
## 1 6.438226 5.353897 -0.05269095 3.524292 6.4301453 4.0171320 5.997880
## 2 6.063254 6.623136 -0.43710881 3.763175 -2.0452279 3.1567213 5.475409
## 3 2.182248 3.319243 -1.13131698 1.983840 -1.1313170 -0.2425151 -1.931739

```

```

## 4 5.434865 6.655167 -2.01717701 1.974156 2.0548733 3.9832698 2.517228
## 5 4.843040 6.034005 -3.88412153 3.648834 3.8725830 0.1633391 -1.770104
## 6 6.449017 5.257385 -2.26327041 4.182617 2.5705272 3.6989339 5.132787
##      Snx27      Snx29      Snx3      Snx30      Snx31      Snx32      Snx33
## 1 7.146401 4.2874407 7.602253 6.620551 -3.663981 5.825368 4.8597689
## 2 5.575589 3.1935291 8.586571 0.367261 -3.651962 1.946266 1.6465620
## 3 7.231970 -1.9317392 8.778047 2.410380 -3.884122 7.514047 0.8617169
## 4 6.615843 2.3793614 7.153437 4.023680 -3.884122 5.842541 5.0541428
## 5 5.731349 -2.8071174 8.308294 1.471579 -3.884122 6.663553 5.1845526
## 6 6.858015 2.6849994 6.701851 4.394629 -3.660779 5.972590 5.4574790
##      Snx4      Snx5      Snx6      Snx7      Snx8      Snx9      Soat1
## 1 6.235951 7.555770 6.197904 3.7430497 5.4458336 4.6207471 4.858502
## 2 6.841821 7.760709 6.723614 5.4043393 3.4095876 6.3352280 3.044779
## 3 7.241267 9.003508 7.966061 0.8617169 -0.2425151 -0.2425151 9.683556
## 4 6.199520 6.724592 8.009448 0.8008592 3.3044535 1.8590222 7.957850
## 5 3.930617 7.044801 8.050169 1.6200547 -0.5800187 3.0328598 7.985758
## 6 5.849080 6.706632 5.510445 3.1130206 4.4493474 4.1993095 7.257353
##      Soat2      Sobp      Socs1      Socs2      Socs3      Socs4
## 1 -3.5124903 4.836107 1.88625492 0.5608347 5.594728 3.5616191
## 2 -1.6312892 5.258284 2.70905563 4.7726232 7.186710 3.9806597
## 3 -3.8841215 -1.131317 -3.88412153 0.3033916 6.047863 -0.6195262
## 4 -3.8841215 4.480016 -1.80530371 4.3821913 0.510496 1.0883001
## 5 -3.8841215 3.909127 -3.88412153 3.4646862 -2.807117 -2.1973739
## 6 -2.5459558 3.894021 2.09103250 2.2027806 8.640241 4.2760059
##      Socs5      Socs6      Socs7      Sod1      Sod2      Sod3      Son
## 1 5.0778542 4.8315412 6.235124 5.769863 6.417551 0.8505585 8.775496
## 2 6.5495383 4.2982797 5.147861 7.612106 5.400762 5.7029904 8.444717
## 3 0.5144282 -0.6195262 1.263249 8.772928 7.246817 2.7805686 7.869834
## 4 3.9891827 3.3954637 5.206381 7.936049 6.588168 2.5721383 8.577678
## 5 3.6138373 -0.4264149 3.230627 8.890757 6.926783 5.7576391 7.889820
## 6 4.6510520 4.6912833 6.330206 5.618551 5.704427 4.4764922 10.712906
##      Sorbs1      Sorbs2      Sorbs3      Sorcs1      Sorcs2      Sorcs3      Sord
## 1 5.407284 4.962962 6.550732 6.625437 3.072084 5.0409835 2.908181
## 2 7.439848 7.329858 7.668954 -1.883208 1.050855 -2.3597589 3.852666
## 3 7.344955 7.137535 5.387524 -1.931739 4.820366 -1.9317392 1.983840
## 4 8.413384 6.217563 6.478671 2.389867 4.782299 0.1787444 5.402472
## 5 7.135502 6.339993 6.690047 -2.807117 4.373992 -3.8841215 5.225700
## 6 7.226232 2.336571 6.104181 2.863678 8.749017 -1.5565902 2.320430
##      Sorl1      Sort1      Sos1      Sos2      Sost      Sostdc1      Sowaha
## 1 4.6528902 7.076471 5.533364 5.5797214 -2.7718087 0.8194867 5.5167592
## 2 -0.3665419 7.112744 6.712088 6.7197507 -3.4837445 -2.2235787 -0.3050181
## 3 7.4172860 4.523891 3.347069 0.3033916 -3.8841215 7.0171278 -3.8841215
## 4 4.6334051 6.453406 5.811482 4.2195032 -3.8841215 1.5961310 4.1769498
## 5 3.4147268 6.321132 6.342668 3.9517923 -3.8841215 -1.4408855 1.1190407
## 6 7.9547270 7.796007 5.931580 5.5990927 -3.4511394 -2.7863740 1.3501649
##      Sowahb      Sowahc      Sox1      Sox10      Sox11      Sox12      Sox13
## 1 -2.1679777 5.293859 0.2703956 9.181720 5.1821073 5.768215 4.6685129
## 2 -3.8841215 3.888386 -1.4268535 -2.336517 2.3719271 3.067678 6.2550067
## 3 -3.8841215 2.462191 1.0083330 6.169734 6.6768692 2.462191 -0.6195262
## 4 -3.8841215 4.015674 5.5937694 3.748958 12.2504640 4.325203 3.0197233
## 5 -3.8841215 4.959127 5.7107943 6.214207 11.0639444 3.568862 -0.4264149
## 6 -0.8015656 5.395974 6.6562008 -2.848578 6.5655387 4.742056 4.9928820
##      Sox14      Sox15      Sox17      Sox18      Sox2      Sox21
## 1 -3.884122 -2.822483 -1.95887371 -2.46406320 7.1411395 6.2398867

```



```

## 2 -3.884122 -3.424345 7.66903214 6.60212846 -0.2456515 0.1667735
## 3 -3.884122 -3.884122 5.63331821 5.09927972 6.7490393 0.6984974
## 4 -3.884122 -3.197812 -2.98088918 -1.58401690 6.2417693 3.0606196
## 5 -3.884122 -2.807117 -3.88412153 -2.80711744 6.5990288 4.0401199
## 6 -3.884122 -3.674482 0.04242896 -0.07391073 8.6485767 6.9419987
##      Sox3      Sox30      Sox4      Sox5      Sox6      Sox7
## 1 4.5092489 -2.886472 6.749759 5.7868207 8.0153313 -1.03824049
## 2 -3.1123102 -2.057822 7.067336 0.5377390 -0.0628266 9.28775477
## 3 -1.9317392 -3.884122 2.859970 0.6984974 1.7537270 0.51442825
## 4 1.3710216 -3.042922 6.440608 6.6256134 6.1541467 -0.05483688
## 5 0.7833343 -3.884122 5.494565 5.9204431 5.9558093 2.96505227
## 6 3.4932637 -3.118612 6.516796 6.1044756 6.5493410 5.48433447
##      Sox8      Sox9      Sp1      Sp100      Sp110      Sp140
## 1 8.5511920 3.5132823 6.242834 -2.573020 -0.3773516 -1.9951111
## 2 -0.2599809 4.0923065 7.164836 4.401873 2.4479152 2.4457066
## 3 4.2121320 7.8793931 5.833466 7.290464 -3.8841215 -1.1313170
## 4 5.1790683 9.3974392 5.564912 1.961169 -1.0821096 -0.5768071
## 5 6.2112832 9.7758704 4.499130 -2.197374 2.4538543 -3.8841215
## 6 6.3271777 8.8596017 6.527212 -2.986249 -2.9479702 -2.8744502
##      Sp2      Sp3      Sp4      Sp5      Sp6      Sp7
## 1 4.41030491 5.609623 4.6461648 1.3850878 -1.2425609 -0.03603835
## 2 4.51247814 7.320489 4.6659103 2.0546923 -1.0380227 -3.65196234
## 3 0.05610664 6.215739 0.8617169 -3.8841215 1.5770128 -3.88412153
## 4 4.67976244 6.162115 5.3002050 -1.8171992 -1.2381361 -1.26680348
## 5 1.93561130 6.513794 4.8876739 -3.8841215 -1.1730114 2.37244086
## 6 4.05249157 6.372420 5.1440821 4.2212623 2.3377113 -3.88412153
##      Sp8      Sp9      Spa17      Spaca1      Spaca4      Spaca5
## 1 -2.5991679 -2.530173 0.79906513 -3.884122 -3.048721 -3.173376
## 2 -2.3729121 -2.895210 0.72701602 -1.853277 -3.076231 -3.248991
## 3 0.3033916 -3.884122 6.17750432 -3.884122 -3.884122 -3.884122
## 4 4.7557710 -1.417597 3.85795294 -3.884122 -3.884122 -3.030183
## 5 5.7814890 -3.884122 4.51344247 -3.884122 -3.884122 -3.884122
## 6 -0.8897565 -2.596535 -0.08829676 -3.512249 -3.674482 -3.352813
##      Spag1      Spag16      Spag17      Spag4      Spag5      Spag6
## 1 2.8930078 -3.6778614 -1.6251472 -0.6056530 3.2420880 -2.727573
## 2 2.6745000 -3.0762312 -1.5183674 0.5444730 3.1559605 -2.935278
## 3 -1.1313170 -3.8841215 -3.8841215 -3.8841215 4.2420805 3.319243
## 4 2.5674031 0.4907928 -1.6964224 0.4309828 5.3787504 2.823489
## 5 4.0401199 -2.1973739 1.4715792 1.3911881 -0.7519471 2.756252
## 6 4.3348392 -1.0422705 -0.1269999 2.4523432 5.9208650 0.100559
##      Spag7      Spag8      Spag9      Sparc      Sparc11      Spast      Spata13
## 1 5.078079 -0.3563060 9.055184 8.269030 9.039988 6.881295 6.065854
## 2 5.629736 -2.2716306 9.151222 13.556471 11.973379 5.750967 6.905884
## 3 8.155991 -3.8841215 5.040846 11.308353 10.076916 6.837522 7.172948
## 4 7.801232 2.2838565 7.295545 10.981691 11.746944 5.707195 5.524223
## 5 8.164170 3.5034443 6.915151 10.441838 10.511158 6.244553 6.282655
## 6 4.888483 1.7940458 10.442078 8.358227 13.189047 6.175656 4.972594
##      Spata17      Spata18      Spata19      Spata2      Spata20      Spata21
## 1 -3.79498311 -3.8841215 -2.893159 6.1930347 -2.5137512 -3.794983
## 2 -2.99562320 -2.5614538 -3.108037 5.3290119 -3.0392407 -2.253206
## 3 -3.88412153 -3.8841215 -3.884122 -0.2425151 -3.8841215 -3.884122
## 4 1.73204215 -1.7918684 -3.653944 4.6127034 0.8709643 -1.054723
## 5 -2.80711744 0.2570463 3.242132 3.2073390 -3.8841215 -3.884122
## 6 -0.08829676 -0.4506588 -3.884122 6.2094903 -3.2808450 -2.736779

```

##	Spata22	Spata24	Spata21	Spata3	Spata4	Spata5	
## 1	-3.3272035	1.9589067	2.2296196	-3.1965122	-3.070282	3.5762520	
## 2	-3.8841215	1.6547817	0.6006240	-3.8841215	-0.420735	4.0331708	
## 3	-3.8841215	-1.1313170	-0.6195262	-3.8841215	-3.884122	0.6984974	
## 4	-3.6539444	3.6019312	1.4624293	0.3033717	-2.685196	3.3965834	
## 5	-3.8841215	4.5229059	-2.8071174	2.0447493	-3.884122	-0.5800187	
## 6	-0.3603606	3.3155090	1.6798749	1.3339056	-3.884122	3.9984043	
##	Spata6	Spata7	Spata9	Spats1	Spats2	Spats21	
## 1	3.606394	2.6695161	-0.4301675	0.31128955	5.5969523	4.1813519	
## 2	6.359630	3.0771841	-0.8606961	-3.47660817	5.8211737	2.5671553	
## 3	-1.131317	3.3470689	-3.8841215	-3.88412153	-0.2425151	-0.2425151	
## 4	1.135254	4.2485287	-0.5603065	1.20369914	3.5318881	3.0640282	
## 5	-2.807117	-0.9471720	-3.8841215	-0.58001868	-1.7701038	4.8163506	
## 6	1.658751	3.4410130	-0.1406001	1.08176161	4.6674011	4.3638716	
##	Spc24	Spc25	Spcs1	Spcs2	Spcs3	Spdef	
## 1	1.7983872	2.09383447	6.346074	6.832285	6.238363	-1.4839590	
## 2	2.2287008	4.07580462	7.104851	6.978469	6.968233	-1.5255932	
## 3	1.4798145	2.85997007	10.212617	10.179144	9.338452	-3.8841215	
## 4	5.1485538	6.47697651	8.269301	8.487696	7.378859	-3.6036807	
## 5	4.8354644	6.43703713	9.298874	8.900999	7.063565	-3.8841215	
## 6	1.3289745	2.26326953	5.383944	6.255482	6.072320	-0.9263122	
##	Spdya	Specc1	Specc11	Spef1	Spef2	Speg	
## 1	-0.1198717	7.8013157	6.458490	3.5829272	-2.0011021	4.5886125	
## 2	-1.0024177	3.0845286	8.175523	3.5316421	-2.6577481	1.2816238	
## 3	-3.8841215	0.3033916	1.375592	-0.6195262	-0.6195262	5.9147399	
## 4	1.5952787	4.4540210	5.341307	1.2734873	2.6096163	0.9732186	
## 5	2.3299438	2.6217964	3.474474	-3.8841215	3.7163802	-3.8841215	
## 6	1.1987216	8.3902517	6.832075	4.4753805	-0.4944282	5.4956499	
##	Spem1	Spen	Spg11	Spg20	Spg21	Spg7	Sphk1
## 1	-0.6705881	6.918347	5.4220133	5.991412	5.859305	6.063995	-1.93036835
## 2	-3.1123102	5.547603	4.9657332	4.589382	5.027531	5.784641	0.03520531
## 3	-3.8841215	1.834579	0.3033916	4.356020	5.551968	1.263249	0.69849743
## 4	-1.1392717	5.694163	3.6002153	6.425323	4.500904	4.121270	-0.20947633
## 5	-3.8841215	3.331009	3.2421320	4.898620	5.178578	3.674536	3.39424835
## 6	-1.2123527	7.304950	5.8779450	4.594656	4.570544	5.946549	0.68567809
##	Sphk2	Sphkap	Spib	Spic	Spice1	Spin1	Spin4
## 1	5.341256	1.8580553	-3.450968	-3.6639813	3.4386214	6.088885	1.9194433
## 2	4.630144	0.4625387	-1.164769	-3.8841215	4.2620959	7.348222	1.7185895
## 3	1.668074	0.6984974	-3.884122	-1.9317392	0.8617169	6.979844	1.0083330
## 4	4.870164	4.0759870	-3.884122	-0.8591616	4.8593055	7.424252	3.3923858
## 5	5.961040	2.1943824	-3.884122	-2.8071174	3.6745361	7.774720	3.6997879
## 6	4.825796	0.3031221	-3.884122	-3.6744822	4.1867583	6.391548	2.7298265
##	Spink2	Spink4	Spink5	Spink8	Spint1	Spint2	
## 1	-3.085375	-3.790167	-2.5223075	-2.88583925	-2.9795162	-0.8911936	
## 2	-3.651962	-2.548285	-3.8841215	-3.88412153	-3.8841215	0.1588344	
## 3	-3.884122	-3.884122	3.4011610	-3.88412153	1.0083330	3.0749023	
## 4	1.766950	-3.101440	0.4150208	-3.38188131	-1.0459627	2.9931575	
## 5	3.958782	-3.884122	3.9306175	-3.88412153	-1.7701038	3.5318445	
## 6	-3.451139	-3.288906	-3.6744822	-3.28890603	-3.6744822	-0.8153195	
##	Spire1	Spire2	Spn	Spns1	Spns2	Spns3	Spock1
## 1	6.748705	4.0622184	-2.7612983	6.968709	6.3921558	-2.337759	3.46145059
## 2	4.838203	-2.2943879	0.1923785	6.234390	7.4915609	-3.656504	-0.02502254
## 3	4.696052	-1.9317392	-3.8841215	8.769076	7.0597922	-1.931739	-0.24251506
## 4	6.342396	1.1275232	-3.1978120	6.613655	2.9333569	-2.576806	3.68921146

```

## 5 6.206887 -2.8071174 -3.8841215 6.520896 2.9925589 -3.884122 4.50868739
## 6 8.189871 -1.8263310 -3.5122488 6.364890 0.4519007 -2.545956 1.24167438
##      Spock2      Spock3      Spon1      Spon2      Spop      Spopl      Spp1
## 1 7.295671 2.6416642 8.3916386 -1.27663217 6.966952 3.116037 -1.776208
## 2 12.230105 -0.1736586 0.8075377 2.63293791 7.054809 4.409429 -2.182835
## 3 6.916254 5.4593963 8.5206680 -3.88412153 6.039361 -1.131317 -1.931739
## 4 3.280461 3.4029322 3.6742348 -0.26190749 6.641033 1.303382 4.570811
## 5 3.819814 3.5224398 0.9609302 4.98332174 6.114452 2.308216 -2.197374
## 6 7.203942 -3.2889060 7.2395730 -1.57566247 6.539546 3.872204 -1.983089
##      Spp2      Spp13      Spr      Spred1      Spred2      Spred3
## 1 -3.46211705 6.820520 4.2148967 7.1955356 4.1570440 5.4382012
## 2 -3.88412153 5.562392 5.9772006 4.9433344 6.1718816 2.0952560
## 3 -3.88412153 8.619524 4.1969213 0.3033916 2.4103803 -1.9317392
## 4 0.01719776 6.037468 3.1110896 4.0038595 2.5201638 1.0698594
## 5 -3.88412153 6.775661 5.3663866 -0.5800187 -0.4264149 -3.8841215
## 6 -3.88412153 5.768167 3.6816190 7.3715879 5.2533518 6.0208249
##      Sprn      Sprr1a      Sprr1b      Spry1      Spry2      Spry4      Spryd3
## 1 5.4538330 -3.8841215 -3.8841215 6.627109 5.846310 5.4049232 4.764587
## 2 -0.4001473 -3.8841215 -3.8841215 7.444366 5.480738 5.3622660 5.303160
## 3 -0.6195262 1.3755916 1.5770128 6.508433 8.906910 4.7595477 6.637976
## 4 1.3896708 -2.2307021 -1.4233444 1.878864 7.695883 3.8814030 3.504380
## 5 -1.4408855 4.1902097 -0.4264149 3.084901 8.773259 3.4646862 5.040446
## 6 -0.7171304 -3.8841215 -3.8841215 6.546481 8.755275 6.9818275 4.323006
##      Spryd4      Spsb1      Spsb2      Spsb3      Spsb4      Sptlc1      Sptlc2
## 1 2.766990 6.0117549 2.3992974 4.822497 4.0524868 6.304584 5.616234
## 2 2.747405 5.3926466 4.9688946 5.257384 -3.1273690 5.765124 6.943737
## 3 6.511510 0.8617169 -0.6195262 1.753727 4.9530358 7.935457 6.529836
## 4 3.985324 4.0107399 2.5551813 5.567632 0.6370762 6.022383 2.406220
## 5 5.123658 3.9447685 2.7722112 5.886023 -3.8841215 6.693193 4.789158
## 6 2.041838 4.2941888 3.4479155 6.145331 3.9007269 5.978841 4.529478
##      Sptlc3      Spty2d1      Sqle      Sqrd1      Sqstm1      Sra1      Srbdl1
## 1 -3.8841215 5.419152 7.813934 2.0032490 7.954353 4.290655 4.4152038
## 2 -3.3444694 7.075151 5.136078 5.8268542 10.219779 4.891001 5.1783503
## 3 0.6984974 1.479815 7.353554 1.2632490 7.203712 8.015667 -1.1313170
## 4 -0.8540918 4.796360 7.581008 4.8114912 6.299897 6.421349 3.9594302
## 5 -1.7701038 5.714929 6.729407 5.2515447 7.346069 7.483882 1.3492478
## 6 -3.6744822 5.926370 8.854928 2.7660809 7.547489 4.442611 4.3549451
##      Src      Srcin1      Srcrb4d      Srd5a1      Srd5a3      Srebf1      Srebf2
## 1 6.934048 6.9030737 -0.5386401 5.080680 4.2272312 6.640557 8.384062
## 2 6.811175 0.4769121 -1.1465823 2.454755 3.6036677 6.083371 7.045349
## 3 1.141414 1.1414140 -3.8841215 1.141414 4.2121320 7.356980 4.134422
## 4 3.606179 3.7018274 -2.0068937 5.608285 2.2476715 5.573845 5.035635
## 5 5.242981 4.6362406 -3.8841215 5.969717 0.5807664 5.649475 4.178282
## 6 7.199104 3.3515021 -0.6044216 3.225494 3.5692544 9.062168 8.730229
##      Srek1      Srek1ip1      Srf      Srfbp1      Srgap1      Srgap2      Srgap3
## 1 5.975989 2.447641 6.836898 3.5443521 5.94246591 5.9366505 6.766675
## 2 5.698398 3.708078 6.545345 3.2544273 6.70403120 8.1395159 1.054275
## 3 7.607602 8.077188 3.528133 0.5144282 0.05610664 4.1344223 6.035090
## 4 7.107466 6.027140 2.802899 4.5359823 2.15870097 5.3298172 6.897836
## 5 4.930969 6.258782 2.433928 4.2196053 0.58076638 0.4279671 5.181568
## 6 7.798667 3.571222 8.017680 3.6842380 5.56760367 7.3358465 8.357998
##      Srgn      Sri      Srl      Srm      Srms      Srp14      Srp19
## 1 0.5251210 6.281566 1.9782283 5.943143 0.3970060 6.536082 5.110465
## 2 8.6394761 7.855124 1.1919168 4.584153 2.5710239 7.184338 5.359483

```

```

## 3  9.0401925  8.182296  1.0083330  6.081382 -1.9317392  9.661563  7.816093
## 4  4.6015293  7.154586  4.0542354  4.067352 -2.7388210  8.415330  6.449474
## 5  6.0273710  8.179584 -0.7519471  5.000359 -3.8841215  9.375962  7.891191
## 6  0.9461888  5.163117  3.3145132  5.872206 -2.8653806  4.916356  4.673942
##      Srp54a      Srp68      Srp72      Srp9      Srpk1      Srpk2      Srpk3
## 1  2.4093355  6.154953  6.490136  2.874543  5.939994  6.605980  4.95202090
## 2  2.7655576  6.046679  7.796304  3.313526  5.804447  5.731761 -1.03139519
## 3  3.6670753  2.356639  3.319243  5.969472  5.688739  5.254267 -3.88412153
## 4  2.5305874  5.845714  7.514528  5.211398  5.731214  8.001152 -0.01311122
## 5  0.9609302  5.541878  6.312973  6.373072  4.941592  7.231697 -0.94717201
## 6  2.3339543  5.812582  6.508661  2.328716  5.919935  6.939057 -1.55585633
##      Srpr      Srprb      SrpX      SrpX2      Srr      Srrd      Srrm1
## 1  5.893096  6.549021  0.9833783 -0.8154879  5.6013354  3.1891867  7.067520
## 2  8.278629  6.292933 -3.4766082 -2.3587360  4.3479829  2.9460994  6.625008
## 3  1.834579  8.760695 -3.8841215 -1.9317392  0.8617169 -1.1313170  3.139975
## 4  5.739971  7.608297  0.4325532  2.3340799  5.2720246  0.4098816  7.481545
## 5  4.773387  7.637162 -3.8841215  4.8430396  5.3820711  1.2155742  7.513853
## 6  6.229639  5.815828  2.5925930 -3.4511394  5.0346255  3.6324496  7.782224
##      Srrm2      Srrm3      Srrm4      Srtr      Srsf1      Srsf10      Srsf11
## 1  8.876555  4.19925690 -0.1442146  6.852012  7.445009  6.030589  7.014773
## 2  7.025185 -1.45518322 -2.4610404  6.860286  6.757401  6.636889  6.945708
## 3  4.800377 -3.88412153  1.6680739  1.577013  3.290869  7.211302  1.911138
## 4  6.725025 -0.04575802  6.1838860  5.505335  6.650472  7.164162  6.587928
## 5  6.693193  2.14620872  3.9091272  3.331009  6.389978  6.761740  4.993568
## 6  10.459164 -1.38282628  1.1943987  7.603515  8.079208  7.602718  8.205884
##      Srsf12      Srsf2      Srsf3      Srsf4      Srsf5      Srsf6      Srsf7
## 1  3.21759860  7.569645  7.170469  5.956747  6.888309  8.169399  6.845310
## 2  0.04773757  7.619565  7.459576  6.087553  7.528809  7.972000  7.058941
## 3  -1.93173924  7.506355  8.559838  4.606795  7.244970  3.202239  6.649196
## 4  3.85500290  8.780284  8.374518  4.155344  6.956774  5.854421  9.069366
## 5  3.41472680  6.876918  8.679586  2.893900  5.797173  5.126764  9.218707
## 6  2.07614036  7.936669  7.107455  6.434299  8.731604  8.906516  7.245500
##      Srsf9      Srxn1      Ss18      Ss1811      Ssb      Ssbp1      Ssbp2
## 1  5.306681  4.526644  6.551615  4.2607216  6.239034  3.139492  4.491280
## 2  5.518958  3.871482  6.283367  1.7561786  7.541826  3.261879  2.972796
## 3  8.398836  1.008333  7.512511  0.5144282  7.155350  5.254267  7.982786
## 4  5.128519  3.853522  6.917753  5.0581429  8.023460  5.278739  6.525240
## 5  6.559342  4.160203  6.366516  4.7654360  7.755782  5.941767  6.829086
## 6  4.645719  3.865778  5.778973  5.1606489  6.775975  3.626659  5.583826
##      Ssbp3      Ssbp4      Ssfa2      Ssh1      Ssh2      Ssh3      Ssna1
## 1  5.084981  5.33051187  6.916527  3.53584042  5.476169  5.6111781  5.438734
## 2  5.097968  7.77843748  7.044945  4.30872511  7.399909  0.9119976  5.784196
## 3  3.041231  0.05610664  4.102127 -3.88412153  3.041231  0.8617169  8.068856
## 4  7.511939 -0.99265629  4.881202  1.38592885  5.681208  4.5537865  7.153857
## 5  7.887075  0.84499419  1.068238 -2.80711744  4.952138  2.4735096  8.056292
## 6  3.626359  5.49020480  7.662180  3.78931662  4.536502  5.2257785  4.052173
##      Sspn      Sspo      Ssr1      Ssr2      Ssr3      Ssr4      Ssrp1
## 1  5.0873777  1.1448114  7.899193  7.008401  8.510475  5.707196  7.410407
## 2  0.5800220 -2.1192014  7.855582  7.957285  9.246572  6.866305  7.558496
## 3  0.8617169 -3.8841215  10.420269  9.283710  8.733940  9.508264  8.318539
## 4  4.1978261 -2.0071009  10.022767  8.235662  9.253236  7.276648  8.183069
## 5  5.5786428  2.9370110  10.602414  9.075531  9.653719  8.704490  7.710430
## 6  4.6502224  0.4434178  7.571234  6.048077  8.643538  5.283009  7.011966
##      Sssca1      Sst      Sstr1      Sstr2      Sstr3      Sstr4

```

```

## 1 3.764437 0.3652342 6.5825696 -2.2446136 0.5489695 -2.0999385
## 2 3.172179 1.2688112 -1.1003172 -2.8000981 -3.3444694 -0.7644914
## 3 6.338642 -1.1313170 -0.6195262 1.4798145 -3.8841215 -3.8841215
## 4 6.108015 -0.6550178 -0.8808508 5.2677213 -1.9892949 -3.8841215
## 5 6.729407 -2.8071174 -1.4408855 6.7181235 -3.8841215 -3.8841215
## 6 2.921389 0.8915046 -0.4804394 -1.8263310 -2.9479702 -3.5122488
##      Sstr5      Ssu72      Ssx2ip      St13      St14      St18      St3gal1
## 1 -2.673269 5.276665 4.83853136 7.305095 0.3759197 2.6062795 0.4911165
## 2 -3.884122 7.167779 6.65555194 7.220626 2.7036370 -2.4823940 6.3645496
## 3 -3.884122 7.782097 0.05610664 3.401161 1.5770128 -1.9317392 0.5144282
## 4 -3.884122 6.503923 4.03810143 7.115619 -0.8674847 3.9343072 2.7624754
## 5 -3.884122 8.178088 4.24269807 7.026622 -0.1609828 0.9609302 2.5679590
## 6 -3.884122 4.622701 5.10773246 6.703767 0.8225505 -3.1713129 0.9723235
##      St3gal2      St3gal3      St3gal4      St3gal5      St3gal6      St5      St6gal1
## 1 5.6528483 5.0420658 5.465148 4.682743 4.1528893 5.213894 5.541516
## 2 6.3957885 4.5770905 4.339364 6.188612 8.3070963 5.898957 6.529072
## 3 0.6984974 -1.9317392 7.117479 3.171443 -0.6195262 6.975394 7.145480
## 4 4.2099308 0.6477402 5.116538 5.409751 3.0121837 4.120450 5.934530
## 5 3.0976229 2.1215049 5.867571 5.833752 -0.4264149 3.242132 4.202040
## 6 6.0010103 4.0545750 5.993445 3.488076 2.8497959 6.772276 5.218427
##      St6gal2      St6galnac2      St6galnac3      St6galnac4      St6galnac5      St6galnac6
## 1 2.01331706 -1.2744406 4.24196219 4.496844 -0.2569975 4.761372
## 2 -3.48374455 6.3200309 5.43733060 6.091668 -1.0496656 3.897867
## 3 -3.88412153 5.9514577 0.05610664 7.145480 5.5638745 -1.931739
## 4 -2.48820161 1.4493785 4.69100559 4.788266 4.7681572 3.044504
## 5 -3.88412153 4.0067846 4.71265866 3.264870 3.2761057 3.972661
## 6 3.89527486 -0.4298861 1.70727305 4.507897 7.5533186 3.481436
##      St7      St7l      St8sia1      St8sia2      St8sia3      St8sia4
## 1 4.988172 5.350663 5.31987872 -2.1380037 6.0478301 1.70069590
## 2 4.706142 5.574393 3.00177481 -1.7539003 -0.9311115 8.63568916
## 3 1.141414 1.834579 0.05610664 -0.2425151 4.0352840 7.45613363
## 4 6.272787 4.895286 3.25256831 5.7680014 6.1705230 3.94310329
## 5 5.759642 5.400157 4.19020969 4.4553202 6.3886841 3.58702079
## 6 4.842952 4.964701 3.60623759 1.6394751 -1.3792344 0.76668382
##      St8sia5      St8sia6      Stab1      Stab2      Stac      Stac2
## 1 0.69569214 -2.8791882 3.141257 -3.20777539 -3.414373 1.1140823
## 2 -2.37137618 3.2266047 8.783540 1.74177545 -1.830789 -0.2306731
## 3 -3.88412153 -3.8841215 3.928827 -3.88412153 -1.931739 -3.8841215
## 4 0.59318048 -2.9446729 4.959301 -2.81261498 -3.218484 -1.6702572
## 5 1.47157920 -3.8841215 3.230627 -3.88412153 -3.884122 -3.8841215
## 6 2.28743006 -3.4904843 1.965553 -1.07461068 -3.512249 -1.4908625
##      Stac3      Stag1      Stag2      Stag3      Stam      Stam2      Stambp
## 1 0.2602570 5.493703 6.652763 0.8464430 6.781436 5.829661 4.294504
## 2 0.2918499 7.061044 7.817354 -0.1215785 5.549618 6.282213 3.976214
## 3 -3.8841215 8.210972 5.201894 -3.8841215 1.753727 7.414001 5.360474
## 4 -2.6030672 6.168374 6.509820 1.3103792 6.118709 6.025463 6.491795
## 5 -3.8841215 6.599029 5.145265 -2.8071174 6.477752 4.006785 6.101878
## 6 1.1508686 6.413528 6.866512 3.4622169 5.900068 5.398268 3.999919
##      Stambp11      Stap1      Stap2      Star      Stard10      Stard13
## 1 4.0285058 -3.458592 -0.7650312 3.2731776 3.73324814 6.0867367
## 2 0.5737636 -2.895210 7.4508913 1.6732085 2.92532037 8.0985117
## 3 -3.8841215 -3.884122 -1.9317392 -1.1313170 0.05610664 1.0083330
## 4 0.8686201 -1.548287 -0.1586712 2.8489858 2.13018253 3.8472788
## 5 -0.5800187 -2.807117 -3.8841215 3.4548318 3.27610569 0.5807664

```

```

## 6 4.4770894 -3.884122 0.8335695 2.7884566 2.79816314 4.9402289
##      Stard3 Stard3n1      Stard4      Stard5      Stard6      Stard7      Stard8
## 1 5.679936 5.733867 4.630245 2.608295 -0.1357823 7.155088 0.8590419
## 2 6.735329 5.638516 7.009628 4.040888 0.7254943 5.897030 6.2025887
## 3 8.541892 8.203380 1.141414 7.119497 -3.8841215 5.539963 1.0083330
## 4 5.991747 6.486857 2.987397 4.204506 -1.6378323 6.768269 3.4988058
## 5 6.460619 7.736593 1.817536 1.991212 -3.8841215 6.388684 5.0502955
## 6 5.102169 4.305062 6.760267 3.716982 -0.5386839 6.647752 6.0595026
##      Stat1      Stat2      Stat3      Stat4      Stat5a      Stat5b      Stat6
## 1 5.2236414 4.7457960 7.177730 -1.9421593 1.4059016 5.5327803 1.708331
## 2 6.1692100 4.2810358 7.826100 -1.5884105 2.9085467 6.3343727 6.801130
## 3 7.3569799 0.6984974 4.328367 -3.8841215 -1.1313170 0.3033916 7.727568
## 4 5.6124090 5.6803458 6.161352 0.9215934 0.8091323 3.3033860 3.300495
## 5 1.2155742 4.4943274 5.895161 -3.8841215 2.2861569 -1.1730114 2.018229
## 6 3.9203524 6.0728807 8.390538 -2.6003052 4.1185334 5.7881739 2.463903
##      Stau1      Stau2      Stbd1      Stc1      Stc2      Steap1
## 1 6.541499 5.0807842 -2.9368206 -1.6129382 0.3648089 0.6418383
## 2 6.915645 4.6678353 -0.5157294 5.9593532 1.9800389 -2.3040431
## 3 4.849841 0.3033916 -3.8841215 -0.6195262 -3.8841215 6.7697476
## 4 7.143028 4.6986008 -1.7143019 1.6543475 -1.7899633 -0.3926602
## 5 6.773681 3.1351297 -3.8841215 4.1233504 -0.4264149 -2.8071174
## 6 6.346363 4.4163894 0.7424735 0.4384895 2.1528506 0.2712285
##      Steap2      Steap3      Steap4      Stfa1      Stfa2      Stfa211
## 1 5.404594 2.24459746 -2.8285048 -3.7949831 -3.61285805 -3.7949831
## 2 -1.436822 6.34233953 0.4771642 -3.8841215 -1.37024474 -1.0077037
## 3 5.942365 0.05610664 -0.2425151 1.6680739 2.41038029 -3.8841215
## 4 3.386229 3.77129538 0.7926822 -1.3795498 -1.31567623 -3.3278129
## 5 3.958782 4.12955814 3.2983183 -0.4264149 -0.04458439 -3.8841215
## 6 3.689297 6.05863098 -2.3975498 -3.8841215 -3.88412153 -3.8841215
##      Stfa3      Stil      Stim1      Stim2      Stip1      Stk10      Stk11
## 1 -3.45979933 1.7886233 6.162998 5.955619 7.190100 4.4778153 5.728364
## 2 -1.71227043 3.4091160 4.735534 6.190935 7.018361 2.9704254 5.486894
## 3 4.62963212 0.3033916 7.165153 1.911138 6.629504 -1.9317392 6.762017
## 4 1.06615671 4.0724430 4.087339 4.268449 7.925713 1.6134457 4.777042
## 5 2.26375475 0.6514968 5.211139 4.236959 7.904375 0.0631199 4.916681
## 6 -3.88412153 3.9478930 6.212812 4.795207 5.944628 3.9976354 5.873445
##      Stk11ip      Stk16      Stk17b      Stk19      Stk24      Stk25      Stk3
## 1 5.399102 5.822089 4.010834 4.209952 4.846323 7.183227 3.103004
## 2 4.469947 5.453852 5.794697 4.569958 6.682800 8.291385 6.351296
## 3 1.983840 6.505350 5.742109 7.748585 2.971435 7.998224 6.483577
## 4 4.204668 5.422404 3.699055 4.419124 3.303427 5.619509 5.452189
## 5 1.722172 5.804951 1.306052 3.765042 1.688930 6.050457 4.789158
## 6 4.829220 5.964547 6.670156 5.078791 4.641748 6.794558 4.086725
##      Stk32a      Stk32b      Stk32c      Stk33      Stk35      Stk36      Stk38
## 1 4.9747205 1.8145154 3.460475 0.4656275 5.540967 3.1032014 5.812404
## 2 -2.8774220 -2.5789021 1.129116 -1.5757623 4.681793 0.6258228 6.480890
## 3 -3.8841215 -3.8841215 -3.884122 -3.8841215 1.479815 -0.6195262 4.474287
## 4 -0.6029866 -0.1544849 -3.186080 -0.3199161 3.295086 4.7982111 5.428719
## 5 -3.8841215 -2.8071174 -2.807117 -3.8841215 5.271331 3.3734750 5.003742
## 6 -0.8446083 -3.1431739 -1.234781 0.5391245 6.559977 4.5124170 6.956259
##      Stk38l      Stk39      Stk4      Stk40      Stmn1      Stmn2      Stmn3
## 1 3.132458 6.2420642 5.612021 5.23211919 3.668731 3.181287 6.561947
## 2 3.457178 5.5449043 5.324732 6.02712050 4.994620 5.868031 3.642097
## 3 6.026512 -0.2425151 1.263249 0.05610664 8.720706 7.776992 8.277555

```

```

## 4 6.346657 3.8593054 5.405762 2.78686059 8.641650 8.431120 8.141272
## 5 5.129864 3.4349186 5.430643 2.70728792 9.347285 9.416192 9.218889
## 6 6.143703 4.3371634 5.369924 5.77274508 2.181003 2.985870 3.613129
##      Stmn4      Stom      Stom11      Stom12      Stom13      Ston1      Ston2
## 1 7.434042 5.318696 5.0569757 5.293885 -3.7949831 1.6232670 3.4583861
## 2 1.793712 7.591189 4.6181049 5.893500 -3.1273690 1.1988147 -0.3312288
## 3 7.203712 6.077235 0.3033916 7.997127 -1.9317392 -0.6195262 1.7537270
## 4 6.488121 5.285783 4.8259381 5.688474 -0.1913757 1.3090249 3.6606385
## 5 7.823879 4.765436 6.6354736 5.931144 -3.8841215 1.8777815 4.2079189
## 6 1.309432 5.430865 5.3813404 5.310901 -1.4142775 3.5238793 7.3766702
##      Stox1      Stox2      Stra13      Stra6      Strada      Stradb      Strap
## 1 1.048462421 7.644147 3.783844 -1.8840690 4.5289065 4.9691459 7.486542
## 2 3.214455943 6.505516 5.187521 8.5112324 4.3749018 3.8291639 7.423370
## 3 -1.131316983 5.367284 7.553395 -1.9317392 8.3070743 -0.2425151 3.910295
## 4 1.783856612 6.464310 6.423262 3.6844131 5.4413525 4.0644774 5.491059
## 5 1.786443458 5.967986 7.363293 5.2227991 0.5807664 3.0328598 5.990329
## 6 -0.009802292 8.249387 2.777434 -0.2064150 4.9083396 4.8258128 6.868216
##      Strbp      Strn      Strn3      Strn4      Stt3a      Stt3b      Stub1
## 1 5.768249 5.9893370 6.153988 8.107818 6.311224 7.297368 4.8652697
## 2 4.843129 4.7057034 7.750515 7.143480 7.366452 7.779735 5.0552361
## 3 2.182248 0.6984974 4.869161 5.704958 7.465684 8.403812 -0.2425151
## 4 6.863037 2.8006062 6.089700 4.695800 7.511787 6.756535 2.8856410
## 5 5.395012 4.2933437 6.469211 4.091904 6.846149 7.957248 3.9864074
## 6 7.364674 5.1542880 6.886004 6.871953 6.167114 8.702850 5.1732433
##      Stx11      Stx12      Stx16      Stx17      Stx18      Stx19
## 1 -1.9106478 7.144570 6.244661 4.8866504 4.0268014 -2.5638265
## 2 1.8161255 8.251141 5.780771 5.3858508 5.0706741 -3.1080374
## 3 -3.8841215 4.749157 1.263249 3.4786766 0.6984974 -1.9317392
## 4 -3.2091840 7.608243 4.536950 4.6762074 4.7827889 -0.1461829
## 5 -2.8071174 6.724289 3.765042 0.6514968 3.6226664 -2.8071174
## 6 -2.2349732 6.184646 7.080437 5.2851829 4.1128548 -0.9932714
##      Stx1a      Stx1b      Stx2      Stx3      Stx4a      Stx5a      Stx6
## 1 4.93844781 5.0452531 5.551428 1.854910 5.500714 6.427068 6.565783
## 2 6.72015567 -0.1620399 5.048955 4.936201 5.836029 7.224757 7.784435
## 3 0.05610664 -1.9317392 -3.884122 7.042878 1.263249 7.982786 4.769864
## 4 4.86797759 2.0031546 2.146616 3.861963 5.086308 6.835580 5.666669
## 5 -0.94717201 0.0631199 3.916326 1.620055 5.585433 6.621226 5.804951
## 6 4.67178915 4.7577674 4.875819 1.022371 6.030592 6.590224 5.113737
##      Stx7      Stx8      Stxbp1      Stxbp2      Stxbp3a      Stxbp4      Stxbp5
## 1 6.893623 3.945095 6.353611 3.83604242 5.140275 4.8364601 5.4619524
## 2 6.996416 4.909265 6.390109 2.25015095 5.306273 3.6005282 5.9280182
## 3 3.074902 7.735486 7.034345 0.05610664 2.739167 0.5144282 0.6984974
## 4 7.013290 5.990533 6.130751 3.66941201 5.376323 6.2053773 3.2649363
## 5 6.937438 6.614603 5.511302 5.01048547 4.231198 1.0682384 4.4454014
## 6 5.812976 3.138378 5.469259 0.28139952 6.110642 5.4150881 5.8321072
##      Stxbp5l      Stxbp6      Styk1      Styx      Styxl1      Sub1
## 1 4.0880119 4.8713152 -1.4025031 1.4570464 -1.1147972 6.056736
## 2 -1.4747565 3.3024644 -2.7662494 2.6128011 -2.4823940 7.815312
## 3 0.5144282 0.6984974 -3.8841215 -3.8841215 -3.8841215 10.271431
## 4 3.4127569 3.9383297 -2.7905134 2.0510730 -0.7096828 9.147255
## 5 4.0401199 4.3043608 -3.8841215 -0.7519471 2.4929006 9.661103
## 6 1.0367404 4.7447201 -0.3200649 2.4635695 -1.8717430 6.110755
##      Suc1a2      Suc1g1      Suc1g2      Sucnr1      Suda3      Sufu      Supp1
## 1 5.340131 6.201908 3.7513997 -3.8841215 6.328252 4.0181835 5.3001996

```

```

## 2 6.328918 6.733050 5.0010830 -3.8841215 7.283619 4.3267645 5.5011946
## 3 8.453457 7.609039 3.8138844 -1.9317392 1.753727 -1.1313170 0.3033916
## 4 6.530059 7.645935 3.9310965 -0.9466532 3.835831 0.4872490 5.4650635
## 5 6.218581 7.973300 4.4846740 -3.8841215 2.393229 -2.1973739 6.1315644
## 6 5.801917 5.954107 4.5348442 -3.2889060 5.782642 4.7660106 5.2078047
##      Supg2      Sugt1      Sulf1      Sulf2      Sult1a1      Sult2b1
## 1 6.2071902 5.310711 4.3257916 10.511093 0.2625965 -1.8332555
## 2 4.8374513 7.278563 0.3560633 1.472678 2.8761283 -3.0392407
## 3 -0.2425151 8.318539 -3.8841215 1.834579 7.3328294 1.2632490
## 4 3.7569775 7.001474 1.9584152 4.824367 3.4580780 -0.4117661
## 5 1.7546656 7.755281 -0.5800187 4.178282 0.0631199 2.9370110
## 6 6.9634389 5.097960 -0.4589826 3.010777 -0.1976843 -1.8954416
##      Sult4a1      Sult6b1      Sumf1      Sumf2      Sumo1      Sumo2      Sumo3
## 1 5.0846784 -3.88412153 4.7980731 4.589064 4.876001 0.8605854 6.300735
## 2 1.8657404 -1.64613657 5.8602380 5.543266 6.344161 1.1621922 7.299887
## 3 6.7200711 -3.88412153 -0.2425151 9.115941 8.687081 1.8345785 7.979457
## 4 4.3972567 -1.28225125 3.0661926 6.256198 7.118574 1.6204269 7.790311
## 5 4.5829496 -3.88412153 3.0849008 6.914253 8.036607 1.0682384 8.139390
## 6 0.7649795 -0.09989886 4.4397874 5.421765 4.514340 0.7093239 6.007456
##      Sun1      Sun2      Sun3      Suox      Supt71      Supv311      Surf1
## 1 6.183608 5.767845 -3.336611 3.613102 4.0836780 4.1943411 5.004704
## 2 6.509554 7.033608 -3.424345 3.409961 2.9948981 3.9454897 5.032336
## 3 2.898090 4.285869 -3.884122 6.902255 0.6984974 4.4616153 6.345556
## 4 6.349215 2.815644 -1.496780 4.830425 5.1598749 2.3684838 6.310736
## 5 4.846812 2.530918 2.673697 4.793075 5.1845526 2.9227833 6.780601
## 6 6.988721 5.736607 -2.616080 4.044813 4.3022195 5.1270621 4.456102
##      Surf2      Surf4      Surf6      Susd1      Susd2      Susd3
## 1 4.3994361 7.273720 4.5479517 2.6292740 -0.95557589 0.9704594
## 2 4.6226314 8.247761 5.1448671 -0.9920285 0.99778209 -3.3444694
## 3 0.8617169 8.014583 -0.2425151 -1.1313170 1.14141397 9.1459526
## 4 5.1701637 6.221335 3.8338324 1.2001703 0.32534029 1.6696194
## 5 5.6580892 7.425793 1.1190407 -2.1973739 3.03285981 -0.4264149
## 6 4.2526198 7.210796 4.1697892 0.1904437 -1.43642263 -2.5546909
##      Susd4      Susd5      Suv39h1      Suv39h2      Suv420h1      Suv420h2      Suz12
## 1 7.072961 6.6462447 4.992251 2.5633518 6.311078 5.2082188 5.104151
## 2 1.505329 -2.1585061 4.604360 2.6187888 6.818497 4.4803037 7.026225
## 3 2.780569 -1.9317392 6.274882 -1.1313170 6.342103 0.3033916 1.577013
## 4 1.702475 1.1270836 5.624110 2.7338965 5.309384 3.2047662 5.350917
## 5 -2.197374 1.9069861 4.494327 -2.1973739 5.445647 3.6574526 2.549557
## 6 2.666588 -3.1713129 5.168977 2.8764475 7.070788 6.0019211 6.165625
##      Sv2a      Sv2b      Sv2c      Svp1      Svil      Svp1
## 1 7.944407 1.3627484 2.807592 2.442183 5.7855338 5.700521
## 2 1.789943 0.7046186 -2.889907 -1.423699 5.8668438 -0.449439
## 3 2.410380 -1.9317392 -1.131317 -3.884122 0.5144282 1.375592
## 4 5.257241 2.1227790 1.076130 -0.208900 2.9105618 5.696189
## 5 5.467866 0.3450364 -3.884122 -2.807117 3.4248580 5.181568
## 6 3.969847 2.6050553 2.218709 4.155187 5.3327182 4.930954
##      Svop      Svop1      Swap70      Swi5      Syap1      Sybu      Syce1
## 1 4.24978579 -2.9652866 4.7313523 6.319734 5.0062666 4.619359 -3.884122
## 2 0.63279934 -0.3077335 8.5386617 6.445909 7.1790459 1.099303 -1.474535
## 3 1.66807388 -3.8841215 5.6219739 9.361231 1.3755916 7.080660 -3.884122
## 4 4.31111728 -1.1287995 4.3755774 7.426245 3.7944706 5.740338 -3.884122
## 5 2.32994383 4.0982486 0.2570463 8.598552 0.0631199 4.072702 -3.884122
## 6 -0.04152957 -3.6744822 6.5819940 5.302798 5.5424202 6.855300 -3.660779

```


##	Syce1	Syce2	Sycp1	Sycp2	Sycp3	Syde1	
## 1	-3.232646	1.6979445	-3.1260294	-1.5204845	1.9002379	3.8829291	
## 2	-2.936956	0.8260503	0.3419206	-3.4766082	-1.1301349	5.1548670	
## 3	-3.884122	3.1399752	-3.8841215	-3.8841215	-1.9317392	-0.2425151	
## 4	-3.427701	5.0665727	-1.3125494	-0.1548058	2.0044389	3.5883691	
## 5	-3.884122	5.6666525	-3.8841215	-3.8841215	2.4538543	4.5369856	
## 6	-1.626262	1.4329409	-2.2745278	3.1253892	1.6531512	4.5372035	
##	Syde2	Syf2	Syk	Sympk	Syn1	Syn2	Syn3
## 1	4.9177507	6.058668	2.2351852	7.600381	5.6575014	5.855763	3.8605967
## 2	-1.1767254	7.116611	5.8076388	6.968411	1.8587072	1.917688	0.7550781
## 3	-1.1313170	8.303528	0.6984974	1.008333	0.3033916	4.869161	-1.1313170
## 4	0.6642669	7.251706	1.2559893	2.861857	3.1124137	5.896052	3.2516567
## 5	0.7833343	7.368551	-0.7519471	1.510155	2.7072879	4.336916	3.2535457
## 6	3.0772968	6.021199	-0.2374980	6.545839	3.1396841	5.800044	1.3641096
##	Syna	Sync	Syncrip	Syne1	Syne2	Syngr1	Syngr2
## 1	0.58902028	-0.66487946	6.525356	6.2355969	5.975514	6.709664	4.800694
## 2	-1.90822661	-2.80009807	6.883239	5.3491367	6.361767	1.572588	6.370693
## 3	-1.13131698	-1.93173924	3.503617	5.3875238	1.983840	6.138229	8.600143
## 4	-1.83873390	-1.22996763	6.904553	3.5104823	5.478678	5.280501	5.018320
## 5	-2.80711744	-3.88412153	6.017363	0.5807664	3.383899	6.998916	5.704570
## 6	0.76839844	-1.25984837	6.809872	8.9460647	6.288853	5.306859	4.045400
##	Syngr3	Syngr4	Synj1	Synj2	Synj2bp	Synm	
## 1	4.394247	-2.26232741	6.649843	3.5307418	4.184745	5.2687328	
## 2	1.095084	-2.01504201	6.083806	2.1817087	6.063521	6.6906472	
## 3	8.212864	-3.88412153	7.456134	-3.8841215	6.345556	-0.2425151	
## 4	5.423120	-0.06822701	5.545558	1.8458967	6.293115	1.3698233	
## 5	3.032860	-3.88412153	5.458033	3.1351297	6.125365	1.1190407	
## 6	1.368085	-2.62121916	7.042759	-0.2516836	4.409384	4.2346390	
##	Synpo	Synpo2	Synpo2l	Synpr	Synrg	Syp	
## 1	3.23548747	-1.9499883	-1.577316	1.70426347	6.0425943	6.091488	
## 2	3.36321100	0.7406178	-2.716134	1.11980679	5.1980381	3.545182	
## 3	0.51442825	-1.9317392	-3.884122	9.69882119	0.6984974	2.356639	
## 4	2.17554438	1.4614381	-3.884122	6.66144852	4.1099916	5.399286	
## 5	2.45385433	-2.8071174	-3.884122	7.26097459	1.8175364	5.767625	
## 6	-0.09096371	2.7082009	-2.027380	0.04537455	5.2308296	3.855077	
##	Syp1	Syp12	Syt1	Syt10	Syt11	Syt12	Syt13
## 1	6.391400	-1.5625883	4.291991	-1.9136681	10.470094	2.2787162	3.3393302
## 2	7.919935	-3.8841215	2.841465	-2.8125900	3.356484	3.5570099	-0.4080631
## 3	8.017833	-3.8841215	2.356639	-1.1313170	10.590709	-1.9317392	1.5770128
## 4	7.755099	2.2261943	3.684931	-0.4843485	11.339696	1.4468089	0.5386194
## 5	8.058734	-0.2876030	2.433928	-2.1973739	11.206018	2.7401147	-1.1730114
## 6	6.160663	3.8203137	1.977738	-0.3436590	9.750987	2.9828025	0.9283860
##	Syt14	Syt15	Syt16	Syt17	Syt2	Syt3	
## 1	2.2401350	-3.2918425	4.9927425	0.04708709	-2.1789278	3.0148171	
## 2	-2.6317274	4.1064745	-0.3848919	-2.09676826	-2.5254901	-1.9385933	
## 3	-3.8841215	-3.8841215	3.8725002	1.26324902	-3.8841215	6.5805307	
## 4	0.1895326	-3.2991483	3.3801518	1.92500012	0.8947575	1.5988209	
## 5	-2.1973739	-3.8841215	3.3310089	-2.19737395	-3.8841215	2.0447493	
## 6	2.3143936	1.6756148	0.1471915	-0.32848097	-2.2322721	0.8554070	
##	Syt4	Syt5	Syt6	Syt7	Syt8	Syt9	Syt11
## 1	4.054163	2.791990	3.06392449	4.150534	-3.3127707	3.3341746	-2.3771560
## 2	1.471009	1.218808	-1.67030852	3.517613	-3.6565043	-2.7115565	-1.9023480
## 3	7.807356	6.643597	-3.88412153	1.008333	-3.8841215	-0.6195262	0.5144282
## 4	2.777870	4.220289	-3.28782173	3.117028	-3.8841215	3.3509391	-1.6121777

```

## 5 1.168115 4.824026 -3.88412153 4.479823 -3.8841215 -0.9471720 -0.5800187
## 6 3.834816 1.719630 -1.01679122 4.024973 -3.8841215 0.0149190 -2.3334194
##      Syt12      Syt13      Syt14      Syt15      Syvn1      Szt2      T
## 1 5.3999282 -3.794983 -2.1811908 2.3656451 6.090981 6.159523 -3.495736
## 2 1.7733439 -2.936956 2.5937763 -3.0277153 5.321213 4.448279 1.592570
## 3 -0.2425151 -3.884122 -1.9317392 -3.8841215 3.710567 2.356639 -3.884122
## 4 3.2321820 -1.532093 0.3735403 -0.7103884 4.674805 3.438654 -3.884122
## 5 -2.1973739 -3.884122 -3.8841215 -2.8071174 3.135130 3.159603 -3.884122
## 6 0.1591861 -1.087529 -0.2435703 -2.3612530 6.448722 6.884839 -2.986249
##      Tab1      Tab2      Tab3      Tac1      Tac2      Tac4      Tacc1
## 1 5.545114 6.874828 3.871430 2.8524520 -2.4275457 -3.884122 5.811666
## 2 4.744169 7.300846 4.969052 -1.6947179 -2.4179184 -3.476608 7.841409
## 3 2.053052 7.360397 5.246901 -1.1313170 -0.2425151 -3.884122 4.878725
## 4 6.100243 5.832864 2.810958 0.2433537 6.3074605 -3.287822 7.387047
## 5 5.050296 3.765042 3.383899 -2.8071174 7.4213722 -3.884122 5.499367
## 6 5.760898 7.429698 4.821893 1.8947685 -2.9280359 -2.600305 6.451865
##      Tacc2      Tacc3      Taco1      Tacr1      Tacr2      Tacr3
## 1 6.524792 4.3631098 3.079578 -2.37506887 -3.5146428 -1.0882357
## 2 3.747758 4.6136989 2.210228 -2.82543180 -3.8841215 3.8070922
## 3 2.935229 1.8345785 -1.931739 -3.88412153 -3.8841215 -3.8841215
## 4 5.935924 5.6774174 3.652196 -3.88412153 -0.5322026 -3.8841215
## 5 6.134654 3.4841954 -2.807117 -3.88412153 -3.8841215 -3.8841215
## 6 3.584278 5.0993281 3.403640 -0.02528107 -2.9280359 -2.0395320
##      Tacstd2      Tada1      Tada2a      Tada2b      Tada3      Taf1      Taf10
## 1 -3.6013384 5.850949 4.448790 4.959300 5.2532659 6.122023 3.752265
## 2 -3.8841215 6.001892 4.139583 4.648678 4.5142109 6.295609 4.947676
## 3 2.9714350 5.877063 7.252346 5.581551 0.5144282 2.560544 1.577013
## 4 0.3412634 6.811336 5.598402 2.778215 4.3219643 6.273174 1.708090
## 5 3.7163802 6.506657 4.013514 2.308216 4.1108541 4.219605 2.530918
## 6 -3.8841215 4.975974 5.327242 4.579880 4.6259184 7.512136 2.811868
##      Taf11      Taf12      Taf13      Taf15      Taf1b      Taf1c      Taf1d
## 1 5.404957 3.59137022 4.469566 5.586450 4.0011171 3.4248298 4.797615
## 2 5.522425 4.51828342 5.014477 5.771982 4.4512794 2.6571175 5.919970
## 3 6.897558 0.05610664 5.074526 1.008333 3.4532981 0.3033916 5.194255
## 4 5.442512 5.49667753 5.114129 2.703498 4.9986989 3.1855301 5.286053
## 5 6.375686 6.59566954 6.078003 -1.173011 5.3505298 -0.5800187 4.499130
## 6 4.529777 3.06903125 5.163440 6.541802 4.4451246 3.8831238 5.622704
##      Taf2      Taf3      Taf4a      Taf4b      Taf5      Taf5l
## 1 5.65531315 3.84611753 5.0912381 2.4149523 2.5206030 5.1900010
## 2 6.16452608 4.80123938 4.1421341 4.8629269 3.2454098 5.9824619
## 3 0.05610664 0.05610664 -1.1313170 -0.6195262 -1.9317392 0.8617169
## 4 4.76458080 4.80019449 3.0929379 0.4649825 2.7108990 3.3405589
## 5 3.87258303 3.09762292 -1.7701038 -3.8841215 -0.7519471 -0.5800187
## 6 6.02854675 3.78233581 4.8509111 4.5856727 3.3780597 4.8835311
##      Taf6      Taf6l      Taf7      Taf7l      Taf8      Taf9      Taf9b
## 1 5.089739 2.6822668 4.147697 -3.338665 4.7198613 5.686384 6.038624
## 2 5.254961 2.4942699 6.626470 -3.884122 5.4240901 6.726593 5.464908
## 3 5.593217 -3.8841215 7.575617 -3.884122 5.2615960 8.582694 5.973941
## 4 6.300559 0.9820193 5.895678 -3.884122 5.3714596 7.019680 6.331041
## 5 6.261611 -1.7701038 6.440786 -3.884122 0.4279671 7.841949 5.465414
## 6 5.333147 3.1640861 5.328220 -1.693141 4.8068265 5.101790 4.291933
##      Tagap      Tagap1      Tagln      Tagln2      Tagln3      Tal1      Tal2
## 1 3.555610 3.6582377 0.9864101 5.286352 5.270976 -0.77245327 -3.066266
## 2 1.408460 3.5775088 3.4690143 8.743983 2.995775 6.39879314 -2.461040

```

```

## 3  1.141414 0.3033916 10.4099998 9.161707 8.799606 -3.88412153 -3.884122
## 4  2.377457 5.4288659 3.5907565 6.476906 8.827427 -2.57098527 -3.218516
## 5 -1.173011 5.0762381 6.7884686 7.141657 9.889511 -3.88412153 -3.884122
## 6  2.387152 3.0680256 3.2685717 3.674132 6.776438 0.04138806 -3.379887
##      Taldo1      Tanc1      Tanc2      Tank      Taok1      Taok2      Taok3
## 1  8.121515 5.7985818 6.521487 4.608316 6.824832 6.655152 5.7215652
## 2  8.066536 7.2147130 4.625093 5.130924 7.366887 7.328356 4.1327217
## 3 10.021063 2.0530520 5.704958 7.151410 4.314340 2.300819 6.8952039
## 4  8.797345 2.6102944 6.221242 6.396465 8.110659 4.445928 5.4678133
## 5 10.116942 0.9609302 2.473510 5.873132 7.858862 2.413722 0.9041264
## 6  5.397786 5.7056050 6.934289 6.780015 7.897150 7.099025 4.9922111
##      Tap1      Tap2      Tapbp      Tapbp1      Tapt1      Tarbp2      Tardbp
## 1  2.9365498 4.7285146 4.906095 2.7888933 6.505893 3.6631213 7.322785
## 2  5.1588458 5.7889969 6.446313 3.9178380 6.665933 3.6595963 7.226066
## 3  6.5892947 0.8617169 8.178429 -0.6195262 3.983037 -0.2425151 6.296450
## 4  2.5138731 3.1709209 6.406099 3.4433227 4.055932 3.5480187 6.663944
## 5 -2.8071174 -1.1730114 6.731450 2.6040729 4.700200 3.5224398 6.084408
## 6  3.3555969 4.9211844 5.102688 2.4566741 7.073085 4.7350327 7.537068
##      Tars      Tars2      Tarsl2      Tas1r1      Tas1r2      Tas1r3      Tasp1
## 1  5.779277 4.995248 4.9576700 -1.8940823 -3.267500 0.1603901 2.1515395
## 2  5.662847 4.883396 4.1278988 -2.5614538 -3.248991 1.2032268 2.2756478
## 3  4.962061 7.554887 -3.8841215 -3.8841215 -3.884122 -3.8841215 -0.6195262
## 4  6.806955 6.009998 2.7960002 -1.4399694 -3.884122 -1.3788209 3.4699443
## 5  6.734507 5.066564 3.4841954 -3.8841215 -3.884122 -3.8841215 -2.8071174
## 6  5.675282 5.095735 4.3243174 -0.9058051 -3.660779 0.6036877 3.0081419
##      Tatdn1      Tatdn2      Tatdn3      Tax1bp1      Tax1bp3      Taz      Tbata
## 1  2.2690571 5.3963132 3.342191 6.674020 1.7997285 5.433581 -2.8729156
## 2  3.1014765 6.7883275 3.937280 7.914914 5.2352399 5.292594 -2.4122130
## 3 -0.2425151 0.5144282 -3.884122 3.290869 -0.6195262 6.426034 -1.9317392
## 4  4.1751864 1.2384186 3.968993 7.602392 3.1276908 4.493694 2.7845379
## 5  4.3207304 3.6226664 3.765042 6.366516 3.4548318 5.988623 3.3629751
## 6  3.4463615 5.5569593 3.644530 6.779643 1.0492304 6.042976 -3.6744822
##      Tbc1d1      Tbc1d10a      Tbc1d10b      Tbc1d10c      Tbc1d12      Tbc1d13      Tbc1d14
## 1  4.409361 3.0724745 6.292899 -0.904461014 5.724820 6.034933 7.816959
## 2  6.929758 4.5417499 5.340858 -0.267066608 5.949186 6.208164 8.139120
## 3 -1.131317 6.0855177 4.212132 6.769747597 -1.931739 1.375592 6.110085
## 4  3.814343 1.8711601 4.328167 0.003394567 3.465165 2.932814 6.600105
## 5  4.741317 -0.1609828 4.336916 -3.884121530 3.691420 2.433928 5.733388
## 6  5.006037 7.1124340 5.275410 0.427036207 5.253614 5.693214 5.681969
##      Tbc1d15      Tbc1d16      Tbc1d17      Tbc1d19      Tbc1d2      Tbc1d20      Tbc1d22a
## 1  5.682738 6.3360639 5.401246 5.692366 1.55729225 5.6663374 4.850904
## 2  6.944306 6.4248648 5.357344 5.215872 3.62690364 5.7571259 6.710786
## 3  2.560544 1.4798145 6.278499 2.898090 -0.61952623 -1.1313170 1.375592
## 4  6.936413 4.2120764 7.025906 6.377974 0.05456873 2.6596851 4.621509
## 5  5.940002 4.2988628 6.565079 6.295135 -2.80711744 2.9510998 4.123350
## 6  5.697867 5.0809575 5.004965 5.938325 0.70407463 4.5544967 4.006375
##      Tbc1d22b      Tbc1d23      Tbc1d24      Tbc1d25      Tbc1d2b      Tbc1d30
## 1  5.5631812 6.2889641 6.4894550 2.62353154 3.7357701 2.7336268
## 2  4.7156267 5.9699215 4.2181538 3.15470364 5.9901083 3.3760819
## 3  0.5144282 0.3033916 0.5144282 0.05610664 -0.2425151 -3.8841215
## 4  2.1636454 5.4599315 4.6757903 2.12978107 2.9777487 -1.3469708
## 5  1.8175364 3.3417432 4.8766441 -2.19737395 3.5688622 -2.8071174
## 6  5.1393875 5.5917908 5.3295269 3.20846110 4.8205866 -0.9214488
##      Tbc1d4      Tbc1d5      Tbc1d7      Tbc1d8      Tbc1d8b      Tbc1d9      Tbc1d9b

```

```

## 1 3.4000278 6.056920 4.437790 5.0578710 3.492391 4.923217 7.6635951
## 2 5.5135226 4.814974 2.789290 4.6838357 4.832631 4.975453 7.2831068
## 3 -0.2425151 1.263249 6.643597 -3.8841215 1.008333 4.696052 0.6984974
## 4 4.5106919 5.111055 5.877990 1.7100608 2.316931 4.051191 4.8807904
## 5 4.4991300 5.205273 6.045541 -3.8841215 -2.197374 3.287255 3.0976229
## 6 4.5494180 4.647353 4.201848 3.5365965 2.776293 4.151611 6.4415745
##      Tbca      Tbc b      Tbcc      Tbccd1      Tbcd      Tbce      Tbce1
## 1 3.863184 6.069474 2.6670914 4.821621 6.0281197 4.9068273 5.8400593
## 2 5.739783 6.199201 3.5000955 3.407899 6.0445626 4.5264985 5.6931636
## 3 7.036483 9.510188 -0.2425151 1.141414 0.3033916 0.6984974 0.3033916
## 4 7.167841 7.480812 1.4514258 5.385139 4.3432003 4.7353634 4.7596751
## 5 8.160385 9.182218 4.1171157 4.527614 4.9591265 3.9091272 2.8343382
## 6 3.394372 4.719501 2.3995210 4.298480 4.9646479 6.2505185 6.9033888
##      Tbck      Tbk1      Tbkbp1      Tbl1x      Tbl1xr1      Tbl2      Tbl3
## 1 4.543950 4.6363693 5.4076889 4.5985988 5.817929 5.1093552 5.134140
## 2 3.778828 5.7233544 6.8661395 5.7147746 5.772268 4.1254954 5.180279
## 3 5.503337 1.0083330 -0.6195262 0.6984974 5.346757 0.6984974 7.925109
## 4 2.018585 4.9600931 2.0288919 4.3092137 5.809312 4.7277774 6.408547
## 5 -3.884122 -0.1609828 1.9636795 -0.4264149 4.657877 5.6233186 6.361251
## 6 4.310148 5.6770037 6.7771202 6.0801432 6.638542 5.5097510 5.240831
##      Tbp      Tbp11      Tbr1      Tbrg1      Tbrg4      Tbx1      Tbx10
## 1 4.249214 4.942762 0.6286117 5.566478 5.591657 -3.309084 -2.834564
## 2 4.874631 5.854272 -0.4336497 7.249830 5.445742 4.709109 -3.424345
## 3 5.881827 7.839545 6.0004657 7.038618 1.141414 -1.931739 -3.884122
## 4 6.005223 6.451847 4.6672419 7.405583 4.989133 -3.653944 -3.884122
## 5 5.555775 5.594437 4.2254133 7.394559 4.839257 -2.807117 -3.884122
## 6 4.916187 4.598589 -0.3416388 5.364870 5.639304 -1.074565 -3.884122
##      Tbx15      Tbx18      Tbx19      Tbx2      Tbx21      Tbx3
## 1 -1.9419340 0.69882105 -3.7949831 -0.0466702 -1.6997530 -1.1930916
## 2 0.8076593 2.29357695 -3.6565043 3.4262764 -3.1080374 6.0544870
## 3 -3.8841215 -3.88412153 -3.8841215 -3.8841215 -3.8841215 -1.9317392
## 4 -0.9002048 2.12134237 -3.8841215 -1.3368077 -3.3278129 1.7257792
## 5 -3.8841215 -1.17301144 -3.8841215 1.3060516 -3.8841215 2.9925589
## 6 -1.9806404 -1.59651043 -3.6744822 0.8050762 -1.6484072 0.2644297
##      Tbx4      Tbx6      Tbx2r      Tbxas1      Tc2n      Tcap
## 1 -2.493239 -0.05145823 -2.5397982 1.20610650 -3.884122 -2.673428
## 2 4.636679 -0.40806313 3.8939278 -2.11225287 -1.994391 -2.358736
## 3 -3.884122 -1.93173924 1.0083330 7.28147929 -3.884122 -3.884122
## 4 -3.603681 1.08047147 -0.7189800 2.53552132 -3.884122 -3.128315
## 5 -3.884122 3.95179230 2.8343382 -0.04458439 -3.884122 -3.884122
## 6 -2.293867 1.32153478 -1.1693643 -1.63861931 -3.237253 -1.937728
##      Tcea1      Tcea2      Tcea3      Tcea11      Tcea13      Tcea15
## 1 3.9548460 4.117778 -3.49573635 3.963724 6.265335 3.8264483
## 2 5.6718970 3.409878 1.76629356 4.084854 1.277238 -0.3795274
## 3 0.5144282 -1.131317 0.05610664 1.911138 -1.131317 -3.8841215
## 4 5.2771057 2.124291 -3.28782173 6.269787 4.494080 2.5536252
## 5 4.4152290 3.276106 -2.80711744 7.156173 4.618695 1.0682384
## 6 3.7196239 4.228314 -2.69236196 3.245324 3.593851 1.7465359
##      Tcea16      Tcea17      Tcea18      Tceanc      Tceb1      Tceb2      Tceb3
## 1 4.11596653 -3.58390652 5.414033 1.7159648 4.823526 5.094509 5.829848
## 2 -1.19728737 -3.21779292 6.817130 2.1556871 5.603290 5.648040 6.178871
## 3 -1.13131698 -3.88412153 7.279676 6.0092001 8.087534 8.665142 8.069900
## 4 0.08338507 -3.03018324 7.905202 4.7248311 7.849448 7.263801 7.271064
## 5 -3.88412153 -3.88412153 8.461633 5.0104855 8.542080 8.104361 6.892515

```

```

## 6 -0.47722832 -3.67448218 5.820340 2.4438934 4.493218 3.838037 5.614855
##      Tcerg1      Tcerg1l      Tcf12      Tcf15      Tcf19      Tcf20
## 1  6.0764737  0.44302746 7.485282 -2.2984165 2.9969698 5.219423
## 2  5.6953490 -2.72104427 8.398655  1.0577608 5.4162838 5.351239
## 3  1.3755916 -3.88412153 1.479815 -1.9317392 1.5770128 2.300819
## 4  5.3828005  0.22038396 5.826144 -3.6036807 5.6790919 4.975229
## 5  0.8449942 -3.88412153 5.211139 -3.8841215 5.2372435 4.474956
## 6  6.8096745  0.03397555 6.743220 -0.8409067 2.7833639 5.402253
##      Tcf23      Tcf25      Tcf3      Tcf4      Tcf7      Tcf7l1      Tcf7l2
## 1 -3.3798642 8.213960 6.4624572 8.117588 2.2161191 3.58435702 4.910353
## 2  1.4220746 8.119845 7.5280905 8.581837 7.2550534 4.52637007 3.524950
## 3  3.8336888 7.574146 0.6984974 7.367208 -1.9317392 0.05610664 7.871032
## 4 -0.5126215 7.822646 4.2439035 11.332583 -0.2923867 2.18870889 7.690691
## 5 -0.2876030 7.600202 3.1351297 10.570827 -1.7701038 3.36297510 6.435785
## 6 -1.0246766 8.857535 6.4312697 9.044530 4.0141269 4.97473860 4.963473
##      Tcf15      Tchh      Tchp      Tcirg1      Tcn2      Tcof1      Tcp1
## 1  0.7268735 -0.7401728 3.6410940 5.488602 5.739725 5.0036993 7.069290
## 2 -3.6565043 -2.2235787 3.1405100 4.875285 7.977146 4.5039505 7.664243
## 3 -3.8841215 3.5036165 -0.6195262 7.604723 8.673408 1.1414140 7.541401
## 4 -1.7487016 0.2247800 3.5739827 4.130939 7.043752 4.7926157 8.463747
## 5 -2.1973739 1.3911881 -2.1973739 5.544204 7.260268 0.2570463 8.132066
## 6 -1.2877943 1.4871794 4.9510289 6.065058 5.862040 4.4628160 6.490960
##      Tcp11      Tcp11l1      Tcp11l2      Tcta      Tcte1      Tctex1d1      Tctex1d2
## 1 -3.596091 4.330704 4.540482 5.243083 -2.5676617 -3.607874 2.866076
## 2 -1.889185 -1.126666 6.892040 5.480235 -2.0578217 -3.656504 4.004029
## 3 -3.884122 -1.931739 1.911138 6.508433 -3.8841215 -3.884122 5.818636
## 4 -1.265554 1.189587 7.304112 6.129634 -3.8841215 -3.373504 4.990344
## 5 -3.884122 1.722172 6.986144 7.268730 -3.8841215 1.068238 6.234508
## 6 -1.391483 3.828262 4.326705 4.399674 -2.9407352 -2.439131 2.660352
##      Tctex1d4      Tctn1      Tctn3      Tdg      Tdo2      Tdp1      Tdp2
## 1 -3.3320631 2.422596 4.061096 -3.160495 -1.352186 4.695534 4.0829472
## 2 -2.1931064 2.750963 3.483439 -3.884122 -2.372912 4.263650 5.5723599
## 3 -3.8841215 -1.931739 -1.131317 -3.884122 -1.931739 5.057784 -0.6195262
## 4  1.1495157 1.533865 5.014428 -3.603681 1.707229 5.885458 4.0662896
## 5  3.5870208 -3.884122 5.334497 -2.197374 -1.770104 5.472757 3.2306273
## 6 -2.4391309 3.917772 5.984653 -2.862656 -2.027380 4.375069 5.1980754
##      Tdrd1      Tdrd12      Tdrd3      Tdrd5      Tdrd6      Tdrd7      Tdrd9
## 1 -3.884122 -1.413855 4.831099 -2.4292592 -0.8766134 6.3523493 -1.8128561
## 2 -3.884122 -3.335655 5.735227 -2.7210443 -3.6519623 6.4312128 -2.1591032
## 3 -3.884122 -3.884122 1.375592 -3.8841215 -3.8841215 5.1155495 -3.8841215
## 4 -3.394496 -2.436594 6.525941 -3.8841215 -0.8554711 3.7381017 -3.2878217
## 5 -3.884122 1.349248 5.400157 -3.8841215 -3.8841215 0.2570463 -3.8841215
## 6 -3.884122 -1.325802 6.139022 -3.2889060 -0.7930540 5.2814167 -3.8841215
##      Tdrkh      Tead1      Tead2      Tead3      Tead4      Tec
## 1 5.3156219 3.3156337 -1.14844755 1.6981143 -1.1929327 -0.4517242
## 2 1.5613956 5.6550092 6.47290120 -0.3249486 4.1349945 5.0821005
## 3 0.8617169 2.0530520 0.05610664 -0.2425151 -1.1313170 1.1414140
## 4 6.0187614 6.0597536 4.59496545 0.2588411 -2.9324314 2.6348306
## 5 6.1697170 5.4969679 5.87867039 -1.1730114 -2.1973739 -0.2876030
## 6 5.0131881 7.3906473 5.21122280 5.8559099 -3.5122488 0.1625651
##      Tecpr1      Tecpr2      Tecr      Tecr1      Tecta      Tectb
## 1 6.0831386 5.89850339 8.181513 -3.884122 0.5734254 -3.4662535
## 2 7.5520309 3.43960245 6.800129 2.610369 -2.0325413 -2.7210443
## 3 2.5605442 0.51442825 11.121862 -3.884122 -3.8841215 -3.8841215

```

```

## 4 4.6860949 4.23766021 9.682635 -2.549523 1.2993226 -3.8841215
## 5 0.3450364 -0.04458439 10.546675 -3.884122 2.7879955 -3.8841215
## 6 5.9478017 5.82818673 8.004044 -3.044745 0.3543551 0.6443396
##      Tef      Tek      Tekt1      Tekt2      Tekt4      Tekt5
## 1 7.901532 -1.39064372 -1.6435145 1.06860357 -1.1724857 -1.58608400
## 2 7.117187 9.90267096 -0.7727742 -2.46017225 -3.1273690 -2.80009807
## 3 2.182248 0.05610664 -1.1313170 -1.93173924 -3.8841215 -0.61952623
## 4 6.551043 2.60374669 3.9725916 3.34428784 -1.2564817 3.22543349
## 5 6.668891 4.02021133 3.3417432 3.88731196 -3.8841215 -0.94717201
## 6 8.104359 2.47829961 0.3953075 1.80181150 0.9445961 2.38089217
##      Telo2      Tenc1      Tep1      Tepp      Terf1      Terf2      Terf2ip
## 1 4.8441010 4.514100 2.421733 -2.600587 2.9105360 4.5821409 4.5542438
## 2 3.5598138 6.750626 2.634667 1.250907 4.6850922 5.8338393 4.1344020
## 3 7.7871844 6.219507 7.320601 -3.884122 -0.2425151 -0.2425151 -0.6195262
## 4 5.4904065 3.204340 3.098624 -2.999999 4.0833701 4.3997096 3.9207740
## 5 2.9788711 3.006118 1.654903 -3.884122 -2.1973739 2.1215049 4.3999029
## 6 4.6299513 2.426106 3.091884 -2.065954 3.9544408 5.1598261 4.4181533
##      Tert      Tes      Tesc      Tesk1      Tesk2      Tet1      Tet2
## 1 1.2055063 2.7477254 -0.3947911 5.472165 4.230089 5.146137 5.181814
## 2 -0.8996806 7.8339934 -1.4272679 4.774097 2.016403 3.591647 6.060849
## 3 -3.8841215 5.4783920 0.3033916 -3.884122 7.410708 -1.131317 1.911138
## 4 1.4183177 1.7014550 -0.7060214 1.755037 2.846047 5.773691 6.198945
## 5 -1.7701038 3.5318445 -2.8071174 1.620055 -1.770104 3.097623 5.508923
## 6 1.0291335 0.4583195 -3.0447446 4.516988 3.766952 6.604655 7.309048
##      Tet3      Tex10      Tex11      Tex12      Tex14      Tex15      Tex2
## 1 6.525492 4.7325600 -3.7949831 -0.7991553 -1.9185196 0.4361451 5.871293
## 2 6.577295 4.9786767 0.3156159 -3.2177929 -0.4841176 -2.9901757 5.046824
## 3 5.232054 0.3033916 -3.8841215 -3.8841215 -3.8841215 -3.8841215 1.668074
## 4 5.035697 4.7365700 -3.8841215 -0.1814918 -1.8707711 -0.7114724 5.686269
## 5 5.027207 4.1842580 -3.8841215 -0.5800187 -3.8841215 -3.8841215 7.023292
## 6 7.035096 5.0787666 -3.8841215 0.7577031 0.2541577 -0.2830564 5.642152
##      Tex22      Tex261      Tex264      Tex9      Tfam      Tfap2a      Tfap2b
## 1 -2.5922956 6.006352 5.964225 3.5206445 4.653683 -2.4886569 -2.1812125
## 2 -3.8841215 5.074871 5.848057 1.8697494 4.995663 -2.5482845 -1.8983550
## 3 -3.8841215 7.714276 7.274251 2.4103803 6.970929 1.5770128 2.2427509
## 4 -3.0732255 5.798828 6.873711 4.9940496 5.786130 -0.5946566 0.5000276
## 5 -3.8841215 5.952311 6.604610 5.0665642 5.285300 -0.7519471 3.3942483
## 6 -3.8841215 5.084403 5.324977 5.8934276 4.710873 -2.6160795 -3.4904843
##      Tfap2c      Tfap2d      Tfap2e      Tfap4      Tfb1m      Tfb2m      Tfcp2
## 1 -3.3847237 -3.884122 -2.827946 2.286380 1.9263483 3.2750237 5.109308
## 2 -3.4766082 -3.127369 -2.649805 2.111779 1.3942417 3.4976780 4.097389
## 3 0.3033916 -3.884122 -1.931739 -1.931739 4.5952392 5.2469007 5.472088
## 4 3.6026086 -3.884122 -1.519699 2.595156 2.7675093 3.2797391 4.772197
## 5 2.0182291 -3.884122 -3.884122 4.649261 2.0707909 3.0460471 4.708518
## 6 1.6984057 -3.884122 -3.884122 1.246589 2.1108534 3.0073470 5.498403
##      Tfcp2l1      Tfdp1      Tfdp2      Tfe3      Tfeb      Tfec      Tfg
## 1 -0.13284892 5.792834 5.338387 5.49006637 5.507000 -2.6968486 6.485747
## 2 -0.89968064 5.224117 5.922122 5.85060887 5.509114 -3.0277153 6.076621
## 3 -0.61952623 5.762917 1.479815 0.05610664 -3.884122 -0.6195262 2.356639
## 4 -0.01199186 5.011753 5.161363 3.92048722 1.923076 -2.9259520 5.766633
## 5 3.63144193 3.965738 5.101722 -0.28760302 4.160203 -3.8841215 5.040446
## 6 0.13695254 4.829744 5.165111 4.96763376 4.191788 -3.8841215 5.629270
##      Tfip11      Tfpi      Tfpi2      Tfpt      Tfrfc      Tg      Tgds
## 1 5.325100 2.86768054 -3.4407838 4.237581 6.724772 -3.264076 3.255904

```

```

## 2 5.684603 7.58662724 2.9697109 4.595461 12.466387 -3.424345 4.165210
## 3 6.399704 0.05610664 -3.8841215 -1.131317 4.606795 -3.884122 -1.931739
## 4 5.229956 3.87872288 -1.3341229 4.543961 6.187810 -3.653944 4.708075
## 5 5.779517 4.01351360 -3.8841215 5.891512 5.374250 -3.884122 5.276935
## 6 5.105874 1.71538497 -3.2808450 3.681379 7.326094 -1.871743 3.986343
##      Tgfa      Tgfb1      Tgfb1i1      Tgfb2      Tgfb3      Tgfb1
## 1 8.232379 2.4453786 2.42798739 3.1544471 2.41235329 2.8710847
## 2 6.743461 7.2491898 6.01726559 6.0763797 2.19361140 2.0883407
## 3 1.983840 -1.1313170 0.05610664 0.3033916 0.51442825 6.6519873
## 4 4.029859 -2.4581396 5.21439945 5.8768526 4.54985326 4.2421375
## 5 3.613837 -2.8071174 5.56496569 5.8969812 0.25704632 3.9795505
## 6 4.938806 1.5570200 2.19186642 7.3049723 3.36984810 0.9346782
##      Tgfbr1 Tgfbr2      Tgfbr3 Tgfbrap1      Tgif1      Tgif2      Tgm1
## 1 6.302576 2.346592 0.8642438 6.691469 0.1080453 1.2047151 -2.5176705
## 2 6.008642 8.904287 5.0605210 6.292077 6.7537951 4.8513563 -2.5789021
## 3 7.904189 4.328367 1.3755916 4.934814 1.3755916 -1.1313170 2.9352286
## 4 5.101155 3.231405 4.6103406 4.378800 4.1149324 3.7800408 0.3971501
## 5 3.894620 3.772995 5.9558093 1.877781 2.5120345 3.1836685 1.2155742
## 6 5.896784 3.110888 -0.2153912 6.146272 1.4955052 4.6597024 -0.3681078
##      Tgm2      Tgm3      Tgm4      Tgm5      Tgm6      Tgoln1      Tgs1
## 1 4.3418560 -2.8483217 2.802539 -3.8841215 -3.794983 6.278717 5.027997
## 2 7.5137216 -2.3713762 3.538597 -3.8841215 -3.656504 7.551954 4.567120
## 3 -3.8841215 1.8345785 -3.884122 -0.6195262 -3.884122 8.119146 1.753727
## 4 0.8166394 -0.5700020 1.104348 0.3070961 -3.218516 7.095262 6.150371
## 5 3.8198143 0.8449942 -2.197374 -2.1973739 -3.884122 6.595670 5.941767
## 6 1.0648003 -1.5756625 2.418282 -3.8841215 -1.519228 6.005097 5.371086
##      Th      Thada      Thap1      Thap11      Thap2      Thap3
## 1 -3.6395235 4.1361470 3.780196 5.19961678 4.0767875 3.7110879
## 2 -0.2274325 3.9059712 3.702493 5.05087883 3.0048246 4.2310489
## 3 -3.8841215 -0.2425151 -1.131317 0.05610664 0.6984974 0.6984974
## 4 -3.2878217 3.6757918 4.145476 2.73174237 4.3520834 4.5058686
## 5 -3.8841215 1.7864435 4.160203 3.30929769 4.5276144 3.4646862
## 6 -3.5122488 4.8133816 2.782910 4.09697568 3.7096366 4.2273775
##      Thap4      Thap7      Thbd      Thbs1      Thbs2      Thbs3
## 1 3.903959 3.9158065 -0.15185716 1.0807145 3.0463862 3.0502877
## 2 5.146595 3.2437481 6.65967726 2.2991537 4.0640349 -0.6589808
## 3 6.009200 0.5144282 7.93660181 1.4798145 0.5144282 7.6681425
## 4 3.774312 5.0494582 3.94348956 1.6226932 2.6715764 4.3391860
## 5 3.640164 4.3315411 5.53954925 0.5807664 0.4279671 6.5018800
## 6 3.591257 3.0667510 0.67819042 7.5255424 3.2251236 4.9753709
##      Thbs4      Them4      Them5      Thg11      Thns11      Thns12
## 1 0.7586556 3.2423962 -3.8841215 2.1941759 3.0430748 2.1151182
## 2 -2.3729121 2.4439405 -3.8841215 2.3145474 0.2966601 3.6808063
## 3 -1.1313170 7.1494360 1.7537270 -0.6195262 -0.2425151 -1.9317392
## 4 4.3434269 7.0445152 0.6154488 2.2402778 4.6975168 3.2077368
## 5 4.0202113 7.5327127 3.4744738 3.1227355 4.5086874 5.0205414
## 6 3.4090432 2.7794809 -3.8841215 2.5448395 3.9627811 2.2197676
##      Thoc1      Thoc2      Thoc3      Thoc5      Thoc6      Thoc7      Thop1
## 1 4.643172 5.419062 4.790420 5.020604 3.5597936 5.019750 5.80266290
## 2 5.249369 6.587589 4.794349 5.574484 4.7794082 5.637425 5.08049406
## 3 7.281479 3.261927 -1.131317 1.479815 -0.6195262 6.505350 1.66807388
## 4 5.886999 7.554689 3.262714 5.850166 5.1875500 7.249037 3.81629121
## 5 4.749401 5.854513 4.172280 6.150004 5.5113018 8.031644 3.93771032
## 6 6.176288 7.282989 3.413585 4.449078 2.7173359 5.038302 4.82077599

```

##	Thpo	Thra	Thrap3	Thrb	Thrsp	Thsd1	
## 1	-0.794168438	8.848641	6.397842	2.9524871	3.2614818	1.6976320	
## 2	-2.990175668	6.036753	6.895551	-1.1641936	0.4059009	7.8451288	
## 3	-1.931739237	2.242751	6.409634	4.1815486	9.5500146	6.6124085	
## 4	0.001725991	5.090593	6.385886	4.2764645	10.2449253	2.7158913	
## 5	-3.884121530	4.905872	5.541878	4.0202113	10.4723804	0.9041264	
## 6	1.830702967	6.460598	7.148753	4.0958649	4.8238395	1.7383409	
##	Thsd4	Thsd7a	Thsd7b	Thtpa	Thumpd1	Thumpd2	Thumpd3
## 1	4.57299325	5.7221180	4.2219686	4.864701	5.417055	2.7155685	4.634907
## 2	-0.79147645	0.7681098	-1.8183758	4.623285	4.974854	2.8827445	4.422940
## 3	-1.93173924	1.5770128	-1.9317392	1.834579	1.263249	-1.1313170	7.059792
## 4	1.10912721	3.5358325	0.5177028	6.519606	4.023289	2.4506347	5.908838
## 5	-1.77010377	0.4279671	-2.8071174	6.498286	5.196429	-2.8071174	6.911553
## 6	-0.16107009	0.5716411	-0.2955165	4.395237	5.163854	3.9164884	4.878130
##	Thy1	Thyn1	Tia1	Tial1	Tiam1	Tiam2	Ticam1
## 1	3.666008	3.419623	6.923320	6.718772	3.964887	0.4730267	3.491184
## 2	2.647726	2.990479	6.173589	6.357610	8.512993	0.2026080	4.570070
## 3	4.907042	5.798623	4.878725	6.496059	3.427465	0.3033916	1.008333
## 4	1.694285	5.498989	7.244014	7.212812	2.372305	4.2552827	4.090243
## 5	3.320194	6.414335	4.513442	8.116914	2.621796	4.1233504	1.261522
## 6	4.098835	2.470168	7.642698	7.314317	2.844305	6.1952738	3.823894
##	Ticam2	Tie1	Tifa	Tifab	Tigd2	Tigd3	
## 1	-1.301208	-0.8335627	1.2203509	-0.8074604	3.9292123	1.0228357	
## 2	-2.990176	10.6643138	6.8102855	-2.7161344	4.9815011	1.4786541	
## 3	-1.131317	2.4621911	7.7705847	7.0909824	-0.2425151	-3.8841215	
## 4	1.300098	-0.2314070	3.4602032	1.2401955	3.2062835	0.8827752	
## 5	-1.770104	-3.8841215	4.6318741	-0.9471720	4.9969675	3.1227355	
## 6	-1.849914	3.3831945	5.3806992	-3.3528132	3.8110483	0.8219912	
##	Tigd4	Tigit	Timd2	Timd4	Timeless	Timm10	Timm13
## 1	-3.884122	-2.8552713	-3.884122	-3.12223847	3.2646230	2.680294	5.354653
## 2	-2.807082	-2.4610404	-1.747418	-3.88412153	5.1716755	2.448063	6.128713
## 3	-3.884122	-3.8841215	-3.884122	0.05610664	1.7537270	5.478392	9.013309
## 4	-2.876652	-3.1860804	-3.884122	1.35042843	5.8327620	5.545509	7.563839
## 5	-3.884122	-3.8841215	-3.884122	-1.17301144	5.2797287	6.873223	8.593790
## 6	-1.958398	-0.7495479	-3.884122	-3.88412153	3.4958734	2.792559	4.008962
##	Timm17a	Timm17b	Timm22	Timm23	Timm44	Timm50	Timm8a1
## 1	5.168674	4.560318	5.422003	2.519189	5.4181353	5.580358	1.806461
## 2	5.337323	5.273701	5.723059	3.186234	5.7652769	5.493842	1.709546
## 3	8.595075	7.861417	6.227015	4.663224	0.8617169	2.053052	-1.931739
## 4	6.805087	6.353300	6.852507	2.979577	6.3656104	4.194777	2.435445
## 5	7.342065	7.380963	7.338720	3.894620	6.5078494	6.571933	3.434919
## 6	4.340973	3.658457	3.629259	2.441354	6.5128830	4.505917	2.538001
##	Timm8a2	Timm8b	Timm9	Timp1	Timp2	Timp3	Timp4
## 1	-3.182029	4.695456	3.786123	-2.4406428	7.899261	7.124234	7.0615730
## 2	-3.076231	5.172870	2.786316	3.9379648	3.651099	8.264447	-0.9358728
## 3	-3.884122	8.261195	1.479815	-1.9317392	7.814848	9.492778	9.6691607
## 4	-3.884122	6.940046	5.112049	0.3218869	5.803846	8.861547	6.6855347
## 5	-3.884122	8.236054	4.725011	2.9227833	5.869427	7.213549	7.1840282
## 6	-3.027614	3.344899	4.150526	-0.1844845	6.511661	9.707510	6.5432003
##	Tinagl1	Tinf2	Tiparp	Tipin	Tipr1	Tirap	Tjap1
## 1	-2.5189277	3.893962	5.7239814	4.125769	5.507509	3.3292121	6.8636379
## 2	5.1928425	4.538193	7.6917625	5.128296	6.473121	4.8787698	5.5369529
## 3	5.2833622	6.925511	0.6984974	7.063990	7.338039	-1.9317392	0.3033916
## 4	1.3641996	4.267784	6.2096540	6.940429	6.875765	3.7085111	3.8479420


```

## 5 -1.1730114 4.141894 4.3476069 6.388684 6.668891 -1.7701038 3.0460471
## 6 -0.8623621 5.639849 8.0766850 4.186066 5.506592 3.9662234 6.3031898
##      Tjp1      Tjp2      Tjp3      Tk1      Tk2      Tkt      Tktl1
## 1 6.999426 6.548518 -0.04381731 1.37327753 4.452302 8.152598 -3.4563872
## 2 9.587585 7.730318 -2.99562320 3.43885266 4.496190 7.576376 -0.6471022
## 3 4.018078 2.410380 -0.61952623 0.69849743 1.577013 9.423407 -3.8841215
## 4 4.945886 5.130496 -1.26754270 4.90229714 4.057431 7.391896 -3.2991483
## 5 4.166254 5.789352 -0.58001868 5.14832496 4.765436 8.800506 -3.8841215
## 6 8.331505 7.757177 -1.27136780 2.34188779 4.069938 7.770255 -1.5794421
##      Tlcd1      Tlcd2      Tle1      Tle2      Tle3      Tle4      Tle6
## 1 4.387639 -0.7054007 4.790843 6.1707325 6.877853 5.865802 3.3059590
## 2 1.296951 1.0884296 6.833748 0.9389133 6.237814 5.333331 -2.5932726
## 3 6.383000 -0.6195262 6.800263 -1.9317392 1.834579 5.147549 -3.8841215
## 4 4.703257 1.2813717 4.216014 0.2017795 4.477413 5.749132 0.5173165
## 5 5.276935 -3.8841215 4.687633 -1.4408855 4.550929 6.290987 -3.8841215
## 6 7.931686 1.1917639 6.399776 4.9846810 6.408073 6.977590 -1.9806404
##      Tlk1      Tlk2      Tll1      Tll2      Tln1      Tln2
## 1 5.7976650 5.4572788 -2.0986941 -1.4444586 7.433062 7.061243
## 2 6.5968923 6.5579505 1.3095580 -3.4243451 8.906423 4.843360
## 3 1.1414140 -1.1313170 -3.8841215 -3.8841215 1.983840 1.375592
## 4 4.8418395 4.5787984 -1.8598251 -1.5744483 5.312616 3.709956
## 5 0.4279671 2.6736968 -2.8071174 -3.8841215 4.839257 4.560151
## 6 6.1916622 5.8985652 -3.4904843 -3.8841215 7.039818 5.395697
##      Tlr1      Tlr2      Tlr3      Tlr4      Tlr5      Tlr6
## 1 -2.3277745 1.2329916 0.7550699 -1.4604684 0.68866119 -1.5228195
## 2 -2.8174159 2.1602184 5.9454069 3.6190998 -1.15994975 1.9750027
## 3 -1.1313170 4.0522874 6.2005665 4.3831520 0.05610664 4.7491572
## 4 -0.1879422 1.6091427 5.2303237 2.4479620 0.36710478 0.5941621
## 5 4.5693135 -1.1730114 3.6226664 2.0182291 -2.80711744 -2.1973739
## 6 -0.9915919 -1.1934877 6.1024491 0.3279338 1.12824095 1.2921891
##      Tlr7      Tlr8      Tlr9      Tm2d1      Tm2d2      Tm2d3
## 1 1.931314 -2.3101779 0.4763370 3.1350874 6.459896 4.240194
## 2 -2.217782 -3.8841215 -2.9956232 4.0232743 6.186817 5.259400
## 3 4.314340 -0.2425151 -3.8841215 -0.6195262 9.567122 8.348962
## 4 2.364240 0.4248157 -3.4989245 3.3171089 7.803121 6.881548
## 5 1.306052 -1.4408855 -3.8841215 4.5647394 8.878139 8.057514
## 6 -2.106804 -3.6744822 -2.5459558 2.9793171 5.340302 4.289490
##      Tm4sf1      Tm4sf19      Tm4sf20      Tm4sf4      Tm4sf5      Tm6sf1
## 1 -1.092891915 -3.663981 -3.794983 -3.884122 -3.6639813 1.322916
## 2 8.649350859 -3.027715 -3.248991 -2.122297 -3.8841215 5.728498
## 3 8.872619317 -3.884122 -3.884122 -3.884122 -3.8841215 4.486849
## 4 5.273191753 -3.141616 -2.567271 -3.884122 -3.2185159 -0.324139
## 5 7.610779851 -3.884122 -3.884122 -3.884122 -3.8841215 1.391188
## 6 1.943300703 -3.660779 -3.451139 -3.044745 -3.8841215 -0.281556
##      Tm6sf2      Tm7sf2      Tm7sf3      Tm9sf1      Tm9sf2      Tm9sf3      Tm9sf4
## 1 -0.2996087 5.226631 7.950211 5.896681 7.546358 8.061185 6.909751
## 2 -2.1919090 4.034603 6.221593 6.711963 7.861459 8.488688 6.059604
## 3 -3.8841215 2.053052 2.780569 5.484669 6.997509 7.768014 8.409597
## 4 -0.2355748 4.195481 5.746616 5.647673 5.166961 6.152546 7.327146
## 5 -3.8841215 6.248837 6.671020 6.387390 6.314336 7.130094 6.784540
## 6 -0.3583821 7.413257 6.319343 6.469859 7.769444 7.497833 7.075932
##      Tmbim1      Tmbim4      Tmbim6      Tmc1      Tmc3      Tmc4      Tmc5
## 1 6.433339 5.732960 9.487691 -3.497841 -0.3014314 -0.18251671 -2.5573893
## 2 5.846457 5.764182 9.097821 -3.884122 -1.3405023 2.89559117 -1.1676167

```

```

## 3 9.420136 9.510957 11.835006 -3.884122 -1.1313170 -1.13131698 -3.8841215
## 4 6.681014 7.300828 10.947655 -3.884122 0.6371174 1.03888177 -0.9766937
## 5 7.126994 8.268764 10.680068 -3.884122 2.6217964 2.84946071 -3.8841215
## 6 6.475900 4.891502 8.786563 -3.884122 -0.8284189 2.99066868 -0.6555209
##      Tmc6      Tmc7      Tmc8      Tmcc1      Tmcc2      Tmcc3      Tmco1
## 1 2.8692007 4.60282672 -1.3761718 6.365235 7.059455 7.604670 5.812499
## 2 5.9616267 7.35711202 3.4331099 5.601516 2.081188 7.454456 6.974079
## 3 5.7473394 0.05610664 -3.8841215 1.834579 8.113081 7.203712 9.385753
## 4 2.6606297 3.79390347 -3.0823831 6.664731 3.885417 6.191865 7.578452
## 5 -1.7701038 0.25704632 -2.8071174 6.267253 2.263755 5.506540 8.592947
## 6 2.0934833 8.01353923 -1.6232663 5.834596 3.604319 6.256920 5.422242
##      Tmco3      Tmco4      Tmco6      Tmed1      Tmed10      Tmed2      Tmed3
## 1 7.392265 1.60113135 3.1189603 4.608823 6.975680 4.881211 5.554549
## 2 4.926550 3.45410652 2.8902849 5.313052 7.278495 5.632468 6.000184
## 3 6.035090 7.68323005 -0.6195262 8.103936 9.233813 5.638957 8.757459
## 4 6.967528 2.61484087 2.4180621 6.207157 7.775974 4.257773 7.047948
## 5 7.541469 3.68300256 3.6488344 6.466761 8.039907 5.415480 8.020830
## 6 6.241720 2.59974793 3.8713238 4.623967 7.230584 4.433116 4.703848
##      Tmed4      Tmed5      Tmed6      Tmed7      Tmed8      Tmed9      Tmeff1
## 1 6.734484 6.083278 -3.191200 7.853333 5.7132873 7.231332 7.3577491
## 2 6.874115 7.889787 -2.271631 7.652456 4.7973156 7.738461 5.5721950
## 3 9.235675 8.917968 -3.884122 7.281479 -0.6195262 6.682341 6.5479326
## 4 8.533034 6.990649 -3.327813 5.943759 2.8447083 6.624672 5.3827741
## 5 8.549044 7.571989 -3.884122 7.408028 0.8449942 8.060766 6.4667615
## 6 6.263380 7.102185 -3.884122 7.537995 5.5414005 6.507861 5.1352026
##      Tmeff2      Tmem100      Tmem101      Tmem104      Tmem106a      Tmem106b      Tmem106c
## 1 7.2772608 6.182878 5.357232 4.503403 0.8110590 7.779237 4.802874
## 2 -1.6065316 3.495137 3.907885 4.184076 1.2950426 7.059146 4.732395
## 3 8.4316938 9.098141 7.617632 1.141414 1.3755916 5.533923 7.921644
## 4 6.6105773 7.879126 6.163291 4.481703 3.4819437 5.756016 6.731253
## 5 7.7987788 8.479666 7.313041 1.754666 3.3942483 6.432023 7.140121
## 6 -0.2955165 5.818925 4.742400 5.223320 0.4297530 7.562645 4.474023
##      Tmem107      Tmem108      Tmem109      Tmem11      Tmem110      Tmem115
## 1 0.64358865 5.6800866 5.073185 4.422434 4.45376516 5.490341
## 2 1.40433099 -1.3172118 7.033453 5.746571 4.84944591 5.544522
## 3 6.01788197 1.0083330 9.478696 8.208130 4.75954771 7.553395
## 4 6.10861201 2.8638587 7.299220 5.453525 3.19051931 5.682492
## 5 6.81855816 -0.7519471 7.354707 6.538499 -0.58001868 5.056825
## 6 1.55559577 2.9456515 5.383304 4.428467 5.01388947 6.043017
##      Tmem116      Tmem117      Tmem119      Tmem120a      Tmem120b      Tmem121
## 1 -1.05618822 3.35112124 3.70725848 3.742204 3.8138658 5.0727991
## 2 -1.75453776 -0.54616948 -1.07256425 3.344232 3.7896133 -1.3947094
## 3 -3.88412153 -3.88412153 7.65010597 5.497141 -0.6195262 -3.8841215
## 4 1.34687262 -1.40799337 2.88548395 4.078333 0.8754686 -0.9105299
## 5 3.66601961 -0.04458439 5.09539336 4.627494 3.8873120 -0.9471720
## 6 -0.02626417 -0.01231626 0.07547691 4.236286 3.0377277 4.1279372
##      Tmem123      Tmem125      Tmem126a      Tmem126b      Tmem127      Tmem128      Tmem129
## 1 5.444174 3.3546540 3.955610 2.3684836 7.057449 5.319035 5.173371
## 2 8.829218 -2.4122496 4.268207 2.9340136 6.412669 6.234943 4.316769
## 3 7.736801 0.6984974 5.440147 6.3728840 2.859970 8.013498 7.404101
## 4 4.186202 3.5095062 5.808721 4.9969028 7.315156 7.030353 6.795249
## 5 3.916326 6.2854374 6.573072 6.5719331 6.604610 8.100811 7.036566
## 6 4.813221 -3.8841215 3.574199 2.0544438 6.102585 4.817452 5.695936
##      Tmem130      Tmem131      Tmem132a      Tmem132b      Tmem132c      Tmem132d

```

```

## 1 2.9877044 6.186857 6.875688 8.4848659 2.9014035 5.30432555
## 2 1.4545130 6.804068 5.955609 -0.9042672 -1.1925455 -2.22357870
## 3 1.0083330 2.512206 5.082824 2.5605442 -1.1313170 -3.88412153
## 4 2.5822796 5.255287 3.765019 7.3514367 2.8030239 -3.04250385
## 5 1.1681147 5.169568 4.415229 6.5821537 5.6056140 -3.88412153
## 6 0.1598671 6.842963 6.123919 6.5777857 -2.3561438 -3.08599915
##      Tmem132e Tmem135 Tmem136 Tmem138 Tmem140 Tmem141 Tmem143
## 1 4.6111095 5.912764 3.7759497 2.672541 -2.4831142 5.669217 3.15775008
## 2 -1.4758441 5.287860 3.3970431 2.464995 1.2941636 2.627133 3.05713819
## 3 -0.6195262 7.779547 3.3470689 1.479815 2.1822477 5.803652 0.05610664
## 4 -2.9056396 4.423386 4.1855913 5.475761 -0.8873482 4.384000 2.80296968
## 5 -3.8841215 4.013514 -0.9471720 6.098718 -1.1730114 6.382200 4.41522904
## 6 1.0705821 6.616691 5.9584593 3.151033 -2.6212192 1.606894 3.10660113
##      Tmem144 Tmem145 Tmem147 Tmem14a Tmem14c Tmem150a Tmem150b
## 1 4.8113100 4.7288226 6.139523 4.1894435 5.456760 3.870412 -1.99121059
## 2 2.6728095 -1.7474181 5.962461 2.0752890 7.117790 2.371657 -3.11651139
## 3 7.5048117 -3.8841215 7.665382 6.9438505 8.170664 -1.131317 -3.88412153
## 4 6.0153529 -0.2473084 6.301102 5.6233257 6.305334 4.006230 -2.98213616
## 5 5.6836281 0.9041264 7.957684 6.8233531 7.512666 4.824026 -3.88412153
## 6 5.2034391 2.3644590 5.254257 3.0908921 4.642219 4.574253 -1.40696354
##      Tmem150c Tmem151a Tmem151b Tmem154 Tmem158 Tmem159
## 1 2.2131710 6.1471021 4.6640117 -3.4343148 4.092682 4.693801
## 2 -0.4824081 -0.1420754 -0.5899577 6.4260704 3.345133 5.820882
## 3 -1.9317392 2.6073156 -0.6195262 -0.2425151 -1.931739 7.199902
## 4 2.6902508 3.7111766 3.1149434 -1.4055388 1.557439 5.615713
## 5 3.0061180 5.8203832 4.2710537 -1.4408855 2.707288 6.968937
## 6 0.9060073 -1.3741706 3.4747354 -0.9855483 1.953677 -1.216923
##      Tmem160 Tmem161a Tmem161b Tmem163 Tmem164 Tmem165 Tmem167
## 1 4.213097 5.916132 4.28255452 8.2289032 4.9776864 5.2346844 6.848763
## 2 5.009359 5.617681 4.90904691 0.0368848 5.0741398 5.9770646 5.580891
## 3 -1.131317 7.620485 0.05610664 -3.8841215 1.3755916 0.8617169 8.098831
## 4 2.549605 5.942984 5.73174654 2.4555589 4.9895269 3.9232260 7.331804
## 5 4.440416 4.876644 4.77734600 1.5477262 4.9695456 5.3611204 7.783113
## 6 3.034416 5.912588 6.63336646 -0.5721560 7.2507118 5.9155793 5.928067
##      Tmem167b Tmem168 Tmem169 Tmem17 Tmem170 Tmem170b Tmem171
## 1 6.104557 4.652288 3.0090404 3.0921253 3.0559345 5.606707 -3.1332752
## 2 6.261316 5.949962 -1.1972874 1.5396306 2.9132424 4.567943 -1.1647695
## 3 5.346757 1.141414 -1.9317392 -0.6195262 -1.9317392 5.304805 -1.9317392
## 4 7.175937 5.242093 2.7533120 4.0869251 -0.5985210 7.319494 -3.2091840
## 5 6.896161 5.095393 -2.1973739 4.8316618 -3.8841215 6.193616 -3.8841215
## 6 6.086916 4.995789 -0.5942476 2.4699160 2.2014959 7.357563 -1.1663014
##      Tmem173 Tmem175 Tmem176a Tmem176b Tmem177 Tmem178 Tmem179
## 1 1.7286716 4.758278 6.199842 7.985773 2.680245 4.51121012 6.7320269
## 2 5.6085704 3.498212 5.008278 7.470780 1.638821 1.06034342 0.5551264
## 3 4.8104064 3.872500 8.745747 10.462421 7.285080 0.05610664 6.3141804
## 4 2.9340375 6.302865 5.042754 7.789070 6.182508 4.25325153 0.3700902
## 5 3.2761057 5.219893 6.459388 8.214315 5.310108 5.83565199 -2.1973739
## 6 3.1434191 5.390886 5.154544 6.981196 2.561255 0.67863810 -0.8084172
##      Tmem18 Tmem180 Tmem181a Tmem182 Tmem183a Tmem184a Tmem184b
## 1 5.5682243 5.001594 4.796693 -1.4444209 6.061512 -3.226487 6.054207
## 2 5.1430543 2.373407 4.195707 0.6360673 6.737194 -2.817416 7.603648
## 3 -0.6195262 7.233834 4.618259 -3.8841215 4.242081 -1.131317 8.423549
## 4 5.4594244 4.554047 1.930904 -3.2091840 4.859927 -2.249195 4.229572
## 5 5.9697166 5.433154 2.656603 -3.8841215 3.298318 -1.770104 3.531845

```

```

## 6 5.4506972 4.731677 3.641952 -3.8841215 6.258818 -3.288906 6.202190
## Tmem184c Tmem185b Tmem186 Tmem189 Tmem19 Tmem190 Tmem191c
## 1 6.272765 3.042056 3.1368057 6.359510 5.939845 -0.9881457 4.4719536
## 2 3.478334 4.839908 2.7930795 5.377971 4.496974 -2.2769649 0.8964433
## 3 1.577013 6.477296 0.6984974 1.577013 6.379636 -3.8841215 -1.1313170
## 4 5.579084 3.299793 4.9985573 3.028077 6.093751 -3.8841215 -0.8503356
## 5 6.662483 3.559696 4.1842580 3.804376 6.767723 -3.8841215 2.2409993
## 6 6.220758 3.514799 3.4785067 5.386682 5.791545 -2.7367791 3.3028242
## Tmem192 Tmem194 Tmem194b Tmem196 Tmem198 Tmem199
## 1 3.5102131 3.1605947 3.923009 2.1685912 3.93203901 4.480761
## 2 3.4915724 3.1951228 3.107427 -3.4243451 -0.79691414 4.541472
## 3 -3.8841215 0.3033916 -1.131317 -3.8841215 -3.88412153 1.008333
## 4 2.0175507 3.0223026 5.114786 -0.5095514 0.02159695 5.716888
## 5 2.5679590 4.9345186 4.990161 0.9609302 -3.88412153 6.601264
## 6 2.0914234 3.5703129 3.284014 -0.9865471 4.08326450 4.090247
## Tmem2 Tmem200a Tmem200b Tmem200c Tmem201 Tmem202
## 1 6.446192 2.038709 2.304413896 1.1056711 6.1237417 -1.8590215
## 2 6.800133 -1.541700 0.847000424 -3.1080374 4.4297112 -2.4601722
## 3 4.849841 -3.884122 -1.931739237 -3.8841215 0.3033916 -1.1313170
## 4 6.333169 -3.209184 -1.671777240 -0.8213694 4.1002699 -1.1825122
## 5 5.880512 -3.884122 2.937010990 -3.8841215 4.8580716 -3.8841215
## 6 4.211464 -0.270329 -0.005514107 3.7399924 6.5542168 -2.6280150
## Tmem203 Tmem204 Tmem205 Tmem206 Tmem208 Tmem209 Tmem210
## 1 3.74294926 0.3905187 4.746211 4.853604 5.197678 5.329356 -3.156652
## 2 4.30209650 8.1314710 4.477678 5.400470 5.514441 4.842595 -3.651962
## 3 0.05610664 3.8138844 6.939287 3.731831 8.234441 7.611909 -3.884122
## 4 0.53052309 5.4254107 6.249334 6.503656 6.978752 6.937722 -3.498924
## 5 3.38389907 6.7129651 7.673730 5.980060 8.223776 6.722237 -3.884122
## 6 3.44482969 0.5992921 3.958887 4.772735 4.596950 5.681066 -2.545956
## Tmem212 Tmem214 Tmem215 Tmem216 Tmem217 Tmem218 Tmem219
## 1 -3.8841215 6.004480 -1.973874 2.1088676 -2.7426365 2.958696 4.164673
## 2 -1.5407288 6.898019 -3.884122 2.6417236 -3.8841215 4.194353 4.607161
## 3 -0.6195262 4.227184 -3.884122 2.6965413 -3.8841215 7.996029 5.872284
## 4 3.4313256 4.621223 1.880662 5.3848881 0.7724394 5.576174 5.272380
## 5 5.4027219 6.257366 2.240999 6.3170585 2.0447493 5.642980 6.808920
## 6 -1.8824626 6.098217 -2.980940 2.3573082 -3.2889060 5.104472 3.434007
## Tmem220 Tmem221 Tmem222 Tmem229a Tmem229b Tmem231 Tmem232
## 1 -1.3168002 -3.884122 6.145873 5.5713366 6.0395754 3.217195 -3.411148
## 2 0.5076280 -3.884122 4.806078 -0.6206468 4.8604203 1.456968 -3.884122
## 3 -1.9317392 -3.884122 9.624027 5.6162681 3.3470689 3.773441 -3.884122
## 4 1.6521735 -2.873198 7.343117 5.3358041 3.9883512 4.739318 -2.237161
## 5 3.2190301 -3.884122 8.446795 5.4052825 0.8449942 5.455564 -3.884122
## 6 0.6412856 -3.674482 5.443108 8.1463785 4.0339218 2.209249 -2.361253
## Tmem25 Tmem26 Tmem28 Tmem29 Tmem30a Tmem30b
## 1 3.655104 -0.1915530 1.0136159 3.945492 8.003534 -3.79498311
## 2 -1.184041 0.5264117 -3.4243451 4.328044 8.096515 -3.88412153
## 3 6.267620 -1.9317392 -3.8841215 1.577013 8.791401 0.05610664
## 4 5.015187 -2.3729523 -1.9457260 6.560727 6.188469 -3.03302059
## 5 1.654903 -3.8841215 -3.8841215 7.483882 6.704673 -3.88412153
## 6 3.746262 -3.1431739 -1.1693643 4.279784 7.451897 -3.45113945
## Tmem30c Tmem33 Tmem35 Tmem37 Tmem38a Tmem38b Tmem39a
## 1 -2.2174725 7.353203 5.4186241 -0.7895866 5.497576 4.1153803 4.2954468
## 2 -2.5789021 6.544281 0.1593910 4.7686449 2.108170 3.2687227 5.2050265
## 3 -3.8841215 9.389521 7.3924641 5.9916781 8.419460 0.8617169 0.3033916

```

```

## 4 -1.2088822 7.457977 5.0989174 4.8004800 6.075689 4.2952727 5.1109145
## 5 -3.8841215 7.652332 6.8815228 6.0356585 6.073180 5.3046319 1.2155742
## 6 -1.1645226 6.568586 2.5630298 1.0145338 4.725309 4.1434858 5.3723822
##      Tmem39b      Tmem40      Tmem41a      Tmem41b      Tmem42      Tmem43      Tmem44
## 1 3.36477668 2.98010659 1.964258 5.343292 3.482090 5.908358 4.3526611
## 2 3.62793534 -2.57685923 3.125700 4.608929 3.128444 6.317961 8.1629500
## 3 0.05610664 6.30711440 6.376264 6.600898 -1.931739 7.852951 -0.2425151
## 4 2.89832485 -0.28839634 2.610199 4.883910 1.408253 7.658875 4.2836955
## 5 5.21698066 -0.94717201 2.263755 3.006118 3.219030 7.766777 5.8860226
## 6 3.23882553 -0.03023639 2.228999 5.693699 2.155925 6.438253 7.8337553
##      Tmem45a      Tmem45b      Tmem47      Tmem5      Tmem50a      Tmem50b      Tmem51
## 1 0.8318630 -3.884122 3.8400873 5.329930 6.703108 6.743394 1.226825
## 2 3.0336662 -3.424345 5.0555959 5.206024 7.923181 5.376474 6.156898
## 3 2.4621911 -3.884122 9.1768073 -1.131317 10.116863 9.289548 7.034345
## 4 4.1055575 -2.071483 9.3571359 3.515100 8.715951 7.097075 2.815672
## 5 6.7212097 -3.884122 8.9319641 4.455320 10.065762 6.442034 3.648834
## 6 -2.1757859 -3.268087 7.5168199 4.650187 5.397421 6.456107 5.646788
##      Tmem52      Tmem53      Tmem54      Tmem55a      Tmem55b      Tmem56      Tmem57
## 1 -1.7905598 -1.2134276 -3.4789689 5.022535 5.771435 4.4945119 6.313015
## 2 -0.8251044 0.2755720 -3.8841215 4.999379 5.096049 0.1554922 6.639722
## 3 2.1190956 4.6632242 0.5144282 7.572673 3.965193 -0.2425151 2.182248
## 4 1.2558436 2.7609980 -1.7662960 7.289558 3.375926 2.6005478 5.348484
## 5 -3.8841215 4.2254133 -0.2876030 8.225226 5.569539 -2.1973739 3.219030
## 6 -1.2980289 1.1698516 -3.2808450 5.853740 6.445539 6.7487447 5.499527
##      Tmem59      Tmem59l      Tmem60      Tmem62      Tmem63a      Tmem63b      Tmem63c
## 1 8.259380 3.0553168 3.561418 5.621785 5.4712431 8.333140 2.5501026
## 2 9.051839 -0.2933244 3.059639 3.077776 6.0508535 5.923601 -1.4745352
## 3 11.923867 9.3697340 7.919329 -1.931739 4.8691608 1.375592 -3.8841215
## 4 10.013385 6.4856771 6.696310 3.821561 5.6299180 4.947874 -0.4917660
## 5 10.900960 7.0241249 7.018282 1.906986 6.2388219 1.431944 -2.1973739
## 6 7.617202 -2.0198352 3.386467 5.011206 3.8420483 7.789580 -1.6931413
##      Tmem64      Tmem65      Tmem66      Tmem67      Tmem68      Tmem69      Tmem70
## 1 5.589682 5.941522 8.166157 2.69824820 5.064476 2.8060726 3.913662
## 2 6.372068 6.184417 9.249589 4.34786543 5.293200 1.8141299 4.222588
## 3 5.924007 5.091076 6.396379 0.05610664 7.683230 6.6519873 2.053052
## 4 3.617731 4.141669 6.114211 4.85487933 5.834253 4.5295111 3.266441
## 5 3.424858 4.254107 6.904330 -0.28760302 4.777346 0.3450364 4.135739
## 6 5.200029 6.022385 8.003794 3.97722004 5.352931 2.4577391 4.056247
##      Tmem71      Tmem72      Tmem74      Tmem79      Tmem8      Tmem80
## 1 -1.1999417 -3.8841215 0.03223917 0.7395822 3.150307 4.72691266
## 2 3.8238160 -2.5768592 -3.21779292 2.5401158 2.082419 3.43060862
## 3 -3.8841215 -1.1313170 -1.13131698 -0.2425151 -3.884122 0.05610664
## 4 0.4676895 -2.6533931 1.79159721 0.1478486 2.664725 4.97816975
## 5 -3.8841215 -3.8841215 -2.80711744 3.7809046 3.749003 6.00052626
## 6 -2.1313321 -3.8841215 -1.79197852 0.2086261 2.350433 4.75847622
##      Tmem81      Tmem82      Tmem86a      Tmem86b      Tmem87a      Tmem87b      Tmem88
## 1 1.898725 -3.082418 5.603653 3.124594963 5.791120 5.264366 -0.26999216
## 2 1.950983 -2.888894 6.615481 1.809779188 6.435240 5.974075 5.73279501
## 3 6.130244 -3.884122 6.762017 -3.884121530 2.242751 2.898090 6.19674832
## 4 2.067197 -3.884122 4.222999 0.005927364 5.445392 4.714156 -0.05550343
## 5 -2.807117 -3.884122 4.969546 -2.807117436 6.140813 2.992559 -0.16098275
## 6 2.488558 4.082972 3.691967 4.130440575 6.371765 5.545716 2.86743792
##      Tmem88b      Tmem89      Tmem8b      Tmem8c      Tmem9      Tmem91
## 1 6.8351725 -3.790167 5.929571 -0.1365261 6.499343 -0.9312480

```

```

## 2 1.2274798 -3.651962 3.242319 -3.8841215 5.824625 -0.8047768
## 3 6.5980058 -3.884122 -1.931739 -3.8841215 8.394675 -3.8841215
## 4 5.3066420 -1.329509 3.703580 -2.2222811 6.849071 1.0609197
## 5 7.4965456 1.620055 3.454832 -3.8841215 8.493570 2.2637547
## 6 0.9845328 -1.509930 5.682652 -3.1565438 6.064308 -1.3329382
##      Tmem95      Tmem97      Tmem98      Tmem9b      Tmf1      Tmie      Tmigd1
## 1 -3.5455256 4.267429 4.808237 7.557717 5.731189 1.677082 -3.8841215
## 2 -2.7161344 3.494305 7.588092 6.588239 7.190714 -1.340559 0.5521109
## 3 -3.8841215 2.182248 8.883942 5.091076 6.795222 -1.931739 -3.8841215
## 4 -3.1880405 5.979193 6.775219 5.614621 7.157501 -2.158799 -1.1776754
## 5 -3.8841215 6.240257 8.508236 6.793364 7.379011 -3.884122 -3.8841215
## 6 -2.6212192 4.691347 3.444359 6.219434 6.018011 2.600726 -3.3528132
##      Tmod1      Tmod2      Tmod3      Tmod4      Tmpo      Tmppe      Tmprss11a
## 1 4.5065823 7.457816 5.286132 -0.9074381 6.575471 3.156343 -1.953568
## 2 -0.8064519 2.623654 8.428810 1.2816238 7.426796 4.054198 -3.884122
## 3 0.3033916 6.577598 6.553915 -3.8841215 3.427465 6.047863 -3.884122
## 4 4.9296418 8.103003 6.806486 -0.6388800 6.840836 3.538456 -3.381881
## 5 4.9486317 6.680565 5.092218 -3.8841215 6.514980 -0.287603 -3.884122
## 6 -1.7992916 7.300952 5.610329 0.1078300 6.140853 3.045362 -3.660779
##      Tmprss11d      Tmprss11e      Tmprss11f      Tmprss13      Tmprss15      Tmprss2
## 1 -3.884122 -3.7669984 -3.7235669 -3.8841215 -3.2199482 -2.6931737
## 2 -3.884122 -3.12736903 -3.8841215 -3.8841215 -3.8841215 -3.0392407
## 3 -3.884122 0.05610664 1.2632490 0.3033916 -3.8841215 -1.1313170
## 4 -3.884122 -2.67189449 -1.2953768 -1.1397455 -3.6749365 -3.1643186
## 5 -3.884122 -2.80711744 0.2570463 -0.7519471 -3.8841215 -2.8071174
## 6 -1.719814 -3.88412153 -3.8841215 -3.8841215 -3.8841215 -2.6334403
##      Tmprss3      Tmprss4      Tmprss5      Tmprss6      Tmprss7      Tmprss9
## 1 0.6519042 -3.7949831 1.0372295 -2.8935757 0.9177518 -1.23896438
## 2 -3.8841215 -3.8841215 -3.8841215 -2.5768592 -1.5573405 -3.22778239
## 3 -3.8841215 3.0067551 -3.8841215 -0.6195262 -3.8841215 -1.93173924
## 4 -3.8841215 0.3465245 -0.3057867 -3.8841215 1.3171379 -2.12888710
## 5 -2.8071174 1.6889296 2.4137218 -3.8841215 -3.8841215 1.39118808
## 6 -3.8841215 -3.8841215 -0.3583821 -2.7367791 3.9245266 -2.98094048
##      Tmsb15b1      Tmsb15b2      Tmsb4x      Tmtc1      Tmtc2      Tmtc3
## 1 -1.6701428 -2.4941736 9.311019 4.3026575 5.4464859 4.2307136
## 2 -3.6565043 -3.6565043 12.929582 6.1543091 7.0457769 5.2729858
## 3 -3.8841215 -3.8841215 13.527315 -1.1313170 -0.6195262 -0.2425151
## 4 2.3324567 -0.6795999 12.281662 0.9723327 3.1104080 3.9338098
## 5 3.7490031 -1.4408855 13.616050 3.7729951 5.4431573 -0.7519471
## 6 -2.3628485 -3.6744822 7.371643 3.9707305 5.8914119 5.7480791
##      Tmtc4      Tmub1      Tmub2      Tmx1      Tmx2      Tmx3      Tmx4
## 1 0.7269693 3.304340 6.001994 6.431891 6.334741 6.588718 6.914091
## 2 5.0159332 2.977115 5.964108 6.800088 5.118521 7.284778 6.320064
## 3 1.3755916 1.375592 8.209078 9.327582 8.798976 9.185503 8.510707
## 4 4.3965008 5.794415 6.660588 7.415882 6.951189 6.674828 6.829694
## 5 5.2111386 7.274343 6.790429 6.323842 7.498945 5.694137 7.636618
## 6 1.4953678 2.882959 6.208465 6.627435 6.232965 7.267986 6.382067
##      Tnc      Tnf      Tnfaip1      Tnfaip2      Tnfaip3      Tnfaip6
## 1 -0.37539927 0.5755281 5.758717 -0.3558958 4.54551589 4.1261162
## 2 3.03904613 4.0822236 9.303693 2.8913448 8.78355023 -0.4842858
## 3 2.69654125 -0.6195262 8.173581 -3.8841215 6.79522189 7.1174790
## 4 6.68481220 1.1319565 7.619283 0.8640589 -0.01622487 6.2967921
## 5 5.31010807 -2.1973739 7.101167 1.1190407 -0.28760302 7.7821278
## 6 10.38908906 -0.6308617 6.288339 4.5796559 5.09168340 4.9225381

```

##	Tnfaip8	Tnfaip811	Tnfaip812	Tnfaip813	Tnfrsf10b	Tnfrsf11a	
## 1	0.4011976	1.8916514	0.44076143	-2.160153	-0.58267133	-0.7255205	
## 2	3.9428583	6.3140660	0.61244869	-3.476608	7.12306750	-0.8861066	
## 3	3.3192428	-0.6195262	8.58707572	-3.884122	-1.93173924	1.0083330	
## 4	4.6734991	3.9667914	3.29138259	-2.509224	0.17801525	1.0640644	
## 5	5.1421976	0.4279671	3.46468620	-3.884122	1.39118808	-0.9471720	
## 6	6.2873773	0.9856732	-2.52164107	1.086637	1.86303452	-2.3726443	
##	Tnfrsf11b	Tnfrsf12a	Tnfrsf13b	Tnfrsf13c	Tnfrsf14	Tnfrsf17	
## 1	1.5055132	2.7603540	-1.9236977	-0.1775171	-2.3314120	-2.1987884	
## 2	5.8716299	7.7679745	-3.8841215	-1.7378136	0.5514196	-3.8841215	
## 3	-1.9317392	-0.2425151	-1.9317392	-3.8841215	-1.9317392	-3.8841215	
## 4	0.2664601	2.7246388	-2.0228963	-2.6187469	-1.4918360	-0.5464437	
## 5	-3.8841215	4.3792114	-2.8071174	-3.8841215	-3.8841215	-2.8071174	
## 6	-1.0897441	3.2950157	-3.8841215	-1.1763446	0.9452144	-3.6607788	
##	Tnfrsf18	Tnfrsf19	Tnfrsf1a	Tnfrsf1b	Tnfrsf21	Tnfrsf25	
## 1	0.4924486	6.841110	5.145833	0.4251757	7.079815	-1.3478546	
## 2	1.4185532	8.842668	6.289177	5.5173857	5.239834	3.0811728	
## 3	1.0083330	6.743815	7.444911	3.6670753	5.297693	-1.9317392	
## 4	0.7314852	6.357272	5.804325	0.8876955	4.163986	-3.1978120	
## 5	-3.8841215	6.677390	6.092375	-1.4408855	3.708108	-3.8841215	
## 6	2.7755602	10.173330	5.052192	-2.0438476	5.957936	-0.9597246	
##	Tnfrsf4	Tnfrsf8	Tnfrsf9	Tnfsf10	Tnfsf11	Tnfsf12	
## 1	-0.21074837	-3.8841215	-3.2788960	-3.4529047	-3.555392	1.8741479	
## 2	-0.74000525	1.2483671	-2.1815875	6.1120250	-3.884122	1.9757886	
## 3	-3.88412153	-3.8841215	-3.8841215	6.7594306	-3.884122	4.5480683	
## 4	-3.65394437	-3.6036807	-3.8841215	-1.0826406	-2.157002	2.6491375	
## 5	-3.88412153	-3.8841215	-3.8841215	3.8043761	-3.884122	3.0720655	
## 6	0.64539706	-3.8841215	-3.6607788	-1.8353764	-3.171313	1.2808439	
##	Tnfsf13	Tnfsf13b	Tnfsf14	Tnfsf15	Tnfsf18	Tnfsf8	
## 1	-1.5806785	-2.30861964	-3.701028	-3.677861	-3.3556620	-3.8841215	
## 2	-1.2445667	-2.57685923	-3.884122	-1.482217	-0.6477254	-0.5777835	
## 3	-3.8841215	-1.93173924	-3.884122	-3.884122	-3.8841215	-1.9317392	
## 4	0.4917561	-3.67493655	-3.884122	-3.884122	-3.0429216	-3.6539444	
## 5	-1.1730114	-3.88412153	-3.884122	-3.884122	-2.1973739	-3.8841215	
## 6	-1.8282728	-0.06532194	-3.884122	-3.280845	-3.3528132	-2.2216202	
##	Tnfsf9	Tnik	Tnip1	Tnip2	Tnip3	Tnk1	Tnk2
## 1	2.0552310	7.074637	4.566981	3.5043204	-3.79498311	-1.4035321	7.637328
## 2	-0.8853241	2.699608	6.720096	4.2528973	-3.24899092	-2.1630896	7.311107
## 3	6.7067089	1.577013	1.141414	-0.6195262	-3.88412153	-0.2425151	3.374368
## 4	3.6416575	5.681139	4.489964	2.1057781	-3.88412153	-2.4510723	3.129391
## 5	4.5039166	2.864426	3.657453	0.8449942	-3.88412153	-2.8071174	3.577970
## 6	0.9044347	8.393302	4.067174	4.2829582	-3.88412153	-2.1287936	7.924698
##	Tnks	Tnks1bp1	Tnks2	Tnn	Tnnc1	Tnnc2	Tnni1
## 1	7.0752561	4.9966927	7.571911	-2.8281589	-1.8285964	-2.088687	0.6746347
## 2	6.2652063	7.4368297	8.110993	0.2613462	-0.2506037	-2.064764	-2.5614538
## 3	0.8617169	2.4621911	5.515649	-3.8841215	-3.8841215	-3.884122	-1.9317392
## 4	3.9075058	3.0343749	6.315235	-2.2738458	-1.1685025	-2.526075	2.3546618
## 5	3.0328598	0.8449942	6.370453	-3.8841215	-3.8841215	-3.884122	4.8047595
## 6	6.2199987	6.2988303	7.912561	-1.0561324	-2.7776757	-1.894268	-3.6744822
##	Tnni2	Tnni3	Tnnt1	Tnnt2	Tnnt3	Tnpo1	
## 1	-2.22963680	-3.1900027	-1.8076003	-1.478168	-3.583907	7.1124704	
## 2	-3.88412153	-1.1599497	0.3208846	-2.294388	-3.108037	7.1677210	
## 3	-1.93173924	-3.8841215	-3.8841215	-1.931739	-3.884122	0.8617169	
## 4	-2.24355434	-0.1391192	-0.4752484	-3.884122	1.600472	3.8870533	

```

## 5 -2.80711744 -3.8841215 -3.8841215 -3.884122 -3.884122 4.1357393
## 6 -3.49048434 0.5418799 -1.1710834 -3.884122 -0.333038 6.5949863
##      Tnp02      Tnp03      Tnr      Tnrc18      Tnrc6a      Tnrc6b      Tnrc6c
## 1 6.881956 5.988388 9.7837566 6.205563 6.590393 5.882594 5.604767
## 2 6.384971 6.222079 -2.4823940 5.804096 5.881645 5.816125 4.730752
## 3 5.427170 2.242751 4.4359321 1.983840 5.757743 4.000664 2.300819
## 4 5.417362 6.686976 0.5998237 4.470166 5.767401 5.666949 6.551591
## 5 5.861990 5.696230 0.1633391 2.690590 1.786443 4.884007 5.418018
## 6 6.511743 6.241578 2.3873886 7.319626 7.691515 7.078872 6.164461
##      Tns1      Tns3      Tns4      Tnxb      Tob1      Toe1      Tollip
## 1 4.8528701 9.179726 -3.3083217 -1.06075563 5.922374 3.277125 7.360550
## 2 7.9704264 4.666345 -3.6565043 2.14854796 7.006909 3.439694 7.878349
## 3 0.3033916 4.728149 1.0083330 -3.88412153 6.030808 1.263249 7.261513
## 4 4.2770529 4.847026 -1.1942022 0.05249424 6.257508 4.767233 7.006617
## 5 3.4841954 4.384412 -1.4408855 2.12150494 7.300715 5.307373 5.484913
## 6 6.8717617 7.833492 -3.1376752 0.71632745 7.933349 3.589332 6.692636
##      Tom1      Tom111      Tom112      Tomm20      Tomm22      Tomm34      Tomm40
## 1 1.07128319 3.431994 6.727032 7.083075 5.750718 5.162516 5.655845
## 2 0.53466345 1.024684 6.895111 6.718025 5.703152 4.609571 5.274916
## 3 1.83457854 6.822734 5.638957 4.052287 8.053105 3.074902 1.577013
## 4 -0.79158753 5.727742 7.018989 4.006087 6.918716 7.180661 2.615958
## 5 -0.04458439 4.420302 6.909751 4.420302 7.764285 6.981861 2.937011
## 6 1.47633724 6.418067 7.296778 6.388097 4.706215 5.088958 5.898090
##      Tomm401      Tomm5      Tomm6      Tomm7      Tomm70a      Tomt      Tons1
## 1 5.204421 3.978626 4.473276 5.238506 6.184500 2.0205135 3.2790067
## 2 5.771195 4.009524 4.844414 6.528411 7.014264 1.0222161 2.2612023
## 3 6.227015 5.497141 8.354970 8.674095 7.651501 -3.8841215 -0.6195262
## 4 6.061191 5.198967 7.593067 7.631934 5.251963 1.7985049 3.7527357
## 5 6.400283 5.889685 8.472358 8.429603 5.063325 -2.1973739 -2.8071174
## 6 4.752380 3.398728 3.361953 4.236862 5.843456 1.7487019 3.8048973
##      Top1      Top1mt      Top2a      Top2b      Top3a      Top3b      Topbp1
## 1 6.417152 2.9743969 4.572464 7.236135 2.838288 4.9804116 5.4186831
## 2 6.871638 2.4623654 6.041960 7.933521 4.029561 5.3968442 5.9340521
## 3 5.339849 -0.2425151 4.717529 2.242751 -1.131317 5.7473394 0.6984974
## 4 7.259782 4.1411237 8.184768 6.647705 4.295687 4.6084056 4.6409436
## 5 5.980060 3.0328598 6.268660 7.432085 -1.440886 -0.7519471 4.2254133
## 6 7.267052 3.5730524 5.865860 7.826143 3.648161 5.6327267 6.3930070
##      Topors      Tor1a      Tor1aip1      Tor1aip2      Tor1b      Tor2a      Tor3a
## 1 5.546524 5.067402 5.261590 6.829826 6.273263 4.869733 3.763487
## 2 7.708370 5.581640 6.440781 7.203899 5.903604 5.451237 4.023655
## 3 6.743815 5.793576 7.317088 8.229777 7.351839 5.955982 7.237555
## 4 4.658662 5.127728 5.221210 7.270256 5.460554 3.847300 3.899086
## 5 4.923843 6.350661 5.347870 7.397777 5.629902 5.329113 4.059758
## 6 6.835051 4.715024 6.235987 6.505423 5.847223 5.170855 5.064959
##      Tox      Tox2      Tox3      Tox4      Tpbg      Tpcn1      Tpcn2
## 1 4.236783 2.000255 5.28287428 5.890758 1.3197868 4.904538 2.8699297
## 2 1.709461 -1.909843 3.85769937 6.648842 3.5312825 7.366688 3.9804158
## 3 -1.131317 -3.884122 0.05610664 2.935229 5.6941658 6.489832 5.4206376
## 4 1.454202 -1.962572 5.31355126 6.276657 4.2551256 4.718616 0.4984018
## 5 4.368753 -3.884122 3.39424835 6.323842 5.1452645 4.720905 -2.8071174
## 6 4.513627 3.786431 4.33798924 5.486963 6.2739492 7.714117 4.4220800
##      Tpd52      Tpd5211      Tpd5212      Tph1      Tph2      Tpi1      Tpk1
## 1 5.410015 2.4787961 6.477596 -1.857497 -0.4643611 7.029533 2.624076
## 2 6.815630 6.6132192 6.746410 -3.884122 -3.8841215 7.853696 4.984853

```



```

## 3  5.793576  6.7723154  3.041231 -1.131317 -3.8841215  7.848090 -1.931739
## 4  5.150507  2.3378903  7.630940  1.598619 -2.6632466  7.610732  3.034906
## 5  5.607839  2.1462087  7.791456  5.418018 -3.8841215  8.007831 -1.770104
## 6  3.465029  2.7692316  6.124340 -3.512249  1.7670741  6.750297  2.214273
##      Tpm1      Tpm2      Tpm3      Tpm4      Tpm5      Tpm6      Tpm7
## 1  7.487632 -0.18084531  6.654152  5.373182  3.7655317 -3.408138  7.315625
## 2  8.367886  2.12121830  6.723782 10.250169  2.2405773 -3.884122  7.567298
## 3  8.210025  7.88296161  7.954801  6.676869  1.0083330 -3.884122  9.414804
## 4  5.123742  3.90000582  7.038087  6.093978  5.8818273 -2.157035  7.946588
## 5  6.130017  4.47007178  5.969717  7.406112  6.0651056 -3.884122  7.463140
## 6  5.173913  1.53897834  6.932496  5.940071  4.7700507 -1.381622  7.553892
##      Tpp2      Tpp3      Tpp4      Tpp5      Tpp6      Tpp7      Tpp8
## 1  5.265399  8.5933283  4.968347  6.179552  3.44270885 -3.8841215  7.136385
## 2  7.139168  1.2208441  4.135553  7.492992  6.00500392 -3.8841215  8.055752
## 3  1.911138  2.8599701  6.310652  2.356639  0.05610664 -0.2425151  6.899908
## 4  5.979414  6.9548216  5.677555  6.601337  5.58075339 -1.5177141  5.305496
## 5  4.508687  7.6382512  7.295203  3.414727  4.52761438  1.6889296  6.380899
## 6  6.216233  0.4237684  3.764262  7.428169  4.32099133 -3.8841215  6.266682
##      Tprkb      Tprn      Tpsab1      Tpsb2      Tpsg1      Tpst1      Tpst2
## 1  5.881105  5.506862 -3.8841215 -3.884122 -3.291855  5.882422  4.656019
## 2  5.651106  3.537882 -3.8841215 -3.884122 -3.884122  6.425970  7.041232
## 3  7.457730  1.141414 -1.9317392 -1.131317 -3.884122  4.925616  6.335173
## 4  6.354772  4.637783  0.8325206  5.643139 -3.251744  3.222807  3.346406
## 5  6.450737  6.430767 -3.8841215 -1.440886 -3.884122  5.111164  4.499130
## 6  5.984687  3.149181 -3.8841215 -3.674482 -3.884122  4.989585  5.225457
##      Tpt1      Tpte      Tpx2      Tra2a      Tra2b      Tra2c      Tra2d
## 1  6.059743 -2.281743  3.9125418  6.691478  5.875645  5.448633  3.2373272
## 2  8.181279 -3.344469  4.5367608  6.575775  6.360974  6.318418  3.5919365
## 3  3.232392 -3.884122  5.1155495  6.559872  6.282107  1.668074  4.8104064
## 4  3.183903 -2.442433  6.8026181  5.581964  6.730642  3.499884  1.3859714
## 5  3.674536 -3.884122  4.3999029  5.731349  6.288215  1.215574 -2.1973739
## 6  5.599084 -2.128794  4.5160098  7.749611  6.024525  4.906635  1.0894257
##      Traf1      Traf2      Traf3      Traf3ip1      Traf3ip2      Traf3ip3
## 1  -1.7784894  3.626756  5.8830091  2.901648  2.26654368 -1.306383
## 2  0.5386095  4.809382  4.4885116  3.004825 -0.08864631 -1.758893
## 3  5.6389571  1.141414  0.5144282 -1.931739  0.05610664 -1.931739
## 4  2.8936502  5.626423  3.4450901  5.336063  1.76653541 -1.779382
## 5  3.4646862  6.105032 -1.7701038  3.309298  0.34503644 -3.884122
## 6  1.3338027  4.306049  6.8535508  4.506242  3.42231213 -2.097773
##      Traf4      Traf5      Traf6      Traf7      Trafd1      Traip      Trak1
## 1  8.2826076  0.9254924  5.793041  6.329439  5.683251  1.848989  6.206254
## 2  4.9915893  3.5719958  5.999026  7.511510  5.256883  2.082771  6.834103
## 3  -0.6195262 -3.8841215  2.512206  1.141414  2.410380 -1.131317  2.410380
## 4  3.2623918  0.2567120  4.107191  6.422321  5.520574  3.654821  6.165100
## 5  3.3629751 -1.7701038  4.499130  5.632090  4.865529 -0.287603  5.301886
## 6  6.5439707  3.2507812  4.819031  7.370968  5.518879  2.604650  7.854478
##      Trak2      Tram1      Tram1l1      Tram2      Trank1      Trap1      Trappc1
## 1  7.724050  5.923104  4.9081041  0.1201406  2.4738491  6.380298  4.931241
## 2  7.534877  7.430791 -0.5686796  3.2235428 -1.0206253  6.449378  5.685151
## 3  1.263249  8.371153  7.0513597 -3.8841215 -1.9317392  3.833689  6.943850
## 4  4.798632  5.862895  5.7227174 -0.7266658  0.9671659  7.248483  7.015489
## 5  1.963680  6.615709  5.2227991 -2.1973739 -2.8071174  6.620124  8.094875
## 6  6.804283  5.877243  3.7542350  2.5929095  0.2020280  6.226818  4.230502
##      Trappc10      Trappc2      Trappc2l      Trappc3      Trappc4      Trappc5      Trappc6a      Trappc6b

```

```

## 1 7.091262 3.417242 4.339260 5.951981 5.489998 5.345135 2.514511 3.979864
## 2 5.563224 3.964494 4.968931 6.893794 5.740568 5.900678 4.509807 5.210530
## 3 4.448831 5.762917 6.741196 1.008333 6.966451 7.514047 5.616268 2.462191
## 4 2.445016 4.977244 6.334083 5.096783 7.400052 5.814587 3.726701 3.972380
## 5 1.349248 6.150004 7.454512 6.968071 8.447106 6.095550 4.405030 3.827472
## 6 6.724205 3.116830 3.112214 5.168898 4.533392 4.305145 1.753668 4.495869
##      Trappc8 Trappc9      Trdmt1      Treh      Trem1      Trem2      Trem11
## 1 5.912212 6.220548 2.1740903 -2.027142 -2.033710 3.5905114 -3.1350957
## 2 6.944227 5.466741 3.7267180 -1.497145 -1.646137 -2.0558375 -3.1123102
## 3 2.182248 2.053052 -0.6195262 -3.884122 -3.884122 8.8803762 -3.8841215
## 4 4.263670 5.999574 3.4056565 -3.884122 -2.831940 3.0653487 -3.8841215
## 5 4.627494 5.941767 0.5063887 -3.884122 -3.884122 3.0195509 -3.8841215
## 6 6.376488 5.493477 2.9430794 -3.660779 -3.660779 -1.0574953 -3.8841215
##      Trem12      Trem14      Trex1      Trex2      Trf      Trh      Trhde
## 1 -1.667628 -2.479795 1.7449719 -3.606445 8.291820 -2.781074 -0.8341627
## 2 -2.270963 -2.657748 4.1116044 -3.884122 8.380415 -1.778745 -2.4610404
## 3 -3.884122 -3.884122 0.5144282 -1.131317 12.340593 -3.884122 -3.8841215
## 4 -3.884122 -3.884122 4.0000952 -2.348373 10.805423 -3.884122 -3.8841215
## 5 -3.884122 -3.884122 2.8343382 -2.807117 11.667227 -3.884122 -3.8841215
## 6 -3.884122 -3.884122 2.1031387 -3.674482 1.033810 3.697300 -2.7776757
##      Trhr      Triap1      Trib1      Trib2      Trib3      Tril      Trim10
## 1 -2.9758229 4.484707 5.018569 6.982597 -0.9567667 7.519104 -2.1649169
## 2 -3.4837445 5.005536 7.996521 7.228649 2.3471424 3.760400 0.1788784
## 3 -1.9317392 6.520703 1.141414 7.004079 -3.8841215 4.583590 -3.8841215
## 4 -1.3876436 5.909226 2.165187 5.036308 -0.3659248 5.298656 -3.8841215
## 5 -2.8071174 7.128545 -1.770104 4.550929 -1.7701038 5.962780 -3.8841215
## 6 -2.2885695 3.407487 6.334757 8.684176 -1.1327209 9.883315 -3.1713129
##      Trim11      Trim12a      Trim12c      Trim13      Trim14      Trim15
## 1 4.622732 -3.88412153 -1.3020209 4.1668574 -2.307132 -2.246565
## 2 3.875906 -3.22778239 5.3679150 4.8013518 -2.358736 -1.529228
## 3 1.479815 6.15800016 -3.8841215 -0.2425151 -3.884122 -3.884122
## 4 2.820565 2.45214657 2.3923098 4.9768668 -3.884122 -1.691132
## 5 3.901892 -3.88412153 2.5309179 5.4256061 -3.884122 -3.884122
## 6 4.970714 -3.15654382 3.1862857 3.9924270 -3.280845 -1.780932
##      Trim16      Trim17      Trim2      Trim21      Trim23      Trim24
## 1 -1.1879604 -0.01073759 6.152295 1.14800613 4.6983275 5.9506863
## 2 7.7250990 -1.67601355 0.393201 3.03087987 4.6090874 6.5951073
## 3 -0.6195262 -3.88412153 6.523754 -1.93173924 1.3755916 -0.2425151
## 4 1.5609076 0.60945857 8.481092 1.11183596 4.9176596 4.6652594
## 5 2.2637547 -3.88412153 7.000610 0.96093015 1.0682384 3.0328598
## 6 0.8274002 0.34531684 6.983280 2.59671817 5.1836248 5.9309511
##      Trim25      Trim26      Trim27      Trim28      Trim29      Trim3      Trim30a
## 1 4.4366425 5.532353 4.6159342 8.245455 -2.5614920 5.9149878 -1.22013048
## 2 7.8213231 6.397950 6.0059112 8.111122 -3.8841215 6.3403345 4.21514007
## 3 0.6984974 7.184561 -0.2425151 2.696541 4.1344223 0.3033916 5.44014712
## 4 2.8055722 4.411330 3.6502639 6.572548 1.9194143 3.9056284 2.23950818
## 5 4.1171157 3.648834 5.4727571 5.450614 5.0922184 3.9864074 -0.04458439
## 6 3.7749339 5.376348 3.8772132 7.308292 -0.3955853 5.5436361 -2.54709800
##      Trim30b      Trim30d      Trim32      Trim33      Trim35      Trim36      Trim37
## 1 -3.4924122 -2.1077744 5.885073 5.6669073 7.384196 3.4390263 5.9415629
## 2 -3.8841215 -3.8841215 3.931349 6.0117883 7.189981 2.4506843 5.7237230
## 3 -1.9317392 6.7774372 5.978395 0.3033916 8.377069 0.6984974 0.6984974
## 4 -3.2878217 2.3075430 7.100226 5.2531458 6.423269 3.9802649 5.4247051
## 5 -2.8071174 2.9510998 6.235948 4.4101384 7.191465 5.5989183 3.7327839

```

```

## 6 -3.8841215 -0.6539213 5.081008 6.3639321 6.596609 2.0026781 6.5055151
##      Trim39      Trim41      Trim43a      Trim43b      Trim43c      Trim44
## 1  4.2758266 5.8953657 -1.63513883 -3.040097 -3.317193 7.097217
## 2  4.4027389 5.7859285 -3.24899092 -3.884122 -3.884122 7.033477
## 3 -0.6195262 1.7537270 -3.88412153 -3.884122 -3.884122 3.107806
## 4  4.3339105 2.9568131 -3.18804048 -2.436594 -2.135608 5.635323
## 5  0.4279671 1.3492478 -3.88412153 -3.884122 -3.884122 4.178282
## 6  5.5622266 6.5300668 -0.29674903 -1.869197 -0.659221 7.750699
##      Trim45      Trim46      Trim47      Trim56      Trim58      Trim59
## 1  2.54253564 4.3458273 0.6686032 0.4390852 -3.8841215 4.9398613
## 2  2.67469013 -0.1226487 5.5441165 4.3525583 -2.8774220 3.0960562
## 3 -0.24251506 5.7263046 1.2632490 -1.9317392 -3.8841215 7.5063550
## 4  1.33221182 4.4685600 0.4248587 1.0322763 -3.8841215 5.2537012
## 5  2.89389987 -1.1730114 -3.8841215 0.5807664 -3.8841215 5.5740981
## 6  2.81186254 3.6457892 5.6423378 3.0505114 -3.8841215 4.0411192
##      Trim6      Trim62      Trim63      Trim65      Trim66      Trim67
## 1 -2.9986609 5.544307 -3.6013384 1.3847025 0.36679017 4.9252396
## 2  1.5377705 2.619054 -3.8841215 2.0332411 -0.59069673 -2.5614538
## 3 -3.8841215 -3.884122 -3.8841215 -1.1313170 -3.88412153 1.0083330
## 4 -3.8841215 2.144895 -3.2991483 1.4141719 -2.40407237 4.7559269
## 5 -2.8071174 2.286157 -3.8841215 -1.7701038 -3.88412153 5.3344968
## 6  0.8029289 5.896325 -2.9862494 2.5468198 1.22790469 0.1490405
##      Trim68      Trim69      Trim7      Trim71      Trim72      Trim8      Trim9
## 1  3.0077911 -3.5680897 5.5509920 -3.767000 -1.3730471 6.404883 5.816015
## 2  3.9859748 0.5294862 4.9732825 -3.656504 0.6104765 5.504634 1.806811
## 3 -1.9317392 -3.8841215 1.6680739 -3.884122 -0.6195262 4.474287 2.119096
## 4  2.0950010 -3.8841215 3.6017170 -3.884122 -2.7047662 5.958436 5.254128
## 5 -2.1973739 -3.8841215 4.5784186 -3.884122 -3.8841215 5.810758 5.202331
## 6  2.8859891 -2.6400046 4.5185512 -3.674482 -1.7340567 6.965973 10.560010
##      Trio      Triobb      Trip10      Trip11      Trip12      Trip13      Trip4
## 1  8.427700 4.220018 1.44626131 5.186570 7.432229 1.149732 5.699882
## 2  6.539635 6.826702 6.40203196 5.966222 8.585028 2.639140 6.040377
## 3  1.577013 1.008333 0.05610664 1.753727 6.241913 3.232392 1.479815
## 4  4.803147 3.803596 3.23358089 5.309409 6.419583 2.111675 6.293575
## 5  3.622666 2.170497 2.70728792 4.986745 6.019036 -1.440886 5.257226
## 6  7.807957 5.887828 4.16143439 6.608691 7.967134 1.759610 6.247906
##      Trip6      Trit1      Trmt1      Trmt11      Trmt112      Trmt12      Trmt2a
## 1  2.49101638 5.15500597 5.31332599 2.670756 3.767463 0.7694644 6.028739
## 2  5.11625433 4.02055024 5.74196398 4.151902 3.957448 0.8422377 5.265726
## 3  0.86171687 0.05610664 0.05610664 7.338039 3.947124 7.8577945 7.407408
## 4  4.07797689 5.26137182 4.77045178 4.844998 4.107623 4.1554106 5.837018
## 5  5.20820870 4.31529446 2.39322898 4.342271 4.489509 4.9166810 6.365202
## 6  4.90769237 4.80516978 5.71676752 3.729605 2.974998 2.8872176 5.567439
##      Trmt2b      Trmt5      Trmt6      Trmt61a      Trmu      Trnau1ap      Trnp1
## 1  4.605425 2.5312490 5.012202 3.336376 3.892568 4.459715 2.9683837
## 2  3.976134 2.3045880 4.654373 2.680255 2.662518 5.766544 -0.8485644
## 3 -1.931739 0.5144282 5.123616 1.479815 6.984281 1.479815 -0.6195262
## 4  5.000796 3.6196517 5.615417 1.810666 4.586817 3.456331 0.4514136
## 5  4.405030 2.1462087 6.614603 2.393229 5.747584 3.944768 -1.1730114
## 6  3.942428 3.1841670 4.907743 3.140925 4.830860 3.857607 -2.5546909
##      Trnt1      Tro      Troap      Trove2      Trp53      Trp53bp1      Trp53bp2
## 1  4.1689626 6.3444714 1.2797525 5.784027 4.726798 6.5728851 6.267057
## 2  3.9206660 0.4197245 1.1141897 7.054555 6.510815 5.8948953 5.208316
## 3  6.6463992 0.6984974 -0.2425151 8.549397 6.314180 0.6984974 6.934710

```

```

## 4 5.7330576 6.3870713 3.9674473 7.223723 8.058439 6.2123417 4.771437
## 5 6.6223272 2.9788711 1.6549031 5.992034 7.825792 4.0791314 5.350530
## 6 4.3252994 5.6297813 2.5681166 5.941624 5.320036 7.1895088 6.937274
## Trp53i11 Trp53i13 Trp53inp1 Trp53inp2 Trp53rk Trp63
## 1 4.418101 1.9074661 5.151797 8.569254 1.4199072 -2.121765132
## 2 7.109550 4.2096887 6.781308 6.680742 0.7911162 -2.578902107
## 3 8.301752 -1.9317392 7.636077 1.141414 -1.9317392 3.041231020
## 4 5.060797 -0.3150663 5.532189 5.381061 -0.6515796 0.765045558
## 5 6.003909 -2.8071174 5.548843 4.342271 -3.8841215 1.391188075
## 6 1.557954 4.0892166 6.209052 8.080988 1.7532352 0.008467964
## Trp73 Trpa1 Trpc1 Trpc3 Trpc4 Trpc4ap
## 1 -3.6626903 -3.7949831 4.1375842 1.7628842 -0.5195434 7.513258
## 2 -1.2392493 -3.4766082 1.6882736 3.6805832 2.0674229 7.496922
## 3 5.7732089 -3.8841215 4.9439535 -3.8841215 -1.9317392 7.360397
## 4 -1.3142096 -3.1860804 0.9066188 1.0301094 1.2950507 5.474366
## 5 -1.4408855 -3.8841215 -0.9471720 0.7833343 -2.8071174 5.347870
## 6 -0.1283673 -3.8841215 5.1466327 2.6074087 -2.7330183 7.122607
## Trpc5 Trpc6 Trpc7 Trpm1 Trpm2 Trpm3
## 1 -0.07893566 -2.4302075 -2.8327986 -2.8911681 1.8043952 2.3134392
## 2 -3.12736903 -3.1165114 -3.4243451 -3.8841215 -1.7831438 -0.6473130
## 3 -3.88412153 0.5144282 -3.8841215 -1.1313170 -1.9317392 -0.2425151
## 4 -1.88837032 0.5342090 -0.3758673 -2.6529055 -2.7185450 2.2060143
## 5 -3.88412153 -1.7701038 -3.8841215 -2.1973739 -3.8841215 2.7879955
## 6 -1.61103464 -2.2857506 0.7920942 -0.8845668 -0.2765361 5.4224090
## Trpm4 Trpm5 Trpm6 Trpm7 Trpm8 Trps1
## 1 1.9854492 -3.794983 -1.97448897 5.918618 -3.794983 4.5092016
## 2 5.2822288 -1.652886 5.33366546 6.795170 -3.884122 5.4181716
## 3 -0.6195262 -3.884122 -3.88412153 1.668074 -3.884122 6.1060197
## 4 1.0982836 -3.674937 0.08494962 5.987705 -3.674937 6.4200824
## 5 1.4319435 -3.884122 -3.88412153 5.445647 -3.884122 6.1832086
## 6 3.0723612 -2.151883 -0.02930388 7.835643 -3.884122 7.5802723
## Trpt1 Trpv1 Trpv2 Trpv3 Trpv4 Trpv6
## 1 2.8845323 -3.311904 0.6353165 -1.8761746 1.8496534 -0.3493282
## 2 3.0652934 -3.884122 0.9324790 -3.4837445 1.3108852 -2.8202690
## 3 -0.2425151 -3.884122 2.8208155 -1.9317392 -0.2425151 -3.8841215
## 4 3.9558647 -3.674937 2.8616163 -3.1014405 1.4525213 -0.1111253
## 5 2.5495573 -3.884122 3.4938520 -3.8841215 -1.1730114 -2.8071174
## 6 3.4811114 -3.085999 -2.2851113 -0.8446083 -2.1942889 -2.3373822
## Trrap Trub1 Trub2 Tsc1 Tsc2 Tsc22d1 Tsc22d2
## 1 7.011318 4.552238622 5.280786 5.944428 7.136341 8.311790 5.462615
## 2 6.762634 2.692598866 5.171747 4.578093 6.034018 11.478462 6.346461
## 3 2.512206 0.861716875 2.119096 3.074902 1.834579 10.520468 3.401161
## 4 6.238746 4.602732857 5.499520 4.507120 6.062828 8.360063 4.567019
## 5 5.293617 4.649261379 4.573873 5.251545 4.839257 9.368108 4.013514
## 6 8.016529 5.328345024 4.987820 6.424061 6.833445 8.646782 6.404136
## Tsc22d3 Tsc22d4 Tsen15 Tsen2 Tsen34 Tsen54 Tsfm
## 1 5.364814 7.853531 2.3402013 3.512427 5.860662 3.790392 3.117326
## 2 8.081058 4.335268 3.8324158 2.861615 6.059037 3.601876 3.251491
## 3 9.276945 8.274841 -1.9317392 1.479815 6.142205 -3.884122 6.523754
## 4 8.241847 7.438889 4.2511924 5.476540 4.210300 2.376985 5.215093
## 5 7.909345 8.571733 4.5276144 5.433154 5.755634 -1.770104 6.554736
## 6 7.365799 7.200757 3.3137831 3.467436 5.234145 3.941262 3.139997
## Tsg101 Tsga10 Tsga13 Tshb Tshr Tshz1
## 1 5.329322 2.3050822 -1.582809 -1.0778282 -1.70799935 5.984687

```

```

## 2 5.458868 2.4000779 -3.884122 -0.4145561 -3.47660817 6.191933
## 3 7.584410 -0.2425151 -1.931739 -3.8841215 -3.88412153 1.834579
## 4 6.582475 3.9580373 -2.862578 -2.5031028 1.40162770 6.502840
## 5 7.189981 0.8449942 -3.884122 -3.8841215 4.45036934 5.271331
## 6 4.688126 4.0618676 -3.009717 -3.1713129 0.08338346 5.355991
##      Tshz2      Tshz3      Tsks      Tsku      Tslp      Tsn      Tsnax
## 1 3.5721820 3.7927712 -3.471100 0.01679357 -2.7604118 6.349409 6.065982
## 2 6.7915533 3.7863088 -1.830789 1.85955837 -0.9358728 6.155316 6.700763
## 3 -0.6195262 0.8617169 -3.884122 2.82081551 4.0352840 6.629504 1.141414
## 4 3.4302507 2.7106288 -3.299148 3.09857624 2.0416895 9.267612 4.079615
## 5 -1.1730114 2.0447493 -3.884122 3.44490956 3.5318445 9.455793 4.839257
## 6 0.3550924 2.2309301 -1.849914 4.56460607 -2.2520684 6.010553 5.407005
##      Tsnaxip1  Tspan1  Tspan10  Tspan11  Tspan12  Tspan13  Tspan14
## 1 -2.4237293 -2.978151 -2.5193961 1.4018999 5.824489 6.519964 5.809554
## 2 -3.0392407 -3.884122 -3.8841215 -1.3978501 7.314842 9.190850 7.802057
## 3 -3.8841215 -3.884122 -3.8841215 -1.9317392 7.346679 7.829717 8.421915
## 4 0.3921305 -2.915977 -0.8920446 2.2592721 8.951491 5.231523 6.342649
## 5 0.5063887 -3.884122 -2.8071174 4.0855320 8.261716 6.929454 5.846998
## 6 -0.4581261 -2.786374 -2.9479702 0.4346993 6.424793 5.287341 6.887508
##      Tspan15  Tspan17  Tspan18  Tspan2  Tspan3  Tspan31  Tspan32
## 1 6.446518 3.8783599 0.9341029 8.9578824 9.550681 6.887035 -1.4464033
## 2 6.118210 3.9228777 6.6142985 7.1043105 7.489269 7.142614 -2.2709628
## 3 5.006360 -1.9317392 6.8052870 9.5726566 7.607602 9.849597 -3.8841215
## 4 6.348203 -0.2038882 4.3709028 8.3107269 7.250243 8.527235 -1.9279250
## 5 7.008210 -2.8071174 4.6274944 9.3391048 8.534789 9.690793 -3.8841215
## 6 4.773279 0.2843683 4.0663527 0.8167677 8.658677 6.425094 -2.5216411
##      Tspan33  Tspan4  Tspan5  Tspan6  Tspan7  Tspan8  Tspan9
## 1 2.36133660 3.646904 5.710217 6.9410114 9.001720 -2.6649803 6.916007
## 2 0.08361859 7.385938 7.873849 7.6118104 4.345998 -2.0967683 7.934274
## 3 -0.24251506 5.346757 8.289256 8.8797810 12.877277 -3.8841215 9.108339
## 4 2.62034277 4.146452 5.668635 7.8936801 12.686713 -1.3604273 5.106172
## 5 0.58076638 5.962780 6.886113 8.9192548 12.621075 -3.8841215 6.357289
## 6 3.51014926 1.648429 6.512149 5.7202606 10.980904 -3.1565438 7.680930
##      Tspo  Tspo2  Tspy11  Tspy12  Tspy14  Tspy15  Tsr1
## 1 -0.16591900 -2.182961 6.211542 5.975739 7.219930 2.3941911 4.592953
## 2 4.30859813 -3.217793 6.343986 4.573262 2.607901 0.4702471 3.443620
## 3 6.72007107 -3.884122 9.561194 -1.131317 5.996079 7.2633399 1.008333
## 4 5.05636904 -3.884122 7.602093 3.962302 6.702208 4.1078328 5.046681
## 5 5.64731318 -3.884122 8.931742 3.965738 7.336039 5.6255165 3.937710
## 6 0.64944228 -3.674482 6.066893 7.134404 4.492378 2.5129353 4.695888
##      Tsr2  Tssc1  Tssc4  Tssk1  Tssk2  Tssk3  Tssk4
## 1 5.562140 4.496989 6.063663 -2.826131 -2.366817 -2.5334479 -1.9944912
## 2 4.156390 4.441984 6.308485 -3.476608 -2.584973 -1.1199786 -0.3882739
## 3 1.479815 4.166010 1.141414 -3.884122 -3.884122 -3.8841215 -3.8841215
## 4 5.777541 5.599381 5.026120 -3.653944 -3.418218 -3.8841215 -1.8248334
## 5 5.934694 5.945290 4.781294 -3.884122 -3.884122 -3.8841215 -3.8841215
## 6 4.338387 3.366540 5.652841 -2.467943 -2.640005 -2.9479702 -0.9509275
##      Tssk6  Tst  Tsta3  Tstd2  Ttbk1  Ttbk2  Ttc1
## 1 -0.1756257 2.760429 4.6680916 4.1868877 5.882399 5.6213684 5.006670
## 2 0.5385688 1.224417 5.8249421 4.6393520 -2.217313 5.9794981 5.054321
## 3 -3.8841215 8.935830 0.8617169 -0.6195262 -1.931739 0.3033916 2.696541
## 4 -3.4447594 6.942582 6.4194425 5.2701520 1.962416 5.0247630 6.957245
## 5 -2.8071174 7.561122 6.2488367 0.2570463 -1.440886 5.3073726 7.537389
## 6 -0.5278463 6.905874 4.5362517 4.3998535 3.523239 6.0683575 4.528945

```

##	Ttc12	Ttc13	Ttc14	Ttc16	Ttc17	Ttc18	
## 1	0.2873755	5.5928746	6.1219523	-2.0551199	5.2262585	-3.41938328	
## 2	3.6908573	5.3048831	5.9875318	-1.1641936	6.0847633	-2.79600245	
## 3	-1.1313170	-0.6195262	0.8617169	-3.8841215	-0.6195262	-3.88412153	
## 4	4.4712612	3.2919337	4.9824957	-2.1358588	4.6949991	0.04257074	
## 5	4.0727023	4.2597782	3.8274719	-3.8841215	0.7189210	0.84499419	
## 6	4.4436984	5.6000302	8.4254407	0.4793089	5.6617903	-0.81484967	
##	Ttc19	Ttc21a	Ttc21b	Ttc22	Ttc23	Ttc25	
## 1	4.81206162	-2.9055742	3.5536373	-2.8483466	-0.2380619	-0.2230782	
## 2	3.98719092	-1.0015775	1.0863958	-3.6519623	5.0451465	-2.3597589	
## 3	0.05610664	-3.8841215	-0.2425151	0.5144282	4.3560197	-3.8841215	
## 4	3.92057709	-0.9399433	3.3237415	-2.2460956	3.2498719	1.6328699	
## 5	-0.28760302	-3.8841215	2.4538543	-3.8841215	5.4629578	-3.8841215	
## 6	5.53699688	0.5721144	3.5769246	-2.7658025	4.3576595	-0.5018655	
##	Ttc26	Ttc27	Ttc28	Ttc29	Ttc3	Ttc30a1	
## 1	1.7641789	3.7139711	4.972041	-3.8841215	8.213174	0.9312987	
## 2	2.0656730	3.8457563	5.752271	-3.4243451	7.558562	1.4148325	
## 3	-0.2425151	0.6984974	2.356639	-3.8841215	4.997609	3.5522389	
## 4	4.0490131	4.7676130	6.746665	-0.2641721	9.292628	3.2558641	
## 5	4.6142748	-0.7519471	7.148552	-3.8841215	7.741161	-0.9471720	
## 6	3.0578361	3.4703485	5.906935	-2.0795621	8.521327	1.5568562	
##	Ttc30a2	Ttc30b	Ttc32	Ttc33	Ttc34	Ttc36	
## 1	-0.46220802	2.725490	1.6395817	4.041881	-0.4121030	-2.931198	
## 2	-1.27958099	2.688711	3.6857207	4.624642	-2.3377699	-2.120670	
## 3	1.26324902	6.676869	4.1344223	8.104955	-3.8841215	-3.884122	
## 4	0.07617364	4.781447	3.7961946	6.905150	-1.0243570	-2.410402	
## 5	-2.19737395	5.959299	4.6535756	7.319164	-3.8841215	-3.884122	
## 6	-1.45024698	2.846389	1.9061000	3.367646	-1.0447341	-1.057495	
##	Ttc37	Ttc38	Ttc39a	Ttc39b	Ttc39c	Ttc4	Ttc5
## 1	4.3641989	3.316692	-2.6742988	3.8729590	5.24081939	5.859353	5.462148
## 2	4.8479626	4.027686	-0.9140281	6.8018542	0.29567316	5.175371	5.063284
## 3	0.3033916	-1.931739	-3.8841215	3.9830373	-1.13131698	5.563874	7.479893
## 4	4.0093089	3.487765	-1.0984671	4.1780988	1.94524104	6.548378	6.912330
## 5	1.7546656	3.857702	-3.8841215	2.2637547	0.50638872	6.413063	6.890689
## 6	5.8367496	3.446282	-2.1740556	5.1546073	3.89563224	5.943575	5.656791
##	Ttc7	Ttc7b	Ttc8	Ttc9	Ttc9b	Ttc9c	
## 1	3.1528091	5.5569150	4.0319660	4.1809048	3.9644034	4.528050	
## 2	2.3754086	7.4658981	3.3674765	-0.2851978	0.8443557	5.103112	
## 3	3.4786766	-0.6195262	6.1619221	-0.2425151	-0.2425151	1.668074	
## 4	-0.7335033	3.4388537	5.5897287	0.6676766	2.1252805	6.319973	
## 5	-0.2876030	2.9925589	4.4846740	0.1633391	3.9587821	3.812116	
## 6	1.7419903	5.1496248	4.8717820	2.5215077	1.5446632	4.618353	
##	Ttf1	Ttf2	Tti1	Tti2	Ttk	Ttl	
## 1	3.40327902	3.3087697	4.415602	4.3364254	1.1967010	5.0594358	
## 2	3.91050521	4.1531807	4.863673	3.1010743	3.1640316	4.6736069	
## 3	0.05610664	1.0083330	7.137535	0.3033916	1.0083330	0.6984974	
## 4	4.87169280	3.9208330	5.140442	3.7273050	4.3116163	3.9322423	
## 5	4.03351421	-1.4408855	4.040120	-1.4408855	2.1462087	5.1236577	
## 6	4.46468992	4.6970144	4.899594	4.1704527	2.5487864	5.0696637	
##	Ttl11	Ttl110	Ttl111	Ttl112	Ttl113	Ttl13	
## 1	4.6066337	-3.244710	2.43621755	5.4358974	-2.4157054	3.1016180	
## 2	2.5422175	-2.631727	-0.09261412	4.6599488	0.2823627	3.4423072	
## 3	0.3033916	-3.884122	-3.88412153	1.0083330	-3.8841215	-3.8841215	
## 4	5.8206410	-3.884122	-0.76941915	4.2999747	-1.6929015	1.7527179	

```

## 5 5.6962299 -3.884122 -3.88412153 3.5318445 -3.8841215 -3.8841215
## 6 2.8138141 -1.965835 2.02128120 4.9360807 -1.0889757 3.3284995
##      Ttl14      Ttl15      Ttl16      Ttl17      Ttl18      Ttl19
## 1 4.1157832 4.97792407 -3.105811 6.4367663 -3.6675068 -0.6587088
## 2 4.0892728 4.95371071 -3.884122 5.5370116 -3.6565043 -3.6519623
## 3 -1.1313170 0.05610664 -3.884122 -0.2425151 -3.8841215 -1.9317392
## 4 3.3092379 4.42785205 -3.299148 4.6344962 -2.8992246 1.6409991
## 5 1.6200547 3.37347502 -3.884122 5.0238779 -3.8841215 -2.8071174
## 6 5.6187181 4.77361356 -1.171894 2.8594464 4.5848805 0.6838571
##      Ttn      Ttpa      Ttpal      Ttr      Ttyh1      Ttyh2      Ttyh3
## 1 -0.6720047 0.7225867 5.263836 -3.2910160 9.354743 5.760493 7.570735
## 2 1.8015661 -0.3266038 5.366451 5.9324977 3.015171 9.155176 7.219748
## 3 -1.9317392 0.8617169 2.182248 13.3526982 9.163175 10.443615 6.097854
## 4 -0.9514240 0.7679992 4.494374 8.0862439 8.647019 8.067018 5.924166
## 5 -3.8841215 1.4715792 3.740916 6.5078494 9.488311 9.793815 6.165192
## 6 0.5388091 5.2844690 4.508160 -3.1376752 10.751222 6.628607 10.462453
##      Tub      Tuba1a      Tuba1b      Tuba1c      Tuba4a      Tuba8      Tubb1
## 1 7.8841435 10.438945 7.309199 2.770539 3.860231 -2.27700403 -2.975823
## 2 0.7236752 9.386855 7.719552 5.063867 3.188894 -2.48239396 -2.960717
## 3 -1.1313170 12.397109 8.451055 6.844860 7.691394 1.26324902 -3.884122
## 4 3.1306479 11.972673 7.884951 4.885774 4.050094 0.06310839 -3.884122
## 5 -2.1973739 13.427381 8.127808 4.415229 4.733187 -0.75194706 -3.884122
## 6 3.0558820 8.263933 5.095878 1.480127 5.126371 -3.11861158 -3.884122
##      Tubb2a      Tubb2b      Tubb3      Tubb4a      Tubb4b      Tubb5      Tubb6
## 1 7.313287 8.649113 4.583289 10.084088 7.128462 9.103103 2.929302
## 2 6.623435 5.455249 3.679665 3.238101 7.069630 10.206474 7.729937
## 3 8.238161 8.001511 8.215696 11.802322 8.947806 10.650378 2.462191
## 4 7.197608 8.798893 9.897733 10.265327 7.009633 11.280703 5.543719
## 5 7.732010 10.273090 11.080311 11.039839 8.346769 12.142786 5.477632
## 6 9.424364 9.189340 2.300990 3.681217 7.122107 6.922522 3.553223
##      Tubd1      Tube1      Tubg2      Tubgcp2      Tubgcp3      Tubgcp4
## 1 3.35525485 1.67072805 2.9907080 5.566761 5.733826 4.8612412
## 2 2.62642744 -0.01121124 -0.5272425 5.817765 6.344987 4.1212874
## 3 0.05610664 -1.13131698 -3.8841215 3.232392 2.356639 -0.2425151
## 4 3.51198179 3.10206417 2.5771111 6.630525 5.536118 4.7081074
## 5 -0.94717201 -1.77010377 3.2872548 6.198053 6.178725 0.1633391
## 6 2.88731490 3.01941396 -0.8535437 5.365840 6.025240 4.7286791
##      Tubgcp5      Tubgcp6      Tufm      Tuft1      Tulp1      Tulp2
## 1 4.8403395 4.94805989 3.015635 -0.7773766 -3.70102821 -2.463199
## 2 4.9705980 4.66185625 2.584056 2.3534397 -2.21778244 -3.884122
## 3 0.8617169 0.05610664 -1.131317 2.4621911 -3.88412153 -1.931739
## 4 5.5957758 3.33633413 4.081287 2.5914825 -1.79075069 -1.594101
## 5 4.2196053 -0.58001868 4.282242 1.4319435 -2.80711744 -3.884122
## 6 5.6808253 5.69388298 2.759630 -0.7973983 -3.26808737 -1.849914
##      Tulp3      Tulp4      Tusc1      Tusc2      Tusc3      Tusc5      Tut1
## 1 3.9886100 6.646491 2.3041795 4.693081 5.839474 -1.695475 3.3356193
## 2 4.2335249 5.160471 1.9293601 5.110461 6.349897 -2.990176 3.5623600
## 3 0.3033916 6.725381 0.5144282 5.527858 8.014583 -3.884122 0.5144282
## 4 4.1243518 5.304330 -0.6282010 3.718798 6.064387 -3.603681 4.9074726
## 5 3.6049537 5.435661 1.5843436 4.242698 7.278540 -3.884122 3.4147268
## 6 7.0694579 6.485244 0.9547291 3.533293 5.937299 -3.660779 4.6381775
##      Twf1      Twf2      Twist1      Twist2      Twistnb      Twsg1      Txk
## 1 6.974003 4.554950 -1.44334721 -3.146509 2.9705023 5.457632 -3.884122
## 2 6.654541 6.723337 0.06782616 -2.807082 4.1689686 6.205298 -1.340751

```

```

## 3 8.880971 6.606665 -3.88412153 -3.884122 -0.2425151 6.810293 -3.884122
## 4 7.939317 4.706734 -1.15027952 -3.653944 3.1320089 5.137895 -2.987730
## 5 8.308636 5.795222 0.65149678 -3.884122 3.7163802 5.592191 -3.884122
## 6 6.366953 4.219400 -1.67265217 -3.660779 3.4473832 5.688816 -2.733018
## Txlna Txlnb Txlng Txn1 Txn2 Txndc11 Txndc12
## 1 6.590465 -3.5680897 3.49741453 4.993635 6.497682 4.952714 6.657979
## 2 6.642168 -0.8456695 4.08021793 7.224924 6.917118 5.766314 7.396000
## 3 4.342260 -1.1313170 -1.13131698 8.307960 8.988127 -1.131317 7.563807
## 4 5.746423 2.5387907 3.29799010 7.312026 8.246285 1.870250 7.484851
## 5 4.555547 2.4735096 1.87778149 8.107903 9.043630 0.718921 8.448968
## 6 6.632948 -1.1970474 3.89958690 5.153418 5.682064 6.151292 5.933115
## Txndc15 Txndc16 Txndc17 Txndc2 Txndc5 Txndc9 Txnip
## 1 6.249382 8.092040 5.214148 -1.9091932 6.472110 4.628384 4.066296
## 2 6.244100 5.737799 6.485541 -2.8000981 6.417308 5.735920 7.773245
## 3 8.774850 1.983840 7.188412 -3.8841215 7.577086 6.842418 8.154023
## 4 5.850023 7.118206 7.252240 -3.8841215 4.264846 7.113695 7.594584
## 5 6.660341 6.329246 8.072494 -3.8841215 4.955637 8.282758 7.146257
## 6 5.876632 6.340198 3.677598 -1.4641656 7.376160 4.863508 6.117251
## Txnl1 Txnl4a Txnl4b Txnrd1 Txnrd2 Tyk2 Tymp
## 1 6.272727 6.716294 3.887419 6.843283 3.597735 4.8475346 0.1407115
## 2 7.632421 6.724318 3.142322 6.580828 2.740701 5.4247526 1.6729301
## 3 1.911138 6.177504 6.918574 2.607316 6.609539 0.3033916 -3.8841215
## 4 6.020423 6.496333 5.820314 6.216542 2.695638 3.5681308 -2.1241735
## 5 7.579378 8.081728 6.854606 6.015688 -2.197374 3.0328598 1.5843436
## 6 5.904214 5.963490 2.784427 5.977098 3.348156 5.4856756 0.1999167
## Tyms Tyro3 Tyrobp Tyrp1 Tysnd1 Tyw1
## 1 2.1601476 7.676195 3.9212099 -3.8841215 4.993628 4.7350016
## 2 4.2588855 4.161931 0.6103905 -3.8841215 4.486806 4.7780471
## 3 2.5122057 3.290869 9.8416725 -0.6195262 5.509506 0.6984974
## 4 6.5383917 4.509803 5.4804670 -2.1538478 2.503904 5.6538145
## 5 6.8156735 5.909662 4.8949806 -3.8841215 4.440416 6.1621668
## 6 2.0772194 5.673571 -1.0240173 -3.1186116 4.367053 4.7474588
## Tyw3 U2af1 U2af114 U2af2 Uaca Uap1 Uap111
## 1 2.2809785 3.238147 4.673883 7.362616 2.1862975 5.174369 4.37999068
## 2 1.1515735 2.499536 4.510696 7.124535 8.4732909 5.367768 2.42338517
## 3 -0.2425151 2.242751 1.983840 5.353632 0.3033916 2.182248 0.05610664
## 4 3.4455588 3.108699 6.753143 4.229725 2.6370428 4.515724 2.24903959
## 5 4.0597575 4.614275 7.605779 3.894620 -1.1730114 6.168210 0.16333909
## 6 2.1952168 4.187169 4.692866 6.881038 4.4918822 5.109723 2.51695851
## Uba1 Uba2 Uba3 Uba5 Uba52 Uba6 Uba7
## 1 9.067381 6.802189 5.429238 5.534928 2.821576 3.563280 0.1999393
## 2 8.915912 7.798403 5.819654 5.864587 5.096352 3.720776 4.8892725
## 3 7.845654 7.145480 7.835868 1.834579 6.307114 2.182248 -1.9317392
## 4 7.962703 5.819103 6.299556 4.725997 5.535886 5.143301 1.9498924
## 5 7.692721 6.482610 5.337181 5.440663 6.349332 4.916681 -1.7701038
## 6 7.752818 6.060424 6.232167 5.950708 1.629787 4.321695 -1.1497461
## Ubac1 Ubac2 Ubap1 Ubap2 Ubap21 Ubash3b Ubc
## 1 5.288866 5.989346 6.182782 5.718618 6.713136 2.5715573 9.165397
## 2 5.320182 6.244417 6.043654 6.226243 6.835860 2.4229864 10.281298
## 3 2.898090 7.117479 1.141414 2.119096 6.458286 -0.6195262 10.181078
## 4 3.899174 5.515154 5.381936 4.316407 7.077816 2.8210941 9.726616
## 5 4.812497 5.440663 5.907857 5.363756 5.214063 -1.7701038 9.957281
## 6 5.603876 5.624617 5.792106 5.831952 6.817457 3.2994091 9.563697
## Ubd Ube2a Ube2b Ube2c Ube2cbp Ube2d1 Ube2d3

```



```

## 1 -3.884122 5.066160 6.053310 2.779599 0.3810105 4.5983582 7.041331
## 2 -3.884122 5.864010 7.427649 3.978881 1.2545201 4.4690134 8.906045
## 3 -3.884122 7.176829 8.527524 5.833466 -1.9317392 0.8617169 7.554887
## 4 -3.498924 6.701551 8.004761 6.621550 2.9653174 5.0902281 6.386737
## 5 2.893900 6.786506 8.597433 7.167531 -2.1973739 4.9309687 7.035740
## 6 -3.884122 4.721806 6.506835 2.382306 0.3890797 3.4945110 6.714782
##      Ube2e1  Ube2e2  Ube2e3  Ube2f  Ube2g1  Ube2g2  Ube2h
## 1 4.216288 5.689713 6.463947 4.422362 6.130457 5.341444 7.008920
## 2 4.440296 4.151215 6.999989 4.583968 7.435050 6.333742 7.277560
## 3 -1.131317 6.764598 5.720998 7.256020 7.467270 8.362658 2.820816
## 4 3.154227 4.600388 6.824375 4.821682 4.988550 6.120445 7.305519
## 5 3.159603 5.623319 6.782572 5.710794 6.310243 5.997135 6.172726
## 6 3.570326 3.837021 5.203403 4.459695 5.748779 4.723012 6.290353
##      Ube2i  Ube2j1  Ube2j2  Ube2k  Ube2l3  Ube2l6  Ube2m
## 1 5.538525 6.210646 2.4774936 6.163681 6.969790 2.0425302 6.531876
## 2 5.211848 7.210645 1.6787477 6.496378 6.193586 5.2123700 6.495240
## 3 4.166010 1.375592 -3.8841215 7.277870 8.334265 8.4897962 1.577013
## 4 4.543979 4.484270 -0.1912011 6.094560 8.246441 4.4062268 3.711636
## 5 4.425357 6.146947 0.7833343 5.190503 7.756785 4.9764501 4.271054
## 6 4.753514 6.243774 1.8626329 5.471893 5.973298 0.8965997 5.390063
##      Ube2n  Ube2o  Ube2q1  Ube2q2  Ube2q11  Ube2r2  Ube2s
## 1 5.379063 6.1093220 6.4047564 4.1161493 4.8645895 6.572258 2.1490341
## 2 5.550463 4.9495156 6.9050000 3.9346667 2.6210381 7.093232 2.9327474
## 3 6.730672 0.5144282 0.6984974 0.5144282 -0.2425151 5.521766 -3.8841215
## 4 6.599213 3.3679014 3.8926589 3.7202853 2.9184110 6.264013 -1.4465262
## 5 6.507849 4.1045651 1.8175364 4.0597575 5.0730206 7.364609 -0.7519471
## 6 4.916163 6.1875113 5.7833935 4.4567193 2.2652091 5.804095 1.9723232
##      Ube2t  Ube2v1  Ube2v2  Ube2w  Ube2z  Ube3a  Ube3b
## 1 0.465542411 3.673238 3.162745 4.953137 5.641900 5.236083 7.033670
## 2 0.524759252 4.331684 3.115549 5.570277 7.119469 5.570008 6.793303
## 3 0.698497435 3.599276 7.113434 7.907697 1.911138 6.073075 1.577013
## 4 4.648064257 5.202081 4.778457 6.838081 4.015870 6.001062 5.046914
## 5 4.777346002 4.839257 4.236959 6.813747 2.096371 5.443157 4.631874
## 6 0.875632620 3.024926 2.783080 4.747840 5.482071 5.691116 6.422488
##      Ube3c  Ube4a  Ube4b  Ubfd1  Ubiad1  Ubl3  Ubl4
## 1 5.989748 6.753337 6.419700 5.492076 4.429109 8.361764 5.879364
## 2 7.441719 5.819838 6.590069 5.400136 3.000856 8.001313 4.831644
## 3 3.074902 2.607316 1.577013 1.263249 4.227184 10.295284 7.927415
## 4 5.135484 6.366426 5.436995 6.096247 4.994780 8.048194 6.914761
## 5 5.069796 6.288215 5.660235 6.539664 5.293617 9.179229 7.415668
## 6 6.324699 6.717332 6.543816 5.728267 5.453484 6.497812 5.172650
##      Ubl5  Ubl7  Ublcp1  Ubn1  Ubn2  Ubox5  Ubp1
## 1 5.837428 5.531797 3.0011188 6.301361 5.734973 3.16465976 6.4308279
## 2 6.905417 5.558482 3.9931163 7.441822 5.633458 2.40284612 6.2059409
## 3 7.804850 6.606665 -0.2425151 2.300819 5.919381 0.05610664 5.2469007
## 4 8.047324 7.166943 4.5648942 5.104640 5.969953 4.38086032 5.0060002
## 5 8.883429 7.244624 5.8010672 3.923490 4.110854 3.24213202 -0.5800187
## 6 5.080616 4.490795 3.8632379 7.058889 7.426574 3.49776772 7.7058011
##      Ubqln1  Ubqln2  Ubqln4  Ubr1  Ubr2  Ubr3  Ubr4
## 1 7.875258 6.634408 6.382272 5.859716 6.4495012 6.737159 7.837588
## 2 7.641915 5.226184 5.184485 6.430411 6.3337086 6.851427 7.532769
## 3 2.696541 6.741196 1.479815 4.342260 0.6984974 1.375592 2.119096
## 4 5.895058 6.165266 5.238653 5.586929 4.2759702 4.671398 5.775293
## 5 5.123658 6.512607 4.573873 4.141894 2.3932290 3.503444 4.835464

```

```

## 6 6.695911 6.416258 5.680124 6.511563 7.0909393 7.540245 8.089905
##      Ubr5      Ubr7      Ubtld1      Ubtld2      Ubtfd      Ubxn1      Ubxn10
## 1 7.430344 5.604786 2.5687838 4.898239 6.852484 6.667865 -1.5820787
## 2 7.783223 6.918485 7.1949435 5.587465 7.394509 7.275867 1.1010150
## 3 2.512206 7.196082 -1.1313170 1.008333 2.652618 6.538913 -3.8841215
## 4 6.131840 5.988408 0.9791733 4.679077 5.654508 6.123134 0.6347841
## 5 5.304632 4.135739 -0.9471720 4.527614 6.106606 6.909751 -3.8841215
## 6 9.345547 6.216054 3.0914228 5.549145 6.546096 5.758777 -0.2000898
##      Ubxn11      Ubxn2a      Ubxn2b      Ubxn4      Ubxn6      Ubxn7      Ubxn8
## 1 0.7361659 3.9221555 4.248217 6.291580 5.978009 5.8342629 4.757673
## 2 -1.2500389 6.2799109 1.888542 7.160593 7.198074 6.4657290 4.776955
## 3 -3.8841215 -1.1313170 1.834579 2.462191 3.552239 3.4532981 4.369650
## 4 3.4950516 4.0559074 5.667319 6.424418 4.759196 4.9758611 5.373011
## 5 1.9356113 1.0155818 5.148325 4.843040 5.702490 0.5807664 6.175729
## 6 2.2858324 3.9361500 4.292946 6.716946 5.355814 7.0182317 3.925543
##      Uchl1      Uchl3      Uchl4      Uchl5      Uck1      Uck11      Ucm1
## 1 5.866829 3.974332 3.285676 3.340812 5.347321 5.0362596 -3.8841215
## 2 6.726866 3.306073 2.847492 4.787992 4.728859 5.1324675 -3.6565043
## 3 8.433317 5.905413 5.818636 6.854585 6.077235 0.5144282 -3.8841215
## 4 6.978888 4.937152 4.488536 5.044032 2.760681 4.9201371 -0.5421079
## 5 7.873731 6.640916 6.125365 5.257226 2.170497 4.1171157 -3.8841215
## 6 3.263466 2.808906 2.128669 3.433966 5.168100 5.2495514 -2.5546909
##      Ucn      Ucn2      Ucp1      Ucp2      Ucp3      Uevld      Ufc1
## 1 -1.990563 -3.462117 -3.44061345 4.511864 -1.632483 2.5993861 5.804122
## 2 -3.248991 -2.716134 -0.04697916 8.487629 -1.482217 3.4672210 6.401455
## 3 -3.884122 -1.931739 -1.93173924 8.474897 -3.884122 -0.2425151 7.276061
## 4 -3.884122 -2.655274 -3.65394437 6.937005 -3.498924 3.4214040 6.883348
## 5 -3.884122 -3.884122 -2.80711744 7.297962 -3.884122 1.5843436 7.489926
## 6 -3.379887 -3.143174 -2.84857827 3.546298 2.641578 3.5881535 4.760845
##      Ufd11      Ufm1      Ufsp1      Ufsp2      Ugcg      Ugdh      Ugg1
## 1 5.977222 5.7401069 2.3442565 4.729042 5.435432 6.756302 6.941326
## 2 6.287176 6.3441611 0.1827565 4.587123 4.215095 4.411142 7.108946
## 3 5.297693 0.6984974 -1.9317392 7.756388 7.061893 1.479815 6.393046
## 4 7.346811 5.6797982 1.9389917 5.792651 5.646015 5.203970 4.921430
## 5 7.870491 5.5989183 2.1462087 4.979890 6.312973 2.723795 2.286157
## 6 5.517617 5.1706721 0.6217239 4.057626 4.901862 5.465398 6.922064
##      Ugg2      Ugp2      Ugt1a7c      Ugt8a      Uhm1      Uhrf1
## 1 5.1298075 6.085514 -1.8716696 9.39825241 4.6097287 4.0906405
## 2 4.4764845 6.301155 -3.6519623 -2.46017225 4.3110205 4.2278753
## 3 -1.1313170 7.163198 2.6965413 8.60950694 0.3033916 2.8980900
## 4 3.6024969 6.512072 -0.9074965 7.40664992 -0.4766841 6.5969168
## 5 4.0532413 5.248696 2.4735096 8.95224400 -0.4264149 6.1315644
## 6 5.8100149 7.264283 -3.8841215 -0.09096371 4.0352237 4.6298532
##      Uhrf1bp1 Uhrf1bp11      Uhrf2      Uimc1      Ulk1      Ulk2      Ulk3
## 1 5.7515036 5.516068 6.0081790 3.898670 5.972791 7.291355 4.36374643
## 2 4.3899316 5.413113 6.9492038 5.687510 6.682172 6.337275 2.01433602
## 3 0.3033916 1.008333 0.6984974 4.962061 5.742109 4.196921 0.05610664
## 4 2.7818651 4.294379 4.9162064 5.194184 5.136190 5.575244 2.60399556
## 5 2.4538543 5.428126 4.1295581 3.373475 5.095393 4.276659 -1.17301144
## 6 6.1834563 5.477452 6.3266727 5.305740 6.358768 6.503339 5.35221956
##      Ulk4      Umod11      Umps      Unc119      Unc119b      Unc13a
## 1 0.8527074 -3.767000 3.715905 5.2424842 6.1212937 5.0727945
## 2 -1.0206253 -3.884122 3.881090 2.2919831 6.5939835 1.7315858
## 3 -1.9317392 -3.884122 8.210025 -0.2425151 4.4742875 2.9352286

```

```

## 4 2.9759571 -3.884122 6.647937 2.6917737 4.3230050 3.1843294
## 5 4.1108541 -3.884122 6.160652 2.9650523 5.5718204 0.6514968
## 6 1.4770607 -3.674482 4.299647 4.8345733 5.8942236 4.3952578
##      Unc13b      Unc13c      Unc13d      Unc45a      Unc45b      Unc50
## 1 5.2114873 4.46798128 -0.17853708 5.795959 -1.9891571 5.389937
## 2 6.5700655 1.05374735 0.09988248 6.120958 5.3972964 5.732184
## 3 0.5144282 -1.93173924 -3.88412153 6.671377 -3.8841215 8.192877
## 4 3.0824747 -0.04157693 -0.85870102 5.582731 1.1427545 5.910322
## 5 -1.7701038 -2.19737395 2.74011471 2.240999 -3.8841215 6.227291
## 6 6.4790457 4.25784666 -0.11929246 6.810273 1.3888112 5.229800
##      Unc5a      Unc5b      Unc5c      Unc5c1      Unc5d      Unc79
## 1 3.161385 5.1128534 6.5801530 -3.7235669 0.8004323 5.5359132
## 2 -1.921123 8.3917298 -2.8174159 -2.8774220 -1.5930663 -1.4117417
## 3 5.710325 -0.2425151 -1.1313170 -3.8841215 -1.1313170 4.8498406
## 4 1.012530 4.9412611 1.2988453 -2.8625781 4.0172101 4.0090737
## 5 -1.440886 5.5718204 -0.7519471 -3.8841215 -3.8841215 0.9041264
## 6 -1.838149 2.5203896 4.2423720 -3.2680874 0.7438137 5.7677385
##      Unc80      Unc93a      Unc93b1      Uncx      Ung      Unk      Unk1
## 1 5.3396964 -3.794983 4.842140 -3.767000 1.051694 5.4488526 2.937139
## 2 -0.8372430 -3.884122 4.723723 -3.884122 1.883572 4.5705750 3.492678
## 3 0.3033916 -3.884122 4.435932 -3.884122 -3.884122 4.1183652 -1.131317
## 4 3.0988761 -3.884122 4.455176 -3.884122 1.904507 3.7955639 2.809995
## 5 -1.1730114 -2.807117 3.414727 -3.884122 2.908414 2.9227833 2.492901
## 6 3.1755028 -3.884122 2.467627 -3.660779 1.813953 5.9642550 3.502530
##      Upb1      Upf1      Upf2      Upf3a      Upf3b      Upk1a      Upk1b
## 1 -3.8841215 6.208861 4.2401164 4.9845188 4.335879 -0.5709251 -3.7901666
## 2 -0.6697228 5.561878 5.7848485 5.3746370 4.733380 -1.4538919 -3.8841215
## 3 -3.8841215 2.462191 0.5144282 0.3033916 1.479815 -1.9317392 -3.8841215
## 4 -2.2212384 5.138235 4.8433787 3.2160371 6.304920 -1.3788199 -0.2326468
## 5 -3.8841215 5.664516 2.1215049 1.3911881 3.135130 -3.8841215 3.3838991
## 6 -3.2680874 6.136349 5.7470813 5.1119976 5.987160 -0.0844578 -3.8841215
##      Upk3a      Upp1      Upp2      Uppt      Uqcr10      Uqcr11      Uqcrb
## 1 -3.12031346 -0.80798113 -2.658774 1.2075284 5.269111 4.891338 4.017446
## 2 -3.25158535 1.73265983 -3.884122 0.8693232 6.667417 5.381765 5.255813
## 3 -3.88412153 -3.88412153 -3.884122 -3.8841215 9.734483 9.101208 9.033786
## 4 -2.65772454 1.24804769 -2.296010 -0.9118843 8.290677 7.728169 7.455577
## 5 -3.88412153 -2.19737395 -3.884122 2.7879955 9.490724 9.037659 8.344102
## 6 -3.88412153 3.70401146 -2.465782 1.6314605 4.892332 3.869246 3.641899
##      Uqcrc1      Uqcrc2      Uqcrfs1      Uqcrh      Uqcrq      Urb1      Urb2
## 1 7.356974 7.484325 6.533081 6.586581 5.597136 4.1915436 4.081314
## 2 8.421036 8.163678 7.225460 8.320932 6.648374 3.7685951 4.913373
## 3 8.748358 8.163835 6.544932 10.516645 9.933151 -1.1313170 -1.131317
## 4 9.008170 8.449304 5.115614 8.639540 8.193566 2.6743754 3.033218
## 5 9.229585 8.803421 6.338654 10.042921 9.378407 -0.7519471 3.512973
## 6 6.786497 6.883225 6.269463 5.867811 4.885411 4.9169326 4.478077
##      Urgcp      Urm1      Urod      Uros      Use1      Usf1      Usf2
## 1 5.0158155 6.373661 4.977264 4.069950 4.987404 6.273095 5.9567745
## 2 4.6803842 6.523528 6.191745 3.444861 7.013848 5.261560 5.6978713
## 3 0.3033916 6.009200 7.981677 6.241913 8.537370 6.968692 0.8617169
## 4 4.2925249 4.843112 7.036070 5.443817 7.144310 6.371360 3.2456615
## 5 4.6749556 6.106606 7.778676 5.789352 8.394913 6.710897 4.3999029
## 6 4.9424996 4.804053 4.151075 3.874994 4.455368 5.091531 5.2180173
##      Ush1c      Ush1g      Ush2a      Ushbp1      Usmg5      Uso1
## 1 -3.27177354 -2.827810 -3.2612921 -2.19305801 2.604372 6.371241

```

```

## 2 -3.88412153 -3.884122 -0.9445582 7.98750644 3.245138 6.914843
## 3 -3.88412153 -3.884122 -3.8841215 -3.88412153 6.852160 6.101943
## 4 -2.49388486 -2.933346 -3.8841215 -1.42861922 5.060083 4.920423
## 5 -3.88412153 -3.884122 -3.8841215 -3.88412153 5.733388 3.522440
## 6 -3.15654382 -3.660779 -2.7776757 0.96070384 1.024516 6.593751
##      Usp1      Usp10      Usp11      Usp12      Usp13      Usp14      Usp15
## 1 4.9811069 5.779680 5.851640 5.3290421 3.4848595 5.344872 5.385639
## 2 5.8636423 5.488168 3.487164 6.8428544 -0.8312258 5.836886 6.570523
## 3 0.8617169 2.652618 7.530825 0.6984974 -1.9317392 7.768014 7.655680
## 4 4.6166506 7.002523 6.840325 1.7250604 0.9319316 7.255736 5.856734
## 5 3.3942483 5.878670 5.472757 3.1474184 2.1462087 7.288283 4.962608
## 6 5.0948236 5.705837 6.366257 5.6293414 2.7191050 5.605837 6.042972
##      Usp16      Usp18      Usp19      Usp2      Usp20      Usp21      Usp22
## 1 5.994688 -1.5618849 7.341757 5.503899 6.4304156 5.074594 8.187811
## 2 6.112568 2.5300566 6.738065 1.054663 3.6167201 4.929025 6.736224
## 3 1.141414 8.6407576 1.141414 1.577013 0.8617169 3.528133 8.977595
## 4 4.950757 4.1696667 4.043189 6.200154 4.1989632 4.861755 9.714671
## 5 2.146209 4.8201936 3.842666 5.271331 4.7331868 4.560151 10.109503
## 6 6.216766 -2.1683174 8.272426 7.326212 5.2430971 5.049927 7.712657
##      Usp24      Usp25      Usp27x      Usp28      Usp29      Usp3      Usp30
## 1 7.999896 5.672163 2.5812973 4.4361660 0.8553279 4.94479772 5.9432779
## 2 6.635555 6.811843 1.4283484 4.3278350 -1.4745352 6.95918520 4.6928021
## 3 1.263249 1.753727 -1.9317392 0.6984974 0.5144282 1.37559158 6.2344829
## 4 4.834194 4.549347 1.0184421 4.6075918 4.1663921 5.72863729 3.9839301
## 5 4.887674 4.347607 -3.8841215 3.6226664 1.1190407 4.15412558 5.0437363
## 6 8.235901 5.942112 3.4410524 5.6103927 -2.6334403 4.47275184 5.2784288
##      Usp31      Usp32      Usp33      Usp34      Usp35      Usp36      Usp37
## 1 5.375896 6.363433 6.336211 6.426222 3.2288025 5.77905062 4.908443
## 2 5.158776 6.313967 6.285306 7.448568 2.0375976 5.38149557 5.122887
## 3 1.668074 1.753727 2.739167 2.182248 -0.6195262 0.05610664 7.252346
## 4 4.608498 5.087262 5.203397 5.253196 3.9871226 4.49667305 7.890664
## 5 2.621796 3.796595 5.175581 3.084901 3.9587821 0.65149678 7.132414
## 6 5.043411 6.962906 6.850881 7.433048 4.2675350 6.31194767 5.745066
##      Usp38      Usp39      Usp4      Usp40      Usp42      Usp43      Usp44
## 1 5.6618032 5.6407298 6.832633 4.8626178 5.003529 -2.8117512 -0.5051478
## 2 6.7547163 5.3799716 7.295341 4.2808385 4.847926 4.3106214 -2.7285573
## 3 6.6713769 0.8617169 8.892819 6.5892947 1.577013 -0.6195262 -3.8841215
## 4 4.4486118 4.0656582 6.753369 5.5187064 5.035055 -3.6036807 -1.7763459
## 5 5.2908499 5.5603777 6.522076 -0.4264149 5.082651 -3.8841215 -3.8841215
## 6 6.0602377 4.4911473 6.791999 5.4131089 5.851135 -1.6610262 -0.7817792
##      Usp45      Usp46      Usp47      Usp48      Usp49      Usp5      Usp50
## 1 4.7262534 5.320116 6.683792 6.831037 4.5283194 7.281703 -3.365584
## 2 4.9783671 6.403411 7.501520 6.259483 4.3120320 6.835405 -2.888894
## 3 -0.6195262 6.674126 5.621974 1.008333 -1.9317392 3.290869 -3.884122
## 4 3.9104365 4.189574 5.892136 5.610992 0.7321141 7.766526 -3.082383
## 5 1.0155818 2.018229 2.819055 4.474956 0.2570463 7.201076 -3.884122
## 6 5.4434192 5.481291 7.399743 7.133811 5.1018911 6.901690 -2.848578
##      Usp51      Usp53      Usp54      Usp6n1      Usp7      Usp8      Usp9x
## 1 1.283012 4.16787682 6.988869 5.3415315 6.812897 6.074978 6.261835
## 2 -1.954447 6.47437237 6.220405 7.5211359 7.459363 6.174133 7.279503
## 3 5.374063 -1.13131698 1.263249 1.6680739 6.073075 5.032301 7.765438
## 4 1.242397 3.45350747 5.439577 3.1805245 5.239817 5.938438 5.417128
## 5 -2.807117 -1.17301144 4.059758 1.6200547 2.453854 5.596679 4.712659
## 6 2.384776 5.19459907 7.144996 6.3679379 7.269181 6.491160 7.016072

```

##	Usp11	Ust	Utf1	Utp111	Utp14a	Utp14b	Utp15
## 1	5.3876273	7.3499405	-2.251006	3.938655	4.5057423	5.5092173	5.053993
## 2	5.0347176	1.4790117	-3.884122	4.648702	6.1335136	5.6502146	5.604452
## 3	0.3033916	4.4097834	-3.884122	6.093753	-0.2425151	-0.6195262	1.753727
## 4	6.1257117	1.9597110	-3.884122	5.968746	4.8947125	2.7610362	5.153421
## 5	5.8375493	3.9163262	-3.884122	6.251685	5.0502955	2.7722112	5.117424
## 6	5.0705433	0.2552414	-3.884122	4.215642	4.5519232	5.7230851	5.133406
##	Utp18	Utp20	Utp23	Utp3	Utp6	Utrn	Uts2
## 1	4.491934	4.6351873	2.2344806	3.985317	5.299017	4.452107	-3.723567
## 2	5.363661	4.6915330	2.0386419	5.394535	5.288775	8.796886	-3.884122
## 3	1.008333	0.8617169	0.5144282	5.551968	7.161240	2.182248	-3.884122
## 4	3.989146	4.1352913	4.7759162	5.275045	5.524583	5.489989	-3.209184
## 5	4.518182	2.6040729	4.8913319	3.352398	1.963680	5.307373	-3.884122
## 6	4.965925	5.6928933	2.7369469	4.618721	5.286447	6.782454	-3.156544
##	Uts2r	Uty	Uvrage	Uxs1	Uxt	Vac14	
## 1	-3.8841215	3.842845	5.609708	3.8513719	-0.1848050	5.4947793	
## 2	-3.8841215	4.806441	6.647797	4.4121168	0.7269637	5.5495997	
## 3	-3.8841215	3.731831	1.375592	-0.6195262	4.8787247	-0.2425151	
## 4	-3.8841215	4.834673	2.241303	3.0681125	2.5214309	3.7192438	
## 5	-3.8841215	4.085532	4.627494	0.5807664	2.9510998	4.5964581	
## 6	-3.6744822	5.462736	3.914245	4.3018786	0.1898569	5.2198431	
##	Vamp1	Vamp2	Vamp3	Vamp4	Vamp5	Vamp8	Vangl1
## 1	3.2661085	7.733135	7.263740	5.329422	-1.4294124	1.576421	3.7153970
## 2	1.3835652	5.601635	8.252621	5.047041	4.3059524	6.583225	5.1523177
## 3	-1.9317392	6.227015	8.841168	7.578554	5.4783920	9.244486	0.6984974
## 4	0.7383923	5.384780	7.065273	5.556285	3.6732311	5.718008	2.9705730
## 5	-2.1973739	5.548843	6.467987	6.602380	3.1351297	6.867663	1.3492478
## 6	3.3282800	7.647306	6.273625	5.291188	-0.2160951	2.229147	3.4050105
##	Vangl2	Vapa	Vapb	Vars	Vars2	Vash1	Vash2
## 1	4.7557135	7.494905	7.0685928	6.8088750	4.797603	7.844788	2.46772494
## 2	3.8227657	6.503514	7.1198612	5.6556155	3.964189	8.785354	0.54613889
## 3	6.7411964	8.600143	1.5770128	0.8617169	-1.131317	1.008333	-0.61952623
## 4	2.8279518	7.696009	3.2670023	3.1519753	2.628642	4.637405	4.32088871
## 5	0.9041264	8.815745	0.7833343	1.4715792	3.937710	1.906986	1.54772616
## 6	5.0988221	6.673439	5.9945274	6.7152171	5.013695	8.168536	2.00679102
##	Vasn	Vasp	Vat1	Vat11	Vav1	Vav2	
## 1	3.9068060	4.93728880	7.274933	6.12857481	2.2399046	5.2053128	
## 2	4.9589970	8.28275752	8.778870	0.63372962	-1.7591046	4.1874830	
## 3	3.8915212	0.05610664	1.983840	0.05610664	-0.2425151	-1.9317392	
## 4	2.4532844	2.37482493	2.610731	0.38167162	0.8931821	1.3753799	
## 5	0.9041264	3.35239820	4.804760	-2.19737395	-2.1973739	-3.8841215	
## 6	4.6781897	5.64126482	4.446636	-0.70570759	-2.1036624	4.7527464	
##	Vav3	Vax1	Vbp1	Vcam1	Vcan	Vcl	Vcp
## 1	2.0705475	-3.589593	5.893297	5.366482	10.0861613	4.691018	6.925423
## 2	3.3682299	-3.656504	6.651666	5.207020	1.3611668	8.325278	7.181532
## 3	1.1414140	-3.884122	9.098653	7.792254	1.2632490	7.292254	4.085705
## 4	0.5830470	-3.884122	8.259126	7.888098	4.5136272	5.418409	3.635100
## 5	0.5807664	-3.884122	9.007641	6.730429	1.1190407	6.196575	2.329944
## 6	4.7685008	-1.821514	5.326101	9.789281	8.2996447	8.412967	6.370789
##	Vcpip1	Vdac1	Vdac2	Vdac3	Vdr	Vegfa	Vegfb
## 1	5.083556	7.597684	6.923752	4.906005	-2.00417818	7.8165649	4.897965
## 2	5.324159	7.824188	7.915614	5.613491	-2.64980479	1.5609641	2.051784
## 3	5.914740	7.353554	9.452518	7.732851	1.91113848	4.0352840	1.008333
## 4	4.434895	7.771936	8.067672	6.652515	-0.66042516	2.4811703	3.791526

```

## 5 3.765042 7.991734 8.145529 7.597405 0.42796713 0.4279671 4.271054
## 6 5.821424 7.613601 6.500721 4.335842 -2.87445018 10.4890466 5.296467
##      Vegfc      Vepfh      Vezf1      Vezt      Vgf      Vgl12
## 1 0.9046125 -1.3745039 6.961296 4.773148 1.8297427 -3.2683703
## 2 4.8012481 -1.3081756 6.094350 4.841130 1.3675394 -3.8841215
## 3 -1.9317392 -1.1313170 4.810406 4.820366 -3.8841215 -3.8841215
## 4 0.9714122 2.4669956 6.140534 6.059363 -2.8433366 -3.8841215
## 5 0.5063887 2.9370110 4.955637 5.727261 -3.8841215 -3.8841215
## 6 2.4536743 3.2742458 6.724996 5.403296 3.0156633 -0.4611844
##      Vgl13      Vgl14      Vhl      Vill      Vill      Vim      Vip
## 1 -1.86441907 4.990471 6.563473 -2.428219 -3.400793 4.376278 -0.5561679
## 2 -3.42434508 6.184163 5.553296 3.870019 -3.651962 10.878142 -0.4221532
## 3 0.05610664 7.565289 7.318845 -3.884122 -1.131317 7.715611 -3.8841215
## 4 -2.81719490 6.863700 5.805878 -1.117112 -2.876652 8.167846 -1.5224546
## 5 -1.77010377 4.363496 6.238822 -3.884122 -3.884122 7.893473 2.2409993
## 6 -2.43415660 5.462399 7.156454 -1.894268 -3.143174 7.373594 -1.1690852
##      Vipr1      Vipr2      Vit      Vkorc1      Vldlr      Vma21
## 1 0.02338648 3.2058151 1.152926 5.184397 7.35388078 5.886404
## 2 -0.16203828 -3.6565043 -2.477045 5.008279 -0.07581117 5.219584
## 3 -1.93173924 -1.9317392 -3.884122 9.038594 5.63895708 4.435932
## 4 -2.69155337 0.8679924 -3.603681 7.538045 4.19001444 6.234914
## 5 -3.88412153 -3.8841215 -3.884122 8.442126 4.95213844 5.904241
## 6 -3.26808737 3.0554733 4.905786 2.907895 8.13468301 4.893925
##      Vmac      Vmo1      Vmp1      Vnn1      Vopp1      Vprbp      Vpreb1
## 1 4.3591136 -3.639524 6.870025 -3.6296120 5.741112 4.547604 -3.1419893
## 2 5.1102449 -3.884122 7.362984 -2.8202690 6.042614 5.586599 -3.1165114
## 3 6.0978538 -3.884122 10.173812 -0.6195262 1.911138 7.066084 5.1788537
## 4 4.3709469 -1.901776 8.514454 5.2087874 4.335416 4.769326 -1.1840158
## 5 4.1045651 -3.884122 9.440894 4.6186948 4.640594 2.512034 -3.8841215
## 6 2.8213512 -3.027614 6.034808 3.2692563 5.358951 5.436109 -3.5122488
##      Vpreb3      Vps11      Vps13a      Vps13b      Vps13c      Vps13d      Vps16
## 1 -3.5895933 6.222980 4.8908826 6.0847645 5.322563 6.400758 6.043218
## 2 -3.3444694 6.177708 5.8783372 6.3501576 4.862559 7.278585 5.840432
## 3 -3.8841215 2.462191 0.3033916 0.5144282 6.966451 4.685192 1.753727
## 4 -2.9139512 6.797353 3.4991627 4.0140261 3.316034 4.047850 6.669225
## 5 -3.8841215 5.793268 -0.7519471 0.8449942 3.857702 4.141894 4.508687
## 6 -2.4391309 6.108279 5.9020340 6.1754488 6.702467 7.604145 6.312007
##      Vps18      Vps25      Vps26a      Vps26b      Vps29      Vps33a      Vps33b
## 1 4.882370 5.864188 5.399041 7.140374 5.793572 6.411330 3.7264529
## 2 5.760487 6.848942 5.845041 6.663235 6.498194 5.812599 2.5943670
## 3 1.668074 7.566769 7.237555 7.952539 7.244970 2.410380 0.5144282
## 4 4.655514 6.889977 7.159037 5.653170 7.739590 6.033215 5.0399107
## 5 5.727261 7.821484 6.773681 6.442034 8.489956 5.683628 4.7614440
## 6 5.661939 5.074592 5.283722 6.225000 5.101144 5.502418 4.9781800
##      Vps35      Vps36      Vps37a      Vps37b      Vps37c      Vps37d      Vps39
## 1 7.648630 4.988235 5.6006709 6.8239278 4.7936478 4.2736820 6.287054
## 2 7.812914 5.638417 5.0606161 6.0992192 4.7923244 0.6230888 5.724791
## 3 7.526268 6.759431 -0.2425151 0.6984974 0.5144282 -3.8841215 1.008333
## 4 8.005984 5.586143 3.6487080 5.3569252 5.0793705 1.5139601 6.064716
## 5 7.965947 6.563933 4.5693135 4.9058716 2.6393048 2.2178791 3.909127
## 6 6.631074 4.302318 6.3627328 7.2887073 4.9362472 3.1481407 5.672051
##      Vps41      Vps45      Vps4a      Vps4b      Vps52      Vps53      Vps54
## 1 6.411934 4.932094 6.642036 5.305845 6.876283 5.669376 5.06870434
## 2 6.146390 4.688350 6.596438 6.447421 6.695581 5.535343 5.89786283

```

```

## 3 5.478392 7.484598 5.268888 6.379636 7.115458 3.773441 0.51442825
## 4 7.640184 5.188583 5.368882 4.879117 5.734366 5.762483 3.85296021
## 5 7.418840 5.251545 6.610170 4.887674 5.190503 4.293344 -0.04458439
## 6 5.997860 4.533329 5.896908 5.797978 6.314857 4.619780 5.65431724
##      Vps72      Vps8      Vrk1      Vrk2      Vrk3      Vsig10      Vsig2
## 1 5.368082 6.479802 3.995710 1.4365715 5.379374 3.67234913 -1.456967304
## 2 6.728449 5.269812 4.454944 1.6923168 5.125611 5.61922211 4.053830287
## 3 6.489832 1.008333 2.053052 -1.9317392 6.923202 6.99750935 -3.884121530
## 4 6.189551 5.198622 6.294532 2.2071877 6.565709 1.96965732 -3.653944373
## 5 6.794342 6.052092 3.320194 -2.1973739 6.017363 -1.77010377 -3.884121530
## 6 4.428322 5.145784 3.840454 1.5712214 4.692068 2.00186965 -1.374170594
##      Vsig4      Vsig8      Vsn11      Vstm2a      Vstm2b      Vstm21
## 1 -3.8841215 -3.3556620 3.820275 4.29555754 5.121923000 0.50077233
## 2 -3.8841215 -3.6565043 1.950885 0.51255357 4.238495540 -0.08864631
## 3 -3.8841215 -1.9317392 6.844860 1.75372696 3.731830913 -1.13131698
## 4 -2.3691546 -3.1377768 3.088497 4.78946119 -1.207132592 -3.06897113
## 5 -2.8071174 0.8449942 1.877781 3.91632624 1.584343649 -3.88412153
## 6 -3.8841215 -3.3798866 -0.189249 1.00097138 -1.475946419 -1.83131118
##      Vsx1      Vsx2      Vta1      Vti1a      Vti1b      Vtn      Vwa1
## 1 -3.723567 -2.506678 5.125691 4.962854 5.776040 3.054089 5.694914
## 2 -3.884122 -3.884122 5.303468 5.450633 5.817608 8.614324 11.532261
## 3 -3.884122 -3.884122 6.134242 5.459396 6.663099 10.838713 7.497071
## 4 -2.828528 -3.114158 6.934086 4.608867 4.846808 9.740658 2.877488
## 5 -3.884122 -3.884122 7.422637 5.700406 6.199529 10.849296 5.104876
## 6 -2.259369 -3.674482 5.357230 4.889954 4.885332 3.105808 3.951594
##      Vwa2      Vwa3a      Vwa5a      Vwa5b1      Vwa5b2      Vwc2
## 1 -1.3729341 -2.5249305 4.338951 -2.1002154 3.3027703 2.81757431
## 2 -3.6565043 1.9824101 6.042574 -1.9414058 -2.2467233 -2.41791844
## 3 1.7537270 1.2632490 1.008333 -1.1313170 -3.8841215 -1.93173924
## 4 -1.8168397 1.8689213 5.336782 -2.7967295 0.1345243 -3.88412153
## 5 -0.7519471 -3.8841215 5.214063 -3.8841215 -1.7701038 -3.88412153
## 6 -3.8841215 -0.1684550 5.226894 -1.8358027 -0.4767352 -3.13767524
##      Vwc21      Vwce      Vwf      Wac      Wapal      Wars      Wars2
## 1 -3.152698 -1.6555071 4.2189070 6.875091 5.5447705 6.285520 2.8549430
## 2 -2.561454 -3.2515854 9.0645232 7.306336 6.8162451 6.596536 3.9409849
## 3 -3.884122 -3.8841215 -1.9317392 2.560544 1.3755916 3.261927 0.3033916
## 4 -3.884122 -3.3818813 0.4451213 5.758601 4.3012678 7.020828 4.3244817
## 5 -3.884122 -3.8841215 2.5309179 5.053564 0.8449942 6.678449 3.3310089
## 6 -3.884122 -0.8889978 1.2257223 6.562467 6.3843009 5.156954 3.9793976
##      Was      Wasf2      Wasf3      Was1      Wbp1      Wbp11      Wbp2
## 1 0.6617646 5.752112 5.0565884 6.260428 6.030136 6.269977 7.518890
## 2 -0.3311522 7.450137 1.6074466 6.606820 6.165444 6.059229 6.646043
## 3 5.2542671 1.008333 -3.8841215 1.577013 6.532868 5.178854 8.534348
## 4 -1.6055788 3.954889 2.4198836 5.123164 5.146639 6.455191 9.257024
## 5 -2.1973739 3.699788 0.6514968 4.773387 6.293753 6.052092 8.511507
## 6 -2.7776757 5.188614 6.8126520 6.326398 5.067296 6.146009 6.890823
##      Wbp4      Wbp5      Wbscr16      Wbscr17      Wbscr22      Wbscr27      Wdfy1
## 1 5.071283 5.364089 3.916879 4.0601975 4.834672 2.815896519 6.733495
## 2 5.321720 8.327249 4.121061 0.6528912 4.765583 3.473955115 6.083397
## 3 5.867488 9.138010 -1.131317 5.7156710 6.227015 -0.242515062 8.056269
## 4 6.369504 8.119335 1.475372 2.6794681 5.798562 4.273908082 6.959960
## 5 5.151379 8.847632 -1.770104 2.4137218 6.415606 5.818463235 6.740604
## 6 5.350839 5.458087 4.127289 0.3590407 4.524484 3.292139300 5.484317
##      Wdfy2      Wdfy3      Wdfy4      Wdhd1      Wdpcp      Wdr1      Wdr11

```

```

## 1  4.0858303 7.585298 1.467645 3.7186663 3.6458094 7.858502 5.9329552
## 2  3.7275909 6.779735 -1.909843 2.3350467 2.8807969 8.330938 6.2887818
## 3  2.8208155 6.056316 -1.931739 1.2632490 -0.6195262 9.158766 0.5144282
## 4  1.2815214 6.222532 -1.630033 4.4195778 3.7225284 8.039854 5.4613439
## 5  -1.4408855 4.789158 -3.884122 2.2861569 -2.8071174 7.706283 3.7409163
## 6  3.7407139 7.627639 -2.252068 3.7899422 3.6211505 7.392302 6.3143306
##      Wdr12      Wdr13      Wdr16      Wdr17      Wdr18      Wdr19
## 1  3.366888 6.741087 -3.509437715 2.83761770 5.459453 3.85772003
## 2  3.477717 6.495675 -2.292322386 -1.14268588 5.056473 3.94035725
## 3  2.119096 1.479815 -3.884121530 -1.93173924 7.088924 0.05610664
## 4  5.900108 5.786146 0.018534871 2.89871253 6.798064 3.90349767
## 5  6.497087 4.184258 3.596015115 2.78799553 7.655562 -0.42641489
## 6  2.992331 6.885437 -0.006978625 3.18784936 4.664976 4.64902774
##      Wdr24      Wdr25      Wdr26      Wdr27      Wdr3      Wdr31      Wdr33
## 1  4.581301 2.3557822 7.199886 -2.951316 4.3083085 0.34320460 5.950134
## 2  4.352568 2.0651875 8.318969 -3.112310 4.7460976 1.19374567 6.208554
## 3  1.479815 -0.6195262 3.427465 -3.884122 0.8617169 0.05610664 6.366100
## 4  5.662471 1.7468155 6.025503 -3.114158 5.4830925 3.24212214 6.970673
## 5  5.007118 -2.1973739 5.924019 -3.884122 2.9227833 3.85770217 4.741317
## 6  5.052452 1.6511572 7.639605 -1.687397 4.7232260 0.34876858 6.482696
##      Wdr34      Wdr35      Wdr36      Wdr37      Wdr38      Wdr4      Wdr41
## 1  4.1606397 4.6409118 4.709565 5.341666 -3.794983 5.2078053 5.723018
## 2  2.5756594 0.5795038 5.155464 7.236269 -3.424345 4.8863227 4.219645
## 3  0.5144282 1.9111385 4.242081 3.528133 -3.884122 -0.2425151 3.833689
## 4  3.1422575 5.8945913 5.488468 5.720705 -2.128198 3.9849658 3.567813
## 5  4.7534269 3.7650420 6.130017 4.749401 -3.884122 3.6914197 3.835089
## 6  3.8335142 5.4209483 4.842722 5.905343 -2.654436 5.3364094 5.043335
##      Wdr43      Wdr44      Wdr45      Wdr46      Wdr47      Wdr48      Wdr5
## 1  5.278801 3.9488743 4.725424 4.67538798 4.9907286 5.474563 5.2573602
## 2  5.685777 4.5037470 5.298418 3.42085574 4.5596400 6.367692 6.0503060
## 3  4.486849 2.6526181 5.394208 0.05610664 0.5144282 3.171443 -0.2425151
## 4  6.276662 4.2347189 5.602590 3.25957181 5.8125442 5.592217 3.7230390
## 5  4.541648 0.2570463 5.379469 4.48950878 4.5874665 4.207919 4.1171157
## 6  6.233874 4.0458446 4.011060 4.92850669 6.4912133 5.418113 5.0747145
##      Wdr52      Wdr53      Wdr54      Wdr55      Wdr59      Wdr5b      Wdr6
## 1  -2.8168149 2.2598758 2.2540033 3.427797 4.9541172 1.6046788 6.986762
## 2  -1.9544473 2.1749678 0.5438786 3.362097 5.3699776 0.8744102 5.978253
## 3  -3.8841215 0.6984974 5.4530084 1.983840 0.6984974 0.6984974 6.110085
## 4  0.4415922 3.8377094 4.4541800 4.277156 4.2155900 3.9735395 6.880437
## 5  -3.8841215 3.4349186 5.0003589 3.765042 0.4279671 2.7562522 6.165192
## 6  2.8590019 2.4910863 1.7591942 2.746504 5.0214372 3.7014652 7.374520
##      Wdr60      Wdr61      Wdr62      Wdr63      Wdr65      Wdr7      Wdr70
## 1  3.7994996 4.670871 3.067765 -3.6787318 -1.9949296 6.556046 3.1177755
## 2  3.3430638 5.505309 2.662111 -3.1080374 0.7986995 5.353737 4.1106385
## 3  -0.6195262 4.342260 -1.131317 -3.8841215 1.9838395 8.032902 -0.6195262
## 4  3.7758852 7.457295 2.234184 -0.8198938 1.2542225 5.435411 4.6055837
## 5  -3.8841215 8.103573 -1.440886 -2.8071174 0.4279671 4.573873 -2.1973739
## 6  5.0563331 4.794497 4.165153 -0.1010332 -1.4370268 5.869987 3.9004197
##      Wdr72      Wdr73      Wdr74      Wdr75      Wdr76      Wdr77      Wdr78
## 1  -3.884122 3.2114466 4.730061 4.6775615 2.1388781 5.252821 -0.04686568
## 2  -3.251585 2.9718122 4.512173 5.0411406 2.4235220 4.279187 1.06225015
## 3  -3.884122 1.2632490 6.282107 0.5144282 -0.2425151 2.512206 -1.13131698
## 4  -2.573232 5.0182986 5.821950 5.3950637 3.8118265 6.380264 2.42618031
## 5  -3.884122 4.6318741 5.353185 2.6040729 4.2878034 4.373992 -2.80711744

```



```

## 6 -3.512249 3.8732243 4.330598 5.3669053 2.7847757 5.695260 2.93074698
##      Wdr81      Wdr82      Wdr83      Wdr86      Wdr89      Wdr90      Wdr91
## 1 5.549629 6.922918 4.286710 -2.3677753 0.25496684 3.9350183 5.5283849
## 2 3.755868 7.124471 4.345345 0.2468424 -0.01594037 3.6212145 4.7770152
## 3 2.410380 5.563874 6.215739 -3.8841215 -0.24251506 -0.2425151 0.8617169
## 4 3.775617 6.159748 5.018599 -2.9159774 3.25507116 3.1579260 4.3362684
## 5 4.331541 6.265845 3.674536 -3.8841215 -2.19737395 -2.8071174 5.2401151
## 6 5.797003 6.974824 3.524303 -3.2680874 0.91614045 5.8578237 6.4067640
##      Wdr92      Wdr93      Wdr96      Wdsub1      Wdtc1      Wdyhv1
## 1 2.2909575 -0.9389049 0.8803411 3.8219326 5.89332229 2.7591072
## 2 3.7571212 -0.9683782 2.1780639 4.7733905 5.18409339 3.0343726
## 3 0.3033916 -3.8841215 4.8498406 2.6073156 0.05610664 0.6984974
## 4 4.5576665 0.3847820 1.8226708 3.1857048 3.80327176 4.2590987
## 5 4.0727023 -3.8841215 0.9609302 -0.4264149 4.28224173 1.3060516
## 6 2.7741864 -0.5031969 1.6278918 4.1861243 4.83273813 3.4435741
##      Wee1      Wee2      Wfdc1      Wfdc12      Wfdc2      Wfdc3
## 1 2.4606993 -2.1317032 -1.0865433 -2.385088 -3.4255043 -3.767000
## 2 5.7819529 0.5131315 8.2760420 -3.884122 -2.0597664 -3.424345
## 3 0.6984974 -3.8841215 7.9783452 -3.884122 5.7935757 -3.884122
## 4 3.8513377 -3.5296461 3.3106241 -2.831401 -0.7891533 -1.789260
## 5 2.8792384 -3.8841215 4.0982486 -3.884122 2.1215049 -3.884122
## 6 4.5238347 -3.6607788 1.2570486 -3.171313 -2.0946010 -3.512249
##      Wfdc5      Wfikkn1      Wfikkn2      Wfs1      Whamm      Whrn
## 1 -3.8841215 1.83604413 -2.1914112 3.9922164 4.059981 3.0111239
## 2 -3.6565043 1.69203256 -2.4179184 3.7280852 4.737911 2.8087664
## 3 0.6984974 0.30339162 -3.8841215 -1.1313170 -1.931739 -0.2425151
## 4 -2.4861952 0.02231748 0.6152317 3.3509045 2.629576 2.0849244
## 5 -1.7701038 -2.19737395 2.5495573 -0.4264149 -2.197374 0.3450364
## 6 -3.8841215 0.57299084 -0.6812880 5.0843629 5.540148 5.0558573
##      Whsc1      Wibg      Wif1      Wipf1      Wipf2      Wipf3      Wipi1
## 1 6.996645 4.294234 -1.9586465 7.005038 5.072850 1.50698992 4.963340
## 2 6.186685 4.736039 -0.3057676 4.742510 4.091668 -0.70603982 6.210397
## 3 2.462191 5.672335 -3.8841215 4.328367 1.911138 0.05610664 -1.131317
## 4 6.268777 3.633755 -3.8841215 3.014362 5.049609 3.35859977 3.680161
## 5 5.664516 4.785232 -3.8841215 2.393229 2.217879 3.67453608 2.656603
## 6 7.194974 3.782589 -3.2889060 4.203652 5.025730 -1.16438742 5.162217
##      Wipi2      Wisp1      Wisp2      Wisp3      Wiz      Wls      Wnk1
## 1 6.820971 -2.994604 -3.292738 0.4222768 5.953849 6.439346 8.450974
## 2 6.470084 -1.642497 -3.108037 -1.9690256 5.134566 7.787708 7.730188
## 3 6.876232 -1.931739 -3.884122 -3.8841215 5.332908 8.638648 6.026512
## 4 5.173226 -1.160433 -3.884122 -2.5149853 3.651624 6.593696 6.094646
## 5 4.315294 -2.197374 -3.884122 -2.8071174 2.044749 6.934781 5.318284
## 6 6.452010 -1.757790 -3.451139 -0.3405268 5.347274 4.402040 8.469030
##      Wnk2      Wnk4      Wnt1      Wnt10a      Wnt10b      Wnt11
## 1 5.181191 0.7512281 -3.756645 2.3300029 -3.6675068 -2.7172290
## 2 4.186953 2.1954786 -3.884122 -3.8841215 -3.6565043 -1.2625190
## 3 1.375592 -1.9317392 -3.884122 -0.2425151 0.5144282 -3.8841215
## 4 4.838500 1.2006914 -3.884122 -2.4033993 -1.7647853 -3.8841215
## 5 4.499130 1.2155742 -3.884122 -2.1973739 -1.4408855 -2.8071174
## 6 6.842777 0.1169687 -3.884122 -3.1186116 -3.6607788 -0.6476910
##      Wnt16      Wnt2      Wnt2b      Wnt3      Wnt4      Wnt5a
## 1 -2.518191 -2.2838944 0.32301178 2.3850221 5.0588801 0.4847601
## 2 -3.651962 -3.6565043 0.27408391 -2.8202690 -1.7676312 3.6191862
## 3 -1.931739 -3.8841215 -3.88412153 0.6984974 1.1414140 0.6984974

```

```

## 4 -2.257442 -2.6932032 -0.46993832 3.5070924 0.7227588 4.8028234
## 5 -2.807117 -3.8841215 -3.88412153 3.4045239 4.6053939 4.0268781
## 6 -3.512249 -3.6744822 -0.27851012 1.2568035 0.5472786 4.4575415
##      Wnt5b      Wnt6      Wnt7a      Wnt7b      Wnt8b      Wnt9a
## 1 -0.5758289 -1.8445901 4.8706366 5.310350 -3.884122 -0.85741308
## 2  2.5737380 -3.8841215 -0.8948347 -1.050280 -3.483745 -1.33165537
## 3 -1.9317392 -0.6195262 5.4336732 1.834579 -1.131317 -3.88412153
## 4  0.4382643 -2.2276619 3.4347254 3.089540 2.970456 -1.50507385
## 5 -2.8071174  0.2570463 1.6549031 3.298318 4.470072 -3.88412153
## 6  0.6527683 -1.8273815 7.3519263 6.176904 -3.674482 0.80917498
##      Wnt9b  Wrap53      Wrb      Wrn  Wrnip1      Wsb1      Wsb2
## 1 -3.884122 4.094189 6.012243 3.0378005 5.854529 7.287601 6.774015
## 2 -1.996355 3.155605 3.992433 3.6919760 5.337100 8.228334 7.192691
## 3 -3.884122 4.018078 8.097808 -0.2425151 1.375592 3.731831 6.355865
## 4 -3.884122 5.097160 8.084543 3.8919009 3.449014 6.715887 4.688744
## 5 -3.884122 5.924019 8.294201 -0.7519471 3.147418 4.379211 4.040120
## 6 -3.512249 3.365124 4.937511 3.6289896 6.109775 9.594768 5.158518
##      Wscd1      Wscd2      Wtap      Wtip      Wwc1      Wwc2
## 1 8.898820 0.4808860 5.173667 3.2564175 4.5254449 5.66538583
## 2 6.690090 -1.6528860 6.081201 5.0251503 -0.3474710 7.21857523
## 3 4.790278 -3.8841215 5.843269 0.3033916 1.4798145 0.05610664
## 4 5.986596 2.2028918 6.285788 0.5423285 2.8055687 2.84688322
## 5 7.016608 -3.8841215 7.145492 -1.1730114 0.7189210 -0.28760302
## 6 7.765308 -1.5099303 5.421233 3.3950819 7.6605104 5.29610566
##      Wwox      Wwp1      Wwp2      Wwtr1      Xab2      Xaf1      Xbp1
## 1 3.787320 5.268417 5.554959 2.8735490 5.911986 -1.670852 6.123677
## 2 4.413119 5.557796 6.374843 9.8227985 5.877062 4.515227 7.784708
## 3 4.383152 -1.931739 3.773441 7.9123610 7.643108 6.260322 7.322354
## 4 5.537321 2.875085 6.082606 3.2192535 6.609067 3.767566 5.131020
## 5 4.765436 1.935611 4.178282 -0.1609828 6.507849 5.804951 5.835652
## 6 3.380251 5.672921 5.090725 7.4487689 5.405498 -1.387290 5.951596
##      Xcl1      Xcr1      Xdh      Xiap      Xirp1      Xk
## 1 -3.794983 -3.1754459 -3.2350937 6.493943 -1.1361490 2.2676299
## 2 -3.424345 -0.4148616 -0.7666628 8.060063 -3.8841215 0.8763517
## 3 -3.884122 6.4454714 7.3603972 2.242751 -1.9317392 -0.6195262
## 4 -1.630198 -3.2897395 2.1226071 5.247768 -3.6749365 1.0254908
## 5 -3.884122 -2.8071174 0.0631199 3.512973 -3.8841215 1.2615221
## 6 -3.451139 -3.4904843 -3.3528132 6.763848 -3.5122488 2.8068406
##      Xkr4      Xkr5      Xkr6      Xkr7      Xkr8      Xkr9
## 1 3.52222600 1.1309088 1.1585459 -2.815406 2.791728 -3.2980280
## 2 -2.34144039 -0.2005538 -3.2515854 -2.948662 2.273652 -3.8841215
## 3 -3.88412153 -1.9317392 -3.8841215 -3.884122 -1.931739 -3.8841215
## 4 -2.47405218 1.8069632 0.6554051 -1.209857 3.675612 -3.8841215
## 5 -3.88412153 -3.8841215 -3.8841215 -1.440886 2.803609 -3.8841215
## 6 -2.01983518 0.6889970 0.9094998 -2.524445 2.547323 -3.4511394
##      Xkrx      Xlr      Xpa      Xpc  Xpnpep1  Xpnpep2  Xpnpep3
## 1 -1.2876197 -2.1309692 3.300857 4.14270415 6.766086 -2.376353 2.219175
## 2 -3.2515854 2.1509382 3.823021 4.85734667 7.554927 -1.605204 2.276754
## 3 0.8617169 -1.9317392 -3.884122 0.05610664 7.161240 -3.884122 -1.931739
## 4 -0.3843563 -0.4824283 2.101079 4.17923238 6.992979 -3.884122 3.387056
## 5 -0.5800187 -3.8841215 3.577970 3.54118834 7.094835 -3.884122 -2.197374
## 6 1.2876385 -3.8841215 2.837826 3.99376576 6.381734 -3.674482 3.466340
##      Xpo1      Xpo4      Xpo5      Xpo6      Xpo7      Xpot      Xpr1
## 1 6.817648 4.040003 6.336372 7.142398 6.411572 6.365688 7.216413

```

```

## 2 6.724127 4.332166 5.278653 5.829400 6.561982 6.433828 6.896940
## 3 7.197993 -1.131317 8.587076 1.263249 5.521766 2.410380 7.131547
## 4 6.715374 2.600788 5.848034 5.061044 5.035687 4.615630 6.299450
## 5 4.691834 -2.197374 5.082651 5.205273 5.023878 1.963680 7.007368
## 6 7.717223 4.446753 6.014375 6.583797 5.952581 6.422130 7.708252
##      Xrcc1      Xrcc2      Xrcc3      Xrcc4      Xrcc5      Xrcc6      Xrcc6bp1
## 1 5.501511 3.1912460 3.6348133 3.287026 4.145199 4.933390 1.9336569
## 2 5.316357 2.1538993 1.5181141 4.312190 3.671170 3.828678 1.3617172
## 3 1.479815 0.8617169 0.6984974 6.899908 1.911138 2.182248 3.4532981
## 4 4.886014 4.4372007 4.4389916 5.089111 6.548804 6.753407 1.9674117
## 5 5.712863 4.6362406 5.6602348 5.216981 6.260198 6.540829 4.1295581
## 6 5.178178 4.5710580 4.2621175 3.141428 4.317140 4.724765 2.3587424
##      Xrn1      Xrn2      Xrra1      Xylb      Xylt1      Xylt2
## 1 4.2256534 6.204933 -2.4115921 1.71015793 7.21335847 5.6098738
## 2 5.0612511 7.579512 -1.9677092 -0.79691414 0.09161946 5.8271064
## 3 -0.2425151 7.478321 -3.8841215 -3.88412153 -1.13131698 0.5144282
## 4 4.7964313 7.275327 -0.9738350 1.78320123 0.78441569 2.5153810
## 5 1.0682384 6.582154 -2.1973739 3.45483176 -0.16098275 4.1480228
## 6 5.5866578 6.563373 -0.9081921 1.11443384 6.43874983 5.6317082
##      Yaf2      Yap1      Yars      Yars2      Ybey      Ybx1      Ybx2
## 1 5.9627348 2.0496266 6.924853 3.6291312 1.1724280 7.878963 -1.56298916
## 2 6.8921789 7.2479374 6.062022 3.3938997 0.5874408 8.447830 -3.88412153
## 3 0.6984974 2.7391666 3.041231 0.6984974 3.4786766 2.652618 -3.88412153
## 4 5.2312186 4.2102157 6.834578 2.5703082 3.7612020 6.012520 -0.07436433
## 5 6.3373138 4.8876739 6.609060 3.7650420 3.9795505 6.802135 -3.88412153
## 6 5.0485518 6.3535944 5.858446 3.3726768 0.7871343 6.211730 -0.30738804
##      Ydjc      Yeats2      Yeats4      Yes1      Yif1a      Yif1b      Yipf1
## 1 1.51561268 6.495957 4.892454 5.0677966 5.264951 4.618729 5.759344
## 2 0.77576678 6.076501 5.495255 7.8893492 5.499775 5.916635 6.249115
## 3 -3.88412153 1.141414 1.834579 0.6984974 9.010593 8.838720 7.849307
## 4 -2.79630959 4.882073 3.651154 3.7723141 7.478623 6.493216 6.291910
## 5 2.19438236 3.812116 4.962608 3.7809046 8.346436 7.683257 7.027453
## 6 -1.96324953 7.353509 4.423511 5.5114467 4.323006 3.635014 4.698508
##      Yipf2      Yipf3      Yipf4      Yipf5      Yipf6      Ykt6      Ylpm1      Yme111
## 1 3.940469 6.493681 4.934318 5.688566 6.063640 7.165945 6.179880 5.923966
## 2 4.109397 6.623244 6.230508 5.853203 5.615743 6.927414 5.537716 7.451099
## 3 4.953036 2.410380 4.674250 8.625217 6.150124 2.607316 1.479815 9.179228
## 4 4.533545 4.869834 5.238589 7.063454 5.709836 5.663046 5.719547 8.022701
## 5 4.384412 5.966252 7.357354 7.497146 5.369013 5.574098 3.531845 8.949176
## 6 3.180418 6.256303 5.072405 5.685844 5.940590 6.643783 7.310405 6.528309
##      Yod1      Ypel1      Ypel2      Ypel3      Ypel4      Ypel5      Yrdc
## 1 3.8353920 3.7902191 5.062404 5.341352 2.6000913 5.806988 4.6849072
## 2 3.4714516 2.6156082 5.930561 5.370812 -2.4122130 6.639034 6.2676321
## 3 1.0083330 -0.2425151 1.375592 5.924007 -1.9317392 7.704898 0.6984974
## 4 4.8007276 3.2180892 5.881849 4.298513 1.0987263 7.652845 2.7006712
## 5 5.7004062 1.5843436 6.086005 4.596458 -3.8841215 8.274028 3.1716861
## 6 4.5690639 1.7429619 2.888287 4.739950 1.8640389 5.602526 4.1699507
##      Ythdc1      Ythdc2      Ythdf1      Ythdf2      Ythdf3      Ywhab      Ywhae
## 1 6.129745 4.7994943 6.491648 5.488271 6.261564 8.180019 9.872758
## 2 7.258716 4.3050099 6.876450 4.865148 7.421187 8.888941 9.586501
## 3 5.367284 6.6686228 1.263249 8.586346 2.512206 6.376264 11.593130
## 4 5.376280 2.7012813 4.524798 7.809021 4.617924 7.350898 11.342005
## 5 5.407839 2.0182291 4.020211 9.120833 4.986745 7.646392 11.869926
## 6 7.381248 5.5543233 5.819655 4.951607 7.071726 6.886145 8.835462

```

##	Ywhag	Ywhah	Ywhaq	Ywhaz	Yy1	Yy2	Zadh2
## 1	7.463030	6.493852	6.702155	6.936651	5.876102	1.4914197	5.7105852
## 2	6.489684	7.680844	6.374238	8.016635	6.805825	3.0221015	6.2032732
## 3	4.934814	7.523223	8.900469	10.883490	1.375592	-1.1313170	0.8617169
## 4	6.648981	5.140121	8.113210	9.536581	4.406007	2.7431765	3.1723939
## 5	7.126218	5.714929	8.647230	10.418499	3.901892	1.2615221	2.8792384
## 6	6.279636	6.741841	4.778972	7.328621	5.359010	2.2414294	4.6446664
##	Zap70	Zar1	Zar1l	Zbbx	Zbed3	Zbed4	
## 1	-2.7651481	-3.048987	-3.673045	-3.528270	4.870191	2.7066327	
## 2	5.6305315	-2.753107	-2.553203	-2.678141	5.305825	2.2961787	
## 3	-1.9317392	-3.884122	-3.884122	-3.884122	-1.131317	-3.8841215	
## 4	-1.2742552	-3.884122	-3.427701	-2.356622	2.999839	2.1721826	
## 5	-3.8841215	-3.884122	-3.884122	-3.884122	3.657453	1.9912121	
## 6	-0.8961047	-3.884122	-3.884122	-2.249857	4.750003	2.6820451	
##	Zbed6	Zbp1	Zbtb1	Zbtb10	Zbtb11	Zbtb12	
## 1	5.41429193	-2.83953542	3.515330	3.99067976	5.114603	3.1403450	
## 2	6.29494996	-1.60653164	4.944802	7.07186673	6.325038	2.2757378	
## 3	1.83457854	-3.88412153	4.435932	6.44868562	5.545978	-1.1313170	
## 4	2.32668725	-1.10717545	3.140988	4.15756421	5.088933	-0.4421878	
## 5	-1.44088555	-3.88412153	-0.287603	4.69602325	4.869244	-2.8071174	
## 6	5.93235929	-3.66077880	5.238197	6.19117379	6.203966	1.5864192	
##	Zbtb16	Zbtb17	Zbtb2	Zbtb20	Zbtb22	Zbtb24	Zbtb25
## 1	3.1345260	5.233290	5.088269	3.3438154	4.7512714	3.5164359	3.1908171
## 2	0.4338790	5.711914	6.323698	2.1049411	5.8324874	3.7227907	2.4439405
## 3	0.5144282	6.278499	-3.884122	4.6521135	0.8617169	-0.2425151	-0.2425151
## 4	2.1245870	4.862064	2.080330	7.1343575	2.1829133	3.6657847	3.5094698
## 5	-0.7519471	2.834338	-2.197374	6.7025927	3.3417432	4.6876331	3.7409163
## 6	1.4381093	4.956029	6.496341	5.1940000	4.5919771	4.3625407	4.5348442
##	Zbtb26	Zbtb3	Zbtb32	Zbtb33	Zbtb34	Zbtb37	Zbtb38
## 1	2.856485	0.6401063	-1.0366326	5.208851	4.0324191	2.734717	3.919319
## 2	1.701691	-0.3451218	-2.1037807	5.223544	4.7957393	3.011556	5.496991
## 3	5.683292	-3.8841215	-3.8841215	4.595239	-0.6195262	-1.931739	1.479815
## 4	4.495686	2.7164939	-2.8314011	4.479985	2.7547850	3.253980	3.824333
## 5	5.571820	-3.8841215	-2.8071174	5.318284	2.8792384	-2.197374	2.549557
## 6	3.458827	1.1713901	-0.4087914	5.333704	4.6531320	4.428833	4.531761
##	Zbtb39	Zbtb4	Zbtb40	Zbtb41	Zbtb42	Zbtb43	Zbtb44
## 1	5.0230732	5.629307	4.2241201	4.772296	-0.80263915	5.292217	4.422017
## 2	4.5154052	6.208972	3.2266593	4.781067	1.88163743	4.605309	4.798038
## 3	0.3033916	6.486708	-0.6195262	2.512206	-1.13131698	1.753727	1.577013
## 4	2.8851538	5.321922	3.0008048	5.476820	-0.77447970	4.973324	4.917330
## 5	3.8725830	4.578419	1.0682384	4.916681	-1.44088555	5.085848	4.894981
## 6	4.7827646	5.608614	4.3259900	6.466725	0.62194971	5.589063	4.765370
##	Zbtb45	Zbtb46	Zbtb48	Zbtb49	Zbtb5	Zbtb6	Zbtb7a
## 1	3.311679	1.5800764	3.2388480	3.2203530	4.415707	4.120511	5.286312
## 2	2.775850	4.9899502	3.6035209	2.6515398	4.057343	3.231344	5.959052
## 3	5.346757	-1.9317392	0.3033916	-1.9317392	5.178854	6.612408	2.780569
## 4	1.746637	1.6597352	4.0814621	2.7397484	5.041221	4.973595	4.620320
## 5	1.119041	-1.7701038	4.7812943	2.7722112	3.298318	6.101878	4.691834
## 6	2.957082	0.3059762	4.0904091	3.7592814	5.123762	4.706678	4.586132
##	Zbtb7b	Zbtb7c	Zbtb8a	Zbtb8b	Zbtb8os	Zbtb9	
## 1	4.3626480	1.417335771	1.35392379	-1.2033511	1.5164011	3.284451	
## 2	3.3455618	-1.482217001	2.59175255	-3.2489909	1.9061801	3.419233	
## 3	1.3755916	0.514428249	0.05610664	-3.8841215	4.7902775	-1.931739	
## 4	0.7268433	-0.724687622	3.96812229	2.2300816	3.3987137	1.352671	

```

## 5 0.8449942 -2.197373949 2.65660325 -2.8071174 1.1681147 3.298318
## 6 4.7859437 2.490193946 1.26311824 -2.8744502 0.7422072 4.168728
##      Zc3h10      Zc3h12a      Zc3h12b      Zc3h12c      Zc3h12d      Zc3h13
## 1 3.2634699 1.86679076 1.7371028 4.7135638 -3.6296120 5.5620030
## 2 5.2343418 3.45150928 -0.1923917 5.2698484 -2.5532032 5.4636748
## 3 0.3033916 -3.88412153 -1.9317392 -0.6195262 -3.8841215 1.3755916
## 4 3.3670132 -0.33747692 0.9012854 4.1285306 -3.8841215 5.5027509
## 5 1.9356113 -2.80711744 -2.8071174 0.9609302 -3.8841215 5.3237082
## 6 4.3537487 1.50401177 2.8688175 5.2993743 -3.1565438 6.6337687
##      Zc3h14      Zc3h15      Zc3h18      Zc3h3      Zc3h4      Zc3h6      Zc3h7a
## 1 5.771453 5.356577 5.4201060 2.7009985 5.862231 2.59056628 5.89666086
## 2 6.694152 6.074888 5.5440515 1.7256188 5.920051 3.28524991 7.21835002
## 3 4.971031 1.479815 0.5144282 -3.8841215 1.577013 0.05610664 1.91113848
## 4 3.980859 5.616797 3.2548310 2.3657267 5.044941 3.07569931 5.60685438
## 5 1.877781 4.777346 1.8479734 0.5063887 3.072065 -2.80711744 2.56795903
## 6 6.160316 5.706713 5.6082497 3.0471238 5.787516 3.96009519 7.06814395
##      Zc3h7b      Zc3h8      Zc3hav1      Zc3hav1l      Zc3hc1      Zc4h2      Zcchc10
## 1 8.239989 2.145932 0.84531257 2.9565618 4.812741 4.978107 2.550295
## 2 7.292601 2.578115 6.29155142 2.9131090 5.412289 3.515492 3.544940
## 3 1.375592 -1.931739 1.75372696 -0.6195262 7.975005 7.473595 1.008333
## 4 4.545614 3.530671 1.56362433 3.1747788 6.784418 6.748155 4.836452
## 5 4.657877 -1.440886 -0.42641489 5.2372435 7.198126 6.865805 4.757441
## 6 7.339991 2.991633 1.75693005 2.5609526 4.554386 3.456063 2.970440
##      Zcchc11      Zcchc12      Zcchc14      Zcchc16      Zcchc17      Zcchc18      Zcchc2
## 1 5.3313718 5.0293134 6.846736 0.91134841 5.310642 6.302628 5.0046355
## 2 6.6781821 1.1464517 6.127762 -3.65196234 5.140282 2.420036 4.2529066
## 3 0.5144282 1.3755916 4.916359 -3.88412153 8.186152 8.732622 1.0083330
## 4 5.2558393 5.0833203 6.007408 -1.71651920 6.928103 8.226386 2.8310921
## 5 2.6393048 0.6514968 4.934519 -3.88412153 7.399063 7.525669 2.0963708
## 6 6.2798683 2.7558984 6.998717 0.11943073 3.726547 6.641140 5.4570026
##      Zcchc24      Zcchc3      Zcchc4      Zcchc5      Zcchc6      Zcchc7      Zcchc8
## 1 8.507853 4.243700 1.8319320 -3.790167 5.728790 4.882825 5.197721
## 2 4.517633 1.194034 2.1504567 -3.884122 7.507656 5.048134 5.522593
## 3 6.674126 1.141414 -0.6195262 -3.884122 1.008333 4.759548 1.479815
## 4 6.367928 4.006207 2.6192988 -3.082383 4.610322 5.485826 6.048990
## 5 5.211139 4.293344 0.6514968 -3.884122 4.202040 4.640594 2.044749
## 6 8.293122 4.162161 3.1342427 -3.674482 6.300361 6.258209 5.829123
##      Zcchc9      Zcrb1      Zcwpw1      Zdbf2      Zdhhc1      Zdhhc12
## 1 3.549571 4.896629 4.0390829 2.96760280 4.521147 3.8518133
## 2 3.890186 5.461180 1.3900837 1.03492864 5.221059 3.1355363
## 3 6.999702 5.803652 -1.1313170 -3.88412153 5.666826 -0.2425151
## 4 4.729819 3.347810 4.6368243 2.43721124 2.535749 4.4866459
## 5 4.352923 3.320194 0.9041264 1.06823845 4.190210 5.0138453
## 6 4.549884 4.661798 2.4033872 5.39229267 5.182245 3.1114496
##      Zdhhc13      Zdhhc14      Zdhhc15      Zdhhc16      Zdhhc17      Zdhhc18
## 1 4.3290469 6.4430101 4.1285875 4.9396387 6.798670 5.2526266
## 2 3.1559294 2.0299141 4.0118438 4.8843582 5.654385 5.2822926
## 3 0.3033916 1.0083330 -0.2425151 -0.6195262 1.141414 -0.2425151
## 4 3.6048746 3.2747106 3.6719060 4.6392749 5.023773 2.5722562
## 5 5.6983196 0.6514968 2.7879955 4.2654270 3.512973 3.5318445
## 6 4.9050012 1.3572228 2.6810758 4.6478303 6.983700 5.8577088
##      Zdhhc2      Zdhhc20      Zdhhc21      Zdhhc22      Zdhhc23      Zdhhc24      Zdhhc3
## 1 6.96328832 6.407946 5.517532 2.325526 2.4825744 4.861625 6.378763
## 2 0.02715752 8.093003 4.878285 -3.112310 -2.5340902 4.186864 6.336113

```

```

## 3 0.05610664 7.182632 1.753727 -1.931739 -3.8841215 1.479815 5.757743
## 4 2.85290737 7.122411 4.519161 -3.444759 -0.1014695 3.691412 4.387069
## 5 2.49290061 7.073259 1.847973 -2.807117 -2.1973739 -2.807117 4.962608
## 6 4.47588444 6.159999 7.912604 -2.865381 0.8711671 4.794505 5.196456
##      Zdhhc4  Zdhhc5  Zdhhc6  Zdhhc7  Zdhhc8  Zdhhc9      Zeb1      Zeb2
## 1 4.565007 5.742554 5.040793 5.971478 5.805495 7.293536 6.823029 7.718865
## 2 4.930872 6.578632 5.332741 5.609416 5.319431 6.674556 7.481987 4.742220
## 3 2.182248 2.820816 3.290869 4.536031 5.453008 4.486849 3.006755 3.074902
## 4 6.062644 3.776920 6.048610 2.905600 2.311251 2.912416 7.041016 7.610405
## 5 6.002219 2.453854 4.623101 3.394248 2.965052 4.033514 5.710794 7.137813
## 6 4.700944 5.736742 5.087800 4.954926 5.955668 5.227931 8.081803 6.683110
##      Zer1  Zfand1  Zfand2a  Zfand2b  Zfand3  Zfand5  Zfand6
## 1 6.807775 2.977001 5.6782484 4.133828 6.816488 6.723471 5.479479
## 2 5.076167 2.733576 8.5945103 5.181861 7.022617 7.732473 6.889438
## 3 5.400861 6.177504 0.3033916 7.486163 4.749157 7.478321 7.856585
## 4 4.778433 4.509149 3.7376836 4.727235 4.230169 5.201732 7.580816
## 5 5.555775 5.358480 4.4152290 5.689943 5.467866 5.741517 8.723340
## 6 6.539766 3.325982 5.5482033 4.203854 6.107103 7.684822 5.594900
##      Zfat      Zfc3h1      Zfhx2      Zfhx3      Zfhx4      Zfml      Zfp1
## 1 3.1492520 5.2401211 4.3333114 2.777618 3.8962770 6.212926 3.698506
## 2 3.5114857 5.2775124 2.4460821 2.347040 -2.2210829 6.841455 4.365024
## 3 -1.1313170 5.0493396 -0.6195262 1.141414 6.6519873 6.035090 1.008333
## 4 2.5877114 3.7502814 3.7046384 4.053881 3.2566755 7.076470 4.960370
## 5 0.8449942 0.2570463 0.7189210 2.803609 -3.8841215 4.166254 5.462958
## 6 3.6415711 7.3730927 5.3693828 2.766621 3.5787655 7.146451 4.226089
##      Zfp105  Zfp106  Zfp108  Zfp109  Zfp110  Zfp113  Zfp114
## 1 2.708745 7.2756780 1.2740015 1.45278683 4.419469 2.405699 -0.0696629
## 2 3.095595 7.3569331 0.3254667 0.72693423 4.667759 1.764466 -2.7198557
## 3 -1.131317 1.6680739 -1.9317392 -3.88412153 2.182248 8.359246 -3.8841215
## 4 2.625435 5.3979285 2.6699362 0.84749438 6.039716 5.548431 1.0565216
## 5 -1.770104 0.6514968 -0.9471720 -3.88412153 5.126764 4.420302 -0.1609828
## 6 3.287557 7.7222980 2.6686770 1.73154585 4.748640 3.702533 -0.2765361
##      Zfp12  Zfp128  Zfp13  Zfp14  Zfp142  Zfp143  Zfp146
## 1 5.018737 1.4295927 3.5644404 5.0499471 5.588512 3.188352 5.3576267
## 2 4.633212 0.6862777 2.5964553 2.0539525 3.968154 4.592276 5.6822726
## 3 4.897664 -0.6195262 0.3033916 -0.6195262 2.119096 -1.131317 1.2632490
## 4 4.062250 3.3264133 4.3803961 4.7943197 4.334134 5.149532 3.9797361
## 5 2.723795 -0.9471720 4.0727023 3.8577022 2.351349 2.453854 -0.7519471
## 6 5.001741 1.2446549 3.7987718 5.9120828 6.776673 4.295110 5.0418514
##      Zfp148  Zfp157  Zfp160  Zfp169  Zfp174  Zfp180  Zfp182
## 1 5.823434 4.525036 3.1045538 3.097932 2.35047203 5.132579 2.7106919
## 2 7.186319 3.668216 3.7314591 1.615127 1.20274756 5.182858 3.6233126
## 3 5.604788 4.018078 -0.6195262 3.232392 -3.88412153 1.141414 -0.6195262
## 4 6.376527 5.985619 4.8791958 2.972813 3.39674786 4.676355 3.8075529
## 5 6.119139 4.460254 2.8938999 -2.807117 -1.77010377 2.492901 1.5843436
## 6 6.511011 4.865498 5.3305333 3.001859 2.29103295 4.564683 4.4182267
##      Zfp185  Zfp189  Zfp191  Zfp2  Zfp202  Zfp207
## 1 -1.5273847 2.437505361 6.3363531 4.4152756 2.3640323 7.648050
## 2 -0.2483317 2.993170563 5.8795425 3.3044121 2.8588728 7.086550
## 3 -0.2425151 -3.884121530 8.5471492 0.6984974 -1.9317392 5.186575
## 4 -0.7595794 4.032214299 6.6383448 5.9399287 2.4923239 8.505577
## 5 -1.7701038 0.783334296 6.1469468 5.8432262 -2.1973739 8.157350
## 6 1.3155532 3.653969858 6.4129372 4.5095209 3.3578530 7.127330
##      Zfp212  Zfp213  Zfp217  Zfp219  Zfp229  Zfp235

```

```

## 1 4.7279147 2.8781914 0.1581152 6.4142228 1.9917647 3.6365382
## 2 5.6514926 3.6169004 4.3651142 3.7505733 3.3092372 2.8956974
## 3 0.6984974 -1.1313170 -0.2425151 -0.2425151 -1.9317392 4.4359321
## 4 4.1070091 2.0159528 2.6610635 1.3364061 3.5620452 4.6599764
## 5 4.7852317 -0.2876030 2.3724409 -0.9471720 0.9609302 2.0447493
## 6 4.7862998 2.3694121 5.5218704 7.2149959 3.5958874 3.9215980
##      Zfp236      Zfp248      Zfp251      Zfp26      Zfp260      Zfp263      Zfp266
## 1 6.2491714 2.56277584 5.0740179 4.669160 5.059345 4.952899 6.170241
## 2 5.6819119 2.66008029 2.3696969 4.729808 5.790017 6.094804 6.360081
## 3 0.8617169 0.05610664 0.6984974 4.523891 2.462191 7.151410 8.010239
## 4 3.9722416 4.43099586 4.0575557 5.482445 7.445121 5.843836 8.837484
## 5 3.2535457 1.11904070 5.1174244 6.146947 6.255948 4.930969 8.036194
## 6 6.5008004 3.85048873 4.8405836 6.003814 5.214882 5.820120 6.624980
##      Zfp27      Zfp275      Zfp276      Zfp277      Zfp28      Zfp280b      Zfp280c
## 1 3.6398041 5.515752 6.279028 3.921840 3.800973 4.0758168 5.4537554
## 2 3.5780088 5.039838 4.182130 6.154979 2.611520 4.2024032 4.6259275
## 3 0.8617169 1.577013 -1.931739 7.925109 -1.131317 0.6984974 8.0531046
## 4 5.0172824 5.429128 2.270263 5.632601 3.080611 2.3194756 5.2107536
## 5 5.3344968 5.783459 3.986407 6.961126 1.306052 2.9227833 0.1633391
## 6 4.4713462 5.628657 4.796712 4.495810 4.451399 4.9425767 7.6080033
##      Zfp280d      Zfp281      Zfp282      Zfp286      Zfp287      Zfp292      Zfp296
## 1 4.818509 5.795227 4.879827 2.68215287 4.284276215 5.306711 -1.8078024
## 2 5.648035 5.662215 5.410348 1.05322854 4.444618048 6.546014 -1.0170699
## 3 6.307114 2.696541 1.479815 0.05610664 -3.884121530 2.053052 -1.9317392
## 4 5.790162 5.150151 3.230155 5.03794159 3.803866467 6.588425 -0.5338012
## 5 3.879966 5.353185 -0.287603 4.15412558 -2.807117436 4.793075 -3.8841215
## 6 6.577629 5.971252 4.512284 3.84396836 4.498901350 6.631696 -0.2901776
##      Zfp3      Zfp30      Zfp300      Zfp316      Zfp317      Zfp318
## 1 2.1880645 3.112900 -0.5711695 4.8902533 5.254782 5.9432056
## 2 2.7139665 2.637442 1.1963170 1.9600334 4.987618 4.7819017
## 3 -3.8841215 -1.131317 -0.2425151 -0.6195262 6.899908 -0.6195262
## 4 2.7591811 4.067937 2.5347010 2.6965400 7.088719 4.8768790
## 5 -0.9471720 4.729104 2.9227833 2.3932290 6.423206 4.3152945
## 6 3.0869786 3.327233 -0.2210227 4.7841041 5.925695 6.5805665
##      Zfp322a      Zfp324      Zfp326      Zfp329      Zfp330      Zfp334      Zfp335
## 1 3.8072690 3.114028 5.3133280 4.069647 4.312733 4.5789608 6.044246
## 2 3.7169062 3.309544 6.0455029 2.935960 5.158334 2.5632834 5.811416
## 3 1.3755916 -3.884122 0.6984974 2.462191 6.927817 -0.6195262 1.008333
## 4 5.8307662 2.022944 4.0727699 6.372825 5.394587 3.6877507 3.970025
## 5 5.4800631 -1.173011 3.9377103 4.207919 4.555547 4.0335142 1.471579
## 6 4.3513358 2.861814 5.9392399 5.102102 4.755732 5.7453439 6.107327
##      Zfp341      Zfp346      Zfp354a      Zfp354b      Zfp354c      Zfp358
## 1 2.5155488 4.777715 2.94165723 0.71685488 5.3377501 5.1427734
## 2 2.2950936 4.123145 3.68790931 0.80338678 3.4347086 5.8754311
## 3 3.4786766 1.263249 -1.93173924 -3.88412153 0.6984974 -0.6195262
## 4 0.1787196 4.473991 2.82462866 2.88980200 6.0882520 1.7404418
## 5 -1.7701038 2.393229 -3.88412153 -0.94717201 4.0662445 2.3082165
## 6 3.0839178 4.872783 3.81792292 0.71245703 6.3836521 3.6821494
##      Zfp36      Zfp362      Zfp365      Zfp366      Zfp367      Zfp369      Zfp3611
## 1 5.776489 5.5640484 7.729483 -2.7992907 3.668308 3.683637923 6.201313
## 2 9.864966 6.5807493 1.294195 5.8935987 4.338035 3.548080510 8.202631
## 3 5.209494 0.3033916 3.688985 -3.8841215 5.843269 -1.931739237 7.638893
## 4 6.920977 3.1275735 4.586336 -3.5296461 6.168135 2.016316354 7.164482
## 5 5.462958 1.5843436 3.972661 -0.4264149 5.861990 -2.807117436 7.016608

```

```

## 6 8.516965 5.3549259 1.807099 -1.1536931 4.127166 4.716226941 8.727037
## Zfp3612 Zfp37 Zfp382 Zfp384 Zfp385a Zfp385b
## 1 6.381146 3.6181924 1.86285679 5.3432378 4.2034635 -1.07697218
## 2 5.460909 2.5692525 0.74061778 5.6718538 2.2282049 1.91872716
## 3 1.911138 0.8617169 -0.61952623 -0.6195262 0.8617169 -1.13131698
## 4 4.249901 5.6721635 3.34486460 2.0126550 0.7508034 4.95663661
## 5 1.786443 4.9798900 -0.04458439 1.7864435 1.5101550 4.79698009
## 6 9.108353 3.7240022 3.04012085 5.7272827 5.8742274 -0.55200249
## Zfp385c Zfp386 Zfp395 Zfp397 Zfp398 Zfp40 Zfp407
## 1 -3.062682 4.053165 3.18507495 5.039305 3.215963 3.1180548 3.9286696
## 2 -2.877422 5.293053 4.28479239 4.480606 2.181526 3.9144615 5.6608084
## 3 -1.931739 1.479815 0.05610664 5.803652 -1.931739 0.6984974 0.6984974
## 4 -3.418218 6.192803 3.03849424 5.538707 2.604101 4.9607748 3.6085723
## 5 -3.884122 6.685840 0.71892097 3.219030 2.965052 3.4646862 3.1227355
## 6 -2.372366 4.766352 4.27707433 5.524548 4.304236 4.8633740 5.0957770
## Zfp408 Zfp41 Zfp410 Zfp414 Zfp420 Zfp422 Zfp423
## 1 4.4109582 4.979080 5.491630 4.727201 2.6381748 5.212157 3.0619806
## 2 4.2809147 2.670963 5.912290 4.169988 2.3213258 5.783402 5.3362142
## 3 -0.6195262 6.260322 1.753727 6.800263 8.0531046 7.172948 3.0067551
## 4 2.1317415 6.327546 6.782287 6.169347 4.8241631 7.073107 4.0402452
## 5 2.7562522 7.103534 5.818463 5.696230 3.8350891 4.591969 5.4555644
## 6 4.9178932 4.078566 5.688669 4.831462 3.6756374 5.020435 5.1883237
## Zfp426 Zfp428 Zfp438 Zfp444 Zfp445 Zfp446 Zfp449
## 1 4.5798358 4.88431825 3.0564059 4.426554 6.931235 4.061539 1.9056496
## 2 4.5625336 3.22400914 2.8220484 4.191681 6.240495 3.949449 1.4213537
## 3 0.3033916 0.05610664 0.6984974 -1.131317 2.410380 -1.931739 0.5144282
## 4 5.5385437 1.10855191 4.6116269 4.552717 6.298813 3.841090 4.4123997
## 5 4.3634957 3.34174318 4.9626079 3.740916 5.913265 -1.440886 -1.1730114
## 6 5.1647762 4.52311525 4.2018038 3.346973 8.414743 4.664361 3.7610981
## Zfp451 Zfp454 Zfp458 Zfp46 Zfp462 Zfp467
## 1 4.566818 2.0706372 2.1429099 4.918335 6.6234418 3.6317376
## 2 4.632660 0.8170049 1.0969388 5.896056 1.8174239 3.3834268
## 3 -1.131317 -1.1313170 -1.1313170 2.119096 1.1414140 -0.6195262
## 4 4.022840 4.2993435 2.6959324 5.553287 4.5093806 2.3723051
## 5 3.159603 -2.1973739 3.0328598 6.426991 4.1480228 -0.5800187
## 6 5.429095 3.3335025 2.5627279 4.657411 6.5774758 5.4660387
## Zfp473 Zfp488 Zfp503 Zfp507 Zfp51 Zfp511
## 1 -0.04017587 6.20012724 4.1711196 4.6266899 1.40170056 3.868581
## 2 0.49703345 -3.88412153 4.8277531 4.5998222 3.67771730 4.555601
## 3 1.00833299 1.75372696 6.2081727 0.5144282 0.05610664 -1.131317
## 4 1.05479981 1.73749663 1.2461964 3.7649188 4.17191440 3.837404
## 5 -3.88412153 1.93561130 0.9041264 2.9650523 3.07206548 4.450369
## 6 0.28139952 -3.51224876 1.9666559 5.6894130 3.27567583 3.498022
## Zfp512 Zfp513 Zfp516 Zfp518a Zfp518b Zfp52
## 1 5.250832 5.2339528 6.2958675 2.7638730 4.2891448 1.7236571
## 2 4.690548 5.4157620 5.5494339 4.3068633 3.6294409 5.4299678
## 3 6.517645 -1.9317392 0.6984974 -0.2425151 0.3033916 -0.6195262
## 4 5.199247 2.5724366 3.7169560 4.2632032 3.9581363 2.3134354
## 5 4.091904 2.4339276 3.5129733 4.4991300 1.8479734 -2.8071174
## 6 5.578070 5.1918604 6.7364990 4.4872264 4.2618475 2.3724078
## Zfp521 Zfp523 Zfp524 Zfp526 Zfp53 Zfp532 Zfp534
## 1 5.4811321 6.2085596 2.187094 2.2822888 2.0932531 6.166227 -2.4487770
## 2 6.5203154 5.0708240 3.351974 2.1823398 1.5730690 6.344523 -3.8841215
## 3 3.9288271 -0.6195262 7.133546 0.3033916 -0.2425151 6.085518 -3.8841215

```



```

## 4  5.0133619  2.7281002  3.671696  1.1048910  3.7224545  5.030881  -3.6539444
## 5  2.0182291  5.1574675  2.922783  2.2409993  1.1190407  4.040120  -3.8841215
## 6  6.4937520  6.2520354  1.192072  2.8140311  2.7700421  7.958530  -0.9637825
##      Zfp536      Zfp54      Zfp541      Zfp551      Zfp553      Zfp558
## 1  4.3810556  0.59263399 -3.715698  1.3989655  4.2449440  2.2124017
## 2  -1.5255932  0.93732722 -3.884122  0.6416153  3.3413293  1.0546628
## 3  -0.6195262  0.30339162 -3.884122  -0.2425151  -1.1313170  0.3033916
## 4  4.7404679  2.65971960 -3.884122  3.4275791  2.8116598  4.7665377
## 5  1.9356113  4.60093290 -3.884122  -0.9471720  3.1351297  4.3947578
## 6  -1.9418910  0.35835193 -2.877778  2.3976787  2.9898672  2.3128478
##      Zfp560      Zfp566      Zfp57      Zfp574      Zfp575      Zfp579
## 1  2.9052841  2.6656808  4.3254685  4.8002194  1.4619217  5.679120
## 2  3.7480802  2.1450151  4.3027512  3.9175950  -2.0452279  2.230244
## 3  -0.2425151  0.5144282  1.3755916  0.5144282  -0.6195262  -1.931739
## 4  5.0956086  3.9765270  6.9627706  3.3768991  -1.5670409  2.934354
## 5  5.6408087  -0.5800187  3.8946204  4.3529226  2.7072879  3.819814
## 6  2.5653572  2.5054815  1.0038554  4.9835017  -0.2497762  4.870132
##      Zfp580      Zfp583      Zfp59      Zfp592      Zfp593      Zfp597
## 1  4.2566015  1.7244015  1.3966106  5.1021559  2.8274970  4.1535221
## 2  3.3038330  0.6983714  0.5377390  5.7946959  2.4367199  4.9885847
## 3  2.3566392  -0.2425151  7.1573158  3.5522389  -1.9317392  -0.2425151
## 4  1.1161873  4.0828624  3.2923303  4.0777938  1.1194452  3.7254173
## 5  0.8449942  -0.7519471  2.2861569  0.9609302  1.2155742  2.1215049
## 6  3.1269328  1.6465080  2.2823583  7.1459301  2.7314017  4.2838161
##      Zfp598      Zfp599      Zfp60      Zfp605      Zfp606      Zfp607
## 1  6.0624646  -0.48565856  3.6576063  3.5865363  3.864552  0.6950117
## 2  6.2557588  -0.08222124  2.6880672  2.8521198  3.757686  1.7911522
## 3  7.0639901  -1.93173924  6.5922043  0.3033916  1.008333  -1.9317392
## 4  3.0486876  2.73942748  6.0134395  5.3047587  5.544044  2.0960025
## 5  -1.1730114  -2.80711744  5.4256061  4.7002001  5.301886  -3.8841215
## 6  6.4243248  -1.20158928  4.0097690  4.6513284  4.866360  2.9589097
##      Zfp608      Zfp609      Zfp61      Zfp612      Zfp618      Zfp62      Zfp622
## 1  6.4872656  6.174165  3.938520  4.3382014  1.360649  4.717760  4.783067
## 2  6.1864619  5.862927  2.629046  -1.3400166  3.564372  4.374525  6.089210
## 3  0.6984974  2.119096  -1.131317  0.5144282  -1.931739  6.077235  4.971031
## 4  5.4524181  3.672402  4.982583  5.8348543  -3.164319  6.112581  3.003095
## 5  4.1357393  1.722172  2.240999  2.7237947  -2.197374  5.163531  5.187531
## 6  7.5732236  6.601679  4.527449  4.9379672  -1.714519  6.014938  4.794832
##      Zfp623      Zfp628      Zfp629      Zfp639      Zfp64      Zfp641      Zfp644
## 1  4.0385291  4.169305  4.616988  4.898553  4.3252642  3.2630251  5.126148
## 2  3.9005820  3.966936  4.501021  4.529392  4.6976273  -0.6445179  5.869085
## 3  0.5144282  1.008333  1.375592  7.470436  -0.2425151  -1.9317392  2.242751
## 4  4.4789629  2.236232  5.326126  5.432726  4.8746473  1.9072563  6.054029
## 5  5.0826515  2.908414  4.536986  3.147418  4.4846740  -3.8841215  4.902250
## 6  4.3129834  3.693825  5.147871  5.264702  4.2870094  4.9131689  5.903544
##      Zfp646      Zfp647      Zfp648      Zfp651      Zfp652      Zfp653
## 1  4.9667861  2.1663618  0.5731424  6.535575  4.801583  3.8200457
## 2  5.4706937  2.0292898  -3.6565043  4.572383  4.464445  4.1867327
## 3  0.8617169  5.9604930  -3.8841215  -1.931739  -1.131317  -0.6195262
## 4  4.0435879  4.3961789  -3.1975237  3.185146  1.667675  1.5274853
## 5  -1.1730114  4.0919043  -3.8841215  2.740115  -2.197374  -3.8841215
## 6  5.2625525  2.4832793  0.1193480  6.165435  4.466659  5.0497352
##      Zfp654      Zfp655      Zfp658      Zfp661      Zfp664      Zfp667      Zfp668
## 1  3.8888778  5.149826  2.3157243  3.1192948  7.618477  3.295596  3.2971306

```

```

## 2  4.7438018 6.339445 0.8121156 2.9291693 7.705331 3.023489 3.5436108
## 3  -0.6195262 8.449452 -1.1313170 -1.1313170 2.242751 6.923202 -0.2425151
## 4  3.1254994 6.140477 4.6300688 4.6183997 5.188665 4.684464 4.2715412
## 5  -1.7701038 6.082810 3.0061180 -0.7519471 5.225700 1.877781 2.7879955
## 6  4.5389276 6.327176 3.0851535 4.2164758 6.347741 3.203312 3.1660122
##      Zfp672      Zfp677      Zfp68      Zfp687      Zfp688      Zfp689      Zfp69
## 1  4.2490006 1.5496053 4.862144 5.8598853 2.623387 2.8337379 0.98599219
## 2  3.9139227 1.3052505 5.867462 4.6416533 1.865510 1.8412142 5.47297868
## 3  0.8617169 -1.9317392 2.053052 1.1414140 -1.931739 0.3033916 -3.88412153
## 4  5.7236133 3.5664874 7.131806 2.9043183 2.764635 4.6971793 -0.36848832
## 5  5.5921914 4.5829496 6.925000 1.9912121 4.184258 2.4137218 -3.88412153
## 6  4.5633175 2.0506298 4.909135 6.3984880 1.939050 2.6923572 1.57335741
##      Zfp691      Zfp692      Zfp697      Zfp7      Zfp703      Zfp704      Zfp706
## 1  2.6016602 5.002825 1.0735896 1.0558887 3.582062 6.624016 6.958489
## 2  2.8397265 3.252564 2.2186027 2.8336359 5.683272 5.913029 6.702621
## 3  4.0690927 -1.131317 0.6984974 -1.9317392 2.512206 1.911138 7.751191
## 4  4.2632468 2.398864 3.6466613 3.7137685 4.271407 5.804580 7.426698
## 5  3.1716861 -1.440886 3.6830026 -3.8841215 3.765042 5.066564 8.222687
## 6  1.9022924 5.461982 2.1749485 1.9430453 6.066670 5.373944 6.252145
##      Zfp707      Zfp710      Zfp711      Zfp719      Zfp738      Zfp74      Zfp740
## 1  2.9123326 4.818563 3.4868751 2.763188 2.9141178 3.085372 7.479257
## 2  3.7721712 3.409819 3.4006021 3.869039 2.6589180 3.091685 6.533436
## 3  -0.2425151 2.300819 -1.1313170 5.509506 -1.9317392 -1.931739 4.820366
## 4  4.3566656 3.866928 2.5627542 6.038173 4.4820363 4.350015 5.326201
## 5  4.3261459 4.298863 -2.8071174 4.293344 1.5477262 -1.440886 4.578419
## 6  3.4103728 5.219918 3.1849612 3.453508 3.9754770 4.433213 6.787856
##      Zfp746      Zfp747      Zfp748      Zfp750      Zfp759      Zfp760
## 1  4.9716648 1.8186656 2.7313467 -3.589593346 0.7561969 2.8029152
## 2  4.9373965 4.4119105 2.9866039 -3.656504276 0.5675397 3.4852119
## 3  0.8617169 -0.2425151 0.5144282 2.242750937 -1.1313170 6.5053496
## 4  3.9221714 2.4464273 5.1594283 -0.001227874 3.0085308 5.4139787
## 5  4.4152290 3.7246054 2.3724409 0.580766378 3.9517923 4.9451163
## 6  5.0442204 2.2643645 4.0603943 -3.379886552 2.3844291 4.3752319
##      Zfp764      Zfp768      Zfp770      Zfp771      Zfp775      Zfp777
## 1  0.9184597 3.92870042 4.076518 3.9518121 2.6777985 4.8903794
## 2  2.2955985 4.39400701 2.993228 4.0526318 2.0770457 4.8733336
## 3  4.3965292 0.05610664 5.919381 -1.9317392 5.1788537 0.3033916
## 4  2.1323292 1.87774771 3.757147 -0.1861499 1.2651860 2.1494511
## 5  4.3895942 -0.42641489 2.893900 -3.8841215 -2.8071174 3.7570449
## 6  1.0731694 4.22740490 4.715366 3.8772132 3.4810971 5.0690751
##      Zfp78      Zfp780b      Zfp781      Zfp784      Zfp786      Zfp787
## 1  1.2918442 1.9595560 -0.49202664 2.1485264 0.3499706 4.2640998
## 2  0.1289705 1.8431852 -1.37601681 2.7989291 -2.4090094 5.3908246
## 3  -0.6195262 0.5144282 -3.88412153 -1.9317392 -3.8841215 -3.8841215
## 4  2.8273945 5.8515751 0.85536922 2.9479410 1.9564435 0.8537740
## 5  -1.7701038 5.6211174 1.68892956 2.0182291 -3.8841215 -2.1973739
## 6  0.5662724 2.7714660 0.58410845 2.2864829 0.4042416 3.8091047
##      Zfp788      Zfp790      Zfp791      Zfp800      Zfp804a      Zfp804b
## 1  4.3676887 3.8058137 0.7560262 3.6181599 2.4366869 -3.884122
## 2  4.7073351 3.7942194 -0.9917238 4.8251970 -2.3587360 -3.884122
## 3  0.3033916 0.3033916 -0.6195262 0.8617169 -3.8841215 -3.884122
## 4  5.2180510 5.5102053 1.7652541 4.7303808 -0.7689227 -3.884122
## 5  5.8712805 5.3237082 -2.1973739 5.4921582 -3.8841215 -3.884122
## 6  4.7845631 3.8134954 0.4549144 5.2340480 -3.5122488 -3.660779

```

##	Zfp808	Zfp809	Zfp810	Zfp819	Zfp82	Zfp821	
## 1	-0.3632548	3.3138227	3.0446993	-2.4389274	1.8697241	5.3826758	
## 2	2.5231744	2.9647851	4.4327034	-0.9304614	0.8136444	4.8755081	
## 3	-1.1313170	-0.2425151	-0.2425151	-1.9317392	-1.1313170	0.3033916	
## 4	3.0386973	3.8414272	3.6074133	-2.5588787	3.7672545	3.9325673	
## 5	0.9041264	4.3098380	4.0662445	-3.8841215	4.3098380	3.3629751	
## 6	1.4890662	3.7264480	2.5075995	-1.9658348	1.9922144	4.7577180	
##	Zfp827	Zfp830	Zfp831	Zfp839	Zfp865	Zfp866	Zfp867
## 1	5.980571	3.468100	-2.5411629	2.3012256	5.0913723	4.275453	2.68957957
## 2	3.853168	4.317048	-2.8952098	2.0348708	4.3957493	2.149829	2.77656716
## 3	1.263249	7.633254	-1.9317392	-0.2425151	2.9714350	2.119096	0.05610664
## 4	3.813447	5.190313	-2.9139512	1.6285549	1.0047118	5.683639	4.96988571
## 5	1.431944	4.564739	-3.8841215	-2.1973739	0.7833343	4.026878	2.09637076
## 6	6.077045	3.974198	-3.6607788	4.4008737	4.8903583	4.796089	3.70233150
##	Zfp868	Zfp869	Zfp87	Zfp872	Zfp879	Zfp9	Zfp90
## 1	4.255003	4.681657	2.384502	-2.238208	0.1696256	4.24623248	3.8098341
## 2	5.747400	4.873848	2.040752	-3.884122	-1.7429100	3.85066080	3.0693578
## 3	2.935229	1.375592	2.652618	-3.884122	-3.8841215	0.05610664	0.5144282
## 4	6.739726	6.169258	5.898321	-3.603681	0.6715805	4.54734140	4.8212733
## 5	6.354641	5.816541	6.145416	-3.884122	-3.8841215	5.31010807	3.7570449
## 6	4.340797	5.419617	2.498350	-1.372462	2.2508473	3.60073840	4.0720425
##	Zfp91	Zfp92	Zfp93	Zfp94	Zfp940	Zfp945	
## 1	6.538342	-0.1965955	1.658758	2.4146067	2.7553743	3.3337638	
## 2	7.211633	-3.2277824	2.349521	1.4401889	2.2345374	4.7571295	
## 3	1.141414	-3.8841215	6.483577	-0.2425151	-0.6195262	-0.6195262	
## 4	5.502090	-2.4464820	3.116054	3.9725538	4.6147182	4.8309867	
## 5	2.586129	-3.8841215	-0.287603	3.2983183	3.3838991	3.8043761	
## 6	6.533181	-1.6435726	2.755696	2.7641794	2.7996320	6.0795740	
##	Zfp948	Zfp957	Zfp963	Zfp964	Zfp11	Zfpm1	
## 1	3.2967710	-2.875470	1.0228558	-0.6389504	4.584951	4.9973296	
## 2	5.0994679	-2.796002	1.5326774	-0.4338065	4.571869	5.5446630	
## 3	1.0083330	-3.884122	-1.9317392	-3.8841215	6.511510	-3.8841215	
## 4	4.3357786	-2.925461	4.6415353	-0.9699384	3.929351	-2.4581396	
## 5	-0.2876030	-3.884122	3.7163802	-3.8841215	5.891512	-1.7701038	
## 6	5.0634746	-2.285751	1.9336832	1.2250695	4.281705	1.6252980	
##	Zfpm2	Zfr	Zfr2	Zfx	Zfyve1	Zfyve16	Zfyve19
## 1	4.3950282	7.515943	4.5051807	5.0974167	5.72119367	4.6390541	4.315658
## 2	-0.8485644	6.927657	-0.9282192	5.9547884	6.09488489	4.8273711	4.077135
## 3	0.6984974	6.988704	-1.9317392	0.3033916	0.05610664	-0.6195262	6.314180
## 4	5.1167306	7.657003	0.8178363	5.2098085	4.16982871	4.6212235	5.503711
## 5	5.2285943	6.222943	-1.1730114	5.1329574	3.63144193	4.7654360	5.166553
## 6	5.2202292	7.397376	2.6218695	6.0284900	5.82052629	6.1952608	3.900020
##	Zfyve20	Zfyve21	Zfyve26	Zfyve27	Zfyve28	Zfyve9	Zglp1
## 1	6.255634	3.725273	5.6546900	6.371926	3.8641358	4.2000871	-0.6516483
## 2	5.499973	4.484461	3.7992737	5.395880	-2.3713762	4.9989341	-1.5891883
## 3	7.569724	6.383000	-0.2425151	8.065720	4.8976644	-0.6195262	-3.8841215
## 4	5.763843	5.897519	4.2270211	5.946347	1.4370318	0.8808129	-0.3280054
## 5	6.012332	5.601154	0.1633391	6.541993	-3.8841215	-1.7701038	-3.8841215
## 6	5.663870	5.645934	6.0205225	6.582755	1.5274466	3.7954276	-1.1084820
##	Zgpat	Zhx1	Zhx2	Zhx3	Zic1	Zic2	
## 1	6.0845498	5.602200	4.2646555	5.3830764	0.7766443	0.95579040	
## 2	5.0274859	6.961200	3.8559838	6.0447875	3.9805278	5.76096150	
## 3	-1.1313170	1.834579	0.3033916	0.3033916	-1.1313170	3.92882712	
## 4	3.3012653	6.458593	5.8608209	4.4655745	2.8764702	6.17834492	

```

## 5 -0.9471720 5.435661 5.1236577 5.0633251 1.7864435 7.39068767
## 6 6.5635020 6.552341 6.1374796 6.9635787 4.5713521 5.67182574
##      Zic3      Zic4      Zic5      Zik1      Zim1  Zkscan1
## 1 -2.0772865 -1.5355705 -2.1521695 3.6416210 0.5972863 6.485479
## 2 7.3971072 0.4627500 2.6139596 1.9877618 -3.8841215 5.515936
## 3 0.3033916 -1.9317392 -3.8841215 0.6984974 -3.8841215 2.410380
## 4 0.2943622 3.3909734 3.0590448 5.4971024 -2.1947335 6.993710
## 5 -0.5800187 3.2761057 -1.1730114 3.5504721 -3.8841215 6.334630
## 6 2.1633643 0.5184958 3.2368934 3.5263500 0.8160543 5.996196
##      Zkscan14  Zkscan16  Zkscan17  Zkscan2  Zkscan3  Zkscan4  Zkscan5
## 1 2.226559 1.3880050 5.3643278 4.4586657 5.544132 1.0881116 4.4852380
## 2 3.298429 -2.1591032 6.4311294 -1.0757312 5.406500 0.1118836 4.0881851
## 3 7.362103 2.4621911 1.4798145 -3.8841215 4.988804 -3.8841215 1.1414140
## 4 4.274099 1.1161278 4.8970049 1.6790332 4.817794 1.9754883 5.5760153
## 5 3.147418 -0.4264149 3.5504721 -2.1973739 4.804760 2.1215049 3.3523982
## 6 2.491608 0.9602108 5.6234488 5.1776468 6.029201 2.0594852 5.0302809
##      Zkscan6      Zmat1      Zmat2      Zmat3      Zmat4      Zmat5      Zmiz1
## 1 3.4006368 3.1688163 5.902660 5.742314 -0.43574226 3.675759 7.711899
## 2 3.7358589 1.6671353 6.072795 3.390648 -0.60807083 3.106314 7.356877
## 3 0.8617169 -3.8841215 6.772315 5.726305 -1.93173924 5.843269 4.102127
## 4 3.8664250 3.2977887 6.974792 4.691205 2.07110979 5.922497 7.225071
## 5 -0.2876030 -2.8071174 7.633891 5.472757 -3.88412153 6.553582 5.448133
## 6 3.9986681 4.0715439 5.094784 5.251597 -2.28856954 2.330937 7.326699
##      Zmiz2  Zmpste24  Zmym1  Zmym2  Zmym3  Zmym4  Zmym5
## 1 7.052045 6.447171 3.533938 6.180600 6.220511 5.668337 4.6674108
## 2 5.522583 6.817414 2.994388 7.282046 5.187763 6.287684 6.0361140
## 3 5.367284 6.738573 1.375592 4.150303 6.583458 7.040749 0.6984974
## 4 6.371684 6.628013 5.568271 6.010252 5.550488 4.798002 5.5558651
## 5 6.162167 5.425606 2.453854 4.141894 4.614275 5.430643 3.8799663
## 6 6.196858 7.030041 3.449012 7.012503 6.950684 6.461386 6.1669417
##      Zmym6  Zmynd10  Zmynd11  Zmynd12  Zmynd15  Zmynd19  Zmynd8
## 1 5.1406834 -1.2468360 7.361814 -2.723039 0.4254431 3.8536396 6.525482
## 2 4.2818128 -1.9986392 7.721505 -3.651962 -0.6684094 3.3431621 5.103688
## 3 0.5144282 -3.8841215 4.916359 -3.884122 -3.8841215 -0.6195262 2.410380
## 4 4.0203399 1.8943582 6.580931 -1.651707 -2.8333189 0.9091651 6.021867
## 5 4.4798230 -2.1973739 5.783459 -3.884122 -2.8071174 -1.7701038 5.687841
## 6 5.7555354 1.2960128 7.719046 -2.259369 -0.8227978 2.7788297 6.377218
##      Znf512b  Znf1  Znhit1  Znhit3  Znhit6  Znr1  Znr1
## 1 6.530156 5.2911693 3.774449 3.215544 3.6231191 3.820879 7.2550649
## 2 5.527372 5.3237552 4.479485 2.802603 3.0445926 4.763037 7.8509722
## 3 2.462191 2.6073156 3.139975 6.523754 0.5144282 5.793576 0.5144282
## 4 6.528659 3.8963049 5.710027 5.843025 4.8774866 5.841881 4.8474734
## 5 4.757441 -0.5800187 6.548958 6.864875 5.2769349 5.900616 3.8873120
## 6 7.527768 5.2328246 2.645757 2.943308 3.2989775 4.061159 5.8705452
##      Znr12  Znr13  Zp3  Zp1  Zp12  Zp15  Zp18
## 1 3.494213 3.779781 -3.209629 -1.2189377 -3.215058 -3.8841215 5.192280
## 2 4.968602 4.573530 -1.845621 -0.7345151 -3.656504 -3.8841215 5.708784
## 3 3.401161 5.610540 -3.884122 -3.8841215 -3.884122 -1.9317392 1.911138
## 4 4.689141 6.933567 -2.738821 -1.5770976 -3.674937 -0.5076871 4.350019
## 5 6.175729 6.501880 -3.884122 -3.8841215 -3.884122 -3.8841215 3.674536
## 6 3.284273 6.679892 -3.884122 -1.3797037 -3.674482 -3.8841215 5.600719
##      Zp1  Zp12  Zp15  Zp18  Zp19  Zp20  Zp21
## 1 6.420790 2.4061754 4.567859 2.855523 4.914870 1.85173196 2.7129749
## 2 5.950305 2.9858552 5.673186 3.043860 2.821161 3.41075603 1.6966433

```

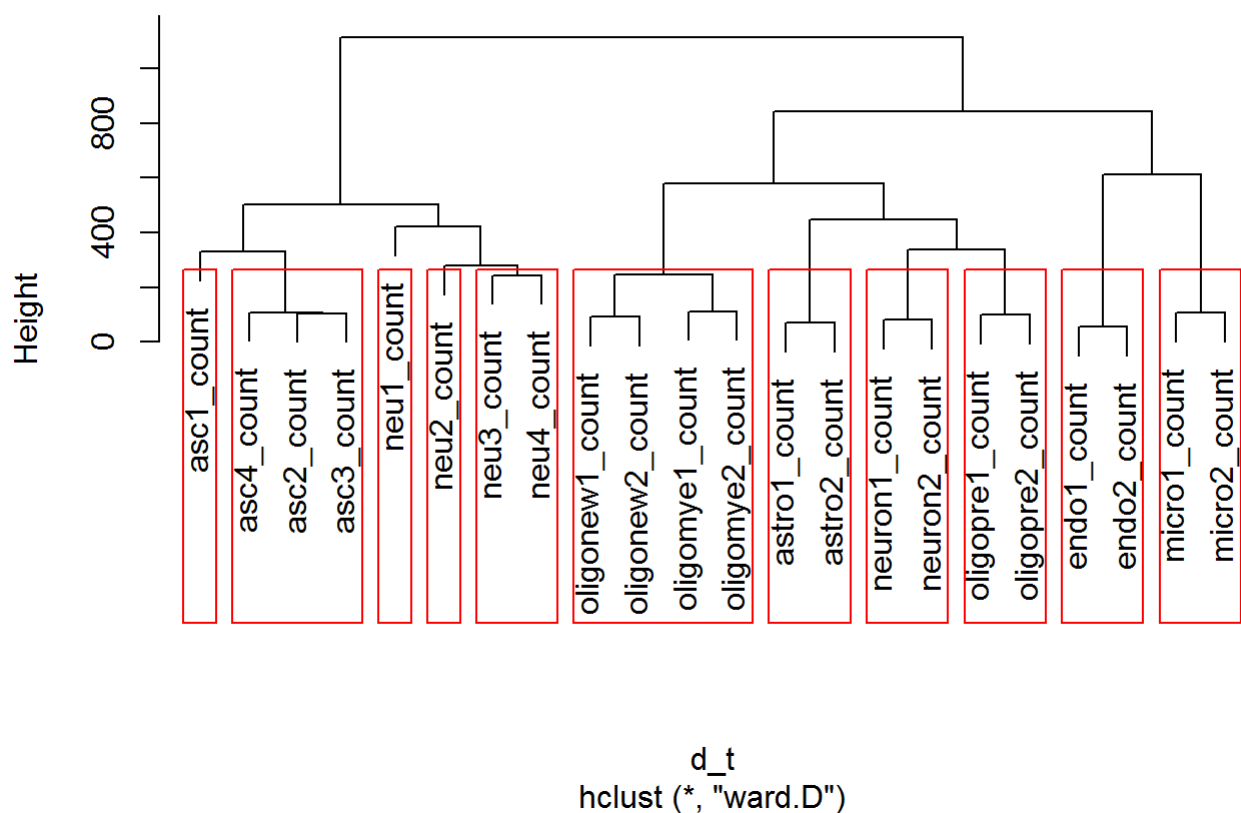
```
## 3  6.946127 -0.6195262 5.400861  7.986108 -1.931739 -1.93173924 -1.9317392
## 4  7.238215  4.1218067 4.400201  4.144596  3.586156  0.59082924  0.9801423
## 5  5.618913  4.3895942 4.522906  2.070791 -2.807117 -0.94717201 -2.8071174
## 6  7.057239  3.8618133 5.242792  4.207013  5.256701  3.06309136  3.9075232
##      Zscan21      Zscan22      Zscan29      Zswim1      Zswim3      Zswim4      Zswim5
## 1  4.223451  1.74012606 4.1990142 3.274694  1.1789498 5.240973  4.7571462
## 2  4.766123  1.74173099 3.7952267 3.346657  0.6484064 5.795049 -1.1641936
## 3  1.141414  0.05610664 0.6984974 5.924007  0.3033916 1.577013 -1.1313170
## 4  6.277826  4.62018895 5.4429274 5.483068  2.8417559 4.016621  2.5083162
## 5  5.312838  4.94511633 -0.4264149 4.172280  3.9795505 2.819055  3.3942483
## 6  4.233394  1.75316700 5.1224411 3.244796  1.9423485 5.242640  5.2628284
##      Zswim6      Zswim7      Zufsp      Zw10      Zwilch      Zwint
## 1  5.605926  2.5602939 2.97967928 4.65116064  2.8782325 5.897090
## 2  5.616066  1.9978062 4.07717793 5.29828582  2.5609538 6.534362
## 3  6.039361  4.4097834 0.05610664 0.05610664 -1.1313170 8.934684
## 4  2.446283  4.1199014 4.17653142 5.76228956  3.5150978 7.341011
## 5 -0.287603  5.7636386 3.09762292 4.06624445 -2.8071174 7.399063
## 6  6.651938  2.2576201 4.43565915 5.57849327  3.6622270 6.027347
##      Zxdb      Zxdc      Zyg11a      Zyg11b      Zyx      Zzef1      Zzz3
## 1  2.219439  5.222159 -3.767000 6.540030 5.736114 6.5419038 6.285284
## 2  2.604427  4.151398 -3.656504 7.037698 7.093473 6.4309560 6.692318
## 3 -3.884122  6.489832 -3.884122 4.242081 2.182248 0.6984974 1.263249
## 4  2.703979  3.851552 -3.884122 5.476192 3.492505 4.7524261 5.000809
## 5  1.215574  4.983322 -3.884122 6.321132 4.591969 2.6217964 3.287255
## 6  2.338343  5.489936 -2.274528 6.660523 5.562745 7.2752350 6.451209
## [ reached getOption("max.print") -- omitted 5 rows ]
```

```
# append cluster assignment
mydata_t <- data.frame(mydata_t, cluster_t$cluster)
# Ward Hierarchical Clustering with sample in rows
d_t <- dist(mydata_t, method = "euclidean") # distance matrix
cluster_t <- hclust(d_t, method="ward")
```

```
## The "ward" method has been renamed to "ward.D"; note new "ward.D2"
```

```
plot(cluster_t) # display dendrogram
groups_t <- cutree(cluster_t, k=11) # cut tree into 11 clusters
# draw dendrogram with red borders around the 11 clusters
rect.hclust(cluster_t, k=11, border="red")
```

Cluster Dendrogram



```
dev.print(pdf, "logcpmcountdataDGE_ClustersDendrogram.pdf")
```

```
## png
## 2
```

```
clustered_samples<-as.data.frame(groups_t)#converting list or 'Values' object to Data object
#include columns from metatable
clustered_samples$individual_id<-metatable$individual_id
clustered_samples$cell_type<-metatable$cell_type
clustered_samples$activated.stemcell_non.stemcell<-metatable$activated.stemcell_non.stemcell
clustered_samples$cell_type_full_name<-metatable$cell_type_full_name
clustered_samples$cell_tissue<-metatable$cell_tissue
clustered_samples$GSE_id<-metatable$GSE_id
#lets view the clustered_samples data
print(clustered_samples)
```

```

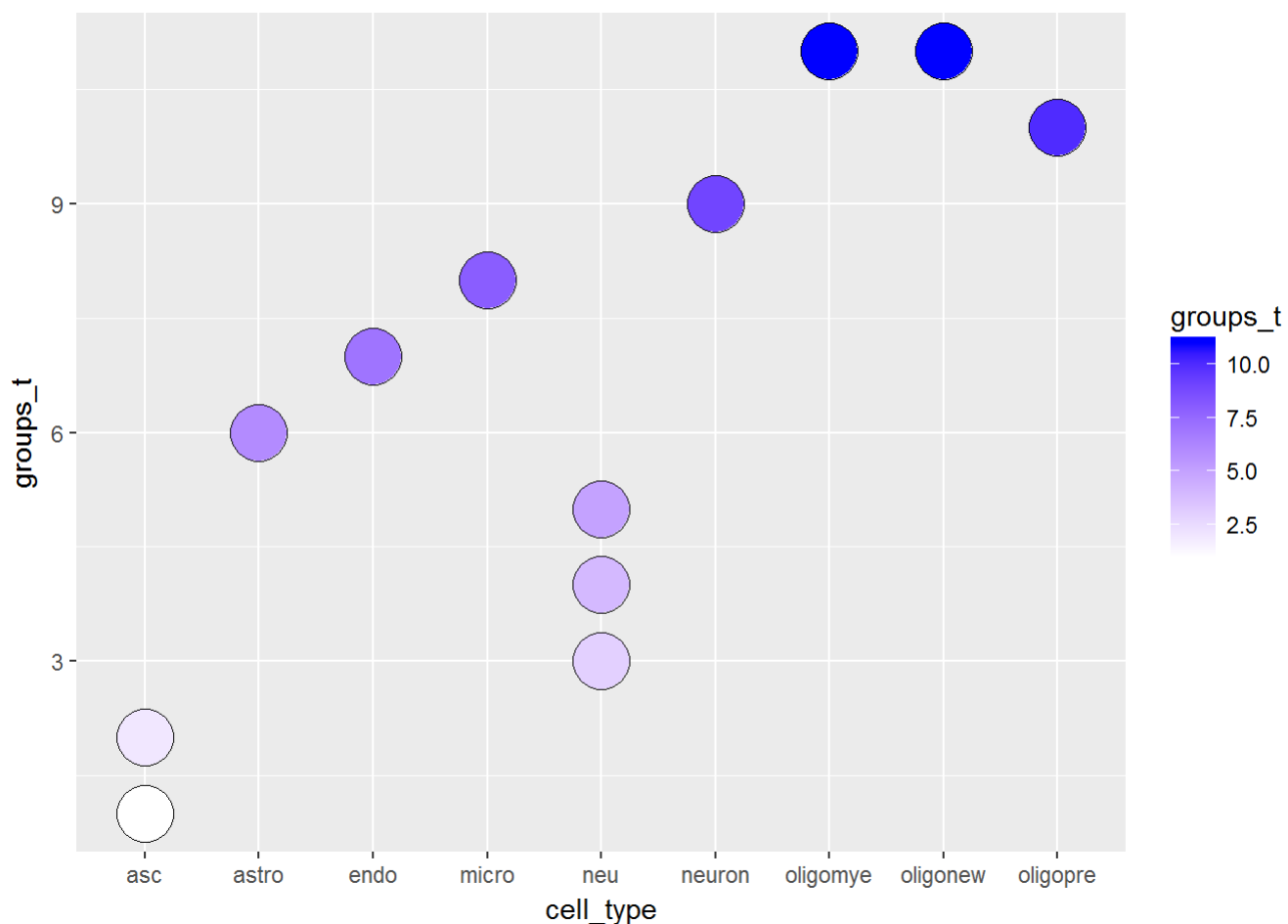
##          groups_t individual_id cell_type
## asc1_count          1           1      asc
## asc2_count          2           2      asc
## asc3_count          2           3      asc
## asc4_count          2           4      asc
## neu1_count          3           1      neu
## neu2_count          4           2      neu
## neu3_count          5           3      neu
## neu4_count          5           4      neu
## astro1_count        6           1    astro
## astro2_count        6           2    astro
## endo1_count          7           1     endo
## endo2_count          7           2     endo
## micro1_count         8           1   micro
## micro2_count         8           2   micro
## neuron1_count        9           1  neuron
## neuron2_count        9           2  neuron
## oligopre1_count     10           1 oligopre
## oligopre2_count     10           2 oligopre
## oligonew1_count     11           1 oligonew
## oligonew2_count     11           2 oligonew
## oligomye1_count     11           1 oligomye
## oligomye2_count     11           2 oligomye
##          activated.stemcell_non.stemcell
## asc1_count                                asc
## asc2_count                                asc
## asc3_count                                asc
## asc4_count                                asc
## neu1_count                                nonsc
## neu2_count                                nonsc
## neu3_count                                nonsc
## neu4_count                                nonsc
## astro1_count                             nonsc
## astro2_count                             nonsc
## endo1_count                             nonsc
## endo2_count                             nonsc
## micro1_count                             nonsc
## micro2_count                             nonsc
## neuron1_count                           nonsc
## neuron2_count                           nonsc
## oligopre1_count                         nonsc
## oligopre2_count                         nonsc
## oligonew1_count                         nonsc
## oligonew2_count                         nonsc
## oligomye1_count                         nonsc
## oligomye2_count                         nonsc
##          cell_type_full_name      cell_tissue  GSE_id
## asc1_count      neural_progenitor_cells  hippocampus GSE68270
## asc2_count      neural_progenitor_cells  hippocampus GSE68270
## asc3_count      neural_progenitor_cells  hippocampus GSE68270
## asc4_count      neural_progenitor_cells  hippocampus GSE68270
## neu1_count      niche_cells_mostly_neurons  hippocampus GSE68270
## neu2_count      niche_cells_mostly_neurons  hippocampus GSE68270

```

```
## neu3_count      niche_cells_mostly_neurons      hippocampus GSE68270
## neu4_count      niche_cells_mostly_neurons      hippocampus GSE68270
## astro1_count    astrocyte cerebral_cortex GSE52564
## astro2_count    astrocyte cerebral_cortex GSE52564
## endo1_count     endothelial_cells cerebral_cortex GSE52564
## endo2_count     endothelial_cells cerebral_cortex GSE52564
## micro1_count    microglia cerebral_cortex GSE52564
## micro2_count    microglia cerebral_cortex GSE52564
## neuron1_count   neuron cerebral_cortex GSE52564
## neuron2_count   neuron cerebral_cortex GSE52564
## oligopre1_count oligodendrocyte_precursor_cells cerebral_cortex GSE52564
## oligopre2_count oligodendrocyte_precursor_cells cerebral_cortex GSE52564
## oligonew1_count newly_formed_oligodendrocytes cerebral_cortex GSE52564
## oligonew2_count newly_formed_oligodendrocytes cerebral_cortex GSE52564
## oligomye1_count myelinating_oligodendrocytes cerebral_cortex GSE52564
## oligomye2_count myelinating_oligodendrocytes cerebral_cortex GSE52564
```

```
View(clustered_samples)
write.table(clustered_samples,file="clustered_samples.txt",sep="\t")
```

```
ggplot(clustered_samples, aes(x=cell_type, y=groups_t, fill=groups_t)) + geom_point(shape=21, si
ze=10) + scale_fill_gradient(low='white', high='blue')
```



```
dev.print(pdf, "logcpmcountdataDGE_ClusterPlot.pdf")
```



```
## png
## 2
```

The clustering result shows that each cell type cluster with each other. These results give confidence that we should be able to find differentially expressed genes 'between clusters' of cell types or stem cells i.e. asc vs non-stemcells with the edgeR differential gene expression analysis.

edgeR model fitting

Here we fit the model based on design using normalized DGElist 'countdataDGE' with dispersion estimates.

```
#Alternative
#glmQLFit(countdataDGE, design)
fit <- glmFit(countdataDGE, design)
summary(fit)
```

##	Length	Class	Mode
## coefficients	59236	-none-	numeric
## fitted.values	325798	-none-	numeric
## deviance	14809	-none-	numeric
## iter	14809	-none-	numeric
## failed	14809	-none-	logical
## method	1	-none-	character
## counts	325798	-none-	numeric
## unshrunk.coefficients	59236	-none-	numeric
## df.residual	14809	-none-	numeric
## design	88	-none-	numeric
## offset	22	CompressedMatrix	numeric
## dispersion	14809	-none-	numeric
## prior.count	1	-none-	numeric
## samples	3	data.frame	list
## prior.df	1	-none-	numeric
## AveLogCPM	14809	-none-	numeric

```
print(fit)
```

```
## An object of class "DGEGLM"
## $coefficients
##           (Intercept) individual_id
## 0610007P14Rik      -9.800632      -0.1138324
## 0610009B22Rik     -10.847609      -0.2382586
## 0610009O20Rik      -9.156801       0.1797940
## 0610010F05Rik      -9.120570      -0.4297015
## 0610010K14Rik      -9.920908      -0.1404812
##           activated.stemcell_non.stemcellnonsc cell_tissuehippocampus
## 0610007P14Rik                      0.39844016                1.9581262
## 0610009B22Rik                     -0.04623036                2.7086765
## 0610009O20Rik                     -0.59965622               -0.1809347
## 0610010F05Rik                     -0.53921803               -0.3724109
## 0610010K14Rik                      0.08966541                1.0867778
## 14804 more rows ...
##
## $fitted.values
##           asc1_count asc2_count asc3_count asc4_count neu1_count
## 0610007P14Rik  4662.8494  5832.3597  6712.4524  6747.9807  2685.2108
## 0610009B22Rik  3061.1054  3380.8725  3435.7639  3049.8152  1130.0170
## 0610009O20Rik  1402.1257  2352.3681  3631.3461  4896.4993   297.5991
## 0610010F05Rik   652.6781   595.1966   499.4198   366.0386   147.1299
## 0610010K14Rik  1684.2672  2051.3003  2298.7487  2250.1395   712.2589
##           neu2_count neu3_count neu4_count astro1_count astro2_count
## 0610007P14Rik  7350.1138  5564.2128  2544.57302   2996.8193   2877.7532
## 0610009B22Rik  2731.2299  1825.6837   737.21527    595.2438    504.7141
## 0610009O20Rik  1092.6292  1109.4504   680.52569   2820.4910   3632.8139
## 0610010F05Rik   293.6197   162.0553    54.03099   1688.9141   1182.4124
## 0610010K14Rik  1898.3614  1399.3099   623.08950   1899.9299   1776.4619
##           endo1_count endo2_count micro1_count micro2_count
## 0610007P14Rik   2931.3894   2556.3237   1930.9926   1438.6775
## 0610009B22Rik    582.2478    448.3403    383.5438    252.3221
## 0610009O20Rik   2758.9110   3227.0482   1817.3759   1816.1557
## 0610010F05Rik   1652.0399   1050.3434   1088.2473    591.1244
## 0610010K14Rik   1858.4485   1578.0407   1224.2148    888.1081
##           neuron1_count neuron2_count oligopre1_count oligopre2_count
## 0610007P14Rik    3662.8909    3181.2303    3879.1114    3261.5062
## 0610009B22Rik     727.5424     557.9394     770.4892     572.0185
## 0610009O20Rik    3447.3720    4015.9169    3650.8704    4117.2554
## 0610010F05Rik    2064.2913    1307.1052    2186.1464    1340.0890
## 0610010K14Rik    2322.2074    1963.8009    2459.2873    2013.3559
##           oligonew1_count oligonew2_count oligomye1_count
## 0610007P14Rik    2834.7218    2289.2615    1409.7104
## 0610009B22Rik     563.0471     401.5016     280.0040
## 0610009O20Rik    2667.9311    2889.9146    1326.7652
## 0610010F05Rik    1597.5610     940.6127     794.4689
## 0610010K14Rik    1797.1630    1413.1809     893.7312
##           oligomye2_count
## 0610007P14Rik    1398.7604
## 0610009B22Rik     245.3213
## 0610009O20Rik    1765.7651
## 0610010F05Rik     574.7233
## 0610010K14Rik     863.4669
```

```
## 14804 more rows ...
##
## $deviance
## [1] 16.61718 14.50197 14.62722 18.44802 15.77225
## 14804 more elements ...
##
## $iter
## [1] 6 7 5 9 5
## 14804 more elements ...
##
## $failed
## [1] FALSE FALSE FALSE FALSE FALSE
## 14804 more elements ...
##
## $method
## [1] "levenberg"
##
## $counts
##
##      asc1_count asc2_count asc3_count asc4_count neu1_count
## 0610007P14Rik      5934      4159      6152      7408      3429
## 0610009B22Rik      4399      2074      2798      3462      1369
## 0610009O20Rik      1561      2675      3148      4323        39
## 0610010F05Rik       425       434       647       485       339
## 0610010K14Rik      1770      1831      2154      2519      1166
##
##      neu2_count neu3_count neu4_count astro1_count astro2_count
## 0610007P14Rik      6097      4615      2708      2741      3005
## 0610009B22Rik      2606      1114       903       374       367
## 0610009O20Rik      2236       925       669      2777      2644
## 0610010F05Rik        45       183        22      1062      1107
## 0610010K14Rik      1229       994       627       574       702
##
##      endo1_count endo2_count micro1_count micro2_count
## 0610007P14Rik       762       769       452       509
## 0610009B22Rik       544       613        66       104
## 0610009O20Rik      2874      2921      3228      3714
## 0610010F05Rik      1443      1537       151        57
## 0610010K14Rik      2721      2525      2568      2526
##
##      neuron1_count neuron2_count oligopre1_count oligopre2_count
## 0610007P14Rik      1792      1504      2815      3784
## 0610009B22Rik       525       431       561       497
## 0610009O20Rik      1860      1507      2927      4008
## 0610010F05Rik      2993      3841      1582       600
## 0610010K14Rik      1268       999      1308      1611
##
##      oligonew1_count oligonew2_count oligomye1_count
## 0610007P14Rik      3858      3882      3576
## 0610009B22Rik       609       522       625
## 0610009O20Rik      1992      2369      1714
## 0610010F05Rik      1932       758       754
## 0610010K14Rik       736       972       770
##
##      oligomye2_count
## 0610007P14Rik      3431
## 0610009B22Rik       506
## 0610009O20Rik      1718
## 0610010F05Rik       769
## 0610010K14Rik       824
```

```

## 14804 more rows ...
##
## $unshrunk.coefficients
##              (Intercept) individual_id
## 0610007P14Rik   -9.800696   -0.1138334
## 0610009B22Rik  -10.847919   -0.2382706
## 0610009O20Rik   -9.156845    0.1798048
## 0610010F05Rik   -9.120274   -0.4298207
## 0610010K14Rik   -9.921002   -0.1404850
##              activated.stemcell_non.stemcellnonsc cell_tissuehippocampus
## 0610007P14Rik                0.39844486                1.9581783
## 0610009B22Rik               -0.04623105                2.7089875
## 0610009O20Rik               -0.59968492               -0.1809483
## 0610010F05Rik               -0.53945568               -0.3725544
## 0610010K14Rik                0.08966799                1.0868398
## 14804 more rows ...
##
## $df.residual
## [1] 18 18 18 18 18
## 14804 more elements ...
##
## $design
##              (Intercept) individual_id activated.stemcell_non.stemcellnonsc
## asc1_count            1            1                                0
## asc2_count            1            2                                0
## asc3_count            1            3                                0
## asc4_count            1            4                                0
## neu1_count            1            1                                1
##              cell_tissuehippocampus
## asc1_count                1
## asc2_count                1
## asc3_count                1
## asc4_count                1
## neu1_count                1
## 17 more rows ...
##
## $offset
##           [,1] [,2] [,3] [,4] [,5] [,6] [,7]
## [1,] 16.40373 16.74136 16.99574 17.11485 15.45342 16.57421 16.40968
##           [,8] [,9] [,10] [,11] [,12] [,13] [,14]
## [1,] 15.74112 17.52139 17.59468 17.49932 17.47624 17.08187 16.9014
##           [,15] [,16] [,17] [,18] [,19] [,20] [,21]
## [1,] 17.72209 17.69494 17.77945 17.71986 17.46578 17.3659 16.76722
##           [,22]
## [1,] 16.87326
## attr("class")
## [1] "CompressedMatrix"
## attr("Dims")
## [1] 5 22
## attr("repeat.row")
## [1] TRUE
## attr("repeat.col")
## [1] FALSE
## 14804 more rows ...

```

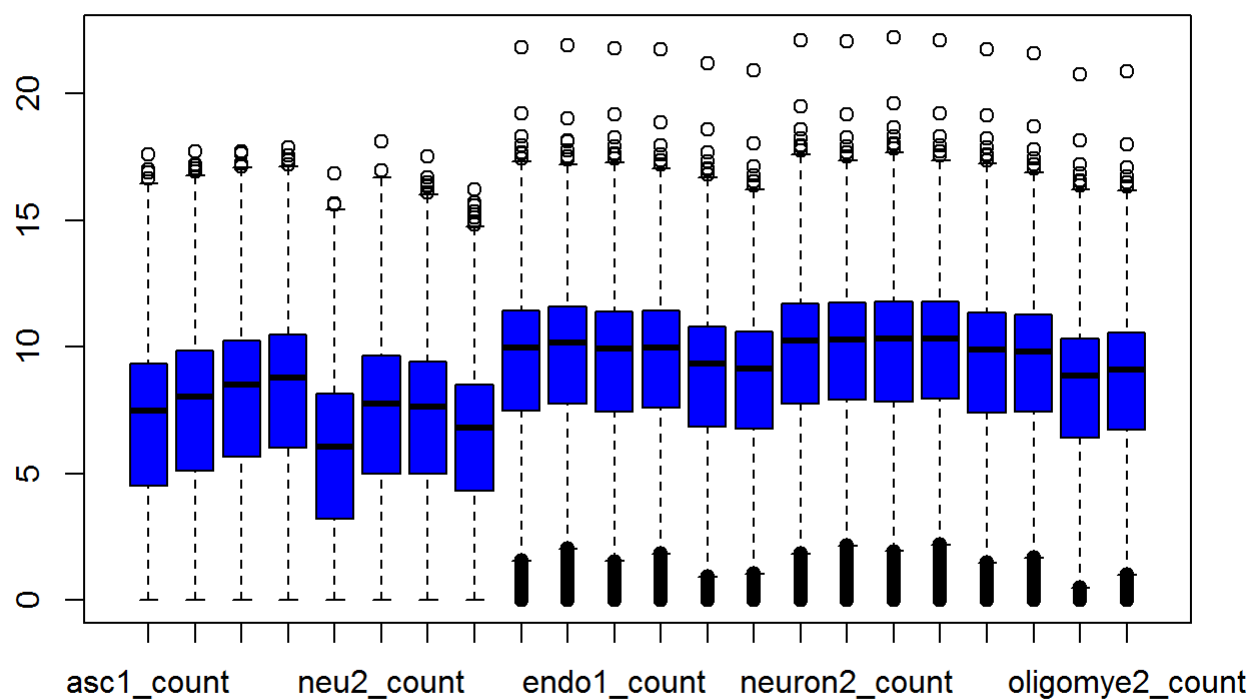
```
##
## $dispersion
## [1] 0.5069459 0.3713588 0.3725753 0.6542342 0.4283765
## 14804 more elements ...
##
## $prior.count
## [1] 0.125
##
## $samples
##           group lib.size norm.factors
## asc1_count      1 13521650    0.9840589
## asc2_count      1 15578146    1.1971956
## asc3_count      1 19833606    1.2126998
## asc4_count      1 22775468    1.1896453
## neu1_count      1  6742110    0.7630263
## 17 more rows ...
##
## $prior.df
## [1] 3.766678
##
## $AveLogCPM
## [1] 7.493147 6.105186 6.456741 4.888942 6.082848
## 14804 more elements ...
```

Fitted values can be extracted using `fit$fitted.values`. Therafter can make plots and clustering same as 'mydata' logcpm data. Here, we do a simple log transformation of the data without using `cpm` function of edgeR

```
#Alternative
#logcountdataDGEfit <- cpm(fit$fitted.values, prior.count=2, log=TRUE)
logcountdataDGEfit <- log2(fit$fitted.values+1)
```

Plots and clustering for visual data exploration of edgeR model fitted values

```
#Boxplot
boxplot(logcountdataDGEfit, col="blue")#blue because we are blue group!
```

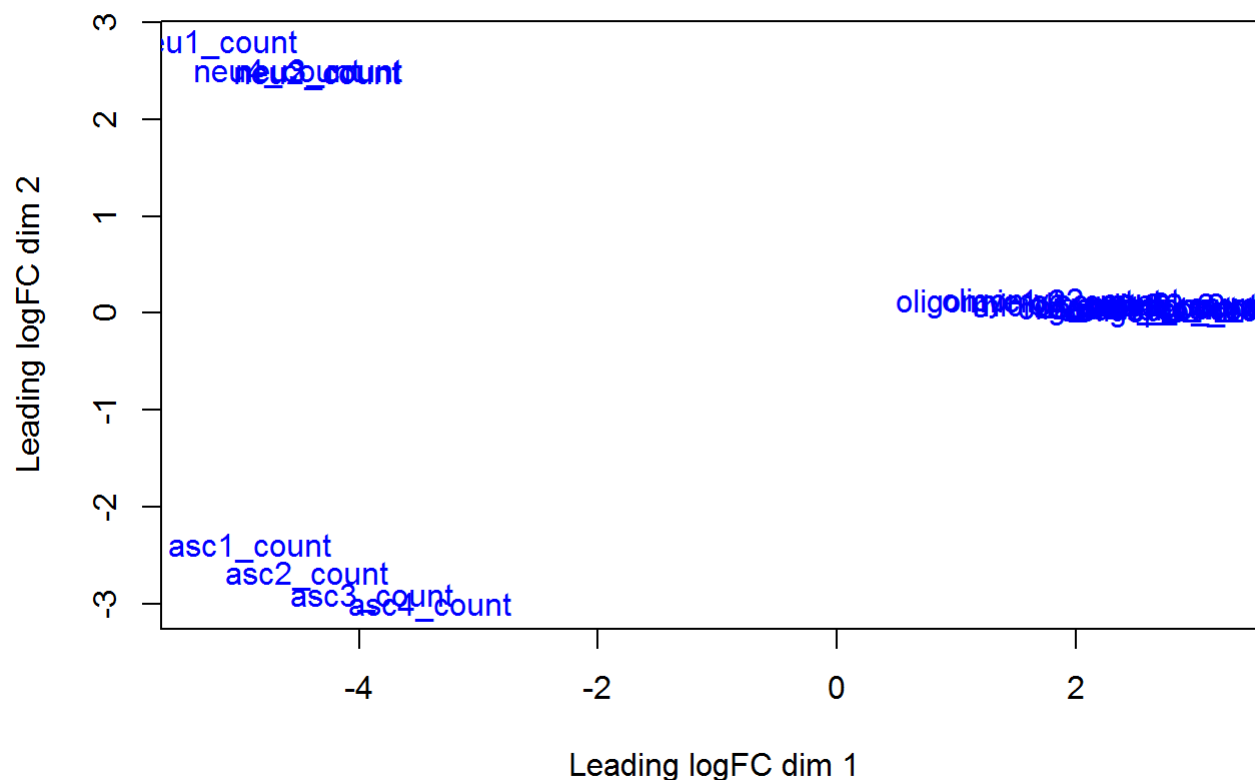


```
dev.print(pdf, "logcountdataDGEfit_boxplot.pdf")
```

```
## png
## 2
```

The boxplot shows that the fitted.counts of samples have similar normal distribution with equal variance.

```
#MDSplot
plotMDS(logcountdataDGEfit, col="blue")#Like PCA plot
```

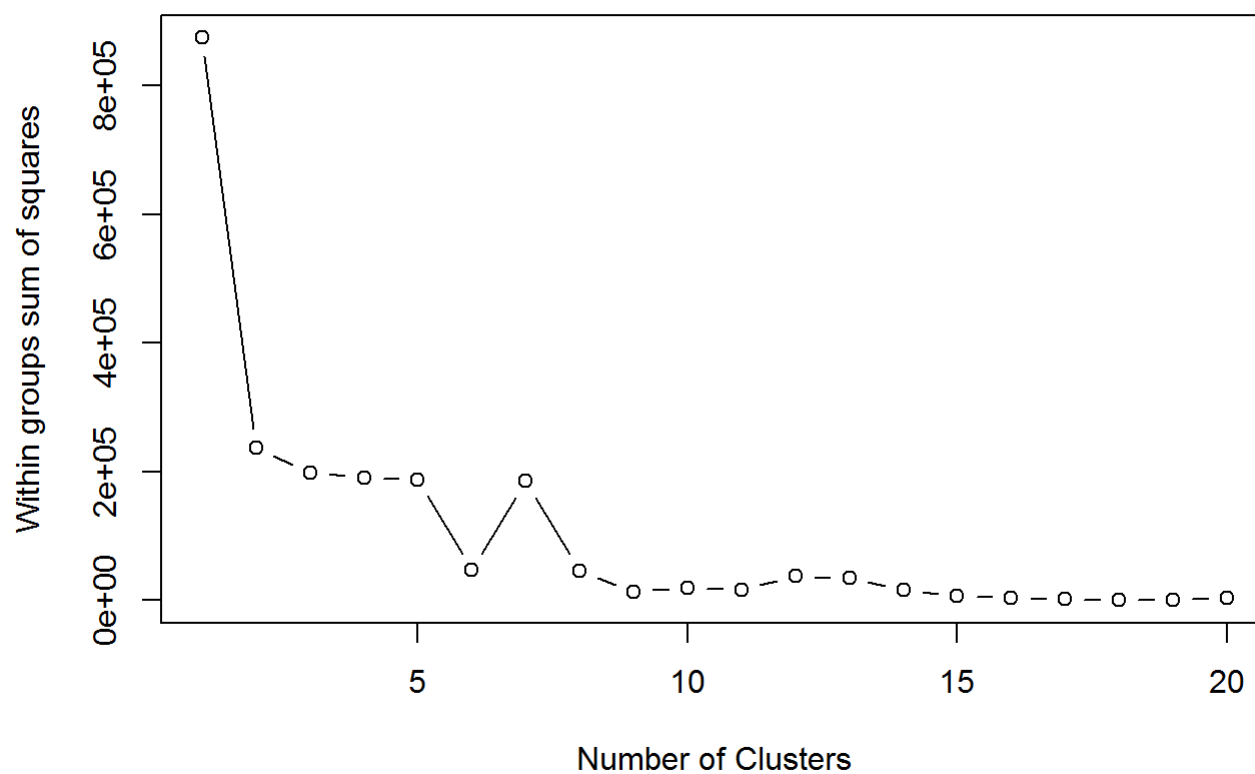


```
dev.print(pdf, "logcountdataDGEfit_MDSplot.pdf")
```

```
## png
## 2
```

The MDS plot shows multiple clusters of the samples. Next, we will use K-means hierarchical clustering to determine the minimum number of clusters required for minimum sum of squares within group. Clustering diagram also helps view the samples in the clusters better.

```
#Clustering
mydatafit <- logcountdataDGEfit#for genes in rows
mydatafit_t <- t(mydatafit)#for samples in rows
#Determine number of clusters with samples in rows, cluater values to try between 2 to 20
wssfit_t <- (nrow(mydatafit_t)-1)*sum(apply(mydatafit_t,2,var))
for (i in 2:20) wssfit_t[i] <- sum(kmeans(mydatafit_t, centers=i)$withinss)
plot(1:20, wssfit_t, type="b", xlab="Number of Clusters", ylab="Within groups sum of squares")
```



```
dev.print(pdf, "logcountdataDGEfit_Clusters&SumofSquared.pdf")
```

```
## png
## 2
```

Therefore the graph indicates, 8 is the minimum number of clusters required for least within group sum of squares.

```
# K-Means Cluster Analysis with samples in rows
clusterfit_t <- kmeans(mydatafit_t, 8) # 8 cluster solution
# get cluster means
aggregate(mydatafit_t, by=list(clusterfit_t$cluster), FUN=mean)
```


##	Group.1	0610007P14Rik	0610009B22Rik	0610009O20Rik	0610010F05Rik
## 1	1	11.88052	9.550186	11.793060	11.053482
## 2	2	11.24086	8.732258	11.576878	9.958504
## 3	3	12.53268	11.656432	11.434864	9.014716
## 4	4	11.99777	10.480544	9.461632	7.136205
## 5	5	11.59961	9.090388	11.935653	10.317063
## 6	6	10.68904	8.360725	10.601610	9.862389
##	0610010K14Rik	0610011F06Rik	0610030E20Rik	0610031J06Rik	0610037L13Rik
## 1	11.223257	9.636181	10.292317	12.79136	11.012733
## 2	10.545292	9.036915	9.218106	12.25759	10.485547
## 3	11.006372	10.992568	8.006325	12.32087	11.187110
## 4	10.026680	9.197286	7.557903	11.57469	9.205554
## 5	10.903958	9.395188	9.576450	12.61641	10.844204
## 6	10.032065	8.446575	9.101842	11.59965	9.821665
##	0610040J01Rik	1110001J03Rik	1110004E09Rik	1110004F10Rik	1110007C09Rik
## 1	11.392516	9.233107	9.861220	12.15740	12.168255
## 2	10.982398	8.333837	9.230637	11.46380	11.316907
## 3	7.449957	11.544486	8.715488	12.37414	8.251255
## 4	7.671812	10.238800	6.840339	11.53854	7.759015
## 5	11.341120	8.691729	9.588986	11.82256	11.675661
## 6	10.201237	8.044266	8.671271	10.96583	10.976682
##	1110008F13Rik	1110008L16Rik	1110008P14Rik	1110012L19Rik	1110017D15Rik
## 1	10.486059	8.979444	10.102361	9.674763	5.997467
## 2	9.873798	8.375581	9.377157	8.808017	5.611259
## 3	5.445599	8.562441	8.832750	10.243807	7.810787
## 4	3.760896	7.271623	8.041802	9.658632	5.486901
## 5	10.232338	8.733501	9.735557	9.166185	5.963613
## 6	9.295395	7.791206	8.912098	8.485094	4.834801
##	1110032A03Rik	1110032F04Rik	1110034G24Rik	1110037F02Rik	1110038F14Rik
## 1	10.171471	7.199712	9.796633	11.595339	10.085310
## 2	9.454176	6.835771	8.980399	10.807828	9.359116
## 3	10.434171	2.007908	9.661460	10.121394	10.195253
## 4	9.457004	2.386312	8.155568	9.264537	8.487798
## 5	9.812601	7.191861	9.338647	11.166529	9.717510
## 6	8.981129	6.020548	8.606777	10.403967	8.895068
##	1110051M20Rik	1110057K04Rik	1110058L19Rik	1110059E24Rik	1110059G10Rik
## 1	10.951337	11.913354	9.164711	9.741043	9.216683
## 2	10.281341	11.675596	8.483764	8.959277	8.436304
## 3	12.014185	11.481440	11.488298	10.900391	9.904450
## 4	11.134133	9.786499	10.464934	9.410826	8.977947
## 5	10.639964	12.034377	8.841753	9.317517	8.794264
## 6	9.760309	10.721862	7.976023	8.551271	8.027878
##	1110065P20Rik	1190002N15Rik	1190005I06Rik	1190007I07Rik	1200014J11Rik
## 1	9.415697	10.965171	7.488242	6.266968	10.856504
## 2	8.783568	10.387385	6.609139	5.671391	10.421729
## 3	4.828461	8.580765	6.261304	8.622752	8.344332
## 4	3.629926	6.826372	4.540093	7.127841	7.396299
## 5	9.141725	10.746026	6.964754	6.024012	10.780376
## 6	8.226483	9.774134	6.306764	5.099352	9.665542
##	1500009L16Rik	1500011K16Rik	1500015O10Rik	1600002H07Rik	1600002K03Rik
## 1	8.822433	9.632764	3.546325	8.748061	8.203770
## 2	8.151877	9.100047	2.961245	7.989046	7.559132
## 3	8.295166	10.809969	11.429909	8.482940	8.079986

## 4	8.802275	9.226618	8.766168	8.386404	5.618499
## 5	8.509636	9.458346	3.278683	8.346672	7.916323
## 6	7.634626	8.443163	2.507401	7.560474	7.018194
## 1600012H06Rik	1600014C10Rik	1600016N20Rik	1700001C02Rik	1700001C19Rik	
## 1	10.434000	9.145166	2.492104	1.7049496	5.086980e+00
## 2	10.005011	8.997330	1.004272	1.7648927	5.268037e+00
## 3	9.616645	8.786635	1.944389	7.3791293	1.044392e-07
## 4	7.881905	8.458848	5.274890	3.3737279	2.684535e-01
## 5	10.363581	9.355586	1.195273	2.0270205	5.618633e+00
## 6	9.243384	7.956522	1.600715	0.9966147	3.949587e+00
## 1700001L19Rik	1700001022Rik	1700001P01Rik	1700003E16Rik	1700003F12Rik	
## 1	5.561435	6.777621	6.600279e+00	6.993209	6.724845e+00
## 2	5.482094	7.075114	5.418784e+00	8.242701	5.591042e+00
## 3	7.187430	5.353676	4.721459e+00	5.661060	7.530222e-01
## 4	4.590572	3.427182	1.111813e-07	4.848838	8.781939e-08
## 5	5.833835	7.431631	5.770205e+00	8.600529	5.943303e+00
## 6	4.408964	5.602787	5.427672e+00	5.816008	5.550646e+00
## 1700003M02Rik	1700007G11Rik	1700007K09Rik	1700007K13Rik	1700008F21Rik	
## 1	4.050476e+00	2.3836721	3.680766e+00	5.020503	2.132745e+00
## 2	4.476017e+00	2.2251835	3.151203e+00	4.369927	1.502584e+00
## 3	2.885016e+00	6.2639246	6.355356e-08	4.387037	8.153923e-01
## 4	8.655772e-08	0.3427217	3.187985e-08	2.519800	7.519735e-08
## 5	4.820525e+00	2.5143774	3.473817e+00	4.713333	1.744634e+00
## 6	2.968184e+00	1.5131803	2.628904e+00	3.885630	1.315621e+00
## 1700008003Rik	1700009P17Rik	1700010I14Rik	1700011E24Rik	1700011H14Rik	
## 1	5.131094	4.977019	6.967442	1.823968e+00	2.005864e+00
## 2	5.135815	4.986770	6.695407	1.266799e+00	2.400676e+00
## 3	5.135977	7.731096	5.315456	1.541732e+00	8.702254e-01
## 4	4.211627	5.032216	5.326620	7.661804e-08	1.090720e-07
## 5	5.485614	5.335577	7.051211	1.487099e+00	2.698020e+00
## 6	3.992089	3.843856	5.790505	1.082964e+00	1.218559e+00
## 1700011L22Rik	1700012P22Rik	1700013F07Rik	1700013H16Rik	1700015E13Rik	
## 1	2.273136e+00	1.259410e+00	2.367322e+00	2.027550e+00	2.571365e+00
## 2	1.330924e+00	6.263293e-01	1.917671e+00	1.460056e+00	1.850474e+00
## 3	4.690496e-08	2.363669e+00	5.609392e+00	4.116699e-08	6.398199e-08
## 4	2.385595e-08	8.792600e-08	5.102122e-08	2.105595e-08	3.278593e-08
## 5	1.557528e+00	7.630570e-01	2.189813e+00	1.698464e+00	2.118350e+00
## 6	1.425266e+00	6.912948e-01	1.500091e+00	1.235008e+00	1.665478e+00
## 1700016C15Rik	1700016K19Rik	1700017B05Rik	1700019B03Rik	1700019D03Rik	
## 1	2.8942617	3.526019	12.972173	2.032499e+00	6.338332
## 2	1.3255676	4.349315	12.086829	1.953955e+00	5.692268
## 3	2.5381536	1.410469	7.732012	1.920560e+00	9.730021
## 4	0.5450801	1.004052	9.814638	1.155263e-07	3.832367
## 5	1.5516569	4.692497	12.445634	2.228314e+00	6.044979
## 6	1.9356212	2.489145	11.780425	1.238770e+00	5.169549
## 1700019G17Rik	1700019L03Rik	1700020A23Rik	1700020D05Rik	1700020L24Rik	
## 1	9.087471	5.4628619	3.470628e+00	4.915771e+00	7.884378e+00
## 2	8.664988	6.0309999	2.940444e+00	4.811570e+00	7.930026e+00
## 3	10.037175	3.9270160	5.342803e-08	1.792004e+00	8.437752e-08
## 4	8.349959	0.3048745	2.681082e-08	9.613378e-08	3.238938e-01
## 5	9.023083	6.3850038	3.257271e+00	5.159072e+00	8.287600e+00
## 6	7.898964	4.3131420	2.439478e+00	3.785102e+00	6.700384e+00
## 1700021F05Rik	1700021K19Rik	1700022I11Rik	1700023E05Rik	1700024G13Rik	
## 1	8.899983	12.625537	3.080964e+00	1.266067e+00	8.343545e-01

##	2	8.142873	12.756020	2.836554e+00	2.367706e+00	4.112760e-01
##	3	10.322433	8.974292	1.034275e+00	9.137207e-01	4.027073e+00
##	4	9.968549	7.349906	6.523085e-08	5.612897e-08	8.857638e-08
##	5	8.500626	13.114853	3.150193e+00	2.663597e+00	5.089084e-01
##	6	7.711957	11.433853	2.096045e+00	6.956385e-01	4.284936e-01
##	1700024P16Rik	1700025G04Rik	1700026D08Rik	1700026L06Rik	1700028K03Rik	
##	1	1.288742e+00	11.155664	1.823605	2.452956	5.603912e+00
##	2	1.968218e+00	10.842896	3.356986	1.939787	5.322305e+00
##	3	1.258513e+00	7.719330	5.830830	6.084043	1.935994e+00
##	4	8.718803e-08	5.936244	3.925290	4.339594	5.484320e-08
##	5	2.243433e+00	11.201602	3.684473	2.213287	5.673208e+00
##	6	7.104854e-01	9.964510	1.082698	1.568967	4.450311e+00
##	1700028P14Rik	1700029I15Rik	1700029J07Rik	1700030J22Rik	1700030K09Rik	
##	1	0.5202882	5.209172e+00	7.636962	6.3428721	8.784686
##	2	1.8839827	5.379888e+00	6.842676	6.0081737	8.632962
##	3	4.3601492	1.921125e+00	7.752741	5.2288858	9.212353
##	4	2.4012267	4.888444e-08	1.859286	0.7382315	4.252077
##	5	2.1540127	5.731104e+00	7.198780	6.3620997	8.991039
##	6	0.2533744	4.067428e+00	6.454459	5.1740177	7.596990
##	1700034I23Rik	1700037C18Rik	1700037H04Rik	1700040L02Rik	1700049G17Rik	
##	1	1.295141e+00	7.219029	9.894222	3.5038859	7.918863
##	2	1.431561e+00	6.848397	9.613840	2.9509854	7.059818
##	3	1.699310e+00	4.698990	10.524360	5.4560279	7.533819
##	4	1.016551e-07	1.105137	8.265511	0.4846755	7.387146
##	5	1.667462e+00	7.204511	9.972313	3.2681234	7.416310
##	6	7.146893e-01	6.039696	8.704227	2.4692756	6.734681
##	1700052N19Rik	1700055N04Rik	1700066M21Rik	1700067K01Rik	1700084C01Rik	
##	1	8.910721	3.794100	10.420000	4.0603869	8.938215
##	2	8.538368	2.760602	9.649255	3.7362134	8.883007
##	3	9.159392	1.477973	7.818823	3.2358379	10.087044
##	4	8.142028	1.412790	6.428640	0.3077706	6.111349
##	5	8.896390	3.071755	10.007737	4.0710156	9.241212
##	6	7.722666	2.732143	9.229398	2.9773736	7.750087
##	1700088E04Rik	1700093K21Rik	1700101E01Rik	1700102P08Rik	1700112E06Rik	
##	1	4.083487	2.135017e+00	0.8501973	5.6541786	5.340707
##	2	4.107507	1.829587e+00	1.1811882	4.8865863	5.728901
##	3	5.369970	5.350776e-08	2.1895572	3.0933621	6.256875
##	4	3.937910	2.632934e-08	1.2395942	0.2988683	4.525282
##	5	4.447807	2.096093e+00	1.3925751	5.2346670	6.081767
##	6	2.998810	1.317377e+00	0.4377635	4.4992815	4.194658
##	1700113H08Rik	1700123I01Rik	1700123L14Rik	1700123O20Rik	1700125H20Rik	
##	1	1.971353e+00	2.155780e+00	2.066870e+00	10.409619	2.439364
##	2	1.482964e+00	1.545614e+00	1.221650e+00	9.602586	2.261175
##	3	2.922047e+00	4.530718e-08	3.792802e-08	11.146351	1.785977
##	4	5.584142e-08	2.306163e-08	1.939340e-08	10.070007	2.034746
##	5	1.723348e+00	1.791233e+00	1.437321e+00	9.961055	2.552126
##	6	1.192506e+00	1.333452e+00	1.264981e+00	9.219027	1.557983
##	1810009A15Rik	1810011H11Rik	1810011O10Rik	1810013L24Rik	1810022K09Rik	
##	1	9.982257	9.343317	10.098327	11.563736	6.625055
##	2	9.176377	9.427864	9.338966	11.001187	6.007760
##	3	11.327138	3.137742	4.931484	10.833193	8.085361
##	4	9.075836	6.895745	6.368639	9.271699	6.922227
##	5	9.534705	9.786281	9.697353	11.359911	6.361684
##	6	8.792144	8.154245	8.908070	10.372377	5.452121

##	1810026J23Rik	1810030007Rik	1810037I17Rik	1810041L15Rik	1810043G02Rik
## 1	12.150449	10.646974	12.16590	13.189922	9.442951
## 2	11.520835	9.996469	11.45598	13.101436	9.750069
## 3	8.811959	10.277904	12.27645	10.105688	9.523891
## 4	8.814934	9.436355	10.87440	9.663322	6.729252
## 5	11.879606	10.355037	11.81475	13.460279	10.108578
## 6	10.958882	9.456170	10.97433	11.998140	8.253685
##	1810043H04Rik	1810055G02Rik	2010002M12Rik	2010012005Rik	2010107E04Rik
## 1	8.694926	10.201191	2.7695038	9.755831	11.41230
## 2	8.182622	10.092776	1.7616080	9.195354	10.79215
## 3	9.430561	9.934708	1.4672322	9.756389	12.05694
## 4	7.969537	7.964790	0.8053538	9.202946	11.09184
## 5	8.540406	10.451364	2.0235078	9.553689	11.15085
## 6	7.507504	9.010815	1.8300943	8.566036	10.22101
##	2010107G23Rik	2010111I01Rik	2010300C02Rik	2210016F16Rik	2210016L21Rik
## 1	8.340976	9.194832	8.601258	9.389293	11.057939
## 2	8.172113	8.466237	8.859757	9.456196	10.555202
## 3	7.645988	7.958303	5.072862	7.079794	10.474913
## 4	5.510938	7.834772	8.502190	5.776852	9.609946
## 5	8.529888	8.824216	9.217950	9.814622	10.913870
## 6	7.154820	8.006076	7.414141	8.200130	9.866843
##	2210018M11Rik	2210408I21Rik	2300005B03Rik	2300009A05Rik	2310002J15Rik
## 1	10.478435	8.536497	0.5862587	8.013268	1.877499
## 2	10.397070	8.167914	0.5588364	7.656905	1.536065
## 3	9.930242	7.950411	2.4131650	6.195707	3.173247
## 4	8.048401	7.162941	1.4164336	5.139927	3.997260
## 5	10.755713	8.525686	0.6840258	8.014206	1.780902
## 6	9.287778	7.349604	0.2887831	6.828594	1.122422
##	2310003H01Rik	2310005G13Rik	2310007B03Rik	2310007L24Rik	2310009B15Rik
## 1	10.935965	3.878427e+00	4.063176	3.056730e+00	8.130166
## 2	10.077815	2.323000e+00	3.288580	2.872922e+00	7.174227
## 3	9.738499	5.816126e-08	1.343516	2.706145e+00	8.256190
## 4	8.962777	2.929888e-01	2.265150	9.365881e-08	6.640875
## 5	10.436400	2.616865e+00	3.614524	3.187704e+00	7.530901
## 6	9.744947	2.809413e+00	2.979960	2.075060e+00	6.944924
##	2310011J03Rik	2310014L17Rik	2310022A10Rik	2310022B05Rik	2310030G06Rik
## 1	10.766304	6.851893	9.802266	13.12088	3.639086
## 2	10.547835	6.263147	9.381633	12.47414	4.608558
## 3	9.867482	4.323041	8.412698	11.07516	5.299720
## 4	8.069557	5.671690	5.731508	8.83047	4.534673
## 5	10.906502	6.617877	9.740034	12.83296	4.954333
## 6	9.575407	5.676204	8.612401	11.92911	2.591120
##	2310033P09Rik	2310035C23Rik	2310036022Rik	2310039H08Rik	2310045N01Rik
## 1	9.653791	11.694795	11.836194	8.623398	9.825131
## 2	9.065038	11.398684	11.586219	7.628114	9.277144
## 3	7.761924	9.523212	8.250190	8.703894	9.436584
## 4	5.483067	8.174703	6.596253	7.024480	7.805468
## 5	9.423323	11.757445	11.944995	7.985383	9.635510
## 6	8.464156	10.503382	10.644728	7.436208	8.635233
##	2310047M10Rik	2310050C09Rik	2310057M21Rik	2310061I04Rik	2310067B10Rik
## 1	10.441448	4.198557e-08	8.869663	10.065728	11.542336
## 2	10.339196	2.670995e-08	8.797393	9.436827	11.399985
## 3	6.648945	5.383224e+00	7.869375	7.878595	9.275795
## 4	4.775838	6.301852e+00	6.250025	6.269096	8.244377

## 5	10.697829	3.425109e-08	9.155557	9.795247	11.758747
## 6	9.250825	1.859736e-08	7.681722	8.875510	10.350987
##	2410004B18Rik	2410004P03Rik	2410015M20Rik	2410016006Rik	2410089E03Rik
## 1	10.591400	5.980141	10.997714	9.176254	11.458185
## 2	9.690387	5.315323	10.353864	9.537269	10.599864
## 3	7.735409	6.588212	11.872485	4.721030	8.992772
## 4	5.718384	3.015912	10.708002	6.099723	7.859996
## 5	10.048880	5.666187	10.712500	9.895720	10.958538
## 6	9.400643	4.817826	9.806656	7.987540	10.266875
##	2410127L17Rik	2410131K14Rik	2510002D24Rik	2510003E04Rik	2510009E07Rik
## 1	6.1044511	10.516868	8.945552	12.286637	12.804920
## 2	5.4371870	9.782279	8.709982	12.017610	12.017483
## 3	2.9215630	9.169009	8.395251	9.590504	10.594371
## 4	0.7038884	7.188471	5.632788	9.400335	9.611682
## 5	5.7887021	10.140797	9.068101	12.376412	12.376285
## 6	4.9397111	9.326176	7.757404	11.095032	11.613201
##	2510039018Rik	2510049J12Rik	2610002M06Rik	2610008E11Rik	2610015P09Rik
## 1	11.913614	3.807898	10.139309	9.846860	8.199596
## 2	12.024011	4.231122	9.582102	8.946232	8.236893
## 3	7.948015	3.584500	9.569062	10.334835	8.644133
## 4	7.715088	1.819432	8.358676	8.635420	7.207600
## 5	12.382813	4.572957	9.940565	9.304466	8.594717
## 6	10.722121	2.744761	8.949004	8.656931	7.014038
##	2610018G03Rik	2610020H08Rik	2610034B18Rik	2610301B20Rik	2610507B11Rik
## 1	6.377559	7.987734	10.480759	10.647743	14.100445
## 2	6.086900	7.831062	9.347135	9.909676	13.777671
## 3	1.299423	6.112949	10.432178	10.415578	10.188086
## 4	2.346457	2.221986	7.813729	9.091492	9.603929
## 5	6.441089	8.188543	9.705526	10.268224	14.136527
## 6	5.208159	6.803190	9.290100	9.456939	12.908569
##	2610528A11Rik	2700029M09Rik	2700049A03Rik	2700060E02Rik	2700062C07Rik
## 1	7.361029	10.298302	8.977783	10.912936	8.521637
## 2	7.485130	9.856801	8.631910	10.144193	8.069812
## 3	1.931254	9.504325	9.908631	9.512797	9.399365
## 4	5.998262	7.182286	6.038654	7.838709	6.906613
## 5	7.842232	10.215336	8.989986	10.502791	8.427506
## 6	6.180515	9.107821	7.789550	9.721934	7.334796
##	2700081015Rik	2700094K13Rik	2810004N23Rik	2810006K23Rik	2810403A07Rik
## 1	12.276931	10.612954	10.140583	8.682123	12.010824
## 2	11.194796	9.941332	9.765891	8.398582	11.730629
## 3	9.360459	12.103033	10.164662	9.882190	8.517107
## 4	7.615916	9.404533	7.477938	7.519937	6.802572
## 5	11.553539	10.299887	10.124404	8.756518	12.089414
## 6	11.085329	9.422178	8.950276	7.494741	10.819299
##	2810408M09Rik	2810417H13Rik	2810428I15Rik	2810459M11Rik	2810474019Rik
## 1	10.080966	7.666566	11.050938	10.207258	9.738491
## 2	9.542551	7.217132	10.307140	9.767825	9.233573
## 3	7.796460	11.220447	11.229418	9.980672	11.111410
## 4	5.281347	5.365256	9.771376	7.239147	9.120606
## 5	9.901003	7.573871	10.665768	10.126339	9.591923
## 6	8.890729	6.483871	9.859847	9.016875	8.548722
##	2900011008Rik	2900026A02Rik	3010026009Rik	3110001I22Rik	3110002H16Rik
## 1	11.88397	10.988417	8.403467	8.100997	11.077187
## 2	11.62887	10.703863	7.698168	7.322342	9.861489

##	3	10.90746	6.998632	9.888079	7.433961	10.177292
##	4	10.29741	7.226089	8.394704	5.820721	9.186787
##	5	11.98765	11.062551	8.055514	7.679231	10.220026
##	6	10.69249	9.797365	7.217065	6.915892	9.886079
##	3110007F17Rik	3110009E18Rik	3110035E14Rik	3110039M20Rik	3110040N11Rik	
##	1	6.203284	6.862449	13.554087	5.597450	8.636755
##	2	6.058677	6.113584	13.551842	5.497771	7.739820
##	3	5.638910	8.450953	7.649931	9.073499	9.011496
##	4	2.719791	7.174881	8.490975	4.308777	8.796622
##	5	6.412774	6.467859	13.910694	5.849590	8.097210
##	6	5.036758	5.686642	12.362261	4.444019	7.449521
##	3110043021Rik	3110057012Rik	3110062M04Rik	3110079015Rik	3110082I17Rik	
##	1	11.750288	8.469823	7.809874	4.587548	8.950264
##	2	11.072504	8.693530	7.348760	4.160178	8.173393
##	3	10.180674	6.199268	6.527123	5.519898	8.334091
##	4	8.847576	3.160877	5.656062	4.218884	6.865142
##	5	11.431235	9.051640	7.705685	4.501149	8.531169
##	6	10.558854	7.283170	6.626303	3.472106	7.762103
##	3632451006Rik	3830403N18Rik	3830406C13Rik	4430402I18Rik	4632428N05Rik	
##	1	11.230805	3.958479	9.166521	6.772709	15.484663
##	2	10.839504	4.145564	8.851780	6.511377	15.321337
##	3	8.206110	2.486336	10.422984	4.872483	6.662772
##	4	8.451647	3.165333	8.263681	4.015059	11.422499
##	5	11.198210	4.486351	9.209970	6.866763	15.680209
##	6	10.039609	2.883106	7.977829	5.597933	14.292721
##	4632434I11Rik	4833403I15Rik	4833420G17Rik	4833424015Rik	4833427G06Rik	
##	1	6.578669	2.624899e+00	11.377880	11.792877	1.6384049
##	2	6.413169	2.264899e+00	10.563078	11.744328	1.8199811
##	3	7.086799	7.926810e-08	11.554999	6.475956	6.3471895
##	4	1.909824	3.910825e-08	8.593234	9.131760	4.0636915
##	5	6.768308	2.556029e+00	10.921747	12.103114	2.0858507
##	6	5.406353	1.709579e+00	10.186607	10.601427	0.9491854
##	4833439L19Rik	4921507P07Rik	4921524J17Rik	4921536K21Rik	4930402H24Rik	
##	1	13.42046	6.156601	9.544436	5.3745480	13.751985
##	2	12.87336	4.517124	8.784078	5.1973680	13.479803
##	3	12.43466	3.642703	10.379481	3.8122464	10.428185
##	4	10.89587	4.194626	8.263258	0.3295059	9.147752
##	5	13.23220	4.862038	9.142235	5.5475475	13.838654
##	6	12.22865	4.990903	8.354986	4.2274521	12.560139
##	4930404N11Rik	4930427A07Rik	4930430F08Rik	4930432K21Rik	4930444P10Rik	
##	1	10.674016	8.337146	8.922187	6.5604542	3.554260e+00
##	2	10.519958	8.088947	8.790157	6.3322300	2.845973e+00
##	3	4.796087	7.222280	9.160826	5.2893995	5.304357e+00
##	4	5.093903	2.942389	6.640269	0.6663084	5.306598e-08
##	5	10.878620	8.446656	9.148316	6.6871538	3.159911e+00
##	6	9.483191	7.151005	7.734101	5.3883856	2.514542e+00
##	4930447C04Rik	4930451C15Rik	4930452B06Rik	4930453N24Rik	4930467E23Rik	
##	1	4.860885e+00	3.6988155	6.263227	10.130467	2.143421e+00
##	2	3.673139e+00	3.9895569	7.456118	9.032191	2.526985e+00
##	3	2.874382e+00	5.1936104	4.601067	9.148757	3.488291e-08
##	4	8.193859e-08	0.7348129	2.914878	7.934130	1.499820e-08
##	5	4.006856e+00	4.3282634	7.813183	9.390462	2.829587e+00
##	6	3.732539e+00	2.6452971	5.095674	8.940172	1.323877e+00
##	4930503L19Rik	4930505A04Rik	4930506M07Rik	4930523C07Rik	4930524B15Rik	

## 1	10.616121	2.043470e+00	10.594026	8.921526	1.292464e+00
## 2	9.290182	2.371701e+00	10.358201	8.913950	1.470295e+00
## 3	7.438553	8.587379e-01	8.220077	5.413293	7.539578e-01
## 4	6.300802	1.131155e-07	6.336924	6.224381	5.002791e-08
## 5	9.648553	2.667770e+00	10.716837	9.272169	1.709591e+00
## 6	9.425344	1.247121e+00	9.403267	7.733442	7.129296e-01
## 4930529M08Rik	4930539E08Rik	4930548H24Rik	4930550C14Rik	4930558K02Rik	
## 1	3.4496535	5.993301e+00	1.664904e+00	4.169558	2.179719e+00
## 2	2.5447595	6.749923e+00	1.896845e+00	3.897483	2.066684e+00
## 3	4.2032869	8.663346e-01	1.588416e+00	6.655040	6.517507e-08
## 4	0.2733969	1.065740e-07	2.435476e-07	1.669907	3.097224e-08
## 5	2.8480643	7.105842e+00	2.167688e+00	4.234850	2.347567e+00
## 6	2.4207226	4.830719e+00	9.679984e-01	3.078893	1.352050e+00
## 4930562C15Rik	4930578C19Rik	4930579G24Rik	4930590J08Rik	4931406C07Rik	
## 1	5.490499e+00	8.768605	7.802595	4.061443e+00	11.672379
## 2	5.271592e+00	7.378961	8.001361	3.785250e+00	10.774271
## 3	3.716545e+00	4.431103	9.056555	2.122414e+00	8.862995
## 4	5.921196e-08	6.765597	5.314304	5.303056e-08	6.415540
## 5	5.622209e+00	7.735926	8.358997	4.120864e+00	11.132968
## 6	4.339989e+00	7.580956	6.619066	2.978353e+00	10.480975
## 4931406P16Rik	4931409K22Rik	4931414P19Rik	4931423N10Rik	4931428F04Rik	
## 1	13.022160	1.926300e+00	7.645907	2.489769e+00	9.612644
## 2	12.689333	1.319901e+00	6.985446	1.686729e+00	9.537516
## 3	10.174768	3.602562e-08	8.127398	5.708216e-08	8.629040
## 4	8.639497	1.832893e-08	2.575611	2.935437e-08	6.705731
## 5	13.048163	1.545443e+00	7.341811	1.943279e+00	9.895967
## 6	11.830404	1.158721e+00	6.463344	1.598816e+00	8.423077
## 4931429I11Rik	4931440F15Rik	4932418E24Rik	4932438A13Rik	4932438H23Rik	
## 1	3.787004	3.498613	5.9906612	12.416294	6.230480
## 2	3.924751	3.457122	5.1623892	12.229597	6.556781
## 3	4.086036	1.204212	1.5648379	9.227351	5.687010
## 4	0.289012	2.791931	0.3148553	8.390926	4.939644
## 5	4.262524	3.786734	5.5123546	12.588410	6.912275
## 6	2.725658	2.464546	4.8281328	11.224657	5.063482
## 4933402J07Rik	4933405L10Rik	4933409K07Rik	4933411K16Rik	4933411K20Rik	
## 1	1.902008e+00	4.268801e+00	1.937239e+00	3.500379e+00	8.990077
## 2	1.667716e+00	2.615416e+00	1.337414e+00	3.463848e+00	8.406560
## 3	4.515472e-08	3.514092e+00	3.867522e-08	6.392965e-01	9.283591
## 4	2.192552e-08	8.307916e-09	1.965578e-08	1.002657e-07	8.795479
## 5	1.922859e+00	2.921425e+00	1.564640e+00	3.793598e+00	8.764501
## 6	1.140613e+00	3.171632e+00	1.166900e+00	2.466130e+00	7.801812
## 4933426M11Rik	4933427D14Rik	4933430I17Rik	4933433C11Rik	4933434E20Rik	
## 1	12.430119	10.059589	4.921823e+00	3.120921e+00	11.224388
## 2	12.061296	10.066847	4.854988e+00	2.417410e+00	10.504456
## 3	8.942358	7.852284	4.596942e+00	3.805174e-08	12.239710
## 4	8.890164	3.239388	5.413125e-08	1.939339e-08	11.209944
## 5	12.420101	10.425430	5.202829e+00	2.715479e+00	10.863116
## 6	11.238479	8.869378	3.790903e+00	2.130746e+00	10.033195
## 5031414D18Rik	5031439G07Rik	5330417C22Rik	5430421N21Rik	5430427019Rik	
## 1	8.512749	14.665163	10.471870	3.7158424	6.825254
## 2	8.640168	14.048149	9.604850	2.5261838	6.446630
## 3	2.929442	8.468602	7.047809	2.0167066	3.956090
## 4	5.837988	8.388279	8.923007	0.8109046	6.714099
## 5	8.998249	14.407009	9.963320	2.8287544	6.801855

##	6	7.325940	13.473252	9.281219	2.6607789	5.649866
##	5430435G22Rik	5730409E04Rik	5730455P16Rik	5730508B09Rik	5730559C18Rik	
##	1	10.784427	10.153275	10.634765	9.289457	10.472406
##	2	10.650711	10.105350	10.432654	8.161212	10.400861
##	3	7.392550	8.223691	10.287941	5.286112	3.284980
##	4	5.267520	5.781278	7.317087	3.497472	3.666972
##	5	11.009392	10.463940	10.791302	8.518979	10.759504
##	6	9.593517	8.962953	9.443972	8.100496	9.281754
##	5830415F09Rik	5830418K08Rik	6030419C18Rik	6030458C11Rik	6030468B19Rik	
##	1	7.049499	9.968114	9.872663	10.008739	6.6543607
##	2	6.536984	10.109813	10.113828	9.923311	7.0282947
##	3	8.569070	8.348083	3.465557	9.291236	0.6738322
##	4	5.718252	5.302844	4.250993	7.698786	5.6891905
##	5	6.892432	10.468404	10.472419	10.281862	7.3847335
##	6	5.871735	8.778019	8.682698	8.818592	5.4810458
##	6330403A02Rik	6330408A02Rik	6330416G13Rik	6430548M08Rik	6430571L13Rik	
##	1	9.453127	8.817092	11.205806	11.482393	6.616111
##	2	9.184904	8.163370	11.380915	11.641966	6.116918
##	3	3.939868	6.869826	6.971121	9.247403	4.124604
##	4	8.524380	2.617026	6.470418	8.266141	1.327118
##	5	9.543236	8.521138	11.739675	12.000745	6.471204
##	6	8.263842	7.629300	10.014624	10.291071	5.443294
##	6430573F11Rik	6820408C15Rik	8030462N17Rik	8430408G22Rik	8430419L09Rik	
##	1	8.191583	4.910867	10.343011	9.650424	12.68168
##	2	7.704599	5.411937	9.855069	9.767398	12.38916
##	3	6.689604	4.057470	6.322947	6.064393	11.64157
##	4	6.135852	3.099027	5.456411	7.452510	11.06564
##	5	8.061952	5.763322	10.213604	10.125912	12.74798
##	6	7.006061	3.780403	9.152484	8.460795	11.48999
##	9030617003Rik	9030624J02Rik	9130008F23Rik	9130011E15Rik	9130019022Rik	
##	1	8.360488	12.47804	2.770592	10.405006	7.557402
##	2	8.800163	12.02811	3.861301	10.190138	7.390702
##	3	6.539336	11.94421	1.059612	8.300979	6.490351
##	4	6.685504	10.55510	2.914808	6.736145	5.570219
##	5	9.158327	12.38691	4.198118	10.548745	7.747683
##	6	7.174254	11.28639	1.831009	9.214418	6.375434
##	9130401M01Rik	9230110C19Rik	9330159F19Rik	9330182L06Rik	9430015G10Rik	
##	1	9.740614	6.981031	11.084021	10.927499	10.005388
##	2	9.239729	6.810681	10.476363	10.603121	10.316168
##	3	9.612589	9.138626	11.194659	6.871314	8.955663
##	4	7.717397	5.452059	8.271991	5.087590	6.085225
##	5	9.598081	7.166722	10.835018	10.961795	10.674798
##	6	8.550842	5.803954	9.892909	9.736488	8.815246
##	9430016H08Rik	9430020K01Rik	9530053A07Rik	9530068E07Rik	9530077C05Rik	
##	1	9.819228	13.973590	5.353398e+00	13.226539	8.244522
##	2	9.381191	12.802045	5.784053e+00	12.897199	8.038227
##	3	9.591381	8.938311	2.513075e+00	10.433731	9.791922
##	4	8.368598	10.367721	6.540967e-08	9.680925	6.312471
##	5	9.739592	13.160879	6.137145e+00	13.256036	8.395895
##	6	8.629339	12.781724	4.206954e+00	12.034752	7.058768
##	9630033F20Rik	9930012K11Rik	9930021J03Rik	A130010J15Rik	A230046K03Rik	
##	1	8.295297	8.362307	11.190499	8.416886	11.316967
##	2	8.436136	7.626008	11.206803	8.132200	11.184041
##	3	8.437593	5.396878	8.804115	8.225372	9.726426


```

## 4      5.694980      5.421938      8.249347      6.734764      8.735425
## 5      8.794096      7.983275      11.565548      8.489944      11.542784
## 6      7.109328      7.176065      9.999325      7.230432      10.125725
## A230050P20Rik      A2m A330021E22Rik A330050F15Rik      A3galt2
## 1      9.377368 9.172201      6.431145      3.352342 6.2742593
## 2      9.008470 9.243076      7.442235      3.725592 6.3183587
## 3      5.244274 7.551694      4.618297      3.398723 1.9942171
## 4      4.865960 6.091179      3.700310      4.047895 0.3119208
## 5      9.366731 9.601430      7.799283      4.060215 6.6732442
## 6      8.188229 7.983495      5.260929      2.334089 5.1065213
## A430005L14Rik A430078G23Rik A430105I19Rik      A4galt A530016L24Rik
## 1      9.524621 3.965466e+00      9.044514 4.275438 3.779519e+00
## 2      8.993720 4.235215e+00      8.655638 4.821836 3.659007e+00
## 3      10.470540 5.022229e-08      4.990546 6.751963 8.728707e-08
## 4      9.851992 2.148531e-08      2.701280 4.256071 2.757623e-01
## 5      9.351975 4.577098e+00      9.013728 5.169419 3.992474e+00
## 6      8.335206 2.889554e+00      7.856111 3.177849 2.718822e+00
## A530054K11Rik A630007B06Rik A730017C20Rik A830010M20Rik A830018L16Rik
## 1      10.050508      9.878751      10.354886      10.474206      7.179242
## 2      9.610592      9.885433      10.172636      10.779825      7.032529
## 3      7.865148      8.201310      10.989978      10.035479      4.851327
## 4      7.329180      4.865160      8.701512      7.361190      6.162640
## 5      9.969063      10.243976      10.531239      11.138523      7.388975
## 6      8.860308      8.688777      9.164347      9.283553      6.000261
## A830080D01Rik AA415398 AA467197 AA474331 AA986860 AA987161      Aaas
## 1      9.330584 7.264688 2.2582458 6.233925 8.543891 8.818515 9.348996
## 2      9.245852 7.147749 3.0068480 5.958652 7.799026 8.512322 9.292458
## 3      7.910686 5.484585 3.0608081 1.661445 5.058894 8.713249 9.881315
## 4      4.595103 5.639415 0.3066908 3.867436 4.052911 6.537745 7.421811
## 5      9.604207 7.504382 3.3255932 6.312405 8.156475 8.870329 9.650830
## 6      8.141538 6.084962 1.4135286 5.066868 7.356972 7.630719 8.159913
## Aacs      Aadat      Aagab      Aak1      Aamp      Aanat      Aard
## 1 13.226522 3.822298e+00 11.99165 12.384319 13.56771 2.115041e+00 6.645381
## 2 13.122895 2.771917e+00 11.76339 12.219860 12.87515 1.327055e+00 7.160865
## 3 10.664082 1.888498e+00 10.94485 8.830859 12.41507 4.114705e-08 4.964853
## 4 8.445362 9.852417e-08 10.44415 8.582792 11.51688 2.116853e-08 2.360266
## 5 13.481738 3.083449e+00 12.12218 12.578673 13.23399 1.553287e+00 7.517518
## 6 12.034735 2.757940e+00 10.80013 11.192690 12.37588 1.301960e+00 5.472182
## Aars      Aars2      Aarsd1      Aasdh      Aasdhppt      Aass      Aatf
## 1 13.266085 9.234451 10.711003 9.048367 10.353703 7.502144 10.237172
## 2 13.199550 9.413350 10.217249 8.990877 9.650026 7.306838 9.508979
## 3 11.339327 5.773737 11.067046 8.280394 10.757073 8.730562 7.939585
## 4 9.850443 4.509227 9.589523 5.841497 9.362187 5.924998 6.431170
## 5 13.558396 9.771762 10.575860 9.349130 10.008509 7.663706 9.867421
## 6 12.074294 8.045608 9.520149 7.859955 9.163165 6.320565 9.046756
## Aatk AB124611      Abat      Abca1      Abca12      Abca13      Abca2
## 1 14.926437 7.789040 13.310440 14.089777 1.5517721 4.329679e+00 15.44684
## 2 14.197217 7.198582 13.201648 13.511790 1.3658179 2.843811e+00 14.69193
## 3 8.537372 6.867891 11.041076 10.749086 4.9900643 1.611018e+00 11.12523
## 4 8.243952 2.575783 9.821351 9.831384 5.2608643 1.242445e-07 10.55927
## 5 14.556079 7.555293 13.560493 13.870641 1.5957262 3.157681e+00 15.05079
## 6 13.734514 6.605591 12.118643 12.897902 0.8883757 3.228722e+00 14.25490
## Abca3      Abca4      Abca5      Abca6      Abca7      Abca8b      Abca9
## 1 12.898167 7.961972 10.621375 7.425487 11.212030 9.225975 11.447379

```

```

## 2 12.679107 7.521633 9.945839 7.197599 10.944212 9.078761 10.931212
## 3 9.286711 3.804965 8.313297 8.275271 5.833215 7.414043 8.324347
## 4 8.687351 4.100370 7.952313 1.590792 6.008627 6.230986 8.213371
## 5 13.037937 7.878779 10.304395 7.554308 11.302930 9.437051 11.289928
## 6 11.706431 6.777562 9.430593 6.244474 10.020844 8.037149 10.256073
##      Abcb10      Abcb1a      Abcb1b      Abcb4      Abcb6      Abcb7      Abcb8
## 1 11.646521 12.981410 8.508557 9.403898 10.362123 10.578802 11.558584
## 2 10.999314 12.500346 7.952686 9.822454 10.152829 10.415663 11.266798
## 3 8.925806 7.040193 6.374392 5.041453 6.947372 9.329741 11.130874
## 4 8.090644 9.050307 6.352064 5.116454 7.568826 7.856022 9.687125
## 5 11.358038 12.859170 8.310279 10.180981 10.511428 10.774309 11.625548
## 6 10.455128 11.789661 7.321763 8.214707 9.171577 9.388056 10.367227
##      Abcb9      Abcc1      Abcc10      Abcc2      Abcc3      Abcc4      Abcc5
## 1 10.264658 11.595490 10.153819 1.563477e+00 11.841192 11.513031 12.842984
## 2 9.440904 11.378734 9.411870 2.119971e+00 12.017554 11.096246 12.612791
## 3 10.416817 8.961773 7.253406 7.348099e-08 4.747645 6.349637 10.708665
## 4 8.682244 6.984771 3.995351 2.895865e-01 7.475249 6.931366 8.631722
## 5 9.799325 11.737493 9.770281 2.403757e+00 12.376357 11.454979 12.971619
## 6 9.074212 10.404118 8.963496 8.965290e-01 10.649724 10.321695 11.651258
##      Abcc6      Abcc8      Abcc9      Abcd1      Abcd2      Abcd3      Abcd4
## 1 10.618897 8.083164 9.995571 11.309250 10.589936 12.83341 10.971164
## 2 9.014825 7.864937 9.513256 11.569527 9.871032 12.25253 10.602210
## 3 4.219094 7.451679 8.651189 8.994038 10.375615 11.40686 9.083078
## 4 2.310949 6.860205 6.873965 7.763877 10.151806 10.66530 7.281638
## 5 9.373089 8.222450 9.871699 11.928301 10.229571 12.61134 10.960884
## 6 9.428117 6.898144 8.805441 10.118012 9.399181 11.64169 9.780123
##      Abce1      Abcf1      Abcf2      Abcf3      Abcg1      Abcg2      Abcg3
## 1 12.086763 12.001266 11.737624 11.582239 12.39823 12.172102 4.345249e+00
## 2 11.812228 12.141559 11.543489 11.506020 11.88566 11.485454 3.530230e+00
## 3 11.133144 11.063148 11.194445 10.981453 11.95468 9.014014 8.097456e-01
## 4 9.491312 8.024637 9.207486 9.465542 12.60342 9.599152 5.298822e-08
## 5 12.171018 12.500368 11.902261 11.864789 12.24446 11.844222 3.861303e+00
## 6 10.895215 10.809744 10.546195 10.390872 11.20660 10.980528 3.243346e+00
##      Abcg4      Abcg5      Abhd10      Abhd11      Abhd12      Abhd12b      Abhd13
## 1 10.173147 2.939169e+00 9.301932 10.892961 14.748571 0.13557215 10.795049
## 2 10.008394 1.239412e+00 8.614794 10.114659 14.079722 0.09347384 10.481785
## 3 7.379694 8.411595e-08 9.243049 10.646580 9.906074 4.16493571 7.877732
## 4 7.818524 4.012376e-08 8.482406 9.190804 10.536383 4.17662038 8.359568
## 5 10.366964 1.456923e+00 8.972861 10.473250 14.438583 0.11880234 10.840442
## 6 8.982802 1.973942e+00 8.112945 9.701973 13.556656 0.06159952 9.604131
##      Abhd14a      Abhd14b      Abhd15      Abhd16a      Abhd2      Abhd3      Abhd4
## 1 9.146210 8.668952 9.745885 12.201391 12.904092 11.88465 14.03535
## 2 8.835037 7.785620 8.930372 11.764545 12.697202 11.32158 13.67643
## 3 10.827349 8.922061 4.153204 9.991926 7.448335 10.62888 13.08786
## 4 8.645657 6.497749 5.786922 10.170299 6.631116 10.91348 11.24879
## 5 9.193219 8.143055 9.288598 12.123333 13.056033 11.68034 14.03529
## 6 7.957564 7.481613 8.556105 11.009810 11.712355 10.69316 12.84348
##      Abhd5      Abhd6      Abhd8      Abi1      Abi2      Abi3      Abi3bp
## 1 11.798021 10.657839 11.562663 12.53187 12.52072 11.713840 4.266486
## 2 11.273327 10.281454 11.316499 11.93959 11.85383 11.379156 3.843320
## 3 9.467507 10.879663 7.044614 10.57248 11.74311 3.747669 2.152733
## 4 8.425466 10.774178 7.195833 10.77937 11.97093 10.319116 2.791535
## 5 11.632077 10.640077 11.675253 12.29839 12.21262 11.737915 4.179858
## 6 10.606569 9.467027 10.371305 11.34021 11.32906 10.522420 3.169464

```

```

##      Abl1      Abl2      Ablim1      Ablim2      Ablim3      Abr      Abt1
## 1 13.560824 12.088316 13.326616 11.654740 9.823668 13.49030 9.973937
## 2 13.205172 12.108249 12.782187 11.237955 9.818851 13.19594 9.576950
## 3 9.320258 8.172959 8.676817 7.672345 6.559968 8.54327 9.483654
## 4 7.969830 7.505560 9.866881 8.366177 5.735809 10.72579 7.055270
## 5 13.564018 12.467056 13.141021 11.596702 10.177377 13.55479 9.935413
## 6 12.368997 10.896767 12.134816 10.463343 8.633772 12.29848 8.783835
##      Abtb1      Abtb2      Acaa1a      Acaa1b      Acaa2      Acaca      Acacb
## 1 11.211409 13.100521 12.231421 7.925279 10.937235 11.780997 8.347409
## 2 10.119734 12.772390 11.564804 6.923307 10.725641 11.439123 8.600765
## 3 10.118550 7.772803 8.317401 3.851322 11.137918 8.702011 4.986037
## 4 8.567677 6.795938 7.392681 2.360193 9.176284 6.914117 4.822295
## 5 10.478326 13.131223 11.923577 7.279561 11.084332 11.797887 8.958824
## 6 10.020224 11.908753 11.039831 6.741063 9.746216 10.589551 7.161227
##      Acad10      Acad11      Acad12      Acad8      Acad9      Acad1      Acadm
## 1 8.325134 10.935993 7.823181 10.456556 11.102394 11.736102 10.955237
## 2 7.958671 10.163777 7.871808 10.454375 10.479930 11.176316 10.824183
## 3 6.350725 9.596333 7.347658 10.242224 9.306395 8.917431 10.613172
## 4 5.152548 7.751399 5.314642 8.265001 8.586569 8.661084 8.872234
## 5 8.316270 10.522379 8.229327 10.813027 10.838586 11.535057 11.182886
## 6 7.139042 9.744975 6.639533 9.265919 9.911271 10.544674 9.764206
##      Acads      Acadsb      Acadv1      Acan      Acap1      Acap2      Acap3
## 1 11.770879 11.225929 12.36208 9.120883 5.7835405 12.699066 13.173515
## 2 10.917273 11.017592 12.17247 9.448659 5.6260179 12.166005 13.104350
## 3 8.164699 11.064236 11.96235 3.492288 2.0340985 9.346855 8.041809
## 4 8.124940 9.113838 10.03883 3.768186 0.5683253 8.219079 6.712544
## 5 11.275988 11.376317 12.53128 9.807083 5.9784385 12.524814 13.463193
## 6 10.579437 10.034735 11.17045 7.932297 4.6255024 11.507367 11.981736
##      Acat1      Acat2      Acat3      Acbd3      Acbd4      Acbd5      Acbd6
## 1 12.20148 12.43084 9.275381 11.602738 9.132315 11.784596 11.025240
## 2 11.74617 11.78279 9.070704 10.621508 9.154967 11.120871 10.376168
## 3 12.62038 11.71084 7.563261 8.799299 6.848975 10.602087 7.833715
## 4 10.24981 10.14611 4.683660 8.261981 6.796345 9.511086 6.599080
## 5 12.10495 12.14158 9.428991 10.980185 9.513287 11.479607 10.734808
## 6 11.00990 11.23919 8.086450 10.411363 7.943701 10.593149 9.834164
##      Acbd7      Accs      Accs1      Acd      Ace      Ace2      Acer1
## 1 2.803908 9.411537 4.019850e+00 11.037294 8.987565 7.592763 3.990867e-08
## 2 2.274287 8.635559 3.522461e+00 10.341852 9.345716 6.926107 2.511730e-08
## 3 6.638632 7.403151 2.805910e+00 11.155401 4.159666 8.593088 4.228256e+00
## 4 3.242190 6.802400 5.409235e-08 9.321920 5.416838 7.626980 4.739016e+00
## 5 2.565867 8.993638 3.853382e+00 10.700486 9.704106 7.282367 3.220877e-08
## 6 1.859056 8.222331 2.939816e+00 9.846211 7.799307 6.410553 1.767740e-08
##      Acer2      Acer3      Ache      Acin1      Acly      Acmsd      Acn9
## 1 9.711833 10.412331 11.351909 12.705441 14.40414 3.568201e+00 7.037072
## 2 8.987538 9.394817 11.554114 12.796297 14.06661 3.434109e+00 6.164577
## 3 6.306346 7.926397 4.410695 10.221597 12.09288 3.134103e-01 8.945081
## 4 7.167107 8.303728 5.482351 8.182007 10.68384 9.424855e-08 7.525886
## 5 9.345790 9.753223 11.912887 13.155132 14.42547 3.763246e+00 6.519013
## 6 8.522105 9.221736 10.160649 11.513741 13.21224 2.527098e+00 5.859430
##      Aco1      Aco2      Acot1      Acot10      Acot11      Acot12      Acot13
## 1 12.63002 13.88032 11.192258 8.320846 9.550026 4.773050e+00 10.302951
## 2 12.06033 13.67970 10.896895 7.849046 9.455242 4.306785e+00 9.657504
## 3 10.71051 12.70975 7.329794 8.294378 9.752160 3.034417e+00 11.051975
## 4 10.26627 11.83618 6.131545 5.507144 8.902621 8.814562e-08 10.688339

```

```

## 5 12.41913 14.03856 11.255607 8.206544 9.813667 4.649495e+00 10.015989
## 6 11.43834 12.68846 10.001084 7.134771 8.360566 3.648600e+00 9.112465
##      Acot2      Acot3      Acot4      Acot5      Acot6      Acot7      Acot8
## 1  9.395943 2.370450 4.953714e+00 2.1811279 7.735316 13.48470 9.564936
## 2  8.812356 2.554001 4.657075e+00 1.8695572 7.199407 12.90443 9.176544
## 3 11.141683 1.680315 2.667215e+00 1.2504254 4.171672 11.99437 9.287912
## 4  9.532036 4.039225 9.933726e-08 0.6679561 1.867552 11.32901 7.759363
## 5  9.170527 2.857667 5.003286e+00 2.1386665 7.556119 13.26327 9.534873
## 6  8.206767 1.502593 3.821488e+00 1.3531469 6.552189 12.29288 8.375450
##      Acot9      Acox1      Acox2      Acox3      Acox1      Acp1      Acp2
## 1 9.474292 13.95363 1.868172e+00 11.810315 2.051631e+00 6.888596 12.17699
## 2 8.990875 13.72690 2.580942e+00 11.438577 2.466693e+00 5.984634 11.90138
## 3 9.127678 12.23923 2.285637e+00 8.161649 9.137259e-08 10.576881 11.17084
## 4 6.608607 11.03866 9.554951e-08 8.397149 3.907306e-08 8.684158 10.45415
## 5 9.349128 14.08576 2.885649e+00 11.797342 2.766846e+00 6.338478 12.26018
## 6 8.284968 12.76177 1.115520e+00 10.618858 1.253342e+00 5.712500 10.98542
##      Acp5      Acp6      Acp6      Acpt      Acr      Acrbp      Acsbg1
## 1 9.302851 10.294384 3.127992 2.102948e+00 5.643629 7.8478437 12.94907
## 2 9.055969 10.055604 2.605162 1.517484e+00 5.635890 7.3730928 12.56150
## 3 2.872453 8.706080 3.775698 1.300861e+00 2.524724 6.6928242 13.51770
## 4 3.058342 6.731096 4.270428 8.368730e-08 1.898431 0.7700429 12.21752
## 5 9.414250 10.414184 2.910787 1.760783e+00 5.988355 7.7300507 12.92033
## 6 8.113862 9.103908 2.136900 1.292650e+00 4.489000 6.6640548 11.75732
##      Acsbg2      Acsf2      Acsf3      Acs11      Acs13      Acs14      Acs15
## 1 2.076391e+00 9.359425 9.651875 12.406667 13.92190 11.077829 11.122906
## 2 1.311978e+00 8.962005 9.018141 12.359951 13.25929 10.388387 11.083356
## 3 4.137976e+00 7.307021 8.920227 9.035106 11.80047 9.962376 7.019199
## 4 1.058625e-07 5.112164 8.075124 8.677992 11.26210 11.121433 7.666520
## 5 1.536752e+00 9.320245 9.376406 12.718769 13.61814 10.747028 11.442088
## 6 1.272267e+00 8.170321 8.462243 11.215032 12.73003 9.886721 9.931771
##      Acs16      Acsm3      Acsm5      Acss1      Acss2      Acss3
## 1 12.43751 3.489126e+00 2.2779745 11.901088 13.203414 7.768915e+00
## 2 12.04940 4.343383e+00 2.6260097 11.693620 12.924939 7.915701e+00
## 3 12.14319 1.201412e+00 1.0939206 9.168786 8.309306 2.160446e+00
## 4 11.30508 5.715591e-08 0.2735084 7.742101 8.522621 1.051771e-07
## 5 12.40821 4.686501e+00 2.9324126 12.052403 13.283777 8.273261e+00
## 6 11.24587 2.456042e+00 1.4290859 10.709600 12.011631 6.585586e+00
##      Acta1      Acta2      Actb      Actg1      Actg2      Act16a      Act16b
## 1 5.559114 7.009660 16.85429 14.008868 3.774573 11.431241 9.863062
## 2 5.237427 6.089166 16.01979 13.405190 3.094120 10.603484 9.359263
## 3 6.906026 8.794840 17.65463 10.610132 3.570557 11.247841 8.667071
## 4 4.714211 12.820606 17.17720 9.241292 6.532433 9.622141 7.189947
## 5 5.587846 6.443362 16.37866 13.764040 3.415251 10.962158 9.717657
## 6 4.406706 5.832292 15.66232 12.816999 2.714305 10.239943 8.673110
##      Act17a      Act17b      Act19      Actn1      Actn2      Actn3
## 1 2.480548e+00 1.839461e+00 2.278362e+00 11.574866 6.012294 5.798800e+00
## 2 1.415011e+00 1.706606e+00 1.774749e+00 11.387796 6.837801 4.924814e+00
## 3 5.426521e-08 4.336729e-08 5.662563e-08 8.392583 3.648034 2.027372e+00
## 4 2.763930e-08 2.090167e-08 2.854728e-08 8.130827 5.162201 5.140590e-08
## 5 1.649432e+00 1.964604e+00 2.037558e+00 11.746556 7.193895 5.273178e+00
## 6 1.591326e+00 1.094345e+00 1.429392e+00 10.383502 4.849332 4.640409e+00
##      Actn4      Actr10      Actr1a      Actr1b      Actr2      Actr3      Actr3b
## 1 13.818365 12.31878 14.23255 13.149884 13.35557 12.973286 9.976053
## 2 13.634767 11.73429 13.60996 12.821273 12.58870 12.393646 9.906826

```

```

## 3 10.086165 12.15543 12.93569 10.383652 12.98573 9.706143 9.209404
## 4 9.417267 10.84717 11.51957 9.781818 13.47063 9.301780 7.804744
## 5 13.993620 12.09307 13.96881 13.180108 12.94753 12.752466 10.265373
## 6 12.626512 11.12717 13.04066 11.958108 12.16377 11.781538 8.785948
##      Actr5      Actr6      Actr8      Acvr1      Acvr1b      Acvr1c      Acvr2a
## 1 9.487216 9.559535 10.411754 11.060951 10.847974 4.985991 10.535249
## 2 9.338685 8.885708 10.390322 10.961235 10.066268 4.837861 10.346005
## 3 5.158011 11.026593 9.553241 6.782388 6.996176 3.502358 8.221834
## 4 4.041747 9.877061 8.761590 8.325897 7.447919 8.653083 8.155941
## 5 9.697072 9.243914 10.748964 11.319954 10.424850 5.185570 10.704640
## 6 8.297868 8.370058 9.221160 9.869853 9.657017 3.852472 9.344540
##      Acvr2b      Acvr11      Acy1      Acy3      Acyp1      Acyp2      Ada
## 1 8.346984 12.645697 10.646324 10.672027 9.144060 9.085768 7.281555
## 2 7.736903 12.152445 10.135836 8.781630 8.358460 8.554317 7.345839
## 3 7.169115 6.230597 9.846454 7.913229 9.995232 9.683904 5.174850
## 4 5.212518 8.236804 7.476670 5.433747 8.359466 9.080267 4.152559
## 5 8.094289 12.511254 10.494432 9.139785 8.716369 8.912349 7.702760
## 6 7.160803 11.454009 9.455522 9.481203 7.955419 7.897265 6.101688
##      Adal      Adam10      Adam11      Adam12      Adam15      Adam17      Adam18
## 1 10.521829 13.43735 11.093666 10.549710 13.822285 12.263682 3.873432e+00
## 2 9.515359 12.74719 11.031873 10.405800 13.494117 12.062808 4.498587e+00
## 3 9.293216 11.60930 7.161194 3.767095 6.910726 10.072106 2.051786e+00
## 4 7.655206 11.45072 8.242206 2.961402 7.428163 8.539863 7.153096e-08
## 5 9.873803 13.10602 11.390600 10.764444 13.852969 12.421613 4.843319e+00
## 6 9.331132 12.24553 9.902548 9.358989 12.630432 11.072084 2.804826e+00
##      Adam19      Adam21      Adam22      Adam23      Adam30      Adam32
## 1 10.975027 2.920432e+00 12.19476 11.347731 1.227168e+00 3.868088e+00
## 2 10.783664 3.942589e+00 11.92729 10.934217 1.608206e+00 2.944921e+00
## 3 5.450179 2.750487e+00 10.88631 9.992120 4.070754e-08 5.655351e-01
## 4 4.656040 7.564221e-08 10.88521 9.589502 1.719050e-08 8.996462e-08
## 5 11.142362 4.280623e+00 12.28608 11.292933 1.858816e+00 3.261881e+00
## 6 9.783984 1.957932e+00 11.00318 10.156474 6.703542e-01 2.799920e+00
##      Adam33      Adam8      Adam9      Adamdec1      Adamts1      Adamts10      Adamts12
## 1 6.122168 8.166790 12.830520 2.312948e+00 14.11951 11.188701 7.8849222
## 2 5.346684 7.879815 12.457966 1.163710e+00 14.12471 11.236429 8.4455019
## 3 3.007572 5.889545 8.413126 4.705305e-08 7.63078 7.509761 2.2169002
## 4 1.285937 3.647538 7.667547 2.389925e-08 7.80065 4.088082 0.4919777
## 5 5.697721 8.237342 12.816789 1.373205e+00 14.48357 11.595176 8.8034676
## 6 4.957099 6.981380 11.638796 1.456774e+00 12.92764 9.997528 6.7009259
##      Adamts13      Adamts14      Adamts15      Adamts16      Adamts17      Adamts18      Adamts19
## 1 3.018128 5.806650 8.797259 9.025083 8.083199 4.7223693 4.9278996
## 2 3.782422 5.530897 7.154048 8.916271 7.876080 5.9269563 5.1143482
## 3 1.925341 2.049911 4.261530 2.475626 3.903025 6.3184739 3.4487482
## 4 2.779812 2.988551 4.801872 5.773837 4.071160 0.4331981 0.8732604
## 5 4.117989 5.882876 7.510691 9.274491 8.233604 6.2805950 5.4640108
## 6 2.041732 4.648079 7.609525 7.836729 6.898180 3.6002721 3.7967290
##      Adamts2      Adamts20      Adamts3      Adamts4      Adamts5      Adamts6      Adamts7
## 1 8.937116e+00 8.738318 9.120775 13.435483 8.427605 9.692390 8.044146e+00
## 2 8.499977e+00 8.959335 8.985473 12.819905 8.174047 9.073456 8.243506e+00
## 3 3.563294e+00 5.478522 7.077443 9.478774 3.606642 6.741764 4.505949e+00
## 4 7.039497e-08 5.670011 8.282249 8.254935 5.647821 3.466962 5.186307e-08
## 5 8.857977e+00 9.317575 9.343723 13.178740 8.531824 9.431744 8.601335e+00
## 6 7.748990e+00 7.550761 7.932189 12.243670 7.241110 8.502693 6.859317e+00
##      Adamts8      Adamts9      Adamts11      Adamts12      Adamts13      Adamts14      Adamts15

```

```

## 1 7.056649 10.554984 5.965345 11.927988 8.541457 8.984668 4.478403
## 2 7.918581 10.583113 6.535641 11.340436 8.657848 8.595765 4.369903
## 3 0.375750 4.573407 3.702164 5.527907 7.111330 7.932832 2.944382
## 4 2.284460 4.440051 3.180908 6.723750 5.295774 5.021222 4.178792
## 5 8.276144 10.941785 6.891085 11.699192 9.015938 8.953821 4.713309
## 6 5.878815 9.364258 4.803333 10.736490 7.354546 7.796417 3.368796
##      Adap1      Adap2      Adar      Adarb1      Adarb2      Adat1      Adat2
## 1 13.203023 10.049105 11.945893 10.373320 8.950778 7.633309 7.846580
## 2 12.376046 9.774275 11.705647 10.507454 9.667749 6.733378 7.962575
## 3 7.707295 7.090475 10.166231 7.385953 3.292570 7.947593 6.045853
## 4 7.851585 6.469728 8.668088 5.730075 5.586692 3.918950 2.983967
## 5 12.734865 10.132791 12.064431 10.866115 10.026237 7.089263 8.320178
## 6 12.011240 8.858907 10.754389 9.182763 7.762616 6.450829 6.662798
##      Adat3      Adc      Adck1      Adck2      Adck3      Adck4      Adck5
## 1 7.524085 8.682170 10.758128 10.582108 9.789168 11.017978 9.388080
## 2 7.598099 8.600825 10.170146 9.958827 9.652584 10.354163 9.005402
## 3 3.192285 4.432178 10.073233 8.022239 10.001163 8.697987 9.410760
## 4 1.514245 4.277751 9.532912 7.661880 8.796936 7.609570 7.646211
## 5 7.955334 8.958884 10.528749 10.317386 10.011067 10.712799 9.363662
## 6 6.342350 7.494788 9.567237 9.391359 8.599323 9.826907 8.198920
##      Adcy1      Adcy10      Adcy2      Adcy3      Adcy4      Adcy5      Adcy6
## 1 12.197571 4.9556983 11.355811 10.318379 10.537109 12.254598 11.980683
## 2 12.333853 3.3247935 10.845359 10.036932 9.739960 11.937413 11.584399
## 3 7.973937 1.4029006 9.110821 5.714806 4.179675 7.813497 7.160308
## 4 11.391429 0.3068306 9.447586 5.576390 6.929047 6.870325 6.791089
## 5 12.692671 3.6515637 11.204065 10.395508 10.098467 12.296210 11.943175
## 6 11.005990 3.8233924 10.164549 9.127877 9.346399 11.063002 10.789167
##      Adcy7      Adcy8      Adcy9      Adcyap1      Adcyap1r1      Add1      Add2
## 1 11.168461 10.369686 9.760263 6.034276 14.16465 15.13869 9.557522
## 2 10.515193 9.519906 9.689426 6.189683 13.79300 14.57115 10.234258
## 3 5.580378 6.629051 6.616777 3.194473 11.96236 12.22534 9.155649
## 4 7.469044 4.270144 8.690694 4.444076 11.53518 11.37170 9.241311
## 5 10.873854 9.878351 10.047919 6.544195 14.15185 14.93001 10.592873
## 6 9.977300 9.179133 8.570461 4.870880 12.97277 13.94676 8.368049
##      Add3      Adh1      Adh5      Adh7      Adhfe1      Adi1      Adipor1
## 1 12.79680 7.899655 12.50621 1.6449302 9.540673 12.757920 13.566485
## 2 12.43325 7.459456 11.81722 1.2149823 9.313591 11.892204 13.243385
## 3 10.98177 4.228319 13.20155 2.1694385 10.159311 11.074591 9.723558
## 4 10.25533 3.592039 11.53308 0.7790440 8.210246 9.577759 9.172043
## 5 12.79208 7.816525 12.17601 1.4299571 9.671970 12.250999 13.602231
## 6 11.60508 6.715578 11.31455 0.9538089 8.351229 11.566210 12.374657
##      Adipor2      Adk      Adm      Adm2      Adnp      Adnp2      Ado
## 1 13.245738 10.814760 10.756502 1.166567e+00 12.705872 9.680402 13.17327
## 2 12.352918 10.159703 10.210357 2.136876e+00 12.457295 9.792142 12.67954
## 3 9.853128 12.259948 6.783791 1.118760e+00 10.400669 8.587014 13.60430
## 4 9.192196 10.634495 6.716556 1.015794e-07 8.149128 4.889097 12.17095
## 5 12.711736 10.518304 10.568967 2.421559e+00 12.816117 10.150662 13.03837
## 6 12.053949 9.623827 9.565612 6.314331e-01 11.514172 8.490724 11.98149
##      Adora1      Adora2a      Adora2b      Adpgk      Adprh      Adprh11      Adprh12
## 1 12.003566 10.534735 10.134806 10.691568 12.58926 4.440566 10.581797
## 2 11.894741 9.374640 8.746512 10.704895 12.05653 3.716107 10.225047
## 3 8.685016 5.412315 6.580093 7.074617 11.98423 4.094707 6.983752
## 4 9.630698 4.873587 6.392420 5.505141 11.18860 3.734338 2.710898
## 5 12.253536 9.733039 9.104650 11.063583 12.41533 4.050568 10.583660

```

```

## 6 10.812043 9.344027 8.944505 9.500728 11.39759 3.333081 9.391049
## Adra1a Adra1b Adra1d Adra2a Adra2b Adra2c Adrb1
## 1 7.623512 8.8036031 6.117525 10.618862 2.717402e+00 6.138820 9.138979
## 2 7.765739 8.6737771 5.851728 9.213422 3.681957e+00 5.819445 9.129075
## 3 5.256272 0.9304476 1.090980 4.287239 1.394481e+00 5.497739 4.955513
## 4 5.969008 0.2986285 6.323079 6.520443 1.129391e-07 3.249865 5.102251
## 5 8.123155 9.0318765 6.205086 9.571765 4.015829e+00 6.172677 9.487386
## 6 6.441097 7.6158506 4.952542 9.428082 1.786443e+00 4.973445 7.950350
## Adrb2 Adrb3 Adrbk1 Adrbk2 Adrm1 Adsl Adss
## 1 11.784626 1.703173e+00 13.185387 11.996262 10.323636 10.618746 11.603755
## 2 11.004003 2.481350e+00 13.108593 12.177125 9.479637 10.303338 11.082624
## 3 7.844463 3.579821e-08 8.749590 9.960919 7.727581 11.195597 9.557650
## 4 8.196443 1.402100e-08 8.170834 6.249193 6.833176 8.822223 7.581457
## 5 11.362727 2.782108e+00 13.467435 12.535935 9.838070 10.661965 11.441356
## 6 10.593179 9.953406e-01 11.993606 10.804741 9.133129 9.427966 10.412380
## Adssl1 Aebp1 Aebp2 Aen Aes AF251705 AF529169
## 1 11.805366 8.818749 11.516762 10.054691 14.356995 12.172244 7.0108697
## 2 11.199545 9.041555 10.671910 9.730683 13.838977 11.454629 6.5900772
## 3 6.966298 7.256196 9.622272 8.382245 10.242311 7.277285 2.0749091
## 4 6.987182 4.642330 7.962429 6.093060 9.185415 10.198872 0.2965141
## 5 11.558289 9.399830 11.030594 10.089187 14.197834 11.813395 6.9456490
## 6 10.613911 7.630953 10.325425 8.864487 13.165101 10.980671 5.8334894
## Afap1 Afap111 Afap112 Aff1 Aff2 Aff3 Aff4
## 1 11.243936 13.154706 11.816912 11.422230 8.465075 9.128797 13.511523
## 2 10.551630 11.855895 11.698024 11.424341 8.090401 9.120161 13.372651
## 3 12.190888 8.834550 10.439173 7.328019 6.838040 9.324572 10.508132
## 4 9.790898 8.874089 8.023759 5.052885 1.019156 4.014556 8.796125
## 5 10.910297 12.214688 12.056807 11.783105 8.448112 9.478468 13.731500
## 6 10.052733 11.962930 10.625453 10.230936 7.278440 7.940192 12.319701
## Afg312 Afmid Afp Aftph Aga Agap1 Agap2
## 1 11.176689 7.318561 4.674814e+00 11.168937 10.263880 13.342523 12.969199
## 2 11.043490 7.960283 6.081705e+00 10.794391 9.157155 12.899046 13.342122
## 3 8.545321 6.736252 6.099351e-07 9.326316 9.821392 9.812360 5.790121
## 4 7.871505 4.056068 1.866836e+00 7.927747 9.622353 9.346949 7.608541
## 5 11.402219 8.317883 6.435877e+00 11.153091 9.515477 13.257883 13.700971
## 6 9.985523 6.138388 3.554998e+00 9.977776 9.073436 12.150722 11.777452
## Agap3 Agbl1 Agbl2 Agbl3 Agbl4 Agbl5 Ager
## 1 12.708644 1.819089e+00 5.0050561 8.197605 5.573450 9.762345 6.673316
## 2 12.244428 1.495967e+00 3.8898572 7.680213 5.279746 9.255891 6.725005
## 3 8.875095 3.771985e-08 5.3571268 7.120364 4.163352 7.010961 3.714707
## 4 7.087901 1.868646e-08 0.5363677 5.159359 6.093793 4.954638 3.121349
## 5 12.603242 1.737458e+00 4.2271096 8.037539 5.630410 9.614249 7.080872
## 6 11.516943 1.079387e+00 3.8707854 7.012056 4.420656 8.572540 5.499759
## Agfg1 Agfg2 Aggf1 Agk Agl Agmo Agpat1
## 1 12.241668 10.138860 10.973688 8.344793 11.584336 9.658098 12.615968
## 2 11.672591 9.438514 10.945135 8.286553 11.002794 8.844648 12.125282
## 3 9.045353 7.868258 8.883447 8.069434 8.742185 9.434693 9.420680
## 4 7.609548 8.229826 7.661727 6.912832 8.115896 9.940489 9.572192
## 5 12.031372 9.796935 11.303853 8.644412 11.361518 9.202835 12.484089
## 6 11.050075 8.948555 9.782645 7.158621 10.392969 8.468456 11.424286
## Agpat2 Agpat3 Agpat4 Agpat5 Agpat6 Agpat9 Agps
## 1 7.261435 14.259362 13.35976 11.95825 12.88000 4.955457 12.034318
## 2 6.578722 13.488848 12.64169 11.42051 12.36684 4.815546 11.865902
## 3 5.215278 10.379006 11.47144 11.47884 11.44795 3.685921 8.557482

```

```

## 4 3.541755 9.680102 10.91059 10.49520 11.16227 1.162211 7.055434
## 5 6.934267 13.847699 13.00052 11.77928 12.72566 5.163079 12.224696
## 6 6.081737 13.067474 12.16795 10.76674 11.68827 3.823161 10.842786
##      Agrn      Agrp      Agt  Agtpbp1      Agtr1a      Agtr1b
## 1 15.205247 1.984435 8.093176 11.555025 3.838166e+00 1.162252e+00
## 2 14.677479 2.647516 7.179109 11.004262 3.051394e+00 2.944079e-01
## 3 10.171232 3.436593 11.611386 9.152329 6.405024e-08 7.564327e-08
## 4 9.023666 2.485564 11.197788 8.705758 3.294941e-08 4.898770e+00
## 5 15.036346 2.954710 7.535790 11.362986 3.371376e+00 3.676901e-01
## 6 14.013314 1.202364 6.908109 10.363670 2.772475e+00 6.286842e-01
##      Agtr2  Agtrap  Ahctf1  Ahcy  Ahcyl1  Ahcyl2  Ahdc1
## 1 3.144897e+00 8.888486 11.291674 8.452977 13.88493 11.481773 11.253918
## 2 2.938023e+00 8.771402 11.463047 8.134048 13.32163 11.325748 10.664844
## 3 5.040829e-08 9.941436 8.090351 7.461545 11.89387 8.481562 9.022831
## 4 2.405086e-08 7.548851 6.745947 5.274622 10.86648 9.380052 6.844575
## 5 3.254779e+00 9.129552 11.821813 8.491794 13.68047 11.684503 11.023527
## 6 2.151628e+00 7.700492 10.100446 7.266386 12.69307 10.290452 10.062709
##      Ahil  Ahnak  Ahr  Ahrr  Ahsa1  Ahsa2  AI118078
## 1 11.925905 11.530447 8.541079 6.767843 12.16841 10.181065 7.466247e+00
## 2 11.825366 10.915448 7.674929 6.241296 11.75638 9.811692 7.885175e+00
## 3 11.060304 9.198573 4.695574 3.713696 11.28273 9.458148 9.064058e-08
## 4 9.331457 9.095153 5.071388 3.095769 10.05645 6.096091 2.075955e+00
## 5 12.184157 11.274162 8.032250 6.595962 12.11517 10.170217 8.242707e+00
## 6 10.734408 10.339104 7.354169 5.593125 10.97684 8.990711 6.284929e+00
##      AI314180      AI317395 AI429214  AI462493  AI464131  AI467606  AI593442
## 1 11.867278 2.717727e+00 6.968829 9.908649 12.118291 8.941345 9.744808
## 2 11.936326 1.610231e+00 7.943289 9.355832 11.386336 8.486012 9.485246
## 3 9.306089 4.020967e+00 6.984777 10.826191 8.467896 5.236770 8.403471
## 4 6.899354 2.025348e-07 3.684861 9.565833 9.074809 8.245202 13.310335
## 5 12.295123 1.860999e+00 8.300874 9.714225 11.745096 8.844003 9.843681
## 6 10.675801 1.786714e+00 5.791878 8.718634 10.926733 7.753207 8.555030
##      AI597479  AI661453  AI837181  AI846148  AI848285  Aif1  Aif11
## 1 10.425050 7.904932 10.749572 10.632642 9.216157e+00 11.530715 10.751538
## 2 9.807982 7.000883 10.677138 10.542732 8.798215e+00 11.079404 10.168085
## 3 10.136010 4.423794 9.002313 6.065022 2.710628e+00 8.085926 11.979119
## 4 8.320013 4.198319 7.669056 3.506817 8.523248e-08 11.089301 9.246532
## 5 10.166506 7.357275 11.035822 10.901397 9.156379e+00 11.438136 10.526687
## 6 9.234443 6.720826 9.558688 9.441851 8.027354e+00 10.339371 9.560652
##      Aifm1  Aifm2  Aifm3  Aig1  Aim1  Aim11  Aim2
## 1 10.334693 8.221480 10.683265 10.434048 7.195634 5.416516 8.685495
## 2 9.791228 7.914961 11.255183 9.799048 5.998597 5.195730 8.179420
## 3 10.185903 7.318872 6.007261 8.511406 5.814795 4.311378 5.691610
## 4 7.935242 4.482011 6.296634 7.140939 5.246828 3.653967 5.692826
## 5 10.149747 8.272520 11.613932 10.157569 6.352490 5.545899 8.537201
## 6 9.144175 7.035825 9.492432 9.243432 6.016507 4.268153 7.498103
##      Aimp1  Aimp2  Aip  Aipl1  Aire  Ajap1 AK010878
## 1 11.32932 10.475239 12.06235 2.201515e+00 3.389399e+00 8.471820 8.107131
## 2 10.56057 9.784863 11.42014 2.154143e+00 3.121255e+00 8.744960 7.954604
## 3 11.65133 11.063421 11.69819 6.817755e-08 2.477184e+00 4.404648 8.473734
## 4 10.98954 9.802742 10.99179 3.200116e-08 1.020640e-07 7.195941 6.377647
## 5 10.91924 10.143381 11.77891 2.439731e+00 3.443098e+00 9.103097 8.312199
## 6 10.13807 9.284585 10.87081 1.369042e+00 2.367004e+00 7.285159 6.921997
##      Ak1  AK129341  Ak2  Ak3  Ak4  Ak5  Ak7
## 1 11.39918 8.1252856 11.792341 12.75117 9.833707 8.521266 3.922783

```



```

## 2 11.00738 7.4277853 10.771836 12.07250 9.211066 9.198300 5.039284
## 3 11.02498 4.3618511 9.760674 10.60943 6.863079 5.509458 5.873124
## 4 10.76064 0.6174785 7.755241 10.01828 8.004223 8.844062 3.180575
## 5 11.36610 7.7848147 11.130533 12.43130 9.569408 9.556637 5.388453
## 6 10.20789 6.9400666 10.600891 11.55946 8.643797 7.334426 2.850207
##      Ak8      Akap1      Akap10      Akap11      Akap12      Akap13      Akap14
## 1 3.273365 10.972104 10.364119 12.108132 13.267807 12.677766 1.5525770
## 2 4.077218 10.619372 10.269524 12.349858 12.406218 11.915265 1.6649971
## 3 3.940627 8.190582 6.948948 9.490051 8.316162 8.534891 0.9145313
## 4 3.562330 7.503756 6.729882 9.321758 5.535903 8.239566 0.2794652
## 5 4.417121 10.978048 10.628145 12.708675 12.765038 12.274062 1.9199374
## 6 2.264256 9.781062 9.173571 10.916577 12.076015 11.486072 0.8889358
##      Akap17b      Akap2      Akap5      Akap6      Akap7      Akap8      Akap81
## 1 9.288121 12.398790 8.216195 11.605905 11.048672 12.101431 12.040576
## 2 8.841961 12.098784 7.989948 11.556599 10.144693 11.856801 12.210269
## 3 7.069843 8.065225 8.538242 9.622076 8.721661 10.221587 8.365088
## 4 6.573801 6.830272 7.664630 8.582857 8.662286 6.850774 5.931291
## 5 9.200147 12.457590 8.347575 11.915372 10.503291 12.215594 12.569081
## 6 8.099163 11.207157 7.030563 10.414529 9.857582 10.909878 10.849042
##      Akap9      Akirin1      Akirin2      Akna      Akr1a1      Akr1b10      Akr1b8
## 1 12.108972 12.173333 11.636366 11.751056 14.77124 10.055124 3.537628
## 2 11.758039 11.446256 10.953188 11.478165 14.22315 9.656485 4.070228
## 3 10.585605 8.101672 8.944122 6.686811 14.13105 8.339620 5.912866
## 4 8.550038 7.544457 7.546730 5.474467 12.79142 8.331681 3.543709
## 5 12.116826 11.805021 11.311906 11.836932 14.58201 10.014969 4.410038
## 6 10.917417 10.981759 10.444977 10.559622 13.57932 8.864919 2.499579
##      Akr1c13      Akr1c14      Akr1c18      Akr1c19      Akr1e1      Akr7a5      Akt1
## 1 5.885986 10.125155 2.9295468 1.4169645 9.483598 10.888509 13.709792
## 2 4.837057 10.101880 0.9924348 1.4422488 9.175636 10.312090 13.324919
## 3 4.104923 3.857598 3.7069152 2.5386705 10.838087 7.288620 9.367825
## 4 2.306049 4.992348 2.3563263 0.3082367 8.401795 5.779544 8.735346
## 5 5.184760 10.460469 1.1819698 1.6790965 9.533964 10.670718 13.683767
## 6 4.725648 8.934866 1.9657159 0.7959144 8.294257 9.697524 12.517949
##      Akt1s1      Akt2      Akt3      Aktip      Alad      Alas1      Alas2
## 1 11.837708 12.281104 11.866579 11.94554 12.20161 12.38119 11.918459
## 2 11.289770 11.791981 12.083504 11.26125 11.60991 11.94043 10.605211
## 3 6.699065 10.093369 9.443177 11.03133 11.29574 11.07517 6.244884
## 4 6.138411 8.657264 6.857943 10.36549 10.47337 10.45540 12.933611
## 5 11.648522 12.150770 12.442310 11.62000 11.96869 12.29923 10.963886
## 6 10.646241 11.089501 10.675103 10.75403 11.01003 11.18956 10.726964
##      Alb      Alcam      Aldh16a1      Aldh18a1      Aldh1a1      Aldh1a2      Aldh1a3
## 1 3.654395e+00 12.318462 10.439561 11.089768 9.225168 6.651762 3.431826
## 2 3.284932e+00 11.907847 10.322265 10.390330 9.540026 6.655994 3.080277
## 3 6.867234e-08 11.325145 7.848446 11.034926 8.289459 7.960615 1.064915
## 4 3.369544e-08 9.910018 5.867221 9.047914 8.327542 2.531566 1.331259
## 5 3.610792e+00 12.266643 10.680895 10.748972 9.898478 7.011714 3.401039
## 6 2.604986e+00 11.126849 9.248940 9.898653 8.036345 5.478481 2.404803
##      Aldh1a7      Aldh1b1      Aldh111      Aldh112      Aldh2      Aldh3a1      Aldh3a2
## 1 7.576322 7.873599 12.57070 10.489498 12.210126 3.5467508 11.925103
## 2 7.554949 7.291538 12.07898 10.117151 11.654681 2.4681685 11.652833
## 3 2.116230 7.664519 10.05222 8.696505 8.731929 5.5979682 10.561498
## 4 1.520134 7.934624 10.16570 3.922125 8.140076 0.9994246 9.419546
## 5 7.912135 7.648384 12.43778 10.475743 12.013461 2.7683821 12.011613
## 6 6.394224 6.689665 11.37903 9.298830 11.018541 2.5077841 10.733606

```

```

##      Aldh3b1 Aldh3b2 Aldh4a1 Aldh5a1 Aldh6a1 Aldh7a1 Aldh8a1
## 1 10.164561 6.869307 11.271028 11.721781 11.77482 11.59834 2.332317e+00
## 2 10.146068 5.973754 11.500756 11.349555 11.18263 10.87371 3.078903e+00
## 3 9.354449 3.986145 9.645516 8.755843 12.21080 11.25598 6.969369e-08
## 4 7.808594 3.837009 8.141125 7.396000 10.47766 10.32882 2.027098e+00
## 5 10.504666 6.327560 11.859525 11.708312 11.54137 11.23242 3.399629e+00
## 6 8.974226 5.693423 10.079810 10.530357 10.58338 10.40697 1.472166e+00
##      Aldh9a1 Aldoa Aldoart1 Aldoart2 Aldob Aldoc Alg1
## 1 12.464328 15.02440 9.264150 5.164316 4.095129e+00 14.13493 11.323418
## 2 11.983247 14.55490 8.802679 4.724508 4.213292e+00 13.58336 9.939218
## 3 11.076813 14.20946 9.951610 8.591470 1.351963e+00 16.63721 7.447348
## 4 9.306523 14.52847 10.095768 8.791796 5.731071e-08 15.23820 7.531732
## 5 12.342048 14.91376 9.160845 5.071299 4.554914e+00 13.94222 10.297772
## 6 11.272680 13.83247 8.075242 4.024128 3.009623e+00 12.94305 10.132173
##      Alg10b Alg11 Alg12 Alg14 Alg2 Alg3 Alg5
## 1 10.935486 10.282476 9.879619 10.105106 12.54795 9.762333 10.902068
## 2 10.725722 9.752107 9.372270 9.611217 11.92096 9.155789 10.303703
## 3 7.071256 11.766479 8.806213 10.157517 11.31623 10.433992 10.329831
## 4 5.572228 11.032213 7.267737 7.939994 10.98151 9.456914 9.989055
## 5 11.084413 10.110617 9.730669 9.969689 12.27976 9.514110 10.662330
## 6 9.744469 9.092012 8.689644 8.914841 11.35628 8.572528 9.711073
##      Alg6 Alg8 Alg9 Alk Alkbh1 Alkbh2 Alkbh4
## 1 9.911726 8.813939 10.607024 8.950801e+00 9.656253 7.664274 8.724459
## 2 8.729845 8.344197 10.306376 7.848919e+00 9.494996 7.776433 8.255662
## 3 9.356493 9.301278 8.653706 2.897214e+00 7.940504 6.602951 7.963687
## 4 8.545444 7.570518 8.298404 5.830439e-08 5.557765 3.190367 8.165319
## 5 9.087974 8.702097 10.665003 8.206416e+00 9.853434 8.133860 8.613499
## 6 8.721707 7.626156 9.416254 7.762639e+00 8.466614 6.481593 7.536945
##      Alkbh5 Alkbh6 Alkbh7 Alkbh8 Allc Alms1 Alox12
## 1 13.20436 10.207588 9.078456 9.273308 4.894349e+00 9.845900 5.378786
## 2 12.57156 10.084788 8.149234 8.862867 3.111142e+00 9.547735 4.225425
## 3 11.16266 10.955661 9.528343 9.719461 1.519970e-11 6.414237 5.362630
## 4 10.50718 8.268569 8.998454 7.827818 1.000440e+00 2.156042 2.659365
## 5 12.93039 10.443374 8.506992 9.221062 3.432722e+00 9.906189 4.567191
## 6 12.01257 9.017205 7.889970 8.084381 3.764577e+00 8.655972 4.231560
##      Alox12b Alox15 Alox5 Alox5ap Alox8 Aloxe3 Alpk1
## 1 2.322270 3.741243e+00 10.079179 12.129277 4.2357270 6.067391 8.832361
## 2 1.668815 2.936779e+00 9.893428 11.735312 3.6719004 5.465978 8.660090
## 3 3.608351 3.184456e-01 5.414458 7.885238 0.8175521 6.470333 6.417419
## 4 4.138176 8.301480e-08 7.297165 11.036202 4.1952021 6.372773 3.045511
## 5 1.924040 3.253498e+00 10.251972 12.094098 4.0055957 5.817639 9.018182
## 6 1.464176 2.683905e+00 8.888944 10.937716 3.1406795 4.903353 7.644525
##      Alpk2 Alpk3 Alpl Als2 Als2c1 Als2cr12
## 1 1.564979e+00 7.116914 10.110916 11.129853 11.157829 2.198466e+00
## 2 1.559356e+00 7.486318 9.316760 10.975834 10.704349 2.242786e+00
## 3 3.798399e-08 2.718298 6.857280 9.625782 4.305678 3.185295e-01
## 4 1.773982e-08 5.695807 8.858281 7.380631 3.856277 9.374700e-08
## 5 1.806091e+00 7.843421 9.675140 11.334555 11.063037 2.532846e+00
## 6 8.975769e-01 5.938504 8.920643 9.938714 9.966674 1.366662e+00
##      Alx1 Alx3 Alx4 Alyref Alyref2 Amacr Ambra1
## 1 0.10484089 4.386390 3.9910613 10.844516 7.512457 8.443876 11.815520
## 2 0.54767028 4.102264 4.4871166 10.313388 6.626132 7.674730 11.693386
## 3 0.21999137 3.201600 4.0233812 10.129495 7.907671 7.257190 8.617774
## 4 6.53510944 4.580317 0.5769809 7.552029 5.059684 4.612412 7.343635

```

```

## 5 0.67088902 4.442496 4.8317358 10.672017 6.981785 8.032051 12.052169
## 6 0.04736425 3.282035 2.9131917 9.653562 6.330804 7.257319 10.624062
##      Amdhd1      Amdhd2      Amfr      Amh      Amhr2      Amica1
## 1 3.598002e+00 10.196813 14.02007 5.174992e+00 3.910775 3.720816e+00
## 2 3.477804e+00 9.386683 13.36065 4.151373e+00 4.685817 2.916386e+00
## 3 1.913029e+00 8.898185 11.42389 6.048841e-08 3.645352 4.167618e+00
## 4 1.114696e-07 8.720840 11.01157 3.127987e-08 1.679088 6.754820e-08
## 5 3.807837e+00 9.745087 13.71950 4.492233e+00 5.032279 3.232496e+00
## 6 2.553976e+00 9.006442 12.82820 4.034429e+00 2.839153 2.665305e+00
##      Amigo1      Amigo2      Amigo3      Ammecr1      Ammecr1l      Amn      Amn1
## 1 10.136032 9.101455 8.431491 8.208645 12.182780 6.8219876 9.305796
## 2 9.756254 7.792485 9.058074 7.471412 11.260989 7.0313555 8.734384
## 3 9.425862 6.123150 4.352806 4.449853 11.009974 0.9404445 10.538808
## 4 8.163421 5.933408 4.845644 1.886154 9.605045 1.6966564 8.531574
## 5 10.114765 8.149928 9.416356 7.828497 11.619739 7.3877995 9.092516
## 6 8.945730 7.912914 7.244981 7.023048 10.991204 5.6466374 8.116801
##      Amot      Amotl1      Amotl2      Ampd1      Ampd2      Ampd3      Amph
## 1 10.880189 11.855081 12.025026 3.765169e+00 11.699112 11.554846 11.999054
## 2 10.458537 11.624038 12.392280 3.786692e+00 11.345295 11.316632 11.800503
## 3 8.838332 10.236038 8.254247 7.563261e-01 10.125593 10.390737 10.480537
## 4 6.639106 7.894316 6.492948 1.199637e-07 9.216325 9.209697 9.600324
## 5 10.817190 11.982816 12.751099 4.122329e+00 11.704052 11.675387 12.159293
## 6 9.689210 10.663608 10.833496 2.705722e+00 10.507697 10.363492 10.807533
##      Amt      Amy1      Amz1      Amz2      Anapc1      Anapc10      Anapc11
## 1 10.033634 8.493379 10.908904 11.570951 13.248311 9.171459 11.64363
## 2 9.488955 8.692300 10.514876 10.955753 12.566736 8.328746 10.78688
## 3 7.849415 5.478706 8.436878 10.785698 10.257728 10.270378 13.08197
## 4 5.840085 2.224404 6.664834 8.479347 9.489687 8.361082 11.51608
## 5 9.847391 9.050409 10.873537 11.314472 12.925563 8.686634 11.14558
## 6 8.843456 7.306639 9.717905 10.379589 12.056522 7.982756 10.45224
##      Anapc13      Anapc16      Anapc2      Anapc4      Anapc5      Anapc7      Ang
## 1 10.405621 12.05606 13.087841 11.275745 13.47741 11.755471 9.821717
## 2 9.607460 11.29198 12.383175 10.964018 12.96183 11.513682 9.691183
## 3 11.649187 11.23471 10.323503 10.231567 11.76069 9.112833 6.179753
## 4 10.150203 10.36512 9.814953 7.579349 10.08641 6.919467 7.654154
## 5 9.965930 11.65073 12.741994 11.322737 13.32067 11.872452 10.049677
## 6 9.215032 10.86452 11.896075 10.084525 12.28560 10.564035 8.631824
##      Angel1      Angel2      Angpt1      Angpt2      Angpt4      Angptl1      Angptl2
## 1 9.839703 11.448936 9.030638 11.737362 5.544001 6.700584 8.324371
## 2 9.888336 11.020508 9.629079 11.002689 3.282606 6.755184 7.961733
## 3 8.523193 10.190815 6.807351 7.111378 4.885257 4.961473 7.825330
## 4 6.619515 8.455071 6.789320 5.717380 4.143465 5.634250 6.782102
## 5 10.246879 11.379234 9.987556 11.361413 3.608413 7.111114 8.319334
## 6 8.649784 10.257630 7.842270 10.545933 4.392004 5.526684 7.138282
##      Angptl3      Angptl4      Angptl6      Angptl7      Ank      Ank1      Ank2
## 1 2.945333 12.323056 8.064735 9.330821 12.89439 9.5591027 12.83776
## 2 3.675277 11.724113 7.080100 9.536436 12.27313 9.7000504 12.58770
## 3 1.120584 8.483331 7.975638 5.268867 10.09223 3.9021035 11.61644
## 4 2.462944 6.316371 6.343346 6.607464 10.44529 0.2970374 11.04737
## 5 4.009031 12.082898 7.436625 9.894887 12.63194 10.0585467 12.94652
## 6 1.979215 11.131442 6.879805 8.141775 11.70266 8.3696269 11.64603
##      Ank3      Ankdd1b      Ankfn1      Ankfy1      Ankhd1      Ankib1      Ankkl1
## 1 13.18978 7.192040 5.437955e+00 12.470677 11.786181 12.632049 2.4446445
## 2 12.95688 6.327073 4.622410e+00 12.062164 11.504273 11.784054 2.3714233

```

```

## 3 11.10270 7.138248 1.282556e+00 10.781023 10.119304 9.342507 0.3112512
## 4 10.93811 4.671514 1.074323e-07 9.107669 7.842465 7.558068 0.7550047
## 5 13.31572 6.681982 4.968311e+00 12.420969 11.863042 12.142843 2.6674800
## 6 11.99800 6.012945 4.288960e+00 11.279027 10.594734 11.440364 1.5622478
##      Ankle1      Ankle2      Ankmy1      Ankmy2      Ankra2      Ankrd10      Ankrd11
## 1 6.188255 11.496755 3.310545e+00 10.053483 10.869750 11.768196 13.176424
## 2 5.644176 10.587050 3.150936e+00 9.826776 10.218189 11.512939 13.254642
## 3 4.897943 10.959528 2.837520e+00 10.438790 8.380347 9.942127 9.860661
## 4 1.765716 10.517451 1.117596e-07 10.191360 7.384582 6.201969 7.978148
## 5 5.996678 10.945722 3.473544e+00 10.185305 10.576800 11.871709 13.613488
## 6 5.021992 10.305427 2.297076e+00 8.863280 9.678778 10.576755 11.984644
##      Ankrd12      Ankrd13a      Ankrd13b      Ankrd13c      Ankrd13d      Ankrd16      Ankrd17
## 1 10.734604 13.240513 12.157025 11.430711 9.990475 10.247253 12.338887
## 2 10.585048 12.867315 11.930870 10.733344 10.757688 9.914624 12.119742
## 3 10.244485 8.271448 6.374649 8.765567 5.045970 7.878204 10.736319
## 4 8.518606 7.315912 3.645854 8.306215 5.499490 6.140990 9.908805
## 5 10.943719 13.226151 12.289668 11.092036 11.116383 10.273174 12.478550
## 6 9.543731 12.048725 10.965456 10.239413 8.800351 9.056826 11.147268
##      Ankrd2      Ankrd22      Ankrd23      Ankrd24      Ankrd26      Ankrd27      Ankrd28
## 1 3.177253e+00 1.6869138 8.656778 9.398593 9.236559 10.818639 13.126621
## 2 3.037326e+00 1.1217907 8.651808 9.122393 9.503326 10.602526 12.376359
## 3 1.734295e+00 0.6458375 6.785463 6.882631 8.846111 10.080180 10.236543
## 4 8.122809e-08 1.9605503 4.450803 4.860731 7.006031 8.495570 8.140967
## 5 3.356922e+00 1.3266412 9.009895 9.480701 9.861766 10.961201 12.735179
## 6 2.179878e+00 0.9836989 7.469478 8.209412 8.047711 9.627703 11.934849
##      Ankrd29      Ankrd32      Ankrd33b      Ankrd34a      Ankrd34b      Ankrd34c      Ankrd35
## 1 8.193831 9.044144 8.787553 7.703187 7.268303 2.358707e+00 8.156178
## 2 7.939043 8.267274 8.787549 7.213839 6.884158 1.339291e+00 7.848010
## 3 7.651456 9.903262 4.764463 6.597704 1.516618 4.912293e-08 3.865275
## 4 7.969953 5.544814 5.629273 5.601832 5.097140 2.501705e-08 5.376062
## 5 8.296624 8.625119 9.145707 7.570572 7.240340 1.566696e+00 8.205507
## 6 7.008299 7.855743 7.599848 6.520259 6.088547 1.493206e+00 6.970816
##      Ankrd37      Ankrd39      Ankrd40      Ankrd42      Ankrd44      Ankrd45      Ankrd46
## 1 9.784332 9.986166 13.190863 7.896070 11.376467 8.265225 12.99245
## 2 9.456668 8.744430 12.720917 7.399151 10.412600 8.566065 12.54100
## 3 6.250733 7.897744 10.009305 5.936105 7.714896 9.261092 12.56820
## 4 6.712943 7.069496 9.078248 2.368354 8.175279 6.705618 11.96089
## 5 9.815094 9.102566 13.079749 7.756143 10.771245 8.924104 12.89982
## 6 8.594494 8.796048 11.999082 6.712012 10.185195 7.079382 11.80070
##      Ankrd49      Ankrd50      Ankrd52      Ankrd53      Ankrd54      Ankrd55      Ankrd6
## 1 8.870121 10.491904 12.136747 5.283946e+00 10.092151 5.787292 10.482142
## 2 8.340187 9.784288 11.834836 5.486421e+00 9.814712 6.488881 10.574864
## 3 9.575378 7.878066 6.268490 2.640523e-01 7.162366 2.522074 9.509785
## 4 7.269650 6.045425 5.300288 5.074492e-08 4.189541 3.376503 6.137562
## 5 8.698084 10.142806 12.193627 5.838184e+00 10.173237 6.844212 10.933535
## 6 7.682178 9.301234 10.945184 4.139709e+00 8.901901 4.629167 9.291481
##      Ankrd61      Ankrd9      Anks1      Anks1b      Anks3      Anks6      Ankzf1
## 1 5.7034426 8.558785 12.191220 13.711322 11.248117 10.266970 9.634626
## 2 5.3993941 7.785660 11.697569 13.013225 10.734795 10.197661 10.037368
## 3 3.4831000 2.930455 9.470314 8.695872 8.828566 4.979783 7.689137
## 4 0.2975958 1.003759 6.646728 9.567578 7.629794 4.083882 5.587321
## 5 5.7507133 8.143095 12.056352 13.372065 11.093487 10.556269 10.395944
## 6 4.5473169 7.371813 10.999641 12.519479 10.056912 9.076523 8.445022
##      Anln      Ano1      Ano10      Ano2      Ano3      Ano5      Ano6

```

```

## 1 11.917275 6.712349 11.850719 3.360786 5.503723 5.513125e+00 11.629328
## 2 11.606418 7.024875 11.296088 5.050964 5.236633 5.226502e+00 11.633417
## 3 9.464300 6.200898 10.328029 2.331741 3.960475 1.521659e+00 10.039809
## 4 6.077319 5.663265 9.141481 5.350957 9.435654 5.001928e-08 8.485644
## 5 11.965195 7.381308 11.654841 5.400211 5.587047 5.576856e+00 11.992196
## 6 10.725780 5.538303 10.659248 2.341581 4.352841 4.361979e+00 10.437942
##      Ano7      Ano8      Ano9      Anp32a      Anp32b      Anp32e      Anpep
## 1 4.056083 11.602067 2.379550e-08 12.303960 11.969064 12.435813 7.771539
## 2 3.641836 10.982434 1.731247e-08 11.778579 11.264967 12.115507 7.306987
## 3 1.890306 3.558501 3.575776e+00 10.539789 8.958676 11.813122 8.243209
## 4 3.248744 3.469286 4.133559e+00 9.301319 6.998227 9.576889 5.381825
## 5 3.974997 11.341156 2.220037e-08 12.137367 11.623717 12.474315 7.663855
## 6 2.973383 10.410692 1.054013e-08 11.112350 10.777553 11.244171 6.588194
##      Antxr1      Antxr2      Anxa1      Anxa11      Anxa2      Anxa3      Anxa4
## 1 10.765744 8.420580 9.163135 8.795310 11.952245 12.010066 10.462536
## 2 10.396677 8.306830 7.937461 8.561734 11.165606 11.138267 9.650952
## 3 7.101614 7.443209 8.243367 5.100106 9.902763 8.122907 10.894861
## 4 7.786916 2.978179 7.732966 6.811313 9.950344 10.411061 8.995524
## 5 10.755320 8.664704 8.295041 8.919771 11.524346 11.497005 10.009435
## 6 9.574848 7.234111 7.974450 7.607582 10.760739 10.818541 9.271894
##      Anxa5      Anxa6      Anxa7      Anxa8      Anxa9      Aoah      Aoc2
## 1 12.16304 13.14677 11.438179 0.7197067 5.803333 6.405682 7.788613
## 2 11.34813 12.95854 10.654374 0.3342595 5.200862 5.427090 7.579394
## 3 11.72880 11.53299 10.084078 5.9948015 4.478955 5.501348 4.259350
## 4 11.41552 10.72810 9.486383 5.6708308 3.173144 2.705688 3.968386
## 5 11.70689 13.31737 11.013056 0.4161145 5.551062 5.778553 7.936608
## 6 10.97147 11.95499 10.246878 0.3626524 4.644838 5.235850 6.605167
##      Aoc3      Aox1      Ap1ar      Ap1b1      Ap1g1      Ap1g2      Ap1m1
## 1 6.2226340 8.617466 10.466557 12.709081 12.485062 8.803238 12.05434
## 2 5.6685424 7.706124 10.130985 12.824479 11.643146 8.567017 11.23837
## 3 0.9303337 7.581686 7.270760 10.560535 10.266317 6.266376 12.00822
## 4 6.6833720 6.051110 5.529329 9.596555 9.206312 3.594136 11.09263
## 5 6.0211509 8.063478 10.489580 13.183314 12.001925 8.925057 11.59712
## 6 5.0557711 7.430295 9.275911 11.517380 11.293409 7.615486 10.86280
##      Ap1m2      Ap1s1      Ap1s2      Ap1s3      Ap2a1      Ap2a2      Ap2b1
## 1 2.560418 12.32182 10.859192 4.970647 13.397193 13.05868 13.794567
## 2 2.301324 11.82215 10.634348 4.926758 13.196213 12.76518 13.316812
## 3 1.511808 11.17141 6.853055 1.533404 8.507965 10.87330 10.618241
## 4 2.506409 10.61839 6.521936 1.008394 7.066752 10.29153 9.284827
## 5 2.594182 12.18094 10.993027 5.275137 13.555058 13.12401 13.675660
## 6 1.656495 11.13020 9.668227 3.837739 12.205384 11.86691 12.602716
##      Ap2m1      Ap2s1      Ap3b1      Ap3b2      Ap3d1      Ap3m1      Ap3m2
## 1 11.75348 12.70710 11.637129 11.475152 13.118153 11.440836 11.339396
## 2 11.34835 12.05464 11.541736 11.609091 12.930887 10.788514 11.258423
## 3 11.13912 11.03712 9.484733 10.486760 10.429931 10.920543 10.673558
## 4 10.09689 10.17199 7.859435 8.996973 8.880097 9.126708 9.197342
## 5 11.70711 12.41344 11.900508 11.967868 13.289726 11.147213 11.617172
## 6 10.56204 11.51540 10.445740 10.283833 11.926383 10.249533 10.148143
##      Ap3s1      Ap3s2      Ap4b1      Ap4e1      Ap4m1      Ap4s1      Apaf1
## 1 10.606225 11.985901 9.585135 9.889136 9.655188 9.997372 10.043294
## 2 9.704988 11.617848 10.020548 10.163424 9.265128 9.691901 9.887134
## 3 7.677559 11.191144 8.176684 7.888753 7.795544 7.626533 6.995906
## 4 6.357417 8.826731 6.459001 4.746543 5.868346 6.563266 7.873197
## 5 10.063486 11.976625 10.379121 10.522025 9.623490 10.050396 10.245677

```

```

## 6 9.415455 10.794384 8.395614 8.699148 8.465551 8.807240 8.853103
##      Apba1      Apba2      Apba3      Apbb1      Apbb1p      Apbb2      Apc
## 1 12.226163 12.341789 11.119353 14.60474 10.886100 11.667073 14.038069
## 2 12.184094 11.977516 10.306252 13.95429 10.836433 11.086186 13.919338
## 3 7.368405 10.873812 7.594610 12.02509 4.552441 10.458478 11.378452
## 4 6.345356 9.315128 7.474908 10.47876 6.606509 9.261665 9.569886
## 5 12.542904 12.336316 10.664880 14.31315 11.195138 11.444919 14.278196
## 6 11.034574 11.150170 9.928220 13.41283 9.695117 10.475672 12.846198
##      Apc2      Apcdd1      Apeh      Apex1      Apex2      Aph1a      Aph1b
## 1 12.844204 14.835736 10.965359 9.680464 8.034068 11.282235 10.683470
## 2 12.726977 13.931853 10.743591 9.344345 8.405832 10.561698 10.478832
## 3 9.157101 9.256456 9.242615 10.175688 7.650234 6.269564 9.232877
## 4 8.561143 7.290417 7.835011 8.340684 4.516765 5.787879 7.982198
## 5 13.085809 14.290712 11.102285 9.702734 8.763773 10.920366 10.837488
## 6 11.652478 13.643817 9.774322 8.490786 6.849289 10.091012 9.492637
##      Aph1c      Api5      Apip      Apitd1      Aplf      Aplnr      Aplp1
## 1 8.081483 12.142895 9.651495 7.453388 7.802857 11.348104 17.08834
## 2 7.173909 11.956947 8.941121 6.485299 7.973206 11.570011 16.37371
## 3 7.845247 10.913409 10.524999 9.139594 6.445968 4.389874 12.01037
## 4 7.385437 9.506175 10.039340 7.234617 1.234316 4.487868 12.87718
## 5 7.530582 12.315746 9.299353 6.840621 8.330818 11.928785 16.73258
## 6 6.896472 10.951330 8.461864 6.272165 6.619326 10.156847 15.89637
##      Aplp2      Apoa1      Apoa1bp      Apoa2      Apob      Apobec1      Apobec2
## 1 15.26438 4.261496 11.49579 3.123547e+00 5.6408744 8.895516 5.644396
## 2 14.73115 4.649473 10.79990 2.194090e+00 4.3438795 8.516646 7.326835
## 3 12.10626 3.956690 11.33511 2.824379e+00 0.8935697 5.975780 1.737315
## 4 12.25767 4.042407 10.52674 9.185115e-08 0.7637194 1.852202 2.585314
## 5 15.09002 4.995617 11.15860 2.481728e+00 4.6870023 8.874656 7.683730
## 6 14.07245 3.164792 10.30446 2.133031e+00 4.4863161 7.707503 4.489747
##      Apobec3      Apobr      Apoc1      Apoc2      Apoc3      Apod      Apoe
## 1 9.166081 9.001282 6.215586 4.7277540 1.693215e+00 14.83873 17.04807
## 2 8.958151 8.009642 5.395762 2.8192020 2.434632e-01 13.81306 16.32777
## 3 8.600834 7.099945 6.837853 2.2403457 1.127146e-07 14.44361 14.56491
## 4 7.922352 3.143507 7.429381 0.2672563 3.986372e+00 12.77730 14.67321
## 5 9.316390 8.367286 5.747062 3.1322851 3.053572e-01 14.17192 16.68665
## 6 7.977390 7.812989 5.048845 3.6054030 9.882060e-01 13.64681 15.85610
##      Apof      Apoh      Apol11b      Apol8      Apol9a      Apold1
## 1 1.685404e+00 1.265821e+00 5.5777894 6.687171e+00 1.813522e+00 14.858453
## 2 8.550633e-01 1.988360e+00 2.6097991 7.225436e+00 9.830402e-01 13.614575
## 3 1.338881e+00 8.725372e-01 0.3534341 2.355380e+00 9.985228e-08 7.290018
## 4 6.508407e-08 1.054246e-07 8.8751415 5.825811e-08 3.787089e-01 6.177763
## 5 1.026552e+00 2.264768e+00 2.9155983 7.582187e+00 1.171402e+00 13.973429
## 6 9.826200e-01 6.954777e-01 4.4248799 5.513440e+00 1.075309e+00 13.666533
##      Apom      Apoo      Apool      App      Appbp2      App11      App12
## 1 2.871848 5.732253 8.915492 16.17122 11.396921 11.665175 12.455932
## 2 3.396561 5.011246 7.977366 15.60545 10.838266 10.987114 12.233274
## 3 1.975569 6.690227 8.893547 12.01012 9.458035 10.053297 11.207752
## 4 0.000000 6.182854 7.901835 11.93837 9.243992 9.195596 9.162108
## 5 3.724906 5.360224 8.334982 15.96432 11.196971 11.345836 12.592087
## 6 1.916561 4.575428 7.727424 14.97926 10.205639 10.473774 11.264286
##      Aprt      Aptx      Aqp1      Aqp11      Aqp12      Aqp2
## 1 11.254712 10.330599 5.8190227 9.436855 1.879516e+00 1.374671e+00
## 2 10.782035 9.717863 6.2191194 8.581448 2.749229e+00 1.491417e+00
## 3 11.632914 10.076874 2.3235863 8.045587 4.724802e-08 2.508504e-01

```

```

## 4 9.823841 9.488109 0.9017244 9.861553 1.779260e-08 1.181127e-07
## 5 11.140733 10.076364 6.5737201 8.939496 3.059999e+00 1.732523e+00
## 6 10.063503 9.140085 4.6601700 8.247601 1.123916e+00 7.674608e-01
##      Aqp3      Aqp4      Aqp5      Aqp6      Aqp7      Aqp9      Aqr
## 1 4.689749 13.81240 3.715257 1.953899e+00 0.8223262 7.873307 11.220616
## 2 4.187018 13.47453 3.383427 1.192461e+00 1.0202505 6.393347 10.800966
## 3 4.379687 11.60518 5.102057 3.552630e+00 1.8143639 5.879368 9.945416
## 4 4.748204 12.81799 2.565684 7.759868e-08 1.3220489 7.471953 7.991206
## 5 4.528321 13.83338 3.711489 1.405055e+00 1.2132096 6.748435 11.159666
## 6 3.569208 12.62055 2.660247 1.179386e+00 0.4214834 6.689375 10.029425
##      Ar      Araf      Arap1      Arap2      Arap3      Arc      Arcn1
## 1 2.9351762 12.38531 12.546699 12.345356 12.801159 11.201027 12.692949
## 2 3.0996178 12.07594 12.803815 12.100089 12.836618 11.066244 12.177107
## 3 0.5971427 11.14315 8.411773 10.447118 4.778962 7.326536 9.589477
## 4 0.2901574 10.58701 7.188132 7.921175 5.827886 6.640782 8.481335
## 5 3.4208946 12.43475 13.162649 12.458895 13.195454 11.424974 12.535918
## 6 1.9705272 11.19368 11.355031 11.153736 11.609440 10.009847 11.501251
##      Areg      Arf1      Arf3      Arf4      Arf5      Arf6      Arfgap1
## 1 3.848011e+00 14.51169 13.450536 13.86180 12.728469 13.06116 12.496678
## 2 2.085834e+00 13.91372 13.274512 12.96163 11.929688 12.32069 11.459750
## 3 6.066856e-08 12.71621 9.922446 13.05315 9.412802 10.50333 9.461235
## 4 2.981046e-08 11.83539 11.054520 12.17357 8.745345 10.21964 9.620674
## 5 2.367774e+00 14.27258 13.633359 13.32046 12.288485 12.67950 11.818516
## 6 2.781500e+00 13.31979 12.258721 12.66995 11.536764 11.86939 11.305022
##      Arfgap2      Arfgap3      Arfgef1      Arfgef2      Arfip1      Arfip2      Arfrp1
## 1 12.469536 10.346181 12.022410 11.719321 11.375585 12.046036 11.139882
## 2 12.009138 10.025775 11.824274 11.674213 11.302864 11.694028 10.334924
## 3 10.806172 9.921849 8.796033 6.725086 9.615330 9.715153 9.404854
## 4 9.475398 8.637693 7.233426 6.940399 7.358672 7.884976 8.889780
## 5 12.367940 10.384349 12.183065 12.032995 11.661617 12.052811 10.693556
## 6 11.277886 9.155651 10.830882 10.527899 10.184313 10.854500 9.948737
##      Arg1      Arg2      Arglu1      Arhgap1      Arhgap10      Arhgap11a      Arhgap12
## 1 2.828571 5.693705 12.45545 11.99221 7.551576 9.184557 10.999834
## 2 1.665211 5.654782 11.79305 11.52319 7.188063 9.045801 10.970136
## 3 3.383149 5.773605 12.19381 11.28472 5.506004 7.552664 10.607280
## 4 2.786960 2.397640 10.28438 10.36277 5.934329 3.724275 8.323949
## 5 1.920168 6.007331 12.15184 11.88196 7.544757 9.404078 11.328857
## 6 1.879883 4.537819 11.26380 10.80069 6.369648 7.995823 9.808774
##      Arhgap15      Arhgap17      Arhgap18      Arhgap19      Arhgap20      Arhgap21      Arhgap22
## 1 4.831898 11.513032 11.499188 10.066180 10.290846 12.891672 10.185999
## 2 4.805760 10.889276 11.849108 10.142803 9.914509 12.831549 10.588643
## 3 5.471782 7.190942 6.928829 7.884137 8.777556 10.476025 3.688039
## 4 6.480929 8.039590 6.617778 6.709027 6.220692 8.889689 3.824119
## 5 5.153216 11.247987 12.207901 10.501400 10.273058 13.190385 10.947315
## 6 3.704813 10.321696 10.307858 8.875962 9.100373 11.699937 8.995640
##      Arhgap23      Arhgap24      Arhgap25      Arhgap26      Arhgap27      Arhgap28      Arhgap29
## 1 13.396740 9.236485 11.982030 10.196962 11.625836 8.392015 13.290053
## 2 12.927288 8.897799 12.032639 10.131101 11.877039 9.389912 12.552230
## 3 8.023286 5.257725 4.903526 9.039789 4.925707 2.191336 8.757847
## 4 7.432697 4.372932 7.556126 7.896898 6.328803 1.860086 7.935865
## 5 13.286126 9.256011 12.391442 10.489696 12.235833 9.748316 12.911056
## 6 12.204932 8.047637 10.790514 9.006590 10.434451 7.205657 12.098258
##      Arhgap30      Arhgap31      Arhgap32      Arhgap33      Arhgap36      Arhgap39      Arhgap4
## 1 10.398405 12.963933 11.920094 12.457740 5.298243e+00 11.982224 11.764876

```

```

## 2 10.656940 12.021372 11.833977 12.432271 4.462345e+00 11.826702 11.662597
## 3 4.791825 7.748890 9.167037 9.180157 2.657296e+00 6.383216 6.264960
## 4 6.804924 8.955805 7.688928 6.350642 1.063590e-07 5.888740 4.964603
## 5 11.015622 12.380175 12.192769 12.791092 4.806716e+00 12.185493 12.021378
## 6 9.207824 11.772186 10.728599 11.266093 4.153543e+00 10.790709 10.573436
## Arhgap40 Arhgap42 Arhgap44 Arhgap5 Arhgap6 Arhgap8 Arhgap9 Arhgdia
## 1 1.984920 9.695143 10.821757 12.28481 6.200732 7.926951 9.797169 15.26349
## 2 1.429522 9.600984 10.422908 11.83278 6.139007 7.384270 9.490515 14.93591
## 3 2.118221 6.860024 8.514660 11.39893 6.713781 2.465035 2.602738 13.13445
## 4 2.022827 6.119094 10.053131 10.25889 6.896181 1.228094 5.313208 11.84780
## 5 1.665242 9.959453 10.781555 12.19158 6.493363 7.741243 9.848952 15.29478
## 6 1.202730 8.505442 9.630819 11.09320 5.034249 6.742726 8.607312 14.07155
## Arhgdib Arhgdig Arhgef1 Arhgef10 Arhgef101 Arhgef11 Arhgef12
## 1 12.687764 9.210567 13.130274 13.471555 11.865304 11.520390 13.462526
## 2 12.169499 9.999837 12.230176 12.845419 11.752456 10.998529 13.174852
## 3 9.715973 4.294051 7.181063 9.233206 7.469455 7.444954 10.187498
## 4 10.892478 2.967755 6.584333 8.679353 7.117706 6.647363 9.603918
## 5 12.528309 10.358405 12.588989 13.204255 12.111243 11.357253 13.533697
## 6 11.496067 8.021776 11.938501 12.279738 10.673828 10.329050 12.270710
## Arhgef15 Arhgef16 Arhgef17 Arhgef18 Arhgef19 Arhgef2 Arhgef25
## 1 10.502084 3.9245766 11.201473 10.878530 9.398781 13.520803 10.867857
## 2 9.468473 3.9733009 10.691963 10.754418 9.116702 12.869557 10.805362
## 3 4.943940 3.2738157 7.950364 8.404734 6.656125 10.251919 8.650275
## 4 3.536885 0.7144061 7.135575 6.957397 5.165982 8.793296 7.667612
## 5 9.826903 4.3117771 11.050650 11.113112 9.475008 13.228393 11.164063
## 6 9.311405 2.8518579 10.010293 9.687552 8.209600 12.328981 9.676887
## Arhgef26 Arhgef3 Arhgef33 Arhgef37 Arhgef4 Arhgef40 Arhgef5
## 1 11.762875 10.618127 4.917568 6.303372 10.815899 12.773945 10.475828
## 2 11.391129 10.289174 5.924928 6.251472 10.920595 12.496033 9.995083
## 3 10.243446 7.803649 1.809390 3.938814 8.503325 7.904191 5.283687
## 4 7.967304 8.756286 1.453393 4.003990 7.813462 6.681465 4.798404
## 5 11.749890 10.647798 6.278559 6.606168 11.279309 12.854857 10.353650
## 6 10.571436 9.427348 3.786825 5.135154 9.624965 11.582232 9.285173
## Arhgef6 Arhgef7 Arhgef9 Arid1a Arid1b Arid2 Arid3a
## 1 9.988747 13.284012 11.930971 12.918574 11.99299 11.828253 10.495962
## 2 10.106372 12.810934 11.864003 12.637763 11.44572 11.142960 10.468295
## 3 6.570844 10.412219 9.274909 11.383422 11.75057 10.746682 5.365796
## 4 6.458125 8.452427 8.848060 9.983747 10.68703 9.394297 5.498995
## 5 10.464962 13.169769 12.222796 12.996592 11.80449 11.501698 10.826949
## 6 8.798626 12.092218 10.739472 11.726835 10.80147 10.636790 9.305289
## Arid3b Arid3c Arid4a Arid4b Arid5a Arid5b Arih1
## 1 9.110695 4.473521e+00 10.764266 11.510149 11.391444 10.210704 12.366010
## 2 8.912080 3.950889e+00 10.572206 11.674741 11.422333 10.299256 11.968824
## 3 7.407903 1.612206e+00 10.270882 10.082908 8.918271 8.712039 9.398445
## 4 4.313377 6.244429e-08 8.273007 7.028542 8.263444 8.468141 7.073147
## 5 9.270299 4.289044e+00 10.930876 12.033522 11.781096 10.657883 12.327623
## 6 7.922132 3.364185e+00 9.573370 10.318814 10.200165 9.020318 11.174385
## Arih2 Arl1 Arl10 Arl11 Arl13a Arl13b Arl15
## 1 12.05329 10.881733 10.956221 8.351408 1.3527906 10.933006 9.931925
## 2 11.73044 10.332071 10.040025 7.352962 0.8620940 9.671801 9.733984
## 3 7.78065 9.162731 5.131210 2.823900 1.5106620 8.364455 7.728760
## 4 7.29624 8.889989 6.823903 8.140476 0.3697795 7.343952 6.396392
## 5 12.08923 10.690703 10.398602 7.709893 1.0345545 10.030289 10.092489
## 6 10.86175 9.690753 9.765190 7.165210 0.7528466 9.741990 8.741879

```



```

##      Arl16      Arl12      Arl2bp      Arl13      Arl4a      Arl4c      Arl4d
## 1 9.090032 12.31377 13.409593 10.649758 12.902775 13.75364 10.404275
## 2 8.602580 11.48037 12.857302 10.077617 12.046984 13.67886 9.982387
## 3 8.654219 11.48912 9.318380 11.429386 9.608069 10.22538 7.166873
## 4 8.821001 10.65256 8.835322 9.554126 9.579339 7.66036 3.455442
## 5 8.960640 11.83914 13.216138 10.436201 12.405788 14.03771 10.340951
## 6 7.901518 11.12216 12.217784 9.458953 11.711039 12.56179 9.213688
##      Arl5a      Arl5b      Arl5c      Arl6      Arl6ip1      Arl6ip4      Arl6ip5
## 1 11.70692 11.035120 10.211650 9.803009 14.20381 10.842150 13.09227
## 2 11.56892 10.092855 9.553871 8.990384 13.58072 10.061756 12.51760
## 3 10.37239 7.181250 6.126096 10.760224 14.41229 9.328413 11.90619
## 4 8.79752 7.028382 4.839566 9.046879 13.98634 8.449426 12.00984
## 5 11.92769 10.451442 9.912326 9.348637 13.93958 10.420338 12.87643
## 6 10.51550 9.844038 9.021262 8.613144 13.01192 9.651198 11.90050
##      Arl6ip6      Arl8a      Arl8b      Arl9      Armc1      Armc10      Armc2
## 1 9.707781 13.518510 13.26945 3.846380e+00 11.302710 9.886463 7.005431
## 2 8.736199 13.143199 12.43335 2.194688e+00 10.704573 9.488413 6.853050
## 3 9.573963 10.546888 12.23619 1.080757e+00 11.073000 8.430899 6.987207
## 4 8.808580 9.396064 12.29719 8.611573e-08 9.556247 7.888958 3.295380
## 5 9.094331 13.502043 12.79217 2.482357e+00 11.063261 9.846849 7.209173
## 6 8.518059 12.326687 12.07766 2.780004e+00 10.111476 8.696478 5.828106
##      Armc3      Armc4      Armc5      Armc6      Armc7      Armc8      Armc9
## 1 6.682310e+00 1.4075141 11.280767 10.534640 8.986394 11.012056 9.065728
## 2 6.314694e+00 1.5558934 11.300404 10.194725 9.184953 10.617715 8.985028
## 3 6.069333e+00 3.3629170 7.312229 8.648180 8.043464 10.054874 9.209020
## 4 5.875703e-08 1.7680172 4.817842 7.013900 7.483588 8.656663 6.061382
## 5 6.669569e+00 1.8023483 11.659157 10.553332 9.543285 10.976391 9.343279
## 6 5.508639e+00 0.7895333 10.089544 9.343932 7.798138 9.820989 7.877273
##      Armcx1      Armcx2      Armcx3      Armcx4      Armcx5      Armcx6      Arnt
## 1 10.201844 11.916571 10.087515 11.528305 9.945310 8.977653 11.720008
## 2 10.006084 11.753071 9.695715 11.296850 10.164203 8.834494 11.127665
## 3 9.826016 10.054754 7.867079 9.162827 7.300425 7.157131 8.449501
## 4 8.383964 7.811992 4.927396 6.767736 5.889030 2.829997 6.652864
## 5 10.364653 12.111857 10.054210 11.655603 10.522805 9.192676 11.486402
## 6 9.011468 10.725077 8.897270 10.336962 8.755245 7.789420 10.528585
##      Arnt2      Arnt1      Arnt12      Arpc1a      Arpc1b      Arpc2      Arpc3
## 1 12.721213 10.247272 4.162693e+00 13.66851 13.543356 13.39813 13.50120
## 2 12.600380 10.523139 4.553557e+00 12.97308 12.869822 12.68089 12.71833
## 3 9.259447 7.676928 1.959056e+00 12.97659 9.284486 10.99132 11.33448
## 4 7.757220 5.834466 7.738533e-08 12.18761 8.849564 10.89927 10.90002
## 5 12.959208 10.881802 4.898821e+00 13.33191 13.228659 13.03972 13.07716
## 6 11.529510 9.056845 3.072494e+00 12.47667 12.351531 12.20633 12.30938
##      Arpc4      Arpc5      Arpc51      Arpp19      Arpp21      Arr3      Arrb1
## 1 13.36601 13.03066 11.774768 12.27194 10.809719 3.113015e+00 13.089980
## 2 12.69747 12.42694 10.962366 11.87464 10.873862 1.749527e+00 12.960986
## 3 11.75681 11.44172 10.405959 12.60924 6.898318 3.360490e-08 9.664414
## 4 11.67403 10.61121 8.975052 11.04258 9.222921 1.698360e-08 8.247232
## 5 13.05630 12.78576 11.321086 12.23343 11.232571 2.010583e+00 13.319825
## 6 12.17420 11.83890 10.583325 11.08034 9.618790 2.123870e+00 11.898213
##      Arrb2      Arrdc1      Arrdc2      Arrdc3      Arrdc4      Arsa      Arsb
## 1 12.660145 9.774395 10.178061 12.083489 10.239068 11.928302 15.626748
## 2 12.740146 9.771532 9.935983 11.836739 10.314679 11.235822 15.064113
## 3 7.379806 7.181565 6.232830 11.483550 6.309122 9.090609 9.826456
## 4 7.079291 4.890430 4.373894 7.984318 4.943985 8.558495 10.853229

```

```

## 5 13.098978 10.130047 10.294537 12.195531 10.673308 11.594569 15.422983
## 6 11.468454 8.584572 8.987711 10.891942 9.048651 10.736804 14.434802
##      Arsg      Arsi      Arsj      Arsk      Art1      Art3      Art4
## 1 11.704701 3.343246e+00 5.171418 9.631388 2.389764e+00 8.420813 1.8860814
## 2 11.378286 2.771635e+00 5.561635 9.035828 2.731949e+00 7.974880 0.5612714
## 3 9.928616 5.249712e-08 4.130092 9.793057 2.164555e+00 9.838858 0.2427759
## 4 8.214132 6.346664e-01 5.647912 9.463924 8.656941e-08 7.680216 1.5247148
## 5 11.737046 3.083158e+00 5.913760 9.394100 3.042129e+00 8.332493 0.6868882
## 6 10.513284 2.326023e+00 4.030980 8.441790 1.518065e+00 7.234343 1.1287834
##      Art5      Artn      Arv1      Arvcf      Arx      Arxes1      Arxes2
## 1 2.648349e+00 4.1346684 8.497026 12.140096 10.134295 9.626343 11.153185
## 2 2.733062e+00 3.1341097 7.880612 11.694229 9.899745 9.254549 10.401212
## 3 1.068081e+00 0.7983239 8.191828 7.669808 7.314830 6.166945 8.682323
## 4 5.566776e-08 1.0378212 6.167582 5.740294 4.971472 8.244324 10.487474
## 5 3.043280e+00 3.4562860 8.238140 12.053012 10.258291 9.612907 10.759855
## 6 1.728986e+00 3.0463911 7.310273 10.948532 8.943995 8.436753 9.962032
##      As3mt      Asah1      Asah2      Asap1      Asap2      Asap3      Asb1
## 1 10.369324 12.53515 9.203907 11.604691 10.945712 10.791785 11.224596
## 2 9.742158 12.04374 8.977602 11.266986 10.773398 10.883206 11.156473
## 3 9.805377 11.61662 3.613643 7.776612 7.343792 5.600396 11.057388
## 4 8.626414 11.10491 3.560142 8.002276 5.490842 5.905527 8.153756
## 5 10.100666 12.40255 9.335850 11.625736 11.132095 11.241917 11.515212
## 6 9.178771 11.34348 8.015131 10.413315 9.754688 9.600869 10.033403
##      Asb10      Asb11      Asb13      Asb14      Asb16      Asb18
## 1 7.206859 1.546405e+00 10.146982 4.451367e+00 2.440473e+00 3.159398e+00
## 2 7.247970 2.273115e+00 9.772515 4.381980e+00 2.133775e+00 4.517399e+00
## 3 2.517880 1.081659e-07 9.679269 1.604270e+00 7.051733e-08 3.374425e-11
## 4 4.173150 4.611075e+00 8.447614 7.409026e-08 3.452412e-08 1.320125e+00
## 5 7.604753 2.564639e+00 10.131030 4.725516e+00 2.418294e+00 4.862316e+00
## 6 6.027632 8.846436e-01 8.956668 3.343271e+00 1.558878e+00 2.164279e+00
##      Asb2      Asb3      Asb4      Asb5      Asb6      Asb7      Asb8
## 1 9.999862 9.655424 10.818642 5.565979e+00 11.028515 9.875405 10.183859
## 2 9.769193 9.034119 10.522958 4.917544e+00 10.530895 9.814744 9.980079
## 3 1.660992 10.376574 1.517841 1.421838e+00 9.402910 8.811060 9.652757
## 4 6.685191 9.212549 5.838239 1.264853e-07 9.697197 5.872729 8.996750
## 5 10.127707 9.392391 10.881620 5.265854e+00 10.889559 10.173269 10.338643
## 6 8.809726 8.465786 9.627707 4.413386e+00 9.837437 8.685436 8.993503
##      Ascc1      Ascc2      Ascc3      Ascl1      Ascl2      Ascl3
## 1 10.533502 10.647826 10.283195 8.024834 4.837729e+00 8.632289e-01
## 2 10.162239 10.266336 10.500944 7.882604 4.717938e+00 1.879211e+00
## 3 10.038075 8.790823 7.546810 10.478894 7.057724e-08 6.199921e-08
## 4 8.257842 5.631748 7.020772 6.418181 3.303402e-08 2.379561e-08
## 5 10.520841 10.624957 10.859603 8.240134 5.064674e+00 2.148937e+00
## 6 9.342795 9.457022 9.092730 6.840101 3.710388e+00 4.454195e-01
##      Ascl4      Asf1a      Asf1b      Asgr1      Asgr2      Ash11      Ash21
## 1 0.16056029 10.135013 7.077336 4.6380866 5.015437 12.063563 11.388726
## 2 0.07984676 9.301839 6.840233 3.9527351 5.011397 11.850517 11.389585
## 3 3.60120846 9.334241 9.959815 6.6910639 3.163095 11.033891 8.734546
## 4 2.65437808 6.972787 6.499081 0.8272225 4.854868 9.372094 6.337595
## 5 0.10161130 9.660213 7.196332 4.2909164 5.360376 12.209310 11.748345
## 6 0.07329233 8.944712 5.899302 3.5200804 3.880761 10.872022 10.197449
##      Asl      Asna1      Asns      Asnsd1      Aspa      Aspdh      Aspg
## 1 10.865197 12.72964 10.303699 11.103635 12.138325 7.033094 7.442322
## 2 10.778073 12.16642 9.845227 10.230825 10.904823 7.009749 6.470249

```

```

## 3 10.028237 10.78591 9.784102 8.369118 11.187557 2.496926 2.914677
## 4 8.510194 9.60589 10.855282 4.324956 9.523601 1.503969 4.963154
## 5 11.136771 12.52523 10.203759 10.589439 11.263536 7.366156 6.825534
## 6 9.674228 11.53793 9.113213 9.912512 10.946761 5.855492 6.261182
##      Asph      Asphd1      Asphd2      Aspm      Aspn      Asprv1      Aspscr1
## 1 11.443672 6.5429458 10.606262 8.786507 7.511368 5.393359 12.108062
## 2 11.067786 7.0881897 10.320836 8.433295 6.728093 4.915994 11.610161
## 3 9.666731 3.8442671 9.566556 9.090922 9.322380 7.850117 8.454930
## 4 10.265222 0.6973724 8.531759 3.864018 7.853226 8.686543 7.486396
## 5 11.426517 7.4447278 10.679466 8.791253 7.083967 5.264293 11.968938
## 6 10.252368 5.3711186 9.415492 7.598805 6.329724 4.245691 10.916507
##      Asrgl1      Ass1      Aste1      Astl      Astn1      Astn2      Asxl1
## 1 13.44423 4.846535 8.586900 2.450033e+00 13.47687 12.127814 12.127426
## 2 13.05793 4.088907 8.013872 2.169060e+00 12.97653 10.975273 11.603121
## 3 12.66211 9.232669 7.297826 7.326824e-08 11.14932 4.483537 8.508483
## 4 11.09113 6.742774 2.959576 3.572125e-08 11.58358 3.945422 8.175424
## 5 13.41677 4.428965 8.371519 2.455420e+00 13.33537 11.333994 11.961897
## 6 12.25242 3.718810 7.399832 1.566603e+00 12.28505 10.936254 10.935865
##      Asxl2      Asxl3      Atad1      Atad2      Atad2b      Atad3a      Atad5
## 1 11.465635 9.058209 12.35298 9.563788 11.091908 11.440644 9.057660
## 2 10.932448 9.070504 11.82182 9.472283 11.204196 11.194975 9.000876
## 3 9.520723 8.162731 12.06129 9.417567 8.381218 7.844907 7.739667
## 4 8.153161 3.482031 11.33481 5.752418 6.997768 6.317923 5.462313
## 5 11.291164 9.428791 12.18061 9.830713 11.562941 11.553718 9.359133
## 6 10.274321 7.869773 11.16136 8.374304 9.900792 10.249342 7.869225
##      Atat1      Atcay      Ate1      Atf1      Atf2      Atf3      Atf4
## 1 12.750859 12.685493 11.620341 9.440721 11.574283 15.914290 14.948602
## 2 12.451470 12.250479 11.019151 8.929275 10.944648 15.342381 14.291523
## 3 12.232853 10.303223 9.431935 7.759184 11.102043 7.768412 10.980207
## 4 8.934917 8.867269 9.159646 6.086673 9.043529 8.309210 9.257879
## 5 12.810292 12.609292 11.377877 9.287501 11.303365 15.701252 14.650386
## 6 11.559150 11.493796 10.428958 8.251460 10.382920 14.722337 13.756678
##      Atf5      Atf6      Atf6b      Atf7      Atf7ip      Atf7ip2      Atg10
## 1 10.799851 11.709815 12.900729 9.443678 11.399149 2.127192e+00 7.561598
## 2 9.970020 11.599147 12.001662 9.350555 11.369559 1.143771e+00 6.961991
## 3 7.176669 9.686944 8.809207 7.844029 9.682604 5.204380e-01 9.087734
## 4 6.502875 9.061396 8.910879 4.588949 7.132119 6.465626e-08 7.166768
## 5 10.328582 11.957924 12.360463 9.708947 11.728317 1.351075e+00 7.318315
## 6 9.608929 10.518396 11.708993 8.254411 10.207867 1.311332e+00 6.379601
##      Atg12      Atg13      Atg14      Atg16l1      Atg16l2      Atg2a      Atg2b
## 1 11.624328 11.732499 10.020511 11.360980 10.265761 11.998750 11.579358
## 2 11.448123 11.189743 10.155953 11.103735 10.019350 12.044383 11.354148
## 3 11.099716 10.211880 9.330221 7.439684 7.869055 8.343455 9.451034
## 4 8.640547 9.168793 7.719420 6.385125 3.955429 6.974548 8.942244
## 5 11.806888 11.548486 10.514553 11.462469 10.377922 12.403186 11.712906
## 6 10.432944 10.541071 8.830350 10.169716 9.075315 10.807229 10.387993
##      Atg3      Atg4a      Atg4b      Atg4c      Atg4d      Atg5      Atg7
## 1 11.299889 8.423670 11.81534 10.988155 10.773629 10.842575 11.163341
## 2 10.601898 7.763020 11.13591 10.201127 9.670145 10.188703 11.049119
## 3 8.982754 7.834859 10.45621 9.413268 6.558123 10.311180 10.260931
## 4 7.268259 6.189635 10.18624 8.459318 7.190314 9.724582 8.918389
## 5 10.960572 8.120433 11.49464 10.559736 10.028633 10.547309 11.407848
## 6 10.108656 7.237190 10.62388 9.797103 9.582727 9.651622 9.972183
##      Atg9a      Atg9b      Athl1      Atic      Atl1      Atl2      Atl3

```

```
## 1 12.713219 5.880435 9.326517 10.991350 10.490947 11.802337 12.348943
## 2 12.441643 5.204888 9.194668 10.958757 9.872388 11.875409 11.270181
## 3 10.289075 2.902052 8.992787 9.940539 10.624643 9.616610 8.582933
## 4 9.987428 3.455961 2.583543 8.634323 10.029704 8.127218 8.150834
## 5 12.800465 5.555112 9.553004 11.317476 10.230927 12.234203 11.628931
## 6 11.521518 4.720218 8.137480 9.800296 9.300278 10.610883 11.157322
##      Atpm      Atpmin      Atpn1      Atpoh7      Atpoh8      Atpox1
## 1 10.556883 11.374627 12.708554 9.618888e-01 6.286570e+00 12.33081
## 2 10.356626 11.257418 12.694395 1.669102e+00 6.462049e+00 11.56339
## 3 8.910065 7.892817 7.547903 6.466898e-01 3.974981e+00 12.04371
## 4 7.236014 7.349541 6.947414 6.615434e-08 1.176998e-07 11.54247
## 5 10.715262 11.616166 13.053226 1.924348e+00 6.817314e+00 11.92216
## 6 9.366156 10.183356 11.516853 5.042866e-01 5.118627e+00 11.13920
##      Atp10a      Atp10b      Atp11a      Atp11b      Atp11c      Atp12a      Atp13a1
## 1 9.690058 9.579514 12.913313 12.548797 10.597372 3.4102414 12.451005
## 2 9.851629 9.711517 12.389407 11.758415 10.440600 2.0393969 12.368688
## 3 4.659012 5.126107 8.966246 8.277475 7.762583 0.8750384 8.580800
## 4 5.257858 5.773602 6.711714 7.148366 5.845167 0.3004374 7.732917
## 5 10.210164 10.070016 12.748227 12.117202 10.799250 2.3187505 12.727507
## 6 8.500365 8.390003 11.721575 11.357129 9.406610 2.3855584 11.259360
##      Atp13a2      Atp13a3      Atp13a4      Atp13a5      Atp1a1      Atp1a2      Atp1a3
## 1 13.124432 11.977265 12.212759 10.085193 15.06437 15.94163 13.897596
## 2 13.035977 11.510148 11.002028 9.369904 14.47214 15.53525 13.727618
## 3 9.038357 8.797641 6.484065 10.395812 10.52783 14.09156 8.718925
## 4 8.102802 8.579089 8.561630 9.379105 10.83885 13.70537 12.716815
## 5 13.394818 11.868918 11.360752 9.728302 14.83101 15.89412 14.086474
## 6 11.932660 10.785750 11.021174 8.894952 13.87244 14.74968 12.705736
##      Atp1a4      Atp1b1      Atp1b2      Atp1b3      Atp1b4      Atp2a1      Atp2a2
## 1 3.357307e+00 13.231645 14.66931 13.18830 3.911603e-01 4.6652169 14.78538
## 2 3.617864e+00 12.935187 14.09390 12.52933 8.528688e-01 4.2879251 14.60351
## 3 8.290786e-08 8.951857 12.75718 10.46301 6.561294e-08 3.4761091 11.21549
## 4 3.629570e-08 12.600258 12.95382 9.00581 3.099015e+00 0.3483799 11.24143
## 5 3.950590e+00 13.294025 14.45276 12.88815 1.024053e+00 4.6304213 14.96238
## 6 2.338493e+00 12.039858 13.47740 11.99652 1.862019e-01 3.5458690 13.59346
##      Atp2a3      Atp2b1      Atp2b2      Atp2b3      Atp2b4      Atp2c1      Atp2c2
## 1 10.055543 12.33813 11.173035 9.213635 11.409310 13.200974 3.5806428
## 2 8.887810 11.99090 10.938281 9.526395 11.490818 12.641668 2.6003877
## 3 8.476516 10.96515 11.591874 4.565188 7.055984 10.414007 0.5301913
## 4 8.143470 12.70209 11.827720 7.188579 8.901705 9.755591 1.2884429
## 5 9.246017 12.34970 11.296997 9.884843 11.849586 13.000497 2.9058331
## 6 8.865337 11.14651 9.981871 8.024837 10.218023 12.009191 2.5383126
##      Atp4a      Atp5a1      Atp5b      Atp5c1      Atp5d      Atp5e      Atp5f1      Atp5g1
## 1 6.298113 15.28738 15.90809 13.72748 13.24819 12.07846 12.62296 8.545708
## 2 6.621893 14.74990 15.15209 12.97394 12.35266 11.30011 11.95358 7.924410
## 3 6.865780 14.23445 13.21561 13.77662 11.33922 13.38910 12.79712 9.772677
## 4 4.146305 13.39485 12.92619 12.93585 10.91600 12.29339 12.16985 9.159841
## 5 6.977537 15.10877 15.51096 13.33278 12.71148 11.65886 12.31238 8.281978
## 6 5.129981 14.09544 14.71614 12.53564 12.05640 10.88691 11.43128 7.358782
##      Atp5g2      Atp5g3      Atp5h      Atp5j      Atp5j2      Atp5k      Atp5l      Atp5o
## 1 5.794760 13.36529 10.827743 12.35145 12.37452 11.72824 7.296863 12.49696
## 2 5.304536 12.64742 10.149716 11.56857 11.71643 11.06087 6.552524 11.74779
## 3 5.504844 12.71805 11.724738 13.08910 12.69499 11.46228 7.595162 13.18334
## 4 3.340142 12.02404 11.213675 12.33275 11.62312 10.83570 6.647778 12.14303
## 5 5.655341 13.00624 10.508315 11.92734 12.07522 11.41960 6.908008 12.10657
```

```

## 6 4.636462 12.17349 9.636801 11.15983 11.18289 10.53681 6.116868 11.30531
##      Atp5s      Atp5s1 Atp6ap1 Atp6ap1l Atp6ap2 Atp6v0a1 Atp6v0a2
## 1 8.811384 10.337024 14.48317 6.123718 12.86647 13.56083 12.675939
## 2 8.704421 9.542629 13.98330 6.637162 12.12197 13.26303 12.146848
## 3 8.843974 9.999873 13.07568 4.765916 12.21639 11.04272 7.361342
## 4 6.688879 9.347616 13.01624 4.859138 12.24860 11.68571 8.854916
## 5 9.062536 9.901082 14.34216 6.992840 12.48077 13.62188 12.505657
## 6 7.623609 9.146503 13.29127 4.958620 11.67474 12.36901 11.484245
##      Atp6v0a4 Atp6v0b Atp6v0c Atp6v0d1 Atp6v0d2 Atp6v0e Atp6v0e2
## 1 4.678451 13.91493 1.9802038 13.58772 3.4993840 12.05704 13.02655
## 2 4.970367 13.22721 1.9487125 12.87021 1.0109649 11.32276 12.69668
## 3 1.360561 13.05206 0.3820433 11.90350 0.2086534 13.54957 13.64097
## 4 1.587042 13.38592 0.5064731 10.84040 0.3748830 12.38742 13.20649
## 5 5.319059 13.58606 2.2227554 13.22905 1.2027892 11.68152 13.05552
## 6 3.558457 12.72307 1.1991733 12.39589 2.4652380 10.86550 11.83479
##      Atp6v1a Atp6v1b1 Atp6v1b2 Atp6v1c1 Atp6v1c2 Atp6v1d Atp6v1e1
## 1 13.45376 0.7629340 13.32960 12.21529 2.786514 11.51377 13.05884
## 2 13.02405 0.4301110 12.98337 11.72210 3.021153 10.99684 12.57231
## 3 12.41627 4.8072470 11.49964 11.22082 4.250149 12.07244 12.65233
## 4 13.30721 5.5180605 11.23961 10.92384 4.560842 11.52493 12.02559
## 5 13.38289 0.5314502 13.34221 12.08088 3.340300 11.35556 12.93114
## 6 12.26194 0.3872206 12.13780 11.02371 1.844399 10.32244 11.86708
##      Atp6v1e2 Atp6v1f Atp6v1g1 Atp6v1g2 Atp6v1h Atp7a Atp7b
## 1 1.356598e+00 12.15186 12.45888 10.672677 12.34302 10.749986 8.1866590
## 2 2.088612e+00 11.37195 11.54934 10.391747 11.61075 10.510473 8.4839829
## 3 5.771518e-01 12.48508 12.18736 8.970571 12.40670 9.255172 4.4090794
## 4 8.277205e-08 11.50051 11.29583 10.889791 11.22092 7.495954 0.2952984
## 5 2.370703e+00 11.73070 11.90812 10.750389 11.96953 10.869133 8.8419727
## 6 7.553846e-01 10.96029 11.26723 9.481853 11.15140 9.559101 7.0011589
##      Atp8a1 Atp8a2 Atp8b1 Atp8b2 Atp8b3 Atp8b4 Atp9a
## 1 13.68642 9.953204 8.619338 11.971183 4.834432e+00 3.046744e+00 14.372545
## 2 13.18413 9.074760 7.860652 11.468730 5.792518e+00 2.188828e+00 14.068090
## 3 10.75636 6.745128 5.071202 7.051402 1.360011e+00 5.564216e-01 10.516745
## 4 11.70973 7.289314 1.329476 6.407522 5.538795e-08 5.034475e-08 9.942124
## 5 13.54297 9.433048 8.218161 11.827497 6.145644e+00 2.476200e+00 14.426950
## 6 12.49458 8.763129 7.432160 10.779671 3.707235e+00 2.066427e+00 13.180651
##      Atp9b Atpaf1 Atpaf2 Atpif1 Atr Atrip Atrn
## 1 12.026974 7.669396 10.489827 12.20829 10.464981 10.221893 13.331480
## 2 11.905676 7.896302 9.853218 11.52019 10.146553 10.392873 12.965783
## 3 8.144309 3.051099 9.641454 13.35342 7.903979 9.123485 9.792663
## 4 7.289137 2.248043 8.763679 11.93613 6.394176 7.349451 9.863701
## 5 12.264472 8.253844 10.211752 11.87896 10.505151 10.751515 13.324622
## 6 10.835444 6.486682 9.299159 11.01671 9.274336 9.031494 12.139680
##      Atrn1l Atrx Atxn1 Atxn10 Atxn11 Atxn2 Atxn2l
## 1 11.168010 12.94863 10.067480 13.50597 11.934743 12.026087 13.548468
## 2 10.053049 12.93364 9.974636 13.04636 11.847789 11.564576 13.089534
## 3 7.286371 11.79765 10.010018 13.59847 7.120377 9.440400 7.962367
## 4 8.816117 10.02126 8.230124 12.17890 6.303104 7.930996 6.532939
## 5 10.411628 13.29248 10.333198 13.40520 12.206582 11.923350 13.448377
## 6 9.976849 11.75688 8.877260 12.31415 10.743243 10.834557 12.356643
##      Atxn3 Atxn7 Atxn7l1 Atxn7l2 Atxn7l3 Atxn7l3b AU019823
## 1 10.113564 11.079246 9.520270 10.112600 12.396009 14.11407 10.730375
## 2 9.923098 11.139106 9.231732 9.482109 12.604309 13.39221 9.812512
## 3 8.130202 8.229192 8.139649 8.461290 5.979863 11.94328 9.126309

```

```

## 4 6.771704 4.652246 6.935500 5.350642 6.231228 11.10662 7.917026
## 5 10.281649 11.497844 9.590081 9.840543 12.963137 13.75106 10.171037
## 6 8.923288 9.888137 8.330862 8.922326 11.204376 12.92219 9.539506
## AU021092 AU022252 AU040320 Auh Aup1 Aurka Aurkaip1
## 1 12.498551 9.518472 12.985742 11.174882 12.95987 7.872935 11.342850
## 2 11.539984 9.285680 12.461884 10.133623 12.26630 7.600953 10.736813
## 3 6.708993 6.813492 9.405508 7.903869 10.99735 9.941288 11.383516
## 4 7.966101 6.044909 9.418952 7.438320 10.34135 5.537820 10.550643
## 5 11.898756 9.644049 12.820706 10.492218 12.62511 7.958192 11.095506
## 6 11.306894 8.329068 11.793992 9.983717 11.76812 6.689005 10.151595
## Aurkb Aut2 Aven Avil Avl9 Avp Avpi1
## 1 8.081326 10.938903 9.283073 5.1634750 11.659591 2.357817e+00 8.244599
## 2 7.202284 10.542679 8.441723 5.2593698 11.497064 2.614838e+00 7.919980
## 3 10.453072 10.987948 6.449623 2.7739802 8.852050 3.836023e-08 8.081609
## 4 5.713623 9.360832 7.257103 0.7147431 7.449476 1.650682e-08 7.198633
## 5 7.559000 10.901344 8.799686 5.6099163 11.855833 2.920825e+00 8.277544
## 6 6.896315 9.747884 8.094125 4.0233165 10.468193 1.492495e+00 7.058844
## Avpr1a Avpr2 AW209491 AW549877 AW551984 AW554918
## 1 2.825518e+00 4.018053e+00 8.332935 12.288744 8.8317167 9.504822
## 2 1.627580e+00 2.797757e+00 7.864562 12.140416 9.3472063 9.198241
## 3 7.178745e-08 2.705843e-01 10.422346 10.340903 2.1391468 8.040119
## 4 3.684859e-08 8.770928e-08 9.346733 7.322894 0.6598499 5.751125
## 5 1.879687e+00 3.110143e+00 8.222075 12.499224 9.7055965 9.556578
## 6 1.877301e+00 2.938153e+00 7.146811 11.097138 7.6438827 8.315443
## Awat2 Axin1 Axin2 Axl Azi2 Azin1 B230118H07Rik
## 1 2.689060 11.531246 11.326636 11.753361 11.319935 13.37391 10.155608
## 2 2.066898 11.542983 10.510832 11.463365 10.718751 12.77583 9.284549
## 3 6.197813 7.712985 7.514548 10.934093 9.176902 12.65180 10.996572
## 4 1.279632 4.925900 7.084807 9.422817 7.700053 10.83351 10.088946
## 5 2.347794 11.901755 10.869493 11.822131 11.077441 13.13467 9.642918
## 6 1.762806 10.339901 10.135390 10.561925 10.128692 12.18210 8.965284
## B230219D22Rik B2m B3galnt1 B3galnt2 B3galt1 B3galt2 B3galt4
## 1 12.408439 13.93178 9.609207 8.996514 10.951047 9.201829 7.942251
## 2 11.833778 13.16790 9.014498 8.486238 10.553583 9.184606 7.536055
## 3 10.158001 13.05708 8.389093 6.368490 10.900220 9.299008 6.669542
## 4 9.246007 13.88274 10.277717 4.941899 10.387855 9.392905 5.243284
## 5 12.192570 13.52675 9.372761 8.844229 10.912250 9.542938 7.893218
## 6 11.216804 12.73992 8.419646 7.808233 9.760019 8.013057 6.757945
## B3galt5 B3galt6 B3gat1 B3gat2 B3gat3 B3gnt1 B3gnt2
## 1 11.552007 9.069922 13.110378 10.236737 11.540741 12.43625 11.200457
## 2 11.142313 8.908523 13.146735 10.121333 11.442768 11.81945 10.668425
## 3 8.399953 6.987436 7.401673 6.561571 8.851714 10.94009 7.861565
## 4 9.859251 6.354135 8.462030 6.041192 7.859652 11.23320 8.226031
## 5 11.501051 9.266739 13.505579 10.479926 11.801532 12.17824 11.027108
## 6 10.360653 7.881457 11.918609 9.046322 10.349392 11.24460 10.009277
## B3gnt3 B3gnt4 B3gnt5 B3gnt6 B3gnt7 B3gnt8 B3gnt11
## 1 3.9714353 6.007632e+00 9.525637 5.304466e+00 9.309371 5.116078 8.797561
## 2 2.5658892 5.227604e+00 8.883499 4.401057e+00 8.979894 4.889265 8.662498
## 3 0.3117042 2.938897e+00 8.845254 6.785282e-08 4.346076 4.528113 7.679197
## 4 4.2372690 6.428655e-08 4.670981 3.509347e-08 3.629166 3.526196 4.681094
## 5 2.8700171 5.577965e+00 9.241704 4.744795e+00 9.338142 5.237365 9.020591
## 6 2.8950636 4.844763e+00 8.336220 4.159565e+00 8.120369 3.977617 7.609826
## B4galnt1 B4galnt2 B4galnt3 B4galnt4 B4galt1 B4galt2 B4galt3
## 1 11.112714 4.670070e+00 3.4896480 10.135788 12.770230 11.282551 11.26591

```

```

## 2 10.951269 3.970681e+00 2.8553654 10.355554 11.847290 11.241562 10.83307
## 3 6.748928 1.538096e+00 0.8799063 7.426861 9.692094 8.771285 11.22246
## 4 8.262742 6.832626e-08 1.1457595 6.371731 10.055010 6.913282 10.69601
## 5 11.309987 4.309120e+00 3.1695995 10.714190 12.206083 11.600309 11.19178
## 6 9.921585 3.550485e+00 2.4565105 8.945486 11.578517 10.091327 10.07469
##      B4galt4      B4galt5      B4galt6      B4galt7      B630005N14Rik      B930041F14Rik
## 1 10.163397 11.301410 11.22118 9.937230      10.811498      9.869996
## 2 9.581987 10.544469 10.94752 9.092604      9.647431      9.291164
## 3 9.428758 8.629560 10.17597 8.600669      8.931771      7.050494
## 4 9.831077 8.584296 10.44494 5.701457      8.537346      5.528334
## 5 9.940451 10.903135 11.30624 9.450900      10.005913      9.649535
## 6 8.973064 10.110177 10.02999 8.747177      9.620567      8.680034
##      B9d1      B9d2      Baalc      Baat      Bace1      Bace2      Bach1
## 1 9.539619 9.953088 11.892723 2.686887e+00 12.993505 11.050348 13.062050
## 2 8.756963 9.233782 11.541267 2.558207e+00 12.821140 10.113297 12.443312
## 3 10.989935 10.151144 8.294387 1.317070e+00 10.802949 2.759295 8.350183
## 4 9.371165 8.771997 7.347049 5.385743e-08 9.817508 3.780434 7.085731
## 5 9.115106 9.592133 11.900040 2.862037e+00 13.179975 10.471889 12.802134
## 6 8.350177 8.763014 10.701237 1.760997e+00 11.801754 9.859257 11.870288
##      Bach2      Bad      Bag1      Bag2      Bag3      Bag4      Bag5
## 1 10.181523 10.503859 12.810016 9.330595 11.517479 10.157792 10.267350
## 2 9.620791 9.772103 12.147694 9.235972 11.201025 9.696112 9.436157
## 3 8.080284 10.899709 9.340658 9.182636 8.537658 9.288452 10.173302
## 4 4.467697 9.645242 8.761683 3.866573 7.540271 8.591062 8.440886
## 5 9.979266 10.130618 12.506503 9.594323 11.559768 10.054607 9.794577
## 6 8.991169 9.313178 11.618296 8.141549 10.326141 8.967465 9.076901
##      Bag6      Bahcc1      Bahd1      Bai1      Bai2      Bai3      Baiap2
## 1 13.868675 10.933606 10.669345 13.699146 13.191343 11.141236 12.089330
## 2 13.624360 10.451696 10.421717 13.396013 13.356435 11.056085 11.853334
## 3 9.328569 7.317325 6.509413 6.942538 5.772116 8.337387 8.859177
## 4 8.150359 3.620355 4.723260 6.513517 7.678812 9.362208 10.823660
## 5 13.983214 10.810348 10.780364 13.754863 13.715284 11.414814 12.212127
## 6 12.676818 9.742591 9.478524 12.507304 11.999562 9.950090 10.897781
##      Baiap2l1      Baiap2l2      Baiap3      Bak1      Bambi      Banf1      Bank1
## 1 5.694546 6.3614718 7.538908 12.051112 10.596191 11.46294 7.951585
## 2 5.358102 6.2040046 7.467809 10.973322 10.503635 10.99828 7.728257
## 3 5.023534 2.0673236 5.018479 6.655859 7.990168 12.87055 5.462830
## 4 2.693456 0.5359448 3.419345 7.151287 6.723386 10.45564 7.815291
## 5 5.709201 6.5585602 7.824889 11.332043 10.862295 11.35700 8.085634
## 6 4.538639 5.1923236 6.357068 10.859575 9.405430 10.27162 6.767229
##      Banp      Bap1      Bard1      Barh1l1      Barh1l2      Barx2      Basp1
## 1 9.935020 12.451189 7.603117 2.3727855 7.2562631 9.696058 13.679210
## 2 9.432249 12.305372 7.371801 2.5427392 5.7155771 9.268092 13.236940
## 3 10.679109 10.287201 7.166873 1.0735943 0.3013159 3.642628 10.803501
## 4 9.837287 8.511373 2.457912 0.2905478 3.7126797 4.897671 9.440637
## 5 9.790667 12.664188 7.728757 2.8459646 6.0683872 9.626455 13.595786
## 6 8.744969 11.259543 6.420837 1.5044617 6.0766091 8.506355 12.487371
##      Batf      Batf2      Batf3      Bax      Baz1a      Baz1b      Baz2a
## 1 8.942083 4.3523313 7.960400 12.041236 10.113787 12.272939 11.957844
## 2 10.516877 4.1653271 8.179969 11.332361 10.033145 12.288691 12.006900
## 3 1.809749 3.7414602 3.026021 10.653579 7.569354 9.708678 8.700102
## 4 2.912649 0.9402377 3.589523 8.712837 5.624545 7.780518 6.568669
## 5 10.875539 4.5063614 8.537751 11.691116 10.391720 12.647506 12.365701
## 6 7.753943 3.2500017 6.775998 10.849702 8.923512 11.081338 10.766336

```

##	Baz2b	Bbox1	Bbs1	Bbs10	Bbs12	Bbs2	Bbs4
## 1	11.577965	4.467993	9.707791	5.897049	6.668224	9.842035	9.633816
## 2	11.530353	3.572690	10.170370	5.505204	6.497190	10.267341	9.126453
## 3	10.443111	6.366597	7.538794	7.536591	6.441152	8.955348	10.227911
## 4	7.270905	6.331475	4.782019	3.887173	1.560215	6.417723	10.046421
## 5	11.889124	3.904576	10.528972	5.857059	6.852541	10.625962	9.484762
## 6	10.386600	3.358965	8.518069	4.736472	5.494732	8.652113	8.444214
##	Bbs5	Bbs7	Bbs9	Bbx	BC003331	BC003965	BC004004
## 1	8.353370	9.266912	10.224780	10.781991	10.886944	9.860736	12.05327
## 2	7.489523	8.751455	9.971839	10.294766	10.662433	9.302081	11.55970
## 3	7.655341	9.033250	9.406662	10.129993	10.323886	10.072437	11.18957
## 4	8.569595	7.230752	7.730603	9.050809	8.230301	9.050187	10.67557
## 5	7.846630	9.109595	10.330401	10.653391	11.021115	9.660455	11.91847
## 6	7.167164	8.077999	9.034378	9.591082	9.695959	8.670787	10.86173
##	BC005537	BC005561	BC005624	BC005764	BC016579	BC017158	BC017643
## 1	12.866443	10.426593	10.973069	11.341357	3.238844	9.557801	11.803223
## 2	12.588997	10.398710	10.252737	10.170687	2.376135	9.143261	11.009758
## 3	9.738911	8.344521	10.507034	9.123784	1.697467	7.019158	10.069254
## 4	7.395179	5.110983	8.914299	4.804542	1.263832	6.418611	9.659372
## 5	12.947824	10.757353	10.611355	10.529289	2.672401	9.501577	11.368482
## 6	11.674713	9.235984	9.782027	10.150103	2.233871	8.368328	10.611769
##	BC018242	BC018507	BC021785	BC021891	BC022687	BC023829	
## 1	11.749057	11.982636	1.842574e+00	4.255506e+00	9.356202	10.620709	
## 2	11.586178	12.119148	2.248224e+00	4.147209e+00	8.497839	10.461687	
## 3	8.363458	8.183232	1.761710e+00	4.592636e-08	6.481587	9.775644	
## 4	9.305156	7.139973	4.999889e-08	2.149154e-08	7.496803	8.309853	
## 5	11.944954	12.477956	2.538548e+00	4.488017e+00	8.855838	10.820340	
## 6	10.557623	10.791120	1.096636e+00	3.159184e+00	8.167104	9.429927	
##	BC024978	BC027231	BC028528	BC029214	BC030336	BC030867	BC037034
## 1	8.362092	9.480710	9.637214	10.737391	10.641364	5.640355	11.497581
## 2	7.918973	9.405851	8.728386	9.864688	9.887553	5.764643	11.437428
## 3	3.373371	6.884447	5.631016	10.191048	9.911540	6.598644	6.350114
## 4	1.559368	2.132928	7.607232	9.058959	10.134335	3.008056	4.920571
## 5	8.276536	9.764261	9.086515	10.223225	10.246095	6.117656	11.796192
## 6	7.175851	8.291374	8.447606	9.546516	9.450565	4.485810	10.306252
##	BC048403	BC048609	BC049635	BC049715	BC051019	BC051628	BC052040
## 1	7.650827	2.466146e+00	1.0315576	2.344123	2.434256	5.237769e-01	8.246415
## 2	7.505664	1.655271e+00	1.9670151	2.107250	2.037108	1.645464e+00	7.900753
## 3	5.607937	5.597691e-08	3.4467800	4.406988	3.330807	4.330128e+00	9.154660
## 4	5.168843	2.873854e-08	1.4677770	1.463937	7.336286	6.127866e-10	6.883430
## 5	7.862790	1.909482e+00	2.2421585	2.390353	2.316332	1.898936e+00	8.258299
## 6	6.468233	1.579646e+00	0.5468106	1.481569	1.553860	2.552284e-01	7.060652
##	BC053749	BC055111	BC055324	BC061194	BC068157	BC068281	
## 1	7.442888	1.961476e+00	7.021953	2.854398e+00	10.415334	8.046586	
## 2	6.983620	2.736833e+00	6.886578	2.079831e+00	9.821291	8.012005	
## 3	7.193099	4.019822e-01	6.765244	3.212853e-01	8.820725	7.407386	
## 4	2.740275	1.271765e-07	2.438008	1.250663e-07	4.932795	4.363960	
## 5	7.339983	3.047180e+00	7.242765	2.361441e+00	10.179818	8.369651	
## 6	6.261744	1.185077e+00	5.844461	1.901751e+00	9.224737	6.861745	
##	BC089491	BC100451	BC100530	Bcam	Bcan	Bcap29	
## 1	4.960903e+00	5.044264e+00	4.137055	10.692936	16.272792	10.066470	
## 2	4.804804e+00	4.963744e+00	3.810900	10.098501	15.801112	9.662880	
## 3	8.665216e-01	1.184275e+00	4.861188	6.871041	9.656597	10.838462	
## 4	9.483021e-08	1.055412e-07	6.042639	7.919836	11.901609	9.954892	


```

## 5 5.152253e+00 5.312389e+00 4.146926 10.457090 16.159986 10.021366
## 6 3.828387e+00 3.908478e+00 3.048613 9.502096 15.080832 8.876251
##      Bcap31      Bcar1      Bcar3      Bcas1      Bcas2      Bcas3      Bcat1
## 1 12.96917 12.812117 10.504921 15.829488 11.58284 11.150642 11.767291
## 2 12.24786 12.499348 9.638569 15.352915 10.82834 10.848704 11.612773
## 3 12.63285 9.425869 8.405580 7.888903 11.82603 10.586398 11.033464
## 4 12.29752 7.614647 8.681024 8.371911 10.71620 9.148045 9.005129
## 5 12.60667 12.858172 9.997048 15.711786 11.18704 11.207410 11.971550
## 6 11.77742 11.620396 9.314240 14.637537 10.39147 9.959491 10.575851
##      Bcat2      Bccip      Bcdin3d      Bche      Bckdha      Bckdha      Bckdk
## 1 10.359771 10.623052 7.624267 9.932546 12.321050 9.908693 11.445357
## 2 10.270253 9.898722 7.284072 9.797352 11.757690 8.943789 10.721230
## 3 8.468158 11.176161 9.179474 6.960849 10.870183 7.025909 11.605474
## 4 7.305006 9.898987 7.324479 6.335156 8.904202 7.145754 10.645049
## 5 10.628874 10.257268 7.640908 10.155873 12.116477 9.302021 11.079921
## 6 9.169228 9.432268 6.441847 8.742499 11.129436 8.718678 10.254052
##      Bcl10      Bcl11a      Bcl11b      Bcl2      Bcl2a1a      Bcl2a1b      Bcl2a1d
## 1 11.886326 10.715412 8.688883 10.700417 8.848930 12.240414 11.772363
## 2 11.061284 10.344986 8.460404 10.317653 8.775956 11.542538 11.086186
## 3 9.830000 10.374918 6.547300 10.334708 2.497694 4.790862 3.399304
## 4 8.791135 8.036796 8.925723 6.600560 6.199480 8.760154 7.270296
## 5 11.420014 10.703621 8.818379 10.676282 9.134109 11.901311 11.444918
## 6 10.694843 9.524554 7.501480 9.509571 7.661047 11.048821 10.580920
##      Bcl211      Bcl2110      Bcl2111      Bcl2112      Bcl2113      Bcl2114      Bcl2115
## 1 13.26835 1.812537e+00 10.385406 8.079362 11.670792 3.909626e+00 4.956483
## 2 12.66750 1.418650e+00 10.014014 7.533527 11.653965 1.578047e+00 4.890391
## 3 12.08932 3.541197e-08 7.849589 8.059839 9.393889 2.455631e+00 2.600003
## 4 11.49083 1.772250e-08 5.448961 5.025454 7.454788 3.627297e-06 2.749656
## 5 13.02633 1.653398e+00 10.372585 7.890687 12.012745 1.826281e+00 5.238500
## 6 12.07656 1.074587e+00 9.194838 6.894361 10.479389 2.838096e+00 3.824146
##      Bcl212      Bcl3      Bcl6      Bcl6b      Bcl7a      Bcl7b      Bcl7c
## 1 12.535921 9.925574 10.529494 10.689840 11.669818 11.239829 8.865630
## 2 12.147552 8.421668 9.843062 11.130711 11.174165 10.634563 9.123324
## 3 7.650653 2.130337 8.686579 5.332843 10.798621 9.126737 4.663937
## 4 5.128141 1.023847 8.668199 3.493765 8.277604 8.319001 2.456667
## 5 12.506360 8.779618 10.201595 11.489448 11.532906 10.993242 9.481632
## 6 11.344256 8.735536 9.338791 9.499002 10.478416 10.048628 7.677699
##      Bcl9      Bcl9l      Bclaf1      Bco2      Bcor      Bcor11      Bcr
## 1 10.484206 11.471097 12.48382 8.457866 11.668200 9.799594 12.038244
## 2 10.301748 11.113611 12.33294 8.100920 11.570566 9.844768 11.896531
## 3 7.352620 7.444162 12.45758 7.838640 9.131326 6.975801 9.470478
## 4 6.097566 6.392927 10.02717 6.283216 6.153277 5.753331 8.896891
## 5 10.660375 11.472346 12.69176 8.458639 11.929341 10.203301 12.255327
## 6 9.293543 10.279780 11.29217 7.271258 10.476798 8.609734 10.846710
##      Bcs11      Bdh1      Bdh2      Bdkrb1      Bdkrb2      Bdnf      Bdp1
## 1 9.768903 12.462530 3.439821 2.493342e+00 7.4067490 6.543837 10.649426
## 2 9.163894 12.151111 2.704470 3.292515e+00 7.4420828 7.390095 10.446410
## 3 9.999963 9.584760 10.012674 1.279234e+00 0.3188674 6.066244 7.851614
## 4 9.838039 7.453828 7.781088 1.146447e-08 0.9791166 8.902354 6.893504
## 5 9.522218 12.509920 3.013698 3.618551e+00 7.7991304 7.747075 10.805061
## 6 8.579088 11.270882 2.411940 1.601721e+00 6.2258788 5.371997 9.458621
##      Bean1      Becn1      Begain      Bend3      Bend4      Bend5      Bend6
## 1 8.808929 12.135682 9.884643 10.307588 9.409968 9.352671 10.327062
## 2 7.696549 11.444938 10.385327 9.541854 8.784203 8.222523 9.784607

```

```

## 3 1.102065 9.621442 3.513663 7.225041 8.068446 5.331065 7.210635
## 4 3.839690 9.375146 4.443747 5.961109 7.374159 5.722671 7.714474
## 5 8.053893 11.803702 10.743968 9.900306 9.142360 8.580336 10.143125
## 6 7.621161 10.944119 8.694661 9.117098 8.220765 8.163580 9.136552
##      Bend7      Best1      Best2      Best3      Bet1      Bet1l      Bex1
## 1 8.387366 7.605164 2.259049e+00 0.3884523 10.831676 10.711941 9.747072
## 2 9.403717 7.128169 1.371623e+00 1.0486995 10.063337 10.000704 9.166566
## 3 5.645153 4.264792 4.711746e-08 0.7503469 11.035330 10.684215 10.199243
## 4 2.549262 6.025589 2.396139e-08 1.7944575 10.188476 10.250050 9.009856
## 5 9.762126 7.484771 1.602072e+00 1.2450851 10.421919 10.359272 9.524891
## 6 7.201026 6.422871 1.414161e+00 0.1848235 9.640731 9.521086 8.557290
##      Bex2      Bex4      Bfar      Bfsp1      Bfsp2      Bglap      Bglap2
## 1 11.72111 9.142641 10.780064 5.956668 7.516064 2.521449 1.018048e+00
## 2 11.24230 8.494528 10.432498 6.190364 7.156486 2.730057 2.436722e+00
## 3 11.90153 9.641890 11.271247 3.170636 6.941348 1.769579 4.872578e-01
## 4 10.95963 8.135324 9.617685 3.295502 7.127512 0.329026 1.289408e-07
## 5 11.60104 8.852524 10.791147 6.544878 7.513132 3.040173 2.735616e+00
## 6 10.52969 7.954004 9.589157 4.794834 6.334386 1.624617 5.385033e-01
##      Bgn      Bhlha15      Bhlha9      Bhlhb9      Bhlhe22      Bhlhe40      Bhlhe41
## 1 11.781440 3.898404e+00 3.528267 11.216021 9.577737 14.137975 11.314245
## 2 11.112913 3.494808e+00 3.383147 11.082321 8.781285 13.945557 10.798227
## 3 12.433166 1.151263e+00 1.794603 9.956264 9.686706 9.770743 4.118927
## 4 9.258535 1.135843e-07 3.632315 8.342624 8.627941 10.403499 3.395227
## 5 11.471649 3.825183e+00 3.711203 11.441053 9.139440 14.304416 11.156927
## 6 10.589994 2.827774e+00 2.491165 10.024833 8.388229 12.946097 10.123004
##      Bhmt      Bhmt2      Bicc1      Bicd1      Bicd2      Bid      Bik
## 1 2.2608276 6.238984e-01 7.870083 9.835406 13.191785 9.803026 5.710183e+00
## 2 2.7200674 2.011528e+00 7.983530 9.633254 12.910906 9.393447 5.623498e+00
## 3 0.9364436 8.774128e-08 5.589201 9.700174 8.753287 9.228192 1.929379e+00
## 4 3.3985806 2.964675e-08 3.935386 7.738796 8.410011 8.201390 6.408550e-08
## 5 3.0298382 2.289286e+00 8.341151 9.991732 13.269743 9.751853 5.975907e+00
## 6 1.4155619 3.093150e-01 6.686169 8.645493 12.000003 8.613161 4.553892e+00
##      Bin1      Bin3      Birc2      Birc3      Birc5      Birc6      Birc7
## 1 15.097194 10.647853 12.047512 11.003467 8.909262 12.55785 3.1450067
## 2 14.205778 10.210714 11.545219 9.981985 7.867989 12.09671 3.3209560
## 3 9.614689 9.071110 10.256776 5.597382 10.426801 11.13951 6.4588017
## 4 8.648494 7.730396 9.536673 6.369618 8.108918 10.08131 0.3103954
## 5 14.564640 10.569324 11.903991 10.340549 8.225505 12.45552 3.6476398
## 6 13.905264 9.457049 10.855976 9.812405 7.721211 11.36618 2.1517236
##      Bivm      Blcap      Blk      Blm      Blmh      Blnk      Bloc1s1
## 1 9.741804 11.505243 3.898307e+00 8.039777 11.80654 11.873934 10.932260
## 2 9.647473 11.182292 2.803588e+00 8.290254 11.61733 11.709259 10.285849
## 3 8.540514 11.107273 6.329697e-08 6.727730 11.52657 5.605527 11.779869
## 4 6.736471 9.910344 3.290135e-08 3.979352 10.08262 8.978387 10.145838
## 5 10.005955 11.541034 3.116165e+00 8.648115 11.97610 12.068043 10.644473
## 6 8.552031 10.313911 2.827684e+00 6.854970 10.61508 10.682455 9.741245
##      Bloc1s2      Bloc1s3      Blvra      Blvrb      Blzf1      Bmf      Bmi1
## 1 9.374512 9.582948 10.282774 10.655847 10.041263 10.872197 11.501058
## 2 8.817209 8.660271 9.634789 9.767245 9.769966 10.674586 10.667567
## 3 9.159006 5.711397 10.364954 10.515414 9.911240 4.511738 9.236112
## 4 6.904325 2.684776 9.156293 9.816949 7.568885 5.201858 8.587863
## 5 9.175383 9.018363 9.993267 10.125758 10.128480 11.033270 11.026251
## 6 8.185378 8.393431 9.092309 9.465036 8.851075 9.681223 10.309728
##      Bmp1      Bmp15      Bmp2      Bmp2k      Bmp3      Bmp4      Bmp5

```

```

## 1 12.874882 5.154826e+00 8.392447 11.479797 5.074708 10.636920 7.604107
## 2 12.651756 4.728529e+00 8.020249 10.867362 4.485682 9.365378 8.419087
## 3 8.116355 2.966534e+00 6.043346 7.124706 3.243872 5.145973 6.205874
## 4 8.382241 1.122022e-07 3.419332 7.959211 3.785791 8.160112 3.266073
## 5 13.010585 5.075354e+00 8.377902 11.226071 4.830287 9.723775 8.777036
## 6 11.683150 4.014974e+00 7.206087 10.288476 3.937772 9.446125 6.421821
##      Bmp6      Bmp7      Bmp8a      Bmp8b      Bmper      Bmpr1a
## 1 7.178147 10.625821 1.843710e+00 4.206167e+00 9.344657 12.020726
## 2 6.830944 10.099737 2.095718e+00 3.889465e+00 8.428086 11.398788
## 3 5.400391 5.242034 2.499208e-01 3.897486e-08 10.834591 10.249391
## 4 1.235638 5.661627 7.493843e-08 1.893581e-08 7.288920 9.449662
## 5 7.187025 10.458325 2.378197e+00 4.226712e+00 8.786041 11.757549
## 6 5.999175 9.435035 1.097472e+00 3.113055e+00 8.155583 10.829197
##      Bmpr1b      Bmpr2      Bms1      Bmx      Bmyc      Bnc1      Bnc2
## 1 10.712180 11.402119 11.083230 6.388229e+00 10.802253 2.105391 2.447084
## 2 10.061245 10.995898 10.676402 6.475953e+00 10.034588 1.668944 2.338805
## 3 9.443762 7.358796 8.967974 1.366955e+00 8.879688 1.848549 2.457036
## 4 8.626078 6.876046 7.142722 1.048937e-07 8.267538 2.214376 2.081640
## 5 10.419826 11.354621 11.035086 6.831253e+00 10.393163 1.924179 2.633393
## 6 9.521324 10.210835 9.892118 5.218664e+00 9.611330 1.294529 1.564219
##      Bnip1      Bnip2      Bnip3      Bnip3l      Bnipl      Boc      Bod1
## 1 9.673447 12.088034 11.024835 12.78935 4.394972 10.014268 11.196667
## 2 9.318062 11.472072 10.220839 12.10777 4.094292 9.470644 10.494065
## 3 9.192697 8.898262 11.051540 12.08711 2.529592 7.275202 9.252790
## 4 7.538214 8.373963 10.103203 10.71109 2.981724 5.768772 7.875592
## 5 9.676442 11.830839 10.579452 12.46658 4.434420 9.829074 10.852724
## 6 8.483781 10.896485 9.833759 11.59764 3.290114 8.824114 10.005490
##      Bod1l      Bok      Bola1      Bola2      Bola3      Bop1      Bpgm
## 1 11.021094 10.932723 8.786631 10.330094 9.393494 11.575094 13.37464
## 2 11.123429 10.316224 7.944594 9.804363 8.340266 11.539916 12.54685
## 3 9.991895 9.121047 10.407934 11.298440 6.536640 9.920513 11.41517
## 4 8.301171 5.987854 9.188743 9.598148 7.208185 8.547615 11.47043
## 5 11.482165 10.674853 8.302181 10.162886 8.698162 11.898688 12.90568
## 6 9.830021 9.741708 7.598929 9.139580 8.204323 10.383731 12.18284
##      Bphl      Bpifa1      Bpifb1      Bpifc      Bpnt1      Bptf
## 1 9.807107 2.245601e+00 4.102747e+00 0.8848612 11.78416 12.232529
## 2 9.079271 2.239022e+00 3.844596e+00 0.7967234 11.15613 12.055974
## 3 10.310793 7.536892e-08 3.760139e-08 6.0013680 11.00202 11.046130
## 4 9.639127 3.449173e-08 1.804235e-08 6.5274562 10.37485 9.257232
## 5 9.437562 2.528897e+00 4.181154e+00 0.9599385 11.51487 12.414778
## 6 8.617236 1.403581e+00 3.016701e+00 0.4581902 10.59271 11.040938
##      Braf      Brap      Brca1      Brca2      Brcc3      Brd1      Brd2
## 1 11.675244 11.799061 10.157108 8.304754 10.136683 12.087205 14.843295
## 2 11.568362 11.482362 9.451965 8.843674 9.761150 11.733055 14.413487
## 3 10.301192 8.698715 8.616329 7.253260 10.565197 9.514331 11.121539
## 4 9.617909 7.414120 7.407733 4.349619 8.675373 8.297713 8.832353
## 5 11.927136 11.841130 9.810389 9.201860 10.119662 12.091840 14.772351
## 6 10.483839 10.607609 8.966781 7.118746 8.946381 10.895657 13.651376
##      Brd3      Brd4      Brd7      Brd8      Brd9      Brdt      Bre
## 1 11.45509 12.550318 11.517508 11.745198 11.626020 9.468431 10.711819
## 2 11.15891 11.975615 11.368022 11.440087 11.499056 9.122395 10.207371
## 3 12.10615 9.787937 9.506066 11.951892 11.350489 7.104839 10.746792
## 4 9.51118 9.005453 8.045925 9.540153 8.406326 4.669893 10.107164
## 5 11.51765 12.334415 11.726781 11.798851 11.857825 9.480703 10.565980

```

```

## 6 10.26378 11.358650 10.326170 10.553766 10.434635 8.279118 9.520964
##      Brf1      Brf2      Bri3      Bri3bp      Brip1      Brix1      Brms1
## 1 11.757547 8.614862 11.212656 11.798885 6.700000 10.255844 10.731333
## 2 11.813649 8.397135 10.680421 11.376169 6.193851 9.633791 10.499803
## 3 7.186037 8.771729 6.335497 9.800974 7.198845 11.271891 9.929213
## 4 6.087878 6.595817 5.196253 10.252488 1.791227 9.517102 7.971879
## 5 12.172439 8.755070 11.039106 11.734929 6.548376 9.992269 10.858462
## 6 10.566110 7.427700 10.021470 10.607432 5.526108 9.065408 9.540462
##      Brms1l      Brpf1      Brpf3      Brs3      Brsk1      Brsk2      Brwd1
## 1 10.869059 11.331972 10.684738 2.795072e+00 12.196672 11.879857 11.971566
## 2 10.565447 11.194711 10.519542 2.454110e-01 12.332319 11.580089 11.723317
## 3 9.503645 8.091708 6.095924 4.722110e-08 5.320405 9.538192 9.907439
## 4 7.321370 7.041858 4.508454 1.783488e-08 4.558337 7.619741 7.941427
## 5 10.924116 11.553455 10.878204 3.077495e-01 12.691136 11.938864 12.082102
## 6 9.678087 10.140722 9.493904 1.851607e+00 11.005091 10.688375 10.780054
##      Brwd3      Bsc12      Bsdcl      Bsg      Bsn      Bspry      Bst1
## 1 9.728443 12.01413 12.106598 17.56223 11.550908 7.425439 4.547509e+00
## 2 9.497351 11.44115 12.032789 16.32930 11.559397 6.917476 2.472099e+00
## 3 7.018692 11.33370 10.225083 11.83898 7.999974 5.156207 1.252291e-07
## 4 4.059169 10.76377 8.433994 13.21614 8.674992 4.230339 3.871861e+00
## 5 9.855790 11.79992 12.391592 16.68817 11.918171 7.273720 2.772476e+00
## 6 8.538690 10.82260 10.915043 16.37025 10.359555 6.244427 3.434159e+00
##      Bst2      Btaf1      Btbd1      Btbd10      Btbd11      Btbd16      Btbd17
## 1 9.945983 11.718471 11.812543 10.671177 9.252029 9.009528 11.548191
## 2 8.754829 11.540295 11.432981 10.419832 8.673007 7.748090 10.393305
## 3 8.193842 8.505727 8.710091 8.535907 3.326987 7.222733 7.582927
## 4 7.933342 6.823532 7.935366 7.857205 5.449918 4.472865 8.021190
## 5 9.112971 11.899067 11.791744 10.778478 9.031106 8.105488 10.751947
## 6 8.755918 10.527049 10.621085 9.480354 8.063147 7.821214 10.356839
##      Btbd19      Btbd2      Btbd3      Btbd6      Btbd7      Btbd8      Btbd9
## 1 8.719651 11.131847 11.631427 10.541951 10.648496 7.080538 11.634889
## 2 7.942577 10.947944 11.298644 9.739924 10.319230 5.756462 11.218182
## 3 5.261967 8.512615 9.538773 6.128848 6.978287 3.870297 9.771222
## 4 5.776648 7.732869 11.221889 8.501227 4.661258 2.350336 10.535769
## 5 8.300161 11.306662 11.657396 10.098430 10.677860 6.109442 11.576927
## 6 7.532152 9.940706 10.440040 9.351237 9.457692 5.902472 10.443501
##      Btc      Btd      Btf3      Btf3l4      Btg1      Btg2      Btk
## 1 3.694501 11.305021 11.552130 9.611327 14.23955 14.71372 9.055075
## 2 3.356303 10.742124 10.835736 9.146893 13.54375 14.05961 9.365616
## 3 3.484311 11.039235 11.446252 8.425884 12.61031 13.22128 3.773575
## 4 2.930727 9.869065 9.698329 6.788008 11.67382 11.80781 5.506431
## 5 3.683774 11.100817 11.194441 9.505211 13.90260 14.41847 9.724012
## 6 2.641377 10.113786 10.360777 8.421762 13.04767 13.52181 7.866647
##      Btla      Btn1a1      Btn2a2      Btn12      Btn19      Btrc
## 1 3.545732 1.692131e+00 3.216718e+00 3.039044 2.385642e+00 10.460430
## 2 3.604891 1.578826e+00 2.886411e+00 3.178557 1.882344e+00 10.624050
## 3 1.408776 1.768123e+00 6.371523e-01 1.304862 5.984744e-08 10.050215
## 4 2.325742 9.015318e-08 6.984986e-08 1.280126 3.024027e-08 9.407655
## 5 3.937378 1.827122e+00 3.201610e+00 3.501860 2.152270e+00 10.982728
## 6 2.506867 9.874307e-01 2.214442e+00 2.059776 1.514760e+00 9.269790
##      Bub1      Bub1b      Bub3      Bud13      Bud31      Bves      Bys1
## 1 8.397068 9.034410 11.90127 9.123064 11.368156 5.4398989 10.406868
## 2 8.274038 8.050448 11.66000 8.473266 10.856219 5.2485429 10.099464
## 3 8.753992 10.260268 12.52247 8.640221 10.816883 0.3588608 8.987997

```

```

## 4 3.208850 7.526020 9.92898 6.853640 9.292086 0.3441344 8.383256
## 5 8.631889 8.408126 12.01878 8.831249 11.214926 5.5990265 10.458053
## 6 7.210690 7.846033 10.70978 7.934472 10.176889 4.2908463 9.216279
##      Bzrap1      Bzw1      Bzw2 C030039L03Rik C030046E11Rik C130026I21Rik
## 1 12.614795 13.48300 11.581707      7.645903      11.777420 2.565458e+00
## 2 12.653698 12.92338 11.406118      7.507469      11.923844 1.240705e+00
## 3 7.634119 12.21918 12.442422      8.342739      6.031286 6.034466e-08
## 4 4.719402 10.58819 8.348572      4.319429      5.699468 3.023906e-08
## 5 13.012528 13.28222 11.764880      7.864598      12.282641 1.458350e+00
## 6 11.423114 12.29118 10.390341      6.463341      10.585976 1.660629e+00
##      C130060K24Rik C130074G19Rik      C1d C1galt1 C1galt1c1      C1qa
## 1 5.060004e+00      12.431274 10.819319 9.701387 10.332486 16.253593
## 2 3.096479e+00      11.678877 10.208636 9.558611 9.611346 15.705543
## 3 7.639785e-08      5.600376 12.182008 4.644113 10.330109 9.024278
## 4 2.516334e+00      5.799267 11.210162 3.908738 10.693096 12.030890
## 5 3.417673e+00      12.037659 10.567246 9.917067 9.969818 16.064416
## 6 3.923621e+00      11.239633 9.628383 8.511676 9.141970 15.061633
##      C1qb      C1qbp      C1qc      C1ql1      C1ql2      C1ql3 C1qtnf1
## 1 15.10651 11.946580 14.957893 11.853501 8.096780 10.184449 8.650513
## 2 14.82606 11.413152 14.498914 12.283040 8.291171 9.343381 8.255636
## 3 11.10188 7.666993 8.986538 3.732494 2.711193 5.544588 8.219357
## 4 14.06162 6.025082 12.148781 6.479551 8.402389 8.629193 5.129992
## 5 15.18492 11.771915 14.857779 12.641855 8.649034 9.701769 8.613474
## 6 13.91458 10.755076 13.765969 10.662029 6.911696 8.994092 7.463234
##      C1qtnf2 C1qtnf3 C1qtnf4 C1qtnf6 C1qtnf7      C1qtnf9 C1ra
## 1 5.6818695 1.7392428 10.347969 10.980434 2.332321 5.336866e+00 6.051611
## 2 5.6140691 1.5411148 9.236283 10.250197 1.855782 4.305092e+00 5.377191
## 3 6.7294230 2.1465838 3.292576 8.680346 6.333364 6.674888e-08 5.667424
## 4 0.3314368 0.4783102 5.566249 7.150563 2.903547 3.474262e-08 1.901834
## 5 5.9664358 1.7863662 9.594634 10.608814 2.124003 4.647783e+00 5.728393
## 6 4.5262768 1.0212970 9.157437 9.789388 1.472169 4.190938e+00 4.887877
##      C1rb      C1rl      C2 C230052I12Rik      C2cd2      C2cd2l
## 1 2.303846e+00 6.247751 7.925807      8.247225 11.109535 11.669773
## 2 2.029748e+00 7.255824 7.649372      7.940814 10.427252 11.193184
## 3 5.661898e-01 2.135935 6.714042      8.884453 7.634822 6.980189
## 4 9.458959e-08 1.833315 3.130402      6.842827 6.509779 9.413512
## 5 2.308553e+00 7.612619 8.006665      8.298397 10.785900 11.551927
## 6 1.449554e+00 5.080459 6.741589      7.061459 9.918408 10.478370
##      C2cd3      C2cd4b C2cd4c      C2cd4d      C3 C330007P06Rik
## 1 10.788218 6.470233e+00 7.528731 3.614261e+00 7.1063960      10.942976
## 2 10.518190 6.093319e+00 7.970706 3.538651e+00 7.3763202      9.996720
## 3 8.982748 7.059022e-08 4.403612 1.168072e-07 2.2207887      9.916210
## 4 7.452269 3.448170e-08 4.366798 2.251959e+00 0.3045536      9.285026
## 5 10.876852 6.447529e+00 8.328315 3.869886e+00 7.7332824      10.355288
## 6 9.597305 5.299439e+00 6.346963 2.568664e+00 5.9280848      9.751954
##      C330018D20Rik C330027C09Rik      C3ar1      C4b C530008M17Rik      C5ar1
## 1 8.906004      8.709589 12.466224 9.428049      11.290527 11.596706
## 2 8.014456      8.873317 11.806379 8.976366      11.017234 10.846186
## 3 9.766864      8.857174 7.976954 9.256888      9.680648 9.050853
## 4 8.908497      6.067475 9.188624 8.398039      4.524022 9.328892
## 5 8.372103      9.231517 12.165169 9.334613      11.375960 11.204892
## 6 7.717962      7.522121 11.274575 8.238811      10.099299 10.405333
##      C6      C77080 C77370 C78339 C87436      C8b      C8g
## 1 3.190071e-01 10.088119 9.716397 9.787935 9.129254 3.088737e+00 5.895714

```

```

## 2 1.018954e+00 9.768890 9.617891 9.339913 8.985671 1.599723e+00 4.906455
## 3 1.104273e+00 5.653448 6.145859 4.517646 10.337301 3.314279e-08 6.560653
## 4 1.050126e-07 6.314522 7.882773 4.278963 7.562830 1.655372e-08 1.160381
## 5 1.211755e+00 10.127404 9.976365 9.698301 9.343922 1.849670e+00 5.254684
## 6 1.499016e-01 8.897874 8.526662 8.598092 7.940647 2.102786e+00 4.735166
##      Cab39      Cab39l      Cabin1      Cables1      Cables2      Cabp1      Cabp4
## 1 13.058644 10.025157 12.054919 11.587627 10.613915 8.274380 4.039557e+00
## 2 12.239235 9.443168 11.728531 11.577536 9.492861 9.006845 4.086635e+00
## 3 9.948835 10.549838 8.820521 9.986978 6.894114 2.292745 7.713720e-01
## 4 9.638168 10.172642 7.557233 6.915920 6.096332 2.783629 5.222810e-08
## 5 12.598048 9.801590 12.087316 11.936311 9.851299 9.365105 4.426663e+00
## 6 11.866883 8.834989 10.863380 10.396259 9.423139 7.088498 2.958065e+00
##      Cabp7      Cabyr      Cachd1      Cacna1a      Cacna1b      Cacna1c      Cacna1d
## 1 5.146569e+00 7.219435 11.076303 11.663035 10.046019 10.274055 10.663986
## 2 5.977599e+00 7.226458 10.780809 11.005156 10.619793 10.351163 10.726348
## 3 8.236907e-08 4.484094 9.392486 7.308429 4.010007 5.712663 6.801345
## 4 2.566727e+00 1.516352 5.966290 6.794489 5.641146 6.480189 6.034445
## 5 6.331418e+00 7.583210 11.139507 11.363880 10.978470 10.709798 11.085039
## 6 4.007009e+00 6.040098 9.885196 10.471635 8.855825 9.083599 9.473169
##      Cacna1e      Cacna1f      Cacna1g      Cacna1h      Cacna1i      Cacna1s      Cacna2d1
## 1 10.873702 4.6775145 10.483319 10.664892 8.453863 5.563542e+00 12.373515
## 2 10.597755 3.6179917 10.852976 10.309585 8.676817 6.521829e+00 12.087031
## 3 5.421480 1.2998307 5.000297 5.070657 2.422569 3.658838e-01 8.976594
## 4 9.393113 0.3449628 5.217395 7.099803 4.175902 9.645746e-08 10.082680
## 5 10.956429 3.9507197 11.211683 10.668213 9.034918 6.877240e+00 12.445837
## 6 9.682727 3.5575663 9.292657 9.474075 7.267269 4.411014e+00 11.181888
##      Cacna2d2      Cacna2d3      Cacna2d4      Cacnb1      Cacnb2      Cacnb3      Cacnb4
## 1 12.019324 10.252275 8.048439 10.177724 7.959734 11.641952 11.154238
## 2 11.992702 10.011807 9.119312 9.920996 7.558778 12.020532 10.778189
## 3 2.145321 6.349597 4.305439 3.399869 5.166403 6.812049 8.984366
## 4 7.589417 7.408666 3.394312 1.884220 5.064330 6.033774 8.481200
## 5 12.351503 10.370378 9.477619 10.279547 7.915968 12.379334 11.136886
## 6 10.827796 9.061843 6.863590 8.987374 6.775335 10.450561 9.963085
##      Cacng1      Cacng2      Cacng3      Cacng4      Cacng5      Cacng6      Cacng7
## 1 4.217254e+00 7.965609 7.364781 11.696571 10.472680 1.5680423 11.973228
## 2 4.224816e+00 7.828818 7.562569 11.102208 10.454174 2.0763884 11.598012
## 3 4.796402e-08 4.408345 4.977748 5.352683 10.829062 1.6506464 3.884345
## 4 2.207637e-08 5.623644 9.438635 6.953028 6.316737 1.0536330 1.710989
## 5 4.566575e+00 8.186297 7.919763 11.460942 10.812826 2.3578090 11.956788
## 6 3.123411e+00 6.781179 6.184237 10.505157 9.282029 0.8997143 10.781716
##      Cacng8      Cacybp      Cad      Cadm1      Cadm2      Cadm3      Cadm4
## 1 8.066236 11.71957 11.082660 12.55823 13.12121 12.991827 15.201804
## 2 7.325300 10.86192 11.129676 12.10850 12.74659 12.517377 14.530082
## 3 2.961546 10.80997 8.660963 11.00777 10.11254 9.780219 7.947611
## 4 2.918312 10.03365 6.320600 11.72942 11.86277 9.093279 6.256752
## 5 7.682193 11.22062 11.488413 12.46730 13.10542 12.876201 14.888948
## 6 6.881299 10.52814 9.891549 11.36656 11.92944 11.800076 14.009871
##      Cadps      Cadps2      Cage1      Calb1      Calb2      Calca      Calcb
## 1 11.287691 9.513949 6.401999 7.744958 11.062000 4.729836e+00 2.290413e+00
## 2 11.485338 8.938654 5.736886 8.145575 10.227837 4.781091e+00 8.868671e-01
## 3 9.224498 7.227579 4.058469 5.256004 13.301680 1.715797e+00 5.449063e-08
## 4 8.341824 4.351782 2.664975 8.344732 9.950216 9.388068e-08 2.741384e-01
## 5 11.844106 9.296884 6.089786 8.503330 10.586450 5.128350e+00 1.062709e+00
## 6 10.096465 8.324553 5.232224 6.561773 9.870901 3.607387e+00 1.438917e+00

```

```

##      Calcoco1      Calcr      Calcr1      Cald1      Calhm2      Calm1      Calm2
## 1 11.901134 3.572262e+00 11.127830 11.119272 7.918874 15.36020 13.80120
## 2 11.434605 2.106256e+00 10.186176 10.923728 6.972925 14.80336 13.20057
## 3 11.399589 4.753625e-08 12.158316 11.529712 5.468179 15.84259 14.41234
## 4 9.534438 2.411356e-08 11.869149 8.761975 7.557746 15.21971 14.13289
## 5 11.793369 2.389306e+00 10.544782 11.282443 7.329268 15.16222 13.55942
## 6 10.709645 2.530757e+00 9.936692 9.928139 6.734693 14.16827 12.60935
##      Calm3      Calm4      Calm13      Calm14      Caln1      Calr      Calr3
## 1 15.07177 3.811410e-07 1.6855539 3.709424 7.113990 15.62848 6.491496
## 2 14.38068 1.592218e-07 1.2148517 2.775878 7.988958 15.17349 6.274849
## 3 12.66552 8.880478e+00 4.2891646 6.999180 4.534363 12.98120 7.492106
## 4 12.11713 8.671155e+00 5.2896761 8.308907 6.829380 12.88874 6.791650
## 5 14.73955 2.041756e-07 1.4298129 3.087542 8.346584 15.53236 6.629612
## 6 13.87984 1.688251e-07 0.9827268 2.654941 5.935608 14.43653 5.320395
##      Calu      Caly      Camk1      Camk1d      Camk1g      Camk2a      Camk2b
## 1 13.87245 10.052029 13.641488 10.321489 8.236513 12.667691 11.77608
## 2 13.70107 9.703614 12.725813 9.946432 8.601376 13.476524 11.72041
## 3 12.70250 8.186432 7.404117 8.213752 4.313767 8.707961 9.55309
## 4 10.31959 12.703616 7.197175 7.961447 2.125809 11.698905 11.12756
## 5 14.05993 10.062111 13.084645 10.304988 8.959435 13.835375 12.07919
## 6 12.68059 8.861828 12.449653 9.130985 7.050793 11.475998 10.58463
##      Camk2g      Camk2n1      Camk2n2      Camk4      Camkk1      Camkk2      Camkv
## 1 12.538283 13.016830 10.084961 10.420715 9.974543 11.251747 10.807898
## 2 12.412654 12.880873 9.823527 9.657814 9.965311 10.315982 11.059422
## 3 9.433373 8.924929 6.110745 7.352270 7.350243 5.258170 6.155396
## 4 9.150158 10.425652 5.597868 6.980907 8.377398 7.231637 8.876017
## 5 12.771475 13.239710 10.182055 10.016299 10.323872 10.674611 11.418151
## 6 11.346618 11.825075 8.894719 9.230112 8.784440 10.060540 9.616970
##      Caml      Camp      Camsap1      Camsap2      Camsap3      Camta1      Camta2
## 1 10.950630 6.246175e+00 11.87838 13.089112 9.917820 11.31600 12.118616
## 2 10.224803 5.728056e+00 11.67862 12.796622 9.584037 11.16650 12.293636
## 3 10.459292 5.616431e-08 10.22839 9.907336 6.199074 10.56007 8.026977
## 4 9.529984 2.803655e-08 7.91737 8.866704 4.058280 10.09103 8.705953
## 5 10.583416 6.080919e+00 12.03740 13.155456 9.942501 11.52524 12.652452
## 6 9.759603 5.078910e+00 10.68690 11.897345 8.727792 10.12476 10.927058
##      Cand1      Cand2      Cant1      Canx      Cap1      Cap2      Capg
## 1 12.409987 9.098968 12.058871 14.86956 14.35097 9.047462 11.064299
## 2 12.147028 8.986360 11.695310 14.12822 13.92409 9.144153 9.789830
## 3 10.685285 8.724672 9.291490 14.90119 12.55437 9.668576 8.597242
## 4 9.101486 6.934150 8.086772 14.49733 12.43073 10.051224 6.341267
## 5 12.505837 9.344611 12.054093 14.48708 14.28295 9.502470 10.148349
## 6 11.218351 7.910433 10.867331 13.67764 13.15908 7.859052 9.873199
##      Capn1      Capn10      Capn11      Capn12      Capn2      Capn3      Capn5
## 1 9.223823 10.954617 5.265813 4.818229 12.666132 11.479473 12.713084
## 2 8.614367 10.430480 5.036832 4.222122 12.433544 11.815453 12.920946
## 3 7.938320 8.041406 3.708824 1.288864 9.400981 3.973833 8.828043
## 4 4.933489 4.382471 3.269554 2.348093 8.819452 8.814728 8.631699
## 5 8.972434 10.789128 5.385985 4.563850 12.792365 12.174244 13.279784
## 6 8.035002 9.763587 4.122169 3.691746 11.474440 10.288153 11.521382
##      Capn6      Capn7      Capn9      Capns1      Capns2      Caprin1      Caprin2
## 1 7.604688 11.073928 2.332260 14.05147 3.993684 13.675120 8.600644
## 2 7.095066 10.993559 2.036835 13.44857 3.006989 13.413404 8.266967
## 3 3.944497 8.558254 7.616599 11.31245 2.930896 11.096347 6.251569
## 4 4.990835 7.292871 1.192637 10.09640 3.950852 9.203411 1.221779

```

```

## 5 7.451615 11.352281 2.316043 13.80742 3.325739 13.772253 8.624813
## 6 6.422398 9.882823 1.472121 12.85959 2.915615 12.483281 7.413530
##      Caps2      Caps1      Capza1      Capza2      Capzb      Car10      Car11
## 1 4.4645370 3.413166 9.913844 13.20945 13.79438 10.010265 10.569756
## 2 4.8349068 3.763352 9.674612 12.59121 13.27693 10.044620 10.240471
## 3 3.8812683 6.772283 8.875892 13.12088 11.84587 5.259023 6.870881
## 4 0.2921291 6.010397 7.439956 12.88272 11.20932 8.244360 8.407490
## 5 5.1825922 4.098606 10.033102 12.95003 13.63577 10.403197 10.599087
## 6 3.3557013 2.388164 8.723822 12.01766 12.60253 8.820116 9.379018
##      Car12      Car13      Car14      Car2      Car3      Car4      Car5a
## 1 5.063069 6.783626 11.010054 14.39938 3.628960e+00 13.61903 5.631091
## 2 5.084375 5.776749 9.920399 13.52704 4.481182e+00 12.67082 4.497199
## 3 4.799320 5.460703 10.012581 15.32625 2.714781e+00 10.15598 2.495092
## 4 9.090396 3.169763 9.199700 14.47173 8.418719e-08 10.92683 2.470725
## 5 5.433843 6.129812 10.278950 13.88589 4.825742e+00 13.02965 4.841918
## 6 3.926569 5.608721 9.818988 13.20748 2.581955e+00 12.42719 4.476784
##      Car5b      Car6      Car7      Car8      Car9      Card10      Card11
## 1 7.306239 3.048553 5.693394 11.273588 3.328323 9.291592 5.7672416
## 2 7.094720 3.254150 6.579274 10.578657 3.698886 8.568000 6.0067988
## 3 7.756428 1.029765 4.008530 4.166770 2.531816 3.767062 0.3276089
## 4 5.548182 1.198355 4.468653 9.297923 4.010665 3.528767 0.3068328
## 5 7.451269 3.579290 6.934821 10.937328 4.033052 8.926040 6.3607201
## 6 6.126167 2.067991 4.537515 10.082369 2.312804 8.102626 4.6095843
##      Card14      Card6      Card9      Carf      Carhsp1      Carkd      Carm1
## 1 3.851281 7.720172 10.279911 7.665985 13.773180 11.72315 10.956924
## 2 3.767895 8.104041 9.592578 8.442537 13.029494 11.13796 10.582713
## 3 1.185149 5.060671 2.633134 4.092536 11.903777 11.54582 7.401325
## 4 2.168855 4.965546 6.112764 3.784838 9.782535 10.34540 5.372283
## 5 4.103225 8.461763 9.951045 8.800501 13.388335 11.49670 10.941384
## 6 2.784498 6.537139 9.089449 6.483293 12.581331 10.53172 9.765892
##      Carns1      Cars      Cars2      Cartpt      Casc1      Casc3      Casc4
## 1 11.037873 11.211512 10.182828 5.4730857 4.492825e+00 12.037760 12.41185
## 2 11.450043 10.756815 9.058162 5.3353107 4.621038e+00 11.850256 11.71991
## 3 7.531059 9.879515 6.411115 0.7519951 4.209083e+00 9.123121 10.40876
## 4 5.540982 9.285376 4.944460 4.3177708 1.205858e-07 7.015456 9.96033
## 5 11.808808 11.115510 9.416444 5.6862856 4.966927e+00 12.209048 12.07869
## 6 9.846789 10.020326 8.992473 4.3230720 3.382422e+00 10.846226 11.22021
##      Casc5      Casd1      Cask      Caskin1      Caskin2      Casp1      Casp12
## 1 7.552130 10.871121 12.57558 12.353846 13.311483 7.154264 7.8068554
## 2 7.050655 11.028276 12.32864 12.620405 12.881461 6.872564 5.6167350
## 3 8.578569 9.456801 11.11622 7.818255 7.379775 5.099991 3.3104797
## 4 4.010891 8.997046 10.60428 6.783743 7.166151 6.664703 0.4410631
## 5 7.407132 11.387003 12.68745 12.979234 13.240297 7.228724 5.9691137
## 6 6.370199 9.680148 11.38391 11.162224 12.119686 5.975509 6.6233019
##      Casp14      Casp2      Casp3      Casp4      Casp6      Casp7      Casp8
## 1 1.1654116 10.595627 11.299160 8.448648 10.456030 10.610840 10.774982
## 2 0.9761073 10.113003 10.945894 8.034542 9.525035 9.599479 9.614985
## 3 4.4508424 11.157348 10.484494 2.525851 9.787134 7.725350 7.346598
## 4 5.7021413 6.139124 7.042676 1.033097 8.653381 8.519677 8.671496
## 5 1.1635975 10.471594 11.304612 8.392207 9.883482 9.957947 9.973458
## 6 0.6306969 9.404866 10.107927 7.262074 9.265393 9.420066 9.584078
##      Casp8ap2      Casp9      Casq1      Casq2      Casr      Cass4      Cast
## 1 9.691717 10.405848 6.193653 7.441969 10.2931346 9.919356 10.530461
## 2 9.875982 10.586281 5.355604 7.112671 9.5457412 9.731840 10.233201

```



```

## 3  9.264090  8.737462  5.627957  8.362395  0.5534253  5.073180  7.046518
## 4  5.876521  5.330944  4.945964  6.017856  0.9368202  3.282645  7.034690
## 5  10.234522  10.944953  5.706690  7.469248  9.9041942  10.090345  10.591815
## 6  8.502021  9.215259  5.027295  6.260831  9.1026593  8.729326  9.339757
##      Casz1      Cat Catsper2      Catsper3 Catsperg1      Catsperg2      Cav1
## 1  8.601113  12.79880  8.319946  2.373806e+00  4.2161891  2.664331e+00  13.00209
## 2  8.301394  12.50315  8.376323  2.767426e+00  4.0277733  2.191437e+00  12.50774
## 3  5.270998  12.63458  6.579886  1.949093e+00  3.0589918  7.676830e-08  10.99582
## 4  5.366929  10.26139  2.529279  6.698574e-08  0.2943417  3.845802e-08  10.68007
## 5  8.659264  12.86198  8.734244  3.078809e+00  4.3670106  2.478941e+00  12.86657
## 6  7.413997  11.60708  7.133875  1.505278e+00  3.1224164  1.742244e+00  11.81033
##      Cav2      Cav3      Cbfa2t2      Cbfa2t3      Cbfb      Cbl      Cblb
## 1  11.297100  1.1669822  10.742520  9.150029  11.838886  11.740814  10.468621
## 2  10.693434  2.1229406  10.527740  9.038173  11.405044  10.611801  10.403889
## 3  12.092275  1.3291597  11.740320  8.432214  9.888480  6.996309  8.664041
## 4  10.707252  6.5658228  9.330985  8.347859  8.216254  5.816524  6.769627
## 5  11.052121  2.4068844  10.886403  9.396447  11.763805  10.970476  10.762533
## 6  10.105868  0.6316980  9.551641  7.961375  10.647419  10.549384  9.277973
##      Cblc      Cbl11      Cbln1      Cbln2      Cbln3      Cbln4      Cbr1
## 1  2.998362  9.326319  7.424656e+00  8.683220  4.992909e+00  6.477811  11.040274
## 2  2.171300  9.342074  7.181399e+00  8.449520  4.633477e+00  6.300569  10.427338
## 3  3.410950  10.071194  2.683863e+00  2.272962  3.882372e+00  3.641265  10.935254
## 4  6.047769  8.182076  7.137696e-08  4.362619  1.177569e-07  2.499167  9.954525
## 5  2.457776  9.700463  7.538083e+00  8.807488  4.979478e+00  6.655405  10.785985
## 6  2.024713  8.137281  6.243649e+00  7.495835  3.859116e+00  5.306907  9.849189
##      Cbr3      Cbr4      Cbs      Cbwd1      Cbx1      Cbx2      Cbx3
## 1  9.671254  8.521381  11.400095  8.780647  10.700898  7.667075  8.130739
## 2  9.168862  7.556671  11.401252  8.151236  9.853856  7.317044  7.313062
## 3  7.151610  9.301387  12.003724  8.558268  10.226756  7.160795  10.339030
## 4  7.279394  8.283694  9.243725  6.641370  7.801307  3.289149  8.603675
## 5  9.527188  7.913858  11.760013  8.508995  10.212391  7.673925  7.669938
## 6  8.481591  7.334541  10.208812  7.592962  9.510051  6.484377  6.945495
##      Cbx4      Cbx5      Cbx6      Cbx7      Cbx8      Cby1      Cc2d1a
## 1  11.941650  13.39796  12.628930  9.002206  9.171565  10.612905  11.024210
## 2  11.306389  12.85376  12.514404  9.164424  9.268690  10.279244  10.549726
## 3  6.788049  13.04580  8.920511  7.036607  7.866591  11.281314  7.236573
## 4  7.403819  11.20447  9.097752  4.843909  4.089246  8.848179  6.687602
## 5  11.665142  13.21259  12.873228  9.522748  9.627053  10.637867  10.908392
## 6  10.750147  12.20616  11.437245  7.813910  7.982861  9.422130  9.833135
##      Cc2d1b      Cc2d2a      Ccar1      Ccbe1      Ccb11      Ccb12      Ccdc101
## 1  11.860961  10.540070  11.709508  8.447849  9.507778  8.273170  9.664072
## 2  11.533176  10.678675  11.708201  8.887655  9.321303  8.112657  9.366566
## 3  8.246182  9.078474  11.578687  2.139243  9.095468  8.521060  10.356482
## 4  6.179174  7.562394  8.379397  1.249267  7.742817  4.939492  8.887621
## 5  11.891948  11.037359  12.066984  9.245862  9.679684  8.470385  9.724963
## 6  10.669486  9.349357  10.518089  7.261278  8.318393  7.087294  8.474421
##      Ccdc102a      Ccdc103      Ccdc104      Ccdc105      Ccdc106      Ccdc107      Ccdc108
## 1  8.5364376  4.339275  11.149124  3.038214e+00  9.290561  10.117145  4.323384
## 2  8.5570694  4.775994  10.938419  1.581160e+00  9.121396  9.618530  4.972572
## 3  4.7532953  6.068397  9.796635  1.074731e+00  8.702366  9.373376  2.808302
## 4  0.9298744  5.967165  8.683822  5.062245e-08  7.255844  8.963140  2.493150
## 5  8.9151031  5.123211  11.297136  1.829642e+00  9.479704  9.977004  5.321279
## 6  7.3495443  3.237734  9.957974  2.059058e+00  8.101598  8.926865  3.222811
##      Ccdc109b      Ccdc11      Ccdc110      Ccdc112      Ccdc113      Ccdc114      Ccdc115

```

```

## 1 5.508493 3.084481 1.179011e+00 7.985233 2.480826 7.993381 10.107822
## 2 5.766404 3.904644 1.813371e+00 7.317710 3.089092 8.744082 9.894956
## 3 3.070092 1.174255 8.219083e-01 7.733900 4.321361 7.309728 8.907614
## 4 4.001050 3.838024 8.183693e-08 6.237695 3.967248 5.164967 7.473792
## 5 6.119425 4.242119 2.078800e+00 7.674592 3.410090 9.102218 10.253500
## 6 4.357477 2.099094 6.393788e-01 6.800702 1.591552 6.808808 8.917553
## Ccdc116 Ccdc117 Ccdc12 Ccdc120 Ccdc121 Ccdc122 Ccdc124
## 1 5.596551 10.894254 10.192411 8.926710 3.901688 7.032301 11.536437
## 2 5.436721 10.556266 9.668362 8.313729 4.068851 7.019217 10.699441
## 3 1.014296 7.563529 8.789744 7.107357 2.680704 4.943540 10.874502
## 4 4.054731 5.936774 8.349435 5.504169 1.873740 2.460344 9.813593
## 5 5.788234 10.914933 10.026850 8.671607 4.408643 7.375640 11.058129
## 6 4.443143 9.703265 9.002045 7.738612 2.830794 5.854707 10.345090
## Ccdc125 Ccdc126 Ccdc127 Ccdc129 Ccdc13 Ccdc130 Ccdc132
## 1 7.4963468 9.734606 11.011060 1.499473e+00 10.128871 9.028491 10.808311
## 2 7.2637006 8.849310 10.410560 1.227365e+00 9.615014 9.205110 10.860059
## 3 3.5350829 8.330288 11.532526 2.401364e+00 8.728204 9.052944 9.560350
## 4 0.7977676 8.680690 10.562021 1.085352e-07 6.983002 5.877101 8.064147
## 5 7.6205071 9.207499 10.769205 1.443632e+00 9.973487 9.563450 11.218766
## 6 6.3148099 8.544843 9.819993 8.521888e-01 8.938577 7.840128 9.617383
## Ccdc134 Ccdc135 Ccdc136 Ccdc137 Ccdc138 Ccdc14 Ccdc141
## 1 10.143126 3.242573 10.330173 10.138267 7.147834 7.587922 12.529266
## 2 10.162626 3.582284 10.561656 10.023016 7.623652 7.338693 12.695338
## 3 8.725602 4.589721 8.710870 8.552625 7.626637 7.945034 7.344293
## 4 6.488924 6.691942 4.570091 5.755266 4.267655 2.216364 6.829677
## 5 10.521227 3.914350 10.920325 10.381589 7.980916 7.695604 13.054169
## 6 8.952816 2.237149 9.139659 8.947962 5.969137 6.405745 11.337603
## Ccdc142 Ccdc146 Ccdc147 Ccdc148 Ccdc149 Ccdc15 Ccdc150
## 1 9.406877 5.001098 2.546740e+00 6.796438 9.598783 6.608564 3.579145e+00
## 2 9.033847 4.837106 2.246491e+00 6.372835 10.141598 5.861819 2.903741e+00
## 3 6.254659 4.616694 7.765702e-08 7.024022 6.267472 6.628149 9.891201e-01
## 4 3.785354 4.529464 3.792897e-08 6.470455 5.051861 2.068692 8.020302e-08
## 5 9.392118 5.184809 2.536730e+00 6.727868 10.500196 6.215216 3.219469e+00
## 6 8.217680 3.866983 1.645289e+00 5.621383 8.409240 5.435847 2.536962e+00
## Ccdc151 Ccdc152 Ccdc153 Ccdc154 Ccdc155 Ccdc157
## 1 5.576392 7.1980067 2.4555382 2.042616e+00 3.789602 10.702656
## 2 6.649360 7.8202857 2.5342241 1.455107e+00 4.134847 10.758768
## 3 5.929408 2.3149681 8.1967705 4.137112e-08 3.854900 7.541202
## 4 2.376702 0.6474072 0.3205335 2.110799e-08 3.017828 4.446621
## 5 7.005065 8.1777558 2.8371137 1.693083e+00 4.475498 11.117463
## 6 4.423520 6.0188583 1.5710564 1.246470e+00 2.728033 9.511808
## Ccdc158 Ccdc159 Ccdc160 Ccdc17 Ccdc18 Ccdc19 Ccdc22
## 1 2.856209e+00 7.904892 4.965374 6.577453 6.530678 4.718714 10.855550
## 2 2.942238e+00 8.324776 6.121024 6.861164 6.458556 4.388775 10.686553
## 3 3.685119e+00 5.875829 3.601884 5.520786 7.584289 5.107237 9.021381
## 4 5.074618e-08 4.492703 2.325359 3.383289 3.861885 3.379009 8.055771
## 5 3.259119e+00 8.682662 6.475323 7.217303 6.813812 4.732383 11.045239
## 6 1.903287e+00 6.720786 3.832678 5.405153 5.359021 3.596789 9.664588
## Ccdc23 Ccdc24 Ccdc25 Ccdc27 Ccdc28a Ccdc28b Ccdc3
## 1 10.472118 6.090015e+00 9.661065 6.402272e+00 7.372302 11.165471 7.006723
## 2 9.754330 5.935052e+00 9.417179 4.383241e+00 7.647004 10.611607 6.785664
## 3 11.069735 5.030582e+00 9.873240 1.293722e-07 7.917765 10.786882 5.892834
## 4 8.777100 1.041533e-07 8.009503 2.790437e-01 6.097983 9.314489 5.496069
## 5 10.112840 6.288720e+00 9.775592 4.726790e+00 8.004294 10.970282 7.141656

```

```
## 6 9.281467 4.925546e+00 8.471418 5.232492e+00 6.191699 9.974312 5.829384
## Ccdc30 Ccdc32 Ccdc33 Ccdc34 Ccdc36 Ccdc37 Ccdc38
## 1 7.030068 9.938129 3.354016 9.708015 5.538037e+00 9.195938 4.651434
## 2 7.016307 9.729143 3.425862 9.348993 5.588793e+00 9.029483 3.891241
## 3 6.907098 10.606655 6.132987 10.183997 3.591111e+00 4.820814 3.668737
## 4 5.272663 8.071147 2.142913 7.860276 6.781913e-08 1.857494 2.796407
## 5 7.372725 10.087647 3.754826 9.707384 5.941044e+00 9.387752 4.228514
## 6 5.852496 8.748074 2.335573 8.518293 4.386203e+00 8.007179 3.532765
## Ccdc39 Ccdc40 Ccdc42 Ccdc42b Ccdc43 Ccdc47 Ccdc50
## 1 8.563821 5.716601 3.249360e+00 2.637057e+00 10.029857 12.28523 12.406824
## 2 7.986436 6.170302 2.296448e+00 3.148380e+00 9.421169 11.98871 12.123521
## 3 7.403476 6.477684 3.907936e-08 1.363034e+00 9.977162 11.57144 10.864739
## 4 4.301302 1.052309 2.024265e-08 7.539842e-08 9.411697 10.48689 8.935172
## 5 8.344059 6.524755 2.589077e+00 3.470922e+00 9.779584 12.34751 12.482329
## 6 7.376832 4.560154 2.243118e+00 1.719635e+00 8.839684 11.09363 11.215189
## Ccdc51 Ccdc53 Ccdc55 Ccdc57 Ccdc58 Ccdc59 Ccdc6
## 1 8.205589 10.089112 9.228853 7.958406 9.097062 10.112664 11.399395
## 2 7.781293 9.279630 8.808999 8.350826 7.906699 9.645901 10.844342
## 3 8.364358 10.076762 10.800683 7.013003 9.340079 10.583568 11.411369
## 4 5.547667 9.549308 9.631730 4.138059 7.875181 9.018936 9.957458
## 5 8.138725 9.637997 9.167168 8.708730 8.264251 10.004383 11.203047
## 6 7.020004 8.898866 8.040021 6.774014 7.908532 8.922389 10.208112
## Ccdc60 Ccdc61 Ccdc62 Ccdc63 Ccdc64 Ccdc64b Ccdc65
## 1 3.103657e+00 9.095260 7.770088 3.324039e+00 9.186189 5.687826 6.102618
## 2 4.235467e+00 8.855754 8.269146 2.958638e+00 8.815228 4.885228 6.263754
## 3 1.041728e+00 5.050966 6.155196 3.280668e+00 4.441686 2.335809 6.785161
## 4 6.117110e-08 4.251968 3.373409 1.202957e-07 4.912024 2.862961 3.045219
## 5 4.577353e+00 9.213946 8.626993 3.276000e+00 9.173400 5.233298 6.618486
## 6 2.115738e+00 7.906734 6.586751 2.309012e+00 7.997452 4.532085 4.937913
## Ccdc66 Ccdc67 Ccdc68 Ccdc69 Ccdc71 Ccdc73 Ccdc74a
## 1 9.450850 3.044722e+00 1.4994252 6.743667 10.188390 7.001689 9.0538820
## 2 9.015903 5.236891e+00 2.7989748 4.685066 9.694471 6.927856 8.7581253
## 3 8.289524 5.440830e+00 0.3311985 4.613296 8.141933 5.910999 6.4818620
## 4 6.365463 3.844210e-08 4.1192269 4.055746 7.546073 4.770228 0.8233514
## 5 9.374167 5.587306e+00 3.1114010 5.031522 10.052966 7.284119 9.1162690
## 6 8.261570 2.064680e+00 0.8521556 5.569239 8.998028 5.824401 7.8654565
## Ccdc77 Ccdc78 Ccdc79 Ccdc8 Ccdc80 Ccdc81 Ccdc83
## 1 9.020856 6.758081 4.3395851 8.722505 11.351545 3.389296e+00 1.478547e+00
## 2 8.430464 6.650400 2.7073324 8.370647 10.810273 4.081373e+00 1.268571e+00
## 3 8.228276 4.961504 0.7582226 3.450104 10.669620 3.376631e+00 7.309717e-01
## 4 5.619844 2.480025 3.7878772 2.725120 8.327078 9.500254e-08 1.280417e-07
## 5 8.788420 7.006108 3.0166604 8.728564 11.168975 4.421331e+00 1.489049e+00
## 6 7.832512 5.583479 3.2380251 7.534996 10.160286 2.366913e+00 8.378213e-01
## Ccdc84 Ccdc85a Ccdc85b Ccdc85c Ccdc86 Ccdc87 Ccdc88a
## 1 8.813168 10.402825 11.654117 8.772401 10.450528 3.916005e+00 12.51353
## 2 8.630253 10.381082 11.475472 8.623631 10.509639 3.723576e+00 12.32243
## 3 5.547525 6.806178 5.478066 1.774930 8.570530 2.590993e+00 11.23395
## 4 2.550094 7.702517 5.239751 1.051861 7.156375 5.435739e-08 10.10244
## 5 8.988329 10.739722 11.834240 8.981703 10.868300 4.058165e+00 12.68125
## 6 7.625387 9.212239 10.462721 7.584741 9.259896 2.843967e+00 11.32187
## Ccdc88b Ccdc88c Ccdc89 Ccdc9 Ccdc90b Ccdc91 Ccdc92
## 1 11.597029 10.899183 6.217468 11.376527 10.037904 10.445687 10.196231
## 2 11.819011 10.781297 5.861052 11.414624 9.739798 10.387726 9.950109
## 3 1.899095 7.571252 4.604563 6.454486 10.934369 8.947812 7.051819
```

```

## 4 3.727186 2.983339 3.442009 5.083670 7.978486 6.646224 6.361092
## 5 12.177802 11.139995 6.214445 11.773387 10.098305 10.746367 10.308666
## 6 10.405656 9.708190 5.050694 10.185255 8.847721 9.255061 9.005860
##      Ccdc93 Ccdc94 Ccdc96 Ccdc97 Cchcr1 Ccin Cck
## 1 11.176424 9.067251 6.077867 11.815648 8.706162 3.487559e+00 9.085323
## 2 10.694942 8.809922 5.489320 11.648518 8.475554 3.070228e+00 9.650234
## 3 8.879802 6.113704 4.474405 9.834004 5.736986 5.775307e-08 3.308705
## 4 7.339910 1.515397 0.354805 7.790106 3.321928 2.857237e-08 8.096333
## 5 11.053629 9.168092 5.841097 12.007298 8.833539 3.390721e+00 10.008717
## 6 9.985258 7.878793 4.913628 10.624190 7.518705 2.454639e+00 7.896820
##      Cckbr Ccl1 Ccl11 Ccl12 Ccl17 Ccl2 Ccl20
## 1 6.300176 1.4777919 1.796436e+00 9.803910 4.269212 11.733235 3.049844e+00
## 2 5.921080 0.2330170 2.070766e+00 8.873841 4.485571 10.561216 2.530793e+00
## 3 4.939665 2.2786280 3.146868e+00 8.481784 2.964564 9.989756 3.871815e-08
## 4 1.983943 1.1917539 8.152264e-08 8.248988 1.370097 8.808117 1.948486e-08
## 5 6.274697 0.2925143 2.351876e+00 9.232042 4.830174 10.919884 2.833547e+00
## 6 5.132010 0.8373038 1.062819e+00 8.614043 3.172017 10.541808 2.069106e+00
##      Ccl22 Ccl24 Ccl25 Ccl27a Ccl3 Ccl4 Ccl5
## 1 8.3610652 8.916529 6.544157 9.979912 14.812814 14.784028 7.155951
## 2 8.1393828 8.104433 6.853984 9.454713 14.289505 14.315349 5.588026
## 3 2.7426099 7.288682 7.175435 8.294498 7.561818 7.386163 7.044233
## 4 0.3599457 4.828068 5.619778 7.376204 7.314371 10.301765 7.963752
## 5 8.4971326 8.462155 7.210109 9.813138 14.648368 14.674212 5.940274
## 6 7.1748284 7.728458 5.372313 8.789802 13.620896 13.592111 5.977180
##      Ccl6 Ccl7 Ccl8 Ccl9 Ccm2 Ccna1 Ccna2
## 1 10.413495 10.470467 4.476560 13.130709 11.211551 3.6152944 9.015259
## 2 9.980221 9.494795 3.445111 12.138191 10.611061 4.4300332 8.723683
## 3 5.920766 9.977089 4.517228 5.149054 8.590362 5.0751237 8.495309
## 4 9.391582 6.279637 5.628815 9.023751 7.691726 0.4052165 4.389493
## 5 10.338784 9.853233 3.774476 12.497000 10.969736 4.7740740 9.081809
## 6 9.222899 9.279817 3.367055 11.938936 10.020365 2.5695978 7.826930
##      Ccnb1 Ccnb1ip1 Ccnb2 Ccnc Ccnd1 Ccnd2 Ccnd3
## 1 7.228552 7.240178e-01 8.339799 10.478184 13.159983 12.16832 11.558023
## 2 6.833626 9.464621e-01 8.075238 9.494152 12.604850 11.93989 11.117473
## 3 10.250477 2.749031e+00 9.054542 10.753205 8.680792 14.52567 7.393033
## 4 4.645181 1.010785e-07 4.592390 9.609705 9.012022 10.82413 7.201961
## 5 7.189712 1.130172e+00 8.432936 9.852590 12.963677 12.29869 11.476209
## 6 6.049136 3.650885e-01 7.153647 9.287527 11.968206 10.97675 10.366667
##      Ccndbp1 Ccne1 Ccne2 Ccnf Ccng1 Ccng2 Ccnh
## 1 11.88544 8.105467 6.233002 8.159582 11.501816 12.654571 10.305232
## 2 10.99554 7.805546 6.689084 7.930220 10.544348 12.090713 9.854939
## 3 11.27572 7.693135 7.123980 9.201369 9.027000 9.688681 11.535558
## 4 11.08886 5.287925 2.864509 4.116836 9.098811 8.334430 10.274698
## 5 11.35426 8.163002 7.044875 8.287794 10.903014 12.449519 10.213474
## 6 10.69396 6.920341 5.065961 6.974204 10.310485 11.462881 9.114744
##      Ccni Ccnj Ccnjl Ccnk Ccnl1 Ccnl2 Ccno
## 1 13.916223 9.089601 9.218915 10.945619 13.045873 12.869963 6.5399622
## 2 13.548316 8.971296 8.521759 10.835013 13.035877 12.206085 7.1522763
## 3 11.757104 8.568868 6.682342 7.681693 9.242735 8.978116 0.6129184
## 4 9.695417 6.255133 7.068140 6.850005 5.449480 6.914204 1.3698692
## 5 13.907168 9.329540 8.879772 11.193717 13.394718 12.564896 7.5089162
## 6 12.724361 7.901089 8.030105 9.754595 11.854113 11.678232 5.3681764
##      Ccnt1 Ccnt2 Ccny Ccnyl1 Ccpg1 Ccr1 Ccr10
## 1 9.654093 11.772136 12.814789 11.027988 12.01059 11.196586 3.841414e+00

```

```

## 2 9.732391 11.381063 12.303860 10.325800 11.73989 10.372688 4.306459e+00
## 3 10.593340 9.491610 8.464329 5.525169 10.99406 7.640855 1.802995e+00
## 4 8.507112 8.201875 8.276384 4.468322 10.07533 9.955514 6.569525e-08
## 5 10.090896 11.739823 12.662676 10.684431 12.09868 10.731326 4.649165e+00
## 6 8.464458 10.580694 11.623068 9.836911 10.81907 10.005408 2.775452e+00
##      Ccr111      Ccr2      Ccr3      Ccr5      Ccr6      Ccr7
## 1 4.940057e+00 5.087768 4.751411e+00 11.983924 9.4296730 10.248134
## 2 3.654853e+00 4.001448 3.996692e+00 11.356459 10.1878467 10.111547
## 3 4.866513e-08 4.591182 3.070282e-01 5.010108 3.0446639 3.315136
## 4 2.537762e-08 8.027214 7.049467e-08 10.784979 0.7328641 7.143951
## 5 3.988246e+00 4.340321 4.335499e+00 11.715217 10.5464527 10.470138
## 6 3.808387e+00 3.950346 3.627956e+00 10.792407 8.2404323 9.057707
##      Ccr9      Ccr12      Ccrn41      Ccs      Cct2      Cct3      Cct4
## 1 2.8894385 14.823852 10.816771 11.012611 13.71579 13.43406 13.02784
## 2 2.7450674 14.370488 10.328260 10.167239 13.03921 12.85314 12.20044
## 3 4.0395493 7.444742 7.898944 10.770507 12.77688 13.12949 12.29000
## 4 0.6684207 9.505469 7.810760 10.056606 10.95465 11.38181 11.08899
## 5 3.0556958 14.729352 10.686891 10.525841 13.39805 13.21198 12.55926
## 6 1.9315158 13.631934 9.625837 9.821543 12.52394 12.24225 11.83608
##      Cct5      Cct6a      Cct6b      Cct7      Cct8      Ccz1      Cd101
## 1 13.72654 13.07315 3.659420e+00 13.71438 12.81839 11.339691 5.3569880
## 2 13.27958 12.47361 3.711192e+00 13.09131 12.34190 10.901856 5.7299020
## 3 13.99162 12.73072 4.496849e+00 13.68104 12.93270 8.504251 0.3370421
## 4 12.22138 11.15388 1.077268e-07 12.51812 11.50380 6.079691 0.2971631
## 5 13.63843 12.83243 4.045569e+00 13.45016 12.70072 11.260568 6.0827721
## 6 12.53470 11.88139 2.609540e+00 12.52254 11.62667 10.148438 4.2104325
##      Cd109      Cd14      Cd151      Cd160      Cd163      Cd164      Cd16412
## 1 7.517477 13.812781 13.04070 4.203882 9.300501 13.39143 4.6365027
## 2 7.070676 13.062862 12.07998 3.755538 9.034128 12.89144 3.6832073
## 3 4.959153 8.827182 10.58642 3.056866 7.799367 12.81647 0.7716571
## 4 4.842694 11.425185 10.89066 2.748258 5.349597 11.89489 2.8780884
## 5 7.427186 13.421704 12.43878 4.090663 9.392400 13.25028 4.0171008
## 6 6.335789 12.620929 11.84894 3.110920 8.111517 12.19963 3.5185755
##      Cd180      Cd19      Cd1d1      Cd1d2      Cd2      Cd200      Cd200r1
## 1 11.399036 4.998856e+00 8.359480 1.692301e+00 4.389667 12.14429 5.021985
## 2 10.801862 4.891493e+00 8.152234 1.231895e+00 4.021197 11.71284 4.803183
## 3 2.273013 8.051213e-08 9.897074 5.811113e-01 6.110582 11.20643 5.387452
## 4 4.695809 3.737296e-08 5.387128 4.953966e-08 1.885326 11.10256 2.669409
## 5 11.160563 5.239611e+00 8.509994 1.448630e+00 4.360344 12.07162 5.150618
## 6 10.207753 3.864829e+00 7.173249 9.875520e-01 3.285120 10.95273 3.887056
##      Cd200r2      Cd200r3      Cd209b      Cd209d      Cd209e      Cd22
## 1 3.232456e-01 7.863894e-01 7.240606 4.4081384 2.665092e-08 6.649743
## 2 4.823032e-01 7.438573e-01 6.765786 3.5195095 1.276984e-08 6.711410
## 3 2.188370e+00 2.415578e+00 7.809484 4.2774012 4.071850e+00 4.166049
## 4 3.196106e-08 8.868120e-08 4.736293 0.6201956 5.452248e-01 3.285293
## 5 5.936176e-01 8.992370e-01 7.121738 3.8503724 1.637521e-08 7.067249
## 6 1.520095e-01 4.006818e-01 6.061086 3.3025136 1.180493e-08 5.476488
##      Cd226      Cd244      Cd247      Cd248      Cd24a      Cd27
## 1 2.422664e+00 4.1079877 4.398917e+00 8.832443 11.614415 4.935589e+00
## 2 2.931825e+00 2.8221836 4.606601e+00 8.372869 10.539501 4.420451e+00
## 3 1.357813e+00 3.3034388 2.092939e+00 7.711401 12.518185 2.022534e+00
## 4 6.657294e-08 0.3859507 8.048584e-08 7.220658 9.276356 8.780999e-08
## 5 3.248397e+00 3.1353627 4.952359e+00 8.730788 10.898166 4.764393e+00
## 6 1.544513e+00 3.0215723 3.293828e+00 7.644607 10.423036 3.804102e+00

```

```

##      Cd274      Cd276      Cd28      Cd2ap      Cd2bp2      Cd300a      Cd300e
## 1 11.155300 10.977407 3.7276927 11.506352 11.893356 12.356221 4.509015e+00
## 2 10.827482 10.748528 3.4124223 11.100898 11.740899 11.255058 3.123962e+00
## 3 6.631369 7.690152 1.2613116 8.375379 10.216213 7.374145 1.659867e+00
## 4 8.144311 6.740017 0.7720088 7.926593 8.379589 9.151532 5.895366e-08
## 5 11.186186 11.107222 3.7411042 11.459632 12.099685 11.613806 3.445876e+00
## 6 9.964146 9.786362 2.6715636 10.315019 10.701870 11.164598 3.397729e+00
##      Cd300lb      Cd300ld      Cd300lf      Cd300lg      Cd302      Cd320      Cd34
## 1 7.2346385 5.4278685 1.050665e+01 5.411979 10.095850 11.289347 14.224437
## 2 6.7612946 6.2575078 1.002618e+01 5.936489 9.348390 10.912900 13.336453
## 3 0.2813760 1.0233823 5.628871e-01 2.255827 11.267157 10.085315 8.586722
## 4 0.8200452 0.2546856 7.505134e-08 2.982573 10.955610 8.711443 10.313836
## 5 7.1172368 6.6122210 1.038475e+01 6.290163 9.706781 11.271614 13.695301
## 6 6.0551698 4.2791697 9.315971e+00 4.263752 8.905596 10.098119 13.032552
##      Cd36      Cd37      Cd38      Cd3d      Cd3e      Cd3eap
## 1 6.598956 12.366341 9.623702 3.949568e+00 3.4788720 9.798931
## 2 6.011759 12.190712 8.926952 4.455275e+00 2.4618292 9.654833
## 3 6.734163 6.028639 7.778374 5.361787e-08 1.9208939 9.895612
## 4 4.008724 9.391363 8.970314 2.753259e-01 0.3449794 8.496821
## 5 6.365698 12.549523 9.285177 4.799575e+00 2.7617792 10.013317
## 6 5.426367 11.174716 8.434116 2.874888e+00 2.4468576 8.609072
##      Cd3g      Cd4      Cd40      Cd44      Cd46      Cd47      Cd48
## 1 4.461338e+00 6.890705 10.235162 9.651188 6.557152 11.831691 7.217596
## 2 2.866025e+00 6.136492 10.241203 9.390657 6.307047 11.429010 6.187457
## 3 8.923571e-01 3.312891 3.713670 7.188737 2.686812 9.771705 6.249110
## 4 1.248408e-07 3.125914 6.735660 6.972055 1.422636 9.816308 9.270705
## 5 3.180593e+00 6.490840 10.599819 9.749061 6.661901 11.787774 6.541963
## 6 3.352682e+00 5.714586 9.044749 8.461558 5.385129 10.640227 6.038275
##      Cd5      Cd53      Cd55      Cd59a      Cd59b      Cd5l
## 1 7.3618120 12.594924 7.151339 10.334688 3.181956 3.059834e+00
## 2 7.3226219 11.720145 7.907160 9.532707 2.597232 2.331770e+00
## 3 1.3497580 9.512509 5.194905 9.258379 5.062471 6.910748e-08
## 4 0.5023232 13.120021 4.743630 9.507845 4.169451 4.335784e+00
## 5 7.6795114 12.078930 8.264713 9.891156 2.902558 2.626037e+00
## 6 6.1812918 11.403247 5.972611 9.144169 2.183991 2.077745e+00
##      Cd6      Cd63      Cd68      Cd69      Cd7      Cd70
## 1 5.091973e+00 12.01100 13.556860 4.098363e+00 3.478002e+00 3.7522635
## 2 4.986127e+00 11.13761 13.244614 4.141461e+00 4.115367e+00 3.3620511
## 3 8.600507e-08 12.99957 8.886486 3.414045e+00 4.171288e+00 5.5136317
## 4 3.996049e-08 11.87775 10.822780 7.903801e-08 1.105111e-07 0.3819252
## 5 5.334930e+00 11.49634 13.603461 4.482196e+00 4.455769e+00 3.6896486
## 6 3.954395e+00 10.81947 12.365033 3.012627e+00 2.446079e+00 2.6939499
##      Cd72      Cd74      Cd79a      Cd79b      Cd80      Cd81      Cd82
## 1 5.958034 11.35240 5.244166 8.437094 6.6323719 16.11912 14.12832
## 2 4.984750 10.84463 5.462928 6.657394 6.5439524 15.38131 13.08658
## 3 2.404114 12.06598 1.936413 4.485957 2.5857755 15.91127 11.91995
## 4 1.132602 13.14992 4.248203 7.157923 0.2970769 15.28776 11.40353
## 5 5.333543 11.20334 5.814574 7.013117 6.8994167 15.74018 13.44542
## 6 4.796172 10.16114 4.101240 7.250563 5.4593417 14.92716 12.93644
##      Cd83      Cd84      Cd86      Cd8a      Cd8b1      Cd9
## 1 15.985865 9.801524 11.008468 3.528682e+00 3.414182e+00 14.98803
## 2 15.393097 9.548110 10.411082 1.443835e+00 2.286511e+00 14.16801
## 3 8.523599 6.411471 6.993033 5.627050e-08 5.379824e-01 15.49831
## 4 9.836418 8.626307 9.756669 2.572866e-01 6.153879e-08 14.13764

```

```

## 5 15.751969 9.906564 10.769727 1.680823e+00 2.578672e+00 14.52688
## 6 14.793910 8.611660 9.817404 2.491538e+00 2.389070e+00 13.79611
##      Cd93      Cd96      Cd97      Cd9912      Cda      Cdadcl      Cdan1
## 1 14.009931 2.474131e+00 11.795006 12.23934 3.659279 10.865137 10.987991
## 2 13.123379 2.308077e+00 11.415622 11.79014 2.870019 10.095777 10.549746
## 3 7.731189 3.834433e+00 8.407748 10.72474 2.128543 10.912071 8.169049
## 4 10.570022 1.246839e-07 7.687976 10.20521 2.275871 10.603393 7.198949
## 5 13.482222 2.601250e+00 11.774384 12.14893 3.184711 10.454365 10.908412
## 6 12.818062 1.586119e+00 10.603555 11.04775 2.609412 9.674169 9.796940
##      Cdc123      Cdc14a      Cdc14b      Cdc16      Cdc20      Cdc23      Cdc25a
## 1 11.47201 9.511399 8.681475 12.040599 9.124441 11.385245 9.818805
## 2 10.85145 9.768552 8.399605 11.567728 8.739270 11.439476 9.348395
## 3 11.54098 5.813599 7.052838 9.927891 8.742228 11.618192 8.860435
## 4 10.04727 4.972067 4.105102 7.588491 3.617994 8.630195 4.829151
## 5 11.21015 10.127066 8.757541 11.926502 9.097404 11.798240 9.706785
## 6 10.28070 8.322008 7.494096 10.849064 7.935846 10.193969 8.628917
##      Cdc25b      Cdc25c      Cdc26      Cdc27      Cdc34      Cdc37      Cdc3711
## 1 9.331210 7.106406 9.656539 12.242327 10.884906 13.375928 11.859799
## 2 9.058165 6.748661 9.070294 11.360016 10.356674 12.733107 11.249015
## 3 8.910122 9.148512 9.838066 10.095755 7.455885 10.627830 9.720230
## 4 6.638906 3.454482 8.850370 8.609368 6.006338 9.296611 8.878505
## 5 9.416447 7.104578 9.428581 11.718774 10.715310 13.091939 11.607763
## 6 8.142163 5.928094 8.466900 11.050734 9.693924 12.184122 10.668324
##      Cdc40      Cdc42      Cdc42bpa      Cdc42bpb      Cdc42bpg      Cdc42ep1      Cdc42ep2
## 1 10.331277 14.86565 12.484249 13.653945 10.133066 12.165142 11.694483
## 2 10.390045 14.14264 12.382709 13.152435 9.718663 11.396758 10.512736
## 3 10.110153 14.08992 9.966473 7.685187 5.385964 7.519182 10.248612
## 4 9.071097 13.47632 8.920576 8.167120 4.395739 7.000342 9.219645
## 5 10.748687 14.50150 12.741529 13.511279 10.077164 11.755519 10.871397
## 6 9.140762 13.67373 11.292596 12.462108 8.942767 10.973571 10.503070
##      Cdc42ep3      Cdc42ep4      Cdc42ep5      Cdc42se1      Cdc42se2      Cdc45      Cdc51
## 1 11.514469 12.306807 6.965450 13.517515 13.60722 8.377507 10.043532
## 2 10.727551 11.758023 5.492332 12.968209 13.00438 8.065839 10.264857
## 3 6.328745 10.555896 5.969998 11.064302 11.77135 9.632052 10.156624
## 4 6.990475 9.182041 6.292536 9.845948 11.23074 5.016974 7.526599
## 5 11.086243 12.116810 5.844124 13.327049 13.36322 8.423529 10.623477
## 6 10.323133 11.115197 5.788535 12.325693 12.41539 7.191205 8.853341
##      Cdc6      Cdc7      Cdc73      Cdca2      Cdca3      Cdca4      Cdca5
## 1 7.401702 9.075044 10.764556 7.697884 8.782242 10.254037 7.411184
## 2 7.245922 9.383490 9.821329 7.899614 7.710538 9.972981 7.146882
## 3 9.313752 8.323189 8.505953 9.164645 10.742947 9.825224 8.632211
## 4 3.812155 5.550925 7.651339 5.248067 7.083139 6.718269 3.528914
## 5 7.602702 9.741892 10.179856 8.257159 8.067897 10.331543 7.503513
## 6 6.220870 7.886567 9.573660 6.514990 7.594552 9.063603 6.230280
##      Cdca7      Cdca7l      Cdca8      Cdcpl      Cdh1      Cdh10      Cdh11
## 1 8.823932 7.835774 8.671754 1.7428013 2.598503 11.027160 11.882397
## 2 8.580377 7.407336 8.366912 1.3331077 2.051374 10.760731 11.283193
## 3 10.174577 7.144250 10.631868 3.2449395 5.814893 9.265130 9.788274
## 4 4.803072 2.251642 5.120182 3.7418138 6.130672 7.810752 9.653042
## 5 8.938424 7.764339 8.724827 1.5599213 2.331403 11.119427 11.641944
## 6 7.636120 6.652054 7.484405 1.0238675 1.687798 9.836083 10.690915
##      Cdh12      Cdh13      Cdh15      Cdh17      Cdh18      Cdh19      Cdh2
## 1 4.708467 10.701761 4.218731 3.995090e+00 7.2656781 7.676554 12.388768
## 2 4.418248 10.855556 4.260559 3.975926e+00 6.8760379 7.232435 12.135627

```

```

## 3 2.826460 6.586719 2.476688 3.264230e+00 2.0264415 6.698794 10.796769
## 4 7.230551 10.062363 1.354524 6.975014e-08 0.2903646 5.591376 8.988221
## 5 4.762166 11.214263 4.602740 4.314440e+00 7.2322049 7.589197 12.494435
## 6 3.587029 9.510913 3.124791 2.916915e+00 6.0859442 6.493794 11.197137
##      Cdh20      Cdh22      Cdh24      Cdh26      Cdh3      Cdh4      Cdh5
## 1 11.368056 7.869100 8.942674 3.312693e+00 3.430774 11.316328 13.474532
## 2 10.801047 8.858765 8.818686 3.557157e+00 2.681965 11.235734 12.262995
## 3 6.623409 0.893458 3.073959 3.927486e+00 4.148099 11.782347 6.716933
## 4 5.105534 2.481724 1.391444 8.848837e-08 5.403965 8.659581 8.463885
## 5 11.159748 9.216958 9.176860 3.888748e+00 2.990399 11.594481 12.621810
## 6 10.176788 6.685191 7.754534 2.298975e+00 2.403865 10.125087 12.282714
##      Cdh6      Cdh7      Cdh8      Cdh9      Cdh10      Cdh11      Cdh12
## 1 8.542753 6.531155 7.552731 5.026248 7.168869 4.602556e+00 3.265739
## 2 9.714806 6.620995 7.310212 4.999599 6.999423 4.318151e+00 2.384517
## 3 4.639744 2.741861 6.533779 4.882861 1.355484 1.281216e-07 7.163069
## 4 4.220243 6.044057 8.028189 9.221825 6.894000 4.447680e+00 1.423985
## 5 10.073306 6.976637 7.667084 5.348496 7.355813 4.660988e+00 2.681154
## 6 7.355838 5.359492 6.370795 3.891153 5.989981 3.486344e+00 2.257536
##      Cdipt      Cdk1      Cdk10      Cdk11b      Cdk12      Cdk13      Cdk14
## 1 12.90915 9.902719 10.248177 12.484684 11.072568 11.388127 11.455312
## 2 12.49689 9.375108 9.973629 12.057917 10.289238 10.823825 11.107539
## 3 10.32737 10.948219 8.617926 10.080774 9.968435 8.018780 9.582973
## 4 11.09073 6.420457 7.140403 9.138059 9.001589 7.533123 9.930039
## 5 12.85572 9.733508 10.332192 12.416721 10.647862 11.182528 11.466273
## 6 11.71741 8.712712 9.057750 11.293030 9.881463 10.196849 10.264002
##      Cdk15      Cdk16      Cdk17      Cdk18      Cdk19      Cdk2      Cdk20
## 1 0.5383510 13.231757 11.666827 11.874462 12.140550 10.700845 9.065755
## 2 0.8189312 12.973550 11.481668 11.370062 12.318960 10.515737 9.032756
## 3 0.8477240 9.564455 9.233081 6.845367 9.177610 8.849421 9.629317
## 4 3.0890646 7.666308 8.845512 6.494951 6.734876 5.152726 7.543837
## 5 0.9853410 13.332390 11.840435 11.728820 12.677777 10.874399 9.391028
## 6 0.2629962 12.039970 10.475425 10.682982 10.948985 9.509998 7.877300
##      Cdk2ap1      Cdk2ap2      Cdk4      Cdk5      Cdk5r1      Cdk5r2      Cdk5rap1
## 1 10.927888 10.646644 13.03490 12.479795 12.398327 11.083451 8.646634
## 2 10.346214 10.394129 12.41395 11.977434 11.879176 11.426014 7.807768
## 3 9.749351 9.822344 13.60903 10.908884 10.918393 2.347498 8.648622
## 4 6.385566 8.808676 11.01150 9.384734 9.693305 5.518127 8.368344
## 5 10.704849 10.752772 12.77277 12.336234 12.237971 11.784777 8.165226
## 6 9.736876 9.455841 11.84314 11.288143 11.206694 9.892339 7.459367
##      Cdk5rap2      Cdk5rap3      Cdk7      Cdk8      Cdk9      Cdk11      Cdk11
## 1 10.733519 11.88179 10.562433 9.926165 11.888631 9.317197 5.851631
## 2 10.736855 11.49446 9.817874 9.438022 11.512456 8.814555 6.556487
## 3 8.664993 11.35960 10.248850 6.829801 8.045097 10.289330 2.488341
## 4 5.712334 10.03851 9.431178 5.425207 5.743715 8.866846 4.112708
## 5 11.095547 11.85323 10.176400 9.796442 11.871226 9.172727 6.911981
## 6 9.542647 10.69031 9.371701 8.736126 10.697147 8.128179 4.692047
##      Cdk12      Cdk13      Cdk14      Cdk15      Cdk16      Cdk17      Cdk18
## 1 8.954012 8.220166 5.376638 8.233727 12.882678 12.125889 11.523636
## 2 8.965739 8.157875 6.313248 8.709557 12.308367 11.262428 11.071500
## 3 7.737106 6.674850 5.059450 5.854521 8.449888 11.874770 6.280857
## 4 5.433971 3.697792 5.709136 5.610054 8.763613 9.525049 8.003788
## 5 9.323981 8.515639 6.668120 9.067675 12.667183 11.621177 11.430231
## 6 7.765841 7.034517 4.229478 7.048020 11.690945 10.934329 10.332296
##      Cdkn2a Cdkn2aipn1 Cdkn2b Cdkn2c Cdkn2d Cdkn3 Cdkn4

```



```

## 1 10.240828 11.116489 9.279996 8.756344 7.615632 5.782364 5.404380
## 2 9.845264 10.749277 9.262894 8.157403 6.790810 5.301621 4.303225
## 3 8.853121 10.383380 2.632937 10.814445 6.705297 8.561321 5.481922
## 4 7.303543 7.955547 1.663339 7.425887 5.905344 4.679115 1.119956
## 5 10.203797 11.107971 9.621255 8.515167 7.146812 5.652409 4.645895
## 6 9.050409 9.925358 8.091055 7.568732 6.433269 4.624353 4.256381
##      Cdo1      Cdon      Cdr2      Cdr2l      Cdr4      Cds1      Cds2
## 1 11.859092 10.041066 11.508748 11.600255 2.5675469 10.669101 13.87284
## 2 11.232374 9.865101 11.588770 11.366985 2.8363086 10.174899 13.51223
## 3 6.352393 8.112654 4.518841 10.157082 1.0461556 4.794589 10.03405
## 4 8.526211 5.902737 5.124218 8.349875 0.2969098 6.934396 10.23866
## 5 11.591121 10.223639 11.947546 11.725743 3.1499399 10.533503 13.87108
## 6 10.667618 8.850879 10.317414 10.408881 1.6623436 9.478280 12.68098
##      Cdsn      Cdt1      Cdv3      Cdy1      Cdy12      Ceacam1      Ceacam10
## 1 1.5075818 10.293873 12.813143 9.922408 9.115634 8.827082 2.957085e+00
## 2 1.2888242 9.492248 12.113312 9.595654 9.530210 8.369306 2.715613e+00
## 3 6.9724080 8.415019 10.375387 6.254461 6.863171 4.605725 2.567269e-01
## 4 7.5145680 5.084705 9.365601 6.324069 6.151870 6.570038 5.716532e-08
## 5 1.5113239 9.850685 12.472120 9.954122 9.888658 8.727222 3.025229e+00
## 6 0.8577731 9.103397 11.621422 8.732374 7.927060 7.639261 1.989277e+00
##      Ceacam15      Ceacam16      Ceacam18      Ceacam19      Cebpa      Cebpb
## 1 1.8208049 5.325632e+00 2.816739e+00 0.14850950 13.719678 12.592953
## 2 1.2275284 5.547484e+00 2.343481e-01 0.08124490 13.314232 12.076472
## 3 3.7721845 2.383402e+00 2.218760e-01 1.89625910 6.262553 6.271272
## 4 4.8714723 5.427096e-08 5.931054e-08 3.15155224 6.630159 7.186371
## 5 1.4438118 5.899543e+00 2.941520e-01 0.10337706 13.673079 12.435277
## 6 1.0806446 4.180058e+00 1.869884e+00 0.06764015 12.527834 11.401276
##      Cebpe      Cebpg      Cebpz      Cccr2      Cccr5      Cccr6
## 1 2.788865e+00 11.153873 11.092225 9.913570 10.772213 8.586814
## 2 2.326043e+00 11.001461 10.576953 9.538630 11.108712 8.256954
## 3 8.825335e-08 9.331449 10.127763 9.737355 7.050275 6.578859
## 4 4.415759e-08 7.470030 9.267113 6.733313 5.183346 6.677349
## 5 2.620047e+00 11.360185 10.935624 9.897081 11.467447 8.614792
## 6 1.846379e+00 9.962720 9.901108 8.723548 9.581312 7.399747
##      Cel      Cela1      Celf1      Celf2      Celf3      Celf4      Celf5
## 1 2.794134e+00 7.930057 12.78554 12.46687 10.448761 11.841370 10.812682
## 2 2.435897e+00 7.436062 12.48423 12.23433 10.114198 11.876436 10.843428
## 3 3.433513e-08 7.272421 10.47334 13.12055 9.286199 9.600369 8.746323
## 4 1.690627e-08 6.747497 10.02631 11.02099 7.042206 10.632243 7.808070
## 5 2.734756e+00 7.793102 12.84305 12.59314 10.472789 12.235230 11.202133
## 6 1.850817e+00 6.745816 11.59382 11.27522 9.258131 10.649902 9.621750
##      Celf6      Celsr1      Celsr2      Celsr3      Cend1      Cenpa      Cenpb
## 1 9.645253 9.480671 12.25418 11.220167 11.532645 9.701961 14.187459
## 2 9.593817 8.983480 11.97851 11.068683 11.256904 8.537820 13.864925
## 3 3.658215 9.190011 10.99139 8.323437 8.960073 10.281655 7.862916
## 4 3.795904 5.786969 10.43937 5.118578 8.713971 6.497499 7.256476
## 5 9.952284 9.341730 12.33731 11.427413 11.615653 8.895843 14.223783
## 6 8.455632 8.291335 11.06258 10.028976 10.341301 8.512248 12.995577
##      Cenpc1      Cenpe      Cenpf      Cenph      Cenpi      Cenpj      Cenpk
## 1 9.765628 8.586421 9.762236 6.693023 7.556787 7.717377 6.129361
## 2 9.520277 8.117231 9.243029 6.205251 7.594595 8.077892 5.444766
## 3 10.304354 10.042184 10.763836 8.660617 7.780286 8.339101 8.916293
## 4 7.540687 5.003259 9.535099 2.456829 4.484891 4.734552 4.576329
## 5 9.878723 8.474963 9.601383 6.559811 7.951826 8.435593 5.796320

```

```

## 6 8.575818 7.399354 8.572431 5.519218 6.374823 6.534361 4.964159
##      Cenpl      Cenpm      Cenpn      Cenpo      Cenpp      Cenpq      Cenpt
## 1 8.431868 7.421967 8.119223 8.088964 6.947507 8.798680 10.055903
## 2 7.970218 6.841297 7.739867 8.621427 6.607452 8.921351 9.792808
## 3 9.099843 10.430638 8.925742 7.436536 8.679785 9.546302 10.086971
## 4 3.593384 5.420398 4.114579 4.664622 5.601226 7.013910 7.204212
## 5 8.327827 7.197398 8.097257 8.979497 6.963064 9.279573 10.151328
## 6 7.245356 6.240981 6.934032 6.903917 5.770778 7.610942 8.865697
##      Cenpv      Cenpw      Cep120      Cep135      Cep152      Cep164      Cep170
## 1 9.843903 6.611184 11.353609 9.400717 9.497345 9.998714 12.532033
## 2 8.883241 5.844543 11.306723 9.595487 9.410772 9.503963 11.827597
## 3 8.896401 8.708202 9.436952 6.213490 5.929614 7.510178 11.542951
## 4 6.831178 6.782723 8.219522 3.299600 6.256329 4.275643 9.611994
## 5 9.241446 6.197873 11.665477 9.953954 9.769183 9.862403 12.186389
## 6 8.653978 5.438433 10.162349 8.211532 8.307979 8.808580 11.340369
##      Cep192      Cep250      Cep290      Cep350      Cep55      Cep57      Cep5711
## 1 10.139891 11.129073 8.584826 11.583857 7.483343 10.589823 8.156486
## 2 10.114777 11.170538 8.395614 11.409084 7.282167 9.800032 7.747359
## 3 8.087871 8.172796 8.255141 8.186782 8.176193 10.281416 8.438845
## 4 6.160397 5.640033 4.083261 7.306932 2.406952 8.862344 6.610896
## 5 10.473369 11.529279 8.753548 11.767846 7.638999 10.158554 8.104756
## 6 8.949585 9.937935 7.397765 10.392490 6.301901 9.399067 6.971123
##      Cep63      Cep68      Cep70      Cep72      Cep76      Cep78      Cep97
## 1 10.054389 11.533258 8.630307 8.640270 9.644173 9.451526 10.280268
## 2 10.128906 11.140821 8.700241 8.064143 8.842745 9.198334 9.258981
## 3 8.063122 8.722306 9.777529 7.555974 7.794939 6.939983 10.182949
## 4 6.578872 7.175498 6.309050 3.232118 4.490523 5.400505 8.443719
## 5 10.487501 11.499559 9.058354 8.421832 9.200930 9.556671 9.617340
## 6 8.864185 10.341913 7.443094 7.453023 8.454554 8.262245 9.089806
##      Cept1      Cer1      Cercam      Cerkl      Cerkl      Ces2b      Ces2e
## 1 11.071153 1.5932872 10.062241 12.956354 3.611322 7.127483e+00 5.3511639
## 2 10.394550 1.6199703 9.564389 12.990223 3.342584 6.637560e+00 5.0640064
## 3 11.029448 3.7536870 8.416460 7.118042 6.473377 3.885573e-08 0.5276287
## 4 10.826464 0.9310810 7.145168 7.118109 5.033412 1.930656e-08 0.3849999
## 5 10.753193 1.8714921 9.922847 13.349063 3.669752 6.993239e+00 5.4133407
## 6 9.880049 0.9173825 8.872027 11.764608 2.566008 5.948975e+00 4.2047891
##      Ces2f      Ces2g      Ces5a      Cetn2      Cetn3      Cfb      Cfdp1
## 1 2.242589e-08 3.721835 1.942012e+00 10.441587 11.63023 7.244904 11.28180
## 2 1.308274e-08 3.075836 1.636779e+00 9.694216 10.86300 7.212602 10.79144
## 3 1.608697e+00 3.691743 1.947777e+00 11.944855 12.61682 4.436515 12.34690
## 4 2.744790e+00 4.579448 1.041736e-07 10.615803 11.05943 1.098456 10.48469
## 5 1.677644e-08 3.396480 1.889590e+00 10.052711 11.22171 7.569333 11.15014
## 6 9.933467e-09 2.666232 1.170474e+00 9.250964 10.43884 6.065347 10.09058
##      Cfi      Cfl1      Cfl2      Cflar      Cfp      Cftr      Cggbp1
## 1 3.776184e+00 15.68097 12.94892 11.058782 9.760576 4.373850e+00 12.104898
## 2 4.888346e+00 15.10190 12.07628 10.614662 9.262499 4.399002e+00 11.963852
## 3 1.166486e+00 14.11525 12.63117 8.924115 8.405428 5.177486e-08 10.244866
## 4 7.798506e-08 12.94612 10.66056 7.392612 8.183011 3.265429e-01 8.837677
## 5 5.236440e+00 15.46077 12.43508 10.973338 9.620859 4.742718e+00 12.322651
## 6 2.715776e+00 14.48902 11.75718 9.867686 8.570773 3.270236e+00 10.913344
##      Cgn      Cgnl1      Cgref1      Cgrrf1      Ch25h      Chac1      Chac2
## 1 7.227697 11.945577 8.249612 10.255489 9.629626 7.734397 8.588224
## 2 7.248776 11.120678 9.502135 9.709969 9.245929 8.636326 8.133531
## 3 8.150652 6.958511 3.779636 10.275509 2.711163 5.124584 9.128161

```

```

## 4 5.631136 6.430013 2.782602 9.504654 2.317662 3.301992 8.330956
## 5 7.605561 11.479414 9.860575 10.068468 9.604284 8.994405 8.491276
## 6 6.048288 10.754073 7.063836 9.065053 8.440031 6.551276 7.401152
##      Chad      Chad1      Chaf1a      Chaf1b      Chat      Chchd1      Chchd10
## 1 5.183185e+00 12.297983 8.914542 8.009765 5.982102e+00 10.346421 9.576240
## 2 4.838349e+00 12.671846 8.772147 7.552431 5.104293e+00 9.755037 9.023411
## 3 4.276491e+00 4.697273 6.942049 9.402713 4.037814e-08 11.968673 6.748424
## 4 5.229192e-08 5.005717 3.732570 3.659234 2.100673e-08 9.893696 6.738892
## 5 5.186062e+00 13.030676 9.130298 7.909613 5.453891e+00 10.113548 9.381679
## 6 4.042337e+00 11.106375 7.726476 6.825108 4.819746e+00 9.155891 8.386735
##      Chchd2      Chchd3      Chchd4      Chchd5      Chchd6      Chchd7      Chd1
## 1 11.87514 12.206648 9.663151 9.646147 9.536892 9.498338 11.625598
## 2 10.91606 11.338657 8.691282 8.840222 9.084603 8.889389 11.288605
## 3 11.58838 11.135736 9.363758 10.827077 10.666675 8.730941 8.618605
## 4 10.91193 9.930958 8.756956 8.789273 9.295279 7.242336 6.864086
## 5 11.27478 11.697413 9.049390 9.198407 9.442896 9.247597 11.647357
## 6 10.68366 11.015065 8.473501 8.456525 8.347455 8.308970 10.434214
##      Chd11      Chd2      Chd3      Chd4      Chd5      Chd6      Chd7
## 1 9.515941 12.455172 13.468231 13.947583 11.143096 12.205941 12.008841
## 2 9.607271 12.067782 13.205776 13.835785 11.641438 11.914247 11.757683
## 3 7.347928 9.749426 8.809101 10.687251 5.108994 10.119631 10.205256
## 4 3.756816 8.425188 7.860773 8.514693 5.680933 8.682018 7.511092
## 5 9.965742 12.426587 13.564621 14.194642 12.000218 12.273044 12.116470
## 6 8.326541 11.263525 12.276414 12.755719 9.951949 11.014358 10.817317
##      Chd8      Chd9      Chdh      Chek1      Chek2      Cherp      Chfr
## 1 12.217630 11.783733 7.101662 7.454521 8.381233 11.285097 11.763723
## 2 12.195326 11.515889 6.100455 6.992311 7.567693 11.277489 11.293247
## 3 10.228016 10.073902 5.642760 9.047173 8.970118 10.007738 8.974823
## 4 7.791514 7.974475 4.010151 4.525725 8.175184 8.178905 7.671427
## 5 12.554137 11.874659 6.454688 7.348688 7.924893 11.636239 11.651999
## 6 11.026044 10.592286 5.923395 6.273290 7.194917 10.093871 10.572284
##      Chga      Chgb      Chic1      Chic2      Chid1      Chit1      Chka
## 1 10.757616 11.056171 9.891168 10.566857 11.162145 1.616548 11.862337
## 2 10.484314 11.365183 9.649563 10.130755 10.883557 1.443047 11.939387
## 3 8.909504 9.669644 9.396626 6.520717 10.169574 3.732375 8.700856
## 4 9.152395 10.503032 7.987597 5.927689 9.818538 3.982461 6.787649
## 5 10.842971 11.723941 10.008046 10.489350 11.242268 1.679965 12.298185
## 6 9.566726 9.865076 8.701177 9.376121 9.970987 0.933743 10.670862
##      Chkb      Chl1      Chm      Chm1      Chmp1a      Chmp2a      Chmp2b
## 1 4.151263 12.84832 10.951024 10.010481 12.802480 12.39589 11.479737
## 2 3.722007 12.66970 10.250766 9.187906 12.248747 11.68309 11.240752
## 3 4.486828 11.39240 9.924184 6.320053 10.988467 12.56717 8.987048
## 4 1.136659 10.44185 8.463349 5.228487 9.787069 11.38264 7.336923
## 5 4.056569 13.02853 10.609384 9.546239 12.607560 12.04188 11.599499
## 6 3.061844 11.65660 9.759996 8.820332 11.610761 11.20426 10.288416
##      Chmp3      Chmp4b      Chmp4c      Chmp5      Chmp6      Chmp7      Chn1
## 1 12.24206 13.451787 2.367988 12.67805 11.410810 12.038180 11.034139
## 2 11.55103 12.732913 2.209549 11.95427 10.853714 11.960273 10.713533
## 3 11.21644 8.488779 1.464652 12.77328 7.935222 9.807270 11.562129
## 4 10.23209 7.601569 1.665293 11.58937 7.887946 8.656556 12.738353
## 5 11.90980 13.091745 2.497965 12.31307 11.212421 12.319072 11.072223
## 6 11.05047 12.259972 1.500624 11.48635 10.219522 10.846647 9.843058
##      Chn2      Chod1      Chordc1      Chpf      Chpf2      Chpt1      Chrac1
## 1 12.72234 7.6300118 10.968345 11.182972 11.666637 11.463838 10.062095

```

```

## 2 12.04011 6.4617502 10.281103 10.923439 10.513378 10.673754 9.219246
## 3 10.26524 0.5436105 10.457601 8.230006 7.465868 8.703254 10.596085
## 4 10.19823 0.2510496 9.177164 8.136554 8.315184 9.086769 10.423151
## 5 12.39892 6.8170140 10.639726 11.282154 10.872039 11.032438 9.577591
## 6 11.53064 6.4475538 9.777306 9.991803 10.475236 10.272525 8.871882
##      Chrd      Chrd11      Chrd12      Chr1      Chr2      Chr3      Chr4
## 1 9.408719 11.654926 2.242883e+00 8.026035 6.368240e+00 6.562377 7.246943
## 2 8.810624 10.244784 2.065522e+00 8.395126 5.778793e+00 7.059681 7.298946
## 3 4.835570 6.808247 6.444858e-08 5.038790 5.904609e-08 1.749818 5.441315
## 4 5.646415 7.762816 3.086662e-08 10.633734 2.974829e-08 2.289248 4.406908
## 5 9.168794 10.603400 2.346341e+00 8.753060 6.131864e+00 7.416173 7.655803
## 6 8.219518 10.463530 1.401445e+00 6.841297 5.198986e+00 5.390282 6.067369
##      Chr5      Chrna1      Chrna2      Chrna3      Chrna4      Chrna5
## 1 3.176239e+00 3.154807 4.294376e+00 5.722656e+00 10.748936 3.534518e+00
## 2 3.538369e+00 1.626925 2.758317e+00 4.827362e+00 10.940684 4.537095e+00
## 3 8.211591e-08 1.076783 8.417935e-08 2.657132e+00 4.282433 1.535794e+00
## 4 3.427610e-08 4.867039 2.637201e-01 5.256513e-08 7.262410 2.214353e-11
## 5 3.869599e+00 1.878982 3.069394e+00 5.174988e+00 11.299401 4.882202e+00
## 6 2.178992e+00 2.160272 3.195597e+00 4.566062e+00 9.558052 2.496783e+00
##      Chrna7      Chrnb1      Chrnb2      Chrnb3      Chrnb4      Chrne
## 1 6.9813358 8.048893 9.835873 3.226774e+00 4.912646e+00 6.0275051
## 2 7.2283453 8.026038 9.712330 1.193342e+00 3.483377e+00 5.2940672
## 3 0.8548144 5.615164 7.544461 4.195239e-08 4.722327e-08 3.0400097
## 4 0.6824277 2.977490 7.351181 1.907644e-08 2.441416e-08 0.4111372
## 5 7.5851003 8.383695 10.070829 1.406030e+00 3.813523e+00 5.6448123
## 6 5.8042559 6.864040 8.645959 2.223268e+00 3.782107e+00 4.8642418
##      Chrng      Chst1      Chst10      Chst11      Chst12      Chst14      Chst15
## 1 2.662374e+00 11.396000 11.26847 12.950493 11.244252 8.380512 10.136562
## 2 3.140953e+00 10.854726 10.79509 12.492975 10.933576 8.279308 9.792589
## 3 6.310676e-08 7.501825 10.35561 8.692464 10.127128 4.566984 8.260253
## 4 2.530796e-08 10.760944 9.21270 9.389842 9.865637 1.826362 8.401700
## 5 3.463305e+00 11.213433 11.15379 12.851799 11.292292 8.637162 10.151109
## 6 1.740619e+00 10.204719 10.07725 11.758749 10.053049 7.194199 8.946259
##      Chst2      Chst3      Chst4      Chst5      Chst7      Chst8      Chst9
## 1 13.46930 11.305457 2.182891e+00 8.942765 11.435710 9.906197 3.852744
## 2 13.02209 11.307772 1.559509e+00 8.023785 10.365728 9.254830 4.225745
## 3 12.31995 6.502121 4.815922e-08 5.094577 3.660469 4.352184 4.237923
## 4 11.06397 5.248847 2.470217e-08 5.695076 5.738633 7.986129 6.670502
## 5 13.38093 11.666525 1.806257e+00 8.381440 10.724366 9.613188 4.567515
## 6 12.27749 10.114221 1.354519e+00 7.754624 10.244409 8.716185 2.785841
##      Chsy1      Chsy3      Chtf18      Chuk      Churc1      Ciao1      Ciapin1
## 1 11.042126 8.382063 8.021407 12.086298 10.362968 10.589219 11.534062
## 2 10.496519 7.484506 7.497890 11.086825 9.503891 9.996166 11.134110
## 3 11.247857 2.055891 8.056310 8.763921 10.781703 10.315581 10.841505
## 4 9.439624 6.810743 6.643362 8.293434 9.816514 9.799194 9.539923
## 5 10.855177 7.841607 7.855007 11.445558 9.862332 10.354734 11.492848
## 6 9.851040 7.195744 6.836691 10.894750 9.172422 9.398464 10.342717
##      Cib1      Cib2      Cic      Cidea      Cideb      Ciita      Cilp
## 1 11.491758 9.723718 13.402334 4.773404 4.740631 5.8257319 4.7955773
## 2 10.734960 8.859389 13.272426 4.714609 4.267188 5.6675468 3.4939640
## 3 10.385691 7.566192 8.482449 6.647687 5.395814 4.5667680 5.6298019
## 4 9.813335 7.413702 6.684845 6.883007 7.087673 0.3343416 0.4931481
## 5 11.093652 9.217583 13.631273 5.061317 4.609445 6.0201510 3.8243215
## 6 10.300432 8.533972 12.210525 3.648938 3.617676 4.6667273 3.6701062

```

```

##      Cilp2      Cinp      Cir1      Cirbp      Cirh1a      Cisd1      Cisd2
## 1 7.291288 10.631688 8.428216 11.89892 10.179175 11.91540 11.202963
## 2 8.052393 10.086272 8.037465 11.36143 9.898046 11.22158 10.344238
## 3 3.236201 10.449714 6.632585 12.31016 10.083372 12.24541 10.958213
## 4 2.308122 9.586090 4.320054 10.17329 8.096144 11.82515 9.977716
## 5 8.410073 10.444858 8.395132 11.72019 10.256591 11.58032 10.702873
## 6 6.111339 9.440897 7.241718 10.70744 8.988823 10.72390 10.011782
##      Cisd3      Cish      Cit      Cited1      Cited2      Cited4      Ciz1
## 1 8.860682 9.068379 9.845764 6.455099 11.089221 5.976701 11.269802
## 2 8.355921 8.443462 10.032863 7.085718 10.476078 5.147118 11.352493
## 3 9.672672 7.562698 6.562708 4.813446 8.799991 1.901568 9.087437
## 4 8.394868 5.653108 4.722139 3.006254 7.456597 1.740632 6.231399
## 5 8.713828 8.801426 10.391438 7.442252 10.834733 5.496988 11.711250
## 6 7.672765 7.879918 8.655837 5.284527 9.898106 4.814455 10.078585
##      CK137956      Ckap2      Ckap2l      Ckap4      Ckap5      Ckb      Cklf
## 1 7.1211533 9.122716 8.695450 11.082362 12.494874 15.21683 8.694061
## 2 6.4938710 8.999307 8.392624 10.601421 12.223259 14.68907 7.799355
## 3 0.3110814 9.953184 10.607744 9.417492 12.465630 15.21122 9.505441
## 4 0.7287808 4.169241 5.130880 8.157811 9.527451 14.29158 7.550263
## 5 6.8492145 9.357564 8.750556 10.960095 12.582072 15.04793 8.156804
## 6 5.9427037 7.934125 7.508026 9.891251 11.303219 14.02490 7.506642
##      Ckm      Ckmt1      Ckmt2      Cks1b      Cks2      Clasp1      Clasp2
## 1 5.0322822 10.203784 2.678049e+00 8.710142 7.281159 11.928878 13.87236
## 2 4.0036999 9.628779 1.115379e+00 7.796612 6.905951 11.823445 13.24674
## 3 0.8291509 7.753716 2.511867e+00 10.780465 8.008166 10.960245 12.38340
## 4 0.3533176 10.253504 9.063592e-10 8.029833 4.036899 8.480023 10.90669
## 5 4.3426045 9.987256 1.319506e+00 8.154059 7.262173 12.182236 13.60559
## 6 3.8969549 9.013405 1.753643e+00 7.522672 6.101295 10.737380 12.68050
##      Clasrp      Clca5      Clcc1      Clcf1      Clcn1      Clcn2
## 1 11.674021 4.878339 10.714700 6.316872e+00 5.479922e+00 11.355522
## 2 11.873321 4.422852 10.173620 5.887649e+00 5.555043e+00 10.927330
## 3 5.980145 1.478002 10.570572 2.217593e+00 2.693323e+00 8.057284
## 4 2.301268 2.195674 9.090803 8.672331e-08 6.017654e-08 7.163783
## 5 12.232115 4.766818 10.532223 6.241142e+00 5.907137e+00 11.286046
## 6 10.482617 3.749245 9.523842 5.148435e+00 4.329713e+00 10.164260
##      Clcn3      Clcn5      Clcn6      Clcn7      Clcnkb      Cldn1      Cldn10
## 1 13.30626 10.250670 13.006077 11.926329 2.6766667 4.842440 10.855603
## 2 12.77290 9.600790 11.953222 11.568523 1.3771913 4.434805 9.940228
## 3 12.23472 6.909708 7.509007 9.110202 3.7320984 4.716069 12.298999
## 4 11.59026 1.852222 8.822576 9.090434 0.4470493 5.411534 12.526741
## 5 13.13174 9.959259 12.312020 11.927297 1.6081578 4.778895 10.298783
## 6 12.11446 9.060239 11.814323 10.734832 1.7524935 3.714893 9.664641
##      Cldn11      Cldn12      Cldn14      Cldn15      Cldn19      Cldn2
## 1 17.46172 10.799261 10.551794 4.5858546 5.993906e+00 2.182525
## 2 16.33236 10.919327 9.130954 4.5438696 5.442074e+00 2.756607
## 3 13.52179 9.112663 6.454450 3.8376219 1.312874e+00 5.819556
## 4 12.76378 6.859920 3.032122 0.3058112 6.424452e-08 4.385676
## 5 16.69124 11.278042 9.489265 4.8890414 5.793614e+00 3.067626
## 6 16.26974 9.608339 9.361071 3.4704997 4.831312e+00 1.354235
##      Cldn20      Cldn22      Cldn23      Cldn25      Cldn26      Cldn3      Cldn4
## 1 3.377008e+00 2.9202142 3.168634 13.05730 3.4751897 3.836351 1.8164616
## 2 2.679473e+00 3.0654963 2.706655 12.32557 3.2255797 3.151816 1.2536814
## 3 1.407359e+00 0.5606316 4.024813 13.15747 0.8165868 8.213194 3.2888060
## 4 7.464923e-08 3.3593376 3.013324 12.05773 8.2711593 3.983825 4.6608981

```

```

## 5 2.987818e+00 3.3858613 3.015959 12.68439 3.5500373 3.474445 1.4726527
## 6 2.355988e+00 1.9577457 2.172345 11.86554 2.4435609 2.770812 1.0774617
##      Cldn5      Cldn6      Cldn7      Cldn9      Cldnd2      Clec11a
## 1 16.201446 5.378230e+00 1.975812e+00 1.4831596 2.584466e+00 5.385264
## 2 14.622989 4.480837e+00 2.196616e+00 1.5636048 2.128148e+00 5.479901
## 3 6.756697 7.108161e-08 1.094568e+00 3.2749394 5.719879e-01 6.424509
## 4 9.093785 3.690652e-08 1.051822e-07 6.3504702 1.059453e-07 4.131870
## 5 14.981855 4.825393e+00 2.484382e+00 1.8106824 2.412368e+00 5.831631
## 6 15.009487 4.231022e+00 1.195863e+00 0.8409825 1.676244e+00 4.237841
##      Clec12a      Clec12b      Clec14a      Clec16a      Clec18a      Clec1a      Clec1b
## 1 4.488323 0.6535759 11.002431 11.737482 3.103462 8.811058 3.853211
## 2 4.797349 0.4370512 10.683690 11.463985 2.433956 8.667959 2.185149
## 3 4.961733 3.9012782 4.509766 9.127323 2.349000 4.313011 1.374815
## 4 4.438354 0.8904075 2.396103 7.857064 7.942779 6.398916 1.295610
## 5 5.144738 0.5397418 11.042375 11.822751 2.732733 9.026055 2.472333
## 6 3.378168 0.3256720 9.811370 10.546052 2.115568 7.623284 2.786269
##      Clec2d      Clec2i      Clec2l      Clec3b      Clec4a1      Clec4a2      Clec4a3
## 1 9.825316 3.8701414 9.537178 5.220373 7.831981 9.602518 7.513920
## 2 8.823882 2.1036016 9.950737 5.656260 6.463337 8.880182 7.278611
## 3 2.609223 1.5734856 3.770911 3.493741 7.747671 6.965077 6.656798
## 4 3.759376 0.2751763 4.085774 1.360536 5.823964 10.099047 8.151728
## 5 9.182058 2.3865076 10.309294 6.008815 6.818605 9.238385 7.635439
## 6 8.635418 2.8018051 8.347740 4.078247 6.648282 8.412968 6.332257
##      Clec4b1      Clec4d      Clec4e      Clec4n      Clec5a      Clec7a      Clec9a
## 1 1.6119195 4.4395699 4.915859e+00 7.965404 7.705482 5.530169 5.695543
## 2 0.8955155 5.1695205 2.323683e+00 8.073641 6.925659 5.850895 5.670067
## 3 3.0124682 0.3576091 5.983032e-08 6.020359 5.551199 4.517846 1.038011
## 4 6.6737064 3.4690048 2.589071e-08 4.842493 9.334336 6.126452 2.180677
## 5 1.0725219 5.5195300 2.617579e+00 8.431338 7.281918 6.204249 6.022683
## 6 0.9304812 3.3321411 3.785187e+00 6.780975 6.522540 4.378552 4.539611
##      Clgn      Clic1      Clic3      Clic4      Clic5      Clic6      Clint1
## 1 8.359165 13.33219 6.362289 14.703930 9.504458 6.076410 12.363925
## 2 8.852501 12.80912 5.765258 14.113210 9.527537 6.630560 12.003826
## 3 4.422387 11.20610 6.416712 10.478935 4.794949 4.441872 8.849670
## 4 5.556291 10.06055 5.919040 8.711329 5.589813 5.236029 7.606176
## 5 9.210691 13.16795 6.118274 14.472071 9.885985 6.986223 12.362627
## 6 7.172936 12.14039 5.193128 13.512017 8.315079 4.912199 11.172300
##      Clip1      Clip2      Clip3      Clip4      Clk1      Clk2      Clk3
## 1 11.923295 13.648749 14.37283 9.702189 13.37103 11.305491 12.377781
## 2 11.703885 13.255034 14.35802 9.555456 12.89083 11.048939 11.908184
## 3 8.763962 8.204841 12.92033 8.829439 11.50446 7.507063 10.638107
## 4 8.528323 5.622054 10.68643 7.118353 9.10689 5.977617 8.762657
## 5 12.062669 13.613880 14.71689 9.913912 13.24967 11.407668 12.266980
## 6 10.731798 12.456913 13.18094 8.512477 12.17923 10.114255 11.186153
##      Clk4      Clmn      Cln3      Cln5      Cln6      Cln8      Clnk
## 1 12.081869 11.369154 11.561043 11.460805 9.488443 13.78398 1.413434e+00
## 2 11.609505 10.996289 11.110645 10.944699 9.128159 13.05823 1.476131e+00
## 3 10.978033 9.630748 10.708956 7.132640 8.380580 10.39737 3.447986e-08
## 4 8.358308 8.524289 9.959535 7.117035 6.996092 10.10988 1.572726e-08
## 5 11.968282 11.355012 11.469380 11.303416 9.486469 13.41707 1.715929e+00
## 6 10.890322 10.177886 10.369686 10.269493 8.299093 12.59213 7.935289e-01
##      Clns1a      Clock      Clp1      Clpb      Clpp      Clptm1      Clptm11
## 1 12.02347 11.369062 9.089672 11.107323 11.018205 14.345702 13.193313
## 2 11.39084 11.786950 9.093725 11.014861 10.333758 13.546688 12.459823

```

```

## 3 11.26268 8.611744 9.327287 10.228614 12.133369 8.973736 9.164856
## 4 10.24994 7.000570 5.249433 7.780630 10.906877 8.957926 9.687141
## 5 11.74960 12.145739 9.452021 11.373586 10.692390 13.905540 12.818645
## 6 10.83194 10.177794 7.901159 9.916197 9.827134 13.153809 12.001531
##      Clpx      Clrn1      Clspn      Clstn1      Clstn2      Clstn3      Clta
## 1 10.698565 3.942364 7.593697 14.325871 11.097061 11.960609 13.832973
## 2 10.573441 4.820372 7.318894 14.150503 11.045311 11.774403 12.843640
## 3 9.193542 3.465898 8.204031 9.385097 7.219445 8.100031 9.884320
## 4 7.808322 1.930696 3.416750 9.418545 9.682305 10.214149 9.702505
## 5 10.932111 5.167944 7.675778 14.509364 11.404040 12.133191 13.202476
## 6 9.507720 2.868246 6.411481 13.133980 9.905941 10.769100 12.641119
##      Cltb      Cltc      Clu      Cluap1      Clvs1      Clvs2      Clybl
## 1 12.874846 14.69979 14.33973 9.930036 7.020931 8.210577 8.129633
## 2 12.197337 14.23670 13.93516 9.218845 6.807598 7.951007 7.728938
## 3 9.683650 12.25608 16.83938 10.505463 8.868261 5.618916 10.620464
## 4 9.631314 11.77034 15.91859 9.280905 5.872088 9.411841 9.807357
## 5 12.556149 14.59556 14.29402 9.577189 7.163633 8.308599 8.086316
## 6 11.683114 13.50787 13.14783 8.739992 5.843449 7.024970 6.944394
##      Cma1      Cmas      Cmb1      Cmc1      Cmk1r1      Cml1      Cml2
## 1 2.809763 11.188342 6.951095 9.357477 11.521215 9.123466 4.944476
## 2 2.277885 10.504405 6.438987 8.457362 11.189864 8.235367 4.414448
## 3 9.527056 7.551390 8.445543 10.357314 4.655648 10.035880 4.679956
## 4 1.666425 7.806212 3.133381 7.013858 5.477058 9.724674 2.552567
## 5 2.569636 10.863064 6.794193 8.815335 11.548606 8.593190 4.758327
## 6 1.863995 9.997169 5.774329 8.168377 10.329876 7.934873 3.812626
##      Cml3      Cml5      Cmpk1      Cmpk2      Cmtm3      Cmtm4      Cmtm5
## 1 5.743268 3.571699 12.176398 8.603018 11.879044 12.671342 13.83957
## 2 5.024884 3.568411 11.734385 8.849135 11.119921 12.682992 12.85296
## 3 1.307446 4.500876 10.966208 6.629639 9.819723 8.192413 14.19537
## 4 1.547402 6.132376 8.784337 6.673256 9.376896 7.527129 13.44380
## 5 5.373955 3.900216 12.093171 9.207323 11.478657 13.041822 13.21179
## 6 4.586179 2.530250 10.984823 7.415895 10.687563 11.479648 12.64772
##      Cmtm6      Cmtm7      Cmtm8      Cmya5      Cnbp      Cndp1      Cndp2
## 1 14.237958 10.838186 8.881000 7.184059 13.70580 5.573971e-01 13.010982
## 2 13.645027 10.625651 8.143382 6.973474 13.00439 1.866416e+00 12.931837
## 3 9.825093 2.762621 6.155698 6.119504 14.37807 8.248889e-08 10.011815
## 4 10.333520 5.875533 7.300960 3.251385 13.25073 2.618998e-08 9.062035
## 5 14.003882 10.984328 8.501135 7.329818 13.36323 2.135323e+00 13.290675
## 6 13.046073 9.647236 7.693027 6.005034 12.51396 2.732015e-01 11.819228
##      Cnfn      Cnga2      Cnga3      Cnga4      Cnih2      Cnih3
## 1 1.3503498 3.656980e+00 3.7504321 2.130339e+00 11.365479 7.947790
## 2 1.1243021 2.882582e+00 4.5477323 1.760575e+00 10.839222 7.920987
## 3 3.9548390 5.690384e-08 0.4868941 2.124844e+00 7.479378 8.254970
## 4 4.4841821 2.927459e-08 4.3327220 1.176287e-07 8.243278 7.486992
## 5 1.3294351 3.197663e+00 4.8929409 2.022403e+00 11.197927 8.278552
## 6 0.7512209 2.607328e+00 2.6922802 1.313762e+00 10.174212 6.763454
##      Cnih4      Cnksr1      Cnksr2      Cnksr3      Cnn1      Cnn2      Cnn3
## 1 11.58359 2.8708211 8.126251 11.958245 3.744956 11.408910 13.634780
## 2 10.88008 2.1341750 8.427190 11.421490 4.135597 10.875007 13.175720
## 3 10.96936 0.8134184 5.331410 7.148252 2.465194 8.674052 12.129981
## 4 10.00729 1.0708004 7.569567 6.496415 7.739032 8.609736 9.407046
## 5 11.23879 2.4187150 8.785144 11.780253 4.476257 11.233716 13.534565
## 6 10.39222 1.9156883 6.941027 10.766737 2.687289 10.217623 12.442945
##      Cnnm1      Cnnm2      Cnnm3      Cnnm4      Cnot1      Cnot10      Cnot2

```

```

## 1 8.705919 10.341925 11.329246 9.766692 12.641274 11.681112 11.365390
## 2 8.369789 9.469498 10.686055 9.216436 11.982202 11.555165 11.151771
## 3 4.912913 5.602478 9.549064 10.294532 10.055970 9.098889 11.268768
## 4 9.770552 7.835430 9.318510 9.618279 9.435942 6.662412 9.237351
## 5 8.727705 9.827928 11.044741 9.574780 12.341002 11.913938 11.510510
## 6 7.518462 9.151399 10.137998 8.576880 11.449587 10.489705 10.174123
##      Cnot3      Cnot4      Cnot6      Cnot6l      Cnot7      Cnot8      Cnp
## 1 10.753627 10.413170 11.375820 10.708138 11.701423 11.83952 18.63382
## 2 10.079099 9.973370 11.315176 10.590506 10.888024 11.37627 17.87620
## 3 8.348720 10.714564 8.651967 7.346440 9.830058 10.94567 15.34683
## 4 7.281759 9.253995 4.980546 7.572716 8.660071 10.00977 14.41519
## 5 10.437683 10.331932 11.673930 10.949179 11.246735 11.73503 18.23507
## 6 9.562739 9.222574 10.184548 9.517285 10.510008 10.64805 17.44184
##      Cnp2      Cnp3      Cnp4      Cnr1      Cnr2      Cnrip1      Cnst
## 1 11.230139 12.87889 10.278817 11.71031 8.228145 10.619477 10.814713
## 2 10.445990 12.38949 9.567868 11.01371 8.386307 9.992083 10.546866
## 3 12.182099 10.63204 11.283003 11.71703 3.044048 11.084861 8.346427
## 4 11.365463 10.18302 9.613251 10.20141 2.731086 8.809285 7.109935
## 5 10.804641 12.74831 9.926327 11.37244 8.744234 10.350649 10.905532
## 6 10.038943 11.68715 9.088357 10.51889 7.042461 9.428696 9.623780
##      Cntd1      Cntf      Cntfr      Cntln      Cntn1      Cntn2      Cntn3
## 1 5.635211 4.027159e+00 11.989379 10.214920 14.70319 14.204718 6.142066
## 2 5.251521 3.614788e+00 10.722205 9.804093 13.90557 13.482865 6.590332
## 3 4.356925 1.324699e+00 6.682922 7.937854 10.36049 9.982855 3.513829
## 4 1.335122 1.255971e-07 7.907744 3.985479 12.87260 7.476129 5.196133
## 5 5.602022 3.947457e+00 11.080896 10.162616 14.26442 13.841716 6.945904
## 6 4.480798 2.946583e+00 10.797860 9.024529 13.51128 13.012834 4.976631
##      Cntn4      Cntn5      Cntn6      Cntnap1      Cntnap2      Cntnap3      Cntnap4
## 1 8.787117 6.002774 8.729851 8.971427 10.902230 6.241273e+00 8.006466
## 2 9.124900 6.889411 10.628840 8.929770 10.584839 4.945557e+00 8.277464
## 3 5.780035 3.160434 1.709384 6.285675 11.277602 1.638134e+00 6.249255
## 4 5.754203 4.408824 3.146044 8.091882 8.120295 6.606270e-08 4.466652
## 5 9.483209 7.245603 10.987518 9.287996 10.943510 5.294072e+00 8.635317
## 6 7.599413 4.840002 7.542320 7.783210 9.711236 5.074091e+00 6.821826
##      Cntnap5a      Cntnap5b      Cntnap5c      Cntrob      Coasy      Cob1      Cob1l1
## 1 5.741905 8.269172 5.605885e+00 9.509366 11.412265 9.897249 11.380898
## 2 5.831388 7.870632 5.254247e+00 9.901433 11.023315 9.882127 10.679100
## 3 2.580825 3.554042 1.044023e-07 7.159462 9.864663 5.954763 7.109710
## 4 1.566262 7.379421 6.560514e-01 3.832283 8.671643 6.168045 6.790686
## 5 6.184667 8.228151 5.604763e+00 10.259979 11.382041 10.240669 11.037785
## 6 4.584848 7.083312 4.452233e+00 8.319978 10.220976 8.707250 10.189624
##      Coch      Cog1      Cog2      Cog3      Cog4      Cog5      Cog6
## 1 7.068684 10.906278 10.625606 11.217142 11.595927 9.656135 10.722723
## 2 5.768807 10.232815 10.253411 11.123411 11.221450 9.795809 10.807374
## 3 7.728983 8.423224 9.793969 6.995859 10.603987 7.664321 9.489365
## 4 2.734827 5.887001 8.654139 5.127335 9.196905 6.062476 7.289677
## 5 6.121837 10.591429 10.612029 11.482147 11.580196 10.154329 11.166076
## 6 5.890733 9.715281 9.434820 10.025953 10.404554 8.466496 9.531859
##      Cog7      Cog8      Coil      Col10a1      Col11a1      Col11a2      Col12a1
## 1 10.273028 9.986392 8.878068 2.203859e+00 10.583763 12.979896 7.200202
## 2 10.098045 10.168734 9.280839 2.134823e+00 10.715727 12.999413 6.911339
## 3 9.779662 4.531126 7.527455 1.158982e+00 7.342210 4.214578 6.367814
## 4 9.112540 3.603523 2.408176 1.024198e-07 3.651373 4.291828 4.685696
## 5 10.456633 10.527336 9.639206 2.419397e+00 11.074416 13.358253 7.267572

```



```
## 6 9.082574 8.796273 7.690103 1.370873e+00 9.393013 11.788147 6.021034
## Col13a1 Col14a1 Col15a1 Col16a1 Col17a1 Col18a1 Col19a1
## 1 5.6481784 6.878414 10.603042 11.385533 4.052735 11.319523 9.384329
## 2 6.1528020 6.212048 10.278521 10.731996 3.449306 10.825237 7.287501
## 3 2.4057970 3.249530 5.606378 5.472248 7.132594 5.462157 5.447798
## 4 0.3562719 3.144625 5.896421 3.499553 7.620198 6.954885 5.294695
## 5 6.5072012 6.566628 10.637143 11.090688 3.778758 11.183940 7.644342
## 6 4.4934337 5.702430 9.412275 10.194257 2.970278 10.128280 8.195176
## Col1a1 Col1a2 Col20a1 Col22a1 Col23a1 Col24a1
## 1 10.305128 11.300954 9.881162e+00 5.3817097 10.055175 8.665839e+00
## 2 9.463572 10.507690 9.700238e+00 5.1674273 9.637043 7.820290e+00
## 3 8.224868 10.288495 2.647860e+00 0.8815683 7.451800 3.609691e-08
## 4 7.044055 7.764475 5.584825e-08 3.0899107 6.726767 1.872749e-08
## 5 9.822000 10.866350 1.005873e+01 5.5174239 9.995522 8.177760e+00
## 6 9.114640 10.109721 8.691184e+00 4.2343952 8.864970 7.478510e+00
## Col25a1 Col27a1 Col28a1 Col2a1 Col3a1 Col4a1 Col4a2
## 1 8.928236 11.447743 5.9907543 7.769823e+00 10.662755 15.478438 15.019203
## 2 8.764002 11.256405 5.4820212 8.815915e+00 10.111788 14.838875 14.472777
## 3 3.498714 5.421725 3.7055085 3.688367e+00 7.779873 9.433660 8.696848
## 4 8.587053 6.370577 0.2955933 7.991946e-08 5.217821 7.725248 7.659986
## 5 9.122148 11.615153 5.8337622 9.174087e+00 10.470379 15.197743 14.831642
## 6 7.740134 10.256437 4.8282239 6.586488e+00 9.471939 14.286496 13.827276
## Col4a3 Col4a3bp Col4a4 Col4a5 Col5a1 Col5a2 Col5a3
## 1 7.451941 11.702536 5.139779 9.698304 9.076914 9.094676 8.7821114
## 2 6.411299 10.991577 5.810385 9.850044 8.835401 9.367133 9.1280611
## 3 4.807277 7.066970 3.883654 7.216265 3.639365 6.234610 2.8058799
## 4 5.332027 6.070772 3.490010 4.177495 3.410681 3.830355 0.5152079
## 5 6.766434 11.350300 6.163582 10.208578 9.193583 9.725530 9.4863711
## 6 6.270729 10.511120 4.000463 8.508598 7.888432 7.906152 7.5944223
## Col6a1 Col6a2 Col6a3 Col6a5 Col6a6 Col7a1 Col8a1
## 1 8.933792 11.159282 10.313365 4.2202740 5.989968e+00 8.542108 5.301841
## 2 8.671293 10.904967 9.893662 4.5223646 3.983871e+00 7.762385 4.374636
## 3 5.840521 4.799577 5.256561 2.0062500 3.137902e+00 4.967049 4.411070
## 4 2.397480 2.186546 3.278059 0.2856842 1.624045e-07 5.411763 6.430723
## 5 9.029391 11.263680 10.252207 4.8673296 4.322497e+00 8.119797 4.718093
## 6 7.745675 9.968126 9.122869 3.1262335 4.827454e+00 7.355194 4.157025
## Col8a2 Col9a1 Col9a2 Col9a3 Colec11 Colec12 Colq
## 1 3.653648 7.595041 10.3394565 13.565997 4.366404e+00 9.376845 3.9188611
## 2 3.035823 8.239940 9.6880570 12.939131 4.165153e+00 8.994913 2.9926769
## 3 4.108988 3.349573 5.6055525 8.282788 3.155106e+00 9.260016 1.2096391
## 4 6.008984 3.755843 0.5849812 6.536965 7.774266e-08 6.009799 0.2784059
## 5 3.355377 8.597766 10.0465501 13.297969 4.506185e+00 9.353168 3.3110205
## 6 2.604309 6.412816 9.1489335 12.374169 3.263232e+00 8.187707 2.8465955
## Commd1 Commd10 Commd2 Commd3 Commd4 Commd5 Commd6
## 1 10.999785 10.762864 10.051257 11.71595 11.377416 9.173927 10.690384
## 2 10.237837 10.046172 9.417730 10.83754 10.817943 8.447993 9.901836
## 3 11.495268 10.499489 10.632541 12.46677 11.459508 9.336567 11.822850
## 4 9.887463 9.304519 9.595830 11.70465 9.873412 8.272097 10.399771
## 5 10.596452 10.404750 9.776143 11.19625 11.176645 8.805960 10.260382
## 6 9.808725 9.571970 8.861057 10.52453 10.186144 7.985218 9.499545
## Commd7 Commd8 Commd9 Comp Comt Comtd1 Copa
## 1 11.197804 11.393014 10.739868 5.757476e+00 12.32141 10.102154 13.71215
## 2 10.827317 10.669053 10.012001 4.824689e+00 11.89648 9.340889 13.10163
## 3 10.508583 11.574707 10.910236 3.404186e-08 11.27049 7.977681 12.05605
```

```

## 4 8.076929 11.362111 9.638767 1.770754e-08 10.99223 8.671947 11.11812
## 5 11.186021 11.027736 10.370572 5.172294e+00 12.25528 9.699277 13.46047
## 6 10.006626 10.201734 9.548991 4.600048e+00 11.12979 8.911892 12.52031
##      Copb1      Copb2      Cope      Copg2      Cops2      Cops3      Cops4
## 1 12.732392 12.60635 12.72126 11.523393 11.898530 11.78096 12.22123
## 2 12.237163 12.15054 12.10115 11.299653 11.631358 11.04050 11.87997
## 3 11.567287 11.30707 12.62351 9.105798 11.831371 11.05726 12.30569
## 4 9.992867 10.36110 11.30716 8.511358 9.359493 10.02042 10.64213
## 5 12.595976 12.50935 12.45996 11.658406 11.990137 11.39923 12.23876
## 6 11.540686 11.41467 11.52956 10.332052 10.707042 10.58951 11.02964
##      Cops5      Cops6      Cops7a      Cops7b      Cops8      Copz1      Copz2
## 1 12.05959 12.28578 11.94016 9.964365 11.84475 12.81076 8.580996
## 2 11.54446 11.67241 11.44109 10.578676 11.45340 12.25688 7.728588
## 3 11.67285 11.96207 11.39251 8.591069 12.19854 12.96899 7.208144
## 4 10.39330 11.11825 10.64508 5.529792 11.00150 11.57605 7.242804
## 5 11.90323 12.03119 11.79986 10.937346 11.81216 12.61569 8.085966
## 6 10.86805 11.09418 10.74866 8.774275 10.65329 11.61904 7.393949
##      Coq10a      Coq10b      Coq2      Coq3      Coq4      Coq5      Coq6
## 1 10.676218 11.163206 10.862040 8.086902 9.412153 9.861849 10.517333
## 2 10.568704 11.010671 10.245567 7.818248 8.537758 9.504524 9.758766
## 3 8.454310 8.715179 7.550184 8.944262 9.937269 10.266409 9.901907
## 4 5.288935 6.802173 7.217433 7.276186 7.880329 8.422215 9.013061
## 5 10.927374 11.369396 10.604184 8.175717 8.895781 9.862964 10.117277
## 6 9.485391 9.972048 9.671073 6.901865 8.222946 8.671899 9.326641
##      Coq7      Coq9      Corin      Coro1a      Coro1b      Coro1c      Coro2a
## 1 10.148305 11.74092 5.090670e+00 13.205874 13.59138 12.94726 8.750503
## 2 9.537620 10.95053 5.656356e+00 12.984888 13.12053 12.41333 8.325453
## 3 10.726388 10.63654 1.253056e-07 8.910977 11.34908 11.63836 2.797328
## 4 9.835796 10.31946 4.848414e-01 10.789626 10.47859 10.27855 3.761903
## 5 9.896070 11.30925 6.008912e+00 13.343727 13.47937 12.77216 8.683340
## 6 8.957989 10.54949 3.953140e+00 12.014090 12.39955 11.75551 7.562909
##      Coro2b      Coro6      Coro7      Cort      Cot11      Cox10      Cox11
## 1 12.524102 5.7812052 12.130386 5.162339 14.077454 10.048131 8.995670
## 2 12.158916 5.7039933 11.927603 5.006349 13.595279 9.495777 9.052859
## 3 9.925188 0.7623421 9.674686 2.514933 11.369591 9.845868 7.408579
## 4 8.574337 0.5612975 8.904799 2.694956 9.557953 8.327697 5.260486
## 5 12.517725 6.0567543 12.286400 5.355293 13.954132 9.854215 9.411139
## 6 11.332439 4.6232215 10.938824 4.022220 12.885580 8.857934 7.807391
##      Cox15      Cox16      Cox17      Cox18      Cox19      Cox4i1      Cox4i2
## 1 9.978008 9.841058 10.031304 9.328344 10.197241 14.55170 7.637108
## 2 10.152458 9.057830 9.236099 8.597023 9.804998 13.82889 6.726312
## 3 8.248976 10.341857 11.119793 5.985849 10.765441 14.68219 10.302577
## 4 6.751743 9.432647 10.564357 5.258936 8.734107 14.29427 8.255254
## 5 10.511058 9.416112 9.594450 8.955080 10.163521 14.18775 7.082182
## 6 8.787901 8.651138 8.841128 8.139303 9.006870 13.35980 6.454604
##      Cox5a      Cox5b      Cox6a1      Cox6a2      Cox6b1      Cox6b2      Cox6c      Cox7a1
## 1 12.076247 9.260291 13.67097 6.317733 13.27157 7.378147 12.58761 5.535739
## 2 11.682503 8.356008 13.06958 7.114727 12.62698 7.232581 11.86427 4.692560
## 3 9.053756 8.823695 13.61281 1.612025 13.32909 9.132123 12.70781 6.611212
## 4 7.285194 8.780924 13.07697 2.639010 12.58128 6.429291 12.16668 6.076625
## 5 12.041285 8.713916 13.42842 7.471307 12.98581 7.589343 12.22307 5.039080
## 6 10.884702 8.071391 12.47913 5.149282 12.07978 6.197498 11.39593 4.383968
##      Cox7a2      Cox7a2l      Cox7b2      Cox7c      Cox8a      Cp      Cpa1
## 1 12.41221 12.85691 3.151719 8.825750 13.18369 9.996364 3.445031e+00

```

```

## 2 11.65216 12.13019 2.555389 8.253999 12.51305 9.200365 4.134996e+00
## 3 13.13714 11.58134 3.896365 8.190859 12.32387 10.258944 5.149903e-08
## 4 11.88870 10.73576 6.454193 7.292252 12.08083 8.938393 1.969950e-08
## 5 12.01094 12.48899 2.859110 8.611835 12.87187 9.558703 4.475649e+00
## 6 11.22057 11.66518 2.157578 7.637933 11.99191 8.806232 2.416593e+00
##      Cpa2      Cpa3      Cpa4      Cpa6      Cpb2      Cpd      Cpe
## 1 5.253395 0.9964977 4.436869 1.577203e+00 1.153603e+00 13.344686 16.00988
## 2 5.366645 0.7325055 3.917103 1.365145e+00 1.008629e+00 13.008883 15.52931
## 3 8.305204 9.0750822 6.563962 8.706906e-08 1.864612e+00 10.470074 15.12352
## 4 3.370200 1.6124133 5.919856 4.240024e-08 6.506979e-08 9.583074 14.11289
## 5 5.717790 0.8861593 4.254763 1.594991e+00 1.200166e+00 13.367723 15.88818
## 6 4.110161 0.5253127 3.329594 9.061152e-01 6.231821e-01 12.152885 14.81793
##      Cpeb1      Cpeb2      Cpeb3      Cpeb4      Cplx1      Cplx2      Cplx3
## 1 10.375017 12.410959 10.361517 11.577032 11.270053 12.20853 7.423695e+00
## 2 9.772044 11.059293 9.854201 11.365194 11.410463 12.44084 7.211717e+00
## 3 8.370418 8.195079 6.935788 7.145959 10.280085 11.36609 5.605456e-08
## 4 8.492340 7.333287 6.907538 6.429729 8.817227 10.35820 2.654713e-08
## 5 10.130559 11.418023 10.212736 11.723953 11.769225 12.79966 7.568447e+00
## 6 9.184458 11.219323 9.170972 10.385668 10.078836 11.01695 6.242696e+00
##      Cpm      Cpn1      Cpne1      Cpne2      Cpne3      Cpne4      Cpne5
## 1 11.821485 4.346365 11.335707 10.969662 10.893321 8.178750 8.666322
## 2 11.124483 3.900141 11.122360 10.705967 10.079829 8.075299 8.188445
## 3 10.079467 2.961976 9.210173 8.553573 11.192891 5.372420 2.420404
## 4 8.747435 0.485312 6.317380 7.278053 10.773202 9.111116 2.074698
## 5 11.483219 4.237549 11.481096 11.064655 10.438413 8.432997 8.546233
## 6 10.630025 3.244395 10.144455 9.778622 9.702332 6.993286 7.478991
##      Cpne6      Cpne7      Cpne8      Cpne9      Cpox      Cpped1      Cps1
## 1 8.623455 9.1858253 9.391626 6.265544 12.797984 10.825221 2.285238e+00
## 2 8.285139 9.4089476 8.579176 6.629292 12.051415 10.185489 1.881182e+00
## 3 8.419201 3.2425479 7.122686 5.654536 9.214345 9.782329 5.697426e-08
## 4 10.792235 0.5448027 6.091350 5.624061 8.879218 9.371185 2.838925e-08
## 5 8.642997 9.7673583 8.937223 6.984953 12.410219 10.544094 2.151034e+00
## 6 7.436264 7.9970892 8.202459 5.097951 11.606266 9.634281 1.434825e+00
##      Cpsf1      Cpsf2      Cpsf3      Cpsf3l      Cpsf4      Cpsf4l      Cpsf6
## 1 12.001272 10.713696 11.75173 11.652004 10.445472 5.407941 12.58590
## 2 11.962433 10.755637 11.27799 10.867919 9.855120 4.258776 12.11057
## 3 10.108137 9.846567 11.46641 9.542846 8.612727 1.301814 11.32819
## 4 8.279872 8.598427 10.26640 8.022561 6.330383 1.499629 9.19360
## 5 12.321232 11.114332 11.63674 11.226627 10.213655 4.600936 12.46938
## 6 10.809750 9.522840 10.56029 10.460608 9.254846 4.259834 11.39422
##      Cpsf7      Cpt1a      Cpt1b      Cpt1c      Cpt2      Cpv1      Cpxm1
## 1 12.03331 12.860580 3.102966e+00 11.80114 9.497671 1.704728e+00 9.679452
## 2 12.04732 12.717252 2.163837e+00 11.19701 9.161254 1.812036e+00 9.410458
## 3 10.57924 9.968035 3.476788e-08 11.22913 9.918102 1.198229e+00 9.037277
## 4 8.44968 8.789115 1.782527e-08 11.16525 7.101879 7.986871e-08 6.966726
## 5 12.40613 13.076084 2.449928e+00 11.55575 9.519576 2.077375e+00 9.768869
## 6 10.84177 11.668851 2.115138e+00 10.60969 8.308304 9.964555e-01 8.489775
##      Cpxm2      Cpz      Cr1l      Crabp1      Crabp2      Cradd      Cramp1l
## 1 7.265474 3.367146e+00 11.443460 7.611548e+00 7.134871 8.284751 11.205382
## 2 6.670498 4.549540e+00 10.415113 6.442668e+00 5.012644 7.809447 10.942316
## 3 3.283765 4.797263e-01 9.979359 5.085616e+00 7.155158 7.874410 8.674643
## 4 3.897034 6.601056e-08 10.477991 7.597883e-08 5.473331 6.977433 6.716050
## 5 7.026250 4.894766e+00 10.773759 6.797883e+00 5.361631 8.166907 11.301033
## 6 6.085742 2.347226e+00 10.252156 6.429212e+00 5.956294 7.098825 10.014200

```

##	Crat	Crb1	Crb2	Crb3	Crbn	Crcp	Creb1
## 1	12.199803	4.288374	8.073070	3.168014	11.020272	10.123121	11.200346
## 2	11.847902	4.820177	8.085065	3.345993	10.403602	9.885613	10.790194
## 3	10.314811	6.125972	5.281710	2.280417	11.338024	10.075466	10.458699
## 4	8.262106	4.414673	3.346276	4.439000	9.796925	7.808554	8.360743
## 5	12.206694	5.167747	8.442771	3.673237	10.762245	10.244155	11.148893
## 6	11.008222	3.189971	6.888100	2.171803	9.829199	8.932834	10.009167
##	Creb3	Creb3l1	Creb3l2	Creb3l3	Creb3l4	Creb5	Crebbp
## 1	12.02136	8.401469	11.071663	4.2607901	4.401296	8.874224	11.669825
## 2	11.26304	7.859869	10.591718	4.3837534	4.279441	9.548186	11.264464
## 3	11.87905	7.379717	5.820626	2.5579923	7.868495	7.818284	10.688157
## 4	11.77084	3.947042	6.117335	0.3181028	4.021440	5.426102	9.030307
## 5	11.62179	8.217378	10.950390	4.7273080	4.621840	9.906640	11.623213
## 6	10.82983	7.215074	9.880559	3.1641307	3.296069	7.686269	10.478422
##	Crebl2	Crebzf	Creg1	Creg2	Creld1	Creld2	Crem
## 1	8.559248	11.617202	12.054041	10.522578	11.760651	11.024992	11.211430
## 2	8.326611	11.372864	11.551697	10.284903	11.246696	10.531972	10.425696
## 3	5.811560	8.104477	7.739288	7.798981	9.553059	8.109161	9.005165
## 4	4.953151	5.208624	8.513701	9.394518	9.493215	7.538548	8.674865
## 5	8.684498	11.731622	11.910469	10.643527	11.605444	10.890636	10.784344
## 6	7.372275	10.425821	10.862503	9.331881	10.569213	9.833916	10.020245
##	Crh	Crhbp	Crhr1	Crhr2	Crim1	Crip1	
## 1	6.206529e+00	7.185430e+00	6.782061	4.3321926	10.564584	9.182707	
## 2	4.894742e+00	6.453799e+00	6.744543	4.7510516	10.010819	8.090096	
## 3	4.135589e+00	3.635866e-08	1.800747	0.4760449	8.077089	10.410789	
## 4	8.329012e-08	1.862436e-08	2.844279	5.0128969	8.600444	11.781809	
## 5	5.242884e+00	6.809042e+00	7.100451	5.0980644	10.369389	8.447806	
## 6	5.039945e+00	6.006393e+00	5.607174	3.2310818	9.373850	7.993978	
##	Crip2	Crip3	Cript	Crispld1	Crispld2	Crk	
## 1	12.51808	4.558673e+00	11.457754	6.938504e+00	5.870587	13.031114	
## 2	11.92082	3.758560e+00	10.730520	6.606874e+00	4.982789	12.845164	
## 3	13.45729	1.290980e+00	12.354516	3.743208e+00	8.229263	9.907955	
## 4	11.65102	5.927425e-08	10.952147	5.209685e-08	8.663068	8.788555	
## 5	12.27961	4.093736e+00	11.089212	6.962484e+00	5.331568	13.203999	
## 6	11.32642	3.444734e+00	10.266443	5.761871e+00	4.710584	11.839356	
##	Crkl	Cr1f1	Cr1f2	Cr1f3	Cr1s1	Crmp1	Crnk11
## 1	12.107157	6.876884	10.142147	10.677316	10.160515	12.883885	10.035147
## 2	11.644875	6.444465	9.876867	10.531234	9.853991	12.413942	9.744739
## 3	9.362867	7.539218	4.777800	7.899460	9.284559	11.691307	10.497737
## 4	8.160574	5.785962	3.045064	5.453654	7.476935	8.619089	7.995990
## 5	12.003655	6.799685	10.235407	10.889898	10.212526	12.772763	10.103247
## 6	10.915603	5.700916	8.951838	9.486488	8.970185	11.692151	8.844967
##	Crocc	Crot	Crtac1	Crtam	Crtap	Crtc1	Crtc2
## 1	8.786582	11.36231	9.832109	3.809068e+00	10.804232	11.544041	11.656910
## 2	8.993774	10.84010	9.826645	2.636721e+00	9.569048	11.096051	11.419647
## 3	6.138092	10.97250	6.405964	6.796001e-08	6.988803	9.038539	7.615043
## 4	3.589001	10.24776	7.584982	8.736172e-01	7.355568	9.650927	5.243956
## 5	9.352029	11.19880	10.185173	2.943519e+00	9.927508	11.454785	11.778409
## 6	7.598880	10.17104	8.642202	2.745832e+00	9.613307	10.352691	10.465512
##	Crtc3	Cry1	Cry2	Cryaa	Cryab	Cryba1	
## 1	10.822541	11.479941	12.638562	1.781705e+00	14.38838	1.366289e+00	
## 2	10.666894	10.529930	12.184180	2.966985e+00	13.32810	7.098439e-01	
## 3	8.239082	6.371504	8.839493	7.193331e-08	13.63366	1.709956e+00	
## 4	7.180484	6.893737	9.317393	4.016851e-01	13.05841	2.011796e-08	

```

## 5 11.025577 10.888594 12.542991 3.284590e+00 13.68695 8.600051e-01
## 6 9.631602 10.288620 11.446875 1.052082e+00 13.19648 7.618539e-01
##      Cryba4      Crybb1      Crybb3      Crybg3      Cryga      Crygn      Cryl1
## 1 9.457795 13.274897 6.0794033 9.973679 3.563578e-01 2.4241025 11.218271
## 2 9.829775 12.987022 5.2968023 10.271844 1.203930e+00 2.3333156 11.065481
## 3 3.045733 5.089086 7.3935365 6.501817 5.124883e-08 6.0860900 8.174872
## 4 5.641461 9.406256 0.8224157 5.696497 2.552153e+00 0.3344776 8.889852
## 5 10.188304 13.345862 5.6475629 10.630465 1.417742e+00 2.6276535 11.424212
## 6 8.268501 12.083104 4.9151356 8.783577 1.685822e-01 1.5456721 10.027082
##      Crym      Cryz      Cryz11      Cs      Csad      Csd2      Csd1
## 1 7.738648 9.823065 10.266098 13.51906 11.665698 12.15121 13.50124
## 2 7.681776 9.994953 9.460152 13.29268 11.095116 11.71425 12.81809
## 3 8.121682 10.100982 11.521240 12.68953 9.469664 11.58007 14.27054
## 4 9.344567 8.122381 10.894861 11.20425 8.593450 10.76058 12.65303
## 5 8.039104 10.353520 9.818579 13.65153 11.453850 12.07303 13.17693
## 6 6.555502 8.633171 9.075651 12.32724 10.474297 10.95964 12.30942
##      Cse11      Csf1      Csf1r      Csf2      Csf2ra      Csf2rb      Csf2rb2
## 1 11.817861 14.328170 17.37070 3.473941e+00 9.748671 10.034935 9.493483
## 2 11.248559 13.600054 17.29015 3.640942e+00 9.372908 9.946267 9.243319
## 3 11.403495 7.880945 10.63092 1.665342e+00 5.382255 5.266072 3.201589
## 4 9.511177 8.952074 13.43084 1.168122e-07 3.623634 6.267949 6.415103
## 5 11.607307 13.958907 17.64902 3.974087e+00 9.731307 10.304823 9.601672
## 6 10.626401 13.136278 16.17873 2.442443e+00 8.558887 8.844755 8.304124
##      Csf3      Csf3r      Csgalnact1      Csgalnact2      Csk      Csl
## 1 5.879752e+00 12.935756 10.324372 10.035568 13.075943 6.906208
## 2 4.965385e+00 12.579743 10.378512 9.306307 12.213388 6.796407
## 3 3.720465e-08 5.294885 9.063812 7.792743 9.229768 8.745146
## 4 1.932083e-08 9.117328 8.513956 6.525817 8.089202 7.128965
## 5 5.314041e+00 12.938570 10.737152 9.664683 12.572200 7.152420
## 6 4.719549e+00 11.744014 9.133864 8.845387 11.884179 5.729920
##      Csm1      Csm3      Csnk1a1      Csnk1d      Csnk1e      Csnk1g1      Csnk1g2
## 1 11.033057 10.783286 13.711289 13.573829 12.727781 10.333239 12.515368
## 2 10.721762 9.984267 12.943841 13.378898 12.492495 10.371202 12.614559
## 3 7.013587 6.553591 10.919754 10.521811 10.722801 10.499942 6.886582
## 4 5.709384 8.001377 9.597523 8.418899 8.416295 8.153096 6.699268
## 5 11.080452 10.342832 13.302680 13.737747 12.851319 10.729841 12.973387
## 6 9.841976 9.592377 12.519446 12.382001 11.536076 9.142722 11.323707
##      Csnk1g3      Csnk2a1      Csnk2a2      Csnk2b      Cspg4      Cspg5      Csp1
## 1 10.871394 12.274953 10.811646 12.38796 13.411137 15.16716 10.313960
## 2 11.040729 11.229490 9.918814 11.63590 13.322885 14.64707 10.501196
## 3 8.128931 9.963513 7.907631 12.39914 7.235431 11.91637 9.333973
## 4 6.909912 9.847134 6.927732 11.06729 9.264593 12.46582 6.359434
## 5 11.399457 11.588236 10.277364 11.99468 13.681733 15.00593 10.859855
## 6 9.680420 11.083351 9.620715 11.19633 12.219327 13.97523 9.123463
##      Csrnp1      Csrnp2      Csrnp3      Csrp1      Csrp2      Csrp2bp      Cst6
## 1 13.401630 10.981534 9.819179 14.89133 12.678839 10.640685 6.544280
## 2 12.881550 10.513850 9.273506 13.78750 11.779517 10.791830 4.710706
## 3 3.817998 9.547000 6.657001 11.51272 9.598426 8.163475 9.303506
## 4 5.048156 7.959283 8.137706 10.69902 8.045885 6.243989 6.670119
## 5 13.240387 10.872511 9.631871 14.14636 12.138306 11.150530 5.057381
## 6 12.209821 9.790487 8.629290 13.69941 11.487144 9.449887 5.372435
##      Cst7      Cstb      Cstf1      Cstf2      Cstf2t      Cstf3      Cst11
## 1 7.122615 10.946864 10.383622 12.188839 11.204272 10.510595 1.518793e+00
## 2 7.344377 10.100981 10.390844 12.124362 10.341334 9.697547 1.911482e+00

```

```

## 3 2.485624 11.698729 10.401785 9.803111 11.651768 10.042388 5.394062e-08
## 4 4.722173 10.583968 7.401842 8.001547 11.086800 8.682189 2.306416e-08
## 5 7.701297 10.459570 10.749486 12.483169 10.699967 10.056043 2.183240e+00
## 6 5.944152 9.755839 9.193055 10.997261 10.013091 9.319909 8.655103e-01
##      Ctage5      Ctbp1      Ctbp2      Ctbs      Ctcf      Ctdnep1      Ctdp1
## 1 11.501568 13.749437 11.038467 9.686807 11.699293 12.395097 10.648957
## 2 10.957844 13.339757 10.821117 8.642028 11.537729 11.736625 10.539547
## 3 9.777708 9.900195 8.902256 8.465300 10.090844 8.664168 6.353867
## 4 8.302254 8.357794 7.533098 6.835051 8.115553 8.076517 3.286294
## 5 11.316563 13.698606 11.179820 9.000110 11.896501 12.095411 10.898212
## 6 10.310237 12.557591 9.847383 8.497119 10.507879 11.203465 9.458152
##      Ctdsp1 Ctdsp2 Ctdspl Ctdspl2 Ctf1 Ctgf Cth
## 1 12.387308 13.07379 9.877153 10.080414 5.2467799 11.321966 9.048187
## 2 12.130025 12.54571 9.220508 10.125612 5.6270663 10.845345 8.416493
## 3 9.719662 11.15339 10.179907 9.832258 4.1177301 6.325467 8.030657
## 4 7.838340 10.16478 8.737581 7.839180 0.5367556 6.363742 4.986671
## 5 12.488833 12.90454 9.578853 10.484206 5.9794915 11.204051 8.774440
## 6 11.195678 11.88202 8.687181 8.890178 4.1037659 10.130722 7.859775
##      Cthrc1 Ctif Ctla4 Ctnna1 Ctnna2 Ctnna3 Ctnna11
## 1 10.850598 11.453140 4.045325e+00 13.499673 12.050588 6.532993 11.436041
## 2 9.760526 11.058242 2.563519e+00 13.323559 11.927736 5.343978 11.036436
## 3 11.108939 8.880694 6.860688e-08 12.357399 9.749948 5.616805 8.263629
## 4 8.120881 5.621504 3.497845e-08 9.769254 7.789412 1.321678 7.325575
## 5 10.119038 11.416971 2.867555e+00 13.682406 12.286534 5.695000 11.395164
## 6 9.659639 10.261831 2.963410e+00 12.307853 10.859050 5.361305 10.244741
##      Ctnnb1 Ctnnbip1 Ctnnbl1 Ctnnd1 Ctnnd2 Ctns Ctps
## 1 15.39497 12.696103 11.112124 13.73611 12.49190 11.471582 12.006100
## 2 14.74172 12.007027 10.692754 12.91490 12.11115 10.745848 11.081896
## 3 12.62502 10.262932 10.960094 10.55430 12.08457 10.598447 9.926526
## 4 11.45297 9.562795 9.412270 10.00167 10.75312 10.453056 8.437849
## 5 15.10059 12.365829 11.051440 13.27374 12.46995 11.104541 11.440628
## 6 14.20303 11.504405 9.920996 12.54427 11.30025 10.280265 10.814576
##      Ctps2 Ctr9 Ctrb1 Ctrl Ctsa Ctsb Ctsc
## 1 10.993487 11.664182 3.840824e+00 4.574623 15.35072 16.60879 11.417123
## 2 10.919650 11.602313 2.497696e+00 4.828440 14.86958 16.13852 11.116540
## 3 10.434074 10.131027 5.947813e-08 3.505514 12.82191 14.67089 9.660877
## 4 9.141554 7.680641 3.048181e-08 0.553537 12.88986 14.53990 10.352519
## 5 11.278365 11.961090 2.799121e+00 5.176075 15.22845 16.49739 11.475275
## 6 9.802431 10.472781 2.774912e+00 3.459850 14.15878 15.41682 10.225832
##      Ctsd Ctse Ctsf Ctsh Ctsk Ctsl Ctso Ctss
## 1 18.27920 7.525955 13.55737 13.36358 10.640506 14.73620 12.00056 15.07130
## 2 17.89540 7.108923 13.07133 12.52728 8.988624 14.13352 11.17409 14.63006
## 3 14.06744 4.501898 10.25919 10.03468 8.933232 13.00093 10.52983 10.55025
## 4 15.24920 6.106797 10.36778 11.33728 7.311577 12.60227 10.03940 14.57812
## 5 18.25428 7.465494 13.43017 12.88610 9.346877 14.49238 11.53283 14.98892
## 6 17.08722 6.344207 12.36554 12.17178 9.449708 13.54429 10.80904 13.87937
##      Ctsw Ctsz Ctttn Ctttnbp2 Ctttnbp2n1 Ctu1 Ctu2
## 1 9.097061 14.46039 12.313526 11.171500 12.618602 8.599206 10.315787
## 2 9.011682 14.04224 12.291623 11.221287 12.207124 8.317510 9.980861
## 3 3.103021 12.02105 11.004848 11.336136 9.811677 6.552992 5.012447
## 4 5.268778 12.06732 9.224969 7.988923 9.179838 2.546715 2.742635
## 5 9.369944 14.40110 12.650439 11.580033 12.565935 8.675391 10.339425
## 6 7.908531 13.26849 11.121914 9.980337 11.426920 7.412096 9.125288
##      Ctxn1 Ctxn2 Ctxn3 Cubn Cuedc1 Cuedc2 Cul1

```

```

## 1 11.736676 6.022125 4.101862 5.1435443 11.718911 12.76855 12.459859
## 2 11.513423 5.559089 3.117905 3.4653344 11.593919 12.13477 12.116779
## 3 9.805113 5.909552 6.849266 4.0971738 7.592543 11.95832 10.898528
## 4 9.252562 7.257261 7.282773 0.9374365 6.291491 10.68925 9.008115
## 5 11.872193 5.911202 3.439661 3.7951146 11.952695 12.49358 12.475586
## 6 10.545247 4.858968 3.015878 4.0040928 10.527489 11.57684 11.268211
##      Cul2      Cul3      Cul4a      Cul4b      Cul5      Cul7      Cul9
## 1 10.855516 12.319194 11.517140 11.106406 11.175871 11.93725 11.867411
## 2 10.444352 11.640210 11.394776 10.867743 10.432862 11.37056 11.421477
## 3 9.652669 9.145579 8.797328 9.881445 11.040269 8.31696 7.044723
## 4 7.890780 8.374326 7.538826 8.604755 10.471351 5.62599 7.640265
## 5 10.803002 11.998989 11.753537 11.226452 10.791511 11.72932 11.780240
## 6 9.664553 11.127580 10.325802 9.915280 9.984705 10.74575 10.675934
##      Cuta      Cutc      Cux1      Cux2      Cuzd1      Cwc15      Cwc22
## 1 11.69438 7.804689 12.168075 10.544484 2.542578e+00 12.31396 12.882460
## 2 10.99361 6.901258 11.944923 10.879150 2.023013e+00 11.54921 12.378529
## 3 11.71311 8.352998 11.225953 3.684974 6.816823e-08 12.37802 10.321487
## 4 10.16812 5.626386 8.680343 2.802490 3.434231e-08 11.02905 7.737554
## 5 11.35234 7.257472 12.303721 11.237860 2.301433e+00 11.90798 12.737348
## 6 10.50297 6.621148 10.976502 9.353768 1.641882e+00 11.12235 11.690727
##      Cwc25      Cwc27      Cwf1911      Cwf1912      Cwh43      Cx3c11      Cx3cr1
## 1 10.538728 9.225346 8.704957 9.518748 4.108777 11.935836 14.714776
## 2 10.752519 8.856876 8.949933 8.991567 3.939111 12.083055 14.846384
## 3 8.882001 9.618081 8.498624 9.321709 2.101397 7.363294 8.693911
## 4 5.956719 7.262969 6.931267 6.901577 2.093254 11.109147 12.171897
## 5 11.111213 9.215068 9.308168 9.349821 4.277094 12.441861 15.205253
## 6 9.348017 8.036522 7.517503 8.329344 3.022306 10.744335 13.522863
##      Cxc11      Cxc110      Cxc111      Cxc112      Cxc114      Cxc116      Cxc117
## 1 10.864210 10.456706 4.963013 13.598953 12.009501 11.510904 0.6946525
## 2 10.508858 9.448550 5.151425 12.727079 11.426759 10.980815 0.8110689
## 3 5.505228 4.941316 2.365532 9.989309 8.675149 6.987253 6.6578319
## 4 1.070425 5.722096 2.119807 10.833572 9.609505 7.222485 2.6230273
## 5 10.867518 9.806973 5.501322 13.085911 11.785522 11.339536 0.9763540
## 6 9.673241 9.266069 3.830412 12.407122 10.817977 10.319569 0.3485558
##      Cxc12      Cxc13      Cxc15      Cxcr2      Cxcr3      Cxcr4      Cxcr5
## 1 11.182839 4.666556e+00 3.200780 2.945930e+00 6.012659 10.947134 6.312071
## 2 11.109195 3.474502e+00 3.537457 3.226396e+00 5.780438 10.156585 5.773241
## 3 6.586220 4.024893e-08 3.433338 6.494160e-08 5.408064 10.287676 4.674286
## 4 2.172458 2.102653e-08 3.260277 2.756499e-08 2.591474 6.434373 2.794738
## 5 11.467930 3.804468e+00 3.868670 3.550874e+00 6.133516 10.515185 6.126289
## 6 9.991670 3.547143e+00 2.200469 1.979726e+00 4.849690 9.756109 5.143712
##      Cxcr6      Cxx1a      Cxx1b      Cxx1c      Cxxc1      Cxxc4      Cxxc5
## 1 3.925134 11.348671 11.449196 10.961594 11.720526 9.476617 11.761011
## 2 2.685748 10.412464 10.800647 10.533654 11.443632 9.055323 11.223961
## 3 5.122810 6.893377 7.690404 10.886256 8.748380 6.576924 10.508315
## 4 3.262463 6.025932 7.656939 10.175205 6.698318 5.654203 8.385042
## 5 2.994316 10.771109 11.159348 10.892318 11.802396 9.413603 11.582707
## 6 2.852371 10.157413 10.257889 9.770560 10.529103 8.287288 10.569572
##      Cyb561      Cyb561d1      Cyb561d2      Cyb5b      Cyb5d1      Cyb5d2      Cyb5r1
## 1 8.731690 9.986040 9.991402 12.585384 7.9368619 9.875047 9.877307
## 2 8.625267 9.411684 9.335047 12.351563 7.6757727 9.323627 9.346964
## 3 6.086848 7.043409 10.056119 10.949977 6.0014217 9.631346 10.139965
## 4 9.508936 8.671997 9.645643 9.151932 0.9475928 9.750368 8.018588
## 5 8.983340 9.770096 9.693433 12.710381 8.0330944 9.682009 9.705354

```

```

## 6 7.544154 8.795922 8.801277 11.393708 6.7525840 8.685078 8.687335
##      Cyb5r2      Cyb5r3      Cyb5r4      Cyb5r1      Cyba      Cybb      Cybrd1
## 1 3.657810 12.738159 9.108529 7.518645 13.03219 7.968104 10.528784
## 2 3.195003 12.376674 8.279468 7.292772 12.27124 6.516059 9.017635
## 3 5.366158 10.932734 6.433361 7.245308 11.45751 7.792554 7.301114
## 4 4.434417 9.084822 5.295208 6.526819 11.93703 6.361850 6.486501
## 5 3.518714 12.735493 8.637322 7.649620 12.63006 6.871457 9.375900
## 6 2.608081 11.546452 7.919971 6.336949 11.84043 6.783661 9.338081
##      Cyc1      Cys      Cyfip1      Cyfip2      Cygb      Cyhr1      Cyld
## 1 12.818384 7.415406 13.51609 13.343966 9.756173 12.24694 11.080795
## 2 12.217710 7.007984 13.13609 13.407785 9.366221 11.63461 10.875503
## 3 9.396431 8.443893 11.56949 9.953234 6.880291 11.37194 8.883849
## 4 9.178206 7.885116 11.84484 10.913972 7.455184 10.36251 8.229447
## 5 12.576522 7.364388 13.49493 13.766635 9.724618 11.99339 11.234212
## 6 11.626663 6.234470 12.32426 12.152164 8.566377 11.05535 9.889685
##      Cyp11a1      Cyp19a1      Cyp1a1      Cyp1b1      Cyp20a1      Cyp26a1
## 1 0.8022836 2.955944e-01 3.081803e+00 9.082095 10.329228 1.626672e+00
## 2 1.3897598 2.810937e-01 3.309749e+00 8.635045 9.723063 1.689989e+00
## 3 5.9775096 5.173772e-08 2.826103e+00 10.731289 10.468383 4.318453e-08
## 4 5.2420612 2.236264e+00 1.180203e-07 5.350179 8.642653 2.017249e-08
## 5 1.6218851 3.514471e-01 3.636179e+00 8.993123 10.081566 1.946778e+00
## 6 0.4098556 1.383129e-01 2.096772e+00 7.893600 9.138715 9.408870e-01
##      Cyp26b1      Cyp27a1      Cyp27b1      Cyp2b19      Cyp2d22      Cyp2d26
## 1 7.927050 10.591551 3.467856e+00 2.1107772 11.24031 1.751807e+00
## 2 7.094917 10.478733 3.855997e+00 1.3501282 10.82023 1.843104e+00
## 3 6.192731 6.844576 2.303319e+00 2.7937733 10.92276 4.963906e-08
## 4 2.033548 5.959263 5.190979e-08 4.3743262 10.03633 2.272548e-08
## 5 7.451466 10.837389 4.192732e+00 1.5785617 11.17894 2.110500e+00
## 6 6.742824 9.400794 2.436997e+00 1.2986751 10.04911 1.030380e+00
##      Cyp2e1      Cyp2f2      Cyp2j12      Cyp2j13      Cyp2j6      Cyp2j8
## 1 9.022650e-03 0.9575544 9.634037 3.973486e+00 12.599022 3.984564e+00
## 2 6.039544e-01 0.4477871 8.806965 3.945805e+00 11.857857 3.201236e+00
## 3 7.048635e-11 2.0505655 6.030834 3.989711e-08 10.092729 1.543023e+00
## 4 3.428456e+00 1.6986185 8.534009 1.828039e-08 9.952088 1.146740e-07
## 5 7.369267e-01 0.5525529 9.165133 4.283885e+00 12.216650 3.525101e+00
## 6 4.003389e-03 0.5016670 8.444435 2.896957e+00 11.407343 2.907188e+00
##      Cyp2j9      Cyp2r1      Cyp2s1      Cyp2u1      Cyp39a1      Cyp3a13      Cyp46a1
## 1 10.829299 3.055475 4.434715 8.009726 7.552103 6.519400 11.242106
## 2 10.472716 2.803359 4.513053 6.677179 7.116780 5.321993 10.836659
## 3 10.793580 1.351351 3.690622 5.959466 10.678225 1.878269 6.589911
## 4 10.031488 4.330487 2.811430 4.919431 7.049965 1.115724 8.249189
## 5 10.831371 3.115929 4.857928 7.032945 7.473364 5.672894 11.195364
## 6 9.638356 2.073975 3.327562 6.825070 6.370172 5.347902 10.050904
##      Cyp4b1      Cyp4f13      Cyp4f14      Cyp4f15      Cyp4f16      Cyp4f17      Cyp4f18
## 1 3.4541974 10.258520 8.404271 10.086951 10.119727 8.837473 4.678643e+00
## 2 2.8359619 9.801200 7.222718 9.826729 10.211543 7.961668 4.397251e+00
## 3 0.5857541 8.683989 7.226884 8.321475 8.550628 6.699616 1.037667e+00
## 4 1.5598982 7.821233 7.808577 7.539105 4.988349 1.078353 7.803512e-08
## 5 3.1495821 10.159723 7.579464 10.185257 10.570154 8.319269 4.740949e+00
## 6 2.4247834 9.068081 7.217865 8.896707 8.929444 7.649622 3.558640e+00
##      Cyp4f39      Cyp4v3      Cyp4x1      Cyp51      Cyp7b1      Cyp8b1      Cyr61
## 1 1.900676 10.006341 5.5089656 14.448341 8.785593 4.520415e+00 14.646549
## 2 1.769567 9.475438 5.7076888 13.952899 8.555173 4.127602e+00 14.490389
## 3 2.573117 10.007942 1.1619939 11.765096 9.692293 4.731375e-08 8.955647

```



```

## 4 3.265996 8.711315 0.2765964 9.779817 10.055536 2.321488e-08 7.420174
## 5 2.032018 9.833870 6.0604656 14.311758 8.913205 4.468161e+00 14.849255
## 6 1.139623 8.816198 4.3579365 13.256441 7.597894 3.408513e+00 13.454639
##      Cys1  Cysltr1  Cysltr2  Cyth1  Cyth2  Cyth3  Cyth4
## 1 5.404690 6.826973 5.4497999 12.736284 13.263762 11.212852 13.566867
## 2 5.898157 6.408758 4.9233792 12.470396 12.467858 10.208931 13.701817
## 3 4.143313 5.658038 7.3903552 8.949978 8.931940 9.143736 8.269813
## 4 3.087851 6.708452 0.7686032 6.982877 8.685104 7.737705 9.726331
## 5 6.251690 6.763886 5.2717328 12.829219 12.826680 10.567541 14.060672
## 6 4.256681 5.651565 4.3004584 11.544578 12.071971 10.021666 12.375039
##      Cytip      Cyt11      Cyyr1 D030056L22Rik D10Bwg1379e D10Jhu81e
## 1 6.999063 2.713403e+00 9.2856599 10.133201 9.624403 11.436219
## 2 7.211929 3.618738e+00 9.7061510 9.283035 9.128599 11.089825
## 3 3.378308 1.474385e+00 2.2864909 8.533251 6.488584 8.072207
## 4 6.111390 8.987920e-07 0.9381242 4.964516 7.511113 7.695289
## 5 7.568660 3.951480e+00 10.0646489 9.641403 9.486909 11.448558
## 6 5.821802 1.783104e+00 8.0967069 8.942902 8.434816 10.244918
##      D10Wsu102e D11Wsu47e D130040H23Rik D130043K22Rik D15Erttd621e D16Erttd472e
## 1 10.997258 8.735181 7.847652 7.039016 12.959989 10.935925
## 2 10.577668 8.787864 7.605138 6.858397 12.004509 9.966225
## 3 9.548930 8.520436 7.649945 2.956086 9.431335 9.041536
## 4 6.012912 4.950859 4.534809 6.855192 9.809446 8.361610
## 5 10.936339 9.146023 7.962382 7.214530 12.363311 10.324786
## 6 9.806200 7.547634 6.663864 5.861355 11.768243 9.744908
##      D17H6S53E D17Wsu104e D17Wsu92e D19Bwg1357e D1Erttd622e D230025D16Rik
## 1 9.054114 12.09285 13.300760 10.490221 11.455449 10.865869
## 2 8.250028 11.43824 13.283097 10.309284 11.059661 9.976096
## 3 8.974339 11.32739 9.066174 11.243932 8.550952 6.826044
## 4 9.065418 11.04501 7.911260 8.911769 7.142771 7.379391
## 5 8.607861 11.79701 13.641944 10.667912 11.418391 10.334659
## 6 7.865688 10.90130 12.108964 9.299553 10.264140 9.674900
##      D2hgdh D2Wsu81e D330045A20Rik D3Bwg0562e D3Erttd254e D3Erttd751e
## 1 8.279443 10.145723 3.506302 10.849990 10.157034 8.091520
## 2 7.852908 9.850325 3.341650 10.881532 10.144466 7.885504
## 3 7.885724 10.172026 5.307309 7.740450 10.009012 8.511496
## 4 5.369784 8.336288 1.364858 12.677915 7.991387 5.069484
## 5 8.210410 10.208859 3.668797 11.240243 10.503064 8.243036
## 6 7.093540 8.955410 2.471443 9.659032 8.966708 6.906461
##      D430041D05Rik D430042009Rik D5Erttd579e D630003M21Rik D630023F18Rik
## 1 11.122119 10.122407 11.917520 9.935118 5.689017
## 2 11.282720 10.019770 11.514833 9.832168 5.666671
## 3 8.493312 6.981137 9.336257 7.149258 2.766069
## 4 9.462050 7.198639 7.699633 5.222611 6.123154
## 5 11.641471 10.378343 11.873604 10.190697 6.019271
## 6 9.930985 8.932121 10.726026 8.745068 4.533247
##      D630039A03Rik D630045J12Rik D6Wsu163e D7Erttd443e D8Erttd738e D8Erttd82e
## 1 5.849198e+00 11.728137 9.964839 7.843832 11.86356 11.773700
## 2 6.088984e+00 11.478922 9.539365 8.951268 11.19611 11.954781
## 3 9.748859e-08 9.569093 8.639301 6.211066 12.17078 9.145523
## 4 4.195181e+00 8.754416 8.857541 3.251186 10.25650 7.021201
## 5 6.443180e+00 11.837690 9.897816 9.309504 11.55485 12.313580
## 6 4.689668e+00 10.536711 8.774749 6.660065 10.67209 10.582257
##      D930015E06Rik D930020B18Rik Daam1 Daam2 Dab1 Dab2
## 1 10.491428 3.762433e+00 12.59530 14.155222 11.472022 11.989943

```

```

## 2      10.037921  3.640906e+00 12.28214 13.695735 11.165454 11.712916
## 3      9.220629  1.669016e+00 10.14449  9.753425 11.111040 10.609923
## 4      5.049486  1.190765e-07  7.91647  8.442286  8.959416  8.968516
## 5      10.396497  3.974049e+00 12.64096 14.054590 11.524194 12.071700
## 6      9.300759  2.703225e+00 11.40362 12.963342 10.280705 10.798425
##      Dab2ip      Dach1      Dach2      Dact1      Dact2      Dact3      Dad1
## 1 12.457382 11.162645 7.2773706 11.645935 7.6998552 12.293507 12.21571
## 2 11.710334 10.213651 7.3246710 10.922375 7.0958884 12.146918 11.66941
## 3  7.860495  7.516432 4.2305489  7.994428 0.3456205  7.829608 13.16835
## 4  6.798019  6.007520 0.3244979  5.478839 4.1316487  7.870793 12.55355
## 5 12.069118 10.572262 7.6815632 11.281090 7.4524390 12.505727 12.02820
## 6 11.265735  9.971487 6.0975383 10.454543 6.5169485 11.101900 11.02413
##      Dag1      Dagla      Daglb      Dak      Dalrd3      Dand5      Dap
## 1 13.641204 11.423495 13.25696 9.685405 10.880018 7.710417 10.638543
## 2 13.325665 10.842707 12.61642 9.258091  9.954752 7.429501 10.231700
## 3  9.252255  6.515529 10.38453 9.377133  9.119434 8.031189 10.563477
## 4  8.439547  8.282622 11.79046 6.780370  7.725987 4.882110  8.087292
## 5 13.684513 11.201412 12.97525 9.616450 10.313310 7.786532 10.590314
## 6 12.449368 10.232201 12.06517 8.495719  9.689038 6.527444  9.447746
##      Dap3      Dapk1      Dapk2      Dapk3      Dap11      Dapp1      Dars
## 1 11.78153 11.559225 9.131348 11.621230 1.8014381 9.849458 12.192591
## 2 11.24955 11.227257 9.052489 11.142575 1.3357206 9.162883 11.412927
## 3 11.71279 10.016285 5.056911  5.039115 6.1761033 8.539537 11.909778
## 4 10.43624  8.443531 4.196959  5.034191 4.5416606 8.756741  9.650918
## 5 11.60830 11.586004 9.410769 11.501313 1.5627843 9.521206 11.771689
## 6 10.59008 10.367869 7.942736 10.429847 1.0664713 8.659526 11.001012
##      Dars2      Daxx      Dazap1      Dazap2      Daz1      Dbf4      Dbh
## 1 9.510781 10.346257 11.916157 14.05901 3.020483 9.095426 7.605913
## 2 9.325665 10.163631 11.492786 13.39984 4.148316 8.401740 5.577083
## 3 9.274667  9.331350  7.925397 13.55751 1.328123 7.122967 1.643016
## 4 5.242597  7.298044  5.307728 12.68171 2.903707 4.699418 1.690189
## 5 9.684048 10.522233 11.851554 13.75869 4.489137 8.759678 5.929280
## 6 8.321391  9.155727 10.724663 12.86713 2.043761 7.906899 6.423615
##      Dbi      Dbn1      Dbndd1      Dbndd2      Dbnl      Dbp      Dbr1
## 1 13.10981 12.412584 8.889058 14.61923 12.530485 10.590371 9.538783
## 2 12.49431 11.863906 8.356704 13.51221 12.375233 10.067122 8.895700
## 3 15.19790 10.403215 8.400343 12.81659 10.677686  7.048450 6.829904
## 4 12.97666  8.467869 1.746184 12.27429  9.131919  6.221391 6.201873
## 5 12.85313 12.222699 8.714611 13.87106 12.734052 10.425704 9.253911
## 6 11.91804 11.220947 7.701062 13.42732 11.338821  9.399615 8.349343
##      Dbt      Dbx2      Dcaf10      Dcaf11      Dcaf12      Dcaf12l1      Dcaf12l2
## 1 10.790612 10.078113 10.747211 12.67798 12.445672 9.622403 4.643264
## 2  9.996034  9.149100 10.632240 12.10415 11.795339 9.441212 5.096194
## 3  9.495775 10.420172  7.743517 11.85144  9.318325 6.678135 2.603404
## 4  9.299443  9.323561  6.971803 10.35941  8.138828 7.599292 4.097677
## 5 10.354601  9.507418 10.990919 12.46295 12.154129 9.799633 5.445739
## 6  9.599697  8.887880  9.556329 11.48629 11.254028 8.432820 3.525000
##      Dcaf13      Dcaf15      Dcaf17      Dcaf4      Dcaf5      Dcaf6      Dcaf7
## 1 10.097369 11.641855 10.252721 10.172616 11.501397 11.377013 13.078317
## 2  9.576085 10.971040  9.471069  9.541954 11.882362 11.098801 12.964315
## 3 10.773819  7.391818  8.607937 10.263138  8.294730  8.185398 10.291076
## 4  8.692218  5.373295  6.382840  9.368527  7.120301  8.211464  9.466267
## 5  9.934547 11.329760  9.829499  9.900406 12.241157 11.457535 13.323154
## 6  8.907112 10.450463  9.062288  8.982272 10.310067 10.185742 11.886552

```

##	Dcaf8	Dcakd	Dcbld1	Dcbld2	Dcc	Dcdc2a	Dcdc2b	
## 1	13.086581	11.62607	10.776305	11.322323	10.743111	7.244094	8.960933	
## 2	12.359168	11.37583	9.675508	10.528648	10.332328	6.604703	8.725451	
## 3	10.772136	12.67590	5.760051	7.381306	9.637472	7.645444	7.133549	
## 4	9.183706	10.46649	6.727759	6.302347	8.136170	1.880879	5.863914	
## 5	12.717987	11.73459	10.033997	10.887311	10.690960	6.960308	9.083578	
## 6	11.894815	10.43469	9.585401	10.131078	9.552232	6.064543	7.772744	
##	Dcdc2c	Dchs1	Dck	Dclk1	Dclk2	Dclk3	Dclre1a	
## 1	1.819460e+00	12.028249	10.430630	13.55875	12.784832	6.465482	9.152723	
## 2	1.076236e+00	11.764454	10.000737	13.37232	12.486726	6.809951	8.802684	
## 3	8.349807e-08	9.135303	10.864295	12.16234	9.137359	2.597422	7.878970	
## 4	4.333672e-08	5.661664	6.646980	11.12229	6.825957	6.796289	4.374010	
## 5	1.275867e+00	12.123242	10.359305	13.73117	12.845550	7.165991	9.160850	
## 6	1.079659e+00	10.836719	9.240017	12.36693	11.593116	5.294758	7.964062	
##	Dclre1b	Dclre1c	Dcn	Dcp1a	Dcp1b	Dcp2	Dcps	
## 1	8.816715	9.478320	9.079657	10.285640	9.827129	10.468155	11.501691	
## 2	8.425055	8.962900	8.423208	10.878534	9.775357	10.992979	11.017768	
## 3	8.754813	8.158604	11.589448	8.343270	8.510632	7.466315	10.882244	
## 4	6.901827	5.962568	8.226522	5.463512	6.712704	5.883648	9.188754	
## 5	8.783008	9.321141	8.781159	11.237244	10.133873	11.351701	11.376493	
## 6	7.628925	8.288989	7.891168	9.095172	8.637228	9.277507	10.310360	
##	Dcst1	Dct	Dctd	Dctn1	Dctn2	Dctn3	Dctn4	Dctn5
## 1	5.747542	9.571664	8.274486	13.893010	14.18515	12.49267	12.71757	12.05100
## 2	5.748091	8.892017	8.115035	13.471120	13.48441	11.92139	12.06841	11.40064
## 3	2.782559	3.934063	7.822510	8.839560	11.91390	11.64166	12.54365	11.93286
## 4	2.394382	5.789293	7.162500	8.643301	10.18071	10.18777	11.71907	10.88725
## 5	6.101036	9.250225	8.472766	13.829971	13.84326	12.28018	12.42721	11.75941
## 6	4.590350	8.382167	7.088604	12.701151	12.99327	11.30102	11.52586	10.85947
##	Dctn6	Dctpp1	Dcun1d1	Dcun1d2	Dcun1d3	Dcun1d4	Dcun1d5	
## 1	11.41520	9.896229	9.868739	10.402080	10.032445	11.084022	11.485498	
## 2	10.88695	9.399811	8.984109	10.416094	10.071898	10.742809	10.677524	
## 3	11.11483	11.338475	10.269956	9.435095	7.350866	9.292304	9.257066	
## 4	10.39868	8.750478	9.374109	8.206713	7.093960	8.430728	7.475082	
## 5	11.24566	9.758219	9.342360	10.774740	10.430481	11.101502	11.036209	
## 6	10.22391	8.706231	8.678779	9.211495	8.842268	9.892910	10.294175	
##	Dcx	Dcxr	Dda1	Ddah1	Ddah2	Ddb1	Ddb2	
## 1	12.322961	10.362054	12.446408	12.34009	11.962341	14.69469	8.834339	
## 2	12.234909	9.668684	11.647378	12.11465	11.813638	14.33244	8.054319	
## 3	12.235007	9.191388	8.933591	12.71353	12.707503	12.37757	7.227408	
## 4	7.213538	8.505192	7.916355	10.65574	8.651427	11.08706	3.477801	
## 5	12.593722	10.027172	12.006157	12.47346	12.172428	14.69130	8.412000	
## 6	11.131347	9.171508	11.254763	11.14847	10.770832	13.50277	7.646497	
##	Ddc	Ddhd1	Ddhd2	Ddi2	Ddit3	Ddit4	Ddit41	
## 1	11.820776	12.350087	11.255325	9.591855	11.521996	12.666051	6.798606	
## 2	10.543436	11.981601	10.772649	9.652116	10.789783	12.001535	6.189447	
## 3	8.691557	8.744086	10.186780	4.013772	10.177750	6.537224	7.883067	
## 4	9.019940	7.346840	9.105308	2.296997	8.890342	6.254066	8.692346	
## 5	10.902102	12.340401	11.131346	10.010600	11.148482	12.360336	6.543959	
## 6	10.629316	11.158466	10.064116	8.402323	10.330656	11.474358	5.623525	
##	Ddn	Ddo	Ddost	Ddr1	Ddr2	Ddrgk1	Ddt	
## 1	11.270867	5.625877	13.591972	14.475107	8.426820	12.72785	9.790845	
## 2	12.038261	5.439404	12.945105	13.659663	8.536133	12.09257	9.297656	
## 3	6.920114	9.389991	9.811428	10.622052	6.815157	11.06131	11.429111	
## 4	9.724084	4.329058	9.903843	9.626359	5.104729	10.60554	9.802776	

```

## 5 12.397064 5.790930 13.303943 14.018518 8.894154 12.45137 9.656030
## 6 10.079649 4.471704 12.400142 13.283207 7.240328 11.53614 8.600997
##      Ddx1      Ddx10      Ddx11      Ddx17      Ddx18      Ddx19a      Ddx19b
## 1 12.63310 9.598964 8.451558 15.415901 8.588774 10.898543 10.393246
## 2 12.13879 10.053701 8.202899 14.696107 8.439065 10.708013 10.149702
## 3 12.34965 8.955552 6.864213 10.625042 9.201588 8.022392 7.641499
## 4 10.89241 6.460618 1.805413 9.407087 7.197563 7.192952 5.106514
## 5 12.49759 10.412281 8.560698 15.054973 8.797026 11.066701 10.508301
## 6 11.44141 8.409420 7.264972 14.223960 7.401700 9.707551 9.202670
##      Ddx20      Ddx21      Ddx23      Ddx24      Ddx25      Ddx26b      Ddx27
## 1 9.049536 11.862785 11.802610 12.20547 9.834886 11.624872 10.712711
## 2 9.213957 11.532141 12.253044 11.96880 8.762167 11.553336 10.694535
## 3 6.499788 10.023870 7.140068 12.13825 10.021528 7.387648 9.167978
## 4 2.546045 8.112384 5.588912 11.23413 9.054981 6.488826 6.869318
## 5 9.572300 11.890913 12.611857 12.32760 9.120313 11.912109 11.053222
## 6 7.861122 10.671310 10.611157 11.01388 8.644974 10.433488 9.521855
##      Ddx28      Ddx31      Ddx39      Ddx39b      Ddx3x      Ddx3y      Ddx4
## 1 8.917926 9.743566 10.686735 13.99574 14.66223 11.82335 1.834550e+00
## 2 8.136097 9.526747 10.567112 13.47054 14.04178 10.97262 2.300857e+00
## 3 5.436602 7.745835 10.772910 13.69306 11.22301 11.21802 4.094837e+00
## 4 7.226938 6.589154 7.228732 11.75772 10.46915 10.07754 5.952109e-08
## 5 8.493844 9.885194 10.925781 13.82939 14.40064 11.33134 2.593693e+00
## 6 7.729852 8.553790 9.495900 12.80388 13.47032 10.63188 1.090734e+00
##      Ddx41      Ddx42      Ddx43      Ddx46      Ddx47      Ddx49      Ddx5
## 1 10.909133 12.292931 5.780976e+00 11.688359 11.53947 10.320873 14.98225
## 2 11.508517 11.551190 5.567912e+00 11.690597 11.17729 9.962231 14.57396
## 3 9.705858 10.317259 1.536148e+00 10.299486 11.21753 9.561701 12.67894
## 4 6.822963 9.220194 6.124982e-08 7.799487 10.13878 6.712646 10.93381
## 5 11.867286 11.909963 5.920066e+00 12.049380 11.53603 10.320791 14.93282
## 6 9.718133 11.101324 4.622998e+00 10.496949 10.34813 9.130369 13.79033
##      Ddx50      Ddx51      Ddx52      Ddx54      Ddx55      Ddx56      Ddx58
## 1 11.205910 10.022556 10.446558 12.336204 10.023291 11.501848 9.535062
## 2 10.764309 9.924313 10.350619 12.303568 9.014112 10.723624 9.540311
## 3 9.639654 6.668699 10.982038 8.325954 9.372862 11.348394 7.698782
## 4 8.354956 4.990432 8.163298 6.802853 8.289690 10.251942 6.991924
## 5 11.123005 10.282864 10.709254 12.662384 9.372375 11.082315 9.898763
## 6 10.014727 8.832392 9.255931 11.144586 8.833126 10.310517 8.345629
##      Ddx59      Ddx6      Ddx60      Deaf1      Deb1      Decr1      Decr2
## 1 8.969740 13.306186 6.692445 11.417862 11.137633 10.926114 9.646531
## 2 9.320447 12.723757 5.886880 11.330108 10.388840 10.451836 9.211684
## 3 6.947809 10.112031 5.307660 7.758493 11.574998 10.384104 10.436407
## 4 5.414832 9.241072 5.322487 6.612822 10.679215 8.758095 8.338809
## 5 9.678828 13.082588 6.240371 11.688863 10.747481 10.810488 9.570026
## 6 7.781528 12.114389 5.518647 10.226571 9.946490 9.735103 8.456908
##      Dedd      Dedd2      Def6      Def8      Defb1      Defb20
## 1 11.034345 10.531901 10.020768 11.397143 0.17492827 3.580960e+00
## 2 10.551078 9.600991 10.067194 11.236228 0.07362227 2.241524e+00
## 3 10.061517 5.107942 2.499540 10.814109 2.32684669 2.855976e+00
## 4 8.574907 4.829403 4.590321 7.865742 2.58469144 1.056578e-07
## 5 10.909745 9.959460 10.425776 11.594975 0.09374467 2.531521e+00
## 6 9.843264 9.341195 8.830606 10.205861 0.08006353 2.538599e+00
##      Defb25      Degr1      Degr2      Dek      Dennd1a      Dennd1b      Dennd1c
## 1 4.860191e-11 14.17776 8.900362 11.566253 11.506791 9.801640 8.629833
## 2 3.210181e-10 13.39373 7.575690 11.443761 11.421923 9.691206 9.558183

```

```

## 3 1.375349e+00 12.67704 6.847533 9.962045 8.585078 8.419834 5.545737
## 4 2.188442e+00 11.98907 9.057806 7.278125 6.372335 6.859565 4.055751
## 5 4.116524e-10 13.75258 7.932900 11.802526 11.780686 10.049700 9.916640
## 6 2.152815e-11 12.98588 7.712335 10.374894 10.315458 8.611776 7.442621
## Dennd2a Dennd2c Dennd2d Dennd3 Dennd4a Dennd4b Dennd4c
## 1 11.862540 9.268882 4.042511 10.576708 12.345215 11.386828 10.664065
## 2 11.592954 8.919727 3.370042 10.583608 11.326637 12.005445 10.616788
## 3 8.920779 4.395671 4.353804 4.183127 8.489006 6.995579 6.338962
## 4 7.696297 5.664421 1.377456 5.038903 9.029757 4.836864 5.534297
## 5 11.951730 9.277949 3.697815 10.942279 11.685392 12.364246 10.975464
## 6 10.671065 8.079965 2.960803 9.385963 11.153595 10.195552 9.473248
## Dennd5a Dennd5b Denr Depdc1a Depdc1b Depdc5 Depdc7
## 1 15.044802 11.385930 10.623534 6.017545 7.978950 10.999195 7.672032
## 2 14.808006 10.783279 10.372777 5.712197 7.641484 10.795966 6.609683
## 3 11.592311 10.156356 10.476829 5.485537 6.653368 9.016627 5.777430
## 4 9.995851 9.243501 8.643545 1.652307 2.879192 7.299724 6.151288
## 5 15.166873 11.141977 10.731416 6.064992 7.998769 11.154666 6.965299
## 6 13.852874 10.194654 9.432750 4.854478 6.794452 9.808136 6.489301
## Deptor Dera Derl1 Derl2 Derl3 Des Det1
## 1 6.985716 9.885870 13.178901 11.274594 6.446356 7.992204 8.115682
## 2 6.797818 9.852743 12.545801 10.654354 6.608343 6.389658 8.042963
## 3 8.453629 8.283262 9.919101 11.527814 6.612632 4.410143 7.346497
## 4 3.365522 6.656853 10.313049 10.966528 3.198495 7.221783 4.949206
## 5 7.153833 10.211278 12.904627 11.013036 6.963957 6.744736 8.400635
## 6 5.808591 8.695887 11.987122 10.083374 5.275913 6.807637 6.930509
## Dexi Dffa Dffb Dfna5 Dfnb59 Dgat1 Dgat2
## 1 9.786438 10.182164 9.293184 7.230130 2.546983e+00 10.575066 10.803697
## 2 9.831427 9.947115 9.006473 7.245388 2.326629e+00 10.360220 10.368948
## 3 6.388082 8.154349 6.832512 8.061702 3.965870e+00 8.302282 7.555984
## 4 6.345253 5.772106 3.500492 6.266300 1.221485e-07 5.846231 10.151421
## 5 10.189956 10.305672 9.364733 7.602168 2.620660e+00 10.718857 10.727586
## 6 8.596596 8.991809 8.104215 6.050700 1.645487e+00 9.384323 9.612773
## Dgcr14 Dgcr2 Dgcr6 Dgcr8 Dgka Dgkb Dgkd
## 1 10.680932 13.24690 11.188331 10.213630 10.412825 9.708957 13.463574
## 2 10.305784 12.70579 10.492448 9.535646 10.423420 9.818675 13.080444
## 3 9.758379 10.38517 9.533336 7.826098 7.899964 9.856119 9.044348
## 4 8.153813 10.02620 8.589944 5.242328 4.770249 8.965374 7.927004
## 5 10.664412 13.06462 10.851106 9.894096 10.782067 10.177202 13.439286
## 6 9.490101 12.05511 9.997159 9.023240 9.222230 8.519234 12.271758
## Dgke Dgkg Dgkh Dgki Dgkk Dgkq Dgkz
## 1 10.263855 7.010447 9.068539 8.799110 6.652824e+00 10.440508 13.310747
## 2 9.771553 7.389369 8.255223 9.066350 6.325113e+00 10.356094 12.866329
## 3 7.885991 6.271999 6.008980 4.695730 2.800055e+00 5.718609 9.193123
## 4 7.243854 9.623376 7.928429 4.840995 1.125755e-07 5.618003 9.501101
## 5 10.130068 7.746348 8.613060 9.424635 6.680017e+00 10.714730 13.225166
## 6 9.073411 5.833071 7.880077 7.611370 5.479529e+00 9.249887 12.118950
## Dguok Dhcr24 Dhcr7 Dhdds Dhdh Dhfr Dhh
## 1 9.847818 15.396829 13.49089 11.81978 8.072575 8.922014 5.634120e+00
## 2 9.083305 14.711504 12.90579 10.87597 8.322962 8.806338 6.038109e+00
## 3 9.638103 9.185468 11.79413 10.89697 7.573851 10.564921 6.122883e-08
## 4 8.609035 9.384902 11.54736 9.45586 3.843887 5.640559 2.958937e-01
## 5 9.441597 15.070371 13.26463 11.23468 8.680847 9.164506 6.392137e+00
## 6 8.657887 14.204890 12.29907 10.62832 6.887607 7.733928 4.479735e+00
## Dhodh Dhps Dhcrs1 Dhcrs11 Dhcrs13 Dhcrs2 Dhcrs3

```

```

## 1  9.855048 10.766656 12.10687 9.410979 9.808488 2.677489e+00 11.95192
## 2  9.599874 9.877899 11.67235 8.337219 8.972904 9.935139e-01 11.33345
## 3 10.128742 7.371622 12.28283 5.076173 7.418016 7.049295e-08 13.64448
## 4  8.577302 5.382239 10.44780 4.668270 5.048539 3.297044e-08 12.80967
## 5  9.958343 10.236440 12.03113 8.695114 9.331149 1.183183e+00 11.69220
## 6  8.665107 9.575759 10.91531 8.221774 8.618615 1.753177e+00 10.76041
##      Dhrc4      Dhrc7      Dhrc7b      Dhrc7c      Dhrcd1      Dhrc15      Dhrc16
## 1 9.850138 10.879151 11.180067 2.202586e+00 9.116823 12.974900 11.169837
## 2 9.285757 10.427076 10.245340 1.487328e+00 9.054549 12.346126 10.967099
## 3 9.647328 10.822687 10.046661 4.688642e-08 6.121197 11.076197 6.626057
## 4 8.268764 10.419743 10.537897 2.414200e-08 4.963269 9.396297 6.160691
## 5 9.644126 10.785724 10.603957 1.728085e+00 9.412829 12.704943 11.325819
## 6 8.660205 9.688173 9.988899 1.369879e+00 7.928246 11.783152 9.978675
##      Dhrc29      Dhrc30      Dhrc32      Dhrc33      Dhrc34      Dhrc35      Dhrc36
## 1 10.272587 12.56694 10.811758 11.347463 10.570443 10.744968 11.470742
## 2 10.334630 12.14206 10.189627 11.126680 10.244651 10.360025 11.121782
## 3 8.123691 11.25819 9.447694 8.070341 6.785224 9.595613 10.296979
## 4 5.589094 10.26972 8.026057 7.623025 3.835324 7.523688 8.342512
## 5 10.693263 12.50087 10.548234 11.485416 10.603268 10.718662 11.480518
## 6 9.082133 11.37527 9.620827 10.156206 9.379704 9.554087 10.279425
##      Dhrc37      Dhrc38      Dhrc40      Dhrc57      Dhrc58      Dhrc8      Dhrc9
## 1 10.841575 11.515751 11.320652 10.711639 7.688593 10.687467 13.151537
## 2 10.715729 11.650805 10.983586 10.476283 6.005955 10.512488 12.659064
## 3 7.638169 8.928153 10.000095 8.373407 6.093659 9.218061 9.893141
## 4 6.303403 6.616347 8.098454 5.250234 7.118007 7.633566 7.144838
## 5 11.074418 12.009585 11.342308 10.834939 6.359873 10.871149 13.017894
## 6 9.650623 10.324414 10.129409 9.520784 6.505757 9.496631 11.959762
##      Diabolo      Diap1      Diap2      Diap3      Dicer1      Dido1      Diexf
## 1 12.711375 10.641338 10.029141 7.067047 11.759305 11.645683 10.194574
## 2 11.895733 10.329038 9.900272 6.234696 11.785555 11.643543 9.941704
## 3 11.342160 6.574917 7.400868 6.938146 8.127923 9.354190 7.951986
## 4 9.846316 5.984409 6.740266 6.655366 6.417169 7.958101 5.804951
## 5 12.254528 10.687669 10.258818 6.589343 12.144344 12.002323 10.300259
## 6 11.519674 9.450539 8.838968 5.889112 10.567867 10.454291 9.004205
##      Dimt1      Dio2      Dio3      Dip2a      Dip2b      Dip2c      Diras1
## 1 8.603230 12.788560 1.819548e+00 14.044808 12.775226 11.563492 11.429808
## 2 7.772207 12.302380 2.105798e+00 12.952591 12.481581 11.312815 11.133975
## 3 8.031316 10.078453 4.141536e-01 8.742985 11.076944 8.870642 6.143053
## 4 6.744504 8.684431 7.737644e-08 7.765975 9.556288 8.421221 4.825835
## 5 8.129629 12.661196 2.388822e+00 13.311430 12.840404 11.671569 11.492712
## 6 7.416107 11.596844 1.079723e+00 12.852936 11.583513 10.372134 10.238511
##      Diras2      Dirc2      Dis3      Dis3l      Dis3l2      Disc1      Disp2
## 1 11.127550 12.842015 10.512375 10.413085 10.965636 8.874177e+00 11.958121
## 2 10.493638 12.278351 9.808084 10.665040 11.108283 8.440044e+00 11.506826
## 3 6.196323 9.582189 7.790745 8.716488 9.055867 3.125488e-01 8.411397
## 4 9.133235 9.526202 4.156246 7.230946 7.380867 6.643921e-08 11.156930
## 5 10.852296 12.637166 10.166608 11.023722 11.467018 8.798006e+00 11.865595
## 6 9.936412 11.650289 9.321687 9.222489 9.774599 7.686223e+00 10.766613
##      Dixdc1      Dkc1      Dkk1      Dkk2      Dkk3      Dkk11
## 1 12.129886 9.738871 2.669664e+00 6.716723e+00 12.62773 5.109452
## 2 11.513417 9.412581 2.222183e+00 5.435631e+00 12.59318 4.509593
## 3 10.598791 10.557966 3.334110e-01 3.845766e+00 12.26906 3.663704
## 4 8.251576 8.856137 1.110970e-07 1.017359e-07 10.05778 3.785820
## 5 11.872187 9.770993 2.511228e+00 5.787138e+00 12.95201 4.854433

```

```

## 6 10.938324 8.549102 1.746673e+00 5.542624e+00 11.43604 3.971232
##      Dlat      Dlc1      Dld      Dlec1      Dleu7      Dlg1      Dlg2
## 1 11.194828 12.261035 11.84355 4.823901 6.958220 12.691886 11.510760
## 2 10.649665 11.358658 11.33139 5.458064 6.406539 12.139758 11.518283
## 3 8.514126 7.233553 11.31141 3.224315 6.337256 9.331123 6.478371
## 4 7.732313 7.294839 10.63497 3.430818 3.502629 8.377031 7.362015
## 5 11.008346 11.717416 11.69014 5.809685 6.761662 12.498566 11.877054
## 6 10.003652 11.069437 10.65209 3.697168 5.781380 11.500188 10.319425
##      Dlg3      Dlg4      Dlg5      Dlgap2      Dlgap3      Dlgap4      Dlgap5
## 1 11.042731 13.057290 11.719383 6.746526 10.912216 12.50170 7.449698
## 2 10.881033 13.024969 11.360140 7.435216 11.708386 12.00660 7.133237
## 3 8.385594 7.336510 9.556022 4.001892 2.988834 10.80306 8.167790
## 4 8.769277 7.418151 6.874414 6.819041 4.191267 9.10908 2.911484
## 5 11.239743 13.383810 11.718898 7.792255 12.067169 12.36540 7.489848
## 6 9.851644 11.865528 10.527961 5.572064 9.721215 11.31004 6.268503
##      Dlk1      Dlk2      Dll1      Dll3      Dll4      Dlst      Dlx1
## 1 5.803006 10.171353 10.944045 8.941621 12.373747 12.904322 9.650817
## 2 6.382012 9.789457 10.337080 9.422036 11.801420 12.332330 9.467069
## 3 1.914713 4.502530 8.264310 6.122874 6.476613 10.191014 5.949662
## 4 2.743189 6.649321 6.088869 2.371786 4.447920 9.659612 2.729971
## 5 6.737070 10.147976 10.695713 9.780451 12.160209 12.691147 9.825499
## 6 4.644519 8.981011 9.753022 7.753483 11.182120 11.712585 8.461187
##      Dlx2      Dlx3      Dlx5      Dlx6      Dmap1      Dmbt1
## 1 9.6874775 0.3301021 7.7108671 6.076435e+00 10.307316 2.410768e+00
## 2 8.3039324 0.2866324 6.7405937 5.799882e+00 10.164211 1.326451e+00
## 3 6.3393822 3.1272858 5.8147742 2.671113e-01 9.658117 5.174136e-08
## 4 0.7741157 3.2961934 0.6200251 7.463014e-08 7.783278 2.651021e-08
## 5 8.6618039 0.3582082 7.0964935 6.153038e+00 10.522813 1.552625e+00
## 6 8.4977884 0.1554259 6.5278916 4.912223e+00 9.116826 1.534937e+00
##      Dmbx1      Dmc1      Dmd      Dmgdh      Dmkn      Dmp1      Dmpk
## 1 1.242650e+00 4.484346 10.993683 3.889116e+00 4.429375 5.380137 10.989089
## 2 2.344585e+00 5.355343 10.802630 2.893103e+00 3.959059 5.737944 9.906566
## 3 9.242522e-08 5.532179 10.033324 4.839068e-08 8.858370 2.436578 5.422072
## 4 3.536526e-08 1.297517 8.648609 2.981662e+00 9.291726 4.137756 4.265596
## 5 2.639436e+00 5.706427 11.161331 3.208506e+00 4.297331 6.090848 10.265113
## 6 6.803893e-01 3.374410 9.802627 2.819235e+00 3.322528 4.232870 9.798037
##      Dmrt2      Dmrt3      Dmrta1      Dmrta2      Dmrta1      Dmrta1a      Dmrtf1
## 1 1.872427e+00 7.4170023 7.653355 9.368491 10.244933 5.024794 11.667943
## 2 2.107272e+00 7.5975441 7.497657 9.409509 10.883380 5.770643 11.355237
## 3 6.556636e-08 6.0926802 1.199506 8.500068 4.147793 2.524223 10.037222
## 4 2.917184e-08 0.5596275 6.221229 4.889294 4.054100 2.831402 8.316809
## 5 2.390376e+00 7.9547789 7.854774 9.767920 11.242091 6.123681 11.713995
## 6 1.118667e+00 6.2360536 6.470745 8.179369 9.054509 3.889756 10.476541
##      Dmwd      Dmx11      Dmx12      Dna2      Dnaic1      Dnaic2      Dnaja1
## 1 12.383669 11.845264 11.710182 7.192137 6.705607 7.934780 11.30248
## 2 11.801643 11.343478 11.974801 6.956680 5.956770 8.439757 10.84616
## 3 8.905785 8.752436 9.092630 7.286946 7.516360 5.492688 11.76391
## 4 8.749900 7.870091 7.306921 2.215470 8.166373 1.773821 10.34164
## 5 12.160432 11.702235 12.333601 7.312994 6.310516 8.797719 11.20487
## 6 11.192039 10.653795 10.518764 6.013041 5.531645 6.750513 10.11124
##      Dnaja2      Dnaja3      Dnaja4      Dnajb1      Dnajb11      Dnajb12      Dnajb13
## 1 12.934011 10.721291 11.142019 13.019551 12.634104 11.163466 7.167679
## 2 12.190764 10.217202 11.085316 12.208789 12.013410 11.165027 7.427752
## 3 10.688913 10.452877 7.826724 9.525013 9.481097 8.377745 4.643579

```

```

## 4 9.949653 9.386449 6.484716 8.718048 9.538691 7.792835 2.782929
## 5 12.549575 10.575814 11.444049 12.567601 12.372212 11.523767 7.784781
## 6 11.742269 9.530429 9.950873 11.827795 11.442418 9.972308 5.988802
## Dnajb14 Dnajb2 Dnajb4 Dnajb5 Dnajb6 Dnajb7 Dnajb9
## 1 9.211744 13.587505 11.314666 11.091605 10.119050 2.3611298 12.680892
## 2 9.214016 12.750835 11.076564 11.098774 9.418715 2.5414645 11.898727
## 3 5.192628 9.837529 10.357975 7.746726 8.570232 3.6237763 10.040426
## 4 6.132002 8.674659 8.809241 7.424941 7.212924 0.3129637 9.156908
## 5 9.572359 13.109668 11.435296 11.457508 9.777129 2.8446398 12.257523
## 6 8.022951 12.395675 10.123426 9.900489 8.928768 1.4951415 11.489197
## Dnajc1 Dnajc10 Dnajc11 Dnajc12 Dnajc13 Dnajc14 Dnajc15
## 1 10.913294 12.091255 11.568052 8.549127 11.577622 11.702666 9.301394
## 2 10.502790 12.088660 11.383253 7.994671 11.268019 10.912530 8.887238
## 3 8.508784 10.793240 10.611306 9.763759 8.198674 9.669252 12.257328
## 4 7.390617 9.274054 8.983955 7.800806 7.929004 8.930060 9.175696
## 5 10.861449 12.447466 11.742013 8.352302 11.626769 11.271243 9.245445
## 6 9.722291 10.899705 10.376692 7.362190 10.386258 10.511250 8.112408
## Dnajc16 Dnajc17 Dnajc18 Dnajc19 Dnajc2 Dnajc21 Dnajc22
## 1 11.382158 7.685714 11.87338 6.861334 10.121946 9.161608 1.451198e+00
## 2 10.919077 7.445530 11.32813 6.460362 9.200192 8.838627 1.794173e+00
## 3 8.674741 7.189804 12.44691 8.279843 7.657722 6.923803 2.502204e-01
## 4 8.790141 4.819170 11.49008 6.477877 6.053922 5.626048 5.628240e-08
## 5 11.277792 7.802582 11.68689 6.815623 9.558530 9.196811 2.058308e+00
## 6 10.190883 6.502896 10.68190 5.685539 8.931661 7.972927 8.191411e-01
## Dnajc24 Dnajc25 Dnajc27 Dnajc28 Dnajc3 Dnajc30 Dnajc4
## 1 10.422708 7.925582 11.051708 7.152331 12.228494 9.416539 9.441178
## 2 9.405151 9.123047 11.084363 7.119088 11.773452 8.692802 8.976813
## 3 10.071103 4.331638 7.409154 7.901344 9.964654 9.774969 9.806204
## 4 8.698755 3.137437 6.416349 7.527542 9.098550 9.561395 8.137975
## 5 9.763561 9.481355 11.443095 7.475676 12.132240 9.050911 9.335061
## 6 9.232103 6.741365 9.860616 5.973593 11.036905 8.227323 8.251915
## Dnajc5 Dnajc5b Dnajc6 Dnajc7 Dnajc8 Dnajc9 Dnali1
## 1 13.154554 2.9305652 11.702538 12.889649 11.81037 10.718970 3.262173
## 2 12.618924 0.3393078 11.316293 12.349495 11.19663 9.793507 4.711121
## 3 10.034676 1.9148516 8.812258 11.203333 12.15707 10.432053 5.713156
## 4 9.761343 5.8012123 9.427258 9.784695 10.55550 9.812463 3.941240
## 5 12.977752 0.4222284 11.675047 12.708313 11.55537 10.152027 5.057799
## 6 11.962778 1.9665861 10.511122 11.697915 10.61891 9.528109 2.254395
## Dnase1 Dnase1l1 Dnase1l2 Dnase1l3 Dnase2a Dnd1 Dner
## 1 7.194355 8.707944 6.254976 6.936249 10.967042 5.805400 12.993472
## 2 7.014648 8.252671 5.902561 6.718341 10.960742 5.421936 12.429066
## 3 4.952129 7.537492 5.586200 4.832758 7.959967 4.929812 7.367567
## 4 1.037694 6.819098 3.841512 6.144295 7.803592 1.763579 9.911855
## 5 7.371063 8.610506 6.256110 7.074194 11.319461 5.773372 12.787887
## 6 6.015239 7.520481 5.087561 5.759640 9.776004 4.646857 11.801721
## Dnlz Dnm1 Dnm1l Dnm2 Dnm3 Dnmbp Dnmt1
## 1 11.069688 13.157395 12.441026 13.922876 11.966430 9.793248 11.597981
## 2 10.465694 12.599708 11.949326 13.298901 11.651868 10.039145 11.178093
## 3 8.110891 5.482536 11.094224 9.683670 9.204802 7.518937 10.548421
## 4 5.955011 9.138464 9.482411 9.860334 9.045056 3.994618 8.224847
## 5 10.824348 12.958536 12.308124 13.657749 12.010648 10.397722 11.536835
## 6 9.878585 11.965619 11.249382 12.731014 10.774919 8.603396 10.406608
## Dnmt3a Dnmt3b Dnpep Dntt Dnttip1 Dnttip2 Doc2a
## 1 13.726366 8.450291 11.732325 1.671001e+00 10.727824 11.040835 8.862726

```



```

## 2 12.994136 8.689588 10.910834 2.344578e+00 9.778060 10.495989 8.936465
## 3 10.126483 5.323745 10.719511 1.493474e+00 7.938216 10.590069 6.462243
## 4 9.858554 3.925449 9.838239 6.109074e-08 7.089338 9.741234 4.803927
## 5 13.352976 9.047696 11.269547 2.639428e+00 10.136576 10.854648 9.294694
## 6 12.534522 7.263710 10.540898 9.723411e-01 9.536957 9.849750 7.674804
##      Doc2b      Dock1      Dock10      Dock11      Dock2      Dock3      Dock4
## 1 7.564146 12.49233 13.047356 10.161603 11.690023 11.122348 12.789759
## 2 7.366177 11.76242 12.066569 9.840062 11.654112 11.404602 12.282754
## 3 2.367680 10.72937 9.243385 9.273996 5.106612 7.181672 7.080340
## 4 3.426767 10.22957 9.851309 5.904584 7.337071 7.365668 6.863684
## 5 7.723125 12.12120 12.425373 10.198593 12.012892 11.763364 12.641569
## 6 6.382131 11.30068 11.855596 8.971271 10.498612 9.931213 11.598043
##      Dock5      Dock6      Dock7      Dock8      Dock9      Dohh      Dok1
## 1 9.9643931 12.336127 11.127539 11.767482 13.302891 11.316053 10.799312
## 2 9.3460977 12.070299 10.640501 11.229227 13.181558 10.960651 10.049475
## 3 7.1626010 8.245499 9.893661 4.195362 7.480124 8.633336 5.676951
## 4 0.3083512 5.194307 7.634513 5.694093 8.343789 6.923134 4.821182
## 5 9.7044875 12.429104 10.999180 11.587973 13.540402 11.319371 10.408054
## 6 8.7743035 11.144509 9.936401 10.576041 12.111094 10.124812 9.608391
##      Dok2      Dok3      Dok4      Dok5      Dok6      Dok7      Dok1
## 1 6.954327 9.410000 12.215782 9.013387 6.566748 7.920338 10.027455
## 2 6.819619 10.306113 11.757070 8.390168 6.330049 8.969130 9.691691
## 3 5.512221 4.320434 5.884535 9.611613 1.313604 5.682799 9.660583
## 4 4.166800 2.870245 5.015058 7.835108 2.103120 3.740516 8.423115
## 5 7.175678 10.664740 12.115857 8.748098 6.684966 9.327374 10.050185
## 6 5.777527 8.220797 11.024196 7.825063 5.394594 6.736149 8.837284
##      Dolpp1      Donson      Dopey1      Dopey2      Dos      Dot11      Dpagt1
## 1 10.782922 9.492874 11.275176 12.221477 11.410577 12.808666 10.691060
## 2 10.490706 9.078055 10.876275 12.389441 11.222463 12.625683 10.355617
## 3 10.081413 6.565188 8.916906 8.544933 7.975546 7.773153 9.998903
## 4 7.700287 4.653283 7.415859 7.323733 8.949607 6.345221 8.183804
## 5 10.849364 9.436345 11.234984 12.748261 11.581209 12.984511 10.714253
## 6 9.592013 8.303516 10.083956 11.029890 10.219288 11.616947 9.500221
##      Dpcd      Dpep2      Dpf1      Dpf2      Dpf3      Dph1      Dph2
## 1 9.958431 2.577568 10.143506 12.39881 7.084061 9.289266 8.855760
## 2 9.387325 2.750754 10.091705 11.79169 5.968345 9.223047 8.478620
## 3 10.540501 3.585710 8.693548 11.79742 7.242774 8.138887 8.722816
## 4 9.994528 1.410259 8.081504 10.42218 6.088598 5.414196 4.256995
## 5 9.745729 3.061575 10.450292 12.15048 6.322132 9.581393 8.836606
## 6 8.768349 1.670573 8.953196 11.20717 5.905962 8.100306 7.667858
##      Dph3      Dph5      Dpm1      Dpm2      Dpm3      Dpp10      Dpp3
## 1 11.353155 8.876721 10.616065 10.889298 9.827642 10.499004 11.999317
## 2 10.547116 8.084981 10.291663 10.430091 9.163839 9.970182 11.555306
## 3 10.766595 9.185944 11.662255 11.333176 11.482224 1.180970 9.548734
## 4 9.052423 8.207274 10.143858 10.235756 10.264502 5.271317 8.913454
## 5 10.905783 8.442687 10.650288 10.788740 9.522163 10.328743 11.914080
## 6 10.161895 7.688760 9.425287 9.698312 8.637740 9.308328 10.807795
##      Dpp4      Dpp6      Dpp7      Dpp8      Dpp9      Dpt      Dpy1911
## 1 9.030695 11.88836 10.519891 12.831046 11.520359 2.8376271 13.36988
## 2 8.511823 12.14420 10.744622 12.850089 11.241613 2.0324313 12.80503
## 3 4.053124 8.68325 9.088813 7.534691 8.784373 1.8977691 11.35301
## 4 2.028356 10.42671 7.857255 6.272423 6.595459 0.7557594 10.06387
## 5 8.869829 12.50301 11.103316 13.208925 11.600361 2.3113894 13.16387
## 6 7.842327 10.69688 9.329196 11.639322 10.329020 1.8875441 12.17808

```

```

##          Dpy1912  Dpy1913  Dpy1914    Dpy30    Dpyd      Dpys  Dpys12
## 1 1.275868e+00 11.843809 11.134655 10.411229 8.639426 1.5604055 13.16711
## 2 2.482501e+00 11.351717 10.123981 9.648508 8.738849 1.6707643 12.48640
## 3 3.378144e-01 10.683135 8.524794 12.174306 5.525412 1.9457813 16.44397
## 4 1.117562e-07 9.171203 6.356739 10.618807 6.643581 0.4943187 15.58911
## 5 2.783306e+00 11.710474 10.482575 10.006990 9.096983 1.9261341 12.84522
## 6 7.020460e-01 10.652340 9.943513 9.220636 7.452182 0.8943875 11.97533
##          Dpys13  Dpys14  Dpys15    Dqx1      Dr1      Dram1  Dram2
## 1 12.524395 11.444518 12.39280 6.013314 11.150632 6.7250417 11.39728
## 2 12.263113 11.541314 12.00516 6.228449 10.894659 6.1898291 11.02336
## 3 12.572638 10.466795 10.80857 3.861179 8.240410 4.6919895 10.78868
## 4 8.733804 8.566136 5.48118 1.427978 6.959729 0.3580752 9.62824
## 5 12.621927 11.900087 12.36396 6.583077 11.253370 6.5443420 11.38209
## 6 11.332733 10.253214 11.20117 4.850331 9.959481 5.5508401 10.20600
##          Drap1  Drd1a  Drd2  Drd3  Drd4  Drd5  Drg1
## 1 12.748717 6.119135 6.529189 3.405154 2.6830198 4.190077 11.83926
## 2 12.313838 7.121924 6.357067 3.573497 0.9942167 4.207335 11.23073
## 3 9.254707 1.809454 3.260885 5.985367 1.5902719 2.226368 12.25380
## 4 7.770360 3.144370 1.477509 1.051164 1.6588629 6.400897 11.21137
## 5 12.672654 7.478516 6.712058 3.905398 1.1839732 4.548885 11.58947
## 6 11.557008 4.954122 5.357553 2.381027 1.7577778 3.098034 10.64779
##          Drg2  Drosha  Drp2  Dsc1  Dsc2  Dsc3  Dscam
## 1 11.582666 11.883323 10.098919 2.270863 4.881050 2.891779 12.151708
## 2 11.150793 11.875788 10.635205 2.084692 4.322315 2.548079 12.690263
## 3 11.581171 10.377766 7.187681 5.462926 1.745560 6.152216 6.381475
## 4 9.792534 8.002532 6.437065 6.138958 1.650048 6.425714 8.226603
## 5 11.509532 12.234582 10.993884 2.366569 4.665199 2.851514 13.049094
## 6 10.391300 10.691840 8.908661 1.423473 3.751841 1.933508 10.960141
##          Dscam1l  Dsccl  Dscr3  Dse  Dse1  Dsg1a  Dsg1b
## 1 11.433494 5.851624 11.610150 8.900406 9.549542 3.906207 1.3388889
## 2 11.538064 5.305192 10.855015 8.276803 9.521698 3.588712 1.0834706
## 3 9.249101 6.846788 11.346218 9.266910 6.725171 7.629124 3.2977964
## 4 7.518732 1.011964 9.003302 8.095930 6.088047 8.005091 3.9208973
## 5 11.896836 5.656000 11.213722 8.634656 9.880144 3.920899 1.2839427
## 6 10.242194 4.692039 10.418772 7.712380 8.360083 2.834950 0.7435990
##          Dsg1c  Dsg2  Dsg3  Dsn1  Dsp  Dst  Dstn
## 1 8.194398e-01 2.888801 0.6217590 8.944759 8.075575 14.42090 13.99822
## 2 1.575959e+00 2.998323 0.5548662 8.830437 7.767608 14.19467 13.13080
## 3 4.789152e-08 3.549868 1.9989953 8.936045 9.882395 10.70792 13.58951
## 4 1.700357e-08 4.674237 3.0908914 6.063384 10.572785 10.00261 12.59902
## 5 1.824027e+00 3.316827 0.6793570 9.188617 8.125026 14.55353 13.48964
## 6 4.198047e-01 1.930973 0.3081416 7.756613 6.890593 13.22900 12.80635
##          Dstyk  Dtd1  Dtl  Dtna  Dtnb  Dtnbp1  Dtwd1
## 1 11.588223 10.095197 8.223418 12.69036 10.425568 11.274805 7.764501
## 2 10.799198 9.330524 7.937749 12.12454 9.843160 10.782853 7.645550
## 3 8.528996 10.656283 9.207534 12.59146 7.033617 8.364463 8.835983
## 4 9.587598 10.308712 4.094136 11.08273 6.005777 7.091480 6.504283
## 5 11.157898 9.688909 8.295330 12.48335 10.201693 11.141551 8.002839
## 6 10.396854 8.904943 7.037756 11.49867 9.234961 10.083585 6.581198
##          Dtwd2  Dtx1  Dtx2  Dtx3  Dtx3l  Dtx4  Dtymk
## 1 7.689678 11.624765 10.289833 12.608823 8.006284 12.971332 10.793685
## 2 7.085962 11.314454 9.704448 12.421476 8.023244 12.318282 10.289005
## 3 7.469221 9.101869 7.195580 10.898496 7.908396 8.944905 11.851994
## 4 6.320196 7.519597 2.898660 8.399006 6.633186 8.929164 9.106391

```

```

## 5 7.442497 11.673208 10.062945 12.780297 8.380899 12.677099 10.647630
## 6 6.506835 10.433380 9.099361 11.417142 6.821645 11.779584 9.602768
##      Duox1      Duox2      Duoxa1      Duoxa2      Dupd1      Dus11
## 1 4.4125968 3.253251e+00 7.541013 2.594482e+00 3.596903e+00 10.779094
## 2 4.2786598 3.047997e+00 5.721797 7.711670e-01 4.429781e+00 10.465406
## 3 1.5644676 5.481818e-08 4.077149 7.034158e-08 6.695412e-08 7.428902
## 4 0.6497077 2.629648e-08 4.077552 3.169831e-08 2.472647e-08 5.367930
## 5 4.6210498 3.367886e+00 6.074634 9.306355e-01 4.773819e+00 10.824060
## 6 3.3067138 2.246541e+00 6.359158 1.684486e+00 2.552984e+00 9.588187
##      Dus31      Dus41      Dusp1      Dusp10      Dusp11      Dusp12      Dusp13
## 1 11.716981 7.482973 15.926025 11.000291 12.789509 9.545192 4.6193303
## 2 11.361003 7.181456 15.327680 10.471385 12.571850 8.646429 4.2942425
## 3 9.389113 6.504982 9.837566 9.012731 10.681890 7.232063 0.5112548
## 4 6.403879 1.985234 9.324984 4.390223 8.403425 5.185235 1.0223319
## 5 11.719761 7.538141 15.686551 10.830040 12.930677 9.004514 4.6368107
## 6 10.525560 6.301533 14.734072 9.809232 11.597792 8.355740 3.5022657
##      Dusp14      Dusp15      Dusp16      Dusp18      Dusp19      Dusp2      Dusp22
## 1 9.112302 12.922410 11.837721 10.126892 9.289484 13.2274673 10.039695
## 2 9.082521 11.982671 10.851110 9.505575 8.780436 11.7465749 9.507446
## 3 11.319812 6.442485 9.051157 10.487566 9.333029 0.7452540 8.549313
## 4 8.121123 4.176174 7.175152 8.252694 7.799964 0.2627482 8.768280
## 5 9.440813 12.341472 11.209817 9.864016 9.138591 12.1053612 9.865888
## 6 7.923735 11.730670 10.646254 8.936600 8.100523 12.0356810 8.849509
##      Dusp23      Dusp26      Dusp27      Dusp28      Dusp3      Dusp4      Dusp5
## 1 7.498649 10.604171 8.226192e+00 9.820974 13.40474 11.380038 10.310181
## 2 6.414196 10.127303 7.700520e+00 8.416175 12.89085 10.929707 8.904424
## 3 7.109673 7.406725 8.218850e-08 6.035326 11.68371 6.832138 1.437291
## 4 5.779702 5.798539 4.104487e-08 6.434609 11.68518 1.792782 0.456052
## 5 6.769339 10.485898 8.057868e+00 8.774122 13.24969 11.288423 9.262639
## 6 6.317096 9.413403 7.040517e+00 8.631082 12.21293 10.188764 9.119688
##      Dusp6      Dusp7      Dusp8      Dusp9      Dut      Dvl1      Dvl2
## 1 13.64793 10.905431 12.52127 8.5927413 9.448148 12.748115 10.879378
## 2 13.07695 10.412393 12.33958 7.6731747 8.957576 12.184810 10.687539
## 3 10.14562 7.638737 11.56460 0.9994456 8.693417 6.895602 7.290864
## 4 11.37145 8.472102 10.02886 0.5613743 5.174922 5.089776 2.991325
## 5 13.43580 10.771038 12.69840 8.0304936 9.315814 12.543621 11.046225
## 6 12.45610 9.714434 11.32961 7.4056535 8.258872 11.556406 9.688399
##      Dvl3      Dydc1      Dydc2      Dym      Dync1h1      Dync1i1      Dync1i2
## 1 11.54556 1.418037e+00 1.817721e+00 11.037874 15.20844 10.975178 13.06719
## 2 11.18535 1.131643e+00 1.047632e+00 10.740061 14.85607 11.084874 12.77970
## 3 10.22272 1.935285e+00 4.538499e+00 8.337184 11.44030 6.356354 12.29329
## 4 8.25027 8.660036e-08 1.991859e-10 7.308495 11.04405 9.241704 10.33734
## 5 11.54410 1.337599e+00 1.243891e+00 11.098754 15.21494 11.443606 13.13854
## 6 10.35421 7.966391e-01 1.078384e+00 9.846790 14.01650 9.784135 11.87543
##      Dync1li1      Dync1li2      Dync2h1      Dync2li1      Dyn1l1      Dyn1l2      Dyn1rb1
## 1 11.993903 13.856278 10.260595 9.006542 13.43302 14.753934 12.40585
## 2 11.283941 13.598545 10.153474 8.448244 12.72240 14.310394 11.69384
## 3 9.493101 10.883209 9.772736 10.367633 13.92243 7.934868 13.42996
## 4 8.347805 8.566962 7.412465 9.075768 13.42517 7.892550 11.98056
## 5 11.642693 13.957399 10.512074 8.806212 13.08123 14.669258 12.05263
## 6 10.802384 12.664422 9.070154 7.818235 12.24121 13.562019 11.21422
##      Dyn1rb2      Dyn1t1a      Dyn1t1b      Dyn1t3      Dyrk1a      Dyrk1b      Dyrk2
## 1 4.088431 7.530163 7.392467e+00 12.17143 12.44223 10.375006 11.579216
## 2 3.436286 6.995115 6.978179e+00 11.60753 11.82740 9.551857 11.290383

```

```

## 3 7.806055 8.087034 4.868465e-08 11.10621 10.56823 5.057318 7.593095
## 4 6.156973 4.321101 2.390134e-08 10.65705 10.14059 3.108811 4.399187
## 5 3.765469 7.351497 7.334531e+00 11.96631 12.18619 9.910312 11.649135
## 6 3.003401 6.348385 6.211707e+00 10.97986 11.25059 9.184448 10.387851
##      Dyrk3      Dyrk4      Dysf      Dyx1c1      Dzip1      Dzip1l      Dzip3
## 1 8.123021 7.623963e+00 9.730327 5.583954 11.164664 10.489903 11.356544
## 2 8.300242 6.195993e+00 9.939282 5.073170 11.336146 10.260164 10.948981
## 3 6.287138 4.931519e-08 3.418774 6.825483 9.077828 5.434926 9.190314
## 4 4.449195 4.132110e+00 4.783328 5.933616 6.784296 5.421364 8.438938
## 5 8.658111 6.550525e+00 10.297837 5.422565 11.694902 10.618783 11.307699
## 6 6.937813 6.441545e+00 8.540571 4.430880 9.973505 9.299236 10.165282
##      E030030I06Rik E130012A19Rik E130308A19Rik E130309D02Rik E130309F12Rik
## 1 0.08332775 9.903643 10.873913 10.997115 10.314962
## 2 0.15795695 9.842081 9.824272 10.518177 9.940578
## 3 2.02891915 5.435142 8.039086 7.603552 7.256902
## 4 2.02259472 1.833305 8.294811 5.916562 8.301260
## 5 0.19958752 10.200613 10.182800 10.876839 10.299133
## 6 0.03749402 8.713635 9.682937 9.806057 9.124464
##      E130311K13Rik E230008N13Rik      E2f1      E2f2      E2f3      E2f4
## 1 8.335482 1.759494e+00 9.026636 9.124503 10.712637 10.866873
## 2 7.611949 3.337042e+00 8.317765 8.981343 10.227864 10.482293
## 3 6.166508 3.093242e+00 7.528661 6.312564 7.225302 7.270342
## 4 7.044564 7.436663e-08 4.971606 5.799382 5.894700 6.087808
## 5 7.969200 3.664086e+00 8.675646 9.339593 10.586478 10.840949
## 6 7.149347 1.035948e+00 7.838278 7.935908 9.521781 9.675903
##      E2f5      E2f6      E2f7      E2f8 E330009J07Rik E430018J23Rik
## 1 10.629203 10.075089 7.905514 9.030756 9.605914 8.125469
## 2 9.553574 10.059791 7.839604 8.803625 9.720692 6.947346
## 3 8.550556 7.546188 6.537018 7.617638 2.969438 6.709435
## 4 8.017096 6.296245 1.750273 5.635580 1.728200 4.852560
## 5 9.912029 10.418372 8.197093 9.161792 10.079194 7.303644
## 6 9.438414 8.884860 6.721405 7.842388 8.416358 6.940249
##      E430025E21Rik      E4f1      Eaf1      Eaf2      Eapp      Ears2
## 1 11.893420 10.746350 11.679095 5.138955e+00 10.481078 8.195278
## 2 11.181210 10.582831 11.688741 5.003192e+00 9.590568 8.203963
## 3 9.372470 6.329784 7.000505 4.929576e+00 11.195674 5.084022
## 4 8.320055 4.783228 5.221386 6.543218e-08 10.048145 1.562869
## 5 11.539952 10.941503 12.047523 5.352114e+00 9.949034 8.561762
## 6 10.701934 9.555468 10.487689 3.999667e+00 9.290418 7.009739
##      Ebag9      Ebf1      Ebf2      Ebf3      Ebf4      Ebi3      Ebna1bp2
## 1 9.158845 8.503947 5.6246008 11.605382 9.123399 9.522133 11.326811
## 2 8.866525 8.720799 6.4562047 10.365067 9.388499 9.404417 10.602162
## 3 8.216524 6.588081 0.8115007 1.109847 5.151207 6.825125 11.611614
## 4 6.492944 6.393995 0.7830138 7.094909 2.609791 7.380655 8.366771
## 5 9.224722 9.078923 6.8114545 10.723705 9.746903 9.762826 10.960836
## 6 7.970170 7.317169 4.4704611 10.414006 7.934806 8.332722 10.135564
##      Ebp      Ebp1      Ecd      Ece1      Ece2      Ecel1      Ech1
## 1 11.97079 9.445809 10.746695 12.258426 10.588465 9.624233 12.51744
## 2 11.31441 9.063480 10.620740 11.834344 10.370623 9.151288 11.68278
## 3 10.67579 9.206808 10.915593 9.588543 9.667533 2.215494 13.00885
## 4 10.61178 7.041567 9.948848 9.667703 6.147026 4.870731 12.24147
## 5 11.67316 9.421764 10.979416 12.193136 10.729262 9.509607 12.04156
## 6 10.77928 8.256537 9.555813 11.066829 9.397710 8.434647 11.32578
##      Echdc1      Echdc2      Echdc3      Echs1      Eci1      Eci2      Eci3

```

```

## 1 8.813967 9.640984 5.2947944 12.35020 10.879558 12.057900 3.7830678
## 2 8.155868 9.178534 5.0314524 11.87251 9.998600 11.558133 4.1316572
## 3 9.116192 7.899375 3.9433220 12.65920 10.086216 11.595261 0.3312691
## 4 6.948598 5.760227 0.9889203 11.34708 9.317678 9.954728 2.9755444
## 5 8.513630 9.536864 5.3805682 12.23130 10.357168 11.916907 4.4722676
## 6 7.626185 8.451370 4.1502053 11.15858 9.688579 10.866360 2.7220628
##      Ecm1      Ecm2      Ecscr      Ecsit      Ect2      Ect2l      Eda
## 1 10.534797 8.390068 12.361841 10.212241 8.711659 1.341494e+00 8.195173
## 2 9.911606 7.958819 11.451531 9.633349 8.446043 7.309985e-01 8.222465
## 3 8.200869 10.114670 6.309076 10.018959 9.685930 2.220125e+00 6.821322
## 4 6.664554 7.098417 9.421648 9.588806 4.110228 2.762518e-08 4.846556
## 5 10.270155 8.316418 11.810297 9.991827 8.804009 8.844220e-01 8.580278
## 6 9.344089 7.203717 11.170217 9.021852 7.524184 7.453298e-01 7.009635
##      Eda2r      Edar      Edaradd      Edc3      Edc4      Edem1      Edem2
## 1 6.848940 6.058785 5.229239 10.560192 11.706170 13.129549 12.330731
## 2 6.470899 5.489030 4.558033 10.003477 11.940608 12.247523 11.844150
## 3 7.332452 7.315081 4.043546 9.114438 9.559675 8.383582 9.423567
## 4 1.210711 3.021685 2.674072 9.236813 8.360233 8.940969 10.120795
## 5 6.826185 5.840806 4.903339 10.362046 12.299406 12.606336 12.202942
## 6 5.673284 4.894912 4.086813 9.369461 10.514753 11.937777 11.139115
##      Edem3      Edf1      Edil3      Edn1      Edn3      Ednra      Ednrb
## 1 11.626352 12.215767 12.92323 11.457748 9.846279 9.735570 14.44613
## 2 11.472194 11.797777 12.13330 11.043641 8.470741 9.038792 13.96758
## 3 7.856470 11.006894 10.47851 4.458338 8.894149 8.055859 11.84280
## 4 7.907935 9.423362 10.57398 6.113910 5.464186 6.837160 12.47305
## 5 11.830961 12.156567 12.49211 11.402369 8.828722 9.397066 14.32644
## 6 10.434967 11.024181 11.73149 10.266438 8.656351 8.545806 13.25423
##      Eea1      Eed      Eef1a1      Eef1a2      Eef1b2      Eef1d      Eef1e1
## 1 11.097367 10.316782 17.22688 12.796905 14.40804 12.74083 10.267239
## 2 10.818594 10.068533 16.51493 12.498751 13.57380 11.97763 9.238303
## 3 8.986328 9.658037 15.79085 6.141151 12.92574 12.29515 11.324001
## 4 7.493237 7.294150 14.40981 8.634102 11.80841 10.87789 9.896447
## 5 11.177297 10.427116 16.87380 12.857575 13.93265 12.33643 9.596655
## 6 9.906247 9.126282 16.03490 11.605188 13.21614 11.54912 9.076791
##      Eef1g      Eef2      Eef2k      Eefsec      Eepd1      Efcab1      Efcab10
## 1 12.10610 17.35054 12.031802 10.105036 10.853245 5.466932 1.6107327
## 2 11.53988 16.88409 11.718528 9.550485 10.120591 5.636981 1.7722202
## 3 11.50710 14.51695 9.269751 9.635894 5.784186 5.961691 6.3877467
## 4 10.07996 12.95605 7.331721 7.362503 7.569422 5.640797 5.6683858
## 5 11.89865 17.24297 12.077313 9.908940 10.479184 5.989450 2.0348545
## 6 10.91455 16.15857 10.840270 8.914771 9.662285 4.317095 0.9296454
##      Efcab2      Efcab4a      Efcab4b      Efcab5      Efcab6      Efcab7      Efcab9
## 1 8.393927 10.016716 4.671215 5.048318 4.6180298 7.290414 4.613343e+00
## 2 8.173266 9.765301 5.175290 5.544727 5.5228898 6.864796 2.515049e+00
## 3 9.124748 3.896352 1.923458 4.785355 3.6869921 8.144696 1.488129e+00
## 4 5.553459 4.500306 3.377761 2.265463 0.5073605 5.671487 5.824824e-08
## 5 8.531042 10.123814 5.525335 5.896772 5.8748306 7.220942 2.817175e+00
## 6 7.207561 8.826559 3.551573 3.912378 3.5010309 6.110472 3.496582e+00
##      Efemp1      Efemp2      Efhb      Efhc1      Efhc2      Efhd1      Efhd2
## 1 5.588380 10.071828 3.5846473 6.361775 4.352117 12.318984 14.238895
## 2 4.826593 9.247663 3.8182372 5.661871 5.298727 11.477092 13.666617
## 3 9.271960 10.259174 4.1986915 7.090537 1.834054 8.016973 10.180545
## 4 9.430701 8.805195 0.5461671 1.069618 4.949928 8.018638 9.907077
## 5 5.174214 9.606018 4.1543805 6.014450 5.649499 11.835859 14.025472

```

```

## 6 4.435188 8.881602 2.5419244 5.192622 3.249801 11.127371 13.047009
##      Efna1      Efna2      Efna3      Efna4      Efna5      Efnb1      Efnb2
## 1 11.193732 8.953688 8.030058 6.719727 7.078754 9.854477 11.172000
## 2 10.922911 8.390306 7.547071 5.911022 6.975744 9.581250 10.556378
## 3 9.131247 7.026722 3.953526 6.462658 10.144114 8.699558 8.837439
## 4 8.121320 4.323591 4.723399 2.705125 7.077768 5.668885 8.218328
## 5 11.281626 8.748236 7.904247 6.264602 7.332092 9.939713 10.915046
## 6 10.002556 7.765518 6.845299 5.545591 5.900706 8.664537 9.980836
##      Efnb3      Efr3a      Efr3b      Efs      Eftud1      Eftud2      Egf
## 1 14.41381 11.389673 12.997531 11.731071 9.308302 12.407202 6.574842
## 2 13.51601 11.043742 12.331376 11.183302 8.987981 12.139783 6.439903
## 3 10.28168 9.617787 9.852853 9.867991 9.063779 11.580071 5.848486
## 4 10.55526 9.012789 8.552657 8.005602 6.565830 9.998083 1.291755
## 5 13.87486 11.402470 12.690194 11.542044 9.346233 12.498591 6.795112
## 6 13.22192 10.198395 11.805779 10.539644 8.119302 11.215567 5.402577
##      Egfl6      Egfl7      Egfl8      Egflam      Egfr      Egl1n1      Egl1n2
## 1 6.940018 12.886861 10.1337207 10.354234 11.274323 11.937965 11.886740
## 2 7.794253 12.131645 8.9813155 10.134101 10.727574 11.677496 11.390991
## 3 3.944289 7.650523 5.3251976 7.950329 9.894260 9.628782 8.960248
## 4 3.760679 8.756592 0.9856896 6.668171 8.015387 8.272239 8.440164
## 5 8.151698 12.490453 9.3395646 10.492697 11.086265 12.036278 11.749752
## 6 5.763368 11.695127 8.9434215 9.163696 10.083104 10.746464 10.695256
##      Egl1n3      Egr1      Egr2      Egr3      Egr4      Ehbp1      Ehbp111
## 1 9.109648 15.941350 12.498453 11.184311 7.797525e+00 11.042529 11.123423
## 2 9.005770 15.723511 11.477531 9.850560 7.189732e+00 10.255492 10.965507
## 3 3.856332 11.586835 7.042154 2.015797 8.188517e-01 9.433724 6.765468
## 4 3.281664 8.689475 5.945412 5.068098 8.125940e-08 5.741117 6.063742
## 5 9.364030 16.082384 11.836298 10.209094 7.546430e+00 10.614111 11.324227
## 6 7.921088 14.749397 11.306797 9.993141 6.614026e+00 9.851443 9.932288
##      Ehd1      Ehd2      Ehd3      Ehd4      Ehf      Ehhdh      Ehmt1
## 1 14.074119 10.140280 11.680488 11.743400 2.1616296 8.477422 11.228004
## 2 13.144873 9.630460 11.344145 11.098611 1.1760258 8.639476 11.076111
## 3 9.920168 8.211558 9.844056 6.734354 4.6938659 6.033241 10.524458
## 4 9.461426 8.498569 10.519082 5.496701 3.4336371 1.362450 8.535231
## 5 13.503717 9.988937 11.702902 11.457345 1.3868563 8.997557 11.434842
## 6 12.882245 8.949973 10.489081 10.551968 1.3379904 7.290741 10.036809
##      Ehmt2      Ei24      Eid1      Eid2      Eid2b      Eif1      Eif1ad
## 1 13.413299 12.960014 13.38933 9.645780 9.585735 14.02129 10.594028
## 2 13.168891 12.212686 12.44523 9.603923 9.012354 13.34925 10.260710
## 3 9.304433 8.977526 10.74352 6.535154 6.729356 12.65322 10.255148
## 4 7.692967 7.954898 10.16214 5.505242 4.760320 11.74242 8.584641
## 5 13.527735 12.571498 12.80405 9.962393 9.370617 13.70809 10.619330
## 6 12.221489 11.768268 12.19752 8.456158 8.396213 12.82942 9.403269
##      Eif1ax      Eif1b      Eif2a      Eif2ak1      Eif2ak2      Eif2ak3      Eif2ak4
## 1 11.390238 12.74107 10.926612 11.351812 9.518410 11.731811 10.987881
## 2 10.609919 11.92872 10.730886 11.124732 9.358379 10.924477 10.456467
## 3 12.076738 11.71276 10.583167 8.584701 7.909010 8.147258 7.005946
## 4 9.920543 10.89898 8.809229 7.417226 7.438150 6.392739 5.603281
## 5 10.968595 12.28752 11.089578 11.483468 9.716773 11.283192 10.815120
## 6 10.198959 11.54936 9.735600 10.160552 8.329006 10.540384 9.796830
##      Eif2b1      Eif2b2      Eif2b3      Eif2b4      Eif2b5      Eif2d      Eif2s1
## 1 10.577793 11.774670 9.609947 11.258338 11.801339 10.920909 11.075431
## 2 10.249252 11.084613 9.300275 10.694335 11.328070 10.451751 10.673557
## 3 11.262639 10.265543 10.570453 10.167871 8.574318 10.458318 11.672032

```

```

## 4 9.421565 9.530297 8.112343 8.835627 8.872924 7.969274 9.444820
## 5 10.607869 11.443345 9.658649 11.053022 11.686825 10.810402 11.032241
## 6 9.387047 10.583226 8.420384 10.067127 10.609886 9.729901 9.884325
##      Eif2s2 Eif2s3x      Eif3a      Eif3b      Eif3c      Eif3d      Eif3e
## 1 11.133370 9.893106 13.005097 13.161576 13.47728 12.96182 12.34486
## 2 10.606619 9.351839 13.188913 13.072446 13.18352 12.50450 11.51752
## 3 11.072906 8.250788 11.693922 10.010661 12.07712 12.01496 12.08361
## 4 9.388548 6.688828 9.851309 8.085585 10.79075 10.97420 10.91984
## 5 10.965294 9.710231 13.547758 13.431288 13.54237 12.86332 11.87629
## 6 9.942229 8.703112 11.813344 11.969798 12.28546 11.77008 11.15324
##      Eif3f      Eif3g      Eif3h      Eif3i      Eif3k      Eif3l      Eif3m
## 1 13.919049 12.32460 13.40800 12.74107 12.84382 12.87408 10.769608
## 2 13.400520 11.59613 12.73710 12.27315 12.04395 12.30473 9.962934
## 3 10.265655 11.90743 13.08563 13.20075 13.25735 13.00329 10.727881
## 4 9.073231 10.63981 11.69529 11.49258 12.42475 11.89412 9.583649
## 5 13.759370 11.95490 13.09593 12.63196 12.40275 12.66355 10.321494
## 6 12.727187 11.13298 12.21619 11.54936 11.65209 11.68235 9.578709
##      Eif4a1 Eif4a2      Eif4a3      Eif4b      Eif4e      Eif4e2      Eif4e3
## 1 12.771958 14.17614 11.778596 13.967220 11.503027 11.81957 9.108594
## 2 11.783191 13.58701 11.222056 13.820362 10.712740 11.26456 8.810899
## 3 10.990258 13.23563 11.189427 11.849683 11.895830 10.88377 7.796806
## 4 9.329293 12.33118 9.922482 9.549853 11.073867 9.48955 4.932301
## 5 12.141979 13.94586 11.580802 14.179219 11.071429 11.62331 9.169069
## 6 11.580245 12.98426 10.587151 12.775354 10.311696 10.62811 7.920036
##      Eif4ebp1 Eif4ebp2 Eif4ebp3 Eif4enif1      Eif4g1      Eif4g2      Eif4g3
## 1 9.594657 10.711303 8.407677 11.580677 14.369424 16.02779 13.500119
## 2 8.084255 10.299286 7.792367 10.699004 14.082285 15.59999 13.403438
## 3 6.478632 6.690022 7.047735 9.560686 9.360971 14.76329 10.302983
## 4 6.434283 5.566748 4.056673 8.494780 7.926261 13.02658 8.613922
## 5 8.441961 10.657913 8.149810 11.057691 14.441146 15.95886 13.762288
## 6 8.405120 9.520449 7.221258 10.389312 13.177530 14.83583 12.308298
##      Eif4h      Eif5      Eif5a      Eif5a2      Eif5b      Eif6      Elac1
## 1 14.29390 13.750643 14.16773 10.085311 11.683947 12.258056 9.185072
## 2 13.79480 13.122545 13.45720 9.986738 11.374538 11.382465 9.364131
## 3 11.35549 11.266529 12.23029 7.979192 11.020465 11.041186 7.452227
## 4 10.73852 9.823545 11.16084 6.716454 9.127414 9.751229 7.100879
## 5 14.15366 13.481388 13.81605 10.345304 11.733297 11.741225 9.722527
## 6 13.10201 12.558796 12.97585 8.895069 10.492539 11.066459 7.996338
##      Elac2      Elane      Elavl1      Elavl2      Elavl3      Elavl4      Elf1
## 1 10.830140 2.212037e-01 12.30688 10.085235 13.738280 10.909938 11.565951
## 2 10.530241 2.696267e+00 11.40852 9.890944 13.589326 10.352331 10.493010
## 3 6.634119 5.124282e-08 11.24565 11.574253 11.068832 13.052793 7.987988
## 4 7.395470 1.227899e-08 10.55306 5.745878 9.323119 9.086604 8.377930
## 5 10.888905 3.005207e+00 11.76728 10.249488 13.948179 10.710967 10.851669
## 6 9.639196 1.021098e-01 11.11527 8.894993 12.546435 9.718938 10.374592
##      Elf2      Elf3      Elf4      Elf5      Elf1n1      Elf1n2      Elk1
## 1 11.589223 3.7308404 10.191690 5.854678 9.994926 11.922078 10.886242
## 2 11.713568 2.8653223 9.213905 4.384515 8.854003 12.177424 10.122369
## 3 7.845950 0.3142093 3.344274 3.683016 1.152470 4.186183 8.253483
## 4 5.876971 0.3249123 5.134515 5.140041 4.648428 6.783395 8.919805
## 5 12.072353 3.1798681 9.572248 4.728078 9.212194 12.536234 10.480963
## 6 10.397854 2.6744295 9.001324 4.695026 8.804796 10.730582 9.695258
##      Elk3      Elk4      Ell      Ell2      Ell3      Elmo1      Elmo2
## 1 11.082315 10.966798 11.225582 11.106969 4.100532 13.060026 12.324622

```

```

## 2 11.350633 9.924590 11.021631 10.555406 4.374014 12.790616 12.220008
## 3 6.099039 7.717657 9.085699 7.764939 3.597656 10.336157 10.698054
## 4 7.535230 6.541373 8.177441 6.947273 4.150967 8.728104 9.815718
## 5 11.709390 10.283141 11.380356 10.914074 4.717465 13.149450 12.578821
## 6 9.891205 9.775761 10.034389 9.915844 3.014642 11.868264 11.133008
##      Elmo3      Elmod1      Elmod2      Elmod3      Eln      Elof1      Elov11
## 1 6.195388 9.905598 9.863275 10.483814 12.553614 10.695824 13.86101
## 2 6.436833 9.894595 9.663198 9.848518 11.181123 9.987099 12.96682
## 3 6.334272 5.695177 9.217874 10.672252 6.529309 11.407636 11.78628
## 4 4.676918 9.441242 8.229557 9.784337 5.030391 9.700475 11.32518
## 5 6.792033 10.253139 10.021684 10.207052 11.539865 10.345665 13.32566
## 6 5.028999 8.715587 8.673323 9.293152 11.361945 9.504982 12.66916
##      Elov12      Elov13      Elov14      Elov15      Elov16      Elov17      Elp2
## 1 11.066208 0.5711693 11.031227 14.04258 12.919333 12.516976 11.83879
## 2 10.138168 1.7641405 10.477008 13.42121 12.559818 11.387588 11.32495
## 3 9.687235 0.5846784 9.682896 12.51397 10.540449 8.613959 11.97237
## 4 9.749412 0.9638839 9.994272 12.17372 8.995317 9.204815 10.91568
## 5 10.496764 2.0262161 10.835664 13.78006 12.918644 11.746348 11.68370
## 6 9.875107 0.2806191 9.840147 12.85071 11.727593 11.325315 10.64733
##      Elp3      Elp4      Eltd1      Emb      Emcn      Emd      Eme1
## 1 11.573233 9.761496 14.220464 8.023565 10.867308 12.164606 5.784106
## 2 11.067294 9.636619 12.972397 7.432767 10.371379 11.272450 5.576114
## 3 11.556121 9.748473 8.115115 6.758234 7.698327 9.732404 7.180119
## 4 9.920533 7.471754 9.794241 8.159885 8.202174 8.656836 1.802212
## 5 11.426025 9.995098 13.331237 7.789802 10.730018 11.631200 5.928307
## 6 10.381871 8.571693 13.028579 6.838839 9.676338 10.973034 4.626055
##      Eme2      Emg1      Emid1      Emilin1      Emilin2      Emilin3      Eml1
## 1 9.049262 10.760696 12.018810 9.038959 10.397663 5.2671418 13.152340
## 2 8.149452 10.002554 11.473844 8.957361 9.551335 6.2633773 12.825359
## 3 7.799129 11.578321 7.552784 4.532394 5.669787 0.6852538 9.808104
## 4 8.010160 9.654881 5.577306 1.493904 1.691591 0.3105152 7.764217
## 5 8.507209 10.361122 11.832611 9.315600 9.909790 6.6181074 13.184195
## 6 7.860848 9.569804 10.827283 7.850570 9.207082 4.1234537 11.960564
##      Eml2      Eml3      Eml4      Eml5      Eml6      Emp1      Emp2
## 1 12.528020 11.145721 11.091630 11.396720 9.745059 10.597627 11.609108
## 2 11.789575 11.015969 11.069125 10.304643 8.875864 10.216965 10.966514
## 3 7.851860 7.115525 8.732373 9.581630 6.226641 6.731420 11.701417
## 4 5.444067 6.289908 7.105968 8.013126 4.905696 6.292292 9.960681
## 5 12.148364 11.374694 11.427856 10.663270 9.234065 10.575577 11.325234
## 6 11.336357 9.954572 9.900514 10.205439 8.555280 9.406865 10.417730
##      Emp3      Emr1      Emr4      Emx1      Emx2      En1      En2
## 1 9.939675 13.030818 3.871175 6.845615 10.272472 1.3583480 7.134517e+00
## 2 8.811016 12.798810 4.432494 6.508592 9.572435 1.6874889 6.426242e+00
## 3 9.026527 8.816452 2.746843 10.506508 9.891573 0.3468964 1.144244e+00
## 4 8.161953 10.245065 4.063225 4.714274 7.640082 0.8151039 4.936309e-08
## 5 9.169186 13.157644 4.776560 6.863972 9.930896 1.9440942 6.781415e+00
## 6 8.749618 11.839060 2.802754 5.669996 9.082019 0.7565517 5.955943e+00
##      Enah      Enc1      Endod1      Endog      Endou      Eng      Engase
## 1 11.960050 12.57255 13.262718 7.759169 7.540138 13.930516 9.539007
## 2 11.609203 12.30585 12.651965 6.792127 6.931427 13.318300 9.924691
## 3 8.329758 13.82888 9.986554 4.325728 4.492706 5.405756 5.729053
## 4 7.384472 12.86298 9.613510 3.692648 5.594574 8.189616 5.193058
## 5 11.967980 12.66467 13.010794 7.148131 7.287696 13.677148 10.283242
## 6 10.768542 11.38088 12.070927 6.575898 6.358290 12.738654 8.349566

```


##	Enho	Enkur	Eno1	Eno2	Eno3	Eno4	Enoph1
## 1	10.939119	4.815322	2.664961	12.400084	9.389813	5.263546	12.321096
## 2	10.282475	5.791424	2.688857	12.271551	10.037538	5.797368	11.923116
## 3	8.914362	5.847445	3.903270	9.541223	5.132403	4.581900	11.024074
## 4	9.992988	3.321830	3.834606	11.315012	5.476942	2.480589	9.377675
## 5	10.641099	6.144545	2.997535	12.630366	10.396114	6.150513	12.281913
## 6	9.748099	3.688968	1.742767	11.208451	8.200649	4.119976	11.129483
##	Enox1	Enox2	Enpep	Enpp1	Enpp2	Enpp3	Enpp4
## 1	9.169671	9.112857	7.686818	9.001780	16.16088	7.3849400	11.156936
## 2	9.391341	9.047485	6.902987	8.225594	15.44139	7.7555073	10.238219
## 3	7.237327	8.204221	8.500847	6.422401	13.91784	4.3572159	10.513024
## 4	5.789720	5.902384	4.651001	2.471419	14.17259	0.3002006	10.411172
## 5	9.749746	9.405762	7.259205	8.583409	15.80027	8.1129128	10.596834
## 6	7.980972	7.924290	6.503993	7.813486	14.96892	6.2042383	9.965782
##	Enpp5	Enpp6	Ensa	Entpd1	Entpd2	Entpd3	Entpd4
## 1	12.11002	13.247150	13.18046	13.089233	10.885070	4.270125e+00	11.559515
## 2	11.56598	12.738965	12.78684	12.810926	10.438147	5.356049e+00	11.099019
## 3	10.98924	7.267425	11.89926	8.525814	13.380455	2.002106e-08	7.166711
## 4	11.00813	9.758778	10.87149	9.944233	10.180940	3.697204e+00	7.784079
## 5	11.92476	13.097797	13.14567	13.169761	10.796796	5.707137e+00	11.457753
## 6	10.91846	12.055361	11.98868	11.897466	9.694088	3.172872e+00	10.368159
##	Entpd5	Entpd6	Entpd7	Entpd8	Eny2	Eomes	Ep300
## 1	12.351169	10.113154	8.654905	3.041832e+00	10.792816	6.547401	11.881387
## 2	12.148755	10.242761	8.586237	2.606242e+00	10.376776	6.308957	11.718944
## 3	9.867666	10.097510	8.817185	4.011742e-08	11.170779	11.175138	8.145367
## 4	8.844499	8.915082	7.391013	1.995370e-08	8.940060	4.091573	7.390509
## 5	12.507564	10.601377	8.944288	2.911907e+00	10.735416	6.663817	12.077729
## 6	11.159548	8.922879	7.467611	2.062183e+00	9.601900	5.375512	10.689905
##	Ep400	Epas1	Epb4.1	Epb4.111	Epb4.112	Epb4.113	Epb4.114a
## 1	12.386288	13.723262	12.275250	12.862178	15.129668	12.648259	9.553262
## 2	12.120266	13.183202	11.602817	12.794014	14.399824	12.124190	10.302514
## 3	10.128353	9.683815	8.979347	8.797923	9.151345	11.322288	5.943708
## 4	9.302336	10.473744	8.794188	8.721093	10.535046	9.538403	5.453015
## 5	12.479073	13.542047	11.961594	13.152848	14.758689	12.482997	10.661141
## 6	11.194657	12.531418	11.083648	11.670448	13.937737	11.456570	8.363796
##	Epb4.114b	Epb4.115	Epb4.2	Epc1	Epc2	Epcam	Epdr1
## 1	7.800010	9.570252	2.300217e+00	12.159757	10.815217	8.155467	11.335122
## 2	7.828661	9.477817	1.883085e+00	11.585967	11.286553	7.782831	10.880443
## 3	3.491103	10.264728	8.825702e-01	9.812827	8.246939	6.851258	9.496595
## 4	3.976771	7.795737	8.578151e-06	7.522654	6.790390	4.462941	9.411397
## 5	8.186140	9.836250	2.153058e+00	11.944742	11.645305	8.140264	11.239153
## 6	6.616496	8.380756	1.446679e+00	10.968187	9.624284	6.970109	10.143871
##	Epgn	Epha1	Epha10	Epha2	Epha3	Epha4	Epha5
## 1	2.0328767	6.537215	8.199881	11.934453	7.958662	11.28772	10.404085
## 2	1.5272301	6.173451	8.068360	11.764937	8.004535	11.17865	9.946769
## 3	0.5597199	3.867736	1.037943	3.842346	6.926307	12.57057	7.635077
## 4	1.0483447	4.451288	6.018789	6.510541	6.337768	11.26340	7.683871
## 5	1.7713386	6.527914	8.426053	12.123724	8.362174	11.53739	10.305326
## 6	1.2390573	5.365467	7.014322	10.742953	6.774269	10.09650	9.213498
##	Epha6	Epha7	Epha8	Ephb1	Ephb2	Ephb3	
## 1	6.675942e+00	8.454693	7.334258e+00	13.709479	9.085980	10.889426	
## 2	6.327436e+00	8.296273	5.995170e+00	13.123416	8.227782	11.074770	
## 3	1.041008e-07	9.501292	4.793476e+00	10.813321	8.353089	7.729577	
## 4	4.194810e+00	12.076361	6.316766e-08	8.532325	5.053655	6.767315	

```

## 5 6.682347e+00 8.654139 6.349052e+00 13.482259 8.585599 11.433501
## 6 5.502352e+00 7.268096 6.153958e+00 12.517636 7.897476 9.698440
##      Ephb4      Ephx1      Ephx2      Ephx3      Ephx4      Epm2a      Epm2aip1
## 1 10.390056 10.508819 9.369483 3.468420 8.357449 7.912789e+00 12.450485
## 2 10.134547 9.899548 9.099250 2.715836 8.017029 7.881405e+00 11.924075
## 3 6.768697 9.114156 9.991565 6.020980 8.586728 2.869696e+00 10.372587
## 4 5.876666 9.990519 8.824660 4.997884 6.968325 1.085946e-07 8.917207
## 5 10.493143 10.258094 9.457548 3.025461 8.374678 8.238934e+00 12.282872
## 6 9.199482 9.318135 8.180359 2.437502 7.171227 6.728641e+00 11.258840
##      Epn1      Epn2      Epn3      Epor      Eprs      Eps15      Eps15l1
## 1 13.945215 14.25871 3.703059 7.964625 12.63222 13.34639 11.638353
## 2 13.425656 13.75567 3.385751 7.819678 12.52586 12.81242 11.841286
## 3 7.912627 11.02467 2.329397 4.353896 12.43150 11.62397 10.285522
## 4 8.318259 11.03765 3.374506 5.385105 10.03228 10.59210 7.245653
## 5 13.784506 14.11453 3.713864 8.177148 12.88469 13.17126 12.200078
## 6 12.753351 13.06683 2.649154 6.780201 11.44054 12.15459 10.446964
##      Eps8      Eps8l1      Eps8l2      Epstil      Ept1      Epx      Erall
## 1 11.482666 5.369708 5.714381 6.992388 11.809246 3.374940 9.854950
## 2 11.433472 4.354570 5.410039 7.913626 11.674447 2.898567 9.876838
## 3 9.344343 5.314760 4.596685 4.494849 9.849029 4.479703 10.335041
## 4 8.149894 5.333212 6.782756 4.374951 8.600817 4.886266 8.577318
## 5 11.792236 4.697809 5.761414 8.271185 12.033228 3.214138 10.235378
## 6 10.291344 4.222761 4.557988 5.815195 10.617789 2.354150 8.665010
##      Erap1      Erbb2      Erbb2ip      Erbb3      Erbb4      Erc1      Erc2
## 1 10.583521 9.108033 13.179484 11.949452 10.242958 11.222682 10.698668
## 2 10.486124 8.926218 12.661484 11.520979 9.520422 10.858275 10.927326
## 3 8.424482 5.965493 10.295273 7.563568 2.736145 8.949072 8.223244
## 4 7.853891 5.773569 9.571177 6.457761 6.121646 6.576461 8.684429
## 5 10.844781 9.284443 13.020313 11.879749 9.878867 11.216982 11.286042
## 6 9.392771 7.919476 11.987705 10.757947 9.052536 10.031491 9.507824
##      Ercc1      Ercc2      Ercc3      Ercc4      Ercc5      Ercc6      Ercc6l
## 1 9.552583 10.664726 10.868316 10.145638 10.178176 10.169138 6.707812
## 2 9.252423 10.822832 10.515087 10.119001 10.028934 10.521083 6.419590
## 3 10.572157 6.079552 9.453400 8.620294 9.076344 7.457254 7.882644
## 4 8.344479 5.433405 7.533288 7.931635 6.597456 6.457633 3.496896
## 5 9.610780 11.181535 10.873749 10.477594 10.387508 10.879746 6.774746
## 6 8.363119 9.473908 9.677345 8.955325 8.987825 8.978798 5.533822
##      Ercc8      Erf      Erg      Ergic1      Ergic2      Ergic3      Erh
## 1 9.516632 13.015817 10.9017308 12.308105 10.982427 13.34018 10.655183
## 2 9.414435 12.746455 10.6832544 11.829696 10.426661 12.81482 9.914437
## 3 7.656668 5.014466 1.3334434 10.576320 10.586582 12.94677 10.390767
## 4 6.104545 4.880204 0.3604262 8.787378 9.868589 12.30341 8.325369
## 5 9.772847 13.105287 11.0419397 12.188488 10.785308 13.17365 10.272986
## 6 8.327231 11.824062 9.7107365 11.116495 9.791379 12.14837 9.464373
##      Eri1      Eri2      Eri3      Erich1      Erlec1      Erilin1      Erilin2
## 1 9.745591 8.617813 12.18037 7.930095 11.198255 9.734303 12.357224
## 2 9.347426 8.549137 11.43600 7.569423 10.688976 9.865017 11.542846
## 3 8.076385 9.328473 11.99880 7.987497 9.564490 8.493864 10.822360
## 4 6.031875 5.537577 10.65330 5.352039 8.640967 7.179241 9.383385
## 5 9.705816 8.907166 11.79476 7.926625 11.047662 10.223555 11.901619
## 6 8.555811 7.430641 10.98879 6.745854 10.007077 8.544541 11.165601
##      Ermap      Ermn      Ermp1      Ern1      Ern2      Ero1l
## 1 6.460721e+00 13.54631 13.153193 9.325036 2.706966e+00 10.709696
## 2 7.391679e+00 12.50240 12.405693 9.414323 1.257244e+00 10.359297

```

```

## 3 1.528199e+00 12.68341 9.102567 4.673095 6.680999e-08 6.369878
## 4 5.380568e-08 10.98402 9.857407 2.629193 3.301079e-08 6.712084
## 5 7.748662e+00 12.86123 12.764513 9.772736 1.476577e+00 10.717934
## 6 5.290067e+00 12.35449 11.961418 8.136001 1.777730e+00 9.518842
##      Ero1lb      Erp27      Erp29      Erp44      Errfi1      Esam      Esco1
## 1 9.349895 6.708907e+00 13.66101 11.995791 12.367943 13.643943 10.166846
## 2 9.645805 5.854013e+00 12.94016 11.209580 11.521716 12.750841 10.268143
## 3 6.287839 2.026118e+00 11.25239 10.261680 7.729661 9.711675 8.787122
## 4 5.407457 9.571075e-08 11.32052 8.957761 8.027763 10.610662 6.664655
## 5 10.004286 6.207380e+00 13.29900 11.568325 11.880487 13.109674 10.626764
## 6 8.160810 5.534904e+00 12.46917 10.804271 11.176317 12.452107 8.976508
##      Esco2      Esd      Esf1      Esm1      Esp11      Espn
## 1 6.983250 10.884672 9.296121 6.545979e+00 9.192007 5.290987e+00
## 2 6.581029 10.129565 9.066638 6.208627e+00 9.254021 5.454139e+00
## 3 9.287024 11.927745 10.537370 7.641751e-08 7.377202 2.343293e+00
## 4 4.035722 10.842369 8.670622 3.702398e-08 3.469620 5.464283e-08
## 5 6.936580 10.488160 9.424923 6.563197e+00 9.612378 5.805741e+00
## 6 5.806151 9.693689 8.107147 5.374110e+00 8.003257 4.146521e+00
##      Espn1      Esr1      Esr2      Esrp1      Esrp2      Esrra
## 1 3.245635e+00 4.8647653 1.824097e+00 3.502812 2.480705 10.920209
## 2 3.329562e+00 4.7661955 2.164334e+00 3.177000 2.003952 10.362168
## 3 6.682315e-08 0.9733768 8.065448e-08 6.180972 3.260419 4.390744
## 4 3.056296e-08 4.1068300 5.223479e-01 6.596847 3.763607 4.458992
## 5 3.656439e+00 5.1133327 2.450451e+00 3.500265 2.281272 10.720805
## 6 2.239842e+00 3.7362519 1.083059e+00 2.468312 1.591454 9.729202
##      Esrrb      Esrrg      Esyt1      Esyt2      Esyt3      Etaa1      Etf1
## 1 4.2431853 7.5305149 12.188174 12.492051 6.183804 8.493661 12.873374
## 2 3.8323047 6.9670102 11.478634 12.048510 5.725651 8.341569 12.722942
## 3 1.0247888 0.8049175 7.252573 8.965500 4.651671 7.620825 9.639652
## 4 0.2953387 4.0115084 5.893700 8.386618 5.722153 5.156491 8.141826
## 5 4.1686702 7.3233431 11.837401 12.407314 6.078504 8.699467 13.081774
## 6 3.1476555 6.3487345 10.996596 11.300396 5.017620 7.306920 11.681643
##      Etf1a      Etf1b      Etf1dh      Etf1e      Etf1l      Etf1k      Etf1k2
## 1 10.425049 11.92475 11.322783 9.302279 9.276978 14.055583 8.824679
## 2 9.822389 11.16155 11.141400 8.225200 8.777287 13.263936 8.901832
## 3 10.898368 12.52511 10.074830 7.826262 4.843851 9.896066 3.260461
## 4 9.233430 11.52403 7.654028 7.356957 3.767981 9.928589 3.209632
## 5 10.180916 11.52029 11.500138 8.583015 9.135441 13.622783 9.260046
## 6 9.234442 10.73326 10.131538 8.113291 8.088043 12.863711 7.636866
##      Ets1      Ets2      Etv1      Etv3      Etv4      Etv5      Etv6
## 1 12.780846 12.382253 10.627271 11.607603 12.073250 11.854618 11.479796
## 2 12.572580 12.009488 10.013814 11.292388 11.352677 11.579134 10.793747
## 3 7.968737 7.444172 9.852197 7.902316 5.380461 8.129959 7.223360
## 4 7.864499 7.940646 8.995114 6.257825 6.536834 8.744001 6.585831
## 5 12.931406 12.368289 10.372385 11.651140 11.711434 11.937909 11.152446
## 6 11.589131 11.190624 9.436484 10.416226 10.881705 10.663146 10.288476
##      Evc      Evc2      Evi2a      Evi2b      Evi5      Evi5l      Evl
## 1 8.943961 9.188383 12.56578 7.718887 11.750678 11.871776 12.400760
## 2 8.807655 8.811868 11.38190 7.925936 11.311399 11.691894 12.113083
## 3 7.501141 7.292692 11.54049 5.071868 9.408094 5.860701 7.250700
## 4 2.329461 3.928752 11.24554 4.979470 7.714742 5.089784 6.506593
## 5 9.165824 9.170038 11.74066 8.283505 11.670153 12.050677 12.471890
## 6 7.755817 7.999641 11.37411 6.535862 10.559243 10.680298 11.209127
##      Ewsr1      Exd1      Exd2      Exo1      Exoc1      Exoc2      Exoc3

```

```

## 1 12.763178 5.916304 11.349921 6.391407 11.214719 11.579240 12.010089
## 2 12.486738 4.111171 11.054859 6.348147 10.924434 11.229764 11.832067
## 3 11.042586 5.698638 10.266534 7.366976 10.076939 10.274014 11.484632
## 4 8.761734 5.520298 9.639139 2.385395 8.378044 8.713999 9.885795
## 5 12.845561 4.451519 11.413588 6.703114 11.283149 11.588511 12.190859
## 6 11.571466 4.755315 10.158663 5.221794 10.023532 10.387875 10.818564
##      Exoc3l      Exoc4      Exoc5      Exoc6      Exoc6b      Exoc7      Exoc8
## 1 9.868113 11.402503 11.888730 9.661114 12.632596 11.633583 9.662909
## 2 9.236595 11.183954 11.585151 10.365888 11.827053 11.384149 9.203354
## 3 5.668803 9.258675 8.688079 6.899850 10.182584 11.320169 9.297580
## 4 6.966986 8.177167 7.996249 6.197541 8.791452 9.362674 8.928387
## 5 9.594946 11.542696 11.943926 10.724526 12.185844 11.742909 9.561693
## 6 8.678154 10.211219 10.697246 8.471467 11.440910 10.442195 8.473259
##      Exog      Exosc1      Exosc10      Exosc2      Exosc3      Exosc4      Exosc5
## 1 10.486592 9.109525 11.560604 9.706872 9.048542 9.980357 10.281125
## 2 9.735914 8.561177 11.478590 9.847462 8.046372 9.402326 9.720213
## 3 9.896424 10.363386 10.416271 10.385136 7.921974 9.688161 10.625250
## 4 9.265779 8.926942 6.834492 7.920620 6.121294 8.843707 8.764902
## 5 10.094420 8.919214 11.837357 10.205996 8.404047 9.760734 10.078715
## 6 9.295928 7.920965 10.369247 8.517153 7.860130 8.790246 9.090662
##      Exosc7      Exosc8      Exosc9      Exph5      Ext1      Ext2      Extl1
## 1 9.404625 10.001851 9.502404 4.418658 11.402014 12.280932 7.813812
## 2 8.677813 9.267026 8.490153 4.249851 10.753125 11.953261 8.910628
## 3 10.701174 10.697170 10.098468 5.869544 8.569632 8.152181 5.396593
## 4 9.642698 8.781860 9.384916 3.661828 5.801298 8.041260 6.670382
## 5 9.035915 9.625388 8.848147 4.591907 11.111819 12.312060 9.268845
## 6 8.215433 8.811713 8.313029 3.312425 10.210729 11.089329 6.630219
##      Extl2      Extl3      Eya1      Eya2      Eya3      Eya4      Ezh1
## 1 11.121931 12.978163 10.313202 9.733943 10.167517 6.258614 10.727179
## 2 10.785328 12.654554 10.153729 8.525191 10.191079 6.689299 10.707102
## 3 11.084619 10.032746 9.311211 5.944798 8.028699 6.251090 9.864412
## 4 11.110408 9.643273 7.220903 6.487995 6.169295 5.838525 8.736123
## 5 11.144027 13.013384 10.512328 8.883205 10.549686 7.045091 11.065791
## 6 9.930797 11.786414 9.122705 8.544181 8.977179 5.091138 9.536312
##      Ezh2      Ezh1      F10      F11r      F12      F13a1
## 1 10.315492 12.44677 2.157931e+00 12.714537 1.596532e+00 10.602278
## 2 10.068261 12.20473 2.606827e+00 12.089159 1.555127e+00 10.357303
## 3 9.689847 12.62292 3.870654e-08 7.476978 3.653821e-08 9.526330
## 4 4.319125 10.07391 1.617716e-08 11.196247 1.732833e-08 8.994428
## 5 10.426844 12.56354 2.912515e+00 12.447965 1.801520e+00 10.715939
## 6 9.124994 11.25513 1.335121e+00 11.522835 9.196602e-01 9.411512
##      F2      F2r      F2r11      F2r12      F2r13      F3      F5
## 1 3.229880e+00 11.934074 4.030828 1.5915877 6.321179e+00 12.00612 5.857820
## 2 2.957215e+00 11.114690 3.706161 1.0622021 6.036783e+00 11.33868 6.149267
## 3 1.687351e+00 9.040424 4.299107 5.6786257 6.724009e-08 10.36078 3.439158
## 4 7.954175e-08 6.409888 4.477024 1.8206153 3.229191e-08 11.78807 4.346179
## 5 3.274536e+00 11.473426 4.040452 1.2601876 6.390806e+00 11.69743 6.503655
## 6 2.225996e+00 10.742574 2.949980 0.9161902 5.152672e+00 10.81460 4.698099
##      F7      F8      F8a      F9      Fa2h      Faah      Fabp3
## 1 2.542128e+00 6.390879 9.225907 6.2201207 14.657468 11.086672 6.871206
## 2 1.701963e+00 5.221881 8.982397 5.2073276 13.914141 10.377350 6.214713
## 3 6.003029e-08 4.729458 6.204881 0.3052073 9.393394 7.137036 6.976239
## 4 3.085789e-08 5.909370 5.197561 6.6040681 8.007504 10.517269 6.183293
## 5 1.959625e+00 5.572207 9.340647 5.5575671 14.272999 10.735990 6.569301

```

```

## 6 1.641514e+00 5.221274 8.037082 5.0533012 13.465557 9.895558 5.695301
##      Fabp4      Fabp5      Fabp6      Fabp7      Fadd      Fads1      Fads2
## 1 2.7272993 12.92157 9.551036e-01 13.99591 9.429913 14.00154 12.984445
## 2 1.8156414 12.09848 1.681568e+00 13.61043 8.593182 13.83036 12.647994
## 3 0.6849149 12.64415 7.136703e-08 15.09652 7.496182 12.55501 10.218113
## 4 0.3463480 10.40924 7.296801e-01 12.37005 5.223647 10.32812 9.245629
## 5 2.0812217 12.45728 1.937737e+00 13.96928 8.951237 14.18922 13.006823
## 6 1.7947158 11.72983 5.001871e-01 12.80404 8.240672 12.80967 11.792695
##      Fads3      Fads6      Faf1      Faf2      Fah      Fahd1      Fahd2a
## 1 9.608116 8.472890 11.515565 11.69838 12.381122 8.252650 9.481334
## 2 9.589084 9.221474 11.043237 11.60950 11.497136 8.173979 9.134360
## 3 5.978809 5.181510 8.788559 10.81136 9.836847 9.589505 10.116400
## 4 6.366750 4.113565 7.313307 8.89185 9.338069 7.879820 8.611457
## 5 9.947549 9.579820 11.401966 11.96827 11.855905 8.531756 9.492673
## 6 8.418557 7.286226 10.324227 10.50697 11.189494 7.066861 8.291997
##      Faim      Faim2      Faim3      Fam101a      Fam101b      Fam102a      Fam102b
## 1 10.620805 11.60363 3.829498e+00 6.899809 11.624743 13.407170 12.309764
## 2 9.993690 11.31494 5.057692e+00 5.952417 11.521607 12.997297 11.980173
## 3 8.424578 10.11984 1.040900e-07 4.525842 5.742756 10.096076 6.688954
## 4 7.516113 11.91687 8.210065e-01 1.899568 5.703350 9.996169 10.167937
## 5 10.352257 11.67370 5.406984e+00 6.306147 11.880377 13.356137 12.338973
## 6 9.430023 10.41226 2.764534e+00 5.723591 10.433359 12.215361 11.118153
##      Fam103a1      Fam105a      Fam107a      Fam107b      Fam109a      Fam109b      Fam110a
## 1 8.686742 11.527685 11.36720 12.13982 10.059787 3.246168 12.353969
## 2 8.282144 11.432188 10.80081 11.43777 9.680731 3.497369 11.392476
## 3 9.163713 4.989810 12.24201 10.08096 7.393267 5.046268 9.726630
## 4 7.250003 7.289728 10.74857 8.29851 6.088808 1.049932 8.605772
## 5 8.640001 11.790952 11.15951 11.79653 10.039222 3.827794 11.751237
## 6 7.499346 10.336342 10.17593 10.94825 8.869576 2.240311 11.162347
##      Fam110b      Fam110c      Fam111a      Fam114a1      Fam114a2      Fam115a      Fam115c
## 1 9.526726 1.800072e+00 9.026830 10.042603 11.417858 12.030041 8.447905
## 2 8.945521 1.972087e+00 8.813254 9.691563 10.909580 12.220167 7.959073
## 3 8.185185 5.751387e-08 8.065706 8.530956 11.586973 10.789204 3.206831
## 4 8.681519 2.570108e-08 7.059713 6.577853 9.410451 8.673134 2.432111
## 5 9.303755 2.247533e+00 9.171426 10.050057 11.268293 12.578979 8.316673
## 6 8.337307 1.065474e+00 7.838472 8.852414 10.226566 10.838510 7.261333
##      Fam117a      Fam117b      Fam118a      Fam118b      Fam120a      Fam120b      Fam120c
## 1 8.813295 11.590116 11.146284 10.497005 12.78929 11.131856 11.685807
## 2 9.256419 11.303261 11.264840 9.815736 12.15818 11.157690 11.157774
## 3 5.281566 8.904547 7.887802 11.124800 11.23290 10.397874 9.338274
## 4 5.709310 7.479017 8.008732 10.104113 10.64665 8.568721 8.684012
## 5 9.614777 11.662014 11.623589 10.174261 12.51699 11.516430 11.516514
## 6 7.625515 10.398747 9.955136 9.306331 11.59757 9.940716 10.494398
##      Fam122a      Fam122b      Fam124a      Fam124b      Fam126a      Fam126b      Fam129a
## 1 9.526778 9.529613 9.234469 8.531904e+00 11.083349 10.372530 11.293616
## 2 8.595151 9.739192 9.140627 8.745830e+00 10.984286 9.992848 10.824631
## 3 7.052303 6.966564 7.328412 5.873047e-08 9.389746 9.866845 5.366890
## 4 7.249831 6.037763 4.986782 3.350856e+00 7.007883 9.619631 6.051161
## 5 8.953207 10.097699 9.498942 9.103967e+00 11.343008 10.351415 11.183334
## 6 8.337359 8.340189 8.045626 7.345027e+00 9.892237 9.181974 10.102386
##      Fam129b      Fam129c      Fam131a      Fam131b      Fam131c      Fam132a
## 1 12.731547 8.031733e+00 11.112736 11.977012 6.961444e+00 8.058398
## 2 12.168549 8.193671e+00 10.841643 11.791741 6.491693e+00 7.229889
## 3 7.535339 3.336840e+00 9.570779 5.155806 2.085334e+00 6.584150

```

```
## 4 6.286690 1.264242e-07 11.340399 7.590881 1.309387e-07 5.597979
## 5 12.527359 8.551462e+00 11.200348 12.150530 6.847031e+00 7.586646
## 6 11.539842 6.846966e+00 9.921607 10.785497 5.784570e+00 6.873499
## Fam132b Fam133b Fam134a Fam134b Fam134c Fam135a Fam135b
## 1 4.400273 10.387778 13.049577 11.790820 12.455623 11.288922 6.293438
## 2 3.852716 9.859183 12.778970 11.513417 12.323907 11.013920 6.008643
## 3 2.609130 10.733794 10.194555 9.849609 7.428826 8.614341 1.517307
## 4 3.374258 8.964363 9.796307 9.244322 6.947297 6.499519 6.195030
## 5 4.189400 10.217720 13.137804 11.872187 12.682723 11.372645 6.362571
## 6 3.295105 9.197207 11.857817 10.599371 11.263976 10.097695 5.125383
## Fam136a Fam13a Fam13b Fam13c Fam149a Fam149b Fam150b
## 1 8.881625 9.809082 11.207300 11.547801 9.707806 10.469570 3.672603
## 2 8.664792 9.912931 10.686176 11.211019 9.778459 10.097221 4.461919
## 3 10.957357 7.245078 6.962847 9.491148 7.871691 8.195149 1.083930
## 4 8.943517 6.479310 3.779383 8.844240 5.424092 7.308954 1.231935
## 5 9.022886 10.271479 11.044862 11.569764 10.136976 10.455809 4.806286
## 6 7.693650 8.619207 10.016116 10.356450 8.518085 9.278921 2.621495
## Fam151a Fam151b Fam154b Fam155a Fam159b Fam160a1 Fam160a2
## 1 2.433801e+00 7.551786 5.031463 10.365094 5.494492 5.185725 10.993503
## 2 1.834732e+00 7.000545 3.994315 10.482352 4.258309 4.690139 10.806044
## 3 5.912325e-08 4.856350 6.643301 6.609661 8.565298 4.031198 8.181904
## 4 3.013932e-08 3.234576 3.525234 7.559357 7.053743 7.440925 7.677679
## 5 2.101578e+00 7.356937 4.333089 10.841008 4.600464 5.036637 11.164745
## 6 1.553492e+00 6.369857 3.896168 9.174545 4.343870 4.044789 9.802448
## Fam160b1 Fam160b2 Fam161a Fam161b Fam162a Fam162b Fam163a
## 1 11.504773 10.310544 7.167409 7.840925 9.946029 1.621209e+00 9.782003
## 2 10.654924 9.296790 8.008958 8.043552 9.674003 1.897098e+00 9.552723
## 3 8.183027 6.484051 6.223758 7.971969 10.527150 5.487680e-08 7.916531
## 4 7.879769 6.337312 2.852886 6.119616 7.730060 2.350745e-08 6.075866
## 5 11.013605 9.655163 8.366601 8.401224 10.032492 2.167957e+00 9.911178
## 6 10.313441 9.120051 5.988535 6.657175 8.755964 9.370302e-01 8.592168
## Fam163b Fam166a Fam166b Fam167a Fam167b Fam168a Fam168b Fam169a
## 1 8.965613 3.245151 3.771582 8.850916 9.580129 14.25707 13.746346 9.749595
## 2 8.905251 3.043410 3.729928 9.441096 8.667040 13.76620 13.529367 9.560432
## 3 5.543510 2.611540 3.784947 7.931213 4.014322 11.91612 10.710229 6.311730
## 4 9.418442 0.346122 4.290842 4.346067 7.799866 10.65297 8.268313 6.099741
## 5 9.263466 3.363173 4.064625 9.799517 9.025136 14.12506 13.888219 9.918889
## 6 7.777411 2.239416 2.711574 7.663028 8.390617 13.06519 12.554500 8.559810
## Fam171a1 Fam171a2 Fam171b Fam172a Fam173a Fam173b Fam174a
## 1 11.706310 11.225559 12.176228 11.351636 11.85377 9.168826 11.406422
## 2 11.370631 10.889368 11.822512 10.574279 11.14685 8.791206 10.644700
## 3 8.468804 5.153764 9.827888 9.819004 10.63448 9.157219 7.942344
## 4 8.125688 5.534355 9.901519 8.780132 10.76750 7.869111 8.510972
## 5 11.729390 11.248079 12.181303 10.932949 11.50559 9.149366 11.003381
## 6 10.514893 10.034365 10.984654 10.160377 10.66230 7.980128 10.215136
## Fam174b Fam175a Fam175b Fam178a Fam178b Fam179a Fam179b
## 1 10.012528 7.681617 10.140454 11.229878 7.312629e+00 4.967482 10.470326
## 2 8.874967 7.933720 9.814788 10.839076 7.323451e+00 6.299023 10.703641
## 3 8.367402 7.876518 9.882457 9.981907 3.577357e+00 2.639964 8.435701
## 4 6.884654 5.644322 7.980389 8.622224 7.495617e-08 2.385470 6.215749
## 5 9.233168 8.291297 10.173314 11.197781 7.680342e+00 6.653855 11.062329
## 6 8.822377 6.498825 8.950147 10.038683 6.132505e+00 3.834701 9.279676
## Fam180a Fam181a Fam183b Fam184a Fam184b Fam185a Fam186b
## 1 6.671787 8.089635e+00 6.446492 10.406171 8.401848 8.260309 3.968140e+00
```

```
## 2 6.104215 7.641280e+00 5.975591 10.059985 8.639993 7.870492 3.374362e+00
## 3 8.421999 4.791679e+00 7.869916 5.792349 4.688495 5.798419 1.155424e+00
## 4 1.099441 1.116440e-07 5.833828 4.627181 7.083656 4.286145 1.120445e-07
## 5 6.458460 7.998564e+00 6.329404 10.418566 8.998074 8.228010 3.702228e+00
## 6 5.498249 6.904585e+00 5.276048 9.215582 7.215452 7.074487 2.892022e+00
## Fam187b Fam188a Fam188b Fam189a1 Fam189a2 Fam189b Fam192a
## 1 4.174073 10.871836 8.563672 10.107798 10.339939 10.235619 11.093052
## 2 4.088526 10.196176 8.041856 10.197375 10.175494 9.609994 10.940247
## 3 1.892343 9.933513 8.562600 4.662830 6.261401 7.396942 11.101432
## 4 2.588766 9.580939 6.397946 7.033614 6.267805 6.230760 8.658552
## 5 4.428579 10.554784 8.399527 10.555983 10.534098 9.968466 11.298964
## 6 3.083103 9.680863 7.376683 8.917529 9.149415 9.045205 9.901935
## Fam193a Fam193b Fam195a Fam195b Fam196a Fam196b Fam198a
## 1 11.289776 12.357050 9.134214 12.87250 9.765363 7.6694069 8.403438
## 2 11.175137 12.295956 8.020172 11.90167 9.278453 7.3575588 7.453870
## 3 9.184859 7.336874 7.067451 10.26198 7.653359 0.2760736 8.523494
## 4 7.234738 5.409677 6.567623 9.30040 6.376837 0.4907716 8.267533
## 5 11.533878 12.654772 8.377824 12.26047 9.636819 7.7144959 7.810933
## 6 10.098548 11.165428 7.945596 11.68076 8.575553 6.4866932 7.217035
## Fam198b Fam199x Fam19a1 Fam19a2 Fam19a3 Fam19a4 Fam19a5
## 1 7.414509 9.604137 7.220687 9.594196 4.225378e+00 6.703927 11.392162
## 2 7.691227 9.384419 7.644806 9.899341 3.726144e+00 7.956098 10.999869
## 3 4.245381 7.998245 4.325233 5.136323 3.591612e-08 3.518189 9.641552
## 4 3.912589 5.221577 8.562847 8.881799 1.792808e-08 4.475428 8.012259
## 5 8.048565 9.742822 8.002094 10.257887 4.060776e+00 8.313695 11.358593
## 6 6.233580 8.414584 6.041339 8.404660 3.131004e+00 5.529986 10.200883
## Fam203a Fam20a Fam20b Fam20c Fam24a Fam25c Fam26e
## 1 9.183477 10.457292 11.321996 11.251478 2.173433e+00 0.2690491 4.589339
## 2 9.142232 9.862854 11.056537 10.892161 2.094069e+00 0.1787239 4.390811
## 3 6.433806 7.960886 8.306841 7.453800 6.556641e-08 8.8736512 7.176208
## 4 4.178444 8.852610 8.386589 7.781617 3.097338e-08 9.2611730 6.833544
## 5 9.500547 10.221391 11.415266 11.250873 2.376458e+00 0.2254135 4.734441
## 6 7.994747 9.266654 10.130752 10.060271 1.347160e+00 0.1252864 3.473804
## Fam26f Fam32a Fam35a Fam3a Fam3c Fam43a Fam43b
## 1 6.933563 11.40959 8.289843 11.405191 12.79532 11.285787 6.367508
## 2 6.246130 10.96806 7.740841 10.868816 12.07565 11.079465 6.661695
## 3 3.926743 11.81275 6.924544 10.402510 11.03331 4.782937 1.427440
## 4 2.337578 10.27032 1.468940 9.866673 10.72400 4.294268 3.459255
## 5 6.600810 11.32678 8.098231 11.227524 12.43446 11.438196 7.017427
## 6 5.756982 10.21830 7.103896 10.213905 11.60360 10.094561 5.198265
## Fam45a Fam46a Fam46b Fam46c Fam47e Fam49a Fam49b
## 1 10.799819 8.972377 5.835409 11.543916 3.489519e+00 11.51864 12.672581
## 2 9.929085 8.506465 5.520292 11.662214 2.430830e+00 11.03039 11.581617
## 3 10.475790 6.697310 1.479257 4.777067 5.218507e+00 11.36312 8.886166
## 4 9.789746 7.497405 3.366776 6.710975 5.564109e-08 10.27636 10.006463
## 5 10.287637 8.864469 5.872220 12.020995 2.729474e+00 11.38912 11.940392
## 6 9.608897 7.784158 4.676187 10.352567 2.456395e+00 10.32730 11.480887
## Fam50a Fam53a Fam53b Fam53c Fam57a Fam57b Fam58b
## 1 10.849561 10.915835 11.952497 11.985952 11.436482 10.274781 9.807721
## 2 10.337735 10.311931 11.661110 11.760622 10.855512 10.716292 8.777267
## 3 9.348805 6.216489 9.764077 10.036105 7.560036 7.523666 9.382796
## 4 7.497544 3.038024 7.624552 8.277138 6.332029 4.990994 8.686900
## 5 10.696368 10.670560 12.019891 12.119409 11.214219 11.074982 9.135420
## 6 9.658603 9.724831 10.760991 10.794435 10.245181 9.084325 8.617848
```

##	Fam60a	Fam63a	Fam63b	Fam64a	Fam65a	Fam65b	Fam65c	
## 1	7.649207	12.55210	12.309712	8.479491	11.940932	10.806145	4.057111	
## 2	6.641054	12.20124	11.670642	7.413758	11.255327	10.773374	4.009063	
## 3	8.224403	10.65494	9.219530	10.931674	8.743729	5.987421	1.907056	
## 4	4.993964	9.30174	9.367745	7.572519	8.544189	8.070089	1.571829	
## 5	6.996741	12.56005	12.029424	7.770769	11.614076	11.132071	4.348042	
## 6	6.466623	11.36043	11.118101	7.292802	10.749430	9.615218	2.974336	
##	Fam69a	Fam69b	Fam69c	Fam71a	Fam71d	Fam71e1		
## 1	9.911487	10.261990	9.404439	8.956450e+00	3.004606e+00	6.230960		
## 2	9.505836	9.707165	8.688416	8.547494e+00	2.335783e+00	6.254639		
## 3	9.429524	7.921188	7.877265	5.340447e-08	3.491887e-08	5.222243		
## 4	9.311271	7.793056	7.016951	2.617150e-08	1.775511e-08	3.100178		
## 5	9.864277	10.065663	9.046523	8.905522e+00	2.630234e+00	6.609344		
## 6	8.721468	9.071548	8.215247	7.768272e+00	2.030085e+00	5.063953		
##	Fam71f2	Fam72a	Fam73a	Fam73b	Fam76a	Fam76b	Fam78a	
## 1	5.869293e+00	7.706157	11.928289	11.902280	11.789502	11.117766	7.713690	
## 2	5.936952e+00	6.671107	11.477152	10.951193	11.009055	10.269794	6.573574	
## 3	3.436967e+00	6.010693	8.765443	8.760494	8.697645	8.527341	3.036455	
## 4	8.092082e-08	4.986202	8.289724	8.996269	8.838919	6.535236	4.870356	
## 5	6.290627e+00	7.026859	11.835920	11.309911	11.367779	10.628415	6.929108	
## 6	4.709319e+00	6.523211	10.736791	10.710791	10.598053	9.926634	6.530697	
##	Fam78b	Fam81a	Fam83a	Fam83b	Fam83c	Fam83d	Fam83e	
## 1	8.323589	8.905140	2.265333	4.401647	1.884310	9.880747	4.0440907	
## 2	7.737351	8.900291	1.874677	3.748164	1.459135	9.271369	2.5029067	
## 3	6.468517	7.443628	2.301206	2.575934	1.531401	6.272697	3.6638049	
## 4	6.156610	9.645477	2.888757	3.251111	1.764207	4.941715	0.5915043	
## 5	8.094737	9.258504	2.144115	4.083166	1.697463	9.629733	2.8045435	
## 6	7.137503	7.717101	1.419112	3.296399	1.127469	8.690770	2.9622661	
##	Fam83f	Fam83g	Fam83h	Fam84a	Fam84b	Fam86	Fam89a	
## 1	4.8418946	9.086758	7.018610	9.420313	9.663869	9.048795	8.230791	
## 2	4.7298530	8.826005	6.699504	8.798018	9.047765	8.374020	8.117238	
## 3	0.9778927	3.287119	4.058442	10.311104	6.539193	9.406133	4.478256	
## 4	2.2356949	3.519384	4.464781	10.395527	8.354583	9.434108	5.793481	
## 5	5.0766894	9.184183	7.055318	9.156181	9.406043	8.731940	8.474970	
## 6	3.7143715	7.898253	5.841152	8.231090	8.474218	7.860382	7.045096	
##	Fam89b	Fam92a	Fam92b	Fam96a	Fam96b	Fam98a	Fam98b	
## 1	11.806340	10.027618	3.738020	11.19257	10.808495	12.026132	10.654354	
## 2	10.963512	9.889325	3.732159	10.33428	10.100988	11.451646	10.624904	
## 3	9.624581	9.018467	7.267526	11.44933	10.956496	8.974388	9.181638	
## 4	7.998041	6.513148	3.653564	10.76888	9.461048	7.117316	7.341399	
## 5	11.322232	10.247868	4.066893	10.69292	10.459577	11.810411	10.983581	
## 6	10.614884	8.837448	2.680968	10.00140	9.617567	10.834603	9.463544	
##	Fam98c	Fan1	Fanca	Fancb	Fancc	Fancd2	Fance	Fancf
## 1	9.696918	9.469685	7.702378	6.858552	9.380256	7.481316	10.197502	7.850620
## 2	8.721456	9.173744	7.489163	6.771492	8.741454	7.423610	10.256475	6.930040
## 3	2.940858	6.661960	6.409481	6.278913	8.850169	7.839448	5.311132	6.543075
## 4	3.148296	2.622732	2.739999	4.028731	8.170741	4.753161	3.202620	5.332911
## 5	9.079581	9.532071	7.846269	7.127455	9.099589	7.780634	10.615094	7.286306
## 6	8.507214	8.280369	6.519455	5.682788	8.191111	6.299888	9.007130	6.666815
##	Fancg	Fanci	Fanc1	Fancm	Fank1	Fap	Far1	
## 1	9.242766	8.007157	8.815789	9.701068	4.3305083	3.808732	11.98508	
## 2	9.401507	7.816486	8.544624	9.658345	5.1184818	4.478816	11.33528	
## 3	8.832025	7.768842	8.087891	6.956007	4.0302839	3.688698	10.49667	
## 4	5.720674	2.495268	6.892956	4.483236	0.2813154	4.606600	10.09593	


```

## 5 9.759915 8.173953 8.902650 10.016830 5.4681709 4.823353 11.69403
## 6 8.053904 6.822513 7.628001 8.511357 3.2295001 2.745524 10.79357
##      Far2      Farp1      Farp2      Fars2      Farsa      Farsb      Fas
## 1 9.056200 12.002073 9.155682 10.402022 11.628185 11.066349 7.945293
## 2 8.810738 11.284360 9.593501 9.988432 11.150204 10.698217 7.953333
## 3 5.425520 8.788703 6.500238 10.597123 11.089185 11.214505 5.535650
## 4 6.215235 8.207034 4.761766 8.406801 9.464331 10.088734 7.587902
## 5 9.168908 11.643112 9.951968 10.346998 11.508943 11.056904 8.310927
## 6 7.867769 10.810551 7.967014 9.211437 10.436799 9.875248 6.760971
##      Fas1      Fasn      Fastk      Fastkd1      Fastkd2      Fastkd3      Fastkd5
## 1 2.415406e+00 15.767065 11.402314 8.810676 9.011718 8.550184 8.038738
## 2 2.708368e+00 15.541689 11.175903 8.803070 9.253571 8.228927 7.482591
## 3 4.010150e-08 11.343863 9.608619 6.099129 9.351298 8.998729 8.414432
## 4 1.749603e-08 9.854663 8.243465 6.453123 5.841877 5.983419 9.023171
## 5 3.017732e+00 15.900562 11.534644 9.161236 9.611928 8.586745 7.839690
## 6 1.538668e+00 14.575116 10.211030 7.622902 7.823398 7.363243 6.853936
##      Fat1      Fat2      Fat3      Fat4      Fate1      Fau      Fbf1
## 1 13.166378 4.142437 11.795523 11.240373 1.202949e+00 9.952823 11.893612
## 2 12.960870 3.517736 11.812493 11.081467 1.491717e+00 9.529176 11.408608
## 3 8.741972 3.442021 7.721901 7.863572 1.196423e+00 8.125290 7.407969
## 4 8.310616 3.576354 8.288173 7.720277 6.102057e-08 7.085186 5.560692
## 5 13.319709 3.848565 12.171283 11.440199 1.732848e+00 9.887625 11.767370
## 6 11.974600 3.053624 10.604072 10.049171 6.547310e-01 8.762748 10.702126
##      Fbl      Fblim1      Fbl11      Fbln1      Fbln2      Fbln5      Fbln7
## 1 9.564071 8.292310 8.377510 10.093390 10.762713 10.079856 7.5256916
## 2 8.514419 8.258633 7.921935 9.551219 11.015764 9.010493 7.8251073
## 3 5.214491 5.462657 5.808771 8.951411 9.575884 7.962757 4.8486724
## 4 4.296681 4.595961 4.347639 7.943367 6.778269 5.528903 0.5443165
## 5 8.872427 8.616472 8.279501 9.909674 11.374489 9.368754 8.1825821
## 6 8.374587 7.106353 7.191208 8.903138 9.571819 8.889621 6.3439452
##      Fbn1      Fbn2      Fbp1      Fbp2      Fbrs      Fbrs11      Fbx112
## 1 9.961718 9.801199 5.872792 4.558023e+00 11.991948 12.383249 9.546770
## 2 9.029915 9.666210 5.719694 3.414802e+00 11.667335 12.139112 8.742142
## 3 6.157370 4.238425 3.249267 3.734395e-08 7.887075 8.422552 7.567107
## 4 6.040542 3.629360 1.148302 1.939508e-08 6.697942 6.220867 4.338242
## 5 9.388185 10.024698 6.072522 3.743534e+00 12.026116 12.497920 9.100278
## 6 8.771632 8.611336 4.712742 3.444119e+00 10.800430 11.191620 8.357316
##      Fbx113      Fbx114      Fbx115      Fbx116      Fbx117      Fbx118      Fbx119
## 1 2.188852e+00 10.260650 9.419945 12.075342 11.508575 9.396717 11.841651
## 2 2.345673e+00 9.984473 8.349608 11.914376 10.754273 8.497723 11.128466
## 3 2.934286e+00 7.448103 3.669410 8.293850 8.330110 6.069514 4.959542
## 4 7.487179e-08 6.533403 3.044904 9.644476 8.825609 6.137067 4.237449
## 5 2.640574e+00 10.343038 8.707510 12.273173 11.112968 8.855721 11.487202
## 6 1.359164e+00 9.070209 8.230723 10.883797 10.317241 8.207540 10.650183
##      Fbx12      Fbx120      Fbx121      Fbx122      Fbx13      Fbx14      Fbx15
## 1 8.987767 11.426258 6.870556 6.948553 12.047362 9.858279 12.470253
## 2 8.753588 10.969052 5.590514 6.972254 11.218727 9.097530 11.703196
## 3 8.058956 8.706215 5.944087 4.418280 9.313022 8.989626 11.320943
## 4 7.125366 7.617532 7.423055 1.987860 8.876558 6.812958 9.508233
## 5 9.111730 11.327772 5.942773 7.328596 11.577472 9.455828 12.061980
## 6 7.799508 10.234962 5.694658 5.771813 10.855825 8.668334 11.278603
##      Fbx16      Fbx17      Fbx18      Fbxo10      Fbxo11      Fbxo15      Fbxo16
## 1 11.728563 8.738782 6.702997 10.824319 11.962911 0.8208387 6.440700
## 2 10.521252 8.254884 5.751141 10.255521 11.581535 0.9647031 6.097401

```

```

## 3 7.053337 6.559215 4.291126 7.681923 10.263763 3.1832060 6.636373
## 4 8.554815 4.892786 2.623332 7.180683 7.786333 0.3025024 6.805635
## 5 10.879914 8.612721 6.104099 10.614140 11.940310 1.1507496 6.451624
## 6 10.537137 7.551224 5.529068 9.633379 10.771401 0.4206181 5.270341
##      Fbxo17      Fbxo18      Fbxo2      Fbxo21      Fbxo22      Fbxo24      Fbxo25
## 1 7.0687173 12.253376 10.261633 11.964461 10.315797 5.917582e+00 10.875454
## 2 7.0917167 11.981467 9.592260 11.467155 10.222920 5.008605e+00 10.494603
## 3 4.7675520 9.834216 8.735987 10.207136 10.072093 1.899764e+00 10.464124
## 4 0.7489204 8.223457 8.613779 8.563197 8.522760 5.730229e-08 8.936614
## 5 7.4482606 12.340267 9.950726 11.825921 10.581533 5.357565e+00 10.853261
## 6 5.8907661 11.061780 9.071191 10.772951 9.125298 4.756567e+00 9.684478
##      Fbxo27      Fbxo28      Fbxo3      Fbxo30      Fbxo31      Fbxo32      Fbxo33
## 1 7.602961 11.346209 11.385879 10.379304 11.776402 11.138056 10.710221
## 2 7.579759 11.478728 10.669333 9.993332 10.974301 10.231138 10.415666
## 3 4.151441 8.866829 11.015434 8.210317 7.596931 9.170194 8.366225
## 4 4.901033 6.175994 9.574094 8.060460 9.104626 9.278975 7.989123
## 5 7.936973 11.837496 11.028016 10.351899 11.333021 10.589752 10.774312
## 6 6.420682 10.154953 10.194603 9.188741 10.584958 9.946912 9.519367
##      Fbxo34      Fbxo36      Fbxo38      Fbxo4      Fbxo41      Fbxo42      Fbxo43
## 1 10.195186 7.952114 11.023748 9.562749 10.014401 11.267119 2.0439978
## 2 9.865309 7.837855 11.054361 8.830297 10.425733 10.552711 2.3874013
## 3 7.605644 8.678753 9.963489 5.539360 6.566897 8.443817 0.6898892
## 4 6.600488 5.959441 8.681252 7.712616 7.873194 5.904902 4.1788542
## 5 10.223847 8.195342 11.413091 9.188477 10.784381 10.911378 2.6841648
## 6 9.004816 6.767755 9.832673 8.373267 8.824247 10.075903 1.2475226
##      Fbxo44      Fbxo45      Fbxo46      Fbxo47      Fbxo48      Fbxo5      Fbxo6
## 1 10.567709 10.798516 8.781376 2.391091e+00 4.8617953 7.535320 10.625198
## 2 10.070345 10.471664 8.191976 2.389340e+00 5.1785691 7.100449 10.139997
## 3 9.990561 8.838163 9.964487 3.713151e+00 3.0473604 9.405672 9.484662
## 4 9.668765 6.545422 8.647544 5.321800e-08 0.5315086 4.531759 8.588130
## 5 10.428928 10.830319 8.549766 2.686189e+00 5.5286342 7.457007 10.498594
## 6 9.376972 9.607595 7.593689 1.519129e+00 3.7334097 6.353505 9.434413
##      Fbxo7      Fbxo8      Fbxo9      Fbxw10      Fbxw11      Fbxw15      Fbxw2
## 1 10.993414 11.297765 10.797258 5.002003 13.237066 0.7340870 11.427396
## 2 10.240972 10.799058 10.690351 5.083585 12.582603 0.9698830 11.166091
## 3 9.098258 10.228141 8.001676 4.988725 10.076326 2.1191241 8.395857
## 4 9.445078 9.776241 7.773972 2.741732 9.717422 0.2857998 7.173481
## 5 10.599588 11.157758 11.049037 5.433049 12.941430 1.1565869 11.524831
## 6 9.802359 10.106533 9.606338 3.867852 12.045279 0.3707908 10.236100
##      Fbxw4      Fbxw5      Fbxw7      Fbxw8      Fbxw9      Fcamr
## 1 11.161208 12.20282 10.655980 13.279943 10.741770 1.437023e+00
## 2 11.142581 11.52234 10.421356 12.341155 10.481335 1.556845e+00
## 3 6.210356 11.21708 9.967521 9.368077 8.440794 3.244653e-01
## 4 5.573669 10.23237 10.018514 8.398679 5.612181 4.913293e-08
## 5 11.501319 11.88111 10.780003 12.699973 10.839992 1.803377e+00
## 6 9.970051 11.01124 9.465170 12.088150 9.550892 8.095022e-01
##      Fcer1a      Fcer1g      Fcer2a      Fcf1      Fcgbp      Fcgr1
## 1 1.297797e-01 12.415820 4.129561e+00 8.865547 5.3515678 11.344570
## 2 6.091201e-01 11.807099 2.965142e+00 8.324664 5.3320777 11.025084
## 3 4.841600e+00 9.376511 3.750885e-01 10.591388 0.5810692 7.064808
## 4 2.225096e-08 12.058270 1.224517e-07 8.592578 0.2855528 10.383674
## 5 7.429655e-01 12.165889 3.282693e+00 8.682550 5.6830348 11.383810
## 6 5.890412e-02 11.224182 3.041638e+00 7.677617 4.2051805 10.153314
##      Fcgr2b      Fcgr3      Fcgr4      Fcgrt      Fcho1      Fcho2      Fchsd1

```

```

## 1 11.122779 12.858017 5.993961 13.08065 12.408543 12.136825 9.422096
## 2 10.188548 12.380554 5.683409 12.34324 11.390202 11.618408 9.220408
## 3 7.644811 8.299943 2.996605 11.93056 7.540046 9.210189 5.899412
## 4 9.506173 11.695283 4.218152 11.79484 7.503257 6.920211 2.246066
## 5 10.547154 12.739373 6.036082 12.70206 11.748962 11.977186 9.578753
## 6 9.931645 11.666288 4.831366 11.88889 11.216908 10.945262 8.232870
##      Fchsd2      Fcrla      Fcrlb      Fcrls      Fdft1      Fdps
## 1 12.416957 1.970429e+00 2.631105e+00 14.411677 12.96211 11.943108
## 2 12.306812 2.582368e+00 2.071855e+00 14.065760 12.57507 11.135458
## 3 10.253517 3.939017e-08 3.225927e-01 9.823935 12.09461 9.970856
## 4 8.306178 1.570631e-08 1.032933e-07 13.078064 10.68402 8.317344
## 5 12.665628 2.887130e+00 2.353026e+00 14.424621 12.93390 11.494195
## 6 11.225320 1.191810e+00 1.714710e+00 13.219780 11.77036 10.751605
##      Fdx1      Fdx1l      Fdxacb1      Fdxr      Fech      Fem1a      Fem1b
## 1 8.751977 6.325229 8.300410 10.126696 11.840158 11.667779 12.847736
## 2 8.155746 6.007220 8.412763 9.685949 10.879950 11.489107 12.317547
## 3 6.850358 1.854492 8.414087 8.871691 9.555128 8.782508 10.370858
## 4 5.114997 1.488875 5.610836 6.853216 9.065303 9.059651 9.464076
## 5 8.513508 6.361142 8.770707 10.044442 11.238660 11.847875 12.676363
## 6 7.564379 5.156656 7.114420 8.936405 10.648691 10.476377 11.656009
##      Fem1c      Fen1      Fermt1      Fermt2      Fermt3      Fes      Fez1
## 1 10.675554 9.828482 0.7539378 13.77604 12.643036 12.013246 14.87778
## 2 10.834630 9.712234 0.6731181 13.36332 12.948598 11.817466 14.18587
## 3 8.434104 10.252163 2.5364439 10.88044 6.890699 5.478551 13.67201
## 4 4.984083 8.098600 3.1760419 10.23090 8.450205 5.961052 11.84920
## 5 11.193334 10.070733 0.8174827 13.72216 13.307437 12.176256 14.54473
## 6 9.484728 8.638579 0.3820819 12.58420 11.451348 10.821721 13.68586
##      Fez2      Fezf2      Ffar2      Ffar3      Fga      Fgd1
## 1 12.150373 6.474489 2.863739e+00 1.711725e+00 1.499430e+00 9.648809
## 2 11.927551 6.694235 2.148408e+00 2.182698e+00 1.687727e+00 9.985429
## 3 7.339765 9.852687 9.615547e-01 7.517502e-08 1.841527e+00 5.435960
## 4 7.808264 4.110790 1.284560e-07 3.041127e-08 9.882769e-08 3.547978
## 5 12.286348 7.050038 2.433697e+00 2.469758e+00 1.944350e+00 10.343994
## 6 10.958806 5.303634 1.909675e+00 1.001478e+00 8.521592e-01 8.459182
##      Fgd2      Fgd3      Fgd4      Fgd5      Fgd6      Fgf1      Fgf10
## 1 12.091106 12.1326416 9.114184 10.719704 11.131366 10.693862 3.852040
## 2 12.488487 11.1049179 8.926661 10.421179 10.878866 10.394457 3.362142
## 3 5.849200 5.1064170 9.396386 4.528072 8.122413 9.928473 5.270411
## 4 8.347347 0.8105079 6.121016 6.427015 5.746253 8.934414 6.464702
## 5 12.847310 11.4636523 9.284886 10.779826 11.237576 10.753100 3.689741
## 6 10.899556 10.9410795 7.925613 9.528842 9.940226 9.503021 2.785195
##      Fgf11      Fgf12      Fgf13      Fgf14      Fgf15      Fgf16
## 1 8.106373e+00 10.345393 10.147139 7.841903 3.228940e+00 1.339771e+00
## 2 7.471797e+00 9.679563 10.042316 8.506126 1.640037e+00 1.581694e+00
## 3 2.658328e+00 9.079644 8.799808 6.414763 3.703224e-08 3.893412e-08
## 4 1.010783e-07 8.199570 8.594894 7.959276 1.833778e-08 1.689780e-08
## 5 7.828882e+00 10.038054 10.400894 8.864130 1.893097e+00 1.830218e+00
## 6 6.921243e+00 9.154864 8.956824 6.658148 2.225170e+00 7.441847e-01
##      Fgf17      Fgf18      Fgf2      Fgf22      Fgf23      Fgf3
## 1 3.9131675 3.833116e+00 5.610960e+00 4.4558212 2.485600e+00 1.756564e+00
## 2 2.6844698 4.251322e+00 4.229926e+00 3.7469297 2.469846e+00 1.859240e+00
## 3 1.1996102 1.324598e+00 1.165014e+00 0.8010014 3.348084e-08 5.322283e-08
## 4 0.2872007 5.719453e-08 1.032468e-07 1.9618592 1.543805e-08 2.363862e-08
## 5 2.9929926 4.593395e+00 4.571746e+00 4.0819116 2.770130e+00 2.127685e+00

```

```

## 6 2.8413549 2.767848e+00 4.457174e+00 3.3474741 1.595429e+00 1.033825e+00
##      Fgf5      Fgf7      Fgf9      Fgfbp1      Fgfbp3      Fgfr1      Fgfr1op
## 1 2.772069 5.965943 6.284003 9.078106 10.042440 12.360183 10.762721
## 2 3.146411 5.759953 5.423804 8.362339 9.253086 12.052049 9.763569
## 3 3.091145 3.134496 4.273348 8.269237 6.933723 12.087921 9.008987
## 4 2.370644 4.736942 5.880658 5.600872 5.964535 9.889711 6.352297
## 5 3.468903 6.112947 5.775250 8.720251 9.611444 12.410853 10.122082
## 6 1.832249 4.803918 5.116103 7.889622 8.852251 11.168560 9.571827
##      Fgfr1op2      Fgfr2      Fgfr3      Fgfr4      Fgfr11      Fgg
## 1 11.312571 12.663230 13.94469 4.467559e+00 11.611400 2.289693e+00
## 2 10.836692 12.005406 13.16020 4.410756e+00 11.618432 1.963723e+00
## 3 9.828477 10.285076 11.58063 2.838815e+00 7.364905 5.069401e-10
## 4 9.228089 9.775945 11.06425 8.288321e-08 7.782400 4.894646e-01
## 5 11.195397 12.364208 13.51905 4.754596e+00 11.977210 2.238669e+00
## 6 10.121331 11.471538 12.75282 3.358555e+00 10.420021 1.438347e+00
##      Fggy      Fgl1      Fgl2      Fgr      Fh1      Fhad1      Fhdc1
## 1 8.279854 1.408729e+00 6.400805 7.0918962 11.52688 5.525181 8.659246
## 2 8.917449 1.690254e+00 6.532731 6.5860670 11.15929 5.207976 8.437489
## 3 7.384478 2.739788e+00 5.625188 0.9127539 11.46752 5.245096 4.291321
## 4 4.617599 9.083387e-08 5.469609 3.3632757 10.31493 7.011739 3.867348
## 5 9.275670 1.947063e+00 6.888168 6.9416296 11.51803 5.558219 8.795449
## 6 7.093950 7.903528e-01 5.231048 5.9137225 10.33554 4.373701 7.471938
##      Fhit      Fhl1      Fhl2      Fhl3      Fhl5      Fhod1      Fhod3
## 1 6.941104 12.218985 8.454493 11.341536 1.3962290 11.300278 8.949945
## 2 6.360382 11.498491 7.780203 10.357218 1.3715019 10.843494 8.894209
## 3 7.245711 10.001977 7.321912 6.631432 1.6355638 5.680379 4.103669
## 4 7.524192 8.544776 1.988270 7.880654 1.4282575 3.258558 2.490337
## 5 6.715383 11.857260 8.137633 10.715854 1.6019402 11.202200 9.252419
## 6 5.764443 11.027398 7.267896 10.150282 0.7819309 10.109045 7.761785
##      Fibcd1      Fibin      Fibp      Ficd      Fig4      Figf      Fign
## 1 8.296717 7.975901 11.083459 9.143142 10.572646 4.794047 8.285176
## 2 8.295301 7.313579 10.520497 8.445247 10.529982 3.884094 8.391432
## 3 3.928719 6.925398 10.396759 8.117109 7.830213 4.529503 5.736885
## 4 7.752947 3.634157 9.349950 7.322953 6.065160 3.349008 5.060982
## 5 8.653167 7.670456 10.879159 8.803213 10.888645 4.221259 8.749363
## 6 7.110742 6.791418 9.892347 7.954503 9.381905 3.668645 7.099249
##      Fignl1      Filip1      Filip1l      Fip1l1      Fis1      Fitm2      Fiz1
## 1 7.075040 8.664973 9.784073 11.548253 13.01575 9.420045 11.377860
## 2 6.744236 8.311430 9.193309 11.566997 12.19076 9.074724 10.406891
## 3 9.688587 4.527735 5.523990 9.013123 13.11097 6.102987 8.440127
## 4 4.133979 4.035264 7.202335 6.394958 12.21293 6.195381 7.219250
## 5 7.100143 8.669307 9.551645 11.925771 12.54957 9.433013 10.765535
## 6 5.897028 7.477646 8.594235 10.356901 11.82400 8.230822 10.186587
##      Fjx1      Fkbp10      Fkbp11      Fkbp14      Fkbp15      Fkbp1a      Fkbp1b
## 1 12.290839 11.202823 7.242169 10.226920 12.491420 15.00968 8.787702
## 2 11.544482 10.636699 5.693477 9.360895 12.213057 14.35952 7.408852
## 3 8.485854 9.608431 5.341062 9.320257 9.177168 11.36625 6.390517
## 4 9.459144 6.834345 5.554095 9.419406 8.230506 11.37744 6.589832
## 5 11.903255 10.995378 6.046193 9.719290 12.571869 14.71839 7.765857
## 6 11.099233 10.011643 6.062635 9.036516 11.299765 13.81776 7.599996
##      Fkbp2      Fkbp3      Fkbp4      Fkbp5      Fkbp6      Fkbp7      Fkbp8
## 1 11.082864 10.271623 13.020185 11.493302 1.608561e+00 9.011364 13.789514
## 2 10.486501 9.696397 12.514666 11.619975 2.326040e+00 8.360398 13.380944
## 3 10.840716 12.449493 10.863681 6.954497 8.852845e-08 9.247711 10.646754

```

```

## 4 10.743675 10.220677 9.198277 7.658808 3.438426e-08 8.395504 9.567805
## 5 10.845158 10.054892 12.873490 11.978753 2.620045e+00 8.718308 13.739793
## 6 9.891753 9.081171 11.828429 10.301975 9.281165e-01 7.823044 12.597664
##      Fkbp9      Fkbp1      Fkrp      Fktn      Flad1      Flcn      Flg2
## 1 13.526166 8.391031 11.015919 10.114267 10.320671 13.192789 3.744781e-08
## 2 12.739187 8.394183 10.232497 10.277764 10.368413 12.469936 2.258197e-08
## 3 9.811929 8.084494 7.695097 9.146665 9.534378 9.741671 5.195128e+00
## 4 8.599839 4.900906 7.502293 7.620812 7.344296 9.150276 6.078556e+00
## 5 13.098020 8.752115 10.591111 10.636387 10.727051 12.828759 2.895763e-08
## 6 12.334342 7.204676 9.824849 8.923990 9.130167 12.001008 1.658738e-08
##      Fli1      Flii      Flna      Flnb      Flnc      Flot1      Flot2
## 1 11.211203 12.330773 13.629170 12.267818 7.999662 11.840208 11.502301
## 2 10.711685 12.054422 13.173089 12.202910 8.114367 11.239625 11.153319
## 3 7.702176 9.612382 10.600206 8.996606 4.016265 9.764199 9.833648
## 4 10.409959 8.120157 9.644429 7.342692 1.041439 9.077873 8.882334
## 5 11.070374 12.413226 13.531934 12.561721 8.472097 11.598372 11.512058
## 6 10.020018 11.139157 12.437336 11.076218 6.815057 10.648741 10.310970
##      Flrt1      Flrt2      Flrt3      Flt1      Flt3      Flt3l      Flt4
## 1 9.388503 10.650876 10.097984 14.113527 4.789951 7.456387 10.976064
## 2 9.252752 10.106193 10.033275 13.623737 3.101224 7.098115 10.199252
## 3 12.483662 8.788284 11.590125 7.793425 1.758185 4.933204 3.935309
## 4 9.660665 8.030192 10.610048 9.154390 4.844310 1.233435 6.515970
## 5 9.611109 10.464783 10.391850 13.982591 3.422543 7.454669 10.557860
## 6 8.199342 9.460070 8.907727 12.921650 3.664734 6.275143 9.785020
##      Flywch1 Flywch2      Fmn1      Fmn2      Fmn1l      Fmn12      Fmn13
## 1 11.588179 7.374668 9.290851 11.276672 12.347102 13.05669 13.464971
## 2 10.734517 7.928817 8.995133 10.995083 12.708143 12.45305 13.431309
## 3 8.010988 7.590206 4.400876 9.089864 6.067638 10.14902 7.020883
## 4 5.267516 3.949388 6.887878 7.706963 6.823947 8.92659 6.095602
## 5 11.093209 8.286389 9.353389 11.353806 13.066974 12.81187 13.790159
## 6 10.396810 6.194046 8.101887 10.085451 11.155481 11.86493 12.273155
##      Fmo1      Fmo2      Fmo4      Fmo5      Fmod      Fmr1      Fmr1nb
## 1 10.761142 3.572959 3.751606e+00 8.132189 5.795418 11.784681 1.680701e+00
## 2 10.759139 3.320623 3.318695e+00 7.524652 5.227427 11.291267 2.896580e+00
## 3 9.478000 3.810322 8.618006e-01 7.514642 9.522422 9.705561 7.417942e-06
## 4 7.141420 3.403492 1.012600e-07 6.897703 3.299121 8.730577 2.324859e+00
## 5 11.117834 3.647300 3.645327e+00 7.881802 5.577787 11.650019 3.212090e+00
## 6 9.570249 2.531385 2.693351e+00 6.946938 4.637105 10.593233 9.792600e-01
##      Fn1      Fn3k      Fn3krp      Fnbp1      Fnbp1l      Fnbp4      Fndc1
## 1 15.000889 8.080514 8.986143 13.678855 12.547709 12.002540 10.544795
## 2 14.625096 7.339705 8.793672 13.513620 11.968275 12.184917 10.309662
## 3 8.019986 8.229347 9.647281 9.822516 9.619553 9.386524 2.400030
## 4 8.845284 8.119839 7.751519 8.123067 6.630890 5.783968 6.092420
## 5 14.983962 7.696618 9.151834 13.872472 12.327075 12.543728 10.668290
## 6 13.808963 6.895508 7.797888 12.487016 11.356041 10.811018 9.354078
##      Fndc3a      Fndc3b      Fndc4      Fndc5      Fndc7      Fndc8
## 1 11.604045 11.532579 11.911833 10.231076 6.562527e+00 4.901644e+00
## 2 11.275788 11.504395 11.421256 10.427538 4.272212e+00 4.993188e+00
## 3 9.960714 7.900237 11.073088 4.230277 6.951016e-08 1.223871e+00
## 4 8.002612 7.436342 9.731134 6.737098 2.180327e+00 1.044904e-07
## 5 11.634539 11.863164 11.780019 10.786186 4.614527e+00 5.342040e+00
## 6 10.412670 10.341234 10.720340 9.040667 5.390430e+00 3.771565e+00
##      Fnip1      Fnip2      Fnta      Fntb      Folh1      Folr1      Folr2
## 1 11.946084 11.260962 12.858977 11.328252 9.774602 3.191254 8.660579

```

```

## 2 11.097621 11.095238 12.515846 10.919330 9.075715 1.822179 8.130433
## 3 10.016600 7.040645 9.304110 10.181402 9.045477 6.816731 7.318685
## 4 9.186032 6.798470 8.563889 9.698712 5.054582 9.752973 6.060945
## 5 11.456355 11.453971 12.874671 11.278044 9.434004 2.088194 8.488176
## 6 10.754580 10.069750 11.667248 10.137004 8.584778 2.192127 7.473267
##      Fcrl4      Fos      Fosb      Fosl1      Fosl2      Foxc1
## 1 2.752410e+00 17.13791 15.872052 5.773280e+00 13.032233 9.707079
## 2 2.062643e+00 16.92183 15.522103 5.159709e+00 12.521757 8.830237
## 3 7.743427e-08 12.66551 7.482462 3.851160e-08 6.290132 7.625760
## 4 3.973582e-08 10.81104 5.876583 1.945676e-08 7.366473 7.228751
## 5 2.343302e+00 17.28071 15.880975 5.509658e+00 12.880581 9.188417
## 6 1.815746e+00 15.94594 14.680099 4.615481e+00 11.840475 8.517358
##      Foxc2      Foxd1      Foxd2      Foxd4      Foxf2      Foxg1
## 1 3.227796e+00 4.558508 2.726012e+00 1.912903e+00 10.360414 11.624956
## 2 4.022744e+00 4.424273 2.442079e+00 1.452098e+00 10.534223 11.172904
## 3 7.859205e-01 5.083176 1.261295e+00 3.826776e-08 4.255063 10.667256
## 4 1.197484e-07 4.601061 5.295718e-08 1.926976e-08 5.031907 7.999559
## 5 4.361912e+00 4.768254 2.741200e+00 1.689811e+00 10.892887 11.531645
## 6 2.224165e+00 3.444578 1.793639e+00 1.148725e+00 9.169870 10.433571
##      Foxj1      Foxj2      Foxj3      Foxk1      Foxk2      Foxl2      Foxm1
## 1 9.089444 11.613047 11.225930 11.584079 12.777733 8.102949e+00 9.707123
## 2 8.794889 11.181907 10.936654 11.037962 11.938194 6.697950e+00 9.343464
## 3 4.964229 8.285893 8.431205 7.074161 8.881593 1.415072e+00 8.018862
## 4 3.418970 6.624554 7.109205 7.494775 8.562581 7.831689e-08 4.123685
## 5 9.153051 11.540649 11.295371 11.396690 12.296992 7.053760e+00 9.701853
## 6 7.900932 10.421668 10.034737 10.392712 11.586019 6.917835e+00 8.517403
##      Foxn2      Foxn3      Foxn4      Foxo1      Foxo3      Foxo4      Foxo6
## 1 11.649629 11.323425 1.007222e+00 11.157677 10.720436 11.307930 9.671509
## 2 10.885148 10.739869 2.481179e+00 10.604222 10.350612 11.416378 9.105570
## 3 10.520628 11.478272 4.046490e+00 10.628994 3.223940 6.238711 5.778566
## 4 9.372087 9.963955 5.136598e-08 9.695278 3.199540 5.122407 2.171048
## 5 11.243859 11.098561 2.781930e+00 10.962897 10.709248 11.775140 9.463871
## 6 10.458234 10.132180 5.318675e-01 9.966522 9.529574 10.116693 8.481845
##      Foxp1      Foxp2      Foxp3      Foxp4      Foxq1      Foxr2
## 1 10.770480 7.861046e+00 4.797903e+00 10.204496 11.919393 4.1063814
## 2 10.521314 7.282683e+00 3.928175e+00 10.186457 10.108030 4.9298128
## 3 9.904465 4.623659e+00 7.790711e-01 5.610973 4.730398 2.9264718
## 4 8.775045 9.163314e-08 6.644947e-08 4.405410 4.716267 0.2663153
## 5 10.879977 7.639516e+00 4.265998e+00 10.545063 10.466621 5.2782134
## 6 9.579580 6.677182e+00 3.672327e+00 9.014117 10.727898 3.0200791
##      Foxred1 Foxred2 Foxs1      Fpgs      Fpgt      Fpr1      Fpr2
## 1 10.925276 9.469591 7.679369 9.454608 10.160913 4.081439 3.316483e+00
## 2 10.744679 9.407569 5.989853 9.890900 8.906889 3.560797 2.889298e+00
## 3 9.720735 8.218831 7.043675 6.944207 9.226650 7.131488 1.701057e+00
## 4 8.356754 4.760960 7.515894 4.723438 8.082190 5.392136 8.205122e-08
## 5 11.103373 9.765979 6.343715 10.249443 9.265105 3.892458 3.204585e+00
## 6 9.734266 8.280276 6.496592 8.265321 8.970582 2.996908 2.302327e+00
##      Fras1      Frat2      Frem1      Frem2      Frem3      Frg1      Frk
## 1 8.805285 9.609727 9.199270 10.270641 1.495198e+00 10.200768 4.791068
## 2 8.655641 9.518543 9.286859 10.397000 1.497204e+00 9.550807 5.821582
## 3 7.185587 5.866143 6.782584 6.467043 3.527717e-08 11.510910 4.889023
## 4 4.513070 3.276057 3.197793 6.671944 1.639372e-08 10.116922 2.878316
## 5 9.013731 9.876987 9.645228 10.755643 1.738800e+00 9.909261 6.174823
## 6 7.617528 8.420165 8.010504 9.080189 8.492484e-01 9.010393 3.665800

```

##	Frmd3	Frmd4a	Frmd4b	Frmd5	Frmd6	Frmd7	Frmd8
## 1	7.5349860	13.383417	12.63495	10.767063	10.650357	7.2695142	14.094771
## 2	7.7573534	13.115635	12.31829	10.119963	10.098758	6.8694835	13.031316
## 3	7.3766208	8.875845	11.10490	7.042212	7.658853	0.9558438	10.241437
## 4	0.7249224	8.790906	8.66253	4.212022	6.597405	3.2297162	9.726819
## 5	8.1147607	13.474478	12.67711	10.478555	10.457347	7.2256381	13.390157
## 6	6.3531741	12.191610	11.44326	9.576165	9.459551	6.0897480	12.902896
##	Frmpd1	Frmpd3	Frmpd4	Frrs1	Frs2	Frs3	Fry
## 1	10.051030	5.879190e+00	7.555957	8.473106	11.202947	10.163903	12.206236
## 2	10.226561	5.843899e+00	7.452641	8.712431	10.815566	8.556050	12.126472
## 3	5.533440	5.544674e-01	5.986372	7.464776	9.096107	6.127450	9.156833
## 4	6.392911	7.131246e-08	7.560434	5.911698	7.129055	6.231133	10.655120
## 5	10.585174	6.197226e+00	7.809702	9.070551	11.174268	8.914083	12.485280
## 6	8.860830	4.719000e+00	6.373999	7.286441	10.011767	8.973568	11.014653
##	Fryl	Frzb	Fsbp	Fscn1	Fscn2	Fscn3	Fsd1
## 1	12.538240	8.807389	4.5934267	15.143322	4.5563191	1.689449e+00	10.606759
## 2	12.229264	8.694641	4.4160725	14.716844	4.3826920	2.224003e+00	9.853487
## 3	9.938534	11.509973	3.9798556	9.786453	0.9662920	3.603463e-01	10.354080
## 4	8.248382	9.172725	0.2960902	9.022806	0.5751277	8.930989e-08	8.967268
## 5	12.588077	9.052752	4.7599682	15.075712	4.7262352	2.513138e+00	10.212021
## 6	11.346574	7.619625	3.4776818	13.951391	3.4425040	9.855120e-01	9.415989
##	Fsd11	Fsd2	Fsip1	Fst	Fstl1	Fstl3	
## 1	10.344275	4.013843e+00	3.071296e+00	5.403421	11.126403	3.6409013	
## 2	10.160473	2.925271e+00	3.288281e+00	5.144537	10.685964	2.9294948	
## 3	8.617692	5.210813e+00	2.955386e+00	2.363534	11.847658	1.5456979	
## 4	5.648552	9.986282e-08	1.289571e-07	4.732195	9.915987	0.4839002	
## 5	10.519074	3.241647e+00	3.614219e+00	5.494391	11.044650	3.2459973	
## 6	9.153747	2.934258e+00	2.087668e+00	4.255450	9.935266	2.5927631	
##	Fstl4	Fstl5	Ftcd	Fth1	Ft11	Fto	Ftsj1
## 1	5.883860	9.358301	2.724575e+00	18.01346	16.03187	12.51807	10.379080
## 2	7.092112	9.295871	2.535558e+00	16.59068	15.33147	12.33028	10.110272
## 3	2.758083	10.223019	3.644928e-08	14.74400	14.38195	12.23673	11.068613
## 4	4.992360	7.148368	1.733209e-08	15.06998	13.27823	10.90444	8.350898
## 5	7.448656	9.654243	2.838500e+00	16.94956	15.69034	12.68910	10.468863
## 6	4.723568	8.169200	1.792438e+00	16.82148	14.83992	11.32641	9.188517
##	Ftsj2	Ftsj3	Fubp1	Fubp3	Fuca1	Fuca2	Fuk
## 1	7.838797	10.737244	12.629314	12.05719	12.64720	11.275471	9.408047
## 2	7.478046	10.859647	12.077777	11.12937	11.94778	11.102235	10.156089
## 3	7.913653	10.156534	12.055102	11.65046	11.57609	10.413471	5.611919
## 4	7.601851	7.902865	9.638557	10.56134	10.93667	9.065714	5.456092
## 5	7.835139	11.218354	12.436583	11.48811	12.30658	11.460969	10.514689
## 6	6.655059	9.546370	11.437629	10.86565	11.45551	10.084251	8.218848
##	Fundc1	Fundc2	Furin	Fus	Fut1	Fut10	Fut11
## 1	10.927017	10.970954	13.453150	13.273273	1.9468567	8.302375	10.762621
## 2	10.121460	10.270750	12.918338	12.814678	1.1850296	8.517877	10.074622
## 3	11.387871	11.778404	7.846658	8.871025	0.9176529	7.651927	7.217076
## 4	10.811151	10.312890	7.845572	7.734204	1.3721632	6.304671	6.375795
## 5	10.480053	10.629371	13.277176	13.173513	1.3968290	8.875887	10.433206
## 6	9.736005	9.779914	12.261335	12.081480	1.1741042	7.116376	9.571726
##	Fut2	Fut4	Fut7	Fut8	Fut9	Fuz	Fxn
## 1	4.097268	7.5065133	4.923017e+00	12.300315	11.443317	10.152877	8.147545
## 2	3.828309	5.8562082	4.120241e+00	11.627873	11.459148	9.786269	7.865278
## 3	2.504608	0.2663832	1.946508e+00	8.680922	10.498399	7.585387	9.217260
## 4	2.352275	3.2095537	7.997071e-08	9.568231	9.064368	4.367286	5.790700

```

## 5 4.164611 6.2095829 4.460705e+00 11.986651 11.817914 10.144788 8.222792
## 6 3.011609 6.3249033 3.792048e+00 11.108706 10.252013 8.962555 6.962222
##      Fxr1      Fxr2      Fxyd1      Fxyd2      Fxyd3      Fxyd4      Fxyd5
## 1 12.029380 12.756504 8.263865 5.011202 1.6983334 3.9857250 10.766949
## 2 11.807464 12.175380 7.469543 4.652709 0.8227019 2.6276439 9.683504
## 3 10.140888 7.575192 11.962859 7.545072 5.4788848 2.3589427 8.270232
## 4 8.295214 6.144874 11.318046 5.255690 4.7256505 0.3158812 9.978050
## 5 12.166254 12.534190 7.826625 4.998881 0.9896485 2.9341073 10.041996
## 6 10.837849 11.564794 7.078028 3.876691 0.9918715 2.9082608 9.576051
##      Fxyd6      Fxyd7      Fyb      Fyco1      Fyn      Fyttd1      Fzd1
## 1 12.76351 8.465434 9.856918 10.788328 14.75465 11.726186 10.328874
## 2 12.22170 8.465275 9.627713 11.056696 14.23834 11.431500 10.169023
## 3 13.30024 7.239027 6.837605 8.558083 10.51424 10.574449 9.585263
## 4 10.14731 5.634848 7.910800 7.275734 11.11272 9.820738 7.265609
## 5 12.58051 8.823254 9.986189 11.415425 14.59720 11.790264 10.527625
## 6 11.57180 7.278797 8.666975 9.597414 13.56274 10.534761 9.138361
##      Fzd10      Fzd2      Fzd3      Fzd4      Fzd5      Fzd6      Fzd7
## 1 9.721502 9.280053 11.738249 10.759866 9.483479 12.347994 10.152347
## 2 8.592354 9.111114 11.417091 10.297101 9.086278 11.911789 9.922011
## 3 3.491977 8.634189 11.677092 3.342499 2.281723 8.217761 6.683693
## 4 5.179800 7.249897 9.811623 5.411152 2.197698 6.694509 6.301652
## 5 8.950408 9.469417 11.775853 10.655727 9.444571 12.270586 10.280562
## 6 8.531760 8.091112 10.546819 9.568973 8.294138 11.156373 8.962026
##      Fzd8      Fzd9      Fzr1      G0s2      G2e3      G3bp1      G3bp2
## 1 9.163429 9.599022 11.751755 10.433560 10.382151 12.50483 13.00730
## 2 9.108465 9.584261 10.910337 9.725649 10.473815 11.83638 12.53576
## 3 5.465443 4.440430 8.944209 8.309906 10.119036 11.97915 12.29409
## 4 5.086127 5.731934 8.734385 8.371493 7.611925 10.18809 10.98847
## 5 9.466767 9.942725 11.269050 10.084152 10.832470 12.19518 12.89459
## 6 7.974743 8.409478 10.560320 9.242945 9.191585 11.31317 11.81555
##      G630090E17Rik      G6pc      G6pc3      G6pd2      G6pdx      Gaa
## 1 2.8853147 3.433257e+00 11.45647 6.969258 11.920169 12.81804
## 2 0.8764390 4.122922e+00 10.83956 6.798101 11.421556 12.55457
## 3 1.4125634 1.850267e-01 10.62983 6.978359 11.328508 12.23379
## 4 0.2431117 1.196489e-07 10.17816 5.319395 9.674538 12.05064
## 5 1.0508653 4.463421e+00 11.19827 7.154117 11.780319 12.91340
## 6 1.9280073 2.406081e+00 10.26516 5.792303 10.728673 11.62632
##      Gab1      Gab2      Gab3      Gabarap      Gabarap11      Gabarap12      Gabbr1
## 1 13.516966 11.242608 7.058222 14.18781 13.94791 11.177438 14.359962
## 2 12.633602 11.365997 6.115857 13.50281 13.26809 10.388524 13.791106
## 3 9.835232 7.383420 5.144020 13.70717 10.73246 10.860502 9.860611
## 4 9.701857 5.323339 4.423281 12.12564 10.58731 9.793167 10.405019
## 5 12.992430 11.724756 6.470140 13.86166 13.62693 10.747165 14.149963
## 6 12.325144 10.051405 5.880373 12.99593 12.75605 9.986272 13.168068
##      Gabbr2      Gabpa      Gabpb1      Gabpb2      Gabra1      Gabra2      Gabra3
## 1 11.52113 11.450455 10.846449 10.885409 8.623709 9.633787 9.915414
## 2 11.64463 10.923753 9.987218 10.530934 8.012565 9.706532 10.310129
## 3 2.97298 9.261898 8.329959 8.430881 5.853933 8.602590 4.251393
## 4 6.70007 7.248435 6.345824 5.790174 11.088933 9.854982 5.913283
## 5 12.00341 11.282468 10.345783 10.889598 8.370211 10.065030 10.668757
## 6 10.32979 10.259148 9.655494 9.694426 7.436518 8.444185 8.725389
##      Gabra4      Gabra5      Gabrb1      Gabrb2      Gabrb3      Gabrd      Gabre
## 1 9.370010 7.052545 8.616847 10.475180 11.241787 6.959575 4.534377e+00
## 2 9.008440 7.196193 8.014624 10.015048 10.662768 7.612814 4.340710e+00

```



```

## 3 10.859603 5.480133 10.206669 8.262649 8.997337 3.375455 5.321565e-08
## 4 10.883258 9.538547 9.700598 12.175709 11.125522 9.226144 2.529136e-08
## 5 9.366701 7.552900 8.372271 10.373620 11.021450 7.970067 4.683798e+00
## 6 8.180885 5.874751 7.429679 9.284526 10.050585 5.782720 3.421725e+00
##      Gabrg1      Gabrg2      Gabrg3      Gabrq      Gabrr1      Gabrr2
## 1 10.853873 9.473048 7.329878 4.579245e+00 2.149778e+00 4.9116937
## 2 10.760122 9.128685 7.123447 3.940334e+00 2.030222e+00 4.6364520
## 3 7.462819 9.080962 5.209624 4.360195e-08 2.675091e-01 3.1294111
## 4 8.955137 11.300771 3.102115 2.214512e-08 7.988710e-08 0.3075472
## 5 11.118818 9.486995 7.480042 4.278335e+00 2.309054e+00 4.9824795
## 6 9.662912 8.283726 6.149613 3.464232e+00 1.328800e+00 3.7811946
##      Gad1      Gad2      Gadd45a      Gadd45b      Gadd45g      Gadd45gip1      Gadl1
## 1 11.261865 9.897843 9.955683 13.889364 12.330727 9.877492 5.118841
## 2 11.434140 10.556097 9.215164 13.099545 12.287492 9.289725 5.418289
## 3 6.256510 3.111929 7.919354 7.242647 12.389908 7.869912 5.065133
## 4 9.080257 6.476474 6.800413 7.516043 8.505587 6.276016 3.320856
## 5 11.792904 10.914764 9.573507 13.458388 12.646307 9.648095 5.769707
## 6 10.070652 8.707843 8.765605 12.697505 11.139111 8.687520 3.980279
##      Gak      Gal      Gal3st1      Gal3st3      Gal3st4      Galc      Gale
## 1 12.514120 6.247713 13.775940 8.817447 11.201343 11.774943 9.673993
## 2 12.118541 6.058509 12.810055 8.518625 10.569765 11.212443 9.122816
## 3 9.570525 9.442538 7.430287 6.661364 6.706305 8.901680 8.015977
## 4 7.605704 4.907341 7.733002 7.721680 9.725179 7.635088 7.029143
## 5 12.477349 6.412605 13.168890 8.876636 10.928435 11.571188 9.481124
## 6 11.322460 5.080421 12.584091 7.629654 10.010163 10.583499 8.484325
##      Galk1      Galk2      Galm      Galns      Galnt1      Galnt10      Galnt11
## 1 10.024504 9.327834 7.823659 9.841278 12.283764 12.140292 11.423722
## 2 9.954860 9.446214 7.358388 9.296042 11.990601 11.741539 10.776579
## 3 7.902687 8.312604 8.609545 7.609729 9.310816 5.004886 8.093945
## 4 6.406541 7.959165 5.993132 8.591342 7.840837 6.325406 6.966351
## 5 10.313418 9.804636 7.715326 9.654415 12.349401 12.100325 11.135276
## 6 8.834337 8.138794 6.640009 8.651357 11.092160 10.948727 10.232427
##      Galnt12      Galnt13      Galnt14      Galnt2      Galnt3      Galnt4      Galnt5
## 1 9.106404 10.005652 7.167227 12.206891 7.628952 9.981665 3.736667e+00
## 2 9.160298 10.011605 7.925956 12.211600 7.196776 9.738062 2.892947e+00
## 3 2.383724 4.512627 4.222278 9.609508 3.728792 7.802648 5.906436e-08
## 4 4.684946 7.542043 5.890156 8.235718 3.094265 6.108509 3.057601e-08
## 5 9.518620 10.370176 8.283526 12.570412 7.553484 10.096568 3.208346e+00
## 6 7.917852 8.815509 5.988354 11.015308 6.446501 8.791553 2.679736e+00
##      Galnt6      Galnt7      Galnt9      Galnt16      Galr1      Galr2      Galt
## 1 11.928595 9.844635 7.739643 7.458824 4.224532 5.760502e+00 11.017594
## 2 11.274667 9.794730 7.839737 8.193902 4.026987 5.123780e+00 10.595257
## 3 8.887422 8.420390 4.625075 1.720901 7.551659 3.242481e-01 9.685950
## 4 6.249687 7.207676 6.727581 3.359005 5.424261 5.183221e-08 8.686782
## 5 11.633417 10.153251 8.197226 8.551693 4.366214 5.473503e+00 10.953930
## 6 10.737097 8.654709 6.556490 6.277561 3.130213 4.603004e+00 9.826523
##      Gamt      Gan      Ganab      Ganc      Gap43      Gapdh      Gapdhs
## 1 13.00280 8.474923 13.70874 9.658515 12.497022 9.075746 7.256198
## 2 11.93668 8.009399 13.50712 9.490933 12.089462 8.354005 6.616324
## 3 8.57709 3.927957 11.04303 8.521731 9.718383 4.680051 6.709118
## 4 6.97690 3.470781 10.24170 6.723353 8.681298 3.456290 4.047476
## 5 12.29548 8.367043 13.86598 9.849370 12.448268 8.711911 6.971956
## 6 11.81105 7.288251 12.51689 8.468873 11.305365 7.887267 6.076545
##      Gapt      Gapvd1      Gar1      Garnl3      Gars      Gart      Gas1

```

```

## 1 3.7620994 12.759773 9.144484 10.049980 12.235715 11.090591 10.549363
## 2 2.1246018 11.765032 8.708576 10.495030 11.970465 10.845477 10.210354
## 3 0.4699919 10.504514 6.538854 6.870385 9.427423 11.003864 10.454975
## 4 0.2775135 9.053677 4.265500 5.641448 8.378957 8.419929 8.067578
## 5 2.4086341 12.123819 9.066694 10.853689 12.329265 11.204182 10.568964
## 6 2.7029208 11.568062 7.955842 8.859782 11.044124 9.899475 9.358642
##      Gas2      Gas2l1      Gas2l2      Gas2l3      Gas6      Gas7      Gas8
## 1 9.102366 10.817957 3.589566e+00 10.077347 13.030107 14.15537 9.748703
## 2 8.778561 10.478944 4.496464e+00 9.243512 12.811281 13.63216 9.070283
## 3 7.689542 6.859476 2.403803e+00 10.199172 8.084111 10.88798 8.953067
## 4 6.550430 6.105538 8.792929e-08 5.979599 8.445069 11.49029 8.328642
## 5 9.136715 10.837600 4.841176e+00 9.601866 13.170115 13.99102 9.428570
## 6 7.913823 9.627022 2.546362e+00 8.887115 11.838349 12.96349 8.558918
##      Gatc      Gata2      Gata3      Gata6      Gatad1      Gatad2a      Gatad2b
## 1 1.5808618 9.430038 5.572798 2.895097e+00 11.98205 12.595009 10.267044
## 2 0.9345439 8.431450 4.999340 2.633224e+00 11.13642 11.605065 10.253209
## 3 0.7508002 5.541594 3.393823 8.181024e-01 11.76322 10.359043 8.167988
## 4 1.1797370 5.638201 3.838497 5.644163e-08 10.53144 9.220049 6.364098
## 5 1.1167099 8.789407 5.348235 2.939894e+00 11.49516 11.963842 10.611827
## 6 0.9086749 8.240797 4.420022 1.936332e+00 10.79054 11.403332 9.076596
##      Gatc      Gatm      Gatsl2      Gatsl3      Gba      Gba2      Gbas
## 1 10.128881 14.19173 11.256019 9.520374 12.77286 11.661448 12.09426
## 2 9.810733 13.41878 11.145164 9.125354 11.87397 11.141962 11.28737
## 3 9.930221 12.91472 9.403258 8.123995 10.71167 7.669630 11.65643
## 4 7.358134 12.62595 7.488605 7.701655 10.59902 7.480403 10.86774
## 5 10.169258 13.77763 11.503903 9.483663 12.23276 11.500701 11.64612
## 6 8.938587 12.99985 10.064810 8.330967 11.58115 10.470048 10.90271
##      Gbe1      Gbf1      Gbgt1      Gbp11      Gbp2      Gbp3      Gbp4
## 1 10.127949 12.354868 8.410958 6.812764 8.468793 9.523714 7.443361
## 2 9.305442 12.228059 7.299737 6.089463 7.879054 8.712886 6.397587
## 3 8.264383 9.338534 1.953838 5.348786 9.184461 8.007528 4.333313
## 4 6.906062 8.756451 6.993490 3.087118 7.494792 8.403822 4.039677
## 5 9.663818 12.586871 7.656595 6.443661 8.236581 9.071006 6.752686
## 6 8.937656 11.163245 7.224526 5.637520 7.282144 8.334300 6.262213
##      Gbp5      Gbp6      Gbp7      Gbp8      Gbp9      Gbx1      Gbx2
## 1 7.468247 4.991832 9.380422 0.9329094 8.249027 2.223306e+00 4.656259e+00
## 2 8.141404 4.888698 9.282200 1.1319891 9.137377 6.751425e-01 2.729774e+00
## 3 3.519860 5.201279 9.396406 2.2271857 4.735841 1.356674e+00 4.120857e-08
## 4 2.658205 2.710298 7.199529 0.3022034 3.576722 9.786492e-08 2.000032e-08
## 5 8.499155 5.236794 9.640568 1.3379832 9.495691 8.198311e-01 3.039879e+00
## 6 6.286914 3.858082 8.191276 0.4868303 7.063253 1.386086e+00 3.537351e+00
##      Gca      Gcat      Gcc1      Gcc2      Gcdh      Gcgr      Gch1
## 1 10.198543 9.545205 10.048110 10.944433 10.419658 4.8817091 10.687710
## 2 9.579796 8.724114 10.282731 10.890255 10.119477 5.6715600 10.171439
## 3 10.466681 10.114035 7.254625 10.050055 10.375838 0.6203286 4.799796
## 4 8.968037 9.217951 5.835567 8.490482 8.169768 3.1927162 2.614679
## 5 9.938259 9.082240 10.641355 11.248966 10.478070 6.0241817 10.530042
## 6 9.008169 8.355753 8.857914 9.753410 9.229056 3.7524716 9.496873
##      Gchfr      Gck      Gckr      Gclc      Gclm      Gcn1l1      Gcnt1
## 1 4.711860 5.3815040 2.581639e+00 11.484566 11.068656 13.074787 9.509346
## 2 4.500373 5.2840074 2.055125e+00 11.090307 10.549759 13.162024 8.635934
## 3 6.523184 3.8557396 1.008496e+00 9.226557 7.318634 8.872035 5.886033
## 4 5.232178 0.5282922 1.116025e-07 6.928455 5.943388 7.804825 8.803630
## 5 4.845123 5.6346954 2.335364e+00 11.449040 10.908425 13.520868 8.994012

```

```

## 6 3.590261 4.2341957 1.673920e+00 10.293243 9.877554 11.883023 8.319959
##      Gcnt2      Gcnt4      Gcnt7      Gcsh      Gda      Gdap1      Gdap111
## 1 9.665158 9.473060 4.311657 11.57952 8.639434 10.352957 10.422358
## 2 9.402025 8.266924 3.742536 10.86176 9.084154 10.668510 10.194447
## 3 8.032752 5.978087 5.547246 11.63493 5.037905 9.098822 10.396513
## 4 8.396994 8.079832 3.184270 10.02762 7.912697 7.902009 8.356740
## 5 9.760433 8.624769 4.077444 11.22047 9.442446 11.027194 10.553055
## 6 8.475505 8.283738 3.211805 10.38816 7.452191 9.162420 9.231754
##      Gdap2      Gde1      Gdf10      Gdf11      Gdf15      Gdf5      Gdf6
## 1 10.479520 13.95293 7.008404 8.7493280 12.6666956 9.3432848 1.706347e+00
## 2 9.712097 13.21362 6.136144 8.4788951 14.1121827 8.5873670 1.603477e+00
## 3 9.561966 9.72201 6.231028 4.1311495 0.9840834 0.7989222 1.230776e-07
## 4 9.217239 9.53790 7.663569 0.7715417 0.6291042 6.5839788 2.942483e-01
## 5 10.070597 13.57247 6.490491 8.8368817 14.4710437 8.9454183 1.853718e+00
## 6 9.288862 12.76106 5.831049 7.5617374 11.4750030 8.1542132 9.976175e-01
##      Gdf7      Gdf9      Gdi1      Gdi2      Gdnf      Gdpd1      Gdpd2
## 1 2.213159e+00 6.275821 14.19162 14.09368 6.0763112 11.171757 11.258261
## 2 1.999399e+00 5.538296 13.76982 13.64075 5.5979218 10.948794 10.692218
## 3 6.272683e-08 8.414971 13.81851 13.11174 0.5672394 12.341052 9.895920
## 4 3.048331e-08 6.195467 12.40183 12.56579 0.8450435 9.440295 7.705605
## 5 2.276454e+00 5.890311 14.12867 13.99961 5.9502151 11.307512 11.050904
## 6 1.378142e+00 5.108057 12.99974 12.90180 4.9121023 9.980594 10.067050
##      Gdpd3      Gdpd5      Gem      Gemin4      Gemin5      Gemin6      Gemin7
## 1 8.053528 11.912203 13.505368 9.158760 10.111585 6.543142 10.252656
## 2 7.778079 10.970820 12.969533 8.373861 10.569806 5.762462 9.689762
## 3 8.137720 8.439413 9.788803 9.209624 7.371146 8.522406 8.904990
## 4 9.423828 7.997122 7.563905 7.766134 6.201304 7.776586 8.070986
## 5 8.135507 11.329541 13.328372 8.731780 10.928476 6.115466 10.048255
## 6 6.868653 10.720710 12.313547 7.970086 8.921311 5.371312 9.062223
##      Gemin8      Gen1      Get4      Gfap      Gfer      Gfi1      Gfm1
## 1 8.607114 5.805097 11.391451 12.46525 10.672747 3.216158e+00 10.528721
## 2 8.154677 5.440826 10.946146 12.28671 9.803100 2.821511e+00 10.287066
## 3 9.468110 6.505195 6.555852 14.00199 7.559743 4.923598e-08 9.532782
## 4 7.591013 1.465759 4.518291 11.26497 5.998486 2.996153e-01 7.437774
## 5 8.512438 5.792359 11.304863 12.64553 10.161623 3.134668e+00 10.645690
## 6 7.419978 4.646562 10.200172 11.27360 9.481922 2.213951e+00 9.338019
##      Gfm2      Gfod1      Gfod2      Gfpt1      Gfpt2      Gfra1      Gfra2
## 1 10.654216 11.095934 9.564879 12.132582 8.860209 11.815970 8.515757
## 2 10.306153 10.712411 9.522143 11.922261 8.858110 11.548472 7.764035
## 3 9.837784 6.865606 8.439894 9.620423 8.513030 6.904224 8.680437
## 4 7.574607 7.598021 6.620178 7.671286 2.301431 9.409392 9.464282
## 5 10.664780 11.071101 9.880589 12.281058 9.216303 11.907244 8.121449
## 6 9.463407 9.904816 8.375393 10.941020 7.672294 10.624511 7.328937
##      Gfra3      Gfra4      Gga1      Gga2      Gga3      Ggct      Ggcx
## 1 2.005768e+00 8.181853 12.234365 11.224829 11.338330 9.106346 10.531700
## 2 2.306007e-01 7.036138 11.957762 10.898316 11.226574 8.325599 10.016418
## 3 6.445182e-01 4.584294 7.338467 9.132748 9.504927 9.182947 9.859825
## 4 7.570409e-08 5.348649 5.175716 6.508340 8.021164 8.558206 8.631409
## 5 2.895405e-01 7.392591 12.316561 11.257028 11.585320 8.683485 10.374990
## 6 1.218487e+00 6.996375 11.042775 10.033636 10.147078 7.917794 9.340995
##      Ggh      Ggn      Ggnbp2      Ggps1      Ggt1      Ggt5      Ggt6
## 1 10.724705 6.871907e+00 11.890921 10.312946 6.936205 10.288373 2.262040
## 2 9.814365 6.213911e+00 11.352721 9.639970 6.624771 10.189838 1.856096
## 3 10.641313 2.533150e+00 9.864770 10.549482 8.564294 8.262817 4.273328

```

```

## 4 10.055365 1.163802e-07 9.130197 9.542677 6.631049 6.543399 2.852906
## 5 10.172890 6.568496e+00 11.711478 9.998450 6.980422 10.548444 2.124338
## 6 9.533840 5.695994e+00 10.699436 9.122450 5.759596 9.097902 1.416517
##      Ggt7      Ghdc      Ghitm      Ghr      Ghrh      Ghr1      Ghsr
## 1 12.01614 9.952240 13.25914 9.309538 2.033056e+00 5.5750827 3.938419e+00
## 2 11.37990 10.200408 12.85024 8.872411 2.327457e+00 4.9176147 4.239221e+00
## 3 9.93204 7.104355 13.21945 7.190182 1.324812e+00 1.7910695 5.587215e-08
## 4 10.49085 6.858573 11.94518 5.870644 1.187138e-07 0.5559346 1.534233e+00
## 5 11.73866 10.559016 13.20907 9.230611 2.621527e+00 5.2659260 4.581151e+00
## 6 10.82462 8.762166 12.06735 8.120536 1.239194e+00 4.4222454 2.864610e+00
##      Gigyf1      Gigyf2      Gimap1      Gimap4      Gimap6      Gimap7      Gimap8
## 1 11.539215 11.078406 9.995865 9.562950 13.251114 0.7590278 8.8856776
## 2 11.599219 11.118563 9.094043 8.011029 11.740516 0.7728603 9.3940041
## 3 10.979451 9.305390 2.263618 5.888539 8.083627 2.1652357 2.9401221
## 4 8.138717 6.610520 4.255643 4.617397 8.006403 3.4879376 0.9262827
## 5 11.957996 11.477298 9.452340 8.368674 12.099302 0.9325794 9.7524100
## 6 10.347868 9.887298 8.805734 8.373468 12.059324 0.3849877 7.6976914
##      Gimap9      Gin1      Gins1      Gins2      Gins3      Gins4      Gipc1
## 1 8.958828 7.988434 6.874972 7.653949 7.224261 10.225285 12.930594
## 2 7.992760 7.695920 6.632893 7.498914 6.756198 9.986382 12.686091
## 3 4.815944 8.734390 9.723465 10.076896 7.427690 9.417349 9.553634
## 4 5.505779 6.343694 4.395380 4.054482 5.935715 5.900502 8.025980
## 5 8.350389 8.053263 6.988561 7.856033 7.112130 10.344947 13.044922
## 6 7.770644 6.803886 5.699026 6.471335 6.044882 9.034882 11.738853
##      Gipc2      Gipc3      Gipr      Git1      Git2      Gja1
## 1 3.664428e+00 5.740958e+00 6.0630125 13.269934 12.14712 14.20848
## 2 3.018983e+00 5.256928e+00 6.6693753 13.002784 11.77801 13.52936
## 3 9.951786e-01 3.992513e-08 2.6295887 8.952008 10.63231 14.74559
## 4 8.685784e-08 1.983643e-08 0.2882681 8.332983 10.34608 15.01470
## 5 3.338069e+00 5.607460e+00 7.0251241 13.361624 12.13679 13.88822
## 6 2.614081e+00 4.583924e+00 4.8990582 12.078142 10.95556 13.01659
##      Gja3      Gja4      Gja5      Gjb1      Gjb2      Gjb3      Gjb4
## 1 1.496854e+00 10.028859 4.970164 12.91473 7.372032 1.0000135 4.179395
## 2 2.115942e+00 8.554769 4.762381 11.68237 6.582200 0.4243387 2.895208
## 3 2.054222e-01 9.021626 2.083251 10.31770 8.618223 4.0690726 5.652201
## 4 7.111803e-08 9.809834 5.097684 10.47568 7.129590 4.0438863 3.468291
## 5 2.399512e+00 8.912802 5.109487 12.04115 6.937754 0.5245480 3.210676
## 6 8.503871e-01 8.838687 3.837275 11.72299 6.191431 0.5274595 3.088067
##      Gjb5      Gjb6      Gjc1      Gjc2      Gjc3      Gjd2      Gjd3
## 1 0.7037234 10.757148 10.184687 13.537372 13.26623 7.1390948 2.685092e+00
## 2 0.3858721 9.891377 9.370211 12.587265 12.65481 5.4723929 2.775426e+00
## 3 4.6340645 11.748709 7.399749 6.206837 10.22459 5.4215795 4.230395e-08
## 4 3.2048963 12.464232 7.911030 6.236911 10.28860 0.2733962 1.920924e-08
## 5 0.4784119 10.249921 9.728609 12.946092 13.01364 5.8240860 3.087076e+00
## 6 0.3536473 9.566258 8.994329 12.345548 12.07444 5.9604788 1.759502e+00
##      Gk2      Gk5      Gkap1      Gla      Glb1      Glb11      Glb112
## 1 2.260958e-08 7.344953 10.074530 11.625986 11.434104 9.974381 6.472323
## 2 3.104597e-08 7.229296 9.635818 11.292987 11.404038 9.519026 6.997435
## 3 2.100639e+00 3.301323 7.844616 8.644993 9.555223 7.661484 8.396746
## 4 1.639836e+00 2.380287 7.455740 5.807211 8.703114 2.260328 3.923875
## 5 3.981131e-08 7.586052 9.994297 11.651739 11.762799 9.877471 7.353821
## 6 1.001483e-08 6.164567 8.884301 10.434601 10.242805 8.784279 5.301499
##      Glb113      Glcci1      Glce      Glde      Gldn      Gle1
## 1 2.750956e+00 10.697261 10.399256 10.639642 5.013389e+00 11.340660

```

```

## 2 2.734910e+00 10.687816 10.349616 10.490578 4.641385e+00 10.607537
## 3 4.124210e-08 9.321616 9.142564 11.284976 3.460445e+00 10.407879
## 4 1.916628e-08 7.900939 7.736600 9.082909 1.107352e-07 10.423369
## 5 3.045192e+00 11.046502 10.708251 10.849235 4.987457e+00 10.966212
## 6 1.814526e+00 9.506417 9.208674 9.448845 3.878793e+00 10.149407
##      Glg1      Gli1      Gli2      Gli3      Glipr1      Glipr2      Glis1
## 1 12.820176 9.349573 10.053182 10.499523 6.947253 9.207466 5.347186e+00
## 2 12.456156 9.322233 9.565423 9.741433 6.629905 8.342725 5.574429e+00
## 3 10.271103 6.950683 6.627614 10.099767 3.186445 9.112141 9.206550e-01
## 4 9.658398 3.815656 5.209207 7.450445 2.114726 8.435056 5.583036e-08
## 5 12.814978 9.680614 9.923882 10.099940 6.985567 8.700623 5.926614e+00
## 6 11.628454 8.160489 8.862979 9.308847 5.770527 8.018682 4.200935e+00
##      Glis2      Glis3      Glmn      Glo1      Glod4      Glod5      Glp1r
## 1 10.555615 7.598503 8.690286 11.264615 12.91669 2.595170e+00 2.6620318
## 2 10.832874 6.559635 7.884288 10.696513 12.05785 2.532423e+00 2.5065873
## 3 6.670819 4.951963 8.904233 12.274271 11.92600 1.047898e+00 0.3848090
## 4 6.640756 4.128812 6.327589 11.073525 10.50056 4.956304e-08 0.6391616
## 5 11.191578 6.915136 8.241820 11.055200 12.41666 2.835241e+00 2.8083728
## 6 9.364889 6.416254 7.502879 10.073401 11.72495 1.685053e+00 1.7403350
##      Glp2r      Glra2      Glra3      Glra4      Glrb      Glrx
## 1 5.340465 7.536508 3.257991e+00 5.374215e+00 12.424001 10.595711
## 2 5.128911 8.124270 2.089333e+00 5.689561e+00 12.200333 9.584094
## 3 2.169969 3.643687 3.751379e-08 1.400081e+00 8.823984 9.410795
## 4 1.846532 3.156357 1.942761e-08 5.518970e-08 10.144682 9.133184
## 5 5.478666 8.482008 2.371464e+00 6.042260e+00 12.559144 9.942559
## 6 4.194424 6.354685 2.250714e+00 4.227129e+00 11.232362 9.404950
##      Glrx2      Glrx3      Glrx5      Glx      Glx2      Glt1d1      Glt8d1
## 1 10.755260 8.690642 11.337661 12.492257 7.059170 5.925706 11.130123
## 2 10.498772 8.057284 11.236071 12.104469 8.039555 5.609530 10.184069
## 3 9.278099 9.816543 7.248073 8.999302 4.735993 1.992940 9.401768
## 4 7.651766 7.897985 6.765466 8.104660 2.444462 2.009929 8.409867
## 5 10.857431 8.414968 11.594818 12.463276 8.397224 5.961876 10.542675
## 6 9.564371 7.503234 10.146409 11.300602 5.881312 4.764518 9.938984
##      Glt8d2      Gltp      Gltpd1      Gltpd2      Gltscr1      Gltscr2      Glud1
## 1 4.455478 14.492730 9.914152 3.419246e+00 10.652569 13.152484 14.29030
## 2 4.598663 13.945640 9.661928 1.593360e+00 10.057435 12.784588 13.68695
## 3 7.788715 10.382402 10.113183 1.698131e+00 6.001943 9.702881 12.19665
## 4 6.930622 9.656955 8.974818 1.316914e-07 5.835325 8.399014 11.13394
## 5 4.944348 14.304499 10.020414 1.842807e+00 10.416016 13.143422 14.04580
## 6 3.347150 13.300829 8.724130 2.393583e+00 9.461762 11.960708 13.09841
##      Glul      Glyat13      Glyctk      Glyn1      Gm10033      Gm101
## 1 16.85272 4.033346e+00 7.271214 13.070527 5.580881 1.936382e+00
## 2 16.17561 3.730136e+00 6.209599 12.823456 5.240772 1.958750e+00
## 3 13.35094 3.472161e-08 7.187483 11.292296 8.511088 1.747170e+00
## 4 13.78999 1.680202e-08 2.989599 9.581333 6.527868 1.080774e-07
## 5 16.53449 4.064836e+00 6.564171 13.182291 5.591210 2.233399e+00
## 6 15.66075 2.952312e+00 6.091433 11.878763 4.427889 1.166259e+00
##      Gm10639      Gm10767      Gm11128      Gm1123      Gm11437
## 1 2.865269e-08 5.3378298 3.710971e+00 3.349413e+00 1.462355e+00
## 2 1.542052e-08 5.0997931 3.064937e+00 3.812328e+00 8.004872e-01
## 3 4.071342e+00 5.0975438 6.379659e-08 4.782900e-01 3.233518e+00
## 4 6.145835e-09 0.2998782 3.043190e-01 9.850425e-08 5.424370e-08
## 5 1.977427e-08 5.4493619 3.385286e+00 4.148378e+00 9.642477e-01
## 6 1.269161e-08 4.1918714 2.656348e+00 2.331491e+00 8.267481e-01

```

```

##          Gm11567  Gm11992    Gm128  Gm12942    Gm13178    Gm13212
## 1 2.755367e+00 4.480757 5.102975 7.240305 2.822480e+00 5.072255e+00
## 2 3.141539e+00 5.102080 4.389547 6.464210 1.835165e+00 4.629083e+00
## 3 6.223740e-08 6.536662 5.726114 8.252014 8.587754e-01 1.431899e+00
## 4 2.729285e-01 5.069089 2.095288 8.045975 1.231662e-07 9.619194e-08
## 5 3.463907e+00 5.451664 4.733163 6.819480 2.102040e+00 4.975044e+00
## 6 1.818225e+00 3.371020 3.964992 6.060787 1.874734e+00 3.935411e+00
##          Gm13242  Gm13308    Gm13889    Gm14124  Gm14137  Gm14295  Gm14378
## 1 1.904353e+00 6.776793 14.094447 2.217920e+00 5.681933 4.648490 7.4246358
## 2 2.013556e+00 6.669154 13.292027 1.720532e+00 4.934995 4.171310 7.2903246
## 3 5.787413e-08 2.700338 6.360712 5.558960e-01 3.184606 6.425168 4.4329738
## 4 2.652528e-08 4.464932 6.367049 7.692340e-08 3.176255 4.389730 0.9554129
## 5 2.291432e+00 7.024902 13.650874 1.979534e+00 5.283433 4.512419 7.6471690
## 6 1.142359e+00 5.601968 12.902572 1.381868e+00 4.526339 3.529966 6.2436291
##          Gm14446    Gm15319    Gm1564  Gm15800  Gm16039  Gm16515  Gm166
## 1 3.1849528 3.091159e+00 4.220263e+00 12.71572 9.026126 12.910153 7.683951
## 2 3.7345341 3.089026e+00 4.588939e+00 12.15582 8.518221 12.117045 6.956336
## 3 2.3315305 7.432234e-01 3.054275e+00 10.51882 9.243249 8.994008 8.740273
## 4 0.2976127 7.846977e-08 9.202867e-08 10.46688 7.883659 8.033625 6.858589
## 5 4.0693081 3.410022e+00 4.934534e+00 12.51463 8.876231 12.475852 7.312650
## 6 2.1866127 2.104887e+00 3.126223e+00 11.52402 7.837770 11.718415 6.501144
##          Gm1661  Gm1673  Gm17296    Gm17359  Gm17455    Gm2a
## 1 4.171815e+00 9.413628 9.344903 1.676058e+00 5.105151 14.25596
## 2 4.324840e+00 8.639452 9.098136 1.683248e+00 4.029669 13.70861
## 3 3.359813e+00 7.291637 5.869174 1.521577e+00 5.305725 13.82274
## 4 8.924086e-08 6.252885 1.648659 9.133833e-08 3.232204 13.44007
## 5 4.667753e+00 8.997533 9.456435 1.939542e+00 4.368933 14.06746
## 6 3.080998e+00 8.224418 8.155828 9.759462e-01 3.967089 13.06408
##          Gm3893    Gm4477    Gm4907  Gm4944    Gm4980  Gm5069
## 1 2.115691e+00 4.018088e+00 7.779218e-01 8.392484 10.133219 7.224501
## 2 1.311560e+00 3.224017e+00 6.738062e-01 7.259902 10.592448 7.065016
## 3 4.066280e-08 7.675356e-08 8.048995e-08 7.641030 2.697667 7.109789
## 4 2.091819e-08 3.179794e-01 1.953913e+00 6.548629 5.861564 4.615367
## 5 1.536293e+00 3.548437e+00 8.182811e-01 7.616703 10.951121 7.421516
## 6 1.302461e+00 2.938186e+00 3.958116e-01 7.206124 8.942920 6.045120
##          Gm525    Gm527    Gm5424  Gm5434    Gm5483  Gm561  Gm5617
## 1 1.998741e+00 7.7450608 8.942963 5.856112 3.834055e+00 8.975133 7.736036
## 2 2.761691e+00 7.1884913 8.079291 4.988812 4.161511e+00 8.378075 7.240627
## 3 8.019112e-01 1.8689028 11.554865 5.799376 1.149946e-07 9.851669 9.324267
## 4 5.219385e-08 0.2993539 8.313274 4.939189 2.897496e-01 8.964873 8.139714
## 5 3.072881e+00 7.5451868 8.436992 5.337634 4.502497e+00 8.735997 7.597400
## 6 1.213170e+00 6.5618750 7.754822 4.696429 2.768708e+00 7.786906 6.552905
##          Gm572    Gm5868    Gm608    Gm614    Gm6484  Gm6537
## 1 4.657032e+00 1.9003746 10.844892 4.520256e+00 4.1754531 2.854867
## 2 4.751489e+00 1.4678165 10.710940 4.041474e+00 3.2027330 1.823653
## 3 7.340177e-08 3.1037482 8.040678 4.516781e-08 1.1055889 1.408117
## 4 3.255469e-08 0.3065948 6.472493 2.246954e-08 0.3311671 1.729059
## 5 5.098505e+00 1.7068977 11.069629 4.380898e+00 3.5266345 2.089767
## 6 3.538087e+00 1.1393989 9.653937 3.408362e+00 3.0843904 1.902149
##          Gm6578  Gm6583    Gm6588    Gm6592    Gm6614    Gm6792
## 1 3.705688 7.513085 6.562274e+00 2.477744e+00 1.602782e+00 5.975533e+00
## 2 3.113835 5.223379 4.965287e+00 1.294564e+00 2.085462e+00 5.681095e+00
## 3 6.702598 1.838579 5.651860e-08 5.445550e-08 6.948010e-08 5.251530e-08
## 4 5.188299 1.168468 2.908967e-08 2.745757e-08 2.770602e-08 2.524631e-08

```

```

## 5 3.435485 5.573714 5.313943e+00 1.517631e+00 2.367381e+00 6.033758e+00
## 6 2.651544 6.331429 5.390181e+00 1.589051e+00 9.240512e-01 4.813312e+00
##      Gm684      Gm6904      Gm694      Gm7102      Gm711      Gm7120
## 1 5.489444 3.375409e+00 7.391661 6.362830 4.795114e+00 9.609786
## 2 4.958927 2.383810e+00 7.588020 4.777774 3.976660e+00 9.586992
## 3 7.232177 4.316589e-08 2.555787 3.142036 2.937266e+00 5.664668
## 4 1.284774 2.216372e-08 2.977925 4.040516 8.236014e-08 5.582283
## 5 5.307538 2.680415e+00 7.945244 5.125005 4.315185e+00 9.945457
## 6 4.338965 2.354567e+00 6.210907 5.193660 3.669664e+00 8.420224
##      Gm7173      Gm8994      Gm94      Gm960      Gm973      Gm9833
## 1 4.287013e+00 6.499435 3.090473e-08 5.6264420 7.524749 10.345230
## 2 4.154761e+00 5.859919 2.387694e-08 5.2202888 7.841725 10.359538
## 3 3.603561e+00 4.849718 3.744118e+00 4.1846367 7.674558 5.425562
## 4 8.638452e-08 2.996415 4.584106e+00 0.2984101 6.128142 4.615627
## 5 4.495663e+00 6.213308 3.061822e-08 5.5706059 8.199216 10.718175
## 6 3.188694e+00 5.328220 1.368914e-08 4.4722547 6.343010 9.154701
##      Gm996      Gm9992      Gm9994      Gmcl1      Gmids      Gmeb1      Gmeb2
## 1 10.979711 2.6198121 1.921205e+00 10.478533 9.015432 10.642313 11.274382
## 2 10.465459 1.1348118 2.146289e+00 9.642360 8.593557 10.335696 11.101097
## 3 5.832265 0.2201297 1.136375e+00 9.350463 6.891124 9.448211 6.643517
## 4 4.966933 0.2666126 9.818049e-08 7.193246 3.944834 6.144421 3.608219
## 5 10.824113 1.3411208 2.431466e+00 10.000840 8.951612 10.694328 11.459831
## 6 9.788665 1.7053764 1.154917e+00 9.287875 7.827102 9.451513 10.083163
##      Gmfb      Gmfg      Gmip      Gmnn      Gmppa      Gmppb      Gmpr
## 1 12.687872 8.035482 11.792338 8.388364 10.507416 9.393558 10.286709
## 2 12.622017 7.342928 11.728453 7.381573 10.370922 9.790591 10.247121
## 3 12.040177 3.805756 8.597106 9.380231 10.008526 7.838523 8.031947
## 4 9.836313 5.624155 6.801519 7.177653 8.592493 6.360201 8.224383
## 5 12.980846 7.699845 12.087238 7.738542 10.729560 10.149111 10.605738
## 6 11.496175 6.850696 10.600888 7.202020 9.316732 8.204387 9.096240
##      Gmpr2      Gmps      Gna11      Gna12      Gna13      Gna14      Gna15
## 1 10.957488 10.807276 12.65287 13.978054 13.395728 3.8989592 11.670413
## 2 10.447368 10.279258 12.17051 13.670702 13.091843 3.9529249 11.742820
## 3 9.655840 11.654048 11.52097 8.453249 10.870506 2.4928975 3.895009
## 4 7.847092 10.731704 10.11969 6.806570 9.288186 0.7548111 8.066078
## 5 10.806019 10.637881 12.52932 14.029556 13.450685 4.2911089 12.101606
## 6 9.766456 9.616349 11.46118 12.786188 12.203919 2.8282841 10.479010
##      Gnai1      Gnai2      Gnai3      Gnal      Gnao1      Gnaq      Gnas
## 1 12.638033 15.53209 12.65487 10.590611 15.12473 12.54134 15.78018
## 2 11.775324 14.97089 11.79306 10.340889 14.73333 12.14081 15.21955
## 3 8.730457 11.85579 11.28889 8.077253 12.30629 12.07202 12.53965
## 4 7.493148 11.06366 10.23250 8.669410 10.75680 10.79145 12.13666
## 5 12.134112 15.32976 12.15185 10.699522 15.09220 12.49962 15.57842
## 6 11.446346 14.34014 11.46318 9.399854 13.93280 11.34968 14.58823
##      Gnat1      Gnat2      Gnaz      Gnb1      Gnb11      Gnb2      Gnb211
## 1 4.378364 2.866706 9.292015 14.89950 7.890495 15.102397 15.60052
## 2 5.513255 2.873221 9.667918 14.20468 7.840090 14.362315 14.85708
## 3 3.743248 3.198280 4.918363 15.15642 8.608018 10.256409 14.03751
## 4 3.223970 1.312003 2.259942 14.06694 3.486970 9.903802 12.78766
## 5 5.865149 3.188012 10.026406 14.56354 8.197580 14.721179 15.21595
## 6 3.274482 1.912194 8.103049 13.70758 6.706468 13.910467 14.40857
##      Gnb3      Gnb4      Gnb5      Gne      Gng10      Gng11      Gng12
## 1 3.0318545 12.90182 10.554518 10.922665 12.02408 12.72093 13.964317
## 2 1.8325855 12.12242 10.046666 10.041622 11.21231 11.53018 13.653769

```

```

## 3 4.6557048 10.55998 10.411484 6.956027 12.63433 11.06041 10.817967
## 4 0.7774906 8.85799 9.695827 8.970260 12.00628 10.91168 9.890426
## 5 2.0992901 12.48123 10.405244 10.400199 11.57105 11.88895 14.012623
## 6 2.0535692 11.71009 9.363792 9.731656 10.83255 11.52923 12.772452
##      Gng13      Gng2      Gng3      Gng4      Gng5      Gng7      Gng8
## 1 6.813064 12.423965 12.06235 10.420119 10.161053 11.89644 8.518726
## 2 7.269957 12.063020 11.59774 10.697819 9.379926 11.56070 7.973394
## 3 2.400866 12.343496 10.17683 3.253224 10.017650 10.62849 5.682819
## 4 4.681229 9.979719 10.39241 4.687911 9.012660 10.27500 2.490790
## 5 7.626773 12.421825 11.95652 11.056507 9.738327 11.91948 8.331006
## 6 5.637816 11.232326 10.87081 9.229516 8.970722 10.70495 7.331896
##      Gngt2      Gn11      Gn12      Gn13      Gn13l      Gnmt      Gnpat
## 1 9.798054 12.192966 11.361195 11.240053 12.61444 5.0980616 12.387411
## 2 9.505007 12.030725 11.607426 10.709619 12.22828 5.0856914 12.216803
## 3 3.721986 8.034992 10.238359 9.722329 11.61684 3.4388255 9.938522
## 4 9.585640 6.971373 8.115506 7.843326 11.08298 0.3021223 8.187354
## 5 9.863448 12.389528 11.966203 11.068308 12.58710 5.4351685 12.575615
## 6 8.608196 11.001387 10.169930 10.048852 11.42276 3.9602593 11.195781
##      Gnpda1      Gnpda2      Gnpmat1      Gnptab      Gnptg      Gnrh1      Gns
## 1 8.564863 10.605306 8.166813 13.094558 11.71365 5.501480e+00 14.555787
## 2 7.941030 9.952668 8.118243 12.433949 11.24679 5.360534e+00 14.046105
## 3 9.582254 11.007930 8.211903 8.919548 10.63600 2.224763e+00 9.476438
## 4 8.019855 9.633357 6.776384 8.580492 10.52339 5.263179e-08 9.713515
## 5 8.298614 10.311226 8.475976 12.792770 11.60554 5.711646e+00 14.404965
## 6 7.377871 9.414537 6.981402 11.902791 10.52223 4.350661e+00 13.363882
##      Golga1      Golga2      Golga3      Golga4      Golga5      Golga7      Golga7b
## 1 10.534667 12.398653 10.956765 11.719973 10.654603 13.889969 10.026148
## 2 10.472080 11.961885 10.563655 11.659160 10.300254 13.160096 9.584643
## 3 9.416227 8.946956 8.854188 9.199209 7.662658 11.217138 6.490238
## 4 7.101142 7.889849 6.518237 5.974627 6.487388 9.596212 9.808489
## 5 10.830734 12.320685 10.922324 12.017940 10.658881 13.518940 9.943107
## 6 9.343959 11.207020 9.765734 10.528550 9.463794 12.698110 8.835979
##      Golgb1      Golim4      Golm1      Golph3      Golph3l      Golt1b      Gon4l
## 1 11.829825 12.080155 13.39312 12.328143 9.957491 10.695166 11.302912
## 2 11.355834 11.207704 13.07873 11.830608 9.193102 10.202437 10.886198
## 3 10.327875 9.502675 10.50010 9.667807 10.835670 11.466537 8.459714
## 4 8.166644 7.693332 10.85651 8.830512 8.957124 11.210063 4.847916
## 5 11.714591 11.566448 13.43757 12.189400 9.551438 10.561046 11.244909
## 6 10.638361 10.888609 12.20131 11.136527 8.767410 9.504324 10.111678
##      Gopc      Gorab      Gorasp1      Gorasp2      Gosr1      Gosr2      Got1
## 1 10.687900 8.851095 10.740361 12.518488 11.381834 13.167394 12.02197
## 2 10.713958 8.786175 10.386785 12.377790 11.044615 12.545184 11.47110
## 3 7.611781 8.957628 7.881686 9.616778 10.072478 11.087309 10.20013
## 4 6.912000 6.822903 8.130152 9.099015 8.842422 9.777331 11.15790
## 5 11.072648 9.144333 10.745426 12.736609 11.403343 12.904010 11.82987
## 6 9.497064 7.663205 9.549484 11.326827 10.190560 11.975616 10.83044
##      Got1l1      Got2      Gp1ba      Gp1bb      Gp2      Gp49a
## 1 2.592921e+00 11.821648 6.1818160 10.804798 5.422394e+00 6.525593
## 2 2.265738e+00 11.434571 6.2833588 9.912287 4.356440e+00 6.202441
## 3 8.700244e-01 9.653195 2.9556431 3.482657 7.066288e-08 2.853303
## 4 1.188022e-07 8.873232 0.3044874 6.195687 3.703377e-08 0.000000
## 5 2.556909e+00 11.793335 6.6381461 10.270835 4.699700e+00 6.556992
## 6 1.683202e+00 10.630188 5.0156672 9.613873 4.273857e+00 5.354008
##      Gp5      Gp9      Gpaa1      Gpam      Gpamk1      Gpat2      Gpatch1

```



```

## 1 4.093775e+00 9.118931 11.793480 12.942485 9.211676 5.9229516 9.321365
## 2 3.956554e+00 9.964973 10.968843 12.227257 8.374907 5.3942719 8.919484
## 3 4.016193e-08 2.623725 9.535912 7.189407 9.363071 1.6152267 9.122871
## 4 1.900966e-08 3.537150 9.882844 9.188766 8.222310 0.3062805 7.405128
## 5 4.294790e+00 10.323534 11.327563 12.586069 8.732827 5.7455641 9.277706
## 6 3.008364e+00 7.930348 10.602029 11.750742 8.022882 4.7618223 8.132338
##      Gpatch2 Gpatch3 Gpatch4 Gpatch8      Gpbar1      Gbbp1      Gbbp111
## 1 10.392978 9.511790 8.223588 11.593576 1.247740e+00 11.998670 11.195929
## 2 10.351312 9.331977 8.285305 12.024003 1.604497e+00 11.617596 10.749563
## 3 7.773297 5.538078 8.576292 10.457696 7.302923e-01 11.388695 10.247597
## 4 6.426497 3.653656 6.221917 8.065779 6.343357e-08 9.509351 8.577413
## 5 10.709948 9.690362 8.643164 12.382806 1.854817e+00 11.976374 11.108257
## 6 9.202402 8.322398 7.037924 10.402205 6.836966e-01 10.807149 10.004752
##      Gpc1      Gpc2      Gpc3      Gpc4      Gpc5      Gpc6      Gpcpd1
## 1 13.39633 10.196327 7.034138 9.222469 11.114316 10.512482 13.805302
## 2 12.67077 9.955379 6.348467 8.766499 10.537776 10.023921 12.816432
## 3 10.72527 7.376721 8.681985 7.957118 10.010319 9.068172 9.509321
## 4 10.67080 3.590061 8.493263 9.410372 10.108036 7.876920 9.169012
## 5 13.02960 10.313937 6.703435 9.124647 10.896441 10.382494 13.175267
## 6 12.20452 9.005956 5.856525 8.033652 9.923186 9.321794 12.613450
##      Gpd1      Gpd11      Gpd2      Gpha2      Gphb5      Gphn      Gpi1
## 1 13.49305 12.387019 12.32749 1.825377e+00 1.979722e+00 11.162979 13.80453
## 2 13.10665 12.081020 11.90370 1.654475e+00 1.609998e+00 10.850903 13.39755
## 3 12.15642 9.230083 10.83577 1.172879e+00 4.391738e-08 9.885943 11.90632
## 4 9.37011 8.336936 11.33869 7.511842e-08 2.187198e-08 9.004315 11.25827
## 5 13.46550 12.439826 12.26249 1.908627e+00 1.860747e+00 11.209610 13.75640
## 6 12.30123 11.195389 11.13587 1.083998e+00 1.198810e+00 9.971821 12.61267
##      Gpihbp1      Gpkow      Gpld1      Gpm6a      Gpm6b      Gpn1      Gpn2
## 1 5.481232e+00 11.662162 12.069612 14.90079 15.30727 10.662214 10.081045
## 2 5.918877e+00 11.010019 11.892081 14.42712 14.87430 9.903093 8.580850
## 3 6.949833e-08 11.058102 11.824598 15.62152 15.84963 11.216259 6.818192
## 4 2.655511e+00 9.623892 9.343901 15.11082 13.77867 9.655445 5.067572
## 5 6.272486e+00 11.368743 12.250876 14.78598 15.23317 10.261640 8.938898
## 6 4.330986e+00 10.470762 10.878069 13.70887 14.11534 9.471398 8.890809
##      Gpn3      Gpnmb      Gpr1      Gpr101      Gpr107      Gpr108      Gpr110
## 1 9.529727 8.340467 2.342553e+00 4.049536 12.385259 11.63263 2.340418e+00
## 2 9.056292 8.119403 2.635091e+00 3.892135 11.989770 11.03264 2.386277e+00
## 3 10.002057 3.953067 3.861884e-08 1.465265 9.816260 10.72973 8.495752e-08
## 4 7.992241 7.288671 1.664252e-08 2.894543 8.719097 10.20007 3.872389e-08
## 5 9.414573 8.477137 2.941829e+00 4.229422 12.348571 11.39137 2.682991e+00
## 6 8.340303 7.154313 1.480318e+00 2.967313 11.193630 10.44124 1.478617e+00
##      Gpr111      Gpr113      Gpr114      Gpr115      Gpr116      Gpr12      Gpr123
## 1 3.569572 1.543327e+00 6.666326e+00 2.618924 13.646222 6.771556 9.509407
## 2 3.242224 2.043021e+00 7.637307e+00 2.254058 13.251492 6.112437 9.354436
## 3 1.263072 1.076109e+00 1.241312e+00 3.015986 7.762561 4.910012 8.500359
## 4 1.279410 8.644454e-08 6.088710e-08 4.804196 8.110413 8.661640 8.955988
## 5 3.567081 2.322580e+00 7.994586e+00 2.544665 13.610338 6.466709 9.712829
## 6 2.528333 8.825052e-01 5.492858e+00 1.704643 12.454386 5.596794 8.320019
##      Gpr124      Gpr125      Gpr126      Gpr132      Gpr133      Gpr135      Gpr137
## 1 11.462867 11.267639 8.397672 7.556538e+00 4.019300 6.451278 11.912961
## 2 10.801346 10.952047 7.420328 6.571887e+00 3.919799 6.502292 11.685238
## 3 5.297226 9.064194 6.146843 3.464794e+00 5.704750 1.625603 8.980685
## 4 4.257120 8.281896 6.265731 6.752752e-08 1.482984 2.114601 8.440594
## 5 11.160047 11.310765 7.777348 6.927417e+00 4.257499 6.857656 12.044020

```

```

## 6 10.271554 10.076423 7.211291 6.374575e+00 2.939308 5.280762 10.721468
##      Gpr137b  Gpr137c      Gpr139  Gpr143  Gpr146      Gpr149  Gpr15
## 1 10.702661 8.635008 2.910455e+00 4.546692 12.031385 8.489136e+00 7.489388
## 2 10.564558 7.986293 7.847473e-01 3.150046 11.467882 7.393375e+00 7.363000
## 3 7.136725 5.711716 1.000853e-07 5.521700 8.447956 2.025625e+00 3.717463
## 4 6.301065 5.065366 3.306000e+00 4.714263 9.366879 1.093110e-07 2.591827
## 5 10.923227 8.343917 9.462162e-01 3.472630 11.826649 7.750360e+00 7.719945
## 6 9.511813 7.447779 1.949420e+00 3.433385 10.839853 7.302412e+00 6.307902
##      Gpr150      Gpr151      Gpr152  Gpr153  Gpr155  Gpr156
## 1 3.667719 5.346764e+00 2.480804e+00 10.906146 12.877357 7.193687
## 2 4.351312 3.856685e+00 2.260509e+00 9.905648 12.218695 7.476347
## 3 1.243102 3.131246e-01 7.602112e-08 7.207693 9.608828 3.259545
## 4 3.237206 8.873476e-08 3.673046e-08 6.598543 9.794416 4.558337
## 5 4.694516 4.193431e+00 2.551428e+00 10.264195 12.577507 7.833438
## 6 2.617065 4.200526e+00 1.591534e+00 9.715149 11.685625 6.014577
##      Gpr157  Gpr158  Gpr160  Gpr161  Gpr162  Gpr17  Gpr171
## 1 11.374462 9.824353 6.803723 7.9021083 11.845355 16.346425 2.435651
## 2 10.906725 9.551926 6.516369 7.6664675 11.815789 15.911280 3.188442
## 3 5.950475 3.551903 5.202512 2.9308114 3.424957 8.200045 3.850414
## 4 5.797079 8.892073 6.425723 0.5205955 6.433561 11.477907 2.845319
## 5 11.265438 9.910381 6.871767 8.0237791 12.174580 16.270154 3.511991
## 6 10.183191 8.634456 5.628583 6.7180178 10.653886 15.154464 1.554985
##      Gpr173  Gpr176  Gpr179      Gpr18  Gpr180  Gpr182  Gpr183
## 1 9.617109 8.863705 6.261193 5.365797e+00 10.647743 6.634503 12.934550
## 2 8.958954 8.884625 7.038019 3.734961e+00 10.555059 5.323390 12.299819
## 3 5.791210 3.487722 2.554470 7.138619e-08 6.719607 6.584584 8.299232
## 4 3.789308 4.548670 3.511236 4.762828e+00 6.342577 2.483677 10.314423
## 5 9.317193 9.242831 7.394474 4.069742e+00 10.913727 5.674299 12.658635
## 6 8.427535 7.675780 5.093674 4.218969e+00 9.456939 5.461445 11.742809
##      Gpr19  Gpr20  Gpr21  Gpr22  Gpr25  Gpr26  Gpr27
## 1 10.660221 1.8675335 6.396608 6.795148 5.962111 7.543589 7.304420
## 2 10.399325 1.3344462 6.968782 6.854777 6.222719 7.372372 7.781875
## 3 11.383019 2.0348797 3.707576 5.479700 1.950476 2.949116 1.533708
## 4 9.640707 8.2319134 4.451507 10.740561 2.059333 3.299630 2.507240
## 5 10.757968 1.5613880 7.325118 7.210904 6.577330 7.729329 8.139307
## 6 9.469407 1.1150479 5.226914 5.620109 4.800165 6.361717 6.124363
##      Gpr3  Gpr33  Gpr34  Gpr35  Gpr37  Gpr3711  Gpr4
## 1 8.441154e+00 1.981557e-08 11.97567 8.075878 14.06391 14.57185 10.682788
## 2 8.051174e+00 1.213965e-08 11.11800 7.765120 13.25442 13.99845 9.100676
## 3 3.878082e+00 6.019633e-01 8.46358 2.568877 12.08903 13.98554 7.097243
## 4 5.155827e-08 4.234978e+00 13.19454 4.537649 11.62498 14.19503 6.292183
## 5 8.408853e+00 1.556709e-08 11.47674 8.122535 13.61327 14.35731 9.458975
## 6 7.254608e+00 8.777234e-09 10.78415 6.890894 12.87204 13.37995 9.491955
##      Gpr45  Gpr50  Gpr55  Gpr56  Gpr6  Gpr61  Gpr62
## 1 7.312365 2.889700e+00 3.8567689 15.29094 3.345120e+00 8.337878 11.918682
## 2 6.670031 3.314858e+00 3.5915629 15.07790 3.399285e+00 7.150035 10.296510
## 3 2.457025 3.351289e+00 1.9623100 14.00499 5.557190e-01 6.223254 5.464449
## 4 6.022577 5.472396e-08 0.2906378 12.54780 8.849953e-08 5.885719 6.361783
## 5 7.025781 3.641403e+00 3.9238030 15.43677 3.727688e+00 7.506671 10.655136
## 6 6.132243 1.931738e+00 2.7895325 14.09900 2.327685e+00 7.151735 10.727187
##      Gpr63  Gpr64  Gpr65  Gpr68  Gpr75  Gpr82  Gpr83
## 1 6.912420 7.726360 5.455712 5.006417 7.764024 2.750136e+00 7.527920
## 2 6.485845 7.550102 4.340746 4.817671 7.315445 1.539289e+00 6.110362
## 3 1.915439 3.444305 7.478388 5.627861 8.432127 2.716213e+00 2.996687

```

```

## 4 1.946310 4.324567 7.369318 7.102599 7.958605 3.195190e-06 7.116557
## 5 6.841169 7.907282 4.683834 5.165221 7.672324 1.784391e+00 6.464627
## 6 5.736065 6.543289 4.306198 3.872093 6.580723 1.813838e+00 6.346158
##      Gpr84      Gpr85      Gpr87      Gpr88      Gpr89      Gpr97      Gpr98
## 1 12.184561 10.392046 0.8239735 7.502436e+00 10.350856 6.734480 9.272824
## 2 11.561883 9.813552 0.3934696 7.679979e+00 10.324164 6.792683 8.404660
## 3 2.329796 10.366688 2.1393270 2.825652e+00 9.764154 3.247983 9.215381
## 4 8.245633 10.375229 3.0722602 9.107072e-08 7.727367 1.202918 7.396232
## 5 11.920656 10.172077 0.4875437 8.037305e+00 10.682794 7.148689 8.762599
## 6 10.992984 9.201471 0.4224420 6.320855e+00 9.160321 5.560163 8.083898
##      Gprasp1      Gprasp2      Gprc5a      Gprc5b      Gprc5c      Gprc5d      Gprin1
## 1 12.95120 11.704336 5.6113332 13.50529 7.001551 3.774593 10.528523
## 2 13.06785 11.177181 5.1860513 12.68599 6.587290 2.644860 10.594977
## 3 10.71236 9.959977 2.4500154 10.74929 8.330159 5.091093 7.771574
## 4 10.79197 8.936998 0.8635266 10.16869 8.300898 2.528275 7.175176
## 5 13.42670 11.535922 5.5361621 13.04482 6.942855 2.951956 10.953651
## 6 11.75946 10.512919 4.4575382 12.31347 5.824265 2.714323 9.337821
##      Gprin2      Gprin3      Gps1      Gps2      Gpsm1      Gpsm2      Gpsm3
## 1 5.323868 5.696927e+00 10.565633 10.764875 11.801542 10.746327 10.210267
## 2 4.937658 6.053645e+00 10.085273 10.419042 11.761905 10.562949 10.247316
## 3 1.560462 1.998334e+00 9.777355 9.920929 8.196799 9.404530 4.740863
## 4 2.825939 8.037400e-08 8.540633 8.419878 7.159154 7.674003 6.184696
## 5 5.286115 6.407725e+00 10.443859 10.777689 12.120692 10.921618 10.605933
## 6 4.178349 4.540961e+00 9.374899 9.573979 10.610089 9.555445 9.019881
##      Gpt      Gpt2      Gpx1      Gpx2      Gpx3      Gpx4
## 1 10.494628 13.017880 13.92900 2.028201e+00 10.255101 10.285258
## 2 9.301312 12.504802 13.23565 5.074798e-01 9.869091 9.488025
## 3 8.923535 9.596097 12.22142 3.876600e+00 8.937415 9.613784
## 4 8.312629 8.725607 11.90423 1.675290e-08 7.583480 8.567539
## 5 9.659686 12.863626 13.59450 6.234549e-01 10.227630 9.846461
## 6 9.303956 11.826124 12.73714 1.235503e+00 9.064666 9.094791
##      Gpx6      Gpx7      Gpx8      Gramd1a      Gramd1b      Gramd1c
## 1 1.721348e+00 10.115563 9.608194 13.932145 10.550138 8.187009
## 2 1.532124e+00 9.413549 8.703091 13.424943 10.570045 7.634752
## 3 4.908682e-08 10.238060 12.145507 8.555718 7.547847 7.657969
## 4 3.914376e+00 8.925796 10.280773 6.520640 7.621398 6.620615
## 5 1.776637e+00 9.771961 9.061206 13.783793 10.928714 7.992029
## 6 1.008397e+00 8.925286 8.418634 12.740282 9.359417 7.001507
##      Gramd2      Gramd3      Gramd4      Grap      Grap2      Grasp      Grb10
## 1 5.992329e+00 12.198779 11.667539 12.590765 3.5950092 10.518900 11.244195
## 2 5.791541e+00 12.001163 11.482888 12.166394 3.9361508 9.713854 10.338471
## 3 1.983056e+00 8.729819 8.387231 6.911422 0.3358775 4.941933 7.389913
## 4 7.386376e-08 8.051879 7.471298 6.837726 2.2578129 6.114723 6.351448
## 5 6.144663e+00 12.359964 11.841656 12.525203 4.2740911 10.072353 10.697104
## 6 4.829767e+00 11.007198 10.476137 11.399088 2.5512745 9.328206 10.052992
##      Grb14      Grb2      Grb7      Grcc10      Greb1      Greb11      Grem1
## 1 12.20597 13.202569 7.736398 12.48597 8.164485 6.202712 3.629046e+00
## 2 10.90343 12.767927 7.351989 11.84690 6.541092 5.922116 3.018078e+00
## 3 11.27972 10.123292 0.998013 13.10552 3.865562 2.613192 3.235086e-01
## 4 10.05339 8.981248 3.112548 11.97961 2.777906 4.669801 8.125189e-08
## 5 11.26215 13.126760 7.708918 12.20570 6.896550 6.275738 3.337139e+00
## 6 11.01439 12.010786 6.553265 11.29432 6.979086 5.036195 2.582034e+00
##      Grem2      Grhl1      Grhl2      Grhl3      Grhpr      Gria1      Gria2
## 1 9.065583 10.322366 3.665233 4.396548 11.273590 11.55563 14.23301

```

```

## 2 8.784669 9.388164 3.157943 3.948184 10.664156 11.56907 14.04253
## 3 2.512141 7.497542 3.702393 2.746498 9.992177 11.28409 12.09708
## 4 5.646080 7.727939 2.891622 3.646390 9.632650 12.56713 12.60916
## 5 9.142826 9.746568 3.480728 4.286299 11.022839 11.92784 14.40139
## 6 7.877129 9.131860 2.614811 3.291598 10.082371 10.36428 13.04113
##      Gria3      Gria4      Grid1      Grid2      Grid2ip      Grifin      Grik1
## 1 11.673643 11.970231 10.789957 9.515080 8.9038060 2.061467e+00 9.800513
## 2 10.928280 11.629233 10.741988 10.317840 8.2084583 2.550727e+00 10.160058
## 3 6.713505 6.823964 6.187926 4.739020 0.3146119 1.656304e+00 4.586740
## 4 10.248101 7.505704 7.796873 2.560004 0.5950356 2.474179e-08 2.506136
## 5 11.286996 11.988012 11.100681 10.676470 8.5662609 2.854265e+00 10.518659
## 6 10.482239 10.778719 9.599042 8.325682 7.7157700 1.260851e+00 8.610651
##      Grik2      Grik3      Grik4      Grik5      Grin1      Grin2a      Grin2b
## 1 10.776337 11.879322 10.245610 12.920907 11.002746 4.655502 8.363686
## 2 10.620807 11.445897 9.614724 12.533739 10.556926 4.412731 8.395718
## 3 9.056435 4.469201 6.465443 6.909534 5.372572 2.010903 10.605504
## 4 8.458333 5.909765 5.102603 6.558852 8.029811 6.028924 11.642521
## 5 10.979484 11.804662 9.973197 12.892564 10.915593 4.756592 8.753651
## 6 9.585433 10.687841 9.055185 11.729167 9.811685 3.536632 7.177439
##      Grin2c      Grin2d      Grin3a      Grin3b      Grina      Grip1      Grip2
## 1 10.960635 9.128596 10.022812 6.448608 13.72416 9.658703 8.310614
## 2 10.543140 9.611745 10.069721 6.868948 13.19165 9.783484 7.686414
## 3 3.355000 2.689978 1.443270 3.183367 11.27740 5.540007 4.110934
## 4 6.919120 3.700508 4.416790 0.540489 12.27898 4.600478 5.464188
## 5 10.901806 9.970217 10.428303 7.225102 13.55049 10.142002 8.043747
## 6 9.769601 7.939991 8.832647 5.278132 12.53232 8.469060 7.124582
##      Gripap1      Grk1      Grk4      Grk5      Grk6      Grm1      Grm2
## 1 11.541527 1.166373e+00 7.691122 9.702324 11.742468 7.870540 9.874175
## 2 11.401292 1.955363e+00 7.786503 9.670360 11.625144 8.291515 9.634909
## 3 9.641674 6.131329e-08 5.353427 4.886366 7.519532 3.771322 5.929389
## 4 7.875950 2.414269e-08 2.694781 4.834780 5.821464 8.259427 9.326402
## 5 11.760053 2.229808e+00 8.143940 10.028848 11.983922 8.649378 9.993387
## 6 10.350179 6.313097e-01 6.508271 8.512611 10.551037 6.686623 8.684208
##      Grm3      Grm4      Grm5      Grm6      Grm7      Grm8      Grn
## 1 12.60973 7.469531e+00 11.710687 3.270991e+00 8.097809 5.607451 15.19885
## 2 11.84406 6.829355e+00 11.939652 3.744434e+00 7.661251 5.576630 14.72436
## 3 11.75395 1.260925e-07 6.920741 2.247603e-01 5.678026 1.762398 11.95409
## 4 11.59462 8.943470e-01 10.881536 9.846637e-08 7.577314 5.413759 12.70173
## 5 12.20285 7.185433e+00 12.298450 4.079375e+00 8.018557 5.928825 15.08322
## 6 11.41805 6.288190e+00 10.519268 2.262163e+00 6.912720 4.453758 14.00691
##      Grp      Grpel1      Grpel2      Grpr      Grrp1      Grsf1      Grtp1
## 1 6.303253 11.51655 10.281781 3.515133 8.5055843 11.38162 9.536136
## 2 6.304854 10.81404 10.361792 3.436517 8.0658638 11.49001 9.416439
## 3 4.315852 12.19903 10.074484 4.131278 0.6317795 9.51079 8.516050
## 4 9.529357 10.87398 7.439754 1.020586 2.0873044 7.97609 5.381082
## 5 6.659702 11.17275 10.720429 3.765704 8.4235546 11.84878 9.774853
## 6 5.135037 10.32521 9.091318 2.479368 7.3188008 10.19034 8.346700
##      Grwd1      Grxcr2      Gsc      Gsc2      Gsdma      Gsdmc
## 1 9.726324 1.699912e+00 1.877167e+00 2.774839e+00 1.0622928 3.193640e-08
## 2 9.823634 2.494844e+00 1.625301e+00 1.283674e+00 0.9102062 2.569672e-08
## 3 9.308297 1.542285e+00 4.332890e-08 7.090367e-08 3.0433226 2.822231e+00
## 4 7.178784 5.015173e-08 2.111326e-08 3.494168e-08 3.7915369 3.187357e+00
## 5 10.182162 2.796154e+00 1.877234e+00 1.505663e+00 1.0891733 3.295178e-08
## 6 8.536574 9.930030e-01 1.122176e+00 1.834578e+00 0.5658194 1.414612e-08

```

##	Gsdmc4	Gsdmd	Gse1	Gsg1	Gsg11	Gsg2	Gsk3a
## 1	3.429441e+00	11.141612	12.068704	5.539774	9.700445	6.1726385	12.201924
## 2	2.916613e+00	11.027813	11.577716	6.337297	10.379732	6.4686773	11.679558
## 3	5.363712e-08	7.242559	9.758197	2.609691	4.749391	4.6230923	8.064066
## 4	2.688396e-08	5.302838	7.854638	3.705353	4.979092	0.7905298	6.965310
## 5	3.232730e+00	11.386540	11.936491	6.692235	10.738372	6.8239585	12.038339
## 6	2.402675e+00	9.950466	10.877161	4.387893	8.510735	5.0066530	11.010343
##	Gsk3b	Gsn	Gspt1	Gspt2	Gsr	Gss	Gsta2
## 1	13.08344	16.93365	12.580184	8.868742	10.590783	11.749484	2.659688e-08
## 2	12.46123	16.01073	12.600779	8.541181	10.062463	11.524646	1.268489e-08
## 3	14.00012	13.16451	9.756526	6.298327	8.862979	10.464350	1.811009e+00
## 4	12.30108	12.43489	8.161130	6.110683	7.796027	7.729989	3.040775e+00
## 5	12.82005	16.36961	12.959607	8.899205	10.421044	11.883417	1.626627e-08
## 6	11.89167	15.74169	11.388510	7.680803	9.400026	10.558051	1.178099e-08
##	Gstcd	Gstk1	Gstm4	Gstm5	Gstm7	Gsto1	Gsto2
## 1	8.823789	9.576101	8.905984	12.56790	11.91183	10.140000	7.607936
## 2	9.536393	8.821203	8.242774	11.79116	11.20515	9.634086	6.492194
## 3	3.227492	10.388320	8.664898	14.37894	11.32729	9.622957	7.551384
## 4	3.397515	9.485710	6.848437	13.85388	10.02475	9.029540	2.821908
## 5	9.894843	9.179378	8.600602	12.14995	11.56389	9.992564	6.847534
## 6	7.635978	8.386596	7.717942	11.37622	10.72034	8.949693	6.425624
##	Gstp1	Gstp2	Gstt2	Gstz1	Gsx1	Gsx2	Gtdc1
## 1	11.85212	1.914650	9.373344	11.285347	8.239211e+00	4.914010e+00	10.560207
## 2	10.96243	1.959655	8.663939	10.512408	8.247138e+00	5.548095e+00	9.497220
## 3	12.01668	3.406253	8.748280	11.095268	1.291113e-07	1.818198e+00	9.328132
## 4	10.96903	3.086531	5.943042	9.924834	8.741901e-01	5.834581e-08	8.215343
## 5	11.32115	2.234358	9.022033	10.871070	8.604969e+00	5.900156e+00	9.855659
## 6	10.66064	1.150028	8.184213	10.094122	7.053479e+00	3.783415e+00	9.369476
##	Gtf2a1	Gtf2a1l	Gtf2a2	Gtf2b	Gtf2e1	Gtf2e2	Gtf2f1
## 1	10.420325	9.735625e-01	10.716669	10.955923	10.335721	10.220553	11.601710
## 2	9.652117	2.091034e+00	10.016496	10.099236	9.463740	9.388749	11.257392
## 3	11.199433	1.176437e+00	11.811597	10.810807	9.584616	10.609923	10.970577
## 4	10.381686	8.389417e-08	9.828326	9.730437	8.999116	9.650356	8.495107
## 5	10.010601	2.373258e+00	10.375068	10.457825	9.822168	9.747153	11.616141
## 6	9.229722	5.113570e-01	9.525810	9.764892	9.145201	9.030156	10.410336
##	Gtf2f2	Gtf2h1	Gtf2h2	Gtf2h3	Gtf2h4	Gtf2h5	Gtf2i
## 1	10.371584	11.936056	10.492095	9.734604	8.754848	11.56915	14.117115
## 2	9.913497	10.846562	9.766776	9.398499	8.757532	10.85474	13.937533
## 3	10.772135	8.277062	9.985835	10.385512	9.838838	12.44303	11.312507
## 4	8.993140	8.459307	8.452384	7.996204	7.224590	11.17936	9.657111
## 5	10.272046	11.205268	10.125290	9.756907	9.115675	11.21344	14.296392
## 6	9.181029	10.744555	9.301425	8.544841	7.567241	10.37779	12.925238
##	Gtf2ird1	Gtf2ird2	Gtf3a	Gtf3c1	Gtf3c2	Gtf3c3	Gtf3c4
## 1	10.956068	9.877600	9.105745	12.913037	12.476489	9.532245	11.811234
## 2	10.546543	10.054038	8.227931	12.511639	12.303814	9.670538	11.437399
## 3	7.697259	6.824117	3.228457	9.896048	10.796470	8.623773	8.796227
## 4	6.084576	5.140501	1.085772	8.696446	8.886436	6.803103	6.971374
## 5	10.905209	10.412618	8.585748	12.870464	12.662630	10.029026	11.796163
## 6	9.765037	8.687627	7.917194	11.721298	11.284838	8.342817	10.619777
##	Gtf3c5	Gtf3c6	Gtl3	Gtpbp1	Gtpbp10	Gtpbp2	Gtpbp3
## 1	10.909974	9.762171	11.82213	11.970132	8.361508	12.220247	9.741532
## 2	10.552890	9.261357	11.10362	11.575081	7.698829	11.453813	9.909524
## 3	10.150313	10.983192	10.14624	9.301099	8.472363	8.456419	5.015189
## 4	6.963106	9.592221	8.12488	6.409194	7.227873	6.931896	4.043208

```

## 5 10.911557 9.619717 11.46235 11.933856 8.056176 11.812579 10.268072
## 6 9.718974 8.572366 10.63067 10.778620 7.175269 11.028660 8.551759
##      Gtpbp4      Gtpbp6      Gtpbp8      Gtse1      Gtsf1l      Guca1a      Guca1b
## 1 10.887094 9.3424971 8.256191 8.052734 0.05861320 5.833904 1.444252e+00
## 2 9.978098 9.1425843 8.284351 7.134741 0.48475018 5.742265 1.804896e+00
## 3 10.746488 4.2558310 8.689007 9.005748 4.04702800 2.972305 9.351568e-01
## 4 9.884874 0.8101479 6.503309 7.572690 1.84026870 5.270934 7.919229e-08
## 5 10.336661 9.5009001 8.642209 7.491353 0.59652179 6.095187 2.069756e+00
## 6 9.696110 8.1534271 7.070386 6.867863 0.02625144 4.674716 8.144139e-01
##      Guca2a      Gucy1a2      Gucy1a3      Gucy1b3      Gucy2c      Gucy2e      Gucy2f
## 1 2.061578e+00 10.008655 10.877261 11.050335 2.0288158 5.394525 8.772825
## 2 2.266150e+00 9.674222 10.512281 10.722143 2.8029314 5.087703 8.870328
## 3 7.376971e-08 7.628563 7.871825 9.788621 1.1621591 5.263793 5.042851
## 4 3.368168e-08 7.023793 8.916358 9.602645 0.3085217 6.193574 3.511212
## 5 2.557340e+00 10.032711 10.870942 11.080834 3.1154869 5.437193 9.228527
## 6 1.260936e+00 8.818508 9.686283 9.859244 1.2359701 4.246821 7.585164
##      Guf1      Guk1      Gulp1      Gusb      Gxylt1      Gxylt2      Gyg
## 1 10.883727 11.795802 8.155660 12.784197 10.757717 4.358956e+00 12.14113
## 2 10.107522 11.027624 8.787049 12.510496 10.271791 4.011496e+00 11.44065
## 3 7.883956 10.252482 6.730061 10.134169 7.772057 2.084954e+00 10.92388
## 4 6.667137 9.628593 3.212632 9.013199 7.209234 6.329296e-08 10.61605
## 5 10.466112 11.386351 9.145207 12.869321 10.630413 4.350509e+00 11.79941
## 6 9.692745 10.604351 6.970301 11.592481 9.566827 3.256229e+00 10.94956
##      Gyk      Gylt1b      Gypa      Gypc      Gys1      Gzf1      Gzma
## 1 10.070077 4.700823 4.5611334 6.515420 10.270529 10.853341 3.997053
## 2 9.561714 4.170112 4.2147029 6.311114 10.099149 10.032377 2.664403
## 3 8.629149 3.925346 0.2721787 8.158836 9.222463 9.860016 4.691458
## 4 9.031149 2.604699 5.3938591 6.600020 7.890981 8.866473 6.149907
## 5 9.920172 4.511206 4.5563412 6.665979 10.457738 10.390952 2.972208
## 6 8.879854 3.579750 3.4470653 5.343978 9.080077 9.662381 2.918729
##      Gzmb      Gzmm      H13      H1f0      H1foo      H1fx
## 1 3.376532e+00 4.968158 13.049356 13.618266 1.907175e+00 10.094268
## 2 2.209566e+00 5.466519 12.201029 12.871357 2.609022e+00 9.156334
## 3 4.207502e-08 3.847211 9.860898 10.666594 4.021714e-08 5.698124
## 4 2.177426e-08 3.874035 9.497858 8.857422 1.568626e-08 4.799351
## 5 2.497983e+00 5.818183 12.559840 13.230193 2.914792e+00 9.514655
## 6 2.355564e+00 3.835350 11.857595 12.426433 1.144459e+00 8.904015
##      H2afj      H2afv      H2afx      H2afy      H2afy2      H2afz      H3f3b
## 1 11.583473 11.475426 10.526148 12.59365 10.450478 9.558100 15.15225
## 2 11.084735 10.736409 10.203388 11.91744 10.071112 8.874007 14.40449
## 3 7.538893 12.090563 8.150906 11.92409 7.702853 10.757065 15.10691
## 4 6.685521 9.206440 5.833323 9.69836 3.178039 9.077960 12.65526
## 5 11.443468 11.095101 10.561997 12.27623 10.429695 9.232207 14.76336
## 6 10.392107 10.284107 9.335448 11.40197 9.259847 8.368626 13.96032
##      H6pd      Haao      Habp4      Hace1      Hac1l      Hadh      Hadha
## 1 9.759745 4.781168e+00 11.040740 10.075177 9.672767 12.70903 13.44371
## 2 9.167010 4.769393e+00 10.861397 9.923214 8.975708 12.01966 12.84208
## 3 6.993054 2.730462e+00 6.372468 6.908835 10.287386 12.19042 11.85380
## 4 7.269595 1.014492e-07 6.264380 6.327454 9.131247 10.29784 10.53091
## 5 9.525336 5.116556e+00 11.220105 10.281765 9.333955 12.37846 13.20092
## 6 8.569944 3.656348e+00 9.849654 8.884948 8.483102 11.51733 12.25189
##      Hadhb      Hagh      Hagh1      Hal      Hamp      Hamp2
## 1 9.657929 11.494194 10.781185 2.258200 1.094614e+00 4.166342e+00
## 2 9.249176 10.719420 10.625229 1.689163 2.248005e+00 2.968603e+00

```

```

## 3 10.014023 10.655438 9.986016 4.436611 8.672131e-08 2.556530e+00
## 4 9.151630 10.697185 8.267060 5.536017 3.348863e-08 5.425557e-08
## 5 9.607532 11.078110 10.983906 1.945891 2.538319e+00 3.286255e+00
## 6 8.468287 10.302867 9.590277 1.413493 5.859724e-01 3.075895e+00
##      Hao1      Hap1      Hapln1      Hapln2      Hapln3      Hapln4      Harbi1
## 1 4.148454e+00 11.393938 11.945563 11.272501 9.084095 7.012018 7.702323
## 2 3.280851e+00 11.614195 11.362891 10.784843 9.300458 6.886107 7.484468
## 3 8.067385e-08 6.456668 9.429038 5.547341 7.713529 3.082946 8.634273
## 4 4.155159e-08 5.968426 9.379046 2.231957 6.183347 5.001975 4.900244
## 5 3.606617e+00 11.972973 11.721649 11.143541 9.658832 7.242293 7.841569
## 6 3.059227e+00 10.202658 10.754059 10.081283 7.895595 5.834626 6.519400
##      Hars      Hars2      Has1      Has2      Has3      Hat1      Haus1
## 1 11.75074 10.375602 4.596142e+00 7.577842 6.633293 10.039457 8.977055
## 2 11.21152 10.635782 3.666571e+00 8.120760 6.214382 9.603432 7.973909
## 3 11.76819 9.283318 2.425210e+00 2.661493 3.364318 10.887967 10.564515
## 4 10.49801 7.380058 6.444953e-08 4.130411 3.813642 8.536967 8.998156
## 5 11.57027 10.994461 4.000173e+00 8.478495 6.568969 9.961902 8.331521
## 6 10.55931 9.185043 3.480258e+00 6.395733 5.460251 8.849271 7.788824
##      Haus2      Haus3      Haus4      Haus5      Haus6      Haus7      Haus8
## 1 10.064901 9.077200 8.007910 8.672634 9.025736 10.132265 9.328118
## 2 9.724350 8.190191 7.975975 8.294537 8.214646 10.064878 9.183401
## 3 10.175760 9.382371 6.918392 9.039673 7.937050 10.084475 9.604100
## 4 7.077555 6.466315 2.823900 5.214756 4.277331 7.304611 5.141711
## 5 10.082853 8.547980 8.333590 8.652402 8.572453 10.423460 9.541732
## 6 8.874684 7.888718 6.823263 7.485283 7.837381 8.941968 8.139077
##      Havcr1      Havcr2      Hax1      Hbegf      Hbp1      Hbq1a      Hbq1b
## 1 1.839084e+00 9.824531 9.496442 12.206422 12.30859 3.673532 3.101097
## 2 1.323110e+00 10.349986 9.115475 11.948487 11.65767 1.882611 4.301583
## 3 3.511471e-08 3.692306 8.986799 7.115439 12.00034 2.012763 0.000000
## 4 1.791839e-08 7.951696 7.095957 8.185179 10.35334 4.067381 3.203015
## 5 1.548962e+00 10.708621 9.473780 12.307286 12.01645 2.152554 4.644234
## 6 1.094068e+00 8.634634 8.307077 11.014839 11.11698 2.622339 2.113514
##      Hbs1l      Hc      Hccs      Hcfc1      Hcfc1r1      Hcfc2      Hck
## 1 11.352590 4.2573562 11.651024 12.841072 11.282432 9.744498 12.107066
## 2 10.853877 4.4881577 10.824230 12.597567 10.678589 9.638889 11.541923
## 3 11.117658 2.4463268 9.644579 10.656396 12.103935 8.768479 4.677463
## 4 8.918205 0.2872134 9.049525 8.711489 10.512691 7.406394 8.769572
## 5 11.212584 4.8327872 11.182933 12.956394 11.037274 9.997368 11.900695
## 6 10.161330 3.1609162 10.459629 11.649347 10.091208 8.554720 10.915511
##      Hcls1      Hcn1      Hcn2      Hcn3      Hcn4      Hcrt
## 1 12.440568 7.526463 12.720235 9.310588 10.048863 1.189130e+00
## 2 12.736178 6.896362 12.111901 9.237171 8.066291 1.697141e+00
## 3 4.893436 7.391496 3.180697 6.622895 1.477785 1.317426e+00
## 4 6.975959 5.721965 3.133864 3.405214 2.656321 8.367508e-08
## 5 13.095010 7.252567 12.470708 9.595522 8.423982 1.954452e+00
## 6 11.248925 6.344712 11.528532 8.121584 8.858666 6.458574e-01
##      Hcrtr1      Hcrtr2      Hcst      Hdac1      Hdac10      Hdac11      Hdac2
## 1 5.790379e+00 4.187365e+00 6.332518 8.734604 10.157313 12.84329 12.148500
## 2 5.391711e+00 2.715771e+00 6.482478 8.040310 9.582349 12.14781 11.445514
## 3 4.316690e-08 7.556055e-08 3.816296 7.875911 9.699537 10.60913 10.664528
## 4 2.116875e-08 3.866526e-08 4.684689 6.347419 6.531178 10.08950 8.560708
## 5 5.742990e+00 3.025393e+00 6.837793 8.397979 9.940813 12.50662 11.804279
## 6 4.632182e+00 3.095503e+00 5.163828 7.547058 8.966986 11.65157 10.956933
##      Hdac3      Hdac4      Hdac5      Hdac6      Hdac7      Hdac8      Hdac9

```

```

## 1 12.355755 9.593876 13.575106 11.385996 11.371090 9.197137 9.432116
## 2 11.650959 9.280508 13.126792 11.216822 11.386829 9.279400 9.355841
## 3 10.717885 9.006594 8.769061 9.746837 6.730441 8.765477 9.975387
## 4 9.743323 7.971276 6.190163 8.053946 6.080636 6.549277 6.395295
## 5 12.009739 9.638876 13.485635 11.575567 11.745589 9.637767 9.714234
## 6 11.164132 8.404340 12.383278 10.194720 10.179821 8.008375 8.242870
##      Hdc      Hddc2      Hddc3      Hdgrfp2      Hdgrfp3      Hdhd2      Hdhd3
## 1 7.170167 9.323015 10.604773 11.764182 11.761157 12.33011 8.742154
## 2 6.432679 8.948676 10.322534 11.817852 11.497175 11.70292 7.930536
## 3 7.097716 9.123900 10.469381 9.405754 10.116105 11.88900 9.264336
## 4 4.535804 7.719188 7.764815 6.400895 7.532932 10.83356 8.918444
## 5 6.787869 9.306911 10.681164 12.176643 11.855944 12.06170 8.288110
## 6 5.991267 8.133984 9.414005 10.572743 10.569719 11.13849 7.554585
##      Hdldbp      Hdx      Heatr1      Heatr2      Heatr3      Heatr5a      Heatr5b
## 1 13.738095 6.914029 10.657744 9.954524 11.940747 11.932664 10.789925
## 2 13.657331 6.484778 10.836792 9.316231 10.987594 11.371175 10.910001
## 3 10.931500 6.741699 8.423819 6.605087 9.278404 7.620531 8.384173
## 4 9.278781 1.022500 7.132361 1.916330 8.164436 6.963325 6.935878
## 5 14.016185 6.840099 11.195497 9.674610 11.346316 11.729934 11.268715
## 6 12.546250 5.737657 9.466932 8.764448 10.749245 10.741164 9.599011
##      Heatr6      Heb1p      Heb2p      Heca      Hec1d1      Hec1d2      Hec1d3
## 1 10.424109 12.176386 6.710207 11.054887 12.621725 9.285627 11.834597
## 2 10.295767 11.114651 6.319775 10.799863 12.245770 9.492036 11.435102
## 3 10.035118 9.340618 6.721873 6.556146 9.975399 4.919002 7.702027
## 4 7.306876 9.387575 6.451485 6.281895 8.939645 3.196447 6.822736
## 5 10.654393 11.473387 6.674665 11.158563 12.604584 9.850473 11.793865
## 6 9.233503 10.984811 5.536188 9.863793 11.430042 8.096674 10.643132
##      Hecw1      Hecw2      Heg1      Helb      Hells      Helq      Helt
## 1 9.002409 9.914763 11.572518 8.704014 8.525390 9.360070 3.0889977
## 2 8.478905 9.389624 10.764614 8.322832 8.402542 9.308992 1.6615958
## 3 10.594136 5.718447 6.929014 5.940176 7.982197 5.715621 3.2781241
## 4 9.677029 4.494142 7.154410 3.899810 3.205940 3.400858 0.9210541
## 5 8.836891 9.748028 11.123310 8.680717 8.760481 9.667369 1.9162818
## 6 7.814113 8.724740 10.381156 7.516563 7.338536 8.170965 2.1030119
##      Helz      Hemk1      Hepacam      Hepacam2      Heph      Heph11      Herc1
## 1 10.412636 9.818754 13.49614 2.4389936 9.029847 2.155143 12.417943
## 2 10.329578 9.679337 12.84481 2.9531468 8.574908 1.975551 12.295266
## 3 7.746741 9.150090 10.73778 1.9269990 5.529132 2.130197 9.820618
## 4 5.874859 7.958788 10.33828 0.3561623 7.221293 2.080355 9.302821
## 5 10.688210 10.037828 13.20364 3.2703483 8.932953 2.251203 12.654081
## 6 9.222040 8.628865 12.30432 1.5576835 7.841481 1.332958 11.226306
##      Herc2      Herc3      Herc4      Herc6      Herpud1      Herpud2      Hes1
## 1 13.103054 10.306139 10.766362 8.474032 13.86369 11.934624 11.971075
## 2 12.993460 10.486746 10.605214 8.996316 13.00174 11.321616 11.190780
## 3 9.385579 8.247623 8.484734 7.991795 11.60092 8.983344 9.791997
## 4 9.473849 7.631423 7.550836 5.540600 11.54842 8.500204 9.603647
## 5 13.352300 10.845403 10.963889 9.354572 13.36058 11.680371 11.549523
## 6 11.911286 9.115650 9.575465 7.287363 12.67183 10.743124 10.779563
##      Hes3      Hes5      Hes6      Hes7      Hexa      Hexb
## 1 3.272310e+00 12.574498 10.420908 5.165620e+00 14.43632 16.357636
## 2 3.364188e+00 11.565941 10.101121 4.792021e+00 13.88888 15.773583
## 3 6.969207e-08 7.627977 8.860249 7.628401e-08 11.21286 9.423903
## 4 3.156033e-08 6.041757 4.719612 3.731315e-08 11.59589 13.959273
## 5 3.691832e+00 11.924715 10.459710 5.139367e+00 14.24774 16.132456

```



```

## 6 2.263325e+00 11.382825 9.230305 4.025386e+00 13.24442 15.165675
##      Hexdc      Hexim1      Hexim2      Hey1      Hey2      Heyl      Hfe
## 1 10.140297 12.081700 7.801993 12.332116 9.165598 8.957213 11.192519
## 2 10.146830 11.754913 7.485566 11.834399 8.643393 8.534025 10.512203
## 3 7.195327 8.595317 8.648884 7.397461 5.291567 9.096517 8.109246
## 4 1.654027 7.109799 6.644617 6.369777 6.402952 7.725199 8.887601
## 5 10.505428 12.113699 7.842668 12.193191 9.001476 8.892046 10.870864
## 6 8.949990 10.890153 6.618468 11.140499 7.976908 7.769034 10.001344
##      Hfm1      Hgd      Hgf      Hgfac      Hgs      Hgsnat
## 1 4.573822 2.017817e+00 9.686642e+00 3.342538e+00 12.054833 11.060799
## 2 4.310983 2.839953e+00 9.298995e+00 3.624266e+00 11.961049 10.560013
## 3 4.822263 6.686685e-01 3.303161e-08 1.876416e+00 10.292405 8.286491
## 4 1.640954 5.677388e-08 1.612429e-08 1.169048e-07 8.182345 8.470403
## 5 4.653741 3.153700e+00 9.657369e+00 3.957108e+00 12.319848 10.918681
## 6 3.459091 1.227618e+00 8.496954e+00 2.325396e+00 10.863294 9.869701
##      Hhat      Hhat1      Hhex      Hhip      Hhip1l      Hiat1      Hiat1l
## 1 7.411903 7.991068 9.396979 11.624171 8.828214 12.696099 12.18662
## 2 6.691442 7.105438 9.926215 10.644044 7.846995 12.217741 11.39877
## 3 6.071376 7.206703 3.993448 9.080475 2.067122 8.785187 10.04786
## 4 2.057590 9.658221 4.432234 6.496683 1.080362 8.600939 10.35656
## 5 7.047238 7.462004 10.284767 11.002724 8.204491 12.576553 11.75753
## 6 6.230993 6.806506 8.207801 10.432787 7.640390 11.504400 10.99504
##      Hibadh      Hibch      Hic1      Hic2      Hif1a      Hif1an      Hif3a
## 1 11.709199 9.873859 9.031883 9.747074 12.965050 11.401981 8.135074
## 2 11.006470 9.452798 7.972857 9.838847 12.649923 11.116086 7.746547
## 3 9.633606 9.613303 3.401456 7.223568 10.570839 8.728932 6.828506
## 4 9.536601 6.369044 3.702664 4.847503 8.497498 5.883147 5.833606
## 5 11.365194 9.811223 8.330468 10.197378 13.008753 11.474821 8.103943
## 6 10.517781 8.683892 7.843513 8.557292 11.773303 10.210697 6.949809
##      Higd1a      Higd1b      Higd2a      Hilpda      Hinfp      Hint1      Hint2
## 1 10.237538 8.971151 12.21598 12.014698 9.261646 12.81228 10.231528
## 2 9.704020 8.024939 11.42695 10.978546 9.593623 12.11108 9.344322
## 3 9.719512 10.400800 11.88533 10.229642 7.110627 13.54795 8.908455
## 4 8.703690 9.827938 11.23754 8.552201 4.838389 12.26557 8.790326
## 5 10.062517 8.382596 11.78572 11.337268 9.952090 12.46988 9.702711
## 6 9.047122 7.782935 11.02439 10.823172 8.072744 11.62056 9.041118
##      Hint3      Hip1      Hip1r      Hipk1      Hipk2      Hipk3      Hipk4
## 1 9.383955 13.373112 13.609770 13.001406 11.852036 12.086187 5.683821
## 2 8.581994 13.131245 13.380471 12.306925 11.665534 11.786513 5.740349
## 3 8.507465 9.856742 8.031253 10.492172 8.552652 8.997844 4.563247
## 4 7.756396 8.825544 5.503543 9.979572 7.306804 8.724204 6.623128
## 5 8.940042 13.490088 13.739321 12.665741 12.024315 12.145302 6.093263
## 6 8.194802 12.181307 12.417938 11.809653 10.660565 10.894638 4.528180
##      Hira      Hirip3      Hist1h1a      Hist1h1b      Hist1h1c      Hist1h1d      Hist1h1e
## 1 11.793091 9.464415 4.142530 3.109083 12.494143 5.8234594 8.688647
## 2 11.190697 9.100860 4.117760 2.949633 12.009427 6.0724821 7.134174
## 3 7.613915 8.644741 5.538156 8.541321 10.165678 4.2888438 7.382659
## 4 6.756923 4.317652 1.261101 4.396497 8.360144 0.7246003 6.281460
## 5 11.549440 9.459160 4.458192 3.266731 12.368229 6.4266244 7.490786
## 6 10.601641 8.275109 3.053710 2.120453 11.302487 4.6645063 7.501245
##      Hist1h2ac      Hist1h2ad      Hist1h2bb      Hist1h2bc      Hist1h2bh      Hist1h2bm
## 1 5.962184 4.497232e+00 2.107304 11.369524 2.689994 1.945207e+00
## 2 5.261775 3.287288e+00 2.659304 10.659264 2.070314 1.510772e+00
## 3 6.701336 9.365835e-08 1.382352 12.241503 2.439040 3.662727e+00

```

```

## 4 1.257976 3.309058e-01 0.000000 10.722286 0.277091 8.739508e-08
## 5 5.612336 3.613203e+00 2.966925 11.017947 2.351399 1.753510e+00
## 6 4.800237 3.386588e+00 1.296001 10.178255 1.763583 1.172868e+00
##      Hist1h3a      Hist1h3i Hist1h4c      Hist1h4f Hist1h4i      Hist1h4n
## 1 2.831322e+00 3.005985e+00 3.314277 1.026546e+00 7.874020 4.536232e+00
## 2 2.413406e+00 3.058832e+00 2.367739 8.221758e-02 7.692753 1.883174e+00
## 3 5.521037e-01 5.914139e-01 3.478747 1.374592e+00 7.390363 4.233751e-01
## 4 4.894417e-08 6.764199e-08 3.702970 5.698784e-08 5.168529 5.936598e-08
## 5 2.711302e+00 3.379016e+00 2.663632 1.046052e-01 8.050093 2.153153e+00
## 6 1.882209e+00 2.031273e+00 2.300376 5.437256e-01 6.690084 3.423481e+00
##      Hist2h2ab      Hist2h2ac Hist2h2bb Hist2h2be Hist2h3c1 Hist3h2a
## 1 3.243075e+00 4.074762e+00 4.1786743 7.385184 8.418910 9.922694
## 2 2.121790e+00 4.085846e+00 3.4460216 7.665174 8.552160 9.430398
## 3 3.793712e-08 3.181164e-01 5.0314913 8.233870 6.079666 11.717720
## 4 1.934300e-08 5.578385e-08 0.3537182 3.355176 6.100388 9.329364
## 5 2.405672e+00 4.425863e+00 3.7754057 8.022485 8.910191 9.788815
## 6 2.237590e+00 2.990710e+00 3.0873948 6.204480 7.232448 8.732660
##      Hist3h2ba Hist4h4      Hivep1      Hivep2      Hivep3      Hjurp      Hk1
## 1 10.459290 3.666376 12.199233 11.172660 10.623420 5.990973 12.582198
## 2 9.607744 1.830922 11.712182 11.307458 10.728560 5.567589 12.476021
## 3 10.199043 4.824069 8.006458 6.894432 7.567939 6.508232 10.865650
## 4 8.295786 4.075395 5.915917 8.318367 5.099706 1.554587 9.937921
## 5 9.966214 2.097517 12.070966 11.666211 11.087251 5.919742 12.834844
## 6 9.268651 2.615847 11.007652 9.981496 9.432636 4.828438 11.390523
##      Hk2      Hk3      Hkdc1      Hlcs      Hlf      Hltf      Hlx
## 1 12.598158 11.958533 5.9795315 9.272774 10.686942 10.572376 9.777215
## 2 12.200894 11.346835 5.2819521 9.409881 10.160258 9.548217 9.719873
## 3 8.433125 6.450172 4.5899549 7.207635 9.837457 9.447312 2.231610
## 4 9.739972 7.085987 0.5549939 4.629607 10.414410 9.179662 1.545677
## 5 12.559705 11.705592 5.6326283 9.768292 10.518859 9.906671 10.078374
## 6 11.406479 10.767025 4.8172287 8.083848 9.496107 9.381635 8.587387
##      Hmbox1      Hmbs      Hmcn1      Hmg20a      Hmg20b      Hmga1      Hmga2
## 1 11.116589 10.323653 11.980618 11.804720 11.846297 5.740369e+00 4.602322
## 2 10.548348 10.074482 11.644020 11.452612 10.598095 5.313828e+00 5.190889
## 3 6.906247 8.560984 2.724496 11.148807 7.096691 4.133819e-08 2.677006
## 4 4.927746 6.051116 3.033590 8.755632 7.317750 2.036910e-08 1.134986
## 5 10.907014 10.433066 12.002800 11.811378 10.956769 5.664684e+00 5.541029
## 6 9.925458 9.133146 10.789103 10.613265 10.654828 4.583349e+00 3.486121
##      Hmgb1      Hmgb2      Hmgb3      Hmgc1      Hmgcl11      Hmgcr      Hmgcs2
## 1 10.481645 10.339209 10.032654 11.45404 8.513168 14.42159 12.407912
## 2 9.836248 9.731662 9.552891 11.05929 7.914501 13.99785 11.732386
## 3 10.966732 11.102507 9.906785 11.35635 8.969548 11.67295 9.627741
## 4 9.714108 6.930776 5.341275 9.63007 6.354513 10.79634 9.220647
## 5 10.194778 10.090167 9.911347 11.41802 8.272060 14.35671 12.091171
## 6 9.290985 9.148686 8.842477 10.26273 7.326358 13.22969 11.216276
##      Hmgn1      Hmgn2      Hmgn3      Hmgn5      Hmgxb3      Hmgxb4      Hmha1
## 1 12.179913 8.743729 11.36202 9.561011 11.759500 9.898941 13.085893
## 2 11.482525 8.026613 10.83049 9.351860 11.658285 9.998275 12.610513
## 3 10.572547 12.931486 11.64825 9.891043 7.881708 9.100092 4.414052
## 4 8.333818 8.953603 10.18775 6.614612 7.673131 7.259915 5.575809
## 5 11.841292 8.384271 11.18919 9.710252 12.017065 10.356843 12.969341
## 6 10.988337 7.556156 10.17075 8.371532 10.568062 8.708940 11.894127
##      Hmnr      Hmox1      Hmox2      Hn1      Hn11      Hnf1a      Hnmt
## 1 8.400182 13.325073 11.91523 12.04119 10.785679 3.630473 8.709168

```

```

## 2 7.280819 12.654255 11.21537 11.46390 10.883446 2.794107 8.116108
## 3 10.084206 8.556075 11.41192 14.14634 10.440887 3.491313 9.545511
## 4 5.579652 9.204180 10.34637 11.14930 7.397972 2.397023 9.345103
## 5 7.637649 13.013084 11.57411 11.82266 11.242156 3.106374 8.473840
## 6 7.213792 12.133273 10.72374 10.84966 9.594768 2.583324 7.521701
## Hnrnpa0 Hnrnpa1 Hnrnpa2b1 Hnrnpa3 Hnrnpab Hnrnpc Hnrnpd
## 1 13.22905 7.125256 14.91208 10.947579 13.720878 13.75659 12.507083
## 2 12.40809 6.955818 14.58585 10.792044 13.200542 13.15276 11.869438
## 3 12.35790 5.812300 13.87756 8.024489 11.465482 13.29158 10.546863
## 4 10.84991 1.887696 11.35937 6.171047 9.118043 11.17684 9.086959
## 5 12.76691 7.312131 14.94472 11.150744 13.559387 13.51160 12.228232
## 6 12.03727 5.946768 13.72016 9.756554 12.529035 12.56475 11.315425
## Hnrnpf HnrnpH1 HnrnpH2 HnrnpH3 HnrnpI HnrnpM HnrnpR
## 1 12.331522 13.614895 11.716143 8.723089 14.15911 12.451874 11.839746
## 2 11.560196 13.163933 11.344377 8.199620 13.35613 12.197607 11.418165
## 3 10.115188 11.816368 10.968513 7.477876 12.26781 11.801258 11.048662
## 4 8.883768 8.984999 9.323317 3.410219 11.24513 9.131775 8.833588
## 5 11.918969 13.522778 11.703134 8.557416 13.71498 12.556418 11.776927
## 6 11.139906 12.423062 10.524722 7.535579 12.96723 11.260228 10.648279
## HnrnpU HnrnpU1 HnrnpU2 Hoga1 Homer1 Homer2 Homer3
## 1 14.26819 13.061901 13.078442 6.9376153 10.851693 10.269785 10.699249
## 2 13.82188 12.810418 12.897164 6.5578410 10.486090 10.075489 10.481731
## 3 13.06756 8.258087 8.404269 5.1025830 8.147888 8.467048 6.368603
## 4 11.31503 6.978183 7.496188 0.2963182 6.826392 5.948667 3.645197
## 5 14.18074 13.169253 13.256001 6.9133380 10.844747 10.434073 10.840388
## 6 13.07630 11.870139 11.886677 5.7609913 9.660734 9.079335 9.508403
## Homez Hook1 Hook2 Hook3 Hopx Hormad2 Hoxb3
## 1 8.408648 9.389870 8.822363 12.389124 9.833767 1.055870e+00 0.7219984
## 2 6.964125 9.658369 9.017016 11.741741 9.364547 1.828504e+00 0.5845180
## 3 7.195279 4.338181 5.891557 10.250782 11.269747 1.811812e+00 1.2409347
## 4 7.337159 4.613287 5.287696 9.252044 7.809674 1.069394e-07 2.1406432
## 5 7.320453 10.016854 9.375281 12.100527 9.722943 2.094939e+00 0.7141725
## 6 7.222225 8.200706 7.634555 11.197493 8.643856 5.618348e-01 0.3639470
## Hoxb4 Hoxd1 Hoxd8 Hp Hp1bp3 Hpca Hpcal1
## 1 3.715208 3.131353e+00 2.5589435 5.489623e+00 13.20511 10.124780 9.829638
## 2 2.971174 3.336806e+00 1.1830854 5.575649e+00 12.99827 10.111980 9.456886
## 3 0.797977 7.061145e-08 0.6248806 1.559515e+00 11.95359 8.872743 8.092148
## 4 1.173403 3.047907e-08 0.4797388 5.850160e-08 9.88400 10.136575 7.156107
## 5 3.288900 3.663845e+00 1.3946761 5.927840e+00 13.35711 10.470571 9.815312
## 6 2.660201 2.139826e+00 1.6552862 4.339138e+00 12.01333 8.934491 8.639734
## Hpcal4 Hpd1 Hpgd Hpgds Hpn Hprt
## 1 11.298453 4.824149e+00 7.953431 10.328030 7.296312e+00 11.89728
## 2 11.965590 5.110454e+00 7.113227 9.368641 7.282256e+00 11.17616
## 3 8.145049 3.985094e+00 8.129582 7.804928 1.883454e+00 11.51814
## 4 10.448221 5.656131e-08 10.342788 10.218190 6.996734e-08 11.66098
## 5 12.324389 5.460092e+00 7.469805 9.727038 7.639089e+00 11.53490
## 6 10.107221 3.697405e+00 6.769065 9.137519 6.116322e+00 10.70579
## Hps1 Hps3 Hps4 Hps5 Hps6 Hpse Hpx
## 1 9.877809 10.402227 11.785036 11.314766 8.040103 5.485871 3.775301
## 2 9.149103 10.332906 11.809950 11.385213 8.258923 4.835947 4.098325
## 3 8.708454 7.174138 8.600395 9.066413 4.901136 1.953397 1.647865
## 4 5.690559 7.522514 7.752960 6.324317 3.823495 2.286299 4.659117
## 5 9.507421 10.691538 12.168740 11.743973 8.616762 5.183641 4.438506
## 6 8.687836 9.211642 10.593588 10.123526 6.855294 4.335493 2.714970

```

##	Hr	Hrasls	Hrc	Hrh1	Hrh2	Hrh3	Hrh4
## 1	12.108736	7.7556767	5.4957156	8.965758	6.645476	7.165319	2.326411e+00
## 2	11.576515	7.6731730	5.2376929	8.741117	6.817862	7.687663	2.841365e+00
## 3	6.720768	4.5895539	3.6310947	4.996104	2.154839	1.425618	4.696429e-08
## 4	6.209461	0.8875406	0.6969188	6.878787	2.358475	5.844771	1.928642e-08
## 5	11.935289	8.0304919	5.5881129	9.099252	7.173917	8.044998	3.155157e+00
## 6	10.917181	6.5724266	4.3450585	7.777556	5.472276	5.986463	1.467468e+00
##	Hrk	Hrnrr	Hrsp12	Hs1bp3	Hs2st1	Hs3st1	
## 1	8.799270	2.031213e-08	9.435372	10.336785	11.965029	11.383762	
## 2	8.757606	1.436649e-08	8.895232	10.100899	11.693719	10.240032	
## 3	8.092693	5.805467e+00	11.898757	8.638542	9.196977	9.836733	
## 4	7.620210	6.798606e+00	10.709802	7.916863	8.535229	9.787316	
## 5	9.115749	1.842264e-08	9.253442	10.459488	12.052502	10.598647	
## 6	7.611531	8.997185e-09	8.246121	9.146265	10.773518	10.192486	
##	Hs3st2	Hs3st3a1	Hs3st3b1	Hs3st4	Hs3st5	Hs3st6	
## 1	8.181149e+00	4.4222338	6.739016	8.360496	7.339845e+00	2.5006810	
## 2	7.651304e+00	3.2061307	6.633843	8.183214	7.940521e+00	2.6354696	
## 3	6.060610e-01	6.8079337	2.623942	3.081276	4.899922e-01	2.5683270	
## 4	1.107418e-07	0.7984015	3.033268	4.048445	9.028486e-08	0.8562487	
## 5	8.008599e+00	3.5301155	6.989514	8.540997	8.298104e+00	2.9422216	
## 6	6.995673e+00	3.3157954	5.564644	7.174262	6.159500e+00	1.6076917	
##	Hs6st1	Hs6st2	Hs6st3	Hsbp1	Hsbp111	Hscb	Hsd11b1
## 1	12.244610	8.468544	8.1701660	13.57073	2.685326	9.095638	9.187164
## 2	12.255575	8.801566	7.1601721	12.88548	2.517005	7.960172	8.246287
## 3	7.432223	4.091904	0.7465838	14.00904	3.129682	9.242649	9.822447
## 4	7.562862	2.834207	0.5115905	12.82531	1.878025	7.594707	12.033008
## 5	12.614389	9.159732	7.5168242	13.24432	2.819210	8.317772	8.604118
## 6	11.053016	7.281896	6.9847403	12.37890	1.759697	7.907111	7.998425
##	Hsd11b2	Hsd17b1	Hsd17b10	Hsd17b11	Hsd17b12	Hsd17b14	Hsd17b4
## 1	3.909292e+00	4.198539e+00	11.38841	12.614506	13.41666	2.643866	12.70355
## 2	3.815513e+00	4.222437e+00	10.64366	11.955009	12.91010	1.785632	12.41250
## 3	2.908982e-01	1.577215e+00	12.00354	8.437423	12.41602	5.237728	11.75161
## 4	1.222372e-07	6.383977e-08	10.74044	8.263411	11.24452	2.137442	10.25455
## 5	4.151613e+00	4.564168e+00	11.00234	12.313807	13.26894	2.049187	12.77132
## 6	2.837788e+00	3.105932e+00	10.19713	11.422825	12.22485	1.725272	11.51185
##	Hsd17b7	Hsd3b2	Hsd3b3	Hsd3b7	Hsd11	Hsd12	Hsf1
## 1	12.018307	1.953722e+00	3.480242	10.873631	11.865928	11.163864	11.310846
## 2	10.922183	2.099878e+00	3.017903	10.012278	10.970729	10.939954	10.809461
## 3	9.719852	6.441374e-08	2.834882	10.270976	10.707440	10.212944	8.623770
## 4	9.410498	2.921813e-08	2.729517	9.961481	8.960128	8.753635	7.105179
## 5	11.280898	2.382582e+00	3.336958	10.370849	11.329449	11.298671	11.168162
## 6	10.826779	1.179253e+00	2.448084	9.682656	10.674451	9.972706	10.119607
##	Hsf2	Hsf2bp	Hsf4	Hsf5	Hsh2d	Hsp90aa1	Hsp90ab1
## 1	11.136302	4.5425864	6.124228	3.7248121	2.261319e+00	12.88879	16.54126
## 2	10.417678	5.7281824	6.487478	3.6589833	2.705211e+00	12.40964	16.24782
## 3	10.904022	0.8349205	2.146792	5.0648116	4.038912e-08	12.39007	15.23947
## 4	8.689234	0.2519471	2.551048	0.3079194	1.716860e-08	10.76425	13.88470
## 5	10.776325	6.0810454	6.842806	3.9924502	3.014464e+00	12.76846	16.60669
## 6	9.945160	3.4294975	4.959121	2.6689413	1.415949e+00	11.69705	15.34930
##	Hsp90b1	Hspa12a	Hspa12b	Hspa13	Hspa14	Hspa1a	Hspa1b
## 1	14.79980	10.562386	11.232710	11.85474	11.261738	14.492986	14.274412
## 2	14.48317	10.201191	10.456703	11.23594	10.748932	14.187156	14.018446
## 3	13.05707	9.162534	4.947291	11.20639	10.777293	6.676826	5.801521
## 4	12.23423	7.174315	5.876200	10.11384	9.652304	7.666748	5.690906

```

## 5 14.84204 10.559800 10.815356 11.59468 11.107626 14.546018 14.377306
## 6 13.60788 9.371654 10.041513 10.66327 10.070525 13.301084 13.082524
##      Hspa11      Hspa2      Hspa4      Hspa4l      Hspa5      Hspa8      Hspa9
## 1 7.459555 10.823819 13.484525 10.645529 16.15768 12.41542 13.334141
## 2 7.335947 10.339497 12.687915 10.576632 15.64847 12.09698 13.084551
## 3 5.061592 12.696319 9.773612 9.720012 13.84649 13.20296 10.615454
## 4 1.483987 11.663197 9.687645 8.385292 13.19942 11.78782 9.273653
## 5 7.692855 10.698130 13.046746 10.935302 16.00734 12.45579 13.443393
## 6 6.278287 9.632879 12.292706 9.454727 14.96572 11.22378 12.142341
##      Hspb1      Hspb1l      Hspb2      Hspb3      Hspb6      Hspb7      Hspb8
## 1 10.596952 8.882471 6.280820 7.659090e+00 8.169993 3.371376 9.331402
## 2 9.735582 8.127634 4.700381 7.711816e+00 8.329014 1.470815 8.507884
## 3 4.891333 9.668656 5.066353 9.080444e-01 8.889392 1.827962 10.168506
## 4 5.942476 8.545425 7.988864 9.381583e-08 6.598054 3.003201 8.232151
## 5 10.094088 8.485374 5.046968 8.069176e+00 8.686903 1.710155 8.865888
## 6 9.406190 7.694493 5.112973 6.476442e+00 6.984568 2.350983 8.142355
##      Hspb9      Hspbap1      Hspbpl      Hspd1      Hspe1      Hspg2      Hsph1
## 1 5.349811e+00 7.255396 11.066292 11.754799 10.902583 13.490084 12.97380
## 2 4.380541e+00 6.993727 10.703618 11.480907 10.248381 12.625707 12.69911
## 3 6.846281e-08 8.545755 10.407575 11.501612 11.145976 6.362629 10.95088
## 4 3.377776e-01 6.678133 8.598191 9.210864 9.620497 7.016239 10.52008
## 5 4.724061e+00 7.350107 11.062307 11.839674 10.606999 12.984536 13.05794
## 6 4.203479e+00 6.075750 9.875191 10.563363 9.711588 12.298265 11.78205
##      Htati2      Htatsf1      Htr1a      Htr1b      Htr1d      Htr1f
## 1 8.134250 11.611351 5.555327 2.688444e+00 6.199398 4.479500e+00
## 2 7.524844 10.908212 5.934531 1.360467e+00 4.442638 4.071544e+00
## 3 5.617424 9.999793 3.714339 6.450108e-08 1.038936 4.534457e-08
## 4 6.163182 9.418877 6.699811 3.250208e-08 0.285155 2.231640e-08
## 5 7.881994 11.266925 6.288198 1.589874e+00 4.786808 4.411372e+00
## 6 6.948989 10.419972 4.403022 1.762293e+00 5.032939 3.369832e+00
##      Htr2a      Htr2b      Htr2c      Htr3a      Htr3b      Htr4
## 1 7.528849e+00 4.879452e+00 6.493707 5.985898e+00 2.526440e+00 3.330227
## 2 6.822724e+00 3.724592e+00 6.177784 6.228013e+00 3.019036e+00 3.899834
## 3 4.667952e-08 2.309734e+00 1.788579 4.069156e+00 5.596559e-08 3.275890
## 4 2.385304e-08 7.492134e-08 1.729622 1.004809e-07 2.256040e-08 5.159342
## 5 7.178789e+00 4.059198e+00 6.532260 6.582640e+00 3.338123e+00 4.237237
## 6 6.347080e+00 3.750310e+00 5.322574 4.823466e+00 1.628691e+00 2.314489
##      Htr5a      Htr6      Htr7      Htra1      Htra2      Htra3      Htra4
## 1 6.405605 4.264573e+00 6.098506 13.99978 11.060848 12.302780 2.138157
## 2 7.521615 4.083339e+00 6.394199 13.27216 10.071077 11.483710 2.496015
## 3 3.330805 1.071519e+00 1.572653 10.74530 7.923984 8.949266 2.601545
## 4 4.477127 5.826667e-08 1.946198 12.64876 7.092120 8.651184 4.476581
## 5 7.878761 4.423323e+00 6.749289 13.63100 10.429660 11.842478 2.797373
## 6 5.235774 3.167672e+00 4.933878 12.80791 9.869750 11.111171 1.319804
##      Htt      Hunk      Hus1      Hus1b      Huwe1      Hvcn1      Hyal1
## 1 12.575224 10.251366 10.422673 2.777754e+00 13.797790 12.095229 8.887085
## 2 12.497834 10.163431 10.209272 3.428511e+00 13.617871 11.855006 8.370004
## 3 8.093766 7.904295 8.652198 6.591051e-01 10.663603 5.149051 9.360932
## 4 7.526213 6.540695 5.663212 7.968818e-08 8.926586 8.008651 6.890021
## 5 12.856657 10.522032 10.567882 3.757531e+00 13.976725 12.213799 8.727920
## 6 11.383550 9.060935 9.232068 1.837029e+00 12.605939 10.903678 7.699095
##      Hyal2      Hyal3      Hydin      Hyi      Hyls1      Hyou1      I830012016Rik
## 1 9.790185 5.915825 5.5270171 9.889966 7.341334 13.053154 4.191160
## 2 9.410947 6.495983 6.1171116 8.688166 6.757583 12.671633 3.257688

```

```

## 3 10.465449 5.272430 5.6628261 3.361801 7.311927 9.401755 8.675152
## 4 8.074340 3.821188 0.9329723 6.427162 1.997401 8.329123 3.720247
## 5 9.769358 6.851332 6.4713984 9.046273 7.113518 13.030463 3.582912
## 6 8.600339 4.754846 4.3754863 8.699976 6.160977 11.861393 3.099044
## I830077J02Rik Iah1 Iars Iars2 Ibsp Ibtck Ica1
## 1 7.118163 9.970451 11.783680 11.473607 2.087057 10.557819 9.581614
## 2 6.496615 9.271086 11.060869 10.920301 3.512583 10.246110 9.447433
## 3 1.931017 10.482378 10.604530 8.351215 3.839847 9.009708 8.554391
## 4 5.765527 8.684658 8.773852 8.017128 2.352684 7.415995 8.810874
## 5 6.851965 9.629450 11.419599 11.279016 3.843310 10.604727 9.805856
## 6 5.939742 8.780354 10.592234 10.282289 1.280443 9.367091 8.392100
## Ica11 Icam1 Icam2 Icam4 Icam5 Ick Icmt
## 1 9.187586 14.761782 12.044632 4.560832 9.079858 12.581063 12.310382
## 2 9.784529 14.522827 10.798898 3.928952 8.896073 12.205476 12.164936
## 3 5.484051 6.877074 6.259529 2.300745 3.424939 9.494695 7.004071
## 4 5.500937 7.975044 9.346044 4.957516 8.079168 8.073357 7.425231
## 5 10.143047 14.881692 11.157598 4.266787 9.254283 12.564288 12.523746
## 6 7.998846 13.569867 10.853097 3.446780 7.891369 11.389389 11.118771
## Icos Icos1 Ict1 Id1 Id2 Id3 Id4
## 1 5.582745 11.820100 10.732758 10.889805 14.07014 12.08461 10.430093
## 2 4.675282 11.576373 10.043353 9.823035 13.26433 11.15890 9.821724
## 3 2.787978 10.043200 11.325044 9.755862 14.44905 11.60129 10.530251
## 4 0.503937 9.064963 9.931904 10.192088 13.33414 12.48895 9.477612
## 5 5.021653 11.935147 10.401930 10.181563 13.62317 11.51764 10.180251
## 6 4.429703 10.628640 9.541887 9.698819 12.87827 10.89306 9.239481
## Ide Idh1 Idh2 Idh3a Idh3b Idh3g Idi1
## 1 12.053949 13.51735 12.423425 12.14645 12.51757 12.45820 10.542202
## 2 11.669459 12.56134 11.671956 11.78546 12.04132 11.78163 9.872119
## 3 9.876581 13.07986 9.963688 12.24285 11.54917 12.63775 6.560586
## 4 8.422148 11.40698 7.318839 11.73825 10.74928 11.45300 5.549339
## 5 12.028240 12.92017 12.030737 12.14425 12.40013 12.14041 10.230658
## 6 10.862410 12.32553 11.231786 10.95488 11.32591 11.26655 9.351487
## Ido1 Ido2 Ids Idua Ier2 Ier3 Ier3ip1
## 1 1.721119e+00 4.758177 13.013837 10.271672 14.507404 13.478796 10.884572
## 2 1.386335e+00 4.498880 12.580461 9.591871 14.099692 13.105554 10.253023
## 3 3.496822e-08 2.678479 9.372863 10.461366 7.996887 8.903114 11.867569
## 4 1.738916e-08 1.392569 9.629507 9.035432 7.225692 8.895975 11.217821
## 5 1.618146e+00 4.843615 12.939288 9.950338 14.458553 13.464397 10.611641
## 6 1.008232e+00 3.634409 11.822082 9.081219 13.315501 12.286978 9.693590
## Ier5 Ier5l Iffo1 Iffo2 Ifi204 Ifi2712a Ifi2712b
## 1 14.884190 9.635051 12.479297 11.191971 2.521037 5.541121 1.3359117
## 2 13.957418 9.258396 12.035181 10.511301 2.168902 4.467729 0.7263088
## 3 10.251392 1.574330 7.652647 7.535024 4.967289 6.751178 0.9499469
## 4 7.350809 1.704159 6.387544 6.810957 1.134143 7.184804 2.1236805
## 5 14.316277 9.616755 12.393984 10.869962 2.455254 4.812154 0.8790138
## 6 13.692269 8.445446 11.287645 10.000796 1.624281 4.389203 0.7416224
## Ifi30 Ifi35 Ifi44 Ifih1 Ifit1 Ifit2 Ifit3
## 1 10.426238 10.129988 6.837668 7.751398 4.418942 8.729552 5.312707
## 2 10.240047 8.852254 4.443904 7.574899 3.402178 8.595654 4.985701
## 3 7.605810 8.185315 4.842582 6.218886 8.486085 9.427813 8.876410
## 4 6.906923 7.764624 6.032274 2.467164 8.666261 6.291364 4.363911
## 5 10.598663 9.210445 4.788087 7.932108 3.730643 8.953710 5.334501
## 6 9.235629 8.939694 5.662139 6.568174 3.312693 7.542022 4.167544
## Ifitm1 Ifitm2 Ifitm3 Ifitm5 Ifitm7 Ifltd1

```

```

## 1 6.981367 10.102980 10.185293 2.081429e+00 5.025590e+00 5.367063e+00
## 2 6.145906 9.326929 9.341672 2.238160e+00 3.657056e+00 5.356774e+00
## 3 9.046347 11.034369 10.981462 3.255816e-01 3.687950e+00 5.269121e-01
## 4 7.838760 10.150220 11.276907 9.415207e-08 1.245972e-07 4.930093e-08
## 5 6.500284 9.685313 9.700060 2.527993e+00 3.990489e+00 5.707866e+00
## 6 5.804287 8.912717 8.994935 1.276127e+00 3.890520e+00 4.220197e+00
##      Ifnar1      Ifnar2      Ifnb1      Ifng      Ifngr1      Ifngr2
## 1 13.349364 12.061276 4.625635e+00 2.405381e+00 12.22547 11.775560
## 2 13.105243 11.666169 3.529565e+00 8.820735e-01 11.66054 11.308514
## 3 10.748618 8.445560 3.958124e-08 1.478524e+00 10.58559 9.352541
## 4 9.295965 8.600373 2.076777e-08 1.108084e-07 11.99153 9.625379
## 5 13.464085 12.024950 3.860624e+00 1.057266e+00 12.01932 11.667267
## 6 12.157562 10.869735 3.508253e+00 1.530605e+00 11.03388 10.584116
##      Ifnk      Ifrd1      Ifrd2      Ift122      Ift140      Ift172      Ift20
## 1 1.059209e+00 13.841623 8.568297 10.461010 11.192744 11.205664 10.882820
## 2 5.649400e-01 12.778552 8.187760 9.973679 11.044857 10.514365 10.203762
## 3 3.375650e+00 8.335905 8.000005 9.853941 9.441391 9.473076 10.592350
## 4 5.475974e-08 7.489060 5.188050 9.237107 7.637594 8.379708 9.944987
## 5 6.911990e-01 13.137385 8.545547 10.332242 11.403585 10.873026 10.562371
## 6 5.639053e-01 12.649768 7.381293 9.270369 10.001569 10.014482 9.691838
##      Ift27      Ift46      Ift52      Ift57      Ift74      Ift80      Ift81
## 1 9.856934 12.091126 10.444671 9.879030 9.499585 9.698485 9.546432
## 2 9.249796 11.479716 9.924482 9.669786 9.191800 9.482175 9.229868
## 3 11.431831 12.088567 10.665319 8.256538 10.365129 9.275875 10.329561
## 4 9.751160 9.986603 8.892003 7.080852 7.595051 6.541839 6.766476
## 5 9.608152 11.838483 10.283034 10.028274 9.550135 9.840609 9.588217
## 6 8.666990 10.899576 9.254045 8.689056 8.310214 8.508778 8.356979
##      Ift88      Igbp1      Igdcc3      Igdcc4      Igf1      Igf1r      Igf2
## 1 9.092224 11.94457 7.100026 11.903812 9.252250 12.395117 11.287211
## 2 9.187312 11.19887 7.168435 11.569327 8.282323 11.872294 10.695525
## 3 8.232940 10.71007 7.576807 9.962819 9.029502 11.072270 10.819548
## 4 5.620945 9.32322 5.270779 8.563172 5.883936 9.536738 7.375181
## 5 9.545645 11.55761 7.525099 11.928102 8.640179 12.231088 11.054212
## 6 7.903705 10.75307 5.921775 10.712322 8.063368 11.203484 10.095985
##      Igf2bp1      Igf2bp2      Igf2bp3      Igf2r      Igfals      Igfbp1      Igfbp2
## 1 4.624513 7.236834 8.183600 11.377597 2.8559682 3.378413e+00 12.832608
## 2 3.227518 6.602493 7.833731 10.983603 2.9728000 3.544687e+00 12.032018
## 3 2.308328 2.330204 6.676111 9.152706 2.6540155 8.057058e-08 8.491210
## 4 1.471051 2.995829 5.076351 8.545480 0.9647873 3.537486e-08 9.119495
## 5 3.552022 6.958093 8.191215 11.342324 3.2905732 3.876039e+00 12.390821
## 6 3.507187 6.057346 6.998114 10.186325 1.9030829 2.357236e+00 11.640884
##      Igfbp3      Igfbp4      Igfbp5      Igfbp6      Igfbp7      Igfbp11      Igfn1
## 1 10.082077 13.331948 11.329517 5.670600 13.319081 9.881498 2.579595e+00
## 2 10.434570 12.479545 11.507957 5.083017 12.466841 9.057882 3.556576e+00
## 3 2.548407 6.537811 9.424558 5.021419 6.481681 11.040310 7.985779e-08
## 4 5.508609 7.862911 10.063739 7.680471 7.621993 4.363329 2.901703e+00
## 5 10.793219 12.838368 11.866727 5.432477 12.825664 9.416164 3.888156e+00
## 6 8.891839 12.140148 10.138269 4.515289 12.127283 8.691521 1.672239e+00
##      Ighmbp2      Igj      Iglon5      Igsf1      Igsf10      Igsf11      Igsf21
## 1 9.385458 3.106783e+00 10.843874 9.696687 9.468062 10.932339 10.789898
## 2 9.392277 2.775826e+00 10.115970 9.153525 9.132658 10.334018 11.058947
## 3 6.481500 3.325082e+00 5.087618 6.236345 7.776010 10.144302 6.897904
## 4 3.435863 1.205608e-07 1.481324 8.797682 5.772170 9.641888 5.969624
## 5 9.750682 3.087489e+00 10.474562 9.511845 9.490970 10.692650 11.417677

```

```

## 6 8.196302 2.118454e+00 9.652920 8.506984 8.278749 9.741324 9.598984
##      Igsf3      Igsf5      Igsf6      Igsf8      Igsf9      Igsf9b      Igtp
## 1 10.701310 9.024147 8.358927 14.083041 9.356263 10.230041 8.306390
## 2 10.151805 7.941944 8.073897 13.434551 8.529297 9.503904 7.485148
## 3 12.387435 5.990174 7.033414 10.961991 8.277309 1.157820 8.867825
## 4 10.935482 6.789557 8.053794 9.619785 5.177003 4.101780 7.017588
## 5 10.510404 8.299528 8.431594 13.793401 8.887314 9.862344 7.842250
## 6 9.510464 7.835796 7.172699 12.891167 8.167165 9.039633 7.120375
##      Ihh      Ik      Ikbip      Ikbkap      Ikbkb      Ikbke      Ikbkg
## 1 2.567517e+00 12.043695 10.274901 11.26408 11.540357 7.425978 11.036559
## 2 3.208527e+00 11.736046 9.460628 11.00324 11.330023 7.344880 10.543548
## 3 2.263104e+00 11.448624 9.762576 10.36663 9.550155 4.164050 10.156082
## 4 1.092974e-07 9.533478 9.368385 8.93053 8.092460 3.301021 8.944553
## 5 3.532570e+00 12.094832 9.819055 11.36196 11.688778 7.701800 10.902214
## 6 1.662319e+00 10.852160 9.084445 10.07287 10.349008 6.244961 9.845477
##      Ikzf1      Ikzf2      Ikzf3      Ikzf4      Ikzf5      Il10      Il10ra
## 1 11.038173 8.572327 3.725391e+00 7.778648 10.639931 4.4498462 13.304206
## 2 10.814722 7.796330 4.445327e+00 7.570361 10.190010 2.9913306 13.242948
## 3 4.782714 8.869398 1.494073e+00 6.926012 10.173201 0.2493774 6.937229
## 4 7.715620 7.316034 4.110660e-07 3.699866 8.476185 0.8418250 8.872532
## 5 11.173424 8.153776 4.789525e+00 7.927565 10.548617 3.3096358 13.601794
## 6 9.847090 7.385309 2.669468e+00 6.595261 9.449134 3.3418355 12.112409
##      Il10rb      Il11      Il11ra1      Il12a      Il12b      Il12rb1      Il12rb2
## 1 11.429596 4.921790e+00 11.438915 3.507896 8.563579e+00 7.799652 5.974892
## 2 10.686970 4.655688e+00 10.657222 3.671926 6.676113e+00 7.790239 5.296201
## 3 8.585831 3.103422e+00 9.471952 6.859568 1.464182e+00 5.049515 3.625283
## 4 9.668837 1.038042e-07 8.514389 2.626754 1.053727e-07 3.025780 4.211037
## 5 11.045656 5.001887e+00 11.015904 4.005622 7.031877e+00 8.147680 5.646958
## 6 10.238299 3.790872e+00 10.247613 2.472873 7.376591e+00 6.616141 4.812683
##      Il13ra1      Il13ra2      Il15      Il15ra      Il16      Il17b      Il17c
## 1 10.494882 1.9958043 7.328255 8.116604 9.651448 4.437886 4.669107e+00
## 2 10.233748 1.0777408 6.446502 7.468573 9.265377 3.432732 4.125784e+00
## 3 7.089713 5.6948386 6.214020 5.490754 6.960770 4.604111 4.909897e-08
## 4 8.067504 1.0151290 7.103503 5.398408 9.579604 4.571193 2.460596e-08
## 5 10.592363 1.2775471 6.801728 7.825654 9.623739 3.761840 4.466319e+00
## 6 9.304210 1.2109496 6.148004 6.931426 8.461817 3.330552 3.549568e+00
##      Il17d      Il17ra      Il17rb      Il17rc      Il17rd      Il17re      Il18
## 1 8.703828 12.127763 6.507999 8.186257 10.165508 3.884473 11.39523
## 2 8.921576 10.878202 5.438303 7.401862 10.583793 3.374684 10.45065
## 3 4.001422 5.857246 7.474962 4.769218 5.095058 1.853182 11.18699
## 4 4.543169 7.490144 6.053050 2.901547 4.562961 3.419158 10.48007
## 5 9.279799 11.236912 5.789824 7.758858 10.942465 3.702557 10.80931
## 6 7.516378 10.936202 5.336662 7.000759 8.975173 2.814968 10.20395
##      Il18bp      Il18r1      Il18rap      Il19      Il1a      Il1b
## 1 7.728539 1.145859e+00 3.598336e+00 2.166115e+00 12.464721 9.924047
## 2 8.063505 1.158417e+00 2.532749e+00 1.515742e+00 12.225061 8.354509
## 3 5.516935 1.385274e+00 4.988958e-08 4.602625e-08 3.429687 3.518586
## 4 3.891426 5.660562e-08 2.594799e-08 2.351638e-08 7.600784 5.254238
## 5 8.421194 1.367333e+00 2.835580e+00 1.758896e+00 12.583873 8.712416
## 6 6.545454 6.182657e-01 2.554277e+00 1.341473e+00 11.273072 8.734011
##      Il1f5      Il1f9      Il1r1      Il1r2      Il1rap      Il1rapl1      Il1rapl2
## 1 2.813970e-08 1.0107046 9.542667 6.746105 12.577522 7.080775 4.1746672
## 2 1.775631e-08 0.6617631 8.987295 6.012732 12.547248 6.663717 3.6938546
## 3 4.757277e+00 2.3950784 6.813858 3.642101 9.340072 6.057821 0.7388496

```



```

## 4 5.752258e+00 2.9976442 9.799903 5.255146 10.306105 6.314198 0.2894905
## 5 2.276952e-08 0.8043007 9.345547 6.366674 12.906074 7.019453 4.0279334
## 6 1.246438e-08 0.5340001 8.353220 5.571647 11.385848 5.902708 3.0836575
##      Il1r1l1  Il1r1l2  Il1rn  Il20rb      Il21      Il21r  Il22ra1
## 1 6.017499e+00 6.875094 6.299119 7.152323 2.149229e+00 11.053221 1.3267355
## 2 5.501075e+00 6.874147 5.944855 6.649011 1.607079e+00 11.124114 0.9866952
## 3 2.915239e+00 3.044133 2.991454 4.024846 4.625607e-08 3.617594 2.8974118
## 4 6.986500e-08 3.230404 2.447515 5.199816 2.349372e-08 7.068384 3.6616928
## 5 5.852909e+00 7.230310 6.298558 7.004715 1.857601e+00 11.482851 1.1755143
## 6 4.854434e+00 5.699146 5.130970 5.973585 1.328375e+00 9.862128 0.7355384
##      Il23a      Il25      Il27  Il27ra      Il2ra      Il2rb
## 1 10.5570026 4.0236309 5.949882e+00 7.534172 2.1191087 4.866917e+00
## 2 8.4426100 4.0377563 4.445204e+00 8.009824 1.3882384 5.426626e+00
## 3 5.3477725 2.5533367 5.717607e-08 3.551897 4.8168409 1.336612e+00
## 4 0.4785761 0.3259162 3.880057e+00 2.139257 0.2699944 1.188617e-07
## 5 8.8005739 4.3771300 4.789401e+00 8.367468 1.6202240 5.778087e+00
## 6 9.3662752 2.9433163 4.788189e+00 6.352366 1.3050951 3.738311e+00
##      Il2rg  Il31ra  Il33  Il34  Il3ra      Il4      Il4i1
## 1 10.649774 2.3488313 8.509956 8.945810 8.000628 2.211160e+00 4.464590e+00
## 2 10.131852 3.1729454 7.509373 7.978852 7.526594 1.575054e+00 4.926160e+00
## 3 6.301367 2.7257171 9.467435 8.615283 4.379229 1.735303e+00 1.008059e+00
## 4 6.809933 0.3096064 7.229439 7.958264 1.668886 9.968257e-08 8.974126e-08
## 5 10.490447 3.4961083 7.866504 8.336469 7.883745 1.823049e+00 5.274534e+00
## 6 9.458968 1.4853235 7.323156 7.757661 6.816018 1.376579e+00 3.355752e+00
##      Il4ra      Il5      Il6      Il6ra  Il6st      Il7
## 1 12.845868 8.762683e-01 3.475499 11.115146 12.845602 2.883670e+00
## 2 12.209613 2.342988e+00 4.599865 11.029227 12.492089 2.040981e+00
## 3 7.088061 2.056802e+00 1.908090 4.445695 9.347584 8.043575e-08
## 4 9.270988 6.425058e-08 2.984562 4.868700 9.014552 4.170331e-08
## 5 12.568425 2.637766e+00 4.945561 11.387954 12.850913 2.320424e+00
## 6 11.654141 4.531081e-01 2.443838 9.924015 11.653875 1.926608e+00
##      Il7r  Illdr1  Illdr2  Ilf2  Ilf3      Ilk      Ilkap
## 1 8.133348 6.8434802 10.950788 12.25965 12.665068 13.21085 11.576775
## 2 7.291956 5.8782973 10.827700 11.58986 12.565159 12.51979 10.775428
## 3 4.867931 1.2966713 9.409404 12.94056 12.968067 11.43379 8.476009
## 4 6.730906 0.3263581 9.166079 10.84120 9.514677 10.63466 7.422601
## 5 7.648802 6.2317559 11.186404 11.94863 12.923985 12.87862 11.134125
## 6 6.948092 5.6678856 9.759760 11.06805 11.473376 12.01906 10.385411
##      Ilvbl  Impp1l  Impp2l  Immt      Imp3      Imp4      Impa1
## 1 12.410859 9.009426 7.156706 12.470680 11.314806 11.290791 11.10648
## 2 11.702291 8.214886 6.766215 12.350550 10.564531 10.670308 10.93301
## 3 9.813177 9.952170 7.423214 11.832509 8.570316 10.943864 11.32550
## 4 9.498117 8.836911 6.618601 9.134421 7.415946 8.991860 10.05968
## 5 12.061074 8.572694 7.122167 12.709368 10.923199 11.028992 11.29172
## 6 11.219222 7.821112 5.977928 11.279030 10.123565 10.099563 9.91535
##      Impa2  Impact  Impad1  Impdh1  Impdh2  Impg2      Ina
## 1 8.096641 12.26582 12.686234 11.506245 9.692965 5.684707 10.284797
## 2 7.916769 11.54501 12.120271 11.477868 9.422179 5.509015 10.128308
## 3 4.298917 13.06930 10.120006 6.468586 7.841147 4.055940 7.197218
## 4 3.780826 12.41973 8.482387 5.062023 5.468553 0.302898 6.494697
## 5 8.274330 11.90378 12.479078 11.836635 9.780594 5.860888 10.486902
## 6 6.911557 11.07422 11.494537 10.314912 8.503267 4.529044 9.094330
##      Inadl  Inca1  Incenp  Inf2      Ing1      Ing2      Ing3
## 1 8.244324 6.649418 9.619069 12.749814 10.833019 9.833379 10.486994

```

```

## 2 7.564520 7.100367 9.571320 12.485940 10.615852 9.910276 10.308152
## 3 6.807939 6.968679 7.685374 7.871431 9.447556 6.128840 10.417981
## 4 3.658478 3.984764 4.113773 6.843658 7.636840 6.036526 7.280025
## 5 7.921717 7.456925 9.929781 12.844764 10.974529 10.268824 10.666780
## 6 7.058571 5.476167 8.429491 11.558106 9.642073 8.643469 9.296329
##      Ing4      Ing5      Inha      Inhba      Inhbb      Inhbc      Inmt
## 1 11.866575 9.311758 8.545829 3.250887 9.817284 2.742741e+00 7.243701e-01
## 2 11.129557 9.470701 8.178559 2.902256 9.041162 3.409131e+00 1.726357e+00
## 3 10.749674 9.860981 4.427604 8.001513 7.518402 9.651169e-01 5.201784e+00
## 4 9.231184 6.947907 2.391120 4.490890 5.208004 8.554015e-08 8.656740e-08
## 5 11.488293 9.829132 8.536339 3.217939 9.399436 3.737744e+00 1.985775e+00
## 6 10.675098 8.122751 7.358902 2.244462 8.627398 1.807641e+00 3.652878e-01
##      Ino80      Ino80b      Ino80c      Ino80d      Ino80e      Inpp1      Inpp4a
## 1 10.991720 10.427276 10.468901 11.437321 9.796712 9.748078 11.89752
## 2 10.484885 9.752684 10.064994 11.094257 9.822780 9.316195 11.26843
## 3 7.901127 5.394858 10.028027 9.088739 8.769272 8.389757 11.01380
## 4 5.379693 4.450036 6.300022 8.283728 6.235944 6.956862 10.83240
## 5 10.843542 10.111194 10.423576 11.452990 10.181307 9.674574 11.62718
## 6 9.800666 9.236666 9.278253 10.246020 8.606855 8.558295 10.70603
##      Inpp4b      Inpp5a      Inpp5b      Inpp5d      Inpp5e      Inpp5f      Inpp5j
## 1 7.454200 11.258963 11.288606 13.804103 10.447254 12.670390 9.441070
## 2 7.335400 10.628814 10.956386 14.050822 9.813066 12.600265 9.480233
## 3 6.815951 7.272305 9.416401 6.434943 8.316481 12.567030 6.290430
## 4 7.048035 4.658854 7.205975 9.240377 6.315058 9.235912 5.854457
## 5 7.692307 10.987492 11.315104 14.409682 10.171591 12.959093 9.838666
## 6 6.272972 10.067752 10.097379 12.612251 9.256626 11.478697 8.251808
##      Inpp5k      Inpp1l      Ins2      Insc      Insig1      Insig2      Insl3
## 1 11.78501 13.863306 0.2746629 10.971946 14.219954 10.368814 2.801649e+00
## 2 11.41303 14.009195 0.4678588 9.820426 13.315744 9.799886 1.547111e+00
## 3 11.21895 6.789899 0.9288083 9.767998 10.634866 10.106073 7.169024e-08
## 4 10.00717 4.311026 2.8986956 6.772880 9.814427 9.638396 3.650694e-08
## 5 11.77179 14.368054 0.5764554 10.178952 13.674592 10.158407 1.792853e+00
## 6 10.59356 12.671449 0.1280312 9.780904 13.028069 9.178262 1.857150e+00
##      Insl5      Insl6      Insm1      Insm2      Insr      Insr
## 1 2.301761e+00 2.894999 8.348676 6.0608535 12.624059 5.158723e+00
## 2 2.705058e+00 2.824388 8.049293 6.1951796 12.077503 4.495149e+00
## 3 1.434753e+00 6.193461 9.212952 0.2422902 8.992041 6.685013e-08
## 4 5.775577e-08 2.753664 4.153845 4.7545690 7.485051 2.976796e-01
## 5 3.014306e+00 3.137638 8.406970 6.5497086 12.436309 4.839848e+00
## 6 1.447902e+00 1.936249 7.162489 4.8969407 11.432375 4.018732e+00
##      Ints1      Ints10      Ints12      Ints2      Ints3      Ints4      Ints5
## 1 12.590479 11.482007 9.491954 10.622380 12.159244 11.288595 9.882471
## 2 12.532480 10.871479 9.402030 10.409785 11.667587 10.833690 9.616852
## 3 8.561619 10.482079 8.951154 9.879664 9.612219 11.110026 7.872685
## 4 8.208999 9.363232 7.542075 7.525475 9.012397 8.945454 5.791589
## 5 12.891306 11.230188 9.760439 10.768430 12.026368 11.192394 9.975325
## 6 11.398802 10.290685 8.302598 9.431597 10.967675 10.097368 8.692492
##      Ints6      Ints7      Ints8      Ints9      Intu      Invs      Ip6k1
## 1 10.706876 10.421619 10.459574 9.678568 8.306772 9.065080 13.73265
## 2 10.035570 10.313857 10.228175 9.501630 8.193172 9.553462 13.24092
## 3 8.606971 9.926214 8.490203 10.465523 6.787620 6.657654 10.69009
## 4 6.716102 7.601546 6.433353 8.544462 3.938925 3.306727 10.25243
## 5 10.394146 10.672486 10.586788 9.860070 8.550963 9.911917 13.59976
## 6 9.516024 9.231015 9.268934 8.488893 7.120755 7.876627 12.54081

```

##	Ip6k2	Ip6k3	Ipcef1	Ipmk	Ipo11	Ipo13	Ipo4
## 1	11.551318	5.5656819	6.625672	11.883193	11.250945	13.615815	11.826452
## 2	11.045590	6.8333007	7.170535	11.193711	10.571938	12.805158	11.804713
## 3	10.220003	1.8922534	3.488842	7.425661	10.101272	10.578356	10.229241
## 4	8.690624	0.2487035	5.563931	8.443581	9.959713	9.059978	8.797922
## 5	11.404318	7.1893861	7.527203	11.552454	10.930608	13.163992	12.163503
## 6	10.359966	4.4130969	5.452729	10.691710	10.059738	12.423982	10.634990
##	Ipo5	Ipo7	Ipo8	Ipo9	Ipp	Ippk	Iqca
## 1	12.895828	12.164620	11.388217	13.038279	9.232517	10.217936	3.163652
## 2	12.575892	11.918297	10.874208	12.881789	8.914503	9.874610	2.857227
## 3	11.172383	9.211815	9.656431	10.644331	7.495999	8.389037	7.105813
## 4	9.000456	7.641304	8.966137	8.583147	6.508547	7.974822	2.516065
## 5	12.934718	12.277094	11.232918	13.240626	9.272723	10.233149	3.171520
## 6	11.704092	10.973048	10.196939	11.846520	8.043677	9.027542	2.167993
##	Iqcb1	Iqcc	Iqcd	Iqce	Iqcg	Iqch	Iqcj
## 1	9.708509	8.518482	5.7671406	10.700188	8.126901	3.727268e+00	1.515565e+00
## 2	9.347351	8.228160	5.9600555	10.524025	8.645648	3.696075e+00	2.033012e+00
## 3	9.804667	9.191394	4.9313932	8.826408	6.784541	1.629523e+00	7.693913e-08
## 4	7.665287	8.095953	0.9341558	7.540065	4.216821	1.232302e-07	2.142491e+00
## 5	9.705741	8.585977	6.3138133	10.882688	9.003732	4.030192e+00	2.312003e+00
## 6	8.518787	7.331652	4.6094857	9.509342	6.941674	2.671177e+00	8.632805e-01
##	Iqck	Iqgap1	Iqgap2	Iqgap3	Iqsec1	Iqsec2	Iqsec3
## 1	6.557748	12.519667	8.495907	9.639587	12.611079	11.249301	9.775095
## 2	5.509671	12.260568	8.826010	8.400899	12.433930	11.365961	10.395787
## 3	7.123019	11.302180	6.572837	7.940056	9.306686	6.939166	5.198924
## 4	1.021163	9.387074	8.028003	7.644633	8.733939	7.224847	6.344542
## 5	5.861548	12.619382	9.184187	8.758836	12.792751	11.724719	10.754429
## 6	5.385717	11.328006	7.309159	8.449975	11.419398	10.058094	8.585271
##	Iqub	Irak1	Irak1bp1	Irak2	Irak3	Irak4	Ireb2
## 1	3.552629	12.308004	8.704175	12.199138	6.3219453	8.069791	12.252611
## 2	4.353333	11.980909	8.183053	11.965578	5.7369116	8.193759	11.845646
## 3	6.077181	9.859475	6.611354	7.179376	2.3944977	6.999919	10.082290
## 4	4.730945	8.079447	7.692250	8.165799	0.3833754	7.516937	7.825737
## 5	4.696559	12.339710	8.540836	12.324377	6.0898109	8.551551	12.204439
## 6	2.513074	11.116394	7.516724	11.007556	5.1534259	6.884836	11.061015
##	Irf1	Irf2	Irf2bp1	Irf2bp2	Irf3	Irf4	Irf5
## 1	11.778745	10.468258	11.383522	13.379736	11.211658	10.3124908	13.080768
## 2	11.449270	10.491035	11.285766	12.919708	10.905749	10.2769657	12.464298
## 3	9.089736	9.368003	7.362596	10.901466	8.822127	3.3232169	6.442562
## 4	8.026422	7.512154	5.608327	9.834988	6.599009	0.5479853	9.037158
## 5	11.808035	10.849693	11.644517	13.278546	11.264462	10.6355881	12.823120
## 6	10.587300	9.277610	10.192247	12.187930	10.020473	9.1219954	11.889002
##	Irf6	Irf7	Irf8	Irf9	Irg1	Irgc1	Irgm1
## 1	3.482661	8.147868	13.757154	10.182077	4.728238e+00	2.655242e+00	9.359831
## 2	3.114026	7.262018	12.750945	9.737686	3.877204e+00	1.727167e+00	9.489203
## 3	3.863277	7.024781	6.067308	9.743612	1.295389e-07	6.799464e-08	9.437841
## 4	3.787656	5.617175	8.047972	7.881669	3.116730e-01	3.494647e-08	7.901602
## 5	3.435682	7.618822	13.109778	10.096193	4.214265e+00	1.986643e+00	9.847639
## 6	2.450251	6.962544	12.565307	8.991723	3.605864e+00	1.734701e+00	8.170727
##	Irgm2	Irgq	Irs1	Irs2	Irs4	Irx1	Irx2
## 1	6.645860	11.395932	11.003600	12.079429	5.720852e+00	6.144999	4.181036
## 2	6.505517	12.096094	10.757501	11.772293	4.703083e+00	6.485831	3.375444
## 3	6.208509	7.505746	9.905288	6.640640	1.721654e+00	1.671638	4.696413
## 4	6.164017	6.529858	7.474118	5.276526	5.126072e-08	2.492226	5.111784

```

## 5 6.860889 12.454900 11.116196 12.131081 5.049693e+00 6.841154 3.703333
## 6 5.472654 10.204651 9.812539 10.887883 4.564301e+00 4.979511 3.089598
##      Irx3      Irx4      Irx5      Irx6      Isca1      Isca2      Iscu
## 1 6.229338 0.14322392 2.841657 1.924095e+00 11.151311 10.725282 10.554084
## 2 5.409150 0.08651288 1.841786 1.711851e+00 10.552038 10.109006 10.028267
## 3 2.016544 3.15403430 1.597361 4.531528e-08 10.170380 10.978269 7.094499
## 4 3.015432 3.64298426 1.872143 2.200992e-08 9.431295 10.051773 6.359223
## 5 5.760520 0.11002615 2.109095 1.970229e+00 10.910705 10.467597 10.386841
## 6 5.062359 0.06516881 1.890956 1.157074e+00 9.960160 9.534416 9.363359
##      Isg15      Isg20      Isg20l2      Isl1      Islr      Islr2      Ism1
## 1 8.397964 8.374359 10.730837 6.919241e+00 10.040388 12.306967 8.112546
## 2 7.062990 6.834907 10.286287 4.797797e+00 9.488942 11.713052 8.469389
## 3 7.084569 5.257923 9.381888 6.519061e-08 10.540090 8.314985 1.552001
## 4 7.770962 8.676713 6.704497 2.548885e-01 9.311676 5.870833 4.268925
## 5 7.419487 7.190996 10.644911 5.145190e+00 9.847378 12.071836 8.827370
## 6 7.211583 7.188070 9.539967 5.742813e+00 8.850201 11.115357 6.927387
##      Isoc1      Isoc2a      Isoc2b      Ispd      Isy1      Isyna1      Itch
## 1 11.652132 9.883826 6.392814 8.686570 10.282597 13.304234 12.157546
## 2 11.403854 9.858814 6.035416 8.013753 9.860514 12.221094 12.215475
## 3 8.713851 5.612903 7.738098 7.286415 9.198353 8.416996 9.716410
## 4 6.961323 3.115730 6.284669 5.915070 6.906622 8.800817 8.035922
## 5 11.762615 10.217350 6.389435 8.371400 10.219051 12.579906 12.574287
## 6 10.460737 8.693845 5.223179 7.499174 9.092132 12.112437 10.965977
##      Itfg1      Itfg2      Itfg3      Itga1      Itga10      Itga11      Itga2
## 1 13.68257 9.912104 12.557839 10.813468 7.0504414 4.798148 6.952347
## 2 12.84734 9.985232 11.868736 10.869329 6.2949852 4.981663 6.987894
## 3 10.34717 9.940850 11.672688 7.627761 4.5407113 4.897040 3.353997
## 4 10.35837 8.099461 9.915982 6.573140 0.6031179 4.814909 1.654023
## 5 13.20617 10.343797 12.227530 11.228037 6.6498054 5.330435 7.344264
## 6 12.49073 8.722085 11.366170 9.622536 5.8726681 3.672561 5.775568
##      Itga2b      Itga3      Itga4      Itga5      Itga6      Itga7      Itga8
## 1 7.218922 9.472439 11.130727 12.359690 12.019469 11.279172 8.996555
## 2 6.626823 9.670693 10.749527 11.944599 11.854689 10.499323 8.049934
## 3 5.330727 6.366411 7.989483 1.979205 8.261602 6.956748 5.876665
## 4 2.634907 5.100896 6.762696 1.163145 8.148522 8.260488 8.162829
## 5 6.982478 10.029182 11.108221 12.303397 12.213482 10.857982 8.407611
## 6 6.039590 8.283118 9.939587 11.168066 10.827941 10.087950 7.808273
##      Itga9      Itgad      Itgae      Itgal      Itgam      Itgav      Itgax
## 1 11.114907 7.063457 8.9947350 7.789372 14.588081 13.236854 8.1899880
## 2 11.250993 5.862142 7.8350917 7.089808 14.676846 12.500356 8.0540720
## 3 5.565336 5.857447 5.6366669 2.844323 6.557425 9.822038 0.9494144
## 4 7.889784 5.560519 0.3421317 1.139048 10.137296 10.454670 0.8573303
## 5 11.609741 6.215540 8.1925762 7.446349 15.035713 12.859180 8.4117530
## 6 9.923777 5.885557 7.8064582 6.605921 13.396174 12.045067 7.0044730
##      Itgb1      Itgb1bp1      Itgb1bp2      Itgb2      Itgb2l      Itgb3      Itgb3bp
## 1 14.90855 10.939098 5.1567158 12.691290 2.117943e+00 10.672639 6.913738
## 2 14.18207 10.136832 4.9875676 12.816391 1.600183e+00 10.162354 6.947670
## 3 11.73724 9.776870 2.8227393 5.942873 4.616745e-08 2.369774 8.899977
## 4 10.96319 8.381897 0.2982745 9.564698 2.340847e-08 4.924073 5.067429
## 5 14.54093 10.495428 5.3363808 13.175226 1.850166e+00 10.520955 7.303969
## 6 13.71662 9.748078 4.0167961 11.499592 1.304196e+00 9.481815 5.737369
##      Itgb4      Itgb5      Itgb6      Itgb7      Itgb8      Itgb1l      Itih2
## 1 12.153721 15.294750 2.405256 8.920091 11.584649 5.452816 5.016886
## 2 11.711782 14.838987 2.059853 8.250930 10.541407 6.560200 5.609470

```

```

## 3 7.510221 9.646274 0.995542 3.246358 8.598740 2.427467 8.235755
## 4 5.460558 10.486259 1.293415 6.964243 7.574790 1.363163 3.568011
## 5 12.070566 15.197855 2.340356 8.608764 10.900072 6.915702 5.961816
## 6 10.962153 14.102813 1.530504 7.732011 10.393281 4.303387 3.882154
##      Itih3      Itih4      Itih5      Itk      Itm2a      Itm2b      Itm2c
## 1 11.600404 3.352920e+00 11.367128 4.6604919 15.46455 16.09853 15.16407
## 2 10.842116 3.537878e+00 10.992521 3.4740643 14.37581 15.27687 14.54350
## 3 12.700702 7.763725e-08 10.898759 3.3940617 12.28341 13.61178 11.92985
## 4 9.604949 3.454935e-08 9.226324 0.2669809 13.64460 13.84332 12.49099
## 5 11.200822 3.869099e+00 11.351243 3.8040218 14.73467 15.63574 14.90236
## 6 10.409030 2.334601e+00 10.175861 3.5413759 14.27261 14.90657 13.97214
##      Itpa      Itpk1      Itpka      Itpkb      Itpkc      Itrp1      Itrp2
## 1 10.186604 12.294203 7.980475 12.487949 10.891862 10.437210 13.113711
## 2 9.467513 12.017537 8.442016 12.374440 10.761866 10.867106 12.501459
## 3 10.636683 8.605579 3.723958 5.779215 7.676020 7.371821 7.627910
## 4 9.078882 8.565994 7.813840 6.049094 6.544224 8.634664 8.445243
## 5 9.825943 12.376340 8.799980 12.733259 11.120561 11.225815 12.860283
## 6 8.996244 11.102596 6.795968 11.296295 9.700875 9.246591 11.921940
##      Itrp3      Itpripl1      Itpripl2      Itsn1      Itsn2      Ivd      Ivl
## 1 10.580570 10.245978 10.042505 11.977986 11.579910 11.42832 4.186167e-08
## 2 10.098022 9.545424 9.587584 11.912761 11.183115 10.80785 2.526342e-08
## 3 4.600577 10.190370 6.864889 10.619592 7.866253 11.21339 3.613074e+00
## 4 5.157428 11.059712 5.391067 7.792316 6.423324 10.02435 4.904558e+00
## 5 10.456610 9.903877 9.946049 12.271557 11.541857 11.16655 3.239614e-08
## 6 9.389822 9.055553 8.852315 10.786471 10.388545 10.23703 1.854248e-08
##      Ivns1abp      Iws1      Iyd      Izumo1      Izumo4      Jag1
## 1 13.378452 11.096010 4.777713e+00 4.307284e+00 7.323079 11.039407
## 2 13.122062 10.764457 5.419586e+00 3.281733e+00 7.009850 10.334693
## 3 11.061913 8.711579 1.143796e-07 2.146662e+00 7.151334 10.612032
## 4 9.439995 6.731804 4.376520e+00 5.185401e-08 5.546830 9.565688
## 5 13.480905 11.123153 5.771010e+00 3.607519e+00 7.366257 10.693326
## 6 12.186646 9.904891 3.653050e+00 3.207703e+00 6.142869 9.848323
##      Jag2      Jagn1      Jak1      Jak2      Jak3      Jakmip1      Jakmip2
## 1 11.895948 10.464032 13.01936 12.370988 11.800262 8.407564 9.917827
## 2 10.820128 9.810949 12.46132 12.018308 11.441267 8.387048 10.443106
## 3 5.392598 10.627427 11.10868 8.724628 1.793102 7.535772 8.791411
## 4 5.223716 10.421281 10.40761 6.827728 1.743052 5.706308 7.260506
## 5 11.178831 10.169474 12.82014 12.377111 11.800031 8.744976 10.801757
## 6 10.704461 9.273388 11.82760 11.179361 10.608810 7.221146 8.727800
##      Jakmip3      Jam2      Jam3      Jarid2      Jazf1      Jdp2      Jkamp
## 1 9.931157 13.47869 13.05894 11.75415 9.312360 11.866067 11.079832
## 2 9.361626 12.83437 12.20560 11.12092 9.736761 11.198018 10.339949
## 3 7.728811 10.56144 12.62325 10.27905 6.957724 3.232166 11.612306
## 4 4.063589 10.19015 11.73267 7.93717 6.948045 3.036527 11.004861
## 5 9.720021 13.19321 12.56441 11.47966 10.095267 11.556761 10.698583
## 6 8.741112 12.28688 11.86718 10.56272 8.123351 10.674591 9.888722
##      Jmjd1c      Jmjd4      Jmjd6      Jmjd7      Jmjd8      Jmy      Josd1
## 1 13.399436 9.746579 11.474818 8.802908 10.633448 12.691773 11.690403
## 2 12.999866 9.544758 11.339440 9.228645 10.642302 12.155912 11.333498
## 3 10.028613 7.572220 8.552679 8.639743 10.088317 10.079511 8.589508
## 4 8.808217 3.463687 6.093911 5.911065 8.335341 9.210191 7.257589
## 5 13.358706 9.903211 11.698196 9.586994 11.000982 12.514721 11.692254
## 6 12.207627 8.556798 10.283500 7.615157 9.442656 11.500075 10.498992
##      Josd2      Jph1      Jph2      Jph3      Jph4      Jrk      Jsrp1

```

```

## 1 12.850275 8.803088 4.7998611 11.095780 11.335800 7.923754 3.906287
## 2 11.823592 8.659667 3.9821924 11.056015 11.226905 7.471945 4.159833
## 3 10.524297 6.322833 0.5729165 7.039578 7.679647 8.892367 1.510137
## 4 9.129265 7.035654 3.3572266 7.246610 9.002993 6.278731 1.330443
## 5 12.182383 9.017759 4.3207949 11.414745 11.585651 7.829030 4.500799
## 6 11.658548 7.615337 3.6741976 9.904661 10.144549 6.739547 2.835024
##      Jtb      Jun      Junb      Jund      Jup      Kalrn      Kank1
## 1 11.353369 16.656274 16.176631 15.767646 13.005371 11.035644 13.124384
## 2 10.591132 16.183082 15.953630 15.314673 12.178274 10.906977 12.850565
## 3 10.032142 10.130307 5.848545 9.166476 9.470713 8.491570 7.871486
## 4 9.729526 9.243242 6.732172 7.340825 9.416916 9.585268 8.560897
## 5 10.949805 16.541957 16.312504 15.673544 12.537084 11.265690 13.209401
## 6 10.162109 15.464308 14.984673 14.575696 11.813617 9.844562 11.932612
##      Kank2      Kank3      Kank4      Kars      Kat2a      Kat2b      Kat5
## 1 10.455221 11.755823 9.122271 12.18842 11.975683 11.371393 11.821168
## 2 9.222634 10.481053 8.972323 11.81758 11.677498 11.077857 10.735549
## 3 6.501420 7.576869 3.503780 12.55406 8.694022 8.324989 9.360779
## 4 7.283520 8.592950 5.474701 10.85204 7.622144 7.453335 9.031652
## 5 9.580980 10.839709 9.330568 12.17637 12.036280 11.436589 11.094241
## 6 9.264585 10.564386 7.933681 10.99684 10.784170 10.180124 10.629708
##      Katna1      Katna11      Katna12      Katnb1      Kazald1      Kazn      Kbtbd11
## 1 10.168351 11.765057 5.666538 11.258812 6.306072 13.444129 12.009885
## 2 9.224226 11.345913 6.036353 10.460112 5.990755 12.771883 11.842206
## 3 10.204272 9.570766 9.024508 10.953355 4.214954 8.751408 9.578460
## 4 8.639189 8.081546 4.493245 9.192535 2.125349 7.167196 9.961321
## 5 9.582573 11.704670 6.390375 10.818765 6.344621 13.130717 12.200998
## 6 8.978012 10.573617 4.511328 10.067601 5.137810 12.252315 10.818360
##      Kbtbd12      Kbtbd13      Kbtbd2      Kbtbd3      Kbtbd4      Kbtbd7      Kbtbd8
## 1 1.9066932 2.990720e+00 11.869732 8.434043 10.238080 9.939096 8.256246
## 2 1.6036486 2.941903e+00 11.505877 8.047913 9.457309 9.345701 8.250908
## 3 3.2966271 1.195242e+00 9.634256 9.546951 11.064447 8.577616 6.383370
## 4 0.7429296 7.248343e-08 8.508561 7.215113 9.776464 6.826605 2.341571
## 5 1.8539028 3.258774e+00 11.864646 8.405589 9.815736 9.704091 8.608741
## 6 1.1441002 2.018142e+00 10.678254 7.247523 9.047663 8.749040 7.070442
##      Kcmf1      Kcna1      Kcna2      Kcna3      Kcna4      Kcna5      Kcna6
## 1 12.135322 12.575768 12.375290 7.429617 8.289137 6.940252e+00 12.789308
## 2 11.480568 11.864859 11.869607 7.253602 8.322024 6.896718e+00 12.260805
## 3 8.862815 9.420157 8.476917 4.224717 2.470413 1.281722e-07 9.150214
## 4 7.052252 10.931318 8.874454 3.734010 8.006925 2.782183e+00 8.835316
## 5 11.839335 12.223652 12.228401 7.610393 8.679908 7.252924e+00 12.619619
## 6 10.943759 11.384095 11.183663 6.248573 7.103193 5.763600e+00 11.597592
##      Kcna7      Kcnab1      Kcnab2      Kcnab3      Kcnb1      Kcnb2      Kcnc1
## 1 7.842636e+00 8.038102 10.401720 8.501264 10.587284 8.509372 10.045613
## 2 7.103725e+00 8.409599 10.799553 8.688174 10.234815 8.645921 10.329381
## 3 5.804843e-08 6.283612 7.776458 4.657572 10.194673 6.846174 6.814006
## 4 8.239551e-01 8.884457 9.293326 6.242466 9.494938 7.705926 7.278833
## 5 7.460288e+00 8.767542 11.158254 9.046281 10.593430 9.004006 10.688013
## 6 6.658877e+00 6.853303 9.211136 7.314496 9.396531 7.322575 8.855420
##      Kcnc2      Kcnc3      Kcnc4      Kcnd1      Kcnd2      Kcnd3      Kcne1
## 1 9.296620 10.432688 9.018502 9.892985 10.965750 11.280962 1.7218572
## 2 10.068136 9.629640 9.187882 9.227692 10.582548 11.822544 2.1179694
## 3 3.853630 6.542427 3.699237 5.946326 6.901612 7.506357 0.9226181
## 4 6.068301 7.360199 8.388486 5.954489 10.667458 7.361926 0.2745795
## 5 10.426718 9.988117 9.546215 9.586040 10.941220 12.181335 2.4016479

```

```

## 6 8.107644 9.242074 7.830164 8.702992 9.774713 10.089740 1.0087637
##      Kcne11      Kcne2      Kcne3      Kcne4      Kcnf1      Kcng1      Kcng2
## 1 8.976749 1.950149 5.830329e+00 9.261577 8.369257 4.846651 5.467308
## 2 8.709121 1.477021 5.628574e+00 8.918841 8.232258 5.562859 5.898746
## 3 10.167166 4.312598 3.457980e+00 7.005589 4.636161 1.214184 1.117501
## 4 6.165438 8.702796 7.240891e-08 5.772824 8.207165 3.231415 5.609885
## 5 9.067239 1.716895 5.981006e+00 9.277062 8.590079 5.914990 6.252281
## 6 7.788518 1.176573 4.671221e+00 8.072675 7.182988 3.718921 4.317460
##      Kcng3      Kcng4      Kcnh1      Kcnh2      Kcnh3      Kcnh4      Kcnh5
## 1 4.534834e+00 7.352310 7.341598 9.206313 8.739272 7.6070762 8.521815e+00
## 2 2.718117e+00 6.329058 8.103661 8.945788 9.510662 7.8555179 7.057252e+00
## 3 3.692944e-08 1.423621 4.003920 1.027223 1.265376 2.4097113 7.217771e-08
## 4 1.819456e-08 5.944000 7.002645 4.646055 3.821377 0.3280926 3.165549e-01
## 5 3.027820e+00 6.683973 8.461382 9.304022 9.869104 8.2130220 7.413740e+00
## 6 3.422158e+00 6.171865 6.161239 8.017531 7.551712 6.4247702 7.334974e+00
##      Kcnh6      Kcnh7      Kcnh8      Kcnip1      Kcnip2      Kcnip3      Kcnip4
## 1 5.044158 8.994776 6.663041 10.505579 9.911397 12.21041 8.246947
## 2 4.618713 8.682579 5.985088 9.649753 9.704896 12.08808 8.302751
## 3 1.805243 7.121539 3.728156 7.950188 2.795400 11.72472 5.731415
## 4 1.499667 5.338847 0.616295 8.014069 5.350401 10.88066 7.199036
## 5 4.964581 9.040683 6.338934 10.008236 10.063394 12.44689 8.660622
## 6 3.908375 7.806499 5.489615 9.314897 8.721378 11.01883 7.061182
##      Kcnj1      Kcnj10      Kcnj11      Kcnj12      Kcnj13      Kcnj14      Kcnj15
## 1 1.804942e+00 14.57955 7.783369 6.657631 4.637401 5.993706e+00 5.4280607
## 2 1.894468e+00 13.95991 7.890908 6.512023 3.777566 5.168106e+00 5.1322998
## 3 5.490906e-08 12.60549 6.561135 4.267235 7.286635 7.915369e-01 0.8577479
## 4 2.458360e-08 11.09993 7.200429 4.934494 9.530522 5.758767e-08 1.4701068
## 5 2.165161e+00 14.31876 8.248445 6.867410 4.113054 5.518107e+00 5.4820767
## 6 1.069032e+00 13.38764 6.599953 5.484275 3.519429 4.831116e+00 4.2793563
##      Kcnj16      Kcnj2      Kcnj3      Kcnj4      Kcnj5      Kcnj6      Kcnj8
## 1 8.376200 11.536394 7.526945 7.231546 9.195415e+00 5.487599 9.262647
## 2 8.093502 10.778559 7.824672 7.633027 8.510691e+00 5.062686 8.831975
## 3 9.646978 5.895225 4.368537 1.448818 5.838699e-08 2.055170 9.872521
## 4 9.145943 8.034399 7.750531 6.496104 4.522731e+00 6.955733 7.599126
## 5 8.451215 11.137256 8.182146 7.990302 8.868697e+00 5.412012 9.190155
## 6 7.189904 10.345047 6.345189 6.052104 8.006657e+00 4.337172 8.073743
##      Kcnj9      Kcnk1      Kcnk10      Kcnk12      Kcnk13      Kcnk2      Kcnk3
## 1 7.518940 9.185798 8.393154 8.6568677 11.991999 10.958569 6.224704
## 2 7.660003 8.917792 8.536339 9.3032283 10.750226 10.365963 6.084798
## 3 4.539972 9.937591 7.339779 0.8065175 7.779276 9.559794 4.135087
## 4 7.637197 9.435357 7.410211 1.8368706 5.782707 10.052707 6.857227
## 5 8.017308 9.276012 8.894361 9.6616034 11.108920 10.724600 6.438980
## 6 6.337241 7.997062 7.206791 7.4695674 10.800480 9.767536 5.057805
##      Kcnk4      Kcnk5      Kcnk6      Kcnk7      Kcnk9      Kcnma1      Kcnmb1
## 1 5.4890753 8.1746150 11.235977 4.722924 7.2510550 10.134575 5.268178
## 2 5.6395270 7.8154661 11.323126 3.322119 8.1329015 9.397907 4.368029
## 3 0.3230060 5.0437595 3.441903 4.400414 0.2126486 6.450727 6.472731
## 4 0.8493474 0.8509002 5.304009 2.746520 1.8206026 8.987404 7.128990
## 5 5.9920078 8.1729315 11.681880 3.648829 8.4906462 9.756314 4.711414
## 6 4.3386060 6.9891692 10.044778 3.600800 6.0714454 8.944275 4.124456
##      Kcnmb2      Kcnmb4      Kcnn1      Kcnn2      Kcnn3      Kcnn4      Kcnq1
## 1 7.622521 9.129750 9.545307 8.886516 10.614197 5.377242 8.790755
## 2 6.853248 8.579034 9.094809 8.393409 10.739617 6.087071 9.715380
## 3 3.240242 5.831432 6.678509 9.615010 5.477102 3.110857 2.576780

```

```

## 4 3.688046 7.395037 6.240989 8.260761 6.537108 2.177674 3.389028
## 5 7.209372 8.937080 9.453105 8.751341 11.098310 6.441261 10.073881
## 6 6.440112 7.941143 8.355855 7.698528 9.423421 4.230063 7.603041
##      Kcnq2      Kcnq3      Kcnq4      Kcnq5      Kcnrg      Kcns1      Kcns2      Kcns3
## 1 10.083414 8.798172 9.014328 9.536302 6.016027 4.848641 6.710744 4.237442
## 2 10.304372 8.072834 8.551473 8.951823 5.420814 5.905515 6.113152 4.677523
## 3 6.266288 4.093521 7.058992 5.964017 4.578918 0.411807 2.020469 4.248988
## 4 8.298382 3.649552 3.336626 5.883965 5.639454 4.370787 6.832717 4.184319
## 5 10.663000 8.430531 8.909504 9.310059 5.772245 6.259075 6.467426 5.023913
## 6 8.893175 7.610435 7.826001 8.346867 4.852990 3.720824 5.536718 3.142283
##      Kcnt1      Kcnt2      Kcnu1      Kcnv1      Kcp      Kctd1      Kctd10
## 1 10.425885 7.448690 6.608484 5.712629 10.5371696 8.987681 11.906581
## 2 9.862845 7.719733 7.223652 5.951700 10.8108103 8.443645 11.777909
## 3 5.055076 5.108618 6.333882 3.760802 4.2058723 9.660245 8.985650
## 4 1.333526 6.264877 5.630842 7.934105 0.4938929 6.838216 7.833138
## 5 10.221382 8.077102 7.580400 6.305428 11.1695121 8.801609 12.136697
## 6 9.235277 6.267503 5.435768 4.556279 9.3464596 7.799422 10.715091
##      Kctd11      Kctd12      Kctd13      Kctd14      Kctd15      Kctd16      Kctd17
## 1 8.372821 13.673896 11.956457 5.452172 9.812990 5.468720 11.996970
## 2 7.844273 13.148985 11.286365 4.916501 9.510290 5.579991 11.544992
## 3 7.974962 9.228677 9.411721 7.519190 8.922357 3.207425 8.014848
## 4 6.832914 10.445444 9.308099 4.925401 5.976551 4.542885 6.806288
## 5 8.201767 13.507829 11.645117 5.264804 9.868732 5.932202 11.903764
## 6 7.186537 12.482057 10.764950 4.302762 8.623110 4.318831 10.805449
##      Kctd18      Kctd19      Kctd2      Kctd20      Kctd21      Kctd3      Kctd4
## 1 9.488608 1.259461e+00 10.927356 11.810322 9.632953 12.342169 8.637823
## 2 9.301697 2.403763e+00 10.728275 11.466250 9.383646 11.995078 7.980485
## 3 8.082495 6.185851e-01 7.772645 8.552877 9.245760 8.291909 11.586486
## 4 5.374812 4.882313e-08 5.960177 6.980574 6.886452 6.847596 10.691679
## 5 9.660071 2.701241e+00 11.086966 11.825017 9.742049 12.353879 8.338103
## 6 8.299258 6.913283e-01 9.736344 10.618865 8.443353 11.150550 7.450585
##      Kctd5      Kctd6      Kctd7      Kctd8      Kctd9      Kdelc1      Kdelc2
## 1 11.896051 10.068581 9.797241 8.535595e+00 9.176183 10.581457 9.559451
## 2 11.436337 10.062090 9.522085 7.225935e+00 8.887179 9.732164 9.941860
## 3 8.617088 7.232074 8.670948 8.597576e-08 6.899103 9.081115 7.194270
## 4 7.515099 6.876519 7.017403 4.069136e+00 3.415783 8.118518 6.579000
## 5 11.795101 10.420671 9.880531 7.582686e+00 9.245386 10.090668 10.300416
## 6 10.704564 8.878360 8.607384 7.348704e+00 7.987469 9.390708 8.369974
##      Kdelr1      Kdelr2      Kdelr3      Kdm1a      Kdm1b      Kdm2a      Kdm2b
## 1 12.711079 11.92431 7.628758 12.200426 10.512754 12.179728 11.418374
## 2 11.838266 10.90484 6.711236 11.753899 10.380723 11.967114 10.788580
## 3 10.215592 12.40477 7.532343 10.369617 8.063852 9.953897 8.755010
## 4 9.781798 11.75554 2.127329 6.979203 5.565891 8.116700 6.409157
## 5 12.197058 11.26355 7.067074 12.112686 10.739363 12.325914 11.147279
## 6 11.519377 10.73282 6.446308 11.008844 9.322066 10.988153 10.227081
##      Kdm3a      Kdm3b      Kdm4a      Kdm4b      Kdm4c      Kdm4d      Kdm5a
## 1 12.533072 12.385956 12.309337 12.257837 10.705338 5.056773 12.037920
## 2 11.605923 11.661583 11.948415 12.054980 10.754082 3.929303 11.725256
## 3 9.770515 9.685491 7.837863 8.469145 9.343526 5.903326 11.649570
## 4 8.398543 7.503412 7.092759 7.782454 7.792195 2.094110 9.485411
## 5 11.964700 12.020364 12.307213 12.413784 11.112776 4.267143 12.084041
## 6 11.341407 11.194325 11.117727 11.066240 9.514487 3.920511 10.846387
##      Kdm5b      Kdm5c      Kdm5d      Kdm6a      Kdm6b      Kdr      Kdsr
## 1 12.10756 12.408604 10.121155 11.396150 13.48876 14.284965 11.135615

```



```

## 2 11.39023 12.096085 9.885868 11.214744 13.04439 13.757728 10.541833
## 3 10.88614 10.083593 8.997818 8.960214 11.31868 6.159823 11.846609
## 4 9.70063 7.596212 5.901899 6.768530 8.51189 7.759911 11.190943
## 5 11.74900 12.454891 10.244411 11.573489 13.40323 14.116584 10.900498
## 6 10.91600 11.216968 8.930870 10.204869 12.29694 13.093076 9.944473
##      Keap1      Kel      Khdrbs1      Khdrbs2      Khdrbs3      Khk      Khnyn
## 1 11.657551 1.904740e+00 12.517891 7.629957 10.853228 10.325753 10.674602
## 2 11.380584 1.649727e+00 12.118376 7.503892 10.835370 10.309634 10.745006
## 3 9.450248 4.496391e-08 9.778628 6.875498 9.163954 9.306027 6.160711
## 4 7.155441 2.202883e-08 7.142590 6.067971 6.165550 8.446883 4.819973
## 5 11.739344 1.903521e+00 12.477184 7.861016 11.194075 10.668262 11.103699
## 6 10.466153 1.142646e+00 11.326230 6.447499 9.662267 9.135244 9.483776
##      Khsrp      Kidins220      Kif11      Kif13a      Kif13b      Kif14      Kif15
## 1 12.11360 13.657259 9.100067 11.890866 11.314875 7.110798 8.451524
## 2 11.51404 13.280631 8.693962 11.422512 11.245722 7.069263 8.066399
## 3 12.27354 11.318127 9.580473 8.956464 7.072267 6.891829 9.036450
## 4 10.79274 9.986831 4.475671 6.366526 4.835847 2.372880 4.062256
## 5 11.87281 13.639478 9.052072 11.781275 11.604470 7.425770 8.424091
## 6 10.92205 12.465421 7.911530 10.699381 10.123634 5.932446 7.264939
##      Kif16b      Kif17      Kif18a      Kif18b      Kif19a      Kif1a      Kif1b
## 1 8.877927 6.975661 8.016887 8.161086 12.415599 15.47006 15.41808
## 2 8.833404 6.914520 8.246628 7.299039 11.110900 15.23950 15.05971
## 3 6.816864 5.306554 8.414349 6.610758 4.669998 12.33904 12.72562
## 4 2.084962 6.707450 4.231210 2.109262 4.491113 11.59820 11.63004
## 5 9.191585 7.270758 8.604459 7.655895 11.469635 15.59837 15.41858
## 6 7.689962 5.798639 6.832194 6.975701 11.223962 14.27811 14.22614
##      Kif1c      Kif20a      Kif20b      Kif21a      Kif21b      Kif22      Kif23
## 1 13.806481 8.230300 8.054100 11.995646 13.786372 8.812680 8.886121
## 2 13.252699 8.253888 7.323256 11.912972 13.431888 8.912217 8.667633
## 3 7.157795 9.636547 8.776031 11.245450 9.835808 10.011596 9.442058
## 4 7.417799 5.727423 2.999734 8.370601 7.289083 5.902974 4.204430
## 5 13.611545 8.611724 7.680147 12.271769 13.790738 9.270435 9.025729
## 6 12.614629 7.044607 6.869222 10.804125 12.594523 7.624901 7.698134
##      Kif24      Kif26a      Kif26b      Kif27      Kif2a      Kif2c      Kif3a
## 1 8.216816 12.278327 7.987627 4.775514e+00 11.627816 7.892370 12.43332
## 2 8.156736 11.675753 8.778739 5.664617e+00 10.954360 7.536469 12.16481
## 3 5.808850 2.770261 5.722637 1.774059e+00 10.748764 9.944157 11.68834
## 4 5.580722 4.430398 4.541271 5.601803e-08 9.517414 5.287925 10.07411
## 5 8.514500 12.034534 9.136893 6.017209e+00 11.313079 7.893633 12.52362
## 6 7.031182 11.086725 6.803084 3.650952e+00 10.436430 6.708333 11.24168
##      Kif3b      Kif3c      Kif4      Kif5a      Kif5b      Kif5c      Kif6
## 1 11.424621 12.738535 8.213778 15.01696 13.37091 13.060059 5.969307
## 2 10.991548 12.462221 7.962666 15.19265 13.09906 13.266677 6.589030
## 3 8.486905 10.035415 8.824799 10.54552 10.98269 10.827683 6.569131
## 4 7.037281 7.907042 3.932824 10.46740 10.29319 9.745033 4.322798
## 5 11.350270 12.821044 8.320269 15.55152 13.45790 13.625524 6.944599
## 6 10.233326 11.546828 7.028157 13.82504 12.17911 11.868296 4.807212
##      Kif7      Kif9      Kifap3      Kifc1      Kifc2      Kifc3      Kifc5b
## 1 9.789326 7.056245 12.238963 8.209222 11.550415 12.630995 7.721289
## 2 8.769675 6.792430 11.944894 7.617438 12.475841 12.382689 8.007501
## 3 6.723752 6.463185 10.979121 6.710486 7.008678 6.416710 4.877319
## 4 3.496757 5.335588 9.878446 2.463035 6.767043 7.073585 2.399935
## 5 9.127824 7.148435 12.303692 7.974696 12.834664 12.741509 8.365142
## 6 8.599481 5.878415 11.047371 7.023621 10.359063 11.439309 6.538249

```

```

##      Kin   Kirrel Kirrel2   Kirrel3   Kiss1r      Kit      Kitl
## 1 8.837273 8.308195 7.701221 11.858037 7.447694 11.019255 12.607409
## 2 8.821692 7.803064 6.898910 11.487818 6.003567 10.950064 12.094916
## 3 8.739452 6.403927 1.950077 7.929609 4.683982 6.658716 9.899389
## 4 6.671650 4.428586 5.390932 9.150863 1.188508 6.960861 9.230086
## 5 9.179867 8.160517 7.255119 11.846587 6.357477 11.308782 12.453722
## 6 7.649423 7.122172 6.518305 10.666563 6.266514 9.828184 11.415728
##      K1      K1b      K1c1      K1c2      K1c3      K1c4      K1f1
## 1 4.400868 2.743008e+00 14.691581 11.698297 5.848109 11.221515 3.5768668
## 2 4.473154 3.878597e+00 14.000244 11.373650 5.629090 10.944451 3.3464729
## 3 5.917637 1.406404e+00 8.552149 6.094836 2.805017 8.971373 4.3051737
## 4 8.448870 4.927198e-08 8.446725 5.993051 2.320041 7.582745 0.6461927
## 5 4.817634 4.215678e+00 14.359103 11.732409 5.981524 11.303168 3.6737272
## 6 3.295665 1.807865e+00 13.499669 10.506883 4.688603 10.030324 2.5349079
##      K1f10     K1f11     K1f12     K1f13     K1f14     K1f15     K1f16
## 1 12.62593 11.668651 10.484079 13.30026 3.927511e+00 9.941313 10.859575
## 2 11.74222 11.251324 9.996956 12.80995 4.432036e+00 9.278751 10.696233
## 3 9.90893 7.174408 8.887597 13.20463 1.547384e+00 7.596919 7.817101
## 4 10.19720 3.099819 7.915143 12.61789 6.605688e-08 6.502906 7.395807
## 5 12.10101 11.610073 10.355523 13.16878 4.776097e+00 9.637118 11.054920
## 6 11.43425 10.477248 9.293416 12.10846 2.854560e+00 8.751254 9.668610
##      K1f2     K1f3     K1f4     K1f5     K1f6     K1f7     K1f8
## 1 14.238929 11.238505 14.038561 6.908481 14.887757 9.782177 8.807204
## 2 13.408809 10.648388 13.471808 6.302439 14.613136 9.687515 7.198072
## 3 6.552692 8.427920 7.911817 4.895950 10.949325 9.719420 6.334978
## 4 8.094995 8.160441 7.503583 4.941128 9.601326 7.260990 3.096237
## 5 13.767658 11.007069 13.830659 6.657280 14.972002 10.046008 7.554782
## 6 13.047043 10.047305 12.846689 5.732168 13.695836 8.592342 7.619441
##      K1f9     K1hdc1     K1hdc10     K1hdc2     K1hdc3     K1hdc4     K1hdc7a
## 1 11.962451 8.237401 12.170751 11.688203 12.415674 10.663270 6.560077
## 2 11.525434 8.636344 12.289718 11.370002 12.246674 10.165721 6.647695
## 3 10.270379 4.895026 9.290788 10.058699 10.637877 9.071068 3.852922
## 4 9.638004 4.227486 6.894907 7.846882 8.796758 7.581860 6.540412
## 5 11.884205 8.994423 12.648534 11.728761 12.605488 10.524323 7.003397
## 6 10.770942 7.051677 10.979178 10.496793 11.224037 9.472453 5.388013
##      K1hdc8a     K1hdc8b     K1hdc9     K1hl11     K1hl10     K1hl11
## 1 8.0796659 11.617580 8.365905 7.655094e+00 4.796536e+00 10.053127
## 2 7.3795136 11.476663 8.139864 7.574907e+00 3.453407e+00 8.728758
## 3 6.2663508 10.352209 7.995875 7.262326e-08 5.561091e+00 5.867821
## 4 0.9133379 7.503681 6.737530 3.338188e-08 8.855488e-08 7.535726
## 5 7.7364800 11.835430 8.497614 7.932116e+00 3.782943e+00 9.086887
## 6 6.8946637 10.426199 7.179649 6.472473e+00 3.671022e+00 8.862924
##      K1hl112     K1hl113     K1hl114     K1hl115     K1hl117     K1hl118     K1hl12
## 1 9.792005 10.969005 4.022854e+00 8.337682 11.709139 10.520255 13.556829
## 2 9.605968 10.654081 3.524840e+00 8.596115 11.621583 10.882399 12.795675
## 3 7.671367 9.684555 8.373612e-08 3.996240 7.547809 7.513763 9.573388
## 4 6.443158 8.102859 4.184115e-08 3.449963 5.845094 7.572567 9.863914
## 5 9.964439 11.012763 3.855808e+00 8.954172 11.980361 11.241109 13.154509
## 6 8.602156 9.777965 2.942597e+00 7.151539 10.517721 9.329560 12.365003
##      K1hl120     K1hl121     K1hl122     K1hl123     K1hl124     K1hl125     K1hl126
## 1 10.080200 10.168797 10.888610 10.567096 12.21795 10.837330 10.142190
## 2 9.966184 10.541799 10.814388 10.538037 11.48864 10.437906 9.996570
## 3 8.885112 5.404376 10.339883 9.751291 11.03000 8.724539 8.995330
## 4 4.465697 3.792840 9.054326 8.003423 10.22660 5.941630 7.409214

```

```

## 5 10.324744 10.900465 11.173090 10.896702 11.84741 10.796555 10.355137
## 6 8.889964 8.978457 9.697625 9.376360 11.02636 9.646381 8.951881
##      Klhl128      Klhl129      Klhl13      Klhl130      Klhl132      Klhl133      Klhl134
## 1 9.429507 8.559704 6.976930 4.593029e+00 8.580409 3.3819466 5.847564
## 2 8.904723 8.222525 6.941301 4.579169e+00 8.324356 3.4838116 5.851943
## 3 9.329024 4.852396 1.724365 2.094625e+00 7.479211 1.1915915 2.252322
## 4 9.150201 2.790600 3.460502 1.493747e-09 6.226692 0.4943456 1.702269
## 5 9.262938 8.580338 7.297588 4.924673e+00 8.682242 3.8139657 6.205301
## 6 8.240267 7.372730 5.799896 3.477305e+00 7.393363 2.3603771 4.688070
##      Klhl135      Klhl136      Klhl138      Klhl14      Klhl15      Klhl16      Klhl17
## 1 7.002092 8.538131 4.5498272 11.089556 13.717478 10.574124 11.762684
## 2 5.618076 9.337527 4.3970178 11.386320 13.531871 10.779895 11.034870
## 3 4.973437 3.701509 0.7037376 7.458790 10.959741 6.324282 11.465461
## 4 3.594165 3.319059 2.7052803 7.548051 9.003993 7.747799 9.618894
## 5 5.970460 9.695913 4.7407133 11.745080 13.890723 11.138593 11.393597
## 6 5.824800 7.351231 3.4363546 9.898441 12.525635 9.383381 10.571245
##      Klhl18      Klhl19      Klk10      Klk11      Klk13      Klk5      Klk6
## 1 9.703165 12.04650 3.171484 2.427345 1.1222212 0.12959605 9.749696
## 2 9.211537 11.21181 2.271777 1.219078 0.9954769 0.09801954 8.655644
## 3 8.878399 14.37242 2.755580 4.204232 2.0233334 3.29840954 4.905650
## 4 6.908111 13.79708 5.177135 2.870640 1.4939238 4.73851188 5.217803
## 5 9.569879 11.57056 2.563237 1.434482 1.1853899 0.12452747 9.013734
## 6 8.513451 10.85497 2.174835 1.548286 0.6033181 0.05881876 8.559910
##      Klk7      Klk8      Klk9      Klrb1b      Klrb1c      Klrb1f
## 1 0.9949463 10.113458 3.771439 4.171173e+00 4.2747850 1.767883e-01
## 2 0.6821425 9.224792 2.927365 3.248837e+00 2.6587977 7.371198e-02
## 3 6.2047362 5.380826 2.511560 2.360173e+00 2.3762088 3.444690e+00
## 4 5.8637767 8.315002 3.159976 5.075992e-08 0.2894852 5.594562e-08
## 5 0.8279474 9.583139 3.243804 3.573852e+00 2.9664005 9.385810e-02
## 6 0.5243660 8.923182 2.711443 3.080399e+00 3.1772369 8.094268e-02
##      Klrd1      Klrg1      Klrg2      Kmo      Kncn      Kndc1
## 1 6.067600 4.380903e+00 6.331151 2.8414455 2.811553e+00 14.229745
## 2 4.313256 2.734243e+00 5.618794 3.0032722 1.434667e+00 13.827665
## 3 1.473671 9.031729e-01 4.358976 2.2147663 7.295602e-08 8.639210
## 4 3.810454 1.187004e-07 4.467287 0.9066523 3.664833e-08 7.586149
## 5 4.656039 3.044502e+00 5.971182 3.3219164 1.670844e+00 14.186522
## 6 4.903558 3.276871e+00 5.162483 1.8907766 1.865506e+00 13.037860
##      Kng2      Kntc1      Kpna1      Kpna2      Kpna3      Kpna4      Kpna6
## 1 3.306114e+00 7.884521 12.068923 6.610230 11.613589 11.947913 11.932821
## 2 1.606400e+00 7.941831 11.679417 6.519583 11.486133 11.270923 11.762728
## 3 4.094737e-08 7.390012 9.478449 7.898873 11.564368 9.399075 8.454619
## 4 1.992250e-08 4.011807 8.801135 4.152125 8.961903 9.572474 7.321000
## 5 1.856869e+00 8.299415 12.038199 6.874988 11.844901 11.629673 12.121516
## 6 2.293159e+00 6.700527 10.877380 5.437491 10.422210 10.756408 10.741321
##      Kpnbl      Kprp      Kptn      Kras      Krba1      Kremen1      Kremen2
## 1 13.778176 3.258894e-08 10.294605 11.932882 11.099868 11.118937 3.901693
## 2 13.485543 2.017756e-08 9.593595 11.183378 10.432540 11.072230 3.111605
## 3 10.529905 4.733755e+00 9.203308 10.024966 8.807100 7.762704 1.609028
## 4 9.018337 5.994812e+00 8.609161 9.125664 7.168332 5.354452 2.987823
## 5 13.844394 2.587438e-08 9.952062 11.542120 10.791189 11.430961 3.433197
## 6 12.586327 1.443515e-08 9.104128 10.741383 9.908747 9.927804 2.830798
##      Kri1      Krit1      Krr1      Krt1      Krt10      Krt12      Krt14
## 1 9.699505 10.731758 10.132832 8.001235 7.952727 4.417846 1.1416125
## 2 9.202856 10.690979 9.639425 7.525675 7.329303 4.115704 0.8053772

```

```

## 3 7.555340 9.363512 10.216528 10.796489 11.347046 2.399624 8.7526395
## 4 2.840447 7.496442 7.816904 11.675891 12.054702 6.067627 8.6612264
## 5 9.561195 11.049666 9.997905 7.882826 7.686202 4.456110 0.9698439
## 6 8.509797 9.540887 8.942534 6.816622 6.768366 3.311660 0.6155740
##      Krt15      Krt16      Krt17      Krt18      Krt19      Krt2
## 1 1.2249145 0.2599776 3.779870 2.260713 2.410996e+00 0.9294445
## 2 0.7617109 0.1945499 3.025502 1.718841 1.791953e+00 1.7361102
## 3 7.8848924 4.3462128 10.483436 2.813274 7.681978e-08 1.2260611
## 4 6.8466126 5.5179055 6.495255 8.308113 8.342182e-01 2.5186381
## 5 0.9197737 0.2450347 3.344770 1.977722 2.055938e+00 1.9962214
## 6 0.6688967 0.1208622 2.719142 1.415471 1.535120e+00 0.4847524
##      Krt20      Krt22      Krt23      Krt25      Krt26      Krt27      Krt28
## 1 1.631852e+00 7.738990 1.833814 0.9197434 0.9183221 3.061249e-08 5.161967
## 2 1.926526e+00 9.021949 1.839326 0.7581934 1.7226186 2.090901e-08 4.538876
## 3 7.612588e-08 3.636783 3.475999 2.9615414 0.9245514 2.687916e+00 3.114806
## 4 1.728840e+00 3.590171 4.137971 4.0698056 0.4279548 3.075621e+00 2.576033
## 5 2.199215e+00 9.380215 2.106474 0.9157305 1.9817696 2.681234e-08 4.884000
## 6 9.445484e-01 6.555841 1.090193 0.4789449 0.4780953 1.355969e-08 4.021861
##      Krt4      Krt5      Krt6a      Krt6b      Krt71      Krt73
## 1 0.3537271 0.6020419 0.3443084 4.183586e-08 4.814030e-08 4.853019
## 2 0.9213436 0.4127097 0.1148206 2.542468e-08 3.115764e-08 4.190810
## 3 4.2567600 8.4453240 6.2477011 3.550360e+00 3.551955e+00 1.825513
## 4 0.4875549 9.2456267 4.6955312 4.870179e+00 5.205497e+00 2.548083
## 5 1.1017821 0.5106262 0.1456474 3.260293e-08 3.995451e-08 4.532159
## 6 0.1672588 0.2973635 0.1625299 1.853104e-08 2.132358e-08 3.725012
##      Krt77      Krt78      Krt79      Krt8      Krt80      Krt83      Krt9
## 1 4.053578 0.2614597 4.022835 1.5250092 5.269712 3.0821401 1.949311
## 2 3.521201 0.1877577 2.956629 1.9942267 4.828459 2.6213087 2.701385
## 3 2.514485 6.2112220 7.623976 1.9796065 4.180539 0.9976758 1.237829
## 4 2.492323 6.8131055 6.473721 3.7870113 4.987410 1.3090106 2.311450
## 5 3.852097 0.2366200 3.273932 2.2709791 5.176094 2.9275372 3.010505
## 6 2.971060 0.1215841 2.942579 0.8698081 4.125939 2.0970647 1.175944
##      Krtcap2 Krtcap3      Krtcap4      Ksr1      Ksr2      Kti12      Ktn1
## 1 11.243893 6.631332 1.620909e-06 10.317188 7.268005 10.792622 12.664894
## 2 10.545385 5.312535 5.508579e-07 10.473106 7.014229 9.805606 12.436385
## 3 12.443082 2.239405 8.537430e+00 3.780672 2.468313 6.089544 11.303227
## 4 11.746121 3.695154 7.739418e+00 3.809630 2.968040 5.929218 9.878768
## 5 10.904051 5.663384 7.063839e-07 10.831761 7.370643 10.164129 12.795206
## 6 10.052690 5.458315 7.179761e-07 9.126688 6.088251 9.601705 11.473202
##      Ky      L1cam      L2hgdh      L3mbt11      L3mbt12      L3mbt13      L3mbt14
## 1 6.877300 11.536111 8.984335 7.022376e+00 10.171340 9.446813 4.364899e+00
## 2 6.926015 11.690166 8.436980 6.160337e+00 10.111986 9.447374 4.301775e+00
## 3 3.524182 8.153983 7.753308 8.437473e-08 10.084752 8.076934 2.776908e+00
## 4 1.613596 6.824067 6.657144 4.368138e-08 8.384492 3.393826 7.656219e-08
## 5 7.282274 12.048949 8.794941 6.514760e+00 10.470577 9.805797 4.644428e+00
## 6 5.701328 10.344765 7.796085 5.844880e+00 8.980997 8.257540 3.261817e+00
##      L7Rn6      Lace1      Lactb      Lactb2      Lad1      Lag3      Lage3
## 1 10.112690 9.705632 9.941284 9.391867 9.199142 13.803350 10.342871
## 2 9.272444 9.664316 9.553598 8.408850 8.840760 13.375434 9.722669
## 3 11.388845 10.319381 7.250301 7.992938 4.648381 3.161984 10.824430
## 4 10.252604 7.419227 6.605440 7.309218 5.721627 5.981133 9.217734
## 5 9.630808 10.022802 9.912053 8.766793 9.198944 13.734283 10.081171
## 6 8.922415 8.515915 8.751225 8.202699 8.010376 12.611498 9.152344
##      Lair1      Lalba      Lama1      Lama2      Lama3      Lama4      Lama5

```

```

## 1 11.747572 4.350153e+00 10.0929477 10.726202 7.264550 13.610227 11.475646
## 2 10.741764 3.939766e+00 9.8730105 10.441278 6.741730 12.550050 11.286788
## 3 6.881659 4.124882e-08 6.2033980 10.220365 3.769206 6.532123 6.195901
## 4 10.817737 2.031876e-08 0.5173624 7.650716 3.910366 3.705033 6.442421
## 5 11.100457 4.277759e+00 10.2315500 10.799928 7.097632 12.908876 11.645539
## 6 10.556139 3.247955e+00 8.9026967 9.535335 6.084825 12.418395 10.284327
##      Lamb1      Lamb2      Lamb3      Lamc1      Lamc2      Lamc3      Lamp1
## 1 12.261961 12.748509 5.426718 14.126960 5.151286 9.006060 16.22102
## 2 11.932819 12.233479 5.107125 13.237646 4.697010 8.506197 15.62530
## 3 9.685758 8.799199 4.166402 9.533159 4.386170 7.594547 12.21671
## 4 8.840360 7.663153 4.411095 9.835857 5.009863 4.954625 11.86467
## 5 12.291617 12.592292 5.456741 13.596492 5.043568 8.864201 15.98417
## 6 11.070362 11.556800 4.278053 12.935082 4.011559 7.817754 15.02906
##      Lamp2      Lamp3      Lamtor2      Lamtor3      Lanc11      Lanc12      Lanc13
## 1 13.57430 6.472719 10.668104 9.853808 12.214363 10.740707 8.094599e+00
## 2 12.91618 5.920756 10.053555 9.153649 11.430556 10.269672 5.715670e+00
## 3 13.06653 7.498732 11.399741 9.732470 9.979793 9.806184 2.834036e+00
## 4 12.27063 5.877488 10.090725 9.021468 9.059165 8.242104 8.892291e-09
## 5 13.27502 6.274372 10.412134 9.511969 11.789320 10.628293 6.068481e+00
## 6 12.38248 5.301890 9.477284 8.663869 11.022778 9.549830 6.909525e+00
##      Lap3      Laptm4a      Laptm4b      Laptm5      Large      Larp1      Larp1b
## 1 12.84064 14.60080 12.30358 16.01400 11.97315 12.269505 9.167445
## 2 12.24355 13.72746 11.63598 15.98439 11.62371 12.320587 8.006162
## 3 11.84555 13.47842 10.01324 10.22822 8.62013 9.093932 6.168970
## 4 10.96299 12.26193 10.91958 13.24532 10.15089 7.457481 5.177333
## 5 12.60236 14.08632 11.99476 16.34326 11.98249 12.679404 8.363803
## 6 11.64892 13.40889 11.11197 14.82205 10.78163 11.077905 7.978751
##      Larp4      Larp4b      Larp6      Larp7      Lars      Lars2      Las11
## 1 11.228783 11.077821 10.942306 9.745980 11.614945 17.78928 10.256057
## 2 10.604613 10.756770 10.168981 9.642511 11.201429 16.95411 10.203280
## 3 10.740806 10.275084 7.698501 10.149649 10.849087 15.71437 9.827792
## 4 9.831070 8.613975 5.739296 7.962520 8.821003 15.73873 7.644430
## 5 10.963288 11.115465 10.527583 10.000991 11.560173 17.31299 10.561889
## 6 10.037589 9.886714 9.751284 8.556200 10.423564 16.59730 9.065621
##      Laspl      Lat      Lat2      Lats1      Lats2      Lax1      Layn
## 1 13.378449 5.880502e+00 10.416325 11.749158 11.322692 2.8599073 8.494390
## 2 13.256477 5.228515e+00 9.468112 11.424807 11.354913 4.5622656 9.584824
## 3 10.196561 2.222384e+00 6.805155 9.570558 8.327686 0.8843044 5.754267
## 4 8.518853 5.935188e-08 8.613212 7.245264 6.589153 2.9177738 3.263137
## 5 13.615324 5.578881e+00 9.826542 11.783571 11.713671 4.9076119 9.943288
## 6 12.186643 4.720283e+00 9.225726 10.557724 10.131447 1.9064240 7.307647
##      Lbh      Lbp      Lbr      Lbx1      Lbx2      Lca5      Lca5l
## 1 13.051012 5.580804 11.55789 5.757391e+00 5.5319294 8.958199 6.3569967
## 2 12.324456 5.081391 10.95796 5.115687e+00 4.8429783 8.936333 5.8101045
## 3 8.751261 6.690116 11.82869 3.751497e-08 0.3139147 8.527758 4.4071658
## 4 8.305798 8.249948 10.51353 1.905844e-08 6.6338258 5.744246 0.9707407
## 5 12.683273 5.430840 11.31668 5.465358e+00 5.1907264 9.294562 6.1633002
## 6 11.859251 4.427814 10.36654 4.599966e+00 4.3802631 7.770017 5.1879188
##      Lcat      Lck      Lclat1      Lcmt1      Lcmt2      Lcn2      Lcor
## 1 10.239313 6.6554771 10.374366 10.772614 8.636597 6.807766e+00 8.408059
## 2 9.552839 6.5527281 10.127565 10.011482 8.578873 6.481270e+00 8.097750
## 3 11.431805 4.9410939 9.267196 10.796061 7.225434 3.402741e-08 6.709904
## 4 12.139578 0.5715222 8.356469 10.289208 6.117816 1.645235e-08 4.690677
## 5 9.911294 6.9082131 10.486160 10.370052 8.936920 6.836582e+00 8.455466

```

```

## 6 9.048895 5.4821478 9.183809 9.581712 7.449363 5.632580e+00 7.221639
##      Lcor1      Lcp1      Lcp2      Lct      Lct1      Ldb1      Ldb2
## 1 11.155137 13.372733 11.531037 4.725087 5.521627e+00 13.024924 7.908441
## 2 10.542223 13.011820 11.518597 5.290765 4.196116e+00 12.567286 7.682171
## 3 8.887451 8.901131 6.666426 4.454024 7.373947e-08 9.112519 8.473604
## 4 7.762452 10.664390 7.763256 8.053955 3.854279e-08 8.195623 4.879941
## 5 10.900889 13.370661 11.877367 5.641492 4.537529e+00 12.926112 8.039500
## 6 9.963983 12.180928 10.339693 3.602861 4.370245e+00 11.833168 6.724316
##      Ldb3      Ldha      Ldha16b      Ldhb      Ldhd      Ldlr      Ldlrad3
## 1 8.895886 13.81475 2.635952e+00 13.41627 8.445932 13.623326 12.379585
## 2 8.013412 13.21319 1.152642e+00 12.99739 8.583886 12.867864 11.519819
## 3 6.600508 11.92167 6.574816e-08 13.04975 6.638115 9.175747 9.645567
## 4 5.433805 12.22988 3.157305e-08 12.78781 4.500860 8.692420 9.189936
## 5 8.371059 13.57203 1.360925e+00 13.35623 8.941935 13.226700 11.878589
## 6 7.707872 12.62290 1.718720e+00 12.22446 7.259368 12.431492 11.187957
##      Ldlrap1      Ldoc1      Ldoc11      Leap2      Lect1      Lef1      Lefty1
## 1 11.999396 3.596870 11.067252 1.630318e+00 7.205524 9.314399 8.739248
## 2 10.827082 3.988863 10.614311 1.577995e+00 6.534346 8.735560 7.776169
## 3 5.872342 3.901328 8.985463 6.764842e-01 9.437205 8.154648 5.083649
## 4 4.618711 1.018309 8.509953 5.620240e-08 6.464094 5.923040 5.047533
## 5 11.185785 4.327560 10.972987 1.826225e+00 6.889787 9.093692 8.133595
## 6 10.807875 2.552954 9.876151 9.434642e-01 6.026310 8.125386 7.551688
##      Lefty2      Lekr1      Lemd1      Lemd2      Lemd3      Lenep      Leng1
## 1 5.332170e+00 7.220458 2.929621e+00 12.049114 10.874781 7.150612 9.011633
## 2 4.923325e+00 6.738963 2.422336e+00 11.876684 10.350006 7.557202 8.988206
## 3 8.421310e-08 7.120324 4.945704e+00 7.527864 8.235575 6.371223 6.721491
## 4 4.137529e-08 0.947943 7.896097e-08 6.176805 7.429170 3.689482 5.891337
## 5 5.271678e+00 7.094860 2.720617e+00 12.235478 10.708641 7.914390 9.346458
## 6 4.186389e+00 6.041113 1.965780e+00 10.857577 9.683805 5.971890 7.823313
##      Leng8      Leng9      Leo1      Lepr      Lepre1      Lepre11      Lepre12
## 1 13.882620 8.576585 9.826071 7.724900 10.706492 9.099268 10.464872
## 2 13.605532 7.897893 9.939118 7.973985 10.145538 7.963801 10.424192
## 3 8.767471 6.622811 9.634955 5.179465 6.249105 2.064285 6.286411
## 4 6.773094 3.358156 7.274503 5.202928 6.053688 4.715972 2.066805
## 5 13.964386 8.255437 10.297673 8.331598 10.504136 8.321404 10.782840
## 6 12.690762 7.389552 8.636172 6.541837 9.515641 7.910733 9.274227
##      Lepre14      Leprot      Leprot11      Letm1      Letm2      Letmd1      Lfng
## 1 11.234428 12.87778 11.65598 11.853570 8.480595 11.77855 12.874823
## 2 10.534968 12.08396 10.90333 11.720752 7.970958 11.24624 12.097542
## 3 8.236962 11.38645 10.42871 8.717518 7.528791 10.85353 7.981900
## 4 7.187118 10.69832 10.21172 8.457980 5.774101 10.17805 6.722281
## 5 10.893632 12.44277 11.26205 12.079537 8.328568 11.60498 12.456348
## 6 10.043230 11.68604 10.46458 10.662098 7.293902 10.58711 11.683091
##      Lgals1      Lgals12      Lgals2      Lgals3      Lgals3bp      Lgals4      Lgals7
## 1 9.900613 3.7152773 4.633942e+00 8.071556 10.432860 3.651613 2.521864
## 2 8.871500 4.3861607 4.887236e+00 7.464667 9.748371 3.642053 1.786806
## 3 10.869748 2.7509379 2.234295e+00 7.367736 10.541081 4.031154 8.211463
## 4 9.535253 0.6390275 9.779082e-08 5.986998 9.929895 2.263682 7.621990
## 5 9.229699 4.7297410 5.235322e+00 7.821743 10.106880 3.975217 2.050440
## 6 8.710609 2.6602648 3.516143e+00 6.886593 9.242245 2.602465 1.624955
##      Lgals8      Lgals9      Lgi1      Lgi2      Lgi3      Lgi4      Lgmn
## 1 11.536047 13.116757 8.059797 8.122512 14.741066 9.904940 16.23271
## 2 10.564935 12.360702 7.920554 8.081908 14.147798 9.410832 15.59970
## 3 9.904237 8.942256 10.185562 1.760591 9.938305 9.653069 12.17238

```

```

## 4 7.910466 10.568243 10.398022 1.847726 9.888801 8.582950 14.10146
## 5 10.923604 12.719520 8.278119 8.439612 14.506660 9.769243 15.95857
## 6 10.344701 11.924987 6.874891 6.937306 13.549151 8.714930 15.04075
##      Lgr4      Lgr5      Lgr6      Lhb      Lhcgr      Lhfp      Lhfp11
## 1 10.364188 6.7930144 9.683754 1.3040479 3.568908e+00 9.962363 3.6408589
## 2 9.211666 6.1042872 8.974655 0.5487798 4.498612e+00 9.144109 3.6109425
## 3 11.092347 0.9863783 2.800383 3.8574369 1.770983e+00 9.826509 0.3101933
## 4 11.546853 2.0722638 5.395832 2.8221154 7.199222e-08 7.884253 1.5684753
## 5 9.570008 6.4585329 9.332901 0.6721951 4.843345e+00 9.502425 3.9435412
## 6 9.173640 5.6179995 8.494071 0.7205514 2.527734e+00 8.772276 2.5927247
##      Lhfp12      Lhfp14      Lhfp15      Lhpp      Lhx1      Lhx2      Lhx5
## 1 13.00460 11.401123 6.205905 9.960701 7.923676 11.081095 9.4895593
## 2 13.09172 11.613405 5.299908 10.048848 7.869534 10.514159 8.9651267
## 3 10.07653 7.372323 5.232438 10.672984 1.483968 11.610175 0.3414652
## 4 10.10292 8.001652 4.484560 7.457829 6.220919 9.066411 3.8308655
## 5 13.45056 11.972182 5.650686 10.407426 8.227052 10.872820 9.3233687
## 6 11.81284 10.209839 5.039333 8.770616 6.739469 9.889985 8.3002073
##      Lhx6      Lhx8      Lhx9      Lias      Lif      Lifr      Lig1
## 1 9.273744 7.177415e+00 6.117290 10.302353 7.5386866 11.106977 10.341340
## 2 9.406436 5.697139e+00 6.333162 9.727056 7.1488488 10.797296 10.255452
## 3 2.010715 3.210543e-08 8.777341 10.129416 4.5132065 9.533930 10.759131
## 4 1.253371 1.679115e-08 5.208004 8.773347 0.2950341 10.250810 5.441985
## 5 9.764845 6.049871e+00 6.688088 10.085560 7.5054834 11.155996 10.614070
## 6 8.084816 5.998450e+00 4.952311 9.111868 6.3568487 9.915851 9.150815
##      Lig3      Lig4      Lilra5      Lilra6      Lilrb4      Lima1      Limch1
## 1 11.069045 8.231016 5.390851 2.7479571 7.412069 11.990274 12.95363
## 2 10.778994 7.848871 5.437637 2.2724989 6.765504 11.849553 12.69065
## 3 8.979264 7.561780 4.903377 0.7573067 5.709151 11.570733 11.58149
## 4 7.720665 5.728071 6.235732 0.5062800 6.134870 8.192411 10.41944
## 5 11.137692 8.206369 5.789154 2.5639934 7.121455 12.208346 13.04948
## 6 9.877942 7.045320 4.243259 1.8120118 6.231158 10.798756 11.76189
##      Limd1      Limd2      Lime1      Limk1      Limk2      Lims1      Lims2
## 1 11.471295 12.707237 11.059094 11.743817 12.187414 12.678066 12.896852
## 2 11.241792 12.310298 10.840614 10.814439 11.935180 12.273469 12.425056
## 3 9.727179 8.220901 7.570143 6.780930 9.914396 10.221402 8.557056
## 4 8.057735 8.651465 4.226750 2.299335 7.493206 9.029819 10.782522
## 5 11.600540 12.669114 11.199319 11.173141 12.293978 12.632284 12.783877
## 6 10.279978 11.515536 9.867998 10.552385 10.995837 11.486371 11.705116
##      Lin28b      Lin37      Lin52      Lin54      Lin7a      Lin7b      Lin7c
## 1 6.953372e+00 8.852851 9.485244 9.587650 8.347057 7.487480 12.15955
## 2 5.782883e+00 8.249088 8.793236 10.076609 8.504216 7.879880 11.97142
## 3 3.027563e-01 9.658270 10.287504 6.907569 6.870367 4.221670 12.62455
## 4 1.027110e-07 8.903299 9.914187 4.766622 7.448737 6.692453 10.66209
## 5 6.135970e+00 8.606920 9.151398 10.435193 8.862218 8.237407 12.33022
## 6 5.776582e+00 7.664956 8.295900 8.398125 7.160876 6.306007 10.96798
##      Lin9      Lingo1      Lingo2      Lingo3      Lingo4      Lins      Lipa
## 1 8.367807 10.361090 9.066156 9.611816 5.969409 9.452090 12.961841
## 2 8.358381 10.748838 8.672451 9.119471 5.970602 9.201950 12.460725
## 3 8.149345 7.258372 6.691036 6.011242 5.874466 8.123899 9.973392
## 4 5.977805 8.134957 8.928931 7.511473 4.314381 6.536983 9.879480
## 5 8.716290 11.107532 9.030550 9.477777 6.324397 9.560289 12.819547
## 6 7.181544 9.170545 7.877700 8.422250 4.807313 8.262807 11.770094
##      Lipc      Lipe      Lipg      Liph      Lipm      Lipo1      Lipt1
## 1 8.281412e+00 10.913447 7.4551730 7.754677 0.8106961 7.423024 5.886884

```

```

## 2 7.178864e+00 10.367246 7.0664541 8.362853 0.4489727 6.638570 5.969371
## 3 1.470553e+00 7.558457 0.6480428 3.220512 5.3079944 7.352239 7.103748
## 4 9.456227e-08 5.435081 1.0775310 4.248361 5.8868805 5.517472 6.408263
## 5 7.535545e+00 10.725884 7.4229567 8.720765 0.5539665 6.994252 6.323162
## 6 7.095501e+00 9.722445 6.2739373 6.571433 0.4147280 6.242030 4.726527
##      Lipt2      Litaf      Lix1      Lix1l      Llg1l      Llg12      Llph
## 1 7.517964 13.70980 9.096372 10.733385 13.847872 6.096018 8.294309
## 2 6.819950 12.99463 8.538821 10.480026 13.645475 5.735803 7.964713
## 3 5.744447 11.98061 12.212877 7.106733 10.338713 2.754520 8.901242
## 4 3.697724 11.16414 9.817145 4.367536 8.493786 3.565804 6.606364
## 5 7.176009 13.35347 8.896844 10.838682 14.004329 6.088698 8.322317
## 6 6.336273 12.51796 7.907843 9.542513 12.656016 4.931436 7.108344
##      Lman1      Lman1l      Lman2      Lman2l      Lmbr1      Lmbr1l      Lmbrd1
## 1 11.631678 3.061216e+00 13.173871 11.203408 10.952818 10.166903 13.16869
## 2 11.249807 2.486634e+00 12.788001 10.958424 10.336491 10.097325 12.77360
## 3 9.156913 3.859585e-08 10.658996 10.000573 8.605576 6.137213 12.08354
## 4 8.914639 1.946283e-08 9.624706 8.900981 7.719736 5.344686 11.02266
## 5 11.608555 2.787608e+00 13.146835 11.317143 10.695124 10.455913 13.13243
## 6 10.440291 2.078942e+00 11.982092 10.012227 9.761790 8.976566 11.97691
##      Lmbrd2      Lmcd1      Lmf1      Lmf2      Lmln      Lmna      Lmnb1
## 1 9.921941 9.816919 11.882073 11.63695 8.251119 13.102938 11.363672
## 2 10.060559 9.211891 11.288749 11.42983 8.711128 12.252682 10.744250
## 3 6.644820 10.621976 10.346260 10.03818 3.751543 9.379820 7.657644
## 4 5.194274 9.007634 9.699232 8.85659 5.581131 8.817856 4.639392
## 5 10.419140 9.570233 11.647501 11.78859 9.069247 12.611496 11.102943
## 6 8.731908 8.627033 10.690591 10.44556 7.065337 11.911170 10.172407
##      Lmnb2      Lmo1      Lmo2      Lmo3      Lmo4      Lmo7      Lmod1
## 1 10.308180 7.824906 12.384404 9.082386 11.295803 8.083587 5.869424
## 2 10.347566 7.785471 12.013265 8.695505 10.542830 8.348006 5.129471
## 3 6.872068 4.516369 5.896969 8.001836 8.497861 5.344026 3.925047
## 4 2.585767 6.317759 7.659698 10.181053 9.610765 7.940652 5.977979
## 5 10.706201 8.142907 12.372067 9.053616 10.901496 8.705908 5.479230
## 6 9.117689 6.641248 11.192774 7.893891 10.104572 6.898565 4.709447
##      Lmod3      Lmtk2      Lmtk3      Lmx1a      Lnp      Lnpep      Lnx1
## 1 1.882929e+00 11.278611 11.955040 3.300465 10.824999 11.054224 10.639880
## 2 1.561649e+00 11.606393 12.308093 3.969844 10.223192 10.432635 10.880088
## 3 4.150164e-08 7.682434 4.691303 4.270965 10.562648 7.956792 7.300854
## 4 2.051073e-08 7.265321 3.470970 3.612740 9.749329 8.014725 4.270157
## 5 1.808569e+00 11.965170 12.666909 4.308271 10.581805 10.791283 11.238798
## 6 1.126446e+00 10.087390 10.763534 2.288168 9.634059 9.863130 9.449083
##      Lnx2      Loh12cr1      Lonp1      Lonp2      Lonrf1      Lonrf2      Lonrf3
## 1 8.975221 9.689764 12.223654 11.369651 9.863796 10.678408 11.207057
## 2 8.905621 9.519270 12.029333 11.273006 9.468649 10.221229 10.805297
## 3 4.997343 7.542249 9.465727 11.026825 7.887495 9.461979 8.389284
## 4 5.234139 6.304714 7.684250 9.678981 6.359000 8.460577 7.483440
## 5 9.263837 9.877715 12.388136 11.631756 9.827079 10.579841 11.163998
## 6 7.786995 8.500071 11.032066 10.178382 8.673843 9.487580 10.015874
##      Lox      Lox1l      Lox12      Lox13      Lox14      Lpar1      Lpar2
## 1 6.407931 8.043061 9.2159364 9.994162 5.999932e+00 13.68543 7.779243
## 2 6.983381 7.846493 8.4263373 9.973526 4.902073e+00 12.74114 7.358065
## 3 2.137914 5.971737 4.3252068 8.513844 2.527416e+00 13.32401 7.933894
## 4 3.162195 2.579672 0.8926667 6.357106 5.745641e-08 11.23320 2.722822
## 5 7.339742 8.203989 8.7842908 10.332089 5.250269e+00 13.09998 7.715003
## 6 5.238065 6.858238 8.0271333 8.804033 4.837217e+00 12.49359 6.595851

```


##	Lpar3	Lpar4	Lpar5	Lpar6	Lpcat1	Lpcat2	Lpcat3
## 1	6.4806370	8.333764	7.0741236	10.081704	12.150058	13.352736	12.63694
## 2	6.8773718	8.166402	7.6378836	9.255648	11.750309	12.421226	12.03361
## 3	4.1504191	8.325775	0.9206576	9.880793	7.131450	5.860965	10.53400
## 4	0.2905194	8.273318	2.8661905	9.470005	6.077859	9.884158	10.01412
## 5	7.2335413	8.524173	7.9951637	9.614006	12.109096	12.780047	12.39242
## 6	5.3096925	7.147636	5.8961202	8.891466	10.958491	12.160933	11.44526
##	Lpcat4	Lpgat1	Lphn1	Lphn2	Lphn3	Lpin1	Lpin2
## 1	10.147870	11.182901	13.51263	12.438416	11.951105	10.860883	12.039270
## 2	9.486263	10.983792	13.37063	11.831720	11.819755	11.351443	11.907074
## 3	5.477444	9.022541	10.46311	7.061146	7.938524	10.153843	9.394582
## 4	6.654019	8.724122	10.29572	6.575725	7.553635	7.423148	8.934482
## 5	9.844699	11.342513	13.72948	12.190512	12.178546	11.710200	12.265870
## 6	8.957555	9.991731	12.32081	11.246773	10.759599	9.669917	10.847736
##	Lpin3	Lpl	Lpo	Lpp	Lpxn	Lrat	
## 1	5.660524	8.380212	7.547978e+00	10.713025	9.388255	4.205003e+00	
## 2	5.424279	8.692610	7.246835e+00	10.435543	9.667430	3.858744e+00	
## 3	5.510492	6.016668	2.959971e+00	9.447036	5.873355	1.633219e+00	
## 4	2.249569	8.294725	7.746475e-08	8.613492	8.510720	5.469854e-08	
## 5	5.775727	9.050720	7.603617e+00	10.794192	10.025917	4.195522e+00	
## 6	4.505466	7.193900	6.366075e+00	9.522169	8.199094	3.111967e+00	
##	Lrba	Lrch1	Lrch2	Lrch3	Lrfn1	Lrfn2	Lrfn3
## 1	11.918068	10.949208	10.302341	11.470042	9.558778	8.667254	9.276724
## 2	10.699624	10.739442	9.662875	11.357494	9.827623	7.713022	8.725412
## 3	7.486508	5.623089	7.658255	7.750436	3.823000	4.285600	5.808394
## 4	7.890579	6.623363	5.670526	5.536660	2.296138	6.402397	5.490755
## 5	11.058311	11.098135	10.021361	11.716251	10.186151	8.070383	9.083539
## 6	10.726574	9.758182	9.111856	10.278725	8.369302	7.479920	8.087790
##	Lrfn4	Lrfn5	Lrg1	Lrguk	Lrig1	Lrig2	Lrig3
## 1	10.771185	8.544923	3.578802e+00	3.706070	13.339310	10.939624	9.618694
## 2	10.906370	8.491916	4.530426e+00	3.734499	12.450154	10.575802	9.885217
## 3	6.551894	3.091751	2.365293e-01	3.891299	9.457684	9.263708	3.928023
## 4	4.155597	7.114224	6.628437e-08	1.576450	9.059014	7.637204	3.758909
## 5	11.265084	8.849910	4.875469e+00	4.069272	12.808977	10.934472	10.243759
## 6	9.580284	7.358000	2.536653e+00	2.651891	12.147509	9.748604	8.429117
##	Lrit3	Lrmp	Lrp1	Lrp10	Lrp11	Lrp12	Lrp1b
## 1	2.143674e+00	10.244085	16.11958	13.137394	11.016652	11.294556	11.052224
## 2	1.234209e+00	10.017881	15.75075	12.893017	10.889134	11.003458	10.858958
## 3	9.237290e-01	4.380919	11.02264	9.110230	8.418246	10.038262	5.569430
## 4	7.233110e-08	1.803616	11.65358	8.491802	9.052625	8.532831	7.549153
## 5	1.451185e+00	10.376453	16.10962	13.251855	11.247845	11.362182	11.217666
## 6	1.324073e+00	9.053662	14.92762	11.945621	9.825582	10.103325	9.861132
##	Lrp2	Lrp2bp	Lrp3	Lrp4	Lrp5	Lrp6	Lrp8
## 1	2.981933e+00	4.7514574	12.052225	12.697562	12.240020	11.819779	12.871590
## 2	3.853910e+00	4.2473121	11.616789	12.216661	11.917567	11.714758	12.810341
## 3	1.804491e+00	1.7191449	8.610362	11.143389	5.499597	9.511578	10.850351
## 4	5.021003e-08	0.5300323	7.306692	9.865285	5.448514	8.261696	8.374091
## 5	4.190613e+00	4.5893379	11.975566	12.575473	12.276364	12.073542	13.169175
## 6	2.010592e+00	3.6280001	10.860687	11.505863	11.048427	10.628319	11.679859
##	Lrpap1	Lrpprc	Lrr1	Lrrc1	Lrrc10b	Lrrc14	Lrrc14b
## 1	12.94313	11.140218	4.302397	9.969162	5.270801	9.924996	6.188487
## 2	12.61512	10.894305	4.218949	9.145646	6.119176	9.607651	5.982587
## 3	13.90898	8.316814	6.490245	9.525011	3.305311	7.885226	5.233274
## 4	12.97907	8.666711	1.538068	6.615365	6.051529	6.499137	3.869343

```

## 5 12.97395 11.253017 4.560638 9.503963 6.473469 9.966122 6.336424 2.584755
## 6 11.75139 9.949073 3.203119 8.779066 4.126993 8.734959 5.022220 2.254452
##      Lrrc16a      Lrrc16b      Lrrc17      Lrrc18      Lrrc19      Lrrc2      Lrrc20
## 1 11.515418 10.797953 4.2054690 4.556197e+00 3.5036551 4.657524 9.050146
## 2 11.009430 11.527803 4.5832363 4.557124e+00 2.2385648 4.559335 9.400784
## 3 7.507361 5.564256 1.5899720 3.135806e+00 4.7894563 4.872409 6.396927
## 4 7.704077 3.244167 0.2949439 9.378833e-08 0.7661531 5.297962 4.841783
## 5 11.368154 11.886574 4.9287787 4.902421e+00 2.5284174 4.904654 9.759192
## 6 10.324081 9.607032 3.1124026 3.442389e+00 2.4690686 3.538554 7.861730
##      Lrrc23      Lrrc24      Lrrc25      Lrrc26      Lrrc27      Lrrc28      Lrrc29
## 1 5.551861 8.695121 11.620105 6.989903e+00 8.065081 10.605106 5.737978
## 2 6.178726 8.039872 10.855483 4.278864e+00 6.870126 9.682015 6.706843
## 3 7.802779 7.130616 6.527132 1.077832e-06 7.826031 9.869982 3.991329
## 4 1.804416 5.540806 7.759629 3.748111e+00 7.262930 9.513252 3.109527
## 5 6.533206 8.397542 11.214190 4.621256e+00 7.226282 10.040507 7.062672
## 6 4.399650 7.507698 10.428723 5.812735e+00 6.880149 9.414337 4.581015
##      Lrrc3      Lrrc32      Lrrc34      Lrrc36      Lrrc38      Lrrc39      Lrrc3b
## 1 10.900723 7.615425 3.139565 2.5084461 5.395453 6.419251 6.000002
## 2 10.727417 7.491017 3.511174 3.0797069 5.757502 6.875941 5.625755
## 3 5.662068 5.429714 3.648560 4.5968742 2.641973 5.234895 1.226913
## 4 8.225110 5.796784 0.290263 0.6050309 3.666741 2.691847 5.898021
## 5 11.086108 7.848125 3.841873 3.4004543 6.110487 7.232108 5.978174
## 6 9.709730 6.433064 2.146981 1.6140148 4.247722 5.249213 4.837286
##      Lrrc4      Lrrc40      Lrrc41      Lrrc42      Lrrc43      Lrrc45      Lrrc46
## 1 10.582303 10.111970 11.677099 10.949145 3.357022e+00 11.422604 4.853052
## 2 10.829333 9.950027 11.113469 10.691040 3.286327e+00 11.219025 4.673404
## 3 6.745492 10.622263 9.872764 9.435617 1.548442e+00 8.059595 5.489874
## 4 8.998455 8.074462 9.401041 8.449331 9.622610e-08 4.909313 4.386464
## 5 11.188037 10.308584 11.472204 11.049726 3.612220e+00 11.577771 5.019757
## 6 9.391553 8.921696 10.485693 9.758119 2.338240e+00 10.231310 3.725044
##      Lrrc47      Lrrc48      Lrrc49      Lrrc4b      Lrrc4c      Lrrc52      Lrrc55
## 1 11.477103 6.005929 10.959036 12.71128 10.628319 3.237115e+00 9.305785
## 2 10.739007 6.180333 10.675103 11.98890 9.992856 2.599897e+00 9.165385
## 3 6.395640 7.331363 10.072253 11.28783 10.072562 4.264529e-08 2.072640
## 4 5.299272 4.770359 7.616005 11.41969 9.865009 2.178882e-08 5.161326
## 5 11.097700 6.534817 11.033787 12.34770 10.351423 2.905324e+00 9.523709
## 6 10.285784 4.843093 9.768003 11.51958 9.437531 2.232352e+00 8.116790
##      Lrrc56      Lrrc57      Lrrc58      Lrrc59      Lrrc6      Lrrc61      Lrrc63
## 1 9.014577 10.359150 13.75874 12.799661 2.565863 9.960803 2.797555e+00
## 2 7.409563 10.076016 13.30346 12.314609 3.234045 9.239540 2.877956e+00
## 3 8.337507 10.699811 13.60544 8.744020 3.799569 8.074974 2.584820e+00
## 4 7.099749 9.073717 12.32353 8.066955 4.104621 6.222549 9.109654e-08
## 5 7.766569 10.434600 13.66230 12.673426 3.558707 9.597892 3.192894e+00
## 6 7.826250 9.168608 12.56690 11.607942 1.660962 8.770718 1.853700e+00
##      Lrrc66      Lrrc7      Lrrc8a      Lrrc8b      Lrrc8c      Lrrc8d      Lrrc8e
## 1 2.496200e+00 8.817658 11.85111 11.424422 10.755513 11.920615 1.1459586
## 2 1.869310e+00 8.471940 11.26436 11.010121 10.234978 11.674151 1.0892341
## 3 1.940679e+00 4.816275 12.79687 6.863542 5.872444 9.643714 3.8610014
## 4 1.290801e-07 5.443801 11.82298 5.757581 6.238632 7.228506 3.6106517
## 5 2.138403e+00 8.829922 11.62311 11.368845 10.593593 12.032932 1.2903731
## 6 1.604046e+00 7.629865 10.65964 10.233127 9.564625 10.729120 0.6183290
##      Lrrc9      Lrrcc1      Lrrfip1      Lrrfip2      Lrriq1      Lrriq3
## 1 6.168411 10.295198 11.412441 10.849483 3.681636e+00 4.381992e+00
## 2 7.408380 10.106131 11.199265 10.163150 4.471636e+00 4.618233e+00

```

```

## 3 2.782124 9.111999 7.320611 8.145528 4.163012e+00 3.040123e+00
## 4 1.192009 6.524622 7.310350 5.931428 5.550831e-08 9.178234e-08
## 5 7.765384 10.464721 11.558008 10.521751 4.816100e+00 4.964096e+00
## 6 5.002501 9.104720 10.221152 9.658525 2.629693e+00 3.277896e+00
##      Lrrk1      Lrrk2      Lrrn1      Lrrn2      Lrrn3      Lrrn4
## 1 10.162010 9.697261 13.45763 11.067562 10.452296 3.195554e+00
## 2 10.588331 9.251379 12.72236 10.891298 9.945627 2.600669e+00
## 3 6.928894 7.603839 10.17603 5.898606 10.019699 4.245735e-08
## 4 4.620906 6.176801 10.53348 10.012914 10.764416 2.147637e-08
## 5 10.947003 9.609735 13.08119 11.250010 10.304183 2.906125e+00
## 6 8.971678 8.507556 12.26581 9.876461 9.261663 2.195892e+00
##      Lrrn4c1      Lrrtm1      Lrrtm2      Lrrtm3      Lrrtm4      Lrsam1      Lrtm1
## 1 5.221680e+00 9.684964 11.314576 10.192573 9.170524 10.470619 3.755007
## 2 5.326616e+00 9.289227 11.059129 9.487665 8.671522 10.618089 3.465419
## 3 4.310291e+00 9.281499 10.067143 6.574948 10.885413 7.951949 2.637193
## 4 6.530457e-08 10.001752 8.867953 9.642833 11.540430 6.887799 3.083972
## 5 5.677543e+00 9.647598 11.417859 9.846101 9.029621 10.976765 3.795200
## 6 4.079509e+00 8.495279 10.123336 9.002207 7.981822 9.279969 2.696452
##      Lrtm2      Lrwd1      Lsmp      Lsg1      Lsm1      Lsm10      Lsm11
## 1 10.411513 10.122537 11.68552 10.478198 10.099035 8.891229 9.993417
## 2 10.357271 10.018014 11.23246 10.314415 9.343084 8.237130 10.036625
## 3 4.777108 9.384552 10.90523 10.177542 9.565894 10.330446 4.412183
## 4 8.529216 6.070538 10.41559 7.399255 7.186627 8.549603 5.681881
## 5 10.715907 10.376586 11.59121 10.673044 9.701472 8.594953 10.395201
## 6 9.220919 8.932251 10.49411 9.287541 8.908776 7.703228 8.803290
##      Lsm12      Lsm14a      Lsm14b      Lsm2      Lsm3      Lsm4      Lsm5
## 1 9.675399 12.418788 11.977124 9.874761 10.183262 11.455049 6.736597
## 2 9.114254 11.903827 11.370959 8.728889 9.466560 10.204189 5.848488
## 3 8.268539 9.333458 10.103198 8.940751 11.539166 8.575043 7.104438
## 4 7.083272 7.841901 8.269895 7.116356 9.396729 7.344467 5.536632
## 5 9.472559 12.262623 11.729717 9.087018 9.824989 10.562798 6.201833
## 6 8.485729 11.227150 10.785610 8.684792 8.992906 10.263740 5.562255
##      Lsm6      Lsm7      Lsp1      Lsr      Lss      Lst1      Lta
## 1 10.731999 6.694971 9.512743 12.572332 12.656607 9.066888 4.932348e+00
## 2 10.148513 5.738819 9.715926 11.203213 12.296656 8.443289 4.729509e+00
## 3 11.257613 6.204282 6.279789 5.435808 9.628388 5.967471 1.098023e+00
## 4 9.869047 5.079219 7.877158 7.776233 6.254342 7.515635 9.411464e-08
## 5 10.507111 6.091726 10.074427 11.561957 12.655472 8.801254 5.076342e+00
## 6 9.541128 5.521142 8.323349 11.380659 11.464916 7.878431 3.800994e+00
##      Lta4h      Ltb      Ltb4r1      Ltb4r2      Ltbp1      Ltbp2      Ltbp3
## 1 11.372405 7.3204769 4.835364 2.6553834 9.642164 4.3516625 11.577672
## 2 10.842639 6.1937767 4.985393 1.8899164 9.172544 5.0065102 11.535797
## 3 11.058208 0.5495867 1.352535 0.9940139 7.850356 6.0207127 7.675337
## 4 8.932575 0.3467297 0.315627 1.4000932 9.377509 0.5220685 4.970887
## 5 11.201344 6.5483015 5.334191 2.1603222 9.530871 5.3554552 11.894569
## 6 10.181135 6.1402884 3.708127 1.7348185 8.452548 3.2493731 10.386308
##      Ltbp4      Ltbr      Ltc4s      Ltf      Ltk      Ltn1      Ltv1
## 1 12.492363 11.819315 11.862230 7.2936590 6.190566e+00 11.549921 10.380676
## 2 11.666481 11.529229 11.538546 7.9036982 6.153802e+00 11.137720 9.598417
## 3 7.855938 8.270881 7.673721 0.2166885 2.946147e+00 9.703334 8.760637
## 4 8.326817 8.140248 10.625525 0.6508028 9.544238e-08 8.747066 6.603260
## 5 12.025262 11.888000 11.897318 8.2612475 6.508205e+00 11.496457 9.956885
## 6 11.300708 10.627855 10.670754 6.1136909 5.024262e+00 10.358569 9.190112
##      Luc71      Luc712      Luc713      Lum      Luzp1      Luzp2      Lxn

```

```

## 1 12.500396 13.018483 12.641872 7.360034 11.470461 13.84409 11.125313
## 2 12.444595 12.496953 12.081785 7.001027 11.436013 13.58687 10.802910
## 3 11.341993 9.715491 12.056953 10.050075 8.332410 11.56572 11.972789
## 4 8.779547 8.157174 9.829714 6.974732 7.616132 10.61964 10.623372
## 5 12.803417 12.855777 12.440590 7.357419 11.794778 13.94573 11.161611
## 6 11.308739 11.826727 11.450185 6.179528 10.279145 12.65224 9.934177
##      Ly6d      Ly6e      Ly6g5b      Ly6g5c      Ly6g6c      Ly6g6d      Ly6g6e
## 1 5.451628 14.40155 5.108793e+00 2.128285e+00 3.116263 5.863662 6.194209
## 2 4.359201 13.84016 5.128155e+00 2.264305e+00 2.286928 5.846127 5.068960
## 3 7.950127 12.08403 2.562745e+00 3.118317e+00 6.138145 3.617109 8.011094
## 4 6.836668 13.01276 1.256976e-07 7.728941e-08 5.562916 4.629768 7.106966
## 5 4.702491 14.19902 5.477905e+00 2.555407e+00 2.579109 6.199463 5.418327
## 6 4.302233 13.20965 3.970597e+00 1.312176e+00 2.126694 4.703812 5.027841
##      Ly6g6f      Ly6h      Ly6k      Ly75      Ly86      Ly9      Ly96
## 1 6.237096e+00 11.399196 2.541829 11.1237796 12.228145 6.736457 6.468960
## 2 5.817977e+00 11.282751 1.855919 11.6872933 11.794159 7.179392 5.566075
## 3 4.529739e+00 4.198986 5.496779 2.3392366 8.307729 1.675789 6.507514
## 4 9.504335e-08 7.167762 1.391761 0.2782652 12.788045 1.807039 7.307180
## 5 6.171204e+00 11.641502 2.124149 12.0460758 12.152948 7.536074 5.918221
## 6 5.069985e+00 10.207913 1.641270 9.9326442 11.036556 5.562116 5.298185
##      Lyar      Ly11      Lyn      Lypd1      Lypd2      Lypd3      Lypd5
## 1 8.949830 11.033334 12.855377 8.276891 2.218884e+00 4.880414 0.5206145
## 2 8.990229 10.752844 12.490149 7.731765 2.819956e+00 4.585509 0.4678478
## 3 7.752322 5.534867 8.817979 5.157337 2.571100e+00 6.577067 3.0100215
## 4 5.152418 4.925545 10.358013 6.625552 1.028099e-07 7.087352 4.0352894
## 5 9.348482 11.111539 12.848973 8.089146 3.133064e+00 4.931072 0.5764423
## 6 7.761670 9.842253 11.663649 7.090999 1.382622e+00 3.751231 0.2535477
##      Lypd6      Lypd6b      Lyp1a1      Lyp1a2      Lyp1a11      Lymr1      Lymr2
## 1 10.098404 6.642117 10.881217 11.891004 9.312935 7.519994 9.952045
## 2 9.669814 6.928219 10.503584 11.007644 8.782714 6.747783 9.271608
## 3 7.394549 3.654236 10.646327 8.920342 8.930321 9.151845 11.228770
## 4 5.660523 3.996216 9.408800 7.988887 6.157584 8.449128 8.953760
## 5 10.028302 7.284483 10.862244 11.366368 9.140870 7.103697 9.629972
## 6 8.908147 5.468960 9.690237 10.699519 8.123926 6.338288 8.761972
##      Lymr4      Lymr5      Lymr7      Lysmd1      Lysmd2      Lysmd3      Lysmd4
## 1 9.477752 9.470333 6.257083 6.638263 9.946967 10.255260 9.489766
## 2 8.630292 8.902642 5.178105 5.922409 9.204617 9.905956 8.925236
## 3 11.760442 10.108335 7.663002 7.376315 8.922024 8.710051 9.105772
## 4 10.088857 8.528855 5.120493 6.373781 8.690882 5.996584 7.903933
## 5 8.988367 9.260856 5.528167 6.276031 9.562956 10.264503 9.283460
## 6 8.288421 8.281016 5.089633 5.465156 8.756900 9.064825 8.300414
##      Lyst      Lyve1      Lyz1      Lyz2      Lyz14      Lzic      Lztf11
## 1 10.468273 9.354853 2.343263 12.01901 1.2474890 10.397937 9.447060
## 2 10.543625 9.090233 2.732156 11.53862 1.2137894 9.953107 9.462868
## 3 7.359281 8.961585 1.058819 11.64611 1.5895957 10.374953 8.982095
## 4 8.713435 6.410416 3.176160 11.87291 5.5455694 6.710475 7.881567
## 5 10.902290 9.448528 3.042344 11.89739 1.4286392 10.311665 9.821296
## 6 9.277625 8.165758 1.480884 10.82748 0.6835337 9.207356 8.257787
##      Lztr1      Lzts1      Lzts2      M6pr      Mab2111      Mab2112      Mab2113
## 1 12.528012 7.712892 12.023542 13.49482 9.852477 2.4060911 5.255071e+00
## 2 12.745207 7.797442 11.177964 12.81066 8.915037 1.6801538 3.442385e+00
## 3 10.410927 6.256504 6.177541 11.22912 0.815456 3.9340647 5.797151e-08
## 4 8.708801 2.474580 4.807615 10.38836 6.455843 0.2563407 2.944551e-01
## 5 13.104040 8.154889 11.536706 13.16950 9.273256 1.9362191 3.771694e+00

```

```

## 6 11.336349 6.529904 10.832013 12.30300 8.662540 1.5311755 4.111781e+00
##      Macf1  Macrodl  Macrodl2  Mad1l1  Mad2l1  Mad2l1bp  Mad2l2
## 1 15.005186 9.410542 9.140323 11.057853 9.160445 8.652015 10.706960
## 2 14.677308 8.889265 8.685666 10.967032 8.313482 8.317544 10.027453
## 3 11.058872 6.296056 7.526413 10.344080 10.158986 9.239003 10.910772
## 4 9.890695 6.542632 6.494200 7.644017 6.564875 7.452230 9.719241
## 5 15.036175 9.247473 9.043772 11.325752 8.671361 8.675425 10.386027
## 6 13.813260 8.221337 7.951691 9.866758 7.971766 7.464730 9.516108
##      Madcam1  Madd  Maea  Maf  Maf1  Mafa
## 1 9.377706e+00 11.465986 11.871771 10.596484 12.675844 4.600413e+00
## 2 8.711841e+00 11.555313 11.846396 10.067553 12.209765 3.884039e+00
## 3 6.312881e-08 7.234590 10.835574 10.039199 9.795950 1.234521e-07
## 4 3.215068e-08 7.856093 8.634772 10.916532 8.763925 5.808281e-01
## 5 9.069961e+00 11.914086 12.205189 10.426135 12.568577 4.221204e+00
## 6 8.188566e+00 10.274672 10.680292 9.405723 11.484150 3.484310e+00
##      Mafb  Maff  Mafg  Mafk  Mag  Mageb3  Maged1
## 1 12.692249 14.054696 11.103120 13.567947 17.59635 1.796110e+00 14.60440
## 2 12.606446 12.854343 10.976588 12.944655 16.70636 2.373914e+00 14.35732
## 3 7.007528 5.134197 7.223883 6.040916 12.17931 1.134009e+00 14.28916
## 4 7.421538 4.480972 6.492166 4.852273 11.54241 2.496267e-09 12.42326
## 5 12.965274 13.213178 11.335309 13.303494 17.06524 2.670081e+00 14.71618
## 6 11.500552 12.862824 9.911997 12.376119 16.40438 1.062581e+00 13.41249
##      Maged2  Magee1  Magee2  Mageh1  Magel2  Magi1  Magi3
## 1 12.567793 11.787348 7.097702 11.489834 9.137393e+00 11.954860 10.655132
## 2 12.232098 11.436333 6.187458 11.001640 8.649111e+00 11.873757 10.991020
## 3 12.385164 8.874735 8.110751 11.508790 5.802271e-08 11.885376 8.038862
## 4 9.486417 8.746687 8.708484 9.856313 2.880903e-08 8.703849 5.122538
## 5 12.590911 11.795097 6.541964 11.360364 9.007196e+00 12.232551 11.349743
## 6 11.376121 10.595900 5.919473 10.298508 7.948768e+00 10.763353 9.464322
##      Magix  Magoh  Magohb  Magt1  Mak  Mak16  Mal
## 1 5.645283e+00 10.971024 7.732141 12.092531 3.211085e+00 9.530347 17.49146
## 2 6.188366e+00 9.997906 6.892402 11.794156 3.670843e+00 9.454359 16.51718
## 3 9.807753e-01 11.235318 9.697966 11.370051 1.600440e+00 9.814298 13.80602
## 4 7.779286e-08 8.712851 8.622879 9.371211 1.117585e-07 8.037788 12.13568
## 5 6.542875e+00 10.356473 7.248599 12.152945 4.004519e+00 9.812784 16.87606
## 6 4.490612e+00 9.779983 6.549035 10.900981 2.209501e+00 8.340921 16.29949
##      Mal2  Mall  Malt1  Mamdc2  Mamdc4  Maml1  Maml2
## 1 8.692195 5.892890 10.178276 7.771206 8.4711464 10.923197 10.963108
## 2 7.937004 5.160900 9.504067 7.874196 8.3760110 10.879800 10.542209
## 3 5.919251 3.452984 5.395571 7.597593 4.7019389 6.891435 11.344192
## 4 10.335960 4.104254 5.300753 6.685408 0.9003116 6.569300 10.646844
## 5 8.294584 5.510857 9.862508 8.231718 8.7339317 11.238510 10.900875
## 6 7.504782 4.732403 8.987925 6.587862 7.2844883 9.732188 9.772073
##      Maml3  Mamld1  Mamstr  Man1a  Man1a2  Man1b1  Man1c1
## 1 10.315211 9.744451 6.083156 12.043103 12.531751 13.129559 12.024389
## 2 10.198035 9.545683 6.133885 11.943134 12.074692 13.013445 11.647809
## 3 7.184607 4.280000 5.641467 6.615383 9.311544 8.983839 7.825351
## 4 6.692578 5.504529 3.499759 7.032785 9.272868 8.607268 8.194859
## 5 10.556643 9.904136 6.488225 12.301932 12.433497 13.372285 12.006589
## 6 9.124713 8.554674 4.918817 10.851568 11.340087 11.937786 10.832860
##      Man2a1  Man2a2  Man2b1  Man2b2  Man2c1  Manba  Manbal
## 1 10.656243 13.734221 14.262407 12.783646 12.136643 10.986100 10.932275
## 2 9.955408 13.678718 14.246165 12.372789 11.853231 9.913632 10.286477
## 3 5.984314 9.179223 9.140456 8.516856 9.890321 7.984140 10.821753

```

```

## 4 7.823478 9.040458 11.011295 8.517075 7.774658 9.317214 10.037266
## 5 10.313967 14.037573 14.605028 12.731608 12.212024 10.272181 10.645101
## 6 9.465432 12.542376 13.070519 11.591931 10.945080 9.795049 9.741260
##      Manea      Maneal      Manf      Mansc1      Maoa      Maob      Map1lc3a
## 1 10.794174 10.577668 12.72638 8.287374 13.046945 8.855129 13.184364
## 2 10.159922 10.803930 11.87974 7.663974 12.333332 8.484503 12.443418
## 3 9.545906 7.535662 11.36432 8.319198 9.996932 9.473307 9.736922
## 4 8.838091 8.232689 11.07647 8.755646 9.538057 8.964467 9.572937
## 5 10.518522 11.162631 12.23854 8.021283 12.692150 8.842493 12.802240
## 6 9.603257 9.386923 11.53467 7.101437 11.855185 7.667229 11.992584
##      Map1lc3b      Map2k1      Map2k2      Map2k3      Map2k4      Map2k5      Map2k6
## 1 13.43886 12.529505 12.904379 12.147645 11.718965 10.994062 9.034322
## 2 12.91031 12.177571 12.269545 11.640830 11.379237 10.886653 8.641839
## 3 14.42344 9.600109 8.943167 8.578953 9.178179 8.761839 8.766692
## 4 12.72141 9.517713 7.844793 6.836862 8.392268 7.350942 6.334343
## 5 13.26915 12.536381 12.628359 11.999609 11.737997 11.245364 8.999921
## 6 12.24705 11.337841 11.712642 10.956078 10.527543 9.803006 7.845945
##      Map2k7      Map3k1      Map3k10      Map3k11      Map3k12      Map3k13      Map3k14
## 1 12.278393 11.362491 11.959916 12.851006 11.030018 8.514924 10.458136
## 2 11.728752 11.120511 12.099099 12.645852 10.712551 8.402435 10.791900
## 3 8.590998 11.269123 4.772245 5.691305 8.205394 7.892292 7.513256
## 4 8.126582 9.836646 4.103393 5.681948 6.659590 4.868988 5.930778
## 5 12.087537 11.479247 12.457906 13.004681 11.071240 8.760373 11.150599
## 6 11.086790 10.171226 10.768408 11.659278 9.838940 7.328107 9.267497
##      Map3k15      Map3k2      Map3k3      Map3k4      Map3k5      Map3k6      Map3k7
## 1 7.6494584 11.815862 12.516605 11.165026 9.278237 5.697384 12.175175
## 2 7.6637882 11.651714 11.732809 10.754104 8.806202 5.900743 11.757822
## 3 1.9238073 8.509629 8.200357 8.400475 4.742588 4.604009 8.610190
## 4 0.2937892 7.371498 6.426481 8.014317 6.798105 4.219848 7.045006
## 5 8.0210968 12.010494 12.091594 11.112799 9.164370 6.254286 12.116609
## 6 6.4668733 10.624403 11.324944 9.973867 8.089299 4.541407 10.983600
##      Map3k8      Map3k9      Map4k1      Map4k2      Map4k3      Map4k4      Map4k5
## 1 10.246035 10.876075 7.1212013 12.106152 12.007808 15.199953 11.989459
## 2 9.994874 10.826688 6.9865176 11.859988 11.075667 14.879375 11.672814
## 3 4.576596 6.418137 3.0695549 6.178469 8.742267 10.592991 8.724913
## 4 4.625764 4.780681 0.3115131 4.590553 8.342003 8.055328 6.238426
## 5 10.353441 11.185392 7.3428846 12.218781 11.434399 15.238243 12.031595
## 6 9.055610 9.685098 5.9427513 10.914598 10.816284 14.008020 10.797940
##      Map6d1      Mapk1      Mapk10      Mapk11      Mapk12      Mapk13      Mapk14
## 1 13.462741 13.22119 10.791794 9.086781 9.660985 3.404763 11.948706
## 2 12.357584 12.63261 10.587254 9.210220 8.227728 3.232019 12.260247
## 3 7.690516 10.90091 10.440414 6.904322 6.106083 4.795755 8.400987
## 4 7.797009 11.39263 10.397232 2.333642 6.401857 4.614795 8.330110
## 5 12.716402 12.99144 10.945926 9.568561 8.585544 3.556632 12.619061
## 6 12.270925 12.02941 9.600878 7.898275 8.471338 2.380678 10.757201
##      Mapk15      Mapk1ip1      Mapk1ip1l      Mapk3      Mapk4      Mapk6      Mapk7
## 1 6.1205476 10.150858 11.249077 14.40825 9.942400 13.098180 11.708044
## 2 5.5012690 9.701903 10.869083 13.92498 9.639877 12.347473 11.390219
## 3 1.1774895 9.743711 10.538051 10.81610 9.646074 10.843364 9.584575
## 4 0.3688828 7.315075 8.313585 10.36076 8.597736 8.991061 6.353141
## 5 5.8531048 10.060400 11.227791 14.28383 9.998357 12.706291 11.748980
## 6 4.9555084 8.960539 10.057871 13.21635 8.752340 11.906412 10.516626
##      Mapk8      Mapk8ip1      Mapk8ip2      Mapk8ip3      Mapk9      Mapkap1      Mapkap2
## 1 11.883347 15.116165 12.037245 14.017986 12.031901 11.606356 13.926545

```

```

## 2 11.475146 14.781307 11.647200 13.623030 11.830876 11.131862 13.482542
## 3 9.905892 8.564235 8.024006 9.696338 9.039807 9.083752 7.643974
## 4 7.168947 7.289787 8.146712 10.243099 8.247554 6.401308 5.157567
## 5 11.833913 15.140175 12.005979 13.981884 12.189668 11.490599 13.841394
## 6 10.691864 13.924235 10.845712 12.826116 10.840369 10.414980 12.734683
## Mapkapk3 Mapkapk5 Mapkbp1 Mapre1 Mapre2 Mapre3 Mapt
## 1 8.801725 11.851589 11.654137 13.84767 13.29659 11.778099 14.15778
## 2 8.707545 10.876697 11.233369 13.46270 13.10593 11.560483 13.70782
## 3 5.316773 7.607683 7.603286 12.72927 12.59077 8.418176 12.55020
## 4 4.531184 6.280463 6.870325 10.51679 10.99888 7.662543 10.71026
## 5 9.065662 11.235407 11.592116 13.82155 13.46477 11.919256 14.06668
## 6 7.613978 10.660117 10.462741 12.65582 12.10479 10.586655 12.96590
## Marcks Marcks11 Mark1 Mark2 Mark3 Mark4 Mars
## 1 15.17691 15.543625 11.673474 12.072404 12.901301 11.423378 12.761161
## 2 14.46235 15.082550 10.476433 11.796124 12.381251 11.136063 12.306613
## 3 15.24749 11.183754 7.538781 8.692583 9.353095 2.268255 9.636711
## 4 14.13975 7.796844 6.845620 7.145160 7.901033 3.358249 7.872951
## 5 14.82121 15.441419 10.835089 12.154914 12.740070 11.494801 12.665429
## 6 13.98498 14.351681 10.482070 10.880859 11.709565 10.232084 11.569450
## Mars2 Marveld1 Marveld2 Marveld3 Mas1 Masp1 Masp2
## 1 9.630222 9.963356 9.261320 3.5036285 2.959747 10.318958 8.198000e+00
## 2 8.805399 9.488788 9.472872 3.6730658 3.837412 9.770127 8.220813e+00
## 3 8.009273 4.198081 4.288199 0.7912084 4.383249 8.160689 3.014478e+00
## 4 7.164083 5.798229 4.643315 0.5175601 8.361202 5.878213 4.886288e-08
## 5 9.163567 9.847224 9.831303 4.0067816 4.173858 10.128641 8.578625e+00
## 6 8.440626 8.773268 8.072419 2.4690448 1.991558 9.128456 7.012449e+00
## Mast1 Mast2 Mast3 Mast4 Mastl Mat2a Mat2b
## 1 11.008281 12.150685 12.934812 11.432845 7.353346 13.43123 11.056623
## 2 11.143853 11.789753 12.564442 11.020236 7.315842 13.18296 10.555627
## 3 6.814559 9.712962 8.792570 8.117382 7.355936 12.62860 11.130184
## 4 6.265488 7.788112 8.623076 7.591452 2.370461 10.53256 10.649454
## 5 11.502591 12.148542 12.923269 11.378962 7.672722 13.54181 10.914294
## 6 9.817216 10.959118 11.743070 10.241546 6.172893 12.23942 9.865528
## Matk Matn1 Matn2 Matn4 Matr3 Mau2 Mavs
## 1 10.574750 8.852068e+00 8.611713 13.603856 13.38862 13.17187 10.566362
## 2 11.333423 7.981476e+00 8.639561 13.021335 12.93296 12.70880 10.446752
## 3 6.331956 1.244248e-07 6.730877 2.922929 13.91248 11.16943 9.465964
## 4 6.128867 5.232965e+00 9.005825 5.014999 12.23301 9.83353 8.020740
## 5 11.692178 8.339095e+00 8.997642 13.380176 13.29180 13.06763 10.805403
## 6 9.384008 7.664176e+00 7.424562 12.412024 12.19682 11.98009 9.375627
## Max Maz Mb Mbd1 Mbd2 Mbd3 Mbd4
## 1 12.002157 13.556082 1.437508e+00 10.636790 11.079477 12.522445 8.525028
## 2 11.582499 12.905290 1.553624e+00 10.616717 10.774793 12.221591 8.074795
## 3 10.550559 8.646083 1.806919e+00 9.015521 7.803759 8.918109 9.423175
## 4 8.979473 8.303924 8.894059e-08 7.186597 6.748644 7.131550 7.300778
## 5 11.941274 13.264127 1.799895e+00 10.975393 11.133490 12.580404 8.432493
## 6 10.810635 12.364256 8.098317e-01 9.445995 9.888368 11.330783 7.338175
## Mbd5 Mbd6 Mbip Mblac1 Mblac2 Mbn11 Mbn12
## 1 10.189179 11.901297 10.076812 6.435882 9.387899 12.12917 12.75444
## 2 10.024532 11.694896 9.768491 6.682519 8.936958 11.64803 12.00312
## 3 7.724662 7.719882 8.981044 4.655111 8.272789 11.50223 10.68619
## 4 6.401458 5.392251 6.627566 1.546316 8.415683 11.08374 10.96076
## 5 10.383105 12.053679 10.127005 7.038296 9.295187 12.00681 12.36192
## 6 8.998816 10.709808 8.886580 5.265595 8.198739 10.93761 11.56273

```

##	Mbn13	Mboat1	Mboat2	Mboat4	Mboat7	Mbp	Mbtd1
## 1	4.886279	9.442357	10.983843	2.050962e+00	12.201262	22.17309	11.290109
## 2	4.323841	8.217435	10.438770	1.883899e+00	11.775863	21.66987	11.135892
## 3	4.483086	6.081817	7.964504	2.625737e+00	8.989135	14.39005	9.820145
## 4	3.057351	6.921234	7.347150	5.603629e-08	9.275073	13.59616	7.428558
## 5	4.666742	8.575245	10.797420	2.153924e+00	12.134652	22.02875	11.494629
## 6	3.756848	8.253093	9.792794	1.252832e+00	11.009680	20.98111	10.098881
##	Mbtps1	Mbtps2	Mc1r	Mc2r	Mc3r	Mc4r	Mc5r
## 1	12.86369	10.624750	3.210537	2.453313e+00	1.254102e+00	6.294806	6.396127
## 2	12.40723	9.774779	3.673694	1.233310e+00	1.353574e+00	5.891927	6.511498
## 3	11.06074	9.055827	3.091669	1.350693e-07	6.156457e-08	3.230027	5.777804
## 4	10.66286	7.467526	1.919882	7.970885e-01	3.592516e+00	7.690436	5.475065
## 5	12.76605	10.133294	4.007421	1.450192e+00	1.582333e+00	6.245437	6.866885
## 6	11.67196	9.433965	2.209021	1.569256e+00	6.878367e-01	5.126728	5.226441
##	Mcam	Mcat	Mcc	Mccc1	Mccc2	Mcee	Mcf2
## 1	13.647679	10.109474	9.801463	10.475928	10.127820	10.234849	6.430333e+00
## 2	12.571797	9.133828	9.804322	9.768763	9.989843	9.376270	6.174758e+00
## 3	9.313631	7.474379	8.429120	10.584967	10.596600	10.809943	3.916264e+00
## 4	7.811869	5.069163	5.479498	9.227595	7.397347	9.895143	1.052996e-07
## 5	12.930623	9.492141	10.162844	10.127277	10.348409	9.734670	6.529224e+00
## 6	12.455843	8.919204	8.611600	9.285273	8.937527	9.044436	5.260129e+00
##	Mcf21	Mcfd2	Mchr1	Mc11	Mcm10	Mcm2	Mcm3
## 1	12.322880	12.22362	6.219553e+00	14.780546	7.273643	10.455586	10.443780
## 2	12.192509	11.47425	6.288024e+00	14.474456	6.729401	10.074842	10.274273
## 3	9.605387	10.43810	1.502812e+00	9.782469	8.474258	10.160830	10.538171
## 4	7.858482	11.03620	9.629419e-08	8.069965	2.960874	6.867442	7.005527
## 5	12.551320	11.83302	6.642824e+00	14.833320	7.085278	10.433426	10.632895
## 6	11.131266	11.03204	5.052743e+00	13.588630	6.093842	9.264950	9.253155
##	Mcm3ap	Mcm4	Mcm5	Mcm6	Mcm7	Mcm8	Mcm9
## 1	11.412723	10.294576	10.446109	10.394232	9.959405	7.433778	9.282969
## 2	11.395186	10.060719	10.458570	10.358989	9.903658	7.543470	8.955070
## 3	8.727275	11.225932	10.880068	10.272402	11.221666	7.084193	6.321122
## 4	6.573142	7.656921	7.160924	6.724758	6.920365	2.562565	2.774087
## 5	11.753946	10.419299	10.817223	10.717626	10.262205	7.900642	9.313307
## 6	10.221433	9.104099	9.255482	9.203655	8.769322	6.252702	8.094022
##	Mcmbp	Mcoln1	Mcoln2	Mcph1	Mcrs1	Mctp1	Mctp2
## 1	11.430203	11.844817	4.165525e+00	8.457509	10.040500	6.916291	5.808909
## 2	10.728081	11.688002	4.025625e+00	8.713085	9.713365	6.977268	5.356738
## 3	11.973446	7.002837	4.286367e-08	7.346363	8.816553	7.530055	1.049382
## 4	10.743181	7.209294	2.007572e-08	5.166858	6.351595	7.794274	5.368085
## 5	11.086772	12.046784	4.364833e+00	9.071205	10.071865	7.333619	5.707829
## 6	10.238905	10.653348	3.075133e+00	7.270902	8.850313	5.739894	4.650286
##	Mcts1	Mcts2	Mdc1	Mdfi	Mdfic	Mdga1	Mdga2
## 1	10.385919	8.746524	10.671444	8.407186	8.452019	9.050666	10.861365
## 2	9.626146	8.400715	10.270870	7.965547	8.259646	8.852380	10.062689
## 3	11.241781	9.064174	7.923726	2.382039	4.706649	9.373501	7.219622
## 4	9.803503	7.573926	6.699307	2.554762	4.821537	6.502479	8.225880
## 5	9.984622	8.758652	10.629491	8.323153	8.617486	9.210570	10.421271
## 6	9.195349	7.558942	9.480621	7.220768	7.265431	7.862248	9.670399
##	Mdh1	Mdh1b	Mdh2	Mdk	Mdm1	Mdm2	Mdm4
## 1	13.24381	2.326338	13.43835	10.315753	8.657235	12.208498	11.660746
## 2	12.66142	2.601087	12.95917	9.730473	9.112671	11.410213	11.463927
## 3	13.62485	4.524164	14.13564	13.027033	7.984017	8.887656	8.412866
## 4	13.38002	3.900147	12.77924	9.561521	5.642780	8.646484	4.638565


```

## 5 13.02025 2.906559 13.31801 10.088978 9.470975 11.768975 11.822693
## 6 12.05202 1.467411 12.24654 9.125254 7.469933 11.016914 10.469347
##      Mdn1      Mdp1      Me1      Me2      Me3      Mea1      Meaf6
## 1 11.397424 11.375696 11.796321 11.152513 9.149812 11.363982 10.240753
## 2 11.106632 10.522312 11.032548 10.671219 9.047875 10.849236 9.651983
## 3 8.430182 10.555453 7.501314 7.217162 7.669503 11.594938 10.212275
## 4 5.927345 9.233301 7.667453 6.066225 6.993179 9.636033 8.610459
## 5 11.465367 10.880974 11.391275 11.029903 9.406153 11.207942 10.010466
## 6 10.206142 10.184425 10.604869 9.961361 7.961158 10.172716 9.050334
##      Mecom      Mecp2      Mecr      Med1      Med10      Med11      Med12
## 1 9.946678 12.128767 10.006861 11.53403 10.615775 9.138642 12.236365
## 2 10.348585 11.746030 9.093557 11.15064 10.222617 8.844093 12.196839
## 3 2.541477 10.082026 9.848857 12.24974 11.527130 9.475632 8.625814
## 4 4.979880 8.022055 8.058954 10.39145 9.582917 7.846772 6.588531
## 5 10.707220 12.104817 9.451853 11.50938 10.581230 9.202279 12.555650
## 6 8.756611 10.937206 8.816716 10.34268 9.424997 7.950013 11.044773
##      Med12l      Med13      Med13l      Med14      Med15      Med16      Med17
## 1 11.127887 12.610624 11.971194 10.846509 11.381611 11.197989 11.189478
## 2 11.055830 11.686860 11.757697 10.942034 11.386264 10.842146 10.477215
## 3 6.484670 10.075804 9.898150 8.291168 9.530558 8.006701 8.524945
## 4 6.256280 8.938979 9.220875 8.256152 7.693231 6.445768 7.994959
## 5 11.414560 12.045642 12.116484 11.300751 11.745024 11.200851 10.835871
## 6 9.936749 11.418943 10.779682 9.655553 10.190337 10.006811 9.998305
##      Med18      Med19      Med20      Med21      Med22      Med23      Med24
## 1 6.540883 9.846623 11.178433 10.578897 12.38357 11.019056 11.69081
## 2 6.146666 9.220144 10.544294 9.804633 11.92677 10.445218 11.36105
## 3 9.439959 10.245323 10.154534 11.216850 11.52173 9.660646 10.66191
## 4 6.618731 9.192969 9.454443 9.905908 10.17776 9.327205 9.09757
## 5 6.501046 9.578489 10.902960 10.163156 12.28557 10.803869 11.71980
## 6 5.369084 8.656694 9.987267 9.388150 11.19194 9.827985 10.49940
##      Med25      Med26      Med27      Med28      Med29      Med30      Med31
## 1 12.357632 9.486222 9.921889 11.91417 9.657769 10.476715 9.434840
## 2 12.221868 9.977914 9.624443 10.98481 9.237941 9.847743 8.648801
## 3 7.107815 5.996361 10.619889 11.88087 8.794769 7.081033 10.375918
## 4 4.490126 4.311336 8.731939 11.31349 6.762320 6.366502 8.823688
## 5 12.580681 10.336477 9.982918 11.34354 9.596292 10.206277 9.006887
## 6 11.166009 8.296876 8.731856 10.72268 8.468128 9.286059 8.245590
##      Med4      Med6      Med7      Med8      Med9      Mef2a      Mef2b
## 1 9.954287 9.311113 9.979891 10.443941 10.613583 12.154374 5.489529e+00
## 2 9.485128 9.294911 9.577295 9.892784 10.298911 11.817186 5.428062e+00
## 3 10.561911 9.780449 9.809278 10.415090 7.692297 6.846503 2.689241e+00
## 4 8.687022 8.106170 7.849078 8.240041 4.973628 7.499376 5.794222e-08
## 5 9.843563 9.653284 9.935757 10.251328 10.657537 12.175977 5.779530e+00
## 6 8.764210 8.122107 8.789781 9.253316 9.422808 10.962806 4.339047e+00
##      Mef2c      Mef2d      Mefv      Megf10      Megf11      Megf6      Megf8
## 1 11.73613 11.979476 4.708332e+00 11.362977 11.511656 12.496261 12.787991
## 2 11.42784 11.767234 1.515982e+00 10.711189 11.041422 11.789409 12.442942
## 3 10.05437 6.730104 7.289176e-08 9.539730 8.101186 6.049630 8.535718
## 4 11.25105 5.594818 2.714012e-08 9.623117 7.195506 4.286034 8.275026
## 5 11.78661 12.126022 1.759156e+00 11.069878 11.400150 12.148198 12.801763
## 6 10.54470 10.787962 3.586900e+00 10.171712 10.320321 11.304605 11.596275
##      Megf9      Mei1      Mei4      Meig1      Meis1      Meis2      Meis3
## 1 10.506822 3.696072e+00 3.392770 3.610001 9.250578 10.942505 11.054368
## 2 10.662264 2.691184e+00 3.373088 3.755527 9.810436 10.749940 10.673661

```

```

## 3 7.443576 8.424699e-08 5.229936 7.153029 6.365475 2.952797 6.883476
## 4 7.456584 2.078903e+00 1.446034 4.931093 3.314782 5.850342 4.177542
## 5 11.020947 2.999944e+00 3.700926 4.090652 10.168960 11.108634 11.032345
## 6 9.316139 2.642804e+00 2.370003 2.564814 8.061700 9.751483 9.863274
##      Melk      Memo1      Men1      Meox1      Mep1a      Mepce      Mertk
## 1 7.545976 10.931033 11.287363 10.751210 1.410887e+00 11.819972 11.833169
## 2 7.092540 10.481048 11.070539 9.829975 1.909511e+00 11.063826 11.721113
## 3 9.462976 9.242816 10.379035 5.763884 1.609964e+00 8.772641 9.333041
## 4 3.849797 7.745090 8.096058 5.723525 9.835062e-08 8.306632 9.479880
## 5 7.449085 10.839705 11.429270 10.188504 2.181147e+00 11.422557 12.079897
## 6 6.364087 9.740019 10.096137 9.560324 7.918091e-01 10.628512 10.641704
##      Mesdc1      Mesdc2      Mesp1      Mesp2      Mest      Met      Metap1
## 1 10.433905 11.88139 2.304503e+00 4.498982 10.825781 7.283906 10.820209
## 2 10.094188 11.28399 2.455524e+00 3.388225 10.390880 6.562030 10.583103
## 3 5.953828 11.88175 3.248272e-01 5.008788 9.497098 4.128942 9.522892
## 4 5.709381 10.97386 1.112034e-07 3.360464 6.842023 1.333313 7.625890
## 5 10.452775 11.64275 2.755211e+00 3.716390 10.749522 6.917537 10.941774
## 6 9.243290 10.68990 1.450075e+00 3.388242 9.634840 6.104019 9.629272
##      Metap1d      Metap2      Metrnl      Metrnl      Mett11      Mett110      Mett11b
## 1 10.337708 12.08177 13.639147 10.193194 8.609816 9.454939 3.742468
## 2 8.953912 11.69391 12.655002 9.682618 8.198285 8.665833 4.317126
## 3 9.005779 11.75230 8.622224 6.669764 10.061353 11.020973 3.589226
## 4 6.784622 10.22388 7.808396 6.874874 7.770019 9.354556 2.117762
## 5 9.312149 12.05269 13.013832 10.041110 8.556080 9.023928 4.659952
## 6 9.147187 10.89022 12.447312 9.002827 7.422670 8.265651 2.685022
##      Mett113      Mett114      Mett115      Mett116      Mett117      Mett12      Mett121a
## 1 9.129274 9.866248 8.223521 9.466107 9.541204 10.171804 8.934160
## 2 9.170882 9.615436 7.228181 9.691593 10.016216 9.362925 8.546807
## 3 7.601784 9.605597 9.338762 9.832608 8.796484 8.733540 10.057986
## 4 3.991473 7.419215 8.120291 7.132410 5.867828 8.754402 8.381508
## 5 9.529209 9.973909 7.584935 10.050087 10.374788 9.721320 8.904834
## 6 7.940668 8.676292 7.037858 8.276798 8.351760 8.981461 7.746042
##      Mett122      Mett13      Mett14      Mett15      Mett16      Mett17a1      Mett17a3
## 1 9.261455 10.094220 8.834253 8.602210 9.726228 9.899076 6.5706030
## 2 9.425129 9.680808 8.021711 7.827783 9.600892 9.603146 3.5478414
## 3 9.854255 9.888017 8.945291 9.433216 9.448310 8.845940 0.5565464
## 4 6.865448 8.060057 7.085687 8.185856 6.827337 7.174821 2.9996088
## 5 9.783545 10.039299 8.379365 8.185260 9.959361 9.961615 3.8792542
## 6 8.072553 8.903967 7.646412 7.415090 8.536478 8.709074 5.3983958
##      Mett18      Mett19      Mex3a      Mex3b      Mex3c      Mex3d      Mfap1a
## 1 9.200483 12.114357 10.907793 11.260345 11.922007 11.289148 8.840941
## 2 9.170157 11.421706 10.615387 10.181294 11.470374 10.810954 8.239645
## 3 8.766801 9.846338 11.220754 9.281055 9.315336 7.954093 9.312485
## 4 5.372214 8.768060 6.419281 7.272382 8.237199 5.480688 8.547303
## 5 9.528483 11.780469 10.974063 10.539899 11.829140 11.169655 8.597470
## 6 8.011714 10.922801 9.716795 10.069133 10.730511 10.097921 7.653081
##      Mfap1b      Mfap2      Mfap3      Mfap3l      Mfap4      Mfap5      Mff
## 1 7.832833 8.633559 11.36301 11.392811 7.464192 2.4647521 12.858462
## 2 7.620134 8.483422 10.94781 10.716716 7.052669 1.8056701 12.229517
## 3 7.141674 13.354131 11.08463 10.274555 12.112842 5.0677090 9.738586
## 4 6.802349 8.560623 10.48067 9.744461 7.052003 0.3191991 9.365852
## 5 7.977394 8.841412 11.30653 11.075406 7.409149 2.0705822 12.588329
## 6 6.649130 7.446335 10.17175 10.201531 6.282890 1.5785165 11.666733
##      Mfge8      Mfhas1      Mfi2      Mfn1      Mfn2      Mfng      Mfsd1

```

```

## 1 14.46290 10.919644 3.4625411 12.092265 12.173221 12.580269 12.460934
## 2 13.95128 10.815436 4.2489404 11.805992 11.932714 11.648221 11.963485
## 3 16.13990 8.733509 2.3990191 9.170648 10.636081 10.468509 9.125134
## 4 14.75759 8.647127 0.3707703 8.616269 9.624092 8.983135 8.638571
## 5 14.31014 11.174138 4.5909853 12.164782 12.291512 12.007000 12.322284
## 6 13.27100 9.728637 2.4322433 10.900715 10.981647 11.388594 11.269286
##      Mfsd10      Mfsd11      Mfsd2a      Mfsd2b      Mfsd3      Mfsd4      Mfsd5
## 1 10.256988 11.492609 14.361573 5.6245884 9.736247 9.313582 11.678052
## 2 10.356367 11.550744 13.540744 5.1061927 8.815275 8.782041 10.738728
## 3 8.536156 10.284587 7.583946 3.2097534 8.540422 6.958408 8.958292
## 4 7.532459 9.010554 9.740443 0.8682115 8.378509 8.989700 8.328591
## 5 10.715003 11.909517 13.899597 5.4558030 9.173448 9.140197 11.097421
## 6 9.066551 10.301283 13.169680 4.4704490 8.546482 8.124571 10.486646
##      Mfsd6      Mfsd6l      Mfsd7a      Mfsd7b      Mfsd7c      Mfsd8      Mfsd9
## 1 11.086058 5.0106437 7.058859 9.512088 10.759118 10.061474 8.343381
## 2 10.978241 4.4598149 6.592348 9.358648 11.214891 9.776176 8.146157
## 3 8.203584 0.3955006 5.876720 7.156533 5.877810 9.323261 7.910493
## 4 8.115967 0.4458718 2.296110 3.884907 5.813805 7.868837 5.945684
## 5 11.336962 4.8041603 6.947925 9.717042 11.573636 10.134692 8.503912
## 6 9.894945 3.8761546 5.881003 8.322695 9.568227 8.871261 7.157215
##      Mga      Mgat1      Mgat2      Mgat3      Mgat4a      Mgat4b      Mgat4c
## 1 11.985469 12.729208 10.990846 12.954688 11.907283 12.026041 7.873112
## 2 11.699400 12.467093 10.726082 12.176547 11.691591 11.578060 6.636466
## 3 10.754674 9.803831 8.136570 9.192753 6.132576 5.541478 6.427473
## 4 8.875008 7.974203 8.117342 10.067815 8.501136 5.206595 7.547390
## 5 12.058184 12.825916 11.084773 12.535357 12.050374 11.936835 6.992143
## 6 10.793952 11.537503 9.799792 11.762943 10.715792 10.834511 6.689182
##      Mgat5      Mgat5b      Mgea5      Mgl1      Mgmt      Mgp      Mgrn1
## 1 11.328297 11.101541 13.402829 13.77045 5.946194 8.203932 13.129158
## 2 11.032139 11.268786 12.895377 13.36197 5.877245 7.026369 12.966759
## 3 6.151165 6.682540 10.937893 11.69019 7.808489 9.630702 11.287391
## 4 6.986961 5.667197 9.926407 11.18232 3.450490 9.728840 9.755816
## 5 11.390866 11.627536 13.254214 13.72082 6.230700 7.382804 13.325598
## 6 10.137050 9.910419 12.211020 12.57860 4.784577 7.018355 11.937386
##      Mgst1      Mgst2      Mgst3      Mib1      Mib2      Mical1      Mical2
## 1 8.495486 4.066880 10.371240 11.099994 12.286545 11.745574 10.857846
## 2 7.570636 3.082643 9.672139 10.991652 11.544495 11.329612 11.149667
## 3 11.658880 4.636366 10.926652 6.270947 7.598530 9.512092 8.607401
## 4 10.912843 1.659972 9.971093 5.654088 7.356103 6.655069 8.889620
## 5 7.927840 3.403469 10.030628 11.350374 11.903267 11.688367 11.508406
## 6 7.308739 2.983397 9.180685 9.908872 11.094940 10.554142 9.666882
##      Mical3 Micalcl Mical1l Mical12 Micu1      Mid1 Mid1ip1
## 1 10.937553 6.592812 14.050653 9.237018 12.53765 10.940926 13.67825
## 2 10.690415 5.872959 13.142662 8.702930 12.28260 10.651185 12.97987
## 3 3.722864 5.983917 7.869071 5.972647 11.77688 8.044558 11.39060
## 4 1.440561 5.367251 7.260935 5.007662 10.01511 6.137513 10.01277
## 5 11.049102 6.226397 13.501506 9.061045 12.64141 11.009866 13.33871
## 6 9.746535 5.420305 12.858781 8.048169 11.34599 9.749905 12.48641
##      Mid2      Midn      Mier1      Mier2      Mier3      Mif      Mif4gd
## 1 9.450265 12.956642 11.608972 11.139260 10.407036 10.950643 11.84876
## 2 9.430722 12.284506 11.088261 10.654090 10.274289 10.487861 11.18569
## 3 7.045668 9.773584 11.351110 7.111538 10.980598 11.692899 10.35294
## 4 6.397244 8.388474 9.949769 6.400410 8.657877 10.168683 10.17924
## 5 9.789140 12.643321 11.446994 11.012772 10.632911 10.846518 11.54443

```

```

## 6 8.260985 11.764896 10.417595 9.948116 9.216446 9.759615 10.65729
##      Miip      Mill1      Mill2      Mina      Mink1      Minos1      Minpp1
## 1 9.345023 8.362651e-07 7.299469e+00 8.574397 13.359810 12.16718 10.817924
## 2 9.364114 5.685702e-08 6.527985e+00 8.498952 13.331337 11.44530 10.079296
## 3 8.604814 1.552369e+00 5.341419e+00 8.439368 8.047470 12.38508 8.535659
## 4 6.327903 1.468508e+00 6.588318e-08 5.348469 8.165689 11.37898 8.361049
## 5 9.722510 7.290970e-08 6.883411e+00 8.856951 13.690185 11.80407 10.437880
## 6 8.155948 3.704207e-07 6.119453e+00 7.387372 12.168006 10.97561 9.626989
##      Mios      Mip      Mipep      Mipol1      Mis12      Mis18bp1      Mitd1
## 1 9.998043 2.624871e+00 9.781596 7.140417 9.331422 8.006714 8.429085
## 2 9.595877 2.538643e+00 9.604104 7.373521 9.296889 7.580920 7.912795
## 3 8.966840 1.808567e+00 8.151890 6.996468 8.728560 8.774611 9.293585
## 4 6.368617 5.828120e-08 6.332737 4.501632 7.050476 3.683759 7.769652
## 5 9.954345 2.841707e+00 9.962574 7.730480 9.655262 7.938136 8.270353
## 6 8.807910 1.709556e+00 8.591762 5.961789 8.142374 6.822073 7.242584
##      Mitf      Mki67      Mkks      Mk11      Mk12      Mkl1n1      Mknk1
## 1 8.956050 10.662256 9.975645 10.861425 10.774881 11.264656 12.279911
## 2 8.374011 10.348890 9.516084 10.397067 10.573625 11.047142 11.628397
## 3 6.250781 10.159384 10.456169 7.788608 9.449159 10.783031 9.720698
## 4 6.062846 5.834079 9.770912 8.261008 10.605953 9.527718 9.052667
## 5 8.731930 10.707525 9.874529 10.755710 10.932295 11.405870 11.987175
## 6 7.767874 9.471441 8.785541 9.670459 9.583977 10.073442 11.088308
##      Mknk2      Mkrn1      Mkrn2      Mkrn3      Mks1      Mkx      Mlc1
## 1 13.601205 12.748097 10.798845 8.607248 9.074773 6.331978 13.36157
## 2 13.107480 12.201525 9.989392 8.233160 8.907189 6.665936 12.80630
## 3 8.798983 10.116582 10.529541 4.836845 7.561701 4.325274 13.65593
## 4 7.502942 9.060622 9.649308 2.721164 4.912524 6.176815 11.50514
## 5 13.466323 12.560337 10.347958 8.590981 9.265405 7.021678 13.16513
## 6 12.409374 11.556389 9.607924 7.420112 7.886297 5.163298 12.16977
##      Mlec      Mlf1      Mlf2      Mlh1      Mlh3      Mlk1      Mllt1
## 1 13.688158 8.351940 14.460983 9.560857 9.521126 6.946781e+00 11.913788
## 2 13.520567 8.368534 14.005139 9.403652 9.092685 6.274554e+00 11.865708
## 3 10.015297 7.508604 10.798629 8.221780 9.093810 2.595093e+00 8.797564
## 4 9.226703 6.231568 9.598101 5.408250 7.554548 1.218964e-07 6.085202
## 5 13.879418 8.726450 14.363999 9.762061 9.450981 6.629317e+00 12.224502
## 6 12.496317 7.165740 13.269084 8.371378 8.331717 5.770060e+00 10.722295
##      Mllt10      Mllt11      Mllt3      Mllt4      Mllt6      Mlph      Mlst8
## 1 10.962427 12.42083 10.509979 12.276683 12.639181 8.422804 10.180723
## 2 10.915217 11.79993 10.210630 12.082570 12.405455 9.016436 10.032972
## 3 9.423094 12.89164 10.544362 9.825466 8.200720 1.637811 9.598451
## 4 5.977631 11.36981 8.092323 8.101805 6.667025 4.971437 7.451539
## 5 11.273931 12.15872 10.569241 12.441376 12.764275 9.374700 10.391547
## 6 9.771392 11.22919 9.319293 11.085081 11.447494 7.236327 8.990370
##      Mlx      Mlxip      Mlxip1      Mlycd      Mmaa      Mmab      Mmachc
## 1 10.373546 11.721725 10.954605 11.122690 9.727990 10.218033 8.439252
## 2 9.963658 11.859749 10.718073 10.031542 9.366385 10.186233 8.507876
## 3 10.090124 7.351772 5.078756 7.911698 8.718294 8.609122 8.899115
## 4 7.839964 7.580345 6.143925 8.069845 6.432876 6.437387 6.549020
## 5 10.322218 12.218542 11.076763 10.390116 9.724782 10.544839 8.865881
## 6 9.182989 10.530302 9.763575 9.931555 8.538238 9.027639 7.252713
##      Mmadhc      Mmd      Mmd2      Mme      Mmel1      Mmgt1      Mmgt2
## 1 11.364815 11.999422 13.88956 7.627601 4.6444801 12.167139 8.716042
## 2 10.745006 11.703958 13.25870 7.827182 4.8740047 11.777913 8.309244
## 3 10.307193 8.551241 15.88494 2.016102 3.4320817 10.735147 8.268479

```

```

## 4 9.129727 9.630644 14.29545 4.680843 0.2996211 9.582781 7.816127
## 5 11.103700 12.062742 13.61754 8.184659 5.2219905 12.136701 8.667119
## 6 10.173549 10.807900 12.69770 6.445158 3.5261556 10.975567 7.528554
##      Mmp11      Mmp12      Mmp13      Mmp14      Mmp15      Mmp16      Mmp17
## 1 6.727616 5.218448e+00 3.286588 11.568818 13.722221 10.874163 10.243869
## 2 6.669945 3.093810e+00 3.356543 11.181283 13.477495 10.015117 10.417753
## 3 7.107295 9.761140e-01 1.760313 9.217929 7.060379 8.826560 6.780133
## 4 4.313415 9.723501e-08 1.279998 7.639237 7.654730 9.809399 8.875422
## 5 7.025695 3.414933e+00 3.684020 11.540025 13.836347 10.373688 10.776399
## 6 5.553383 4.076387e+00 2.275917 10.377458 12.530377 9.683187 9.053446
##      Mmp19      Mmp2      Mmp23      Mmp24      Mmp25      Mmp28      Mmp3
## 1 6.917859 11.048558 4.9239181 10.042333 9.427599e+00 8.9306251 0.22508397
## 2 6.574200 10.955877 4.5370353 9.390584 9.333102e+00 8.5477465 0.02176280
## 3 5.125804 5.158822 3.2213039 6.648371 9.185492e-08 1.3188939 5.03301334
## 4 3.654201 7.596819 0.2997948 5.884625 4.009391e+00 0.5086004 1.25721658
## 5 6.929735 11.314596 4.8821417 9.748988 9.691487e+00 8.9057747 0.02784810
## 6 5.741446 9.857468 3.7929117 8.852143 8.238363e+00 7.7425165 0.10397492
##      Mmp8      Mmp9      Mmrn1      Mmrn2      Mms19      Mms221
## 1 3.208907e+00 8.562407 8.926570e+00 11.543551 11.925190 8.300702
## 2 2.293079e+00 8.539806 8.338577e+00 10.717878 11.597655 9.003863
## 3 3.856276e-08 6.736021 4.773242e-08 6.079977 10.143361 5.572896
## 4 1.998183e-08 6.000090 2.406007e-08 8.196879 9.281007 4.233914
## 5 2.585550e+00 8.897830 8.696472e+00 11.076568 11.956432 9.362122
## 6 2.207592e+00 7.375423 7.738472e+00 10.352201 10.733693 7.114710
##      Mn1      Mnat1      Mnd1      Mnda      Mndal      Mns1      Mnt
## 1 9.253191 9.869387 4.166918 2.8824012 1.3369693 6.911464 11.680378
## 2 9.152667 9.484156 3.621253 1.2206888 0.5420124 6.843748 11.394350
## 3 10.646664 10.006123 7.606484 3.8677475 8.1797176 7.001058 8.294151
## 4 8.259857 7.774418 4.364682 1.1569062 4.2949843 5.666815 7.997639
## 5 9.510987 9.842591 3.954041 1.4362605 0.6642258 7.199853 11.753110
## 6 8.064306 8.679426 3.076432 1.9255294 0.7423244 5.735119 10.488971
##      Moap1      Mob1a      Mob1b      Mob2      Mob3a      Mob3b      Mob3c
## 1 4.4813100 10.368971 9.468686 10.807640 11.303418 10.798366 11.029747
## 2 3.8425226 10.470412 9.287856 9.997534 10.823761 10.634930 10.494461
## 3 1.9029807 4.717059 5.925648 10.250184 9.874899 9.279259 6.162117
## 4 0.3154309 3.010590 3.610135 10.018018 7.638736 7.939630 6.252747
## 5 4.1790483 10.829067 9.646226 10.356102 11.182465 10.993609 10.853120
## 6 3.3715420 9.178418 8.279372 9.616713 10.112183 9.607446 9.838669
##      Mob4      Mobp      Moccos      Moccs1      Moccs2      Moccs3      Mog
## 1 10.941901 17.64837 6.157893 9.676251 11.237414 8.3969350 16.34821
## 2 10.263212 16.88815 5.530960 9.255849 10.930840 7.6984833 15.15065
## 3 11.840865 12.36264 4.731457 6.303785 11.509314 3.7156349 13.48725
## 4 11.147929 11.04252 2.927722 3.876463 9.414879 0.5760365 12.58794
## 5 10.621832 17.24702 5.882940 9.614208 11.289555 8.0558293 15.50952
## 6 9.750879 16.45640 4.992172 8.486580 10.046215 7.2105574 15.15625
##      Mogat1      Mogat2      Mogs      Mon1a      Mon1b      Mon2      Morc1
## 1 2.704649 3.528280e+00 11.108916 9.699465 10.945869 14.073560 1.2942053
## 2 2.785385 3.294764e+00 10.793174 9.369659 9.965253 13.439369 1.6126099
## 3 5.648683 6.730366e-08 7.330297 6.311184 9.083908 9.353772 1.3597754
## 4 2.965123 3.224660e-08 6.153373 5.516261 8.030770 9.210308 0.5223616
## 5 3.097365 3.620851e+00 11.151874 9.728057 10.323813 13.798219 1.8635620
## 6 1.775798 2.491176e+00 9.917789 8.509757 9.754845 12.881686 0.7140741
##      Morc2a      Morc2b      Morc3      Morc4      Morf411      Morf412      Morn1
## 1 11.716868 0.5551799 10.541332 7.900991 9.973826 13.67425 7.480761

```

```

## 2 11.382092 0.9325824 10.529666 7.387293 9.418194 13.10852 7.261782
## 3 8.629345 0.5122848 9.699543 5.789592 9.628352 11.92956 7.032767
## 4 7.654701 1.8488725 7.229930 1.111272 8.411849 10.22941 4.188934
## 5 11.740852 1.1144929 10.888329 7.744269 9.776607 13.46736 7.618586
## 6 10.525447 0.2720103 9.350618 6.716906 8.783724 12.48241 6.299337
##      Morn2      Morn3      Morn4      Morn5      Mospd1      Mospd2      Mospd3
## 1 7.743005 5.4302238 10.845164 4.061478 9.914894 10.722771 10.761935
## 2 7.581575 4.4877251 10.602374 2.902776 9.478906 9.740969 9.969191
## 3 9.457587 4.9855740 11.424066 8.078346 10.327039 8.259544 8.493107
## 4 6.378960 0.2867495 8.488298 6.213699 7.376835 7.910113 7.052309
## 5 7.938791 4.8323503 10.961048 3.218474 9.837339 10.099476 10.327753
## 6 6.559832 4.2814555 9.654209 2.978385 8.724870 9.531907 9.571042
##      Mov10      Mov1011      Moxd1      Mpdu1      Mpdz      Mpeg1      Mpg
## 1 9.253876 4.202428e-01 7.903773 12.16682 11.340802 14.528472 9.718592
## 2 8.999367 1.952175e+00 6.980016 11.49423 11.074778 14.458272 9.126479
## 3 6.708534 9.449418e-08 3.652617 10.88186 8.434819 5.393083 8.906841
## 4 2.720995 3.073925e-08 6.401798 10.30421 7.428862 9.558800 6.699721
## 5 9.357624 2.226427e+00 7.336372 11.85300 11.433510 14.817137 9.484789
## 6 8.064991 2.010836e-01 6.719673 10.97525 10.149548 13.336568 8.528854
##      Mphosph10 Mphosph6 Mphosph8 Mphosph9      Mpi      Mpl      Mpnd
## 1 9.388788 9.749342 10.103493 10.526588 11.746283 5.085374e+00 11.829772
## 2 9.186828 9.377589 10.080043 9.809920 11.155882 3.467872e+00 11.329164
## 3 9.930866 9.961412 10.536519 9.437448 10.135907 5.404442e-08 8.692453
## 4 8.063094 8.149537 8.342576 7.460677 9.158582 2.745087e-08 7.180478
## 5 9.545161 9.735990 10.438627 10.168445 11.514621 3.797704e+00 11.687920
## 6 8.199626 8.559557 8.913230 9.335888 10.554850 3.948040e+00 10.638308
##      Mpo      Mpp1      Mpp2      Mpp3      Mpp4      Mpp5      Mpp6
## 1 3.1111274 10.841874 12.238952 9.416637 4.076379e+00 11.886076 10.267442
## 2 2.7379108 10.237481 11.901972 8.848419 4.024015e+00 11.343940 9.808308
## 3 5.0767525 9.156822 9.074480 9.291828 2.240409e+00 10.342294 8.684359
## 4 0.4108804 8.842751 9.348373 8.630079 5.909578e-08 8.872718 6.920149
## 5 3.0482953 10.596096 12.260768 9.206607 4.363201e+00 11.702696 10.166832
## 6 2.1222292 9.650922 11.047360 8.227421 2.992211e+00 10.694592 9.076993
##      Mpp7      Mppe1      Mpped1      Mpped2      Mprip      Mpst      Mpv17
## 1 7.840856 8.860677 10.775070 9.551329 13.671339 11.618242 11.47471
## 2 7.807331 8.446717 10.662550 9.120846 13.320949 11.209817 11.11688
## 3 7.690051 6.328957 7.030816 8.187666 10.748790 8.006531 12.00453
## 4 6.304945 5.938790 6.105896 7.606693 9.847958 6.828292 10.20241
## 5 8.164788 8.804684 11.021233 9.479154 13.679797 11.568562 11.47562
## 6 6.657107 7.672761 9.584166 8.361866 12.479500 10.426860 10.28339
##      Mpv171      Mpv1712      Mpz      Mpz11      Mpz12      Mpz13      Mr1
## 1 10.363848 10.104455 2.081294e+00 14.497242 2.210092 5.577597 8.734241
## 2 9.665940 10.015438 1.354339e+00 13.844040 2.040415 5.206227 8.657517
## 3 9.117984 7.300876 4.285935e-08 9.685409 5.826438 4.169777 10.538125
## 4 9.375272 6.658023 2.169552e-08 9.556249 4.635717 1.542522 6.355486
## 5 10.024427 10.374009 1.583170e+00 14.202897 2.319826 5.556460 9.015608
## 6 9.173300 8.914190 1.276024e+00 13.305340 1.375744 4.424693 7.546697
##      Mrap      Mrap2      Mras      Mrc1      Mrc2      Mre11a      Mreg
## 1 1.932531 9.4102290 12.594002 10.828053 9.045956 8.996233 6.713939
## 2 1.664071 8.1545927 12.126952 10.184771 9.290745 8.909667 6.296332
## 3 2.438571 0.2762707 9.639342 10.115559 6.037562 8.856282 6.089108
## 4 3.782534 5.7511765 9.234210 8.680301 3.490318 6.258766 5.814132
## 5 1.918942 8.5123544 12.485759 10.543376 9.649116 9.267884 6.651156
## 6 1.163379 8.2210256 11.402324 9.637110 7.857550 7.807953 5.539874

```

##	Mrfap1	Mrgpra4	Mrgprb1	Mrgpre	Mrgprf	Mrgprx2	
## 1	13.93015	2.368183e+00	1.787635e-08	9.052853	5.165162	4.419391e-08	
## 2	13.00400	1.574713e+00	1.760358e-08	8.782492	3.963444	9.274679e-09	
## 3	12.77943	2.486367e+00	3.981651e+00	6.768019	7.412853	2.676561e+00	
## 4	12.59651	5.412906e-08	4.440626e-09	7.482820	7.385456	6.953517e-09	
## 5	13.36284	1.822681e+00	2.257368e-08	9.140648	4.301779	1.189324e-08	
## 6	12.73829	1.500779e+00	7.918267e-09	7.864430	4.024944	1.957554e-08	
##	Mri1	Mrm1	Mro	Mrpl1	Mrpl10	Mrpl11	Mrpl12
## 1	8.935241	9.258763	9.950543	8.822306	11.065779	10.725654	11.585405
## 2	8.992257	8.819000	9.538470	8.528997	10.411251	10.085336	10.938510
## 3	5.111476	4.954684	11.346452	10.185179	10.490759	11.516482	10.881913
## 4	3.838607	6.575907	8.791261	8.482105	9.416217	10.475299	9.418214
## 5	9.350511	9.177175	9.896921	8.887015	10.769896	10.443922	11.297227
## 6	7.747120	8.069867	8.760472	7.634499	9.874679	9.534788	10.394037
##	Mrpl13	Mrpl14	Mrpl15	Mrpl16	Mrpl17	Mrpl18	Mrpl19
## 1	10.693909	9.718679	10.334852	10.004196	11.39506	10.592739	9.782802
## 2	9.903195	9.179702	9.647387	9.193478	10.70114	9.853913	9.509586
## 3	11.171321	10.984983	11.256615	10.280016	11.90136	11.903693	10.149219
## 4	10.196040	9.833367	10.409115	9.024285	10.49353	10.717724	8.211263
## 5	10.261741	9.538032	10.005869	9.551813	11.05983	10.212448	9.868029
## 6	9.503068	8.528941	9.144334	8.814055	10.20377	9.401981	8.592967
##	Mrpl2	Mrpl20	Mrpl21	Mrpl22	Mrpl23	Mrpl24	Mrpl27
## 1	10.756180	11.45731	9.251929	8.054644	5.396501	11.105780	10.032077
## 2	10.187479	10.83886	8.378750	7.731203	4.642091	10.168242	9.660997
## 3	10.367047	11.98909	10.076412	9.344372	5.083179	10.529101	10.896167
## 4	8.769108	10.52389	8.791771	7.334002	3.651326	9.510800	8.871448
## 5	10.546085	11.19757	8.736672	8.088583	4.988169	10.526844	10.019483
## 6	9.565291	10.26599	8.063048	6.869763	4.248738	9.914655	8.841901
##	Mrpl28	Mrpl3	Mrpl30	Mrpl32	Mrpl33	Mrpl34	Mrpl35
## 1	11.202750	11.354020	10.828509	9.820847	10.304216	10.121694	9.812938
## 2	10.601159	10.977684	10.263895	9.303620	9.580418	9.220260	9.139093
## 3	12.670624	8.329807	11.749285	10.911994	11.574390	11.348086	11.305526
## 4	11.061058	7.255292	10.317405	9.200105	10.329278	9.764446	10.661804
## 5	10.959833	11.336406	10.622515	9.661996	9.938882	9.578605	9.497407
## 6	10.011570	10.162759	9.637566	8.630955	9.113730	8.931409	8.623058
##	Mrpl36	Mrpl37	Mrpl38	Mrpl39	Mrpl4	Mrpl40	Mrpl41
## 1	9.995679	11.347617	10.445482	10.211169	11.269076	10.086604	10.686530
## 2	9.328742	10.269494	9.905904	9.799623	10.598780	9.507703	9.989211
## 3	11.942561	10.259170	9.030952	9.990568	11.191493	10.561277	11.620817
## 4	10.686094	9.028250	7.651129	7.574804	10.239448	9.316884	10.344004
## 5	9.687126	10.628115	10.264452	10.158145	10.957453	9.866144	10.347777
## 6	8.805549	10.156359	9.254856	9.020782	10.077860	8.896360	9.495695
##	Mrpl42	Mrpl43	Mrpl44	Mrpl45	Mrpl46	Mrpl47	Mrpl48
## 1	9.894217	11.237985	9.467843	10.118298	9.315079	8.254644	10.009258
## 2	9.112853	10.393237	8.931733	9.566415	8.873366	7.581744	9.288269
## 3	11.572891	11.031457	9.455383	11.130696	10.847952	9.795395	10.654354
## 4	10.560209	10.126437	9.015423	10.013677	9.059356	9.024722	9.648554
## 5	9.471157	10.751880	9.289960	9.924874	9.231566	7.938961	9.646638
## 6	8.704222	10.046785	8.278531	8.928017	8.126065	7.068846	8.819111
##	Mrpl49	Mrpl50	Mrpl51	Mrpl52	Mrpl53	Mrpl54	Mrpl55
## 1	10.509431	10.059736	10.084982	10.533918	10.508915	10.642444	9.397180
## 2	9.950357	9.478906	9.506865	9.825484	9.702843	9.423244	8.778795
## 3	11.128640	10.923071	10.595753	11.449999	11.202093	9.724719	10.850776
## 4	9.982509	8.748574	9.909667	10.115967	10.529819	8.928763	9.520130

```

## 5 10.308914 9.837338 9.865306 10.184012 10.061340 9.781660 9.136949
## 6 9.318745 8.869525 8.894741 9.343210 9.318230 9.451645 8.208001
##      Mrpl9      Mrps10      Mrps11      Mrps12      Mrps14      Mrps15      Mrps16
## 1 11.429642 9.162102 10.625231 10.401816 10.411616 10.101907 10.008306
## 2 10.756089 8.329230 10.067055 9.525165 9.623430 9.649078 9.326686
## 3 10.318845 9.256770 11.177123 10.093951 12.350477 8.216033 10.656523
## 4 8.758513 7.630362 9.864912 8.982169 11.481729 7.022862 9.694381
## 5 11.114784 8.687119 10.425637 9.883612 9.981905 10.007560 9.685069
## 6 10.238344 7.973420 9.434446 9.211231 9.221022 8.911645 8.818160
##      Mrps17      Mrps18a      Mrps18b      Mrps18c      Mrps2      Mrps21      Mrps22
## 1 10.655570 10.369468 9.271425 9.443174 10.249205 10.703952 9.206139
## 2 9.789030 9.995482 8.647214 8.841590 9.893456 9.959308 8.505964
## 3 12.024314 11.596856 8.420045 10.639873 9.159383 11.422802 8.277597
## 4 10.215305 10.076938 7.940912 9.732302 8.251793 10.439301 6.938029
## 5 10.147549 10.354049 9.005299 9.199775 10.252000 10.317867 8.863967
## 6 9.464760 9.178915 8.082502 8.253908 9.058777 9.513103 8.017358
##      Mrps23      Mrps24      Mrps25      Mrps26      Mrps27      Mrps28      Mrps30
## 1 10.974504 10.658562 10.447746 10.809072 9.538671 9.525943 10.293469
## 2 10.082809 9.718211 9.798528 10.548550 9.301632 8.790654 9.903514
## 3 11.040708 7.197553 11.238071 6.484895 10.533970 10.245710 6.410713
## 4 9.122702 4.895157 9.992771 6.108834 8.432551 9.251271 4.801626
## 5 10.441395 10.076712 10.157050 10.907216 9.660007 9.148814 10.262061
## 6 9.783461 9.467749 9.257117 9.618143 8.349231 8.336525 9.102993
##      Mrps31      Mrps33      Mrps34      Mrps35      Mrps36      Mrps5      Mrps6
## 1 9.288884 9.339380 10.567136 9.416458 7.040042 10.123546 9.975758
## 2 8.840038 8.535816 9.682859 9.085161 6.327527 10.034132 9.468280
## 3 9.616344 10.390683 6.765174 7.246029 6.376212 9.841341 9.494938
## 4 7.971106 9.172059 6.819007 6.285374 5.151103 7.035464 7.900068
## 5 9.198223 8.893837 10.041350 9.443454 6.682438 10.392708 9.826709
## 6 8.099924 8.150316 9.376400 8.227242 5.862371 8.933259 8.785654
##      Mrps7      Mrps9      Mrpf      Mrs2      Mrto4      Mrvi1      Ms4a1
## 1 11.839716 10.103574 9.371844 10.434270 9.830897 6.114206 3.1229677
## 2 11.343482 9.539809 9.064200 10.161434 9.298856 5.553001 3.0776554
## 3 10.266425 10.335110 10.001166 4.646972 9.618774 5.443027 0.8560538
## 4 9.593031 9.343231 7.966557 3.996024 7.499744 4.429964 6.2979476
## 5 11.702238 9.898260 9.422484 10.520035 9.657229 5.905085 3.3983479
## 6 10.648249 8.913311 8.182715 9.243654 8.640991 4.949285 2.1325269
##      Ms4a6b      Ms4a6c      Ms4a6d      Ms4a7      Msc      Msh2      Msh3
## 1 9.072175 8.779223 9.099269 8.729548 4.1009990 9.796549 10.083725
## 2 8.132382 8.400178 8.685737 7.582985 4.3853913 10.086755 9.056330
## 3 8.348724 7.713155 7.595928 8.687215 3.2791305 9.685532 8.665179
## 4 8.245162 7.781866 6.971751 7.244622 0.3291253 7.303295 7.978993
## 5 8.490126 8.758115 9.043843 7.940204 4.7289633 10.445342 9.414611
## 6 7.883705 7.591542 7.910733 7.542018 3.0150767 8.606693 8.893485
##      Msh4      Msh5      Msh6      Msi1      Msi2      Msl1
## 1 2.808215e+00 1.042188e+01 10.167089 9.952203 13.01503 12.342372
## 2 2.503026e+00 9.675199e+00 9.820487 9.612962 12.36828 12.418061
## 3 3.562290e-08 4.677055e+00 8.526456 4.962629 10.98472 9.150896
## 4 1.737902e-08 6.654942e-08 6.749283 0.936689 8.82530 8.294903
## 5 2.804668e+00 1.003369e+01 10.179014 9.971435 12.72709 12.776882
## 6 1.862689e+00 9.231273e+00 8.976751 8.762129 11.82327 11.150753
##      Msl2      Msl3      Msl3l2      Msln      Msln1      Msn
## 1 11.771855 10.622177 9.078648 2.436491e+00 1.508013e+00 13.764941
## 2 11.131069 10.469922 8.801170 2.365613e+00 1.393930e+00 13.834900

```



```

## 3 8.425607 10.569908 7.680072 2.723919e-01 6.686209e-01 11.113877
## 4 7.342547 8.296724 5.394581 1.066801e-07 5.085256e-08 9.677606
## 5 11.489807 10.828576 9.159336 2.661410e+00 1.626437e+00 14.193757
## 6 10.580413 9.431395 7.890162 1.555663e+00 8.580702e-01 12.573094
##      Msr1      Msra      Msrb2      Msrb3      Mst1      Mst1r      Mstn
## 1 6.157683 9.651369 9.975695 9.961633 2.3479340 5.319962 3.974114
## 2 5.886783 9.083602 9.300449 9.474377 1.9029246 4.904712 3.127750
## 3 5.866546 10.577721 9.378382 4.467716 1.5313704 2.641520 1.153870
## 4 2.015748 8.886185 8.717008 6.139083 0.5168619 2.203315 2.155917
## 5 6.240273 9.441894 9.658823 9.832809 2.1741488 5.252928 3.449762
## 6 4.991966 8.461738 8.785591 8.771548 1.4846078 4.174567 2.897537
##      Msto1      Msx1      Msx2      Mt1      Mt2      Mt3      Mta1
## 1 10.025394 5.8737032 4.954545e+00 12.18194 10.867848 11.69686 11.976682
## 2 9.482718 5.0751489 3.553078e+00 11.64778 10.334619 11.10837 11.736814
## 3 8.379399 2.2589405 1.074556e-07 15.12336 12.984827 14.58265 9.086810
## 4 7.779044 0.3147395 3.932093e+00 14.22042 11.532993 13.79157 7.693279
## 5 9.841152 5.4245569 3.884591e+00 12.00656 10.693251 11.46710 12.095599
## 6 8.835226 4.7136328 3.822285e+00 10.99036 9.676878 10.50545 10.785168
##      Mta2      Mta3      Mtap      Mtap7d3      Mtbp      Mtch1      Mtch2
## 1 13.323298 11.040254 10.257021 5.319379e+00 8.620292 14.18780 12.10824
## 2 12.798635 11.224756 10.034402 5.205894e+00 9.053075 13.54544 11.33265
## 3 8.709207 8.126098 9.674447 2.504477e+00 7.652261 10.33126 11.77593
## 4 8.295430 7.390566 7.541155 4.964021e-08 3.526023 10.79585 11.33629
## 5 13.157469 11.583502 10.392977 5.556125e+00 9.411354 13.90429 11.69140
## 6 12.131499 9.849169 9.066584 4.174003e+00 7.433112 12.99592 10.91669
##      Mtcp1      Mtdh      Mterfd1      Mterfd2      Mterfd3      Mtf1      Mtf2
## 1 8.984960 12.807615 9.642147 9.633438 7.940990 11.208559 10.611137
## 2 8.285051 12.230211 8.960166 9.555640 7.779749 10.706945 10.210997
## 3 9.041085 10.448814 10.342437 9.956122 8.786195 9.293537 10.100531
## 4 8.524742 9.428186 8.931473 7.093400 6.051120 7.564697 7.613453
## 5 8.642910 12.589024 9.318406 9.914096 8.137179 11.065633 10.569607
## 6 7.796708 11.615895 8.452531 8.443836 6.756690 10.017375 9.420364
##      Mtfmt      Mtfp1      Mtf1r1      Mtg1      Mthfd1      Mthfd1l      Mthfd2
## 1 8.718970 8.358043 9.631201 9.693100 11.254464 9.718509 9.749253
## 2 8.043653 8.037880 9.546738 9.708210 11.368584 8.555616 8.912363
## 3 8.111518 9.419941 9.393757 9.236776 10.235388 6.381709 10.255639
## 4 7.209854 10.735189 6.817916 7.149848 8.341334 7.512186 8.171338
## 5 8.401325 8.395547 9.905191 10.066709 11.727343 8.913649 9.270581
## 6 7.531472 7.171818 8.441603 8.503402 10.063255 8.528771 8.559468
##      Mthfd2l      Mthfr      Mthfs      Mthfsd      Mtif2      Mtif3      Mt15
## 1 8.142287 11.148086 7.836055 9.981665 9.864801 8.881402 6.423136
## 2 7.931355 11.353804 6.789269 9.366906 9.897661 8.438716 5.854102
## 3 5.883067 8.086111 8.069963 8.655076 9.397898 9.366936 1.426488
## 4 4.762260 5.800282 7.346464 6.534732 7.776367 8.235541 1.374172
## 5 8.288929 11.712561 7.145268 9.725303 10.256206 8.796677 6.207469
## 6 6.956989 9.956936 6.652333 8.791553 8.674846 7.693428 5.253040
##      Mtmr1      Mtmr10      Mtmr11      Mtmr12      Mtmr14      Mtmr2      Mtmr3
## 1 10.673010 11.831171 10.623577 10.761165 11.542045 12.316332 12.565397
## 2 10.597551 12.067223 9.730522 10.283311 10.333950 11.508452 12.523453
## 3 7.409146 9.178680 8.396667 7.773085 7.020173 11.223165 8.679367
## 4 7.526938 7.457017 7.866886 8.282381 7.338454 9.844593 8.553422
## 5 10.956225 12.426028 10.089026 10.641934 10.692582 11.867221 12.882278
## 6 9.482186 10.639707 9.432793 9.570272 10.350696 11.124719 11.373726
##      Mtmr4      Mtmr6      Mtmr7      Mtmr9      Mto1      Mtor      Mtpap

```

```

## 1 11.728412 12.95275 8.781368 11.191724 9.770640 12.407082 10.874479
## 2 11.672543 12.27132 8.421207 11.406485 10.014340 11.926050 10.225377
## 3 9.345031 10.99127 7.234987 7.164712 6.496263 9.114257 10.704048
## 4 7.676625 11.32553 7.518043 5.585685 5.778756 8.984357 8.650895
## 5 12.031324 12.63014 8.779157 11.765247 10.372911 12.284847 10.583991
## 6 10.536986 11.76101 7.593681 10.000550 8.580822 11.215447 9.683504
##      Mtpn      Mtr      Mtrf1      Mtrf1l      Mtrr      Mtss1      Mtss1l
## 1 13.51854 10.218659 7.356216 7.988734 9.355894 12.88658 14.295120
## 2 12.89387 10.031535 7.497896 7.667143 8.773065 12.14226 13.923384
## 3 11.05731 7.453556 8.084494 5.432526 8.923549 11.12804 10.366897
## 4 10.11150 5.930890 6.640631 4.005675 7.376061 7.29796 8.164577
## 5 13.25270 10.390110 7.855013 8.024455 9.131216 12.50107 14.282243
## 6 12.32672 9.028263 6.175740 6.804185 8.166797 11.69484 13.103230
##      Mttp      Mtus1      Mtus2      Mtx1      Mtx2      Mtx3      Muc1
## 1 8.916063 12.17175 8.372897 11.148437 10.783025 11.107412 7.741146e+00
## 2 9.142743 11.57678 8.919151 10.727485 10.037005 10.709318 7.766078e+00
## 3 8.895679 10.67492 5.165380 10.776991 7.883366 8.335408 2.902263e+00
## 4 7.148382 10.27244 4.113197 9.005401 5.098518 6.216977 9.805137e-08
## 5 9.501059 11.93556 9.277372 11.086176 10.395581 11.068007 8.123494e+00
## 6 7.727993 10.98018 7.186614 9.957287 9.592115 9.916286 6.557984e+00
##      Muc13      Muc15      Muc5b      Muc6      Mul1      Mum1      Mum1l1
## 1 5.9265437 1.2267853 3.026476e+00 5.6768220 11.406771 10.480611 7.659631
## 2 4.0349978 1.4131686 8.602392e-01 4.0052900 10.713436 10.605436 7.479449
## 3 4.7299531 0.2391670 4.003883e-08 1.6720067 9.902510 9.209702 6.664425
## 4 0.2756831 0.7419951 1.714219e-08 0.2984463 9.190587 7.097993 4.135051
## 5 4.3743339 1.6474231 1.032444e+00 4.3442167 11.072126 10.964111 7.836543
## 6 4.7653386 0.6701067 2.048929e+00 4.5213551 10.215485 9.289952 6.476980
##      Murc      Mus81      Musk      Mustn1      Mut      Mutyh      Mvd
## 1 6.9793250 10.101803 3.300064 5.734457 10.735130 7.2186022 12.882367
## 2 7.2668887 10.234704 3.842866 5.147050 9.982282 6.9136879 12.337016
## 3 0.9026477 8.814053 4.067551 6.259408 10.903653 6.9538251 9.823644
## 4 0.6921222 7.051118 2.877645 9.090533 10.319738 0.9078775 9.039536
## 5 7.6236997 10.593319 4.179397 5.496920 10.340846 7.2699248 12.695834
## 6 5.8022658 8.911541 2.287814 4.577579 9.544257 6.0392728 11.690634
##      Mvk      Mvp      Mx1      Mx2      Mxd1      Mxd3      Mxd4
## 1 12.066894 11.570373 3.2782661 8.4669098 11.566790 7.123169 10.852469
## 2 11.401594 10.807050 3.5516906 8.1076102 10.972394 6.517163 11.463842
## 3 9.647616 6.425456 3.9511983 5.0469473 8.577007 8.554096 5.893833
## 4 8.698696 5.032095 0.3056379 0.5399446 8.053037 2.733075 5.123508
## 5 11.760355 11.165751 3.8831772 8.4653349 11.331115 6.872563 11.822608
## 6 10.875352 10.379012 2.2685763 7.2802673 10.375430 5.944701 9.661509
##      Mxi1      Mxra7      Mxra8      Myadm      Myadm12      Myb      Mybbp1a
## 1 12.208027 8.891465 10.983106 11.377859 7.1374176 6.792330 12.50151
## 2 11.612589 8.133399 11.020295 10.591688 8.2416217 7.140964 12.71286
## 3 9.504947 7.179542 9.334678 9.967865 0.2322843 5.967436 10.46393
## 4 9.992082 3.336867 6.472251 10.087775 5.0674652 1.878375 8.36715
## 5 11.971366 8.491144 11.379020 10.950361 8.5994488 7.497586 13.07169
## 6 11.016444 7.703463 9.792058 10.186587 5.9588170 5.617323 11.30985
##      Mybl1      Mybl2      Mybpc1      Mybpc2      Mybpc3      Mybph
## 1 7.935241 7.463149 4.9351462 3.5203110 8.899641e+00 3.900128e+00
## 2 8.001958 6.578034 4.8282704 3.7230234 7.552202e+00 3.804548e+00
## 3 4.945145 5.402533 1.3466811 0.6184415 3.924176e-08 1.276913e+00
## 4 4.059731 1.192357 0.3400063 0.2994580 2.069662e-08 1.324366e-07
## 5 8.359595 6.933578 5.1759040 4.0576027 7.909384e+00 4.140473e+00

```

```

## 6 6.750971 6.281855 3.8036776 2.4840178 7.711616e+00 2.829359e+00
##      Mybph1      Myc      Mycbp      Mycbp2      Mycbpap      Mycn      Myct1
## 1 2.584263e+00 11.033472 8.971768 12.95785 4.684336 9.085909 10.642798
## 2 1.171835e+00 11.160632 8.691963 12.79009 4.035398 9.021455 9.491939
## 3 6.193029e-08 7.187514 8.354378 10.68716 6.687553 9.996434 2.261406
## 4 3.061904e-08 6.492234 7.470295 10.44175 5.408120 5.374635 5.153514
## 5 1.382212e+00 11.519371 9.050072 13.14893 4.374740 9.379721 9.850375
## 6 1.676077e+00 9.842391 7.783551 11.76610 3.564057 7.897405 9.451998
##      Myd88      Myef2      Myeov2      Myg1      Myh1      Myh10      Myh11
## 1 10.764331 11.043958 11.54786 10.269093 1.230440e+00 12.963310 5.400001
## 2 10.664702 10.212199 10.79429 9.772761 1.520267e+00 13.029802 5.125671
## 3 7.268445 11.550130 12.55625 11.289968 3.488644e-08 10.938231 5.822231
## 4 8.169912 9.082903 11.22481 9.282978 1.542102e-08 8.098266 9.338238
## 5 11.023385 10.570809 11.15299 10.131276 1.763798e+00 13.388643 5.475405
## 6 9.573436 9.852871 10.35651 9.078643 6.724718e-01 11.771564 4.252133
##      Myh13      Myh14      Myh15      Myh3      Myh4      Myh6
## 1 2.761488e+00 11.618670 5.2536966 3.283009 1.127375e+00 9.237660
## 2 1.967721e+00 11.380758 5.3432585 5.021091 2.714291e+00 9.341940
## 3 7.445653e-08 5.856223 0.7376122 0.000000 7.676394e-08 5.598179
## 4 3.827629e-08 5.824446 1.7379249 2.796773 4.270339e-01 2.103628
## 5 2.242907e+00 11.739517 5.6942770 5.370136 3.023862e+00 9.700329
## 6 1.823363e+00 10.427289 4.1104526 2.272759 6.065693e-01 8.048809
##      Myh7      Myh7b      Myh8      Myh9      Myl12a      Myl12b      Myl2
## 1 4.3936472 6.4191924 2.896809e+00 14.06297 13.34402 12.87484 5.860695
## 2 4.5450710 6.3919688 5.012124e+00 13.51155 12.41066 12.40595 5.948599
## 3 3.8907815 2.0923166 2.117509e-01 10.29869 11.76932 12.45523 3.002919
## 4 0.5749564 0.3115129 1.245060e-07 10.61106 10.89635 11.73242 4.570437
## 5 4.8902543 6.7470532 5.361108e+00 13.87040 12.76948 12.76477 6.302316
## 6 3.2888666 5.2491559 1.937790e+00 12.87109 12.15222 11.68311 4.700910
##      Myl4      Myl6      Myl6b      Myl9      Mylip      Mylk      Mylk2
## 1 8.584195 12.73481 7.806665 9.863113 10.813260 8.960581 6.016699e+00
## 2 7.891071 11.84206 7.312648 9.023636 10.602472 7.814426 5.198935e+00
## 3 4.073494 11.14421 5.683023 11.418707 5.826236 7.781805 4.216424e-08
## 4 4.852185 10.46476 1.438643 11.881818 8.402838 8.764510 2.179445e-08
## 5 8.248609 12.20086 7.669524 9.381904 10.961146 8.171891 5.549124e+00
## 6 7.397136 11.54310 6.623113 8.673161 9.622329 7.772393 4.853650e+00
##      Mylk3      Mylk4      Mylpf      Mynn      Myo10      Myo15      Myo16
## 1 3.748727 3.241069e+00 6.534991 11.088796 13.150638 3.627801 9.485859
## 2 3.774673 2.974938e+00 5.869793 10.240735 12.821471 4.212418 9.848817
## 3 4.126470 2.764314e-01 6.605361 10.258773 11.702766 1.509070 4.974172
## 4 4.211160 6.931733e-08 3.591079 9.247025 9.636342 1.879463 2.915012
## 5 4.110114 3.292773e+00 6.223219 10.599351 13.180306 4.554029 10.207351
## 6 2.690725 2.235827e+00 5.363274 9.897682 11.958863 2.580907 8.296514
##      Myo18a      Myo18b      Myo19      Myo1a      Myo1b      Myo1c
## 1 13.937246 1.052224e+01 9.395794 4.460045e+00 12.788738 12.543514
## 2 13.407759 1.135052e+01 9.288272 4.460806e+00 12.313718 12.186458
## 3 10.107668 1.303425e+00 6.356390 6.420330e+00 9.100707 7.645142
## 4 8.700495 1.143533e-07 4.088723 9.571378e-08 7.245008 8.090754
## 5 13.766609 1.170928e+01 9.646641 4.805162e+00 12.672534 12.545269
## 6 12.745383 9.331547e+00 8.206618 3.351461e+00 11.597022 11.351847
##      Myo1d      Myo1e      Myo1f      Myo1g      Myo1h      Myo3b
## 1 11.934641 11.460252 11.450315 10.060005 3.375211e+00 4.619103e+00
## 2 11.472753 11.770550 11.531247 9.442621 3.773958e+00 4.754008e+00
## 3 7.791507 7.968404 6.239606 2.818581 1.491810e+00 2.473203e+00

```

```

## 4 6.369335 6.420708 8.310179 8.768385 1.148630e-07 9.719991e-08
## 5 11.831520 12.129338 11.890018 9.801043 4.109387e+00 5.101045e+00
## 6 10.743141 10.268940 10.259008 8.869794 2.354391e+00 3.502049e+00
##      Myo5a      Myo5b      Myo5c      Myo6      Myo7a      Myo7b      Myo9a
## 1 12.463778 6.294304 4.509991 13.778412 10.069551 3.541823e+00 11.753188
## 2 12.357243 6.603339 5.623511 13.401079 10.030142 4.027292e+00 11.871986
## 3 9.235777 5.245946 1.753859 10.139721 7.468949 4.343693e-08 9.389423
## 4 9.221801 7.766518 2.347803 9.195562 6.803380 1.789878e-08 6.993429
## 5 12.716061 6.958941 5.975920 13.759929 10.388717 4.366523e+00 12.230780
## 6 11.272129 5.126234 3.398652 12.586563 8.879329 2.503351e+00 10.561753
##      Myo9b      Myoc      Myocd      Myof      Myom1      Myom3      Myoz2
## 1 12.723306 4.6565887 1.8076361 7.480678 7.381895 8.1639292 2.799021e-01
## 2 12.217598 3.5015018 1.1072236 7.179465 7.003629 7.8807306 5.893359e-01
## 3 7.862526 5.8848763 0.9285838 4.566471 4.183567 3.0724050 1.910727e+00
## 4 6.045260 0.3306056 2.1912229 5.005451 5.051836 0.5117182 6.529492e-08
## 5 12.576410 3.8320093 1.3104249 7.536146 7.360026 8.2382585 7.198176e-01
## 6 11.531602 3.5376649 1.0710017 6.299254 6.201217 6.9785319 1.305978e-01
##      Mypn      Mypop      Myrip      Mysm1      Myt1      Myt1l      Myzap
## 1 5.657050e+00 9.438557 9.729018 10.945865 11.590007 9.914096 7.968325
## 2 5.297860e+00 8.660440 9.717177 10.142386 11.200828 10.571762 6.928498
## 3 1.882304e+00 6.061488 5.257283 10.639694 9.290340 10.486025 4.763382
## 4 5.490937e-08 4.064692 5.112995 9.775507 5.857028 8.327379 2.378612
## 5 5.648626e+00 9.018532 10.075678 10.500983 11.559572 10.930432 7.284762
## 6 4.502080e+00 8.249299 8.539263 9.754841 10.398637 8.724073 6.783882
##      Mzf1      Mzt1      Mzt2      N28178      N4bp1      N4bp2      N4bp2l1
## 1 7.523034 10.618033 10.681172 9.447828 11.376197 10.334234 10.167905
## 2 6.704196 9.993549 10.210027 9.717852 10.888848 9.998379 9.557741
## 3 4.738687 11.027992 10.000854 4.006240 8.753489 7.278037 7.510671
## 4 2.785939 9.065017 9.134195 5.470423 7.736501 3.601389 5.763294
## 5 7.060020 10.352116 10.568638 10.076353 11.247559 10.356946 9.916198
## 6 6.341307 9.427253 9.490341 8.258553 10.184925 9.143717 8.977566
##      N4bp3      N6amt1      N6amt2      Naa10      Naa15      Naa16      Naa20
## 1 11.490419 8.754010 9.519448 10.823426 11.370900 9.466791 10.589335
## 2 11.474786 8.657916 8.892377 10.090436 11.460022 9.016790 9.725461
## 3 5.565897 8.555597 11.264560 10.940498 9.139872 8.661607 9.847041
## 4 5.263617 7.307091 9.976572 9.257409 8.167528 6.449235 9.019956
## 5 11.833554 9.016007 9.250586 10.449023 11.818788 9.375054 10.083964
## 6 10.299094 7.566406 8.330042 9.632487 10.179631 8.277481 9.398580
##      Naa25      Naa30      Naa35      Naa38      Naa40      Naa50      Naaa
## 1 10.263444 10.651797 11.271788 10.023100 10.961092 11.871431 10.827438
## 2 10.202537 9.996542 10.910024 9.440927 10.327871 11.590430 10.195460
## 3 10.033725 8.990035 10.936161 11.210399 8.106279 10.260883 12.625611
## 4 9.242941 7.693263 9.494763 8.672385 8.327281 8.643986 10.500376
## 5 10.561145 10.355109 11.268737 9.799348 10.686502 11.949206 10.554067
## 6 9.073000 9.460990 10.080570 8.832935 9.770057 10.679952 9.636496
##      Naalad2      Naaladl1      Nab1      Nab2      Naca      Nacad      Nacc1
## 1 6.774835 4.6281727 11.243879 11.364637 11.55829 12.433300 12.619003
## 2 7.687831 4.5470735 10.892526 11.408034 10.86983 11.266590 12.550395
## 3 5.381995 2.1103114 7.931739 4.783176 10.80629 7.593927 8.021040
## 4 3.488513 0.3315141 7.102303 4.635143 9.54497 7.000488 7.631356
## 5 8.045166 4.8922758 11.251238 11.766796 11.22854 11.625340 12.909221
## 6 5.600034 3.5106628 10.052676 10.173371 10.36694 11.241658 11.427320
##      Nacc2      Nadk      Nadsyn1      Nae1      Naf1      Naga      Nagk
## 1 12.77070 12.804714 8.683468 10.551175 9.961254 11.014543 10.000412

```

```

## 2 12.49070 12.457362 8.145382 9.942898 9.693282 10.510924 9.738648
## 3 10.05828 10.401515 7.973577 11.157011 7.429856 10.549569 10.377681
## 4 8.86632 8.278425 5.930540 9.078931 4.130001 10.473996 8.161830
## 5 12.84952 12.816184 8.503137 10.301453 10.051777 10.869585 10.097154
## 6 11.57899 11.612994 7.496082 9.360453 8.771169 9.823474 8.810276
##      Naglu      Nagpa      Naif1      Naip1      Naip2      Naip5      Naip6
## 1 11.913504 10.771251 7.565166 4.8486353 8.372313 7.913874 6.272755e+00
## 2 11.055317 10.682745 6.501517 4.6279146 9.030381 8.038327 4.786059e+00
## 3 7.460788 6.164996 6.232840 0.6806313 4.185664 3.003317 4.585883e-08
## 4 8.447825 6.344962 4.769602 1.4180150 5.143345 1.404355 2.374013e-08
## 5 11.414047 11.041430 6.856880 4.9738655 9.388651 8.395995 5.133358e+00
## 6 10.722011 9.580351 6.383144 3.7208187 7.186032 6.729720 5.105043e+00
##      Nalcn      Nampt      Nanos1      Nanos2      Nanos3      Nanp
## 1 11.898829 14.088343 9.755498 4.698038e+00 4.387800e+00 2.642133
## 2 11.292647 13.292666 9.418244 5.360572e+00 4.596199e+00 2.112356
## 3 7.446022 10.198312 9.845699 1.889991e+00 2.821448e+00 3.608980
## 4 8.132409 9.383803 7.112696 1.280593e-07 9.048396e-08 2.674381
## 5 11.651399 13.651514 9.776658 5.711685e+00 4.941861e+00 2.395733
## 6 10.707341 12.896467 8.565704 3.577099e+00 3.283362e+00 1.723837
##      Nans      Nap11      Nap12      Nap13      Nap14      Nap15      Napa
## 1 11.424292 12.069490 9.518510 9.929501 13.49991 12.573997 13.29920
## 2 10.599778 11.892758 8.855718 9.134448 12.90977 12.001702 12.79008
## 3 9.632736 10.701767 7.932066 7.247980 11.85863 8.901712 12.85044
## 4 7.890447 8.738103 8.887786 6.094984 10.06475 8.342248 12.19904
## 5 10.958452 12.251554 9.213910 9.492760 13.26861 12.360503 13.14891
## 6 10.232997 10.877947 8.329105 8.739458 12.30809 11.382324 12.10741
##      Napb      Napepld      Napg      Naprt1      Napsa      Narf      Narf1
## 1 10.214181 8.803264 11.203374 9.352160 6.892303 11.510432 10.665226
## 2 10.706735 8.162662 11.074154 8.821325 5.670894 10.715867 10.292275
## 3 9.311217 8.322146 10.152299 9.291397 5.698766 10.264014 9.524898
## 4 9.295917 8.955042 8.960535 9.147937 8.144893 9.335568 9.184542
## 5 11.065423 8.520429 11.432886 9.179500 6.023513 11.074556 10.650900
## 6 9.023791 7.615512 10.012193 8.163071 5.716166 10.319097 9.474408
##      Narg2      Nars      Nars2      Nasp      Nat1      Nat10      Nat14
## 1 9.698090 12.74421 9.615574 11.594140 5.299982 10.492966 9.337423
## 2 9.393829 12.42737 9.054119 11.464023 4.614169 10.727424 8.856273
## 3 8.708546 12.06143 6.351724 11.269201 7.215238 8.920563 7.773935
## 4 6.309065 11.38829 3.865955 5.764239 7.038638 6.505424 8.151609
## 5 9.752234 12.78619 9.412400 11.822789 4.959995 11.086116 9.214465
## 6 8.508384 11.55251 8.426002 10.402769 4.155226 9.302296 8.148363
##      Nat2      Nat6      Nat8      Nat8l      Nat9      Nav1      Nav2
## 1 6.023098 9.840766 6.011797 11.498276 9.657267 12.891187 12.53331
## 2 5.930561 9.704438 5.521023 11.397189 9.544655 12.642881 12.06743
## 3 5.818130 9.386001 5.165823 7.302171 8.525526 12.276942 10.04116
## 4 3.935054 6.573503 7.938532 9.016082 6.518560 9.785284 8.66103
## 5 6.284212 10.062936 5.872955 11.755950 9.903108 13.001710 12.42624
## 6 4.859921 8.650846 4.848845 10.306947 8.467626 11.699452 11.34165
##      Nav3      Nbas      Nbea      Nbea1      Nbea12      Nbl1      Nbn
## 1 11.087307 11.796435 11.987665 10.925168 11.050255 10.452571 9.835680
## 2 11.466039 10.926221 11.936078 10.149105 10.659154 10.294568 9.647923
## 3 5.320796 9.561842 8.928040 8.580963 4.958628 8.410318 7.164052
## 4 5.822035 9.719875 9.128552 8.089578 4.283039 7.003269 7.104462
## 5 11.824805 11.284936 12.294876 10.507704 11.017837 10.653193 10.006405
## 6 9.896194 10.604983 10.796147 9.734158 9.859164 9.261938 8.645767

```

##	Nbr1	Ncald	Ncam1	Ncam2	Ncan	Ncapd2	Ncapd3
## 1	13.33269	12.61200	14.95993	11.300992	14.74373	10.539726	10.553014
## 2	12.92418	12.46199	14.56285	10.728456	14.32955	10.142219	10.457047
## 3	12.22811	10.57199	15.03231	8.177274	13.42253	10.264394	9.244162
## 4	10.49811	12.24494	13.88356	8.202384	12.63538	6.580377	6.265551
## 5	13.28302	12.82081	14.92172	11.087148	14.68841	10.500816	10.815699
## 6	12.14089	11.42032	13.76801	10.109759	13.55181	9.349013	9.362290
##	Ncapg	Ncapg2	Ncaph	Ncaph2	Ncbp1	Ncbp2	Nccrp1
## 1	7.677039	9.428113	10.719977	12.219169	11.888817	11.371972	5.294349
## 2	7.259778	8.990479	10.373875	11.935580	11.823576	10.741218	4.769165
## 3	9.035261	8.876803	10.103551	11.214151	9.221293	11.399200	4.328839
## 4	3.261925	5.151868	6.676291	9.913236	8.433167	9.659424	5.163364
## 5	7.616579	9.348732	10.732514	12.294378	12.182367	11.099911	5.116326
## 6	6.494277	8.238875	9.529115	11.027582	10.697333	10.180703	4.149774
##	Ncdn	Nceh1	Ncf1	Ncf2	Ncf4	Nck1	Nck2
## 1	13.259806	10.965793	14.178642	11.956077	11.037627	9.981578	10.088891
## 2	13.163107	10.453316	14.548562	11.478460	10.351398	9.567393	9.186038
## 3	9.543257	9.029238	5.305737	6.718311	4.056861	8.669693	10.569985
## 4	11.560632	10.954765	8.216364	5.808532	8.578401	7.881564	8.709517
## 5	13.521951	10.811968	14.907428	11.837227	10.710033	9.925852	9.544371
## 6	12.068015	9.774756	12.986760	10.764570	9.846544	8.791466	8.898645
##	Nckap1	Nckap1l	Nckap5	Nckap5l	Nckipsd	Ncl	Ncln
## 1	13.43403	13.806748	10.630072	12.212258	10.354863	13.521898	13.058119
## 2	12.95003	14.101885	10.397406	12.130106	10.152980	13.458415	12.472615
## 3	10.09901	6.565550	9.794366	5.596045	7.557405	12.651707	8.953161
## 4	10.41058	8.933865	6.048091	3.763832	6.181860	9.943098	7.483950
## 5	13.30886	14.460745	10.756049	12.488914	10.511580	13.817266	12.831438
## 6	12.24222	12.614896	9.439282	11.020673	9.164325	12.330075	11.866357
##	Ncoa1	Ncoa2	Ncoa3	Ncoa4	Ncoa5	Ncoa6	Ncoa7
## 1	12.07137	11.894769	12.199613	10.323991	11.128432	11.879496	10.081239
## 2	11.84119	11.713560	11.879496	9.949287	10.970149	11.428566	9.755764
## 3	11.85807	8.884059	9.583434	7.416812	8.682269	9.108106	8.860575
## 4	10.19783	8.378245	8.744045	6.745745	6.502869	7.645754	7.595432
## 5	12.19998	12.072344	12.238290	10.307844	11.328869	11.787330	10.114275
## 6	10.87982	10.703282	11.008032	9.133484	9.937294	10.688015	8.891002
##	Ncor1	Ncor2	Ncr1	Ncs1	Ncstn	Ndc80	Nde1
## 1	12.930821	13.840084	0.9897772	11.88416	12.65557	7.644081	12.027996
## 2	12.534678	13.624207	0.2135585	11.57585	12.46899	7.083773	11.917322
## 3	10.904840	8.358062	3.1483438	11.69764	11.70237	8.592143	11.180570
## 4	9.388257	8.232286	0.2446263	11.78472	10.51215	2.976008	9.288246
## 5	12.893503	13.983061	0.2685339	11.93463	12.82781	7.440304	12.276119
## 6	11.739080	12.648229	0.5212146	10.69267	11.46388	6.461531	10.836465
##	Ndel1	Ndfip1	Ndfip2	Ndn	Ndor1	Ndp	Ndrg1
## 1	12.717893	13.935807	12.401893	13.10096	11.159422	9.188368	14.340494
## 2	11.792112	13.229494	11.939077	12.58206	10.694981	8.497042	13.328984
## 3	9.354135	9.332236	9.352473	11.80589	8.360765	11.276592	10.830996
## 4	9.232922	9.385600	8.625325	10.79721	7.400700	10.109572	9.653901
## 5	12.150901	13.588340	12.297875	12.94089	11.053668	8.855039	13.687832
## 6	11.526191	12.743944	11.210260	11.90920	9.968266	7.999626	13.148602
##	Ndrg2	Ndrg3	Ndrg4	Ndst1	Ndst2	Ndst3	Ndst4
## 1	13.98933	12.74628	13.07413	12.788060	11.120922	7.799338	6.578732
## 2	13.53592	12.28377	12.95672	12.570820	10.577974	8.070243	8.046483
## 3	14.30945	12.32374	10.80280	8.900742	8.139346	3.957470	1.242676
## 4	12.81261	12.13170	12.12019	7.858870	6.622608	5.707688	4.449318

```

## 5 13.89477 12.64259 13.31556 12.929647 10.936644 8.427938 8.404158
## 6 12.79747 11.55457 11.88237 11.596344 9.929788 6.615828 5.406414
##      Ndufa1  Ndufa10  Ndufa11  Ndufa12  Ndufa13  Ndufa2  Ndufa3
## 1 10.713920 12.176913 11.66269 8.585062 12.13552 11.90591 11.64442
## 2 9.968117 11.667655 10.88024 7.928805 11.44855 11.14412 10.96470
## 3 11.930717 10.644352 12.36479 11.054842 13.12549 12.58340 13.11106
## 4 11.436416 9.657148 11.82062 10.117304 12.68011 11.61241 12.38988
## 5 10.326678 12.026436 11.23895 8.286377 11.80732 11.50286 11.32342
## 6 9.523063 10.985338 10.47129 7.398001 10.94395 10.71442 10.45303
##      Ndufa4  Ndufa412  Ndufa5  Ndufa6  Ndufa7  Ndufa8  Ndufa9
## 1 12.70755 8.028201 10.340148 11.99830 11.75542 11.87494 12.28390
## 2 12.06277 7.622323 9.609973 11.20051 11.06096 11.17000 11.62575
## 3 13.69225 10.125092 12.398234 12.84577 12.84144 12.54239 12.54070
## 4 12.88536 8.413645 11.690652 12.02929 11.84650 11.89752 11.83733
## 5 12.42157 7.979586 9.968444 11.55926 11.41969 11.52874 11.98453
## 6 11.51585 6.843451 9.149624 10.80678 10.56399 10.68346 11.09229
##      Ndufab1  Ndufaf1  Ndufaf2  Ndufaf3  Ndufaf4  Ndufb10  Ndufb11
## 1 8.387406 9.064931 9.252646 9.862324 9.675964 12.12046 12.47953
## 2 7.941689 8.228331 8.379431 9.344508 8.927216 11.43963 11.74407
## 3 4.539699 9.900518 10.353684 10.171215 9.969841 12.57527 13.00267
## 4 2.861818 8.688535 9.588009 9.946627 9.394726 12.25997 12.03822
## 5 8.299273 8.586149 8.737353 9.702897 9.285441 11.79840 12.10286
## 6 7.201066 7.876479 8.063763 8.672373 8.486293 10.92891 11.28787
##      Ndufb2  Ndufb3  Ndufb4  Ndufb5  Ndufb6  Ndufb7  Ndufb8
## 1 11.602845 10.958473 5.723706 12.00541 11.263432 11.63986 12.54463
## 2 10.593684 10.148823 5.166815 11.22028 10.531928 10.99630 11.74478
## 3 10.554955 11.276626 9.702324 12.82900 11.796967 12.33385 13.21991
## 4 9.820230 10.383548 8.991194 12.20609 10.963300 11.58762 12.53335
## 5 10.952357 10.507421 5.516807 11.57902 10.890592 11.35502 12.10357
## 6 10.411470 9.767441 4.567087 10.81389 10.072219 10.44847 11.35296
##      Ndufb9  Ndufc1  Ndufc2  Ndufs1  Ndufs2  Ndufs3  Ndufs4
## 1 12.75582 9.919650 11.88597 11.84000 13.69953 10.227139 11.50338
## 2 12.04173 9.329170 11.21727 11.70401 12.82979 9.603148 10.80868
## 3 12.75677 11.568527 14.41632 11.07833 11.32532 9.482645 12.39000
## 4 12.74271 10.331521 12.85460 10.14877 10.83045 8.539375 11.30741
## 5 12.40053 9.687554 11.57601 12.06280 13.18862 9.961618 11.16738
## 6 11.56411 8.729620 10.69449 10.64853 12.50769 9.036734 10.31205
##      Ndufs6  Ndufs7  Ndufs8  Ndufv1  Ndufv2  Ndufv3  Neb
## 1 10.561639 11.54070 12.17047 12.83561 12.14700 11.92193 6.310271
## 2 9.939087 10.98844 11.55006 12.19114 11.42701 11.30549 6.560750
## 3 11.558584 12.60684 12.63020 12.24533 12.92762 12.11997 5.659378
## 4 10.417900 11.67451 12.15607 11.81608 12.52420 11.24450 5.100616
## 5 10.297642 11.34716 11.90883 12.54996 11.78577 11.66425 6.916254
## 6 9.370908 10.34935 10.97889 11.64388 10.95543 10.73043 5.141941
##      Neb1  Necab1  Necab2  Necab3  Necap1  Necap2  Nedd1
## 1 10.034633 8.993941 10.005323 8.555831 11.80898 12.693697 9.287361
## 2 9.587794 8.798650 9.854257 7.997166 11.46173 12.174389 9.003204
## 3 5.808995 6.031026 6.899384 9.299516 11.02116 10.394170 9.626249
## 4 7.606692 6.360600 4.919718 5.913476 10.43097 9.760022 4.335047
## 5 9.946260 9.156814 10.212792 8.354799 11.82050 12.533199 9.361462
## 6 8.844454 7.805666 8.815181 7.368870 10.61752 11.501999 8.098404
##      Nedd4  Nedd41  Nedd8  Nedd9  Nefh  Nefl  Nefm
## 1 14.88184 11.044030 11.99402 11.302339 6.782021 8.785748 7.378984
## 2 14.44967 10.990525 11.46629 11.392271 6.822661 9.076200 7.486441

```

```

## 3 14.22445 11.107461 12.82289 9.056007 3.125082 6.129265 3.926474
## 4 11.94861 9.702289 11.33212 5.322362 4.678501 9.868964 6.840474
## 5 14.80853 11.349247 11.82505 11.751031 7.178726 9.434489 7.843544
## 6 13.68992 9.852942 10.80250 10.111105 5.607135 7.598049 6.198329
##      Negr1      Neil1      Neil2      Neil3      Nek1      Nek10      Nek11
## 1 11.408964 8.924846 5.306144 7.333936 9.835163 2.884742 4.025011
## 2 10.786372 8.908246 4.656245 6.968426 9.800096 2.362440 4.142190
## 3 8.959013 8.721355 3.001390 8.223837 8.294042 1.272226 4.808611
## 4 10.490294 5.389484 2.977567 3.132244 5.208686 3.790629 1.782035
## 5 11.145071 9.266462 5.002449 7.324762 10.158618 2.658096 4.482934
## 6 10.217677 7.736753 4.161190 6.153639 8.645251 1.927520 2.944594
##      Nek2      Nek3      Nek4      Nek5      Nek6      Nek7      Nek8
## 1 8.060225 8.704943 9.493423 3.694818 11.939471 11.335198 9.207891
## 2 7.493134 7.857805 8.421714 4.030521 11.675795 10.836739 8.903402
## 3 5.967751 8.243817 9.067379 3.759707 8.753570 9.474503 6.550874
## 4 2.703198 6.988424 5.518264 1.477263 7.438992 9.197254 5.185792
## 5 7.850245 8.215311 8.779664 4.369796 12.034577 11.195444 9.261616
## 6 6.875317 7.517490 8.304064 2.641665 10.747970 10.143947 8.019106
##      Nek9      Nell1      Nell2      Nemf      Nenf      Neo1      Nes
## 1 12.593049 8.306247 11.406049 10.798585 10.945679 14.116435 12.336646
## 2 12.410162 8.281306 11.456151 10.579585 10.409833 13.799739 12.053243
## 3 9.306291 5.831545 9.829699 11.305177 8.286474 11.299330 8.315473
## 4 7.690693 5.242868 11.716354 9.209949 7.587491 8.958221 6.232237
## 5 12.768982 8.639161 11.814917 10.938256 10.768478 14.158595 12.412047
## 6 11.401371 7.120232 10.214762 9.607664 9.754655 12.924558 11.145029
##      Net1      Neto1      Neto2      Neu1      Neu2      Neu3      Neu4
## 1 10.626596 9.826298 11.353260 12.613264 3.2885783 6.795633 13.060777
## 2 9.922686 10.137626 10.451703 12.136096 3.1224725 6.320480 12.890688
## 3 7.103717 3.266950 7.876861 9.137546 5.0998503 7.060182 5.943661
## 4 9.777920 3.987046 7.661984 9.127076 0.8659075 7.302247 10.996704
## 5 10.281237 10.496222 10.810354 12.494904 3.4443477 6.675372 13.249525
## 6 9.435810 8.636398 10.161999 11.421582 2.2776731 5.620587 11.869015
##      Neurl1a Neurl1b Neurl2 Neurl3 Neurl4 Neurod1 Neurod2
## 1 11.268077 8.483613 7.754588 10.826414 12.357522 6.090707 7.978515
## 2 12.018693 8.965677 7.186889 10.856042 11.984501 5.916705 7.234594
## 3 4.995023 7.711149 6.993463 3.521004 9.491844 14.624588 8.641435
## 4 7.823165 7.102222 1.694067 6.531821 7.421203 9.130425 8.934212
## 5 12.377496 9.323920 7.543582 11.214749 12.343301 6.270306 7.591358
## 6 10.076861 7.296909 6.571345 9.635472 11.165899 4.926225 6.794019
##      Neurod4 Neurod6 Neurog1 Neurog2 Nexn Nf1 Nf2
## 1 2.322204 7.540520 1.407956e+00 6.142546 5.789668 12.575476 13.115600
## 2 2.084298 6.912723 7.312655e-01 5.663724 5.919106 12.063635 13.011630
## 3 10.608015 10.363560 1.646307e+00 8.314808 4.159951 10.226076 9.282248
## 4 3.738124 6.634442 6.246327e-08 2.038223 4.526725 8.308681 7.230735
## 5 2.366154 7.268958 8.847298e-01 6.016312 6.272716 12.422439 13.370471
## 6 1.464124 6.358669 7.898317e-01 4.977103 4.631488 11.383802 11.923829
##      Nfam1 Nfasc Nfat5 Nfatc1 Nfatc2 Nfatc2ip Nfatc3
## 1 11.523710 17.06775 12.930609 10.954898 11.783977 9.617901 10.950993
## 2 11.785378 16.55995 12.292784 11.068676 11.332349 9.139053 10.789683
## 3 6.965333 10.82358 8.483171 8.048016 5.912318 6.586853 7.706611
## 4 8.901535 10.66592 8.464051 7.121595 5.386746 2.702323 6.890807
## 5 12.144166 16.91883 12.651600 11.427407 11.691105 9.497368 11.148382
## 6 10.332370 15.87578 11.738868 9.763868 10.592530 8.428325 9.759965
##      Nfatc4 Nfe2 Nfe2l1 Nfe2l2 Nfe2l3 Nfia Nfib

```



```

## 1 7.634323 4.7260543 13.182559 12.06710 8.739810 12.11872 12.74290
## 2 7.376955 4.0812219 12.837421 11.63672 8.294601 11.67534 12.54051
## 3 3.782392 1.9675138 9.115860 11.28702 4.331886 16.20761 15.45628
## 4 1.468078 0.5173049 8.602966 10.22969 2.299576 13.13298 11.65892
## 5 7.733918 4.4211782 13.196256 11.99550 8.652466 12.03412 12.89934
## 6 6.451837 3.6037833 11.990779 10.87556 7.552248 10.92717 11.55120
##      Nfic      Nfil3      Nfix      Nfkb1      Nfkb2      Nfkbia      Nfkbib
## 1 12.363554 12.031814 11.78084 12.494998 12.462394 14.98731 12.479826
## 2 11.783402 11.323944 11.67468 12.111858 11.576706 14.21013 11.815674
## 3 10.827628 7.121899 14.47591 8.367982 6.069828 10.65179 8.984312
## 4 8.447222 1.938697 10.70179 7.782895 3.118133 10.98747 8.045854
## 5 12.142191 11.682699 12.03346 12.470665 11.935481 14.56899 12.174465
## 6 11.171930 10.840283 10.58940 11.303342 11.270746 13.79539 11.288174
##      Nfkbid      Nfkbie      Nfkbil1      Nfkbiz      Nfrkb      Nfs1      Nfu1
## 1 12.610202 11.817428 9.942003 12.986542 11.132273 11.059694 9.978027
## 2 12.588632 11.476018 9.572078 13.240296 11.464485 10.170763 9.139640
## 3 5.396348 7.072428 3.689433 7.314439 9.342405 10.045763 10.746367
## 4 5.928923 4.712395 3.151250 5.950654 6.560345 8.180211 10.176097
## 5 12.947459 11.834785 9.930538 13.599142 11.823251 10.529365 9.497955
## 6 11.418521 10.625969 8.751943 11.794792 9.941133 9.868597 8.787919
##      Nfx1      Nfxl1      Nfya      Nfyb      Nfyc      Ngb      Ngdn
## 1 12.05699 10.319254 11.479964 9.980856 9.812019 7.216487 10.813581
## 2 11.67537 10.282723 11.233670 9.187005 9.521899 6.361828 9.995721
## 3 10.60675 6.682261 7.908947 10.954976 8.220245 6.904166 10.916513
## 4 9.26148 3.809936 6.488918 9.433623 6.706986 7.796324 9.689538
## 5 12.03415 10.641346 11.592416 9.545338 9.880344 6.716832 10.354288
## 6 10.86545 9.128751 10.288643 8.790745 8.622140 6.037176 9.622649
##      Ngef      Ngf      Ngfr      Ngfrap1      Ngly1      Ngrn      Nhej1
## 1 11.863339 4.6649880 6.743286e+00 12.26414 10.315371 9.851272 7.037824
## 2 11.621837 5.4673324 5.739120e+00 11.88776 9.848634 8.994209 6.079193
## 3 8.131289 1.5865800 3.079984e-01 11.98860 8.503991 9.271296 7.189085
## 4 8.194429 0.4728939 9.022790e-08 10.13070 7.051158 8.478973 7.870048
## 5 11.980615 5.8190002 6.092029e+00 12.24655 10.207167 9.352464 6.433357
## 6 10.671864 3.5456514 5.568862e+00 11.07255 9.124873 8.661337 5.860175
##      Nhlh1      Nhlh2      Nhlrc1      Nhlrc2      Nhlrc3      Nhlrc4      Nhp2
## 1 5.560063 11.089850 9.592106 10.265534 9.814335 9.100370e-01 11.61998
## 2 4.372013 10.359276 8.704938 10.693123 9.101483 1.635897e+00 10.91142
## 3 9.759702 8.419703 7.013536 6.845796 7.439694 2.645368e+00 11.39287
## 4 7.027940 6.348629 5.555963 5.110898 6.968057 5.339098e-08 10.07747
## 5 4.715441 10.717913 9.063054 11.051810 9.459782 1.888641e+00 11.27013
## 6 4.407630 9.898735 8.402574 9.075088 8.624453 4.731496e-01 10.42860
##      Nhp211      Nhs      Nhs11      Nhs12      Nicn1      Nid1      Nid2
## 1 11.376275 7.633273e+00 12.405298 9.115399 11.181955 13.162647 12.510109
## 2 10.687723 7.075617e+00 12.104363 8.968021 10.454666 12.871326 11.709195
## 3 10.175954 3.111570e+00 10.143187 6.244820 11.558512 9.884056 6.867547
## 4 8.874528 7.522084e-08 8.456296 8.690099 9.830441 7.573148 6.060418
## 5 11.046409 7.432135e+00 12.463170 9.326264 10.813318 13.230162 12.067978
## 6 10.185003 6.450794e+00 11.213663 7.926825 9.990786 11.970870 11.318450
##      Nif311      Nin      Ninj1      Ninj2      Ninl      Nip7      Nipa1
## 1 10.245970 10.970889 13.054159 9.138815 8.620473 11.062756 11.396853
## 2 9.527776 10.727687 12.165467 8.026852 8.905797 10.626963 10.820795
## 3 11.259473 8.399387 9.655922 9.062724 7.270329 10.990116 9.067759
## 4 8.854876 6.330025 8.484909 7.758751 4.676288 8.780823 8.179001
## 5 9.886224 11.086378 12.524276 8.384510 9.264012 10.985641 11.179498

```

```

## 6 9.055545 9.779849 11.862398 7.950186 7.433292 9.871657 10.205571
##      Nipa2  Nipal1  Nipal2  Nipal3  Nipal4  Nipbl  Nipsnap1
## 1 10.522070 4.988990 6.968859 12.686783 11.307217 11.977303 10.258453
## 2 9.885803 4.389558 7.207301 11.969724 11.030588 11.701346 10.132145
## 3 7.608510 2.324370 3.712037 8.288949 8.316846 10.669881 11.080625
## 4 7.486389 3.608998 5.369080 8.691036 6.532759 9.044246 9.167680
## 5 10.244345 4.733174 7.564024 12.328524 11.389314 12.060129 10.490740
## 6 9.331373 3.855352 5.791908 11.495086 10.115981 10.785789 9.068014
##      Nipsnap3b  Nisch  Nit1  Nit2  Nkain1  Nkain2  Nkain3
## 1 11.287872 14.66925 10.108395 10.457711 13.822034 12.279756 5.498696
## 2 10.165149 14.25869 9.931949 9.681379 13.212997 11.162303 5.658910
## 3 11.161343 11.52443 9.181804 10.588010 10.761035 7.024655 4.088634
## 4 9.340447 10.81811 7.466718 9.142556 7.508633 7.007287 4.821319
## 5 10.523751 14.61756 10.290502 10.039870 13.571842 11.521043 6.011476
## 6 10.096645 13.47734 8.918125 9.267073 12.630181 11.088153 4.347955
##      Nkain4  Nkap  Nkap1  Nkd1  Nkd2  Nkg7  Nkiras1
## 1 10.513341 10.095033 3.5726692 13.066172 8.570816 4.316586 10.382778
## 2 9.709656 9.817411 3.5632596 11.584159 8.569121 2.871207 9.646782
## 3 12.850924 9.754739 5.9651905 6.248886 5.890861 5.423475 9.926220
## 4 11.309265 7.708224 0.5721281 5.332189 4.682727 5.623877 9.133215
## 5 10.068155 10.175938 3.8949670 11.942934 8.927162 3.185936 10.005264
## 6 9.322652 8.904780 2.5311240 11.874409 7.383803 3.216430 9.192211
##      Nkiras2  Nkpd1  Nkrf  Nktr  Nle1  Nlgn1  Nlgn2
## 1 9.930188 3.981345 9.227973 12.874956 9.324477 10.970046 13.465676
## 2 9.368592 3.595267 8.683198 12.755506 9.151559 10.678580 13.448220
## 3 8.547905 2.480809 7.699341 8.647131 8.671709 9.713168 9.511830
## 4 6.884699 2.988279 5.348726 6.285016 5.178567 10.134314 8.900348
## 5 9.726990 3.927576 9.041303 13.114339 9.509879 11.037265 13.807070
## 6 8.740144 2.904214 8.039143 11.683224 8.135444 9.779006 12.273860
##      Nlgn3  Nlk  Nln  Nlrc3  Nlrc4  Nlrc5  Nlrp10
## 1 11.99597 11.622229 10.563359 7.6531596 4.306712 4.428502 1.3598635
## 2 11.91252 10.874208 9.731844 8.3099379 3.823006 3.998777 0.9564384
## 3 10.93555 8.954542 9.759736 3.0489365 4.147170 3.381721 2.8849017
## 4 10.76646 8.765747 8.464418 0.2814978 2.215443 4.292792 3.1103343
## 5 12.27131 11.232917 10.090348 8.6678137 4.159225 4.337613 1.1414306
## 6 10.80445 10.430845 9.372627 6.4705505 3.207166 3.321704 0.7575629
##      Nlrp12  Nlrp1a  Nlrp1b  Nlrp3  Nlrp4f  Nlrp6
## 1 1.613928e+00 7.106755 5.3008163 11.851297 8.152531e-01 1.046902e+00
## 2 2.262716e+00 7.524848 6.7980103 12.120694 9.240078e-01 2.512956e+00
## 3 8.670311e-08 2.300281 0.9715133 3.939746 2.267419e+00 1.236370e+00
## 4 3.293565e-08 1.129187 3.1829771 6.775671 1.502712e-07 1.179733e-07
## 5 2.553742e+00 7.881997 7.1540265 12.479501 1.104796e+00 2.814998e+00
## 6 9.318964e-01 5.928440 4.1560332 10.659826 4.173723e-01 5.562820e-01
##      Nlrx1  Nmb  Nmbr  Nmd3  Nme1  Nme2  Nme3
## 1 9.117447 7.704580 3.120613 10.736648 12.21634 11.98033 10.126238
## 2 8.703164 8.081083 3.885693 10.072463 11.69739 11.19546 9.575910
## 3 7.691561 7.727954 3.825829 9.500972 13.10075 12.38919 11.030873
## 4 5.751005 5.589905 2.216340 9.041952 11.65727 11.13940 9.447414
## 5 9.061280 8.438787 4.222883 10.431047 12.05617 11.55421 9.934372
## 6 7.928868 6.521644 2.130478 9.545774 11.02475 10.78882 8.935947
##      Nme4  Nme5  Nme6  Nme7  Nmi  Nmnat1  Nmnat2
## 1 8.180366 6.256056 7.686060 9.413612 8.396278 8.129042 11.028932
## 2 7.256162 6.049904 6.942255 9.121836 8.326534 7.604383 10.883470
## 3 8.062824 8.038251 9.923519 10.316034 8.432736 7.987661 9.059340

```

```

## 4 6.909953 6.692453 8.023932 10.015225 6.834360 6.189004 8.334593
## 5 7.612958 6.403972 7.298543 9.480144 8.684421 7.961625 11.242181
## 6 6.994894 5.088623 6.503240 8.224402 7.209903 6.943805 9.837855
##      Nmnat3      Nmral1      Nmt1      Nmt2      Nmu      Nmur1      Nnat
## 1 6.3870325 11.349634 12.46649 10.461865 1.5307466 1.091050e+00 13.83945
## 2 6.6185586 10.505737 12.14742 10.011942 1.5610919 1.045742e+00 12.81881
## 3 5.7088160 11.607413 10.81880 7.627783 2.0865449 2.372299e+00 12.90008
## 4 0.9347485 9.605433 9.90454 5.296953 0.3127506 9.901257e-08 10.35906
## 5 6.9741951 10.864397 12.50623 10.370513 1.8079669 1.241775e+00 13.17765
## 6 5.2174866 10.158375 11.27484 9.271223 0.8737798 5.837420e-01 12.64759
##      Nnmt      Nnt      Noa1      Nob1      Noc3l      Noc4l      Nod1
## 1 4.339615e+00 11.378275 10.202915 10.708577 9.830698 10.142815 11.138492
## 2 3.636445e+00 11.310149 10.332620 10.328828 9.873256 9.432938 10.651151
## 3 3.366669e-01 11.265833 6.587507 10.547531 8.531313 9.911502 6.564708
## 4 4.974374e-08 9.100833 5.323173 8.186397 4.483057 7.172633 5.366654
## 5 3.969508e+00 11.668903 10.691252 10.687460 10.231796 9.791356 11.009832
## 6 3.238054e+00 10.187002 9.012537 9.517724 8.640792 8.952505 9.947348
##      Nod2      Nodal      Nog      Nol10      Nol11      Nol12      Nol3
## 1 8.214224 4.946301 8.108178 9.711538 10.182519 9.739271 10.632115
## 2 7.807252 4.482637 7.566410 9.801954 10.111108 9.422877 9.666137
## 3 4.510607 6.251855 3.858103 8.757360 10.542609 10.261851 7.860879
## 4 3.500863 4.540141 4.832691 5.689907 8.836373 7.797169 6.295650
## 5 8.164710 4.827212 7.923609 10.160477 10.469699 9.781292 10.024624
## 6 7.028602 3.814376 6.923039 8.521811 8.992164 8.549501 9.441324
##      Nol4      Nol6      Nol7      Nol8      Nol9      Nolc1      Nom1
## 1 9.877806 11.688794 11.550470 9.567974 10.355042 11.626078 9.617189
## 2 9.681876 11.599818 10.520111 9.311046 10.328877 11.322689 10.116629
## 3 11.068927 10.158379 10.516193 9.647765 8.130615 10.668578 7.015357
## 4 8.193192 8.702667 8.905471 6.550487 5.965764 8.360307 5.804562
## 5 10.040367 11.958594 10.878774 9.669424 10.687508 11.681443 10.475222
## 6 8.687834 10.497384 10.359118 8.378483 9.164503 10.434694 8.427614
##      Nomo1      Nono      Nop10      Nop14      Nop16      Nop2      Nop56
## 1 13.964957 12.917527 10.232834 10.400316 10.231052 11.205547 11.476324
## 2 13.817024 12.489323 9.485475 10.089533 10.040103 10.595435 11.131896
## 3 9.218254 12.240567 12.611379 9.177550 11.504179 10.228250 11.354753
## 4 8.642654 9.872978 10.891570 7.069136 8.968137 9.316397 9.692789
## 5 14.175881 12.848147 9.843910 10.448120 10.398680 10.954108 11.490633
## 6 12.773092 11.725788 9.042423 9.209733 9.040643 10.014365 10.285004
##      Nop58      Nos1      Nos1ap      Nos2      Nos3      Nosip      Nostrin
## 1 10.575341 9.519365 7.909833 1.044302e+01 12.175398 11.654672 11.173549
## 2 10.262866 9.572611 8.475592 7.478061e+00 11.608431 11.026649 10.457288
## 3 10.837679 1.648753 3.691214 2.755184e+00 6.064886 11.267132 7.764649
## 4 8.888311 4.846500 5.890450 2.280199e-10 4.544366 9.758676 7.368219
## 5 10.621485 9.931072 8.833577 7.835154e+00 11.967208 11.385376 10.815941
## 6 9.384597 8.329959 6.725701 9.252391e+00 10.983823 10.463275 9.982384
##      Notch1      Notch2      Notch3      Notch4      Notum      Nov      Nova1
## 1 13.676486 12.07155 11.864838 11.558589 10.721473 8.518203 11.678874
## 2 13.010055 11.34095 11.075552 10.649942 9.769537 7.693525 11.254579
## 3 11.490787 13.17417 7.700899 5.181808 5.629898 4.474012 10.493931
## 4 9.784635 10.66405 7.657372 5.208958 2.423143 3.231804 7.528365
## 5 13.368896 11.69970 11.434284 11.008623 10.128052 8.050866 11.613328
## 6 12.484646 10.88001 10.673362 10.367233 9.530610 7.331374 10.487468
##      Nova2      Nox1      Nox3      Nox4      Noxo1      Npas1
## 1 11.370792 2.376061e+00 4.800737e-01 8.4035451 8.722916 9.518753e+00

```

```

## 2 10.649026 1.045529e+00 4.829377e-02 8.8010580 8.694684 1.001331e+01
## 3 8.859575 5.276235e-08 1.457009e+00 2.2535765 4.643079 1.356678e+00
## 4 7.899509 2.536020e-08 1.214623e-07 0.2903777 4.635666 5.811933e-08
## 5 11.007707 1.241537e+00 6.164058e-02 9.1592233 9.052795 1.037188e+01
## 6 10.179523 1.507084e+00 2.321513e-01 7.2171419 7.535406 8.329348e+00
##      Npas2      Npas3      Npas4      Npat      Npb      Npbwr1
## 1 8.055049 10.940694 1.119273e+01 10.559937 6.808058e+00 5.9640826
## 2 7.377893 10.309700 1.135680e+01 10.621136 6.838550e+00 4.6914051
## 3 4.902177 10.882947 1.162848e+00 9.981376 1.264920e+00 0.2748383
## 4 5.912393 9.122235 5.573345e-08 7.251500 5.121540e-08 0.8035830
## 5 7.734858 10.668328 1.171556e+01 10.979813 7.194646e+00 5.0379149
## 6 6.870167 9.749674 1.000156e+01 9.369207 5.632868e+00 4.8020957
##      Npc1      Npc1l1      Npc2      Npdc1      Npep1l      Npepps      Npff
## 1 14.36565 5.9867898 15.19926 13.007544 12.271179 12.298868 6.8386240
## 2 13.71038 5.6454077 14.45934 12.361626 11.768395 12.180574 6.4763569
## 3 10.40945 1.0799033 13.55430 10.156052 7.434765 10.553881 4.6807770
## 4 10.56523 0.3497396 12.48479 9.744468 7.768811 8.979589 0.6980899
## 5 14.06924 5.9979147 14.81821 12.720444 12.127183 12.539384 6.8316571
## 6 13.17376 4.8243396 14.00732 11.815790 11.079578 11.107260 5.6630844
##      Npffr1      Nphp1      Nphp3      Nphp4      Nphs1      Nphs2
## 1 3.288411e+00 9.312442 10.519541 8.114257 6.174844e+00 3.3015306
## 2 2.594656e+00 9.297611 10.088939 7.755435 4.067554e+00 2.7778800
## 3 4.352333e-08 6.310535 7.282604 5.066778 4.606875e-08 2.2854148
## 4 2.223573e-08 2.988292 2.520466 4.579840 2.212510e-08 0.5247677
## 5 2.899884e+00 9.655984 10.447526 8.112840 4.407328e+00 3.0896109
## 6 2.277526e+00 8.123433 9.328847 6.929090 5.008819e+00 2.2891096
##      Npl      Nploc4      Npm1      Npm2      Npm3      Npnt      Nppa
## 1 11.958070 12.546479 11.40832 4.263335 7.583172 10.567225 5.2648218
## 2 11.557888 12.060101 10.84352 4.622872 6.999543 10.711247 4.3280889
## 3 9.008204 9.611021 12.85344 3.653351 5.708081 4.504445 5.0737506
## 4 8.869383 8.499606 10.74225 3.249762 3.927943 8.001527 0.5832701
## 5 11.916662 12.418905 11.20222 4.968777 7.355933 11.069936 4.6710373
## 6 10.766562 11.354812 10.21703 3.166513 6.401027 9.376489 4.1212100
##      Nppc      Npr1      Npr2      Npr3      Npr12      Npr13      Nps
## 1 7.921729 9.238478 11.732478 7.155976 10.069864 10.063139 2.683771e+00
## 2 7.688406 9.089254 11.837429 7.354915 9.804046 10.043588 1.603150e+00
## 3 4.769753 2.979319 8.399106 3.289677 10.486413 8.998687 1.061848e+00
## 4 5.719310 1.070932 6.060755 4.390087 8.372620 6.562415 1.074098e-07
## 5 8.045742 9.447548 12.196221 7.711848 10.162569 10.402165 1.853365e+00
## 6 6.737532 8.049625 10.541051 5.977205 8.879641 8.872924 1.758403e+00
##      Npsr1      Nptn      Nptx1      Nptx2      Nptxr      Npy      Npy1r
## 1 5.812426 13.13182 10.952082 10.356322 6.865649e+00 11.53660 6.900911
## 2 7.085016 12.69450 10.969736 10.758466 6.796928e+00 11.50283 6.579962
## 3 5.482828 11.49616 6.697444 3.019047 1.111634e-07 4.34295 6.938421
## 4 3.638798 12.31423 11.541037 4.161708 5.183878e-01 6.84957 9.882355
## 5 7.441549 13.05333 11.328456 11.117161 7.152942e+00 11.86160 6.935511
## 6 4.653723 11.94004 9.761053 9.165782 5.689806e+00 10.34526 5.724681
##      Npy2r      Npy5r      Nqo1      Nqo2      Nr1d1      Nr1d2      Nr1h2
## 1 5.953529 2.771616 6.885772 9.227237 13.84884 12.630821 12.173603
## 2 5.410627 3.344931 6.537181 9.082842 13.71125 11.644693 11.955876
## 3 5.498724 3.667590 9.416356 8.839967 10.83905 9.557836 9.714825
## 4 10.762567 7.191181 8.372609 7.654812 10.08360 8.145918 8.670204
## 5 5.762005 3.672151 6.892629 9.441134 14.07010 12.003473 12.314675
## 6 4.791760 1.831869 5.709707 8.038409 12.65699 11.439136 10.982029

```

##	Nr1h3	Nr1h4	Nr1i3	Nr2c1	Nr2c2	Nr2c2ap	Nr2e1
## 1	7.416251	3.272898e+00	2.779338e+00	9.604690	10.998271	6.759335	10.663426
## 2	7.486912	3.989257e+00	2.677168e+00	9.549224	10.466407	6.499979	10.392576
## 3	8.116496	3.068780e+00	1.980456e+00	8.474653	9.051213	7.979487	9.443242
## 4	6.600413	8.188787e-08	6.752828e-08	6.349905	7.808467	5.718769	6.210373
## 5	7.844016	4.327959e+00	2.985431e+00	9.907678	10.825061	6.855338	10.751218
## 6	6.235308	2.263844e+00	1.838362e+00	8.415136	9.807212	5.584718	9.472610
##	Nr2f1	Nr2f2	Nr2f6	Nr3c1	Nr3c2	Nr4a1	Nr4a2
## 1	10.871681	10.463436	11.064020	12.683133	8.726258	15.271299	11.104182
## 2	10.235985	9.696715	10.820031	12.260018	8.674966	15.248758	11.685602
## 3	10.779385	11.629531	6.658003	10.722572	6.160475	7.068388	3.809353
## 4	8.524309	10.722974	4.954381	9.934347	6.892484	7.396697	3.083630
## 5	10.594600	10.055211	11.178734	12.618832	9.033066	15.607629	12.044384
## 6	9.680707	9.272793	9.872920	11.491438	7.538738	14.079363	9.913058
##	Nr4a3	Nr5a1	Nr5a2	Nr6a1	Nrap	Nrarp	
## 1	1.057474e+01	1.176615e+00	4.050294e+00	7.836308	6.9676272	12.260847	
## 2	1.075998e+01	2.317516e+00	2.983704e+00	7.742587	6.3042029	11.791796	
## 3	6.657857e-01	1.568745e+00	7.009798e-08	5.728508	2.9257854	8.412403	
## 4	1.009337e-07	1.312334e-07	3.641039e-08	4.568474	0.3103891	6.671203	
## 5	1.111867e+01	2.611127e+00	3.301791e+00	8.099979	6.6590489	12.150586	
## 6	9.384001e+00	6.378471e-01	2.968015e+00	6.652584	5.7906888	11.069249	
##	Nras	Nrbf2	Nrbp1	Nrbp2	Nrcam	Nrd1	Nrf1
## 1	12.94455	9.663148	12.268483	13.066897	12.88898	12.938461	10.949407
## 2	12.32655	8.822316	12.126978	12.580365	12.67407	12.602127	10.177758
## 3	13.49650	5.607769	10.585121	9.334131	10.65778	9.795096	9.720254
## 4	11.44802	4.257118	8.784103	6.847786	11.10056	8.504034	8.443319
## 5	12.68537	9.180491	12.485786	12.939192	13.03290	12.960954	10.536362
## 6	11.75281	8.473497	11.076883	11.875134	11.69725	11.746718	9.758381
##	Nrg1	Nrg2	Nrg3	Nrg4	Nrgn	Nrip1	Nrip2
## 1	9.428163	7.582774e+00	8.608299	6.145179	11.759131	11.049752	7.507292
## 2	8.505322	7.609645e+00	8.409496	4.980294	12.079525	10.451059	7.045169
## 3	8.145624	5.603584e-01	3.836965	2.163227	7.501198	8.117003	7.307319
## 4	8.416268	8.976259e-08	7.468211	1.309430	10.317713	8.455813	7.727608
## 5	8.863325	7.966894e+00	8.767439	5.329056	12.438331	10.809711	7.401637
## 6	8.238925	6.400632e+00	7.421159	4.979688	10.567694	9.858661	6.325676
##	Nrip3	Nrk	Nrm	Nrn1	Nrn11	Nrp1	Nrp2
## 1	8.643298	1.969529e+00	10.775933	10.773195	5.353145	12.34921	11.399135
## 2	8.990306	1.747495e+00	9.770375	10.282854	3.844311	11.90753	11.411855
## 3	9.475028	4.729142e-08	10.116952	11.269113	4.585753	12.02435	8.144111
## 4	7.079559	2.301410e-08	9.250118	12.365971	5.589783	11.15920	6.858160
## 5	9.348559	2.008409e+00	10.128889	10.641477	4.180865	12.26633	11.770617
## 6	7.456042	1.191133e+00	9.585029	9.582293	4.206708	11.15759	10.207852
##	Nrsn1	Nrsn2	Nrtn	Nrxn1	Nrxn2	Nrxn3	Nsa2
## 1	11.123862	6.777984	7.252895	13.78114	13.954155	10.449457	10.741618
## 2	10.896270	7.004989	6.951297	13.53776	13.741690	10.642936	10.077629
## 3	7.955811	4.319573	2.326635	14.42801	7.277732	6.211432	8.832649
## 4	9.714196	8.064535	1.202466	13.24019	8.074640	8.973321	6.867794
## 5	11.254982	7.361388	7.307602	13.89661	14.100546	11.001616	10.436213
## 6	9.932727	5.603146	6.073269	12.58929	12.762290	9.258827	9.550739
##	Nsd1	Nsdh1	Nsf	Nsf11c	Nsg1	Nsg2	Ns11
## 1	12.74059	12.43313	11.83382	10.980584	12.66429	13.14234	7.400835
## 2	12.65140	11.65864	11.86378	10.750532	12.19614	12.65444	6.797606
## 3	11.29137	11.64330	11.06571	10.802399	12.04866	12.16389	8.644960
## 4	10.15226	10.49531	12.71984	8.800987	11.35455	11.99811	4.960808

```

## 5 13.01023 12.01742 12.22257 11.109227 12.55495 13.01327 7.153621
## 6 11.54888 11.24149 10.64235 9.789537 11.47259 11.95056 6.220010
##      Nsmaf      Nsmce1      Nsmce2      Nsmce4a      Nsun2      Nsun3      Nsun5
## 1 11.668679 11.188627 9.493173 11.237560 11.884438 7.477189 9.076862
## 2 10.701543 10.418480 9.234272 10.304735 11.240555 7.760233 8.889579
## 3 8.061495 11.610547 10.457518 9.216624 8.804423 6.532179 7.691805
## 4 5.268207 10.141664 8.678826 7.347239 8.225900 5.378880 6.160458
## 5 11.060231 10.777127 9.592623 10.663362 11.599302 8.117643 9.247787
## 6 10.477276 9.997454 8.303815 10.046360 10.692955 6.295792 7.888380
##      Nsun6      Nsun7      Nt5c      Nt5c1a      Nt5c2      Nt5c3      Nt5dc1
## 1 9.111119 6.639505 10.283322 4.6829442 11.494144 11.087852 8.706207
## 2 8.163772 7.378862 9.773667 3.9115308 11.050704 10.075080 7.916076
## 3 9.009979 1.009184 10.695195 0.5719086 9.018740 9.818761 7.060244
## 4 6.656246 2.292932 8.877028 2.9369692 8.158535 8.706145 8.563179
## 5 8.521541 7.735828 10.132182 4.2491080 11.409433 10.433663 8.273637
## 6 7.922555 5.466382 9.092857 3.5627325 10.302816 9.896738 7.518749
##      Nt5dc2      Nt5dc3      Nt5e      Nt5m      Ntan1      Ntf3      Ntf5
## 1 10.015468 11.246947 8.6365543 10.707925 10.906788 1.993544 2.7287266
## 2 9.911028 11.116776 9.0478794 10.275526 10.072121 1.674483 1.8634560
## 3 9.171148 6.772687 5.0400400 9.052105 10.864372 7.632651 0.9285837
## 4 7.403015 7.674450 0.9041216 6.978787 9.116350 9.355415 0.3563819
## 5 10.269577 11.475512 9.4061569 10.634149 10.430705 1.930129 2.1321729
## 6 8.825312 10.055742 7.4493203 9.517073 9.715790 1.209241 1.7959095
##      Nthl1      Ntm      Ntn1      Ntn3      Ntn4      Ntn5      Ntng1
## 1 8.184342 10.956060 11.355283 9.096790 8.871349 6.159952e+00 7.376744
## 2 7.832090 10.502642 11.400284 9.083873 8.645924 6.921659e+00 7.107007
## 3 8.003968 10.976157 6.227301 4.462954 2.836305 5.325973e-08 3.248225
## 4 4.791403 9.656299 5.820893 3.851244 3.184274 2.813037e+00 7.392850
## 5 8.189572 10.861301 11.759045 9.442165 9.004009 7.277911e+00 7.463576
## 6 6.998853 9.765029 10.164021 7.908260 7.683403 4.994194e+00 6.196106
##      Ntng2      Ntpcr      Ntrk1      Ntrk2      Ntrk3      Nts      Ntsr1
## 1 9.876661 11.135256 7.516702e+00 14.49904 12.17264 7.076766 6.6402971
## 2 9.301578 10.561465 6.110708e+00 14.11154 11.69703 6.288033 6.9166115
## 3 5.004294 9.275903 4.062998e-08 14.21640 8.27556 7.323460 4.0214719
## 4 3.736285 9.167176 2.134157e-08 12.88358 10.65314 3.132601 0.5062656
## 5 9.659952 10.920134 6.464975e+00 14.47040 12.05582 6.642834 7.2728538
## 6 8.686690 9.944113 6.335020e+00 13.30714 10.98107 5.898737 5.4671638
##      Ntsr2      Nuak1      Nuak2      Nub1      Nubp1      Nubp2      Nubp1
## 1 10.995379 11.510050 10.268146 11.821123 9.718920 11.277336 7.391958
## 2 10.264613 11.176260 9.736008 11.537777 9.203581 10.769289 7.170954
## 3 11.884120 8.945656 6.259429 11.300025 6.596505 10.932972 6.542200
## 4 11.504332 6.345818 4.778955 8.446848 1.913616 9.873248 5.023523
## 5 10.623233 11.535001 10.094514 11.896549 9.561920 11.127986 7.527622
## 6 9.804323 10.318715 9.077697 10.629662 8.529181 10.086115 6.211201
##      Nucb1      Nucb2      Nucks1      Nudc      Nudcd1      Nudcd2      Nudcd3
## 1 13.88585 8.701984 12.08987 11.726791 9.177248 10.556903 12.578294
## 2 13.29434 9.383801 11.27178 11.304902 8.285124 9.878925 12.124406
## 3 11.06786 7.613646 12.04732 9.342138 9.368284 10.053926 11.269982
## 4 10.63895 6.111601 11.11566 7.845871 8.380410 9.469291 9.466113
## 5 13.65318 9.742204 11.63053 11.663655 8.642983 10.237466 12.483214
## 6 12.69399 7.514540 10.89832 10.535366 7.988532 9.366176 11.386620
##      Nudt1      Nudt10      Nudt11      Nudt12      Nudt13      Nudt14      Nudt15
## 1 8.680106 8.843483 10.285167 7.012321 10.161326 10.097611 5.499902e+00
## 2 8.320935 8.745570 9.241845 7.972854 9.252506 9.169068 5.394198e+00

```

```

## 3 9.462234 8.617551 7.243937 5.583952 9.119909 8.710804 3.835737e+00
## 4 6.349924 7.190928 7.208197 3.517802 6.786414 7.650407 6.303035e-08
## 5 8.678818 9.103708 9.600198 8.330466 9.610863 9.527394 5.745490e+00
## 6 7.492731 7.655615 9.094700 5.834926 8.970995 8.907354 4.349127e+00
##      Nudt16  Nudt16l1  Nudt17  Nudt18  Nudt19  Nudt2  Nudt21
## 1 10.607164 11.58965 7.508819 10.105162 10.168463 9.362174 8.688647
## 2 10.035839 10.96696 6.496053 9.943095 9.408892 8.737806 8.022994
## 3 7.526706 11.02496 6.926351 7.402903 9.473412 10.448013 8.402750
## 4 6.761272 10.29464 7.248070 5.304768 8.845322 8.637427 5.717095
## 5 10.394414 11.32568 6.851402 10.301651 9.767302 9.095939 8.380649
## 6 9.416394 10.39828 6.327193 8.914896 8.978124 8.173065 7.501245
##      Nudt22  Nudt3  Nudt4  Nudt5  Nudt6  Nudt7  Nudt8
## 1 8.851699 13.96979 13.756427 10.410991 7.350796 7.107214 9.869737
## 2 8.054563 13.14658 12.726743 9.399436 8.070672 5.974728 8.684795
## 3 8.380823 12.28069 9.687789 10.094079 4.665664 7.583645 5.362501
## 4 8.117531 11.46487 8.901352 8.638559 3.252785 8.673149 2.987243
## 5 8.412245 13.50543 13.085575 9.757844 8.428367 6.328537 9.042901
## 6 7.663808 12.77792 12.564580 9.220397 6.170363 5.928895 8.679776
##      Nudt9  Nuf2  Nufip1  Nufip2  Numa1  Numb  Numbl1
## 1 11.385136 8.458040 9.508687 11.92136 13.144688 10.885295 10.151905
## 2 11.194220 7.892958 9.685519 11.70224 12.841293 10.673185 10.317512
## 3 8.882482 10.114466 7.353638 12.15347 10.328013 7.676985 6.039485
## 4 8.316281 3.977239 4.546775 10.85294 9.003941 8.133154 4.925008
## 5 11.552963 8.250497 10.044011 12.06102 13.200129 11.031869 10.676141
## 6 10.193860 7.271431 8.319300 10.72986 11.952913 9.694312 8.961585
##      Nup107  Nup133  Nup153  Nup155  Nup160  Nup188  Nup205
## 1 9.507148 10.831449 12.045554 10.357364 10.180562 10.941916 11.377027
## 2 9.065217 10.245704 11.727045 10.009347 9.844377 10.960509 11.112580
## 3 10.418049 9.755608 9.200868 9.167405 9.436088 9.524177 10.001519
## 4 9.252312 8.541683 7.919205 8.646133 5.965797 7.245908 7.252324
## 5 9.423502 10.604321 12.085830 10.367917 10.202910 11.319228 11.471315
## 6 8.317764 9.640504 10.854018 9.166823 8.990209 9.750894 10.185755
##      Nup210  Nup210l  Nup214  Nup35  Nup37  Nup43  Nup50
## 1 11.287171 5.505599 11.300711 7.799897 7.781930 7.573543 11.573740
## 2 11.176057 5.198566 11.195698 7.150124 6.857060 6.816457 11.896729
## 3 9.021557 4.011745 9.495422 7.527314 10.016637 9.914972 8.209677
## 4 7.171673 2.016259 8.215567 6.368054 7.939142 7.268533 7.485142
## 5 11.534799 5.548752 11.554441 7.506761 7.213191 7.172509 12.255525
## 6 10.095945 4.354664 10.109478 6.616384 6.598523 6.391463 10.382377
##      Nup54  Nup62  Nup62c1  Nup85  Nup88  Nup93  Nup98
## 1 9.776689 11.69923 2.849434e+00 10.895388 11.611869 10.916394 11.040186
## 2 9.418114 11.77369 2.854969e+00 10.494296 10.874262 10.532640 10.961426
## 3 9.904887 10.23501 3.431996e+00 10.478715 10.632428 9.845920 6.941574
## 4 6.405348 7.05968 5.803692e-08 9.016183 9.166675 7.503393 4.401570
## 5 9.776527 12.13248 3.169191e+00 10.852954 11.232972 10.891304 11.320145
## 6 8.586863 10.50782 1.897543e+00 9.704398 10.420490 9.725390 9.849101
##      Nupl1  Nupl2  Nupr1  Nus1  Nusap1  Nutf2  Nvl
## 1 10.858930 8.981301 8.521905 12.096399 8.173547 8.951117 10.857187
## 2 10.418708 8.231997 7.902872 11.434667 8.063485 8.699181 10.534739
## 3 7.814284 6.171915 10.400607 9.072139 9.957784 9.423120 10.199107
## 4 5.758172 4.544017 7.879478 8.548563 5.014100 8.061502 7.015640
## 5 10.777355 8.589817 8.260420 11.793431 8.421174 9.057294 10.893404
## 6 9.667966 7.793059 7.335063 10.904848 6.988106 7.762954 9.666224
##      Nwd1  Nxf1  Nxf2  Nxf3  Nxn  Nxn11

```

```

## 1 12.373777 12.764594 2.461642e+00 2.642952e+00 10.759613 1.323855e+00
## 2 12.143227 12.230117 2.485866e+00 2.295300e+00 10.390723 2.511563e+00
## 3 9.574252 10.873351 2.770753e+00 8.188883e-08 8.792514 4.780282e-01
## 4 8.441354 9.288523 8.247253e-08 4.032502e-08 7.325007 1.217205e-07
## 5 12.502036 12.588930 2.786809e+00 2.587875e+00 10.749365 2.813549e+00
## 6 11.182150 11.572883 1.575998e+00 1.724515e+00 9.568721 7.336312e-01
##      Nxn12      Nxph1      Nxph2      Nxph3      Nxph4      Nxt1      Nxt2
## 1 4.6595810 10.949895 5.358049e+00 9.019533 10.217148 9.074401 10.634511
## 2 3.7705844 11.155741 5.137753e+00 8.168857 9.113040 8.358799 10.039020
## 3 0.5798695 4.241437 1.130340e-07 4.776670 7.059690 10.188299 11.713070
## 4 2.5198471 6.988177 2.691747e+00 1.383476 7.298061 8.882724 10.363998
## 5 4.1059581 11.514480 5.487565e+00 8.526629 9.471344 8.716708 10.397597
## 6 3.5405099 9.758869 4.211461e+00 7.831193 9.026754 7.885925 9.443718
##      Nynrin      Nyx      Oaf      Oas1a      Oas1b      Oas1c      Oas1g
## 1 10.912947 4.437214 11.135647 7.157113 5.0388607 6.600980 3.457274
## 2 10.214996 4.269931 10.195535 5.932518 4.2209598 5.649245 4.384180
## 3 8.131044 3.307980 8.379654 5.785284 4.2142302 1.296330 1.912401
## 4 5.940381 0.291846 8.861067 6.266078 0.3748365 0.947658 0.242639
## 5 10.573607 4.612220 10.554143 6.286176 4.5626731 6.001769 4.727739
## 6 9.721945 3.329919 9.944505 5.978331 3.9032810 5.428363 2.427533
##      Oas2      Oas3      Oas11      Oat      Oaz3      Obfc1      Obscn
## 1 5.888205 2.448886e+00 5.086856 12.29626 7.198368 9.409410 6.525889e+00
## 2 3.689089 2.553460e+00 5.480304 11.88241 7.141641 9.175839 6.564978e+00
## 3 5.198473 1.042665e+00 4.392080 12.91939 5.406766 9.746501 1.565932e+00
## 4 5.087629 1.325762e-07 2.942844 11.52437 2.342045 6.762595 1.146499e-07
## 5 4.023085 2.857106e+00 5.832037 12.24120 7.498264 9.534167 6.920492e+00
## 6 4.727819 1.565676e+00 3.949468 11.10465 6.019217 8.220208 5.354300e+00
##      Obs11      Oc90      Oca2      Ocel1      Ociad1      Ociad2      Ocln
## 1 10.217729 2.196021e+00 2.728744 10.223153 13.33804 7.484327 11.664995
## 2 9.795278 1.381810e+00 3.739389 9.525288 12.73084 7.723092 11.093232
## 3 6.535991 4.514124e-08 1.029463 5.138658 12.36154 8.000781 8.041589
## 4 2.238060 2.316296e-08 2.848262 4.573732 12.25790 7.785751 9.715159
## 5 10.153799 1.613204e+00 4.074245 9.883734 13.08968 8.080464 11.451965
## 6 9.027335 1.364754e+00 1.795924 9.032752 12.14624 6.302877 10.473594
##      Ocr1      Odc1      Odf2      Odf2l      Odf3      Odf3b
## 1 11.002998 12.135100 11.907405 9.370014 4.234680e+00 5.477927
## 2 11.052564 11.417265 11.652387 8.794433 4.381499e+00 5.064923
## 3 7.602253 9.450639 10.370296 8.291252 1.170142e+00 5.282346
## 4 7.114171 6.601689 9.322939 1.357280 6.301467e-08 3.306399
## 5 11.411293 11.776027 12.011167 9.152595 4.725029e+00 5.414263
## 6 9.811936 10.943537 10.715914 8.180889 3.139700e+00 4.327775
##      Odf3l1      Odf3l2      Odf4      Ofd1      Ogdh      Ogdh1
## 1 2.326882e+00 4.538038e+00 2.339286e+00 9.392466 13.13769 10.749405
## 2 3.180801e+00 4.168678e+00 1.791850e+00 9.676592 12.72097 10.106870
## 3 1.286518e+00 5.228657e-08 5.560276e-08 6.448392 12.48061 5.686913
## 4 7.678397e-08 4.944500e+00 2.826838e-08 4.076708 11.31161 6.588462
## 5 3.504160e+00 4.509754e+00 2.055828e+00 10.035082 13.07980 10.465461
## 6 1.467843e+00 3.425191e+00 1.477715e+00 8.203297 11.94591 9.558521
##      Ogfod1      Ogfod2      Ogfr      Ogfr11      Ogg1      Ogn      Ogt
## 1 10.219617 10.441640 12.370914 10.046394 8.698152 6.032204 13.242032
## 2 10.342544 10.003870 12.356131 9.836621 8.602652 5.492825 12.828428
## 3 8.805047 8.946234 8.816737 8.774060 7.436370 8.278958 11.716822
## 4 9.111164 6.627077 7.512359 8.299598 6.077017 8.564251 9.988959
## 5 10.701178 10.362439 12.714949 10.195152 8.960712 5.844620 13.187263

```



```

## 6 9.029220 9.251017 11.179288 8.856200 7.510720 4.868848 12.050244
##      Oip5      Oit3      Ola1      Olfm1      Olfm2      Olfm3      Olfm4
## 1 5.280817 3.430127e+00 11.112521 13.14915 11.999836 7.653907 4.641437
## 2 5.474768 3.347962e+00 10.841747 12.75721 11.612414 7.736899 5.712994
## 3 6.119868 6.447079e-01 10.580251 10.16469 10.441916 3.635711 1.895608
## 4 1.672171 8.662550e-08 8.962470 13.08042 9.642001 5.644594 3.217320
## 5 5.826473 3.675249e+00 11.200453 13.11605 11.971191 8.094286 6.065793
## 6 4.136681 2.403288e+00 9.921392 11.95738 10.808315 6.471293 3.523264
##      Olfm11 Olfm12a Olfm12b Olfm13      Olfr110      Olfr111
## 1 9.386336 7.428941 9.283085 14.26118 5.702930e+00 4.306353e+00
## 2 8.480721 6.952124 9.374505 13.68064 3.480929e+00 2.723867e+00
## 3 10.909027 5.060687 9.239403 10.54327 8.562295e-08 8.390389e-08
## 4 9.671245 1.074156 8.752082 13.50392 3.081213e+00 4.252051e-08
## 5 8.838709 7.308431 9.732905 14.03950 3.811025e+00 3.033770e+00
## 6 8.197178 6.247902 8.094138 13.06930 4.546817e+00 3.206829e+00
##      Olfr1373 Olfr1392 Olfr1420      Olfr267 Olfr287
## 1 2.862083e+00 1.047970e+00 1.761609e+00 1.905961e+00 4.336716
## 2 1.133187e+00 2.045146e+00 1.564262e+00 2.104343e+00 4.240802
## 3 8.023461e-08 7.322746e-08 6.633461e-01 4.160620e-01 4.553465
## 4 3.806268e-08 2.694977e-08 6.131484e-08 7.728623e-08 3.667042
## 5 1.339315e+00 2.324825e+00 1.811392e+00 2.387289e+00 4.582751
## 6 1.908270e+00 5.569422e-01 1.037482e+00 1.143555e+00 3.235330
##      Olfr288      Olfr317      Olfr520      Olfr558      Olfr56      Olfr658
## 1 5.682632e-01 2.281501e+00 3.015916e+00 1.0192538 3.364471e+00 1.2631789
## 2 3.297464e-01 1.445042e+00 2.341343e+00 1.7133023 2.405016e+00 1.4483073
## 3 3.459417e+00 1.797361e+00 3.508072e-08 1.4714667 1.233760e-07 2.3632558
## 4 1.570650e-06 1.095381e-07 1.801517e-08 1.1893547 6.462185e-01 0.2806244
## 5 4.106449e-01 1.682136e+00 2.636047e+00 1.9717846 2.702549e+00 1.6856882
## 6 2.790513e-01 1.431871e+00 2.039825e+00 0.5392436 2.344852e+00 0.6937533
##      Olfr78      Olfr878      Olig1      Olig2      Olr1      Oma1
## 1 1.603943e+00 0.000000e+00 15.962632 13.706418 7.067834e-01 9.050722
## 2 1.539471e+00 1.467598e-09 15.304132 12.917945 2.106510e+00 9.272184
## 3 9.119775e-08 1.311982e+00 9.244894 7.602714 3.693384e-08 8.390800
## 4 2.906210e+00 1.057541e-09 10.184877 8.388404 1.190066e-08 6.793866
## 5 1.784588e+00 1.881951e-09 15.663003 13.276782 2.389573e+00 9.630548
## 6 9.248676e-01 0.000000e+00 14.770678 12.514576 3.553680e-01 7.862304
##      Omd      Omg      Omp      Onecut1      Onecut2      Onecut3      Ooep
## 1 3.712611 13.11177 6.334047 0.5066011 7.625794 2.415443e+00 1.181226e+00
## 2 2.874308 12.36077 5.879615 0.9532835 7.152868 3.870417e-01 1.432765e+00
## 3 7.793989 12.42133 2.172802 1.0433102 7.562512 1.526081e+00 3.266206e+00
## 4 5.457913 12.22245 0.296494 1.2161000 5.396682 1.304915e-07 7.580536e-08
## 5 3.189133 12.71958 6.233079 1.1378714 7.509509 4.798183e-01 1.668773e+00
## 6 2.657840 11.92000 5.165333 0.2461203 6.443364 1.538698e+00 6.407950e-01
##      Opa1      Opa3      Opalin      Opcm1      Ophn1      Oplah      Opn1sw
## 1 12.085822 11.249862 13.04100 12.154275 11.268637 10.951237 3.789348
## 2 12.202473 11.107356 11.87760 11.844377 11.705846 10.778196 2.956270
## 3 9.973539 9.550419 12.52751 8.264574 8.939476 8.511306 8.134160
## 4 8.594124 7.791151 10.92989 9.553436 7.320707 7.448711 1.277916
## 5 12.561284 11.466091 12.23639 12.203170 12.064630 11.136894 3.273563
## 6 10.894274 10.058655 11.84924 10.962707 10.077421 9.760210 2.727800
##      Opn3      Opn4      Opn5      Oprd1      Oprk1      Oprl1
## 1 7.127812 3.1767846 2.320641e+00 5.868850e+00 4.1862314 10.427025
## 2 6.657903 2.9116263 2.272748e+00 5.187738e+00 4.0843900 9.795802
## 3 3.190636 0.3031804 7.744909e-08 1.324591e-07 4.9698156 7.223408

```

```

## 4 4.085840 1.2997192 3.596902e-08 3.091142e+00 0.2892089 8.781675
## 5 7.013627 3.2275929 2.564255e+00 5.537859e+00 4.4243880 10.154323
## 6 5.949301 2.1794687 1.462882e+00 4.708886e+00 3.0944447 9.236416
##      Oprm1      Optc      Optn      Orai1      Orai2      Orai3
## 1 3.466566e+00 3.994595e+00 10.330386 11.532422 11.86940 10.759887
## 2 2.448929e+00 4.180168e+00 10.195618 10.980712 11.76811 10.120135
## 3 6.172273e-08 2.960162e+00 7.933721 6.360962 8.34488 8.708042
## 4 1.655443e+00 7.281932e-08 6.044145 8.690416 8.91684 9.822976
## 5 2.748339e+00 4.521386e+00 10.554226 11.339433 12.12690 10.478727
## 6 2.435844e+00 2.916457e+00 9.139872 10.341078 10.67793 9.568995
##      Oraov1      Orc1      Orc2      Orc3      Orc4      Orc5      Orc6
## 1 9.977355 6.740173 10.735503 11.290649 10.484827 10.192320 10.037194
## 2 9.201162 6.444214 10.324969 11.112629 10.128228 9.878897 9.393984
## 3 8.995465 6.737764 9.334100 10.930630 9.983181 10.270078 11.093605
## 4 7.791470 4.239653 7.112957 8.440903 8.669155 8.830299 8.897201
## 5 9.559500 6.799433 10.683600 11.471364 10.486823 10.237438 9.752390
## 6 8.787248 5.565787 9.544629 10.099421 9.294164 9.001954 8.847011
##      Orm1      Orm2      Orm3      Ormdl1      Ormdl2      Ormdl3
## 1 1.1971330 6.819730e+00 3.471475e+00 10.174644 8.953343 12.117125
## 2 1.1728800 5.917832e+00 3.038871e+00 9.376575 8.098728 11.713890
## 3 1.2853247 7.256461e-08 5.726950e-08 9.623982 9.087100 9.395504
## 4 2.5533515 3.763852e-08 2.839327e-08 10.170074 7.298984 7.511164
## 5 1.3833705 6.271437e+00 3.358509e+00 9.734975 8.456446 12.072675
## 6 0.6509925 5.644406e+00 2.440236e+00 8.984298 7.765174 10.925568
##      Os9      Osbp      Osbp2      Osbp110      Osbp111      Osbp11a      Osbp12
## 1 13.83334 11.722579 9.167129 9.208678 11.296206 13.524018 11.102745
## 2 13.60468 11.239133 9.391935 8.430266 10.746701 13.129825 10.951664
## 3 11.04273 8.444679 5.311112 2.698913 8.268369 10.051496 8.604809
## 4 10.07381 8.977273 5.458558 4.474077 7.384383 9.200034 7.842667
## 5 13.96353 11.597880 9.750340 8.788222 11.105395 13.488668 11.310382
## 6 12.64149 10.531156 7.978435 8.019891 10.104975 12.332195 9.911622
##      Osbp13      Osbp15      Osbp16      Osbp17      Osbp18      Osbp19      Oscar
## 1 7.962257 10.288878 9.838132 10.888056 11.40658 11.716697 5.144999e+00
## 2 7.750064 9.782450 9.606904 10.263249 11.00721 10.936895 4.285304e+00
## 3 5.825973 10.298284 7.132756 8.684776 9.55121 10.003839 2.800661e+00
## 4 6.172355 6.803866 7.053576 7.340012 8.37581 9.570893 9.844055e-08
## 5 8.107463 10.140967 9.965375 10.621869 11.36593 11.295611 4.627770e+00
## 6 6.777845 9.098407 8.648216 9.697071 10.21529 10.525275 4.005495e+00
##      Oscp1      Osgep      Osgep11      Osgin1      Osgin2      Osm      Osmr
## 1 8.945454 11.398118 9.093184 12.514043 10.337102 12.875529 10.536715
## 2 8.380514 10.190603 8.835744 11.146966 10.242918 12.287497 9.869558
## 3 9.883660 8.937645 9.766373 7.225356 7.979102 3.093933 5.901065
## 4 8.644377 8.966147 7.284281 4.732510 6.774970 1.439671 9.060483
## 5 8.738438 10.549210 9.193926 11.505704 10.601534 12.646313 10.228097
## 6 7.757306 10.206836 7.904663 11.322382 9.146582 11.683797 9.346005
##      Osr1      Osr2      Ost4      Ostc      Ostf1      Ostm1
## 1 1.3616725 3.602961e+00 10.580409 11.87364 12.508167 11.623759
## 2 1.4832948 3.933611e+00 9.865759 11.01924 11.572874 11.092313
## 3 4.4626071 3.968378e-08 10.755801 12.28306 7.288452 9.484701
## 4 0.7392269 1.689028e-08 9.386409 11.71656 8.887880 7.853367
## 5 1.7237074 4.271514e+00 10.224297 11.37797 11.931649 11.451046
## 6 0.7587704 2.558454e+00 9.389662 10.68216 11.316509 10.432376
##      Otc      Otoa      Otof      Otog      Otogl      Otop2
## 1 3.376247e+00 3.626097 5.106525e+00 3.287119e+00 2.697057e+00 1.4613416

```

```

## 2 2.488885e+00 3.400112 5.250707e+00 2.208404e+00 2.758148e+00 1.2415649
## 3 1.870878e+00 3.305596 1.879362e+00 3.917550e-08 4.315158e-08 2.0824753
## 4 7.740026e-08 4.837258 1.286751e-07 2.023402e-08 1.940395e-08 1.0636601
## 5 2.789952e+00 3.728532 5.601203e+00 2.496763e+00 3.069219e+00 1.4592976
## 6 2.355311e+00 2.579366 3.968412e+00 2.276385e+00 1.769468e+00 0.8260563
##      Otop3      Otor      Ootos      Otub1      Otub2      Otud1      Otud3
## 1 3.051464 1.662722e-01 4.845123e+00 12.17958 9.914216 11.141742 8.5739089
## 2 1.646295 6.593684e-01 4.512922e+00 11.73515 9.290213 10.737742 8.9190313
## 3 2.169117 3.973886e+00 1.927458e+00 13.32096 7.861560 6.926454 2.1222395
## 4 4.313995 7.421538e-13 8.710726e-08 12.31675 8.328564 5.676748 0.3104417
## 5 1.899830 8.015186e-01 4.857795e+00 12.09393 9.648583 11.096435 9.2772526
## 6 2.070507 7.597998e-02 3.717459e+00 10.98800 8.724194 9.950596 7.3868853
##      Otud4      Otud5      Otud6b      Otud7a      Otud7b      Otx1      Otx2
## 1 11.986518 11.974385 11.022257 8.952257 12.733449 9.150541 3.371585
## 2 11.905128 11.663698 10.917293 9.120422 12.707438 8.658655 3.402945
## 3 9.168793 8.388831 10.089946 3.513825 8.802959 8.664680 3.799940
## 4 7.849155 6.410504 8.144860 4.592263 7.696729 5.897019 5.041826
## 5 12.263924 12.022479 11.276008 9.478729 13.066269 9.016746 3.731425
## 6 10.795000 10.782872 9.831184 7.764091 11.541744 7.961885 2.351170
##      Ovca2      Ovgp1      Ovol1      Ovol2      Oxa11      Oxct1      Oxct2b
## 1 9.774370 7.852735 6.114875 3.338899e+00 11.753659 13.26412 3.070820e+00
## 2 9.302965 7.882471 5.501745 2.275920e+00 11.321868 12.98170 3.113007e+00
## 3 7.870729 5.251819 4.080219 9.641037e-08 11.088975 11.84184 1.281960e+00
## 4 6.255087 3.633221 4.446061 4.355308e+00 9.119164 11.20591 7.570496e-08
## 5 9.661340 8.240001 5.853583 2.567578e+00 11.680623 13.34054 3.434636e+00
## 6 8.584546 6.668919 4.949941 2.322171e+00 10.562224 12.07233 2.087255e+00
##      Oxnad1      Oxr1      Oxsm      Oxsr1      Oxt      Oxtr      P2rx1
## 1 10.043903 11.900335 7.489454 12.090694 2.092163e+00 6.525831 9.860088
## 2 8.948490 11.448596 6.970182 11.900228 2.169030e+00 6.957803 9.884342
## 3 9.436879 10.791541 7.312578 8.168360 4.064542e-01 4.657214 4.097626
## 4 8.015674 9.154727 4.143393 6.549774 9.907574e-08 1.890173 5.052832
## 5 9.306724 11.807361 7.326520 12.259024 2.455388e+00 7.314120 10.242884
## 6 8.853712 10.708846 6.307967 10.899144 1.284362e+00 5.354243 8.670140
##      P2rx2      P2rx3      P2rx4      P2rx5      P2rx6      P2rx7      P2ry1
## 1 5.334225e+00 4.950859 10.353905 8.297794 6.317450 11.638418 8.969265
## 2 4.854256e+00 5.219211 9.825003 9.784802 6.556656 10.747640 7.906553
## 3 8.115910e-08 2.262110 7.587099 2.390384 7.334926 8.946617 6.527293
## 4 4.031720e-08 0.544602 8.646429 2.934350 3.492264 9.236321 5.438573
## 5 5.202092e+00 5.569521 10.183531 10.143320 6.912150 11.106334 8.264105
## 6 4.188380e+00 3.818750 9.163367 7.111814 5.149003 10.447028 7.781054
##      P2ry10      P2ry12      P2ry13      P2ry14      P2ry2      P2ry4      P2ry6
## 1 3.388975 13.472012 13.182989 7.781631 9.036567 1.6582942 11.872612
## 2 4.441310 12.940446 12.699850 6.780395 8.553737 1.2022352 11.276786
## 3 2.212433 9.313403 8.363718 10.572121 5.115850 2.1553706 7.827838
## 4 1.650302 14.375160 12.385462 9.728957 5.794487 2.3095703 10.515745
## 5 4.785467 13.299284 13.058681 7.136376 8.911769 1.4158676 11.635537
## 6 2.366627 12.280195 11.991209 6.598226 7.848185 0.9632965 10.681133
##      P4ha1      P4ha2      P4ha3      P4hb      P4htm      Pa2g4      Pabpc11
## 1 12.46003 7.759988 8.825063 15.24340 11.045433 12.54228 5.1022981
## 2 12.15175 7.736725 8.449871 14.58033 10.575031 12.00569 5.0632595
## 3 10.89632 8.051980 5.808723 13.06773 8.806022 12.51552 4.2067114
## 4 10.49151 7.414712 4.259934 12.11055 9.860285 10.67210 0.3028251
## 5 12.51056 8.094111 8.807839 14.93919 10.933702 12.36450 5.4125889
## 6 11.26838 6.576712 7.637248 14.05147 9.854345 11.35062 3.9643400

```

```

##      Pabpc4 Pabpc4l Pabpc5 Pabpn1 Pabpn1l Pacrg Pacrgl
## 1 10.090372 5.911073 5.4874351 13.087967 0.9934661 8.424707 8.462855
## 2 9.728500 5.296223 5.0797689 12.928517 0.1282262 7.735270 7.919979
## 3 6.253433 7.872497 4.2636243 9.755809 1.9629373 9.237088 8.126844
## 4 5.416123 5.746365 0.8481938 7.600079 1.7261847 9.832729 6.425685
## 5 10.087003 5.646981 5.4292072 13.287355 0.1624539 8.092654 8.277544
## 6 8.900124 4.750196 4.3370123 11.896200 0.5234632 7.238223 7.276227
##      Pacs1 Pacs2 Pacsin1 Pacsin2 Pacsin3 Padi1 Padi2
## 1 11.798295 15.271141 10.915700 12.303195 11.455629 1.2062747 11.661328
## 2 11.659604 14.871714 11.058558 11.469279 10.970384 1.1346917 11.196162
## 3 8.162945 8.345940 7.034868 8.176398 9.370287 0.4912164 10.960956
## 4 5.540319 7.464447 7.114344 8.721391 6.547480 2.1888653 8.929121
## 5 12.018385 15.230582 11.417288 11.828046 11.329104 1.3409873 11.554905
## 6 10.606843 14.079206 9.724696 11.111586 10.264319 0.6568707 10.469929
##      Padi3 Padi4 Padi6 Paf1 Pafah1b1 Pafah1b2
## 1 1.6704945 1.806512e+00 1.551942e+00 11.833545 14.27329 13.217871
## 2 1.3810118 4.220523e-01 1.601000e+00 11.534713 13.60447 12.458602
## 3 0.6321625 3.285544e+00 3.959936e-08 8.599392 11.14111 11.063589
## 4 1.2893735 6.142695e-08 1.842109e-08 8.366924 10.55363 9.798094
## 5 1.6123317 5.218125e-01 1.851047e+00 11.893485 13.96332 12.817424
## 6 0.9719799 1.070180e+00 8.884942e-01 10.642080 13.08140 12.026086
##      Pafah1b3 Pafah2 Pag1 Paics Paip1 Paip2 Paip2b
## 1 10.292339 8.748742 12.352095 12.59386 12.11607 12.78781 11.681484
## 2 9.502763 8.399346 12.100312 12.03664 11.22291 12.25359 11.413652
## 3 10.879347 7.746888 7.689995 12.59898 12.83066 13.17066 9.359455
## 4 8.827235 6.875678 8.437477 10.81065 11.34652 11.10147 6.354145
## 5 9.861204 8.757282 12.459119 12.39545 11.58166 12.61241 11.772414
## 6 9.101864 7.561154 11.160473 11.40219 10.92452 11.59609 10.490077
##      Pak1 Pak1ip1 Pak2 Pak3 Pak4 Pak6 Pak7
## 1 12.79970 11.283175 12.558679 11.019352 10.747965 9.924698 9.484298
## 2 12.28641 10.676048 12.174965 10.626275 10.642929 10.140992 9.003085
## 3 10.91448 11.185946 9.501471 10.063122 7.836555 5.703759 10.387749
## 4 10.18152 10.153887 8.054140 9.155640 6.441014 6.834510 8.373711
## 5 12.64522 11.034732 12.533775 10.984952 11.001609 10.499589 9.361343
## 6 11.60798 10.091951 11.367009 9.828280 9.557081 8.734661 8.294956
##      Palb2 Palld Palm Palm3 Palmd Pam Pam16
## 1 6.669429 8.551007 12.409548 6.5082645 11.776573 12.12198 6.763883
## 2 6.030173 8.322511 12.216326 6.4539550 11.648603 11.38172 6.128726
## 3 7.247474 6.695045 8.753036 1.7090137 9.088867 11.01632 5.857794
## 4 6.358302 5.120050 7.196823 0.5058086 7.907498 10.85616 5.800441
## 5 6.384174 8.680396 12.575138 6.8091991 12.007383 11.74047 6.483049
## 6 5.495921 7.364063 11.217912 5.3369240 10.585129 10.93042 5.589212
##      Pamr1 Pan2 Pan3 Pank1 Pank2 Pank3 Pank4
## 1 10.469464 10.864766 11.854479 9.814926 11.145905 12.721923 11.151624
## 2 9.894385 11.219151 11.495612 9.149580 10.185335 12.398614 10.867102
## 3 7.799002 8.987533 10.679329 9.196039 8.020014 9.578187 8.804373
## 4 8.793937 5.085685 9.298531 7.026654 6.733606 8.607602 7.328725
## 5 10.252930 11.577896 11.854381 9.507898 10.543941 12.757434 11.225810
## 6 9.278816 9.673798 10.663007 8.625043 9.954756 11.530219 9.960472
##      Panx1 Panx2 Paox Papd4 Papd5 Papd7 Papln
## 1 11.516715 9.473159 8.329819 9.555092 11.395846 11.182227 6.682671
## 2 10.433853 9.017492 7.599986 8.801464 10.628571 10.918345 6.588886
## 3 8.343121 5.642585 3.995191 6.074987 8.653784 8.366672 3.414120
## 4 7.134029 6.221398 3.924259 4.489129 6.530290 6.194510 4.549888

```

```

## 5 10.792502 9.375756 7.957224 9.159630 10.987249 11.277059 6.944455
## 6 10.325378 8.283837 7.143708 8.365623 10.204565 9.991058 5.508995
##      Papola  Papolb  Papolg      Pappa  Pappa2  Papss1  Papss2
## 1 12.601771 3.334935 8.966945 5.6641101 5.573118 13.82007 8.080371
## 2 12.140650 3.368501 8.624331 3.7570545 4.298213 13.69396 7.754323
## 3 10.912714 3.531020 9.840607 1.8931410 3.999086 12.11468 8.162183
## 4 8.953674 1.679117 8.391021 0.4889103 1.132051 10.70850 7.757360
## 5 12.499459 3.696240 8.982404 4.0922049 4.640826 14.05282 8.111728
## 6 11.410092 2.318659 7.778740 4.5089619 4.420333 12.62822 6.895366
##      Paqr3      Paqr4      Paqr5      Paqr6      Paqr7      Paqr8      Paqr9
## 1 7.589452 12.316030 6.870754 8.735712 12.19889 13.08260 7.461184
## 2 7.551963 11.604810 6.361552 8.316589 11.66602 12.43071 7.936613
## 3 4.259604 8.457632 6.827454 10.149999 10.61089 10.85597 2.157019
## 4 2.018442 9.062283 8.596977 7.799759 11.49621 10.21071 6.522200
## 5 7.909145 11.963587 6.716555 8.674470 12.02480 12.78953 8.294192
## 6 6.407265 11.124417 5.694854 7.548163 11.00731 11.89083 6.279903
##      Pard3  Pard3b  Pard6a  Pard6b  Pard6g  Parg  Park2
## 1 11.120513 9.068154 10.223295 7.542530 10.249944 11.101017 7.563744
## 2 11.170641 8.772903 9.657303 6.032996 9.791243 10.063906 7.252651
## 3 9.211508 8.220911 9.853892 4.568104 8.704131 8.390938 7.125126
## 4 7.823205 3.588025 8.565225 5.759538 7.008491 7.853859 6.178201
## 5 11.529382 9.131054 10.015788 6.387007 10.149763 10.422487 7.609442
## 6 9.929380 7.879694 9.032895 6.360666 9.059514 9.909895 6.381732
##      Park7  Parl  Parm1  Parn  Parp1  Parp10  Parp11
## 1 12.34571 11.165233 9.741181 10.816135 12.475737 9.408960 9.679943
## 2 11.78389 10.277968 9.680904 10.283009 12.429117 9.776093 9.561231
## 3 13.58521 9.680791 7.055823 9.891256 10.941992 4.860134 9.990190
## 4 12.47343 9.380239 8.325372 10.171211 9.429868 6.023141 6.499079
## 5 12.14268 10.636590 10.039395 10.641633 12.787938 10.134609 9.919689
## 6 11.15409 9.974073 8.551408 9.625201 11.284086 8.219759 8.490266
##      Parp12  Parp14  Parp16  Parp2  Parp3  Parp4  Parp6
## 1 10.004762 8.530862 8.137102 9.844459 7.262440 9.458264 11.428986
## 2 10.097862 8.364846 7.530993 9.746326 7.337003 9.087403 11.087492
## 3 7.025630 5.541564 5.999372 10.500664 7.096870 7.331380 10.446358
## 4 7.168807 4.398639 3.321719 7.680056 6.079544 6.893940 7.906769
## 5 10.456451 8.722759 7.888151 10.104834 7.693912 9.445697 11.446225
## 6 8.814620 7.343988 6.951828 8.654534 6.082734 8.268969 10.237689
##      Parp8  Parp9  Pars2  Parva  Parvb  Parvg  Pask
## 1 10.420395 8.969872 6.531969 10.865177 14.080838 13.239705 8.387481
## 2 10.998810 8.873446 7.259979 10.790168 13.947810 13.032243 8.488794
## 3 6.234022 7.539415 7.998824 9.815287 8.746411 4.348195 7.690519
## 4 4.471545 2.283639 6.072014 7.566417 7.993013 9.953935 4.486927
## 5 11.357533 9.231647 7.616780 11.148867 14.306669 13.391084 8.846787
## 6 9.229792 7.781660 5.360294 9.674208 12.888964 12.047917 7.201140
##      Pate2      Pate4      Patl1      Patl2      Patz1      Pawr
## 1 3.213280e+00 1.190917e+00 11.237587 2.060852e+00 11.465956 8.324256
## 2 3.224053e+00 1.600116e+00 11.167515 1.068706e+00 10.847372 7.750022
## 3 1.967019e+00 9.046380e-01 9.185456 3.806867e-08 8.974241 7.478074
## 4 9.219329e-08 8.217546e-08 6.087313 1.931062e-08 8.442775 2.270230
## 5 3.548474e+00 1.850094e+00 11.526256 1.267456e+00 11.206078 8.107421
## 6 2.211427e+00 6.470033e-01 10.046387 1.260381e+00 10.274642 7.138168
##      Pax4      Pax6      Pax7      Pax9      Paxip1      Pbk
## 1 3.814558e+00 10.058391 2.278850e+00 2.017970e+00 11.185200 9.001422
## 2 3.928006e+00 9.649235 8.331497e-01 1.556294e+00 10.227586 8.093298

```

```

## 3 4.151759e+00 10.758343 4.904386e-08 4.309036e-08 8.545766 11.971930
## 4 9.500744e-08 7.558380 2.328910e-08 2.176173e-08 8.273453 7.307127
## 5 4.265827e+00 10.007718 1.001576e+00 1.802781e+00 10.586200 8.451011
## 6 2.750855e+00 8.868182 1.429777e+00 1.227735e+00 9.994029 7.813128
##      Pblid1      Pbrm1      Pbx1      Pbx2      Pbx3      Pbx4      Pbxip1
## 1 3.090399e+00 12.076178 12.281675 11.485544 10.4197122 7.870637 12.706805
## 2 2.514007e+00 11.721617 11.786437 11.005296 8.9551888 7.501859 12.438908
## 3 1.413989e+00 11.985211 13.071736 7.050910 5.2376057 5.449648 10.411978
## 4 6.413434e-08 9.289691 9.658067 6.386509 0.9434554 1.407487 9.872284
## 5 2.816091e+00 12.080402 12.145226 11.364020 9.3134264 7.858981 12.797729
## 6 2.104227e+00 10.884633 11.090072 10.294221 9.2291102 6.686720 11.515105
##      Pcbd1      Pcbd2      Pcbp1      Pcbp2      Pcbp3      Pcbp4      Pcca
## 1 7.613973 7.966142 13.778738 13.547995 11.077039 13.945818 10.575985
## 2 6.832521 7.848953 13.159872 12.865541 10.167997 12.999640 10.613417
## 3 9.206769 5.776721 10.717126 10.996447 7.413477 9.798347 9.940410
## 4 7.773881 3.583229 9.519059 9.866951 7.270332 9.040427 7.391669
## 5 7.188605 8.206451 13.518716 13.224377 10.526599 13.358480 10.972093
## 6 6.431621 6.781710 12.586889 12.356169 9.885931 12.753954 9.385241
##      Pccb      Pcdh1      Pcdh10      Pcdh11x      Pcdh12      Pcdh15      Pcdh17
## 1 11.958320 12.130639 13.458491 9.922047 10.349995 11.813727 12.59577
## 2 11.814273 11.508549 12.920529 9.921685 11.316809 11.689676 12.04818
## 3 11.339273 6.588446 10.301483 6.558816 3.016194 5.552704 8.77462
## 4 9.319451 8.037806 8.885026 6.859877 4.191814 7.852931 10.53633
## 5 12.173064 11.867318 13.279366 10.280235 11.675563 12.048459 12.40698
## 6 10.766812 10.939077 12.266676 8.732014 9.159461 10.622269 11.40409
##      Pcdh18      Pcdh19      Pcdh20      Pcdh7      Pcdh8      Pcdh9      Pcdha10
## 1 9.190791 10.853582 9.745756 11.732513 10.328221 12.89779 6.816038
## 2 8.575628 10.077879 9.268436 11.840321 9.584076 12.45544 6.857088
## 3 8.306447 6.810720 7.415859 6.767027 7.397849 11.26012 3.069874
## 4 6.556754 10.489936 11.544048 8.143786 8.994888 10.74851 2.961521
## 5 8.933673 10.436463 9.626799 12.199113 9.942540 12.81426 7.213219
## 6 8.002044 9.662621 8.555976 10.541086 9.137710 11.70605 5.640757
##      Pcdhb1      Pcdhb10      Pcdhb11      Pcdhb12      Pcdhb13      Pcdhb15      Pcdhb16
## 1 1.988936e+00 8.315930 7.389966 6.431136 6.992435 7.270367 8.610032
## 2 1.294705e+00 8.722654 7.233947 6.100369 6.943654 6.781737 8.149116
## 3 3.697979e-08 6.588985 6.814272 7.937984 6.335483 6.191590 7.322833
## 4 1.909344e-08 5.768396 5.013854 5.618234 5.970210 2.138149 7.195441
## 5 1.517786e+00 9.080779 7.590710 6.454602 7.299945 7.137721 8.506873
## 6 1.205761e+00 7.129876 6.209226 5.260920 5.815242 6.090594 7.422886
##      Pcdhb17      Pcdhb18      Pcdhb19      Pcdhb2      Pcdhb20      Pcdhb22      Pcdhb3      Pcdhb4
## 1 8.904763 8.595816 8.390328 6.973342 9.051361 8.829061 7.288314 7.082108
## 2 8.866083 8.784109 7.877849 6.855414 9.219918 8.068622 7.693387 6.191715
## 3 7.798432 6.029655 7.860491 5.429173 6.929094 6.685937 6.839309 7.181160
## 4 7.062234 5.793973 6.536733 3.576819 7.808436 2.023357 5.879907 4.348528
## 5 9.224280 9.142266 8.235374 7.211542 9.578263 8.426315 8.050727 6.546234
## 6 7.716725 7.408718 7.203976 5.796345 7.862942 7.641235 6.108390 5.904028
##      Pcdhb5      Pcdhb6      Pcdhb7      Pcdhb8      Pcdhb9      Pcdhga12      Pcf11
## 1 6.823260 6.0029549 8.166996 6.648044 8.726681 9.298066 11.659525
## 2 6.859605 6.2845728 7.849799 6.813907 8.595590 9.627239 11.828736
## 3 5.982359 4.9013454 9.490077 7.260299 9.219234 6.575582 9.361201
## 4 5.936523 0.5471343 8.482010 4.259092 9.296365 5.756603 6.585862
## 5 7.215741 6.6393635 8.207298 7.169955 8.953646 9.985716 12.187527
## 6 5.647895 4.8401792 6.981584 5.474810 7.539160 8.109087 10.468126
##      Pcgf1      Pcgf2      Pcgf3      Pcgf5      Pcgf6      Pcid2      Pcif1

```

```

## 1 7.722387 9.833235 11.023559 8.381608 9.477794 10.430580 11.758222
## 2 7.678758 9.538277 10.894591 8.407711 8.882040 10.083242 11.725865
## 3 8.453120 7.767385 7.468736 5.779763 7.396359 10.805301 10.456604
## 4 5.814815 5.141784 6.038536 2.091340 5.592707 9.064009 8.649203
## 5 8.036083 9.896728 11.253303 8.765653 9.240244 10.441827 12.084650
## 6 6.539340 8.643326 9.832484 7.195290 8.288464 9.239968 10.566785
##      Pck2      Pclo      Pcm1      Pcnt1      Pcmt1      Pcmt2      Pcna
## 1 10.502493 11.362691 12.621613 11.63944 11.814148 11.43023 11.74465
## 2 9.837946 11.009401 12.121983 11.04328 11.371187 11.11465 10.94602
## 3 9.634462 8.316716 11.179484 11.77864 9.599392 11.10475 10.45316
## 4 8.979385 9.266732 9.449362 11.15566 8.878360 9.08626 9.06946
## 5 10.196477 11.368126 12.480790 11.40201 11.729945 11.47339 11.30474
## 6 9.311814 10.171426 11.429930 10.44805 10.622690 10.23893 10.55321
##      Pcnp      Pcnt      Pcnx      Pcnx12      Pcnx13      Pcolce      Pcolce2
## 1 11.40440 10.177023 12.972927 8.532953 12.445858 8.212442 8.126638
## 2 10.88560 10.387749 12.626345 9.334578 12.477660 7.346868 7.658279
## 3 11.72824 7.722035 8.769306 1.486775 8.054591 10.610649 5.489486
## 4 10.31657 5.517476 9.138035 2.413517 7.460883 9.029363 5.850152
## 5 11.24431 10.746390 12.985174 9.692964 12.836483 7.703791 8.015581
## 6 10.21312 8.986674 11.781179 7.346072 11.254213 7.026828 6.941413
##      Pcp2      Pcp4      Pcp411      Pcsk1      Pcsk1n      Pcsk2      Pcsk4
## 1 2.656496 11.29379 9.777787 7.937399 12.809275 10.485001 6.652730e+00
## 2 1.804356 10.76223 8.868018 9.846917 12.654238 10.573876 6.395067e+00
## 3 1.585283 11.95667 8.060254 2.076682 6.969075 6.547943 5.094427e+00
## 4 1.005140 11.39215 9.389292 3.597890 8.233847 10.729707 5.050946e-08
## 5 2.069180 11.12092 9.226216 10.205450 13.013068 10.932546 6.750160e+00
## 6 1.735741 10.10256 8.587959 6.753118 11.617555 9.294338 5.479436e+00
##      Pcsk5      Pcsk6      Pcsk7      Pcsk9      Pctp      Pcx      Pcyox1
## 1 8.094032 11.709534 11.388149 6.6630638 6.795097 12.883901 12.81672
## 2 7.918007 11.194605 11.010294 5.9741700 6.889678 12.709326 12.75820
## 3 5.984480 10.324597 8.794942 1.9798031 5.847012 12.386573 11.68982
## 4 7.119392 8.611824 5.050716 0.3105043 7.170773 9.100034 10.12771
## 5 8.275569 11.553348 11.369019 6.3279777 7.245871 13.068157 13.11703
## 6 6.908961 10.518116 10.196872 5.4896374 5.620057 11.692168 11.62500
##      Pcyox11      Pcyt1a      Pcyt1b      Pcyt2      Pdap1      Pdcd1      Pdcd10
## 1 9.782743 12.364493 10.729292 13.886682 11.774556 6.007741e+00 10.109142
## 2 9.035695 12.098007 10.757998 13.388909 11.414095 5.928777e+00 9.382539
## 3 8.987325 10.172083 9.158158 11.366886 10.804687 1.373312e+00 10.119405
## 4 8.616984 8.597162 7.412371 9.952847 9.068015 7.518989e-08 9.022555
## 5 9.393967 12.456813 11.116693 13.747758 11.772857 6.282422e+00 9.740941
## 6 8.592908 11.172868 9.538423 12.694823 10.583113 4.844869e+00 8.918872
##      Pdcd11      Pdcd11g2      Pdcd2      Pdcd21      Pdcd4      Pdcd5      Pdcd6
## 1 10.927360 6.015944e+00 8.802747 10.448072 11.80319 8.423546 11.93394
## 2 10.585989 6.402774e+00 8.983728 9.470178 11.06750 7.940413 11.21419
## 3 8.324839 5.990930e-01 6.816901 9.119236 11.83900 8.900038 11.76831
## 4 7.387430 9.157231e-08 4.969142 8.084173 11.20208 7.156111 10.61042
## 5 10.944661 6.757886e+00 9.341978 9.828608 11.42623 8.297996 11.57294
## 6 9.736348 4.852909e+00 7.614997 9.257443 10.61173 7.237066 10.74244
##      Pdcd6ip      Pdcd7      Pdc1      Pdc13      Pddc1      Pde10a      Pde11a
## 1 12.850574 10.127340 10.820511 10.856995 10.308751 10.370826 2.987751e+00
## 2 12.508552 8.829736 9.995130 10.253090 9.640362 9.564849 2.506933e+00
## 3 8.862828 7.516760 11.238151 11.285554 10.595138 8.073337 1.859926e+00
## 4 8.829675 5.864858 9.071319 9.749081 10.320701 8.087822 6.532077e-08
## 5 12.867376 9.187916 10.353697 10.611708 9.998842 9.923308 2.808732e+00

```

```

## 6 11.658846 8.937048 9.629573 9.666032 9.118259 9.180272 2.015590e+00
##      Pde12      Pde1a      Pde1b      Pde1c      Pde2a      Pde3a      Pde3b
## 1 10.158151 8.435109 10.735189 9.861135 12.771150 9.149529 11.542144
## 2 9.180240 8.372096 11.221576 9.354716 12.368005 7.982686 11.003657
## 3 7.125768 8.672117 8.205191 7.908184 8.891598 6.226979 7.861360
## 4 7.750164 8.166955 8.040884 3.643908 9.272840 4.570455 8.044066
## 5 9.538570 8.730014 11.580321 9.713108 12.726823 8.340306 11.362381
## 6 8.967824 7.248585 9.544316 8.671186 11.579437 7.960876 10.350795
##      Pde4a      Pde4b      Pde4c      Pde4dip      Pde5a      Pde6d
## 1 9.994082 13.544046 4.501599e+00 13.233979 9.344595 12.183984
## 2 9.836616 13.172291 3.956076e+00 12.930550 8.791422 11.676833
## 3 9.012280 10.911264 4.908249e+00 11.038531 7.135335 7.849653
## 4 7.706715 9.872285 1.227613e-07 9.293876 6.610360 5.591855
## 5 10.195147 13.531135 4.294305e+00 13.289388 9.149583 12.035614
## 6 8.803953 12.352221 3.390717e+00 12.042192 8.155521 10.992407
##      Pde6g      Pde7a      Pde7b      Pde8a      Pde8b      Pde9a      Pdf
## 1 2.096338e+00 10.439771 10.168808 11.850713 10.437971 10.697466 10.206583
## 2 1.399017e+00 10.355661 9.560187 11.043447 10.068433 10.239752 9.410129
## 3 1.554150e+00 7.980123 7.759196 7.344332 10.224860 9.734806 8.073285
## 4 8.937100e-08 5.247394 7.586612 3.643614 9.840068 7.504693 6.943769
## 5 1.631988e+00 10.714297 9.918644 11.402175 10.427016 10.598368 9.768540
## 6 1.287568e+00 9.249150 8.978468 10.659242 9.247351 9.506622 9.016201
##      Pdgfa      Pdgfb      Pdgfc      Pdgfd      Pdgfra      Pdgfrb      Pdgfrl
## 1 11.528282 12.924058 8.750578 8.887530 15.407990 11.700822 8.152239
## 2 10.437862 12.857450 8.718093 8.634649 14.842555 10.848583 8.366926
## 3 7.341240 5.072521 6.441855 8.621826 9.361283 10.707605 7.864634
## 4 8.237501 6.957009 6.394563 6.170584 11.331947 8.398845 5.653973
## 5 10.796512 13.216286 9.076216 8.992727 15.201424 11.207289 8.724841
## 6 10.336939 11.732318 7.562984 7.699539 14.216050 10.509407 6.966895
##      Pdha1      Pdha2      Pdha3      Pdha4      Pdha5      Pdha6
## 1 12.45135 11.91207 10.967277 14.95881 12.42204 9.714832 13.53221
## 2 12.01686 11.27273 10.772772 13.91015 12.00760 9.929412 13.03008
## 3 11.18237 11.23010 10.174181 11.03291 12.88147 4.571548 13.94310
## 4 10.19948 10.50775 9.251540 11.19751 11.49648 3.700218 12.92667
## 5 12.37566 11.63148 11.131469 14.26901 12.36640 10.287964 13.38892
## 6 11.25971 10.72058 9.776239 13.76689 11.23040 8.525100 12.34039
##      Pdik1l      Pdk1      Pdk2      Pdk3      Pdk4      Pdlim1      Pdlim2
## 1 8.411940 10.958280 12.06704 10.873036 11.404719 6.179044 13.38994
## 2 8.333115 10.909458 11.43618 10.421715 11.146955 6.095157 12.23852
## 3 9.758732 7.143448 11.23090 7.306582 7.448186 7.177809 11.51998
## 4 6.648150 6.409821 10.39176 7.409485 5.951020 5.949938 10.12989
## 5 8.691007 11.268172 11.79494 10.780362 11.505694 6.449373 12.59733
## 6 7.225504 9.767247 10.87549 9.682061 10.213433 5.012945 12.19813
##      Pdlim3      Pdlim4      Pdlim5      Pdlim7      Pdp1      Pdp2      Pdpk1
## 1 4.442458 11.095454 12.257279 10.384481 10.208865 9.480967 11.720646
## 2 3.734373 10.426524 11.768826 9.916891 9.668554 8.841416 11.153013
## 3 9.253904 10.481954 10.801762 10.220429 10.161121 10.821964 9.106956
## 4 6.904813 7.610596 8.784351 7.357010 9.713515 9.598508 8.857461
## 5 4.069144 10.785171 12.127614 10.275440 10.027041 9.199601 11.511752
## 6 3.334865 9.904335 11.065682 9.193913 9.018481 8.291631 10.529223
##      Pdpn      Pdpr      Pdrgr1      Pds5a      Pds5b      Pdss1      Pdss2
## 1 9.862749 9.687372 11.342962 11.558173 11.810171 8.021805 7.962785
## 2 9.328210 9.320189 10.981772 11.410620 11.516169 7.825306 8.085866
## 3 12.460562 6.509386 11.116437 8.329982 10.478461 7.580245 8.220169

```



```

## 4 10.711543 4.010691 9.365269 6.729628 8.429322 4.553700 5.594852
## 5 9.686594 9.678570 11.340494 11.769382 11.874939 8.182781 8.443573
## 6 8.672798 8.497683 10.151707 10.366817 10.618715 6.837087 6.778370
##      Pdxdc1      Pdxk      Pdyn      Pdzd11      Pdzd2      Pdzd3      Pdzd4
## 1 12.749220 13.14140 5.928539 10.696062 11.541971 2.927344e+00 10.692754
## 2 12.472210 12.72386 5.831058 10.247072 11.301076 3.522580e+00 11.080503
## 3 10.043265 10.70128 2.641668 11.633627 7.146618 9.780991e-08 6.501688
## 4 8.793967 10.17764 7.438118 9.087523 8.250700 1.071066e+00 5.788399
## 5 12.831033 13.08269 6.184336 10.605689 11.659829 3.853503e+00 11.439235
## 6 11.557512 11.94962 4.767292 9.505220 10.350623 1.963834e+00 9.501914
##      Pdzd7      Pdzd8      Pdzd9      Pdzk1 Pdzk1ip1      Pdzn3      Pdzn4      Pea15a
## 1 8.049646 12.17862 2.789803 8.839253 6.149422 10.217961 8.355599 16.00997
## 2 7.979235 11.67689 2.385603 8.193546 5.365642 9.990218 8.624042 15.45002
## 3 2.666657 10.81441 2.633212 6.978728 6.507795 8.354844 6.826541 13.51414
## 4 3.774768 10.43725 2.669349 7.540539 6.185146 5.146139 7.290426 12.63530
## 5 8.336852 12.03567 2.682288 8.551338 5.716782 10.348784 8.982114 15.80890
## 6 6.864790 10.98704 1.847169 7.651398 4.983854 9.027566 7.169384 14.81802
##      Pear1      Pebp1      Pecam1      Pocr      Pef1      Peg10      Peg3
## 1 9.867269 12.96791 13.716790 8.161267 11.251178 10.628425 11.323650
## 2 9.492261 12.38664 13.384049 8.304534 10.567697 10.431051 11.813375
## 3 6.842581 11.68504 7.040388 8.925568 10.785314 7.064523 9.024773
## 4 4.706455 10.41948 7.957674 6.281766 8.479899 3.519160 7.991543
## 5 9.850698 12.74546 13.742898 8.662406 10.926366 10.789699 12.172166
## 6 8.677312 11.77617 12.524947 6.975882 10.059971 9.437636 10.132405
##      Peli1      Peli2      Peli3      Pelo      Pelp1      Pemt      Penk
## 1 12.252330 11.182608 7.736517 10.836532 10.913174 7.116926 8.254328
## 2 11.755442 10.648013 5.881060 9.824374 10.527368 6.463799 8.095836
## 3 10.100982 9.234977 5.166111 6.775654 7.939496 7.518860 5.196407
## 4 9.820395 7.702547 5.819461 7.236590 6.528731 2.622417 10.385175
## 5 12.114229 11.006694 6.234529 10.182902 10.886031 6.819068 8.453551
## 6 11.060734 9.991438 6.553384 9.645583 9.722171 5.938516 7.068532
##      Peo1      Pepd      Per1      Per2      Per3      Perp      Pes1
## 1 10.189496 11.81019 14.245567 11.499565 11.455838 9.124391 11.44975
## 2 9.369157 10.95267 13.994141 10.746478 11.126443 8.112734 11.30038
## 3 9.251031 11.15859 6.787674 7.340165 9.907378 8.425898 10.31629
## 4 6.669244 10.03229 6.752942 5.197548 8.437244 8.994162 8.19984
## 5 9.727555 11.31139 14.353000 11.105171 11.485180 8.470463 11.65913
## 6 8.999133 10.61874 13.053680 10.308235 10.264528 7.935796 10.25845
##      Pex1      Pex10      Pex11a      Pex11b      Pex12      Pex13      Pex14
## 1 10.185905 9.406277 7.434629 10.703092 9.210642 10.887234 11.081743
## 2 10.092961 9.120872 7.294316 9.985303 8.527679 10.073381 10.470138
## 3 8.521320 8.013286 7.959201 10.545328 8.885038 8.623711 9.520320
## 4 7.209478 7.427715 5.064274 9.597080 8.605698 8.993555 8.112044
## 5 10.451549 9.479180 7.651166 10.343868 8.885696 10.431964 10.828793
## 6 8.995546 8.217081 6.253547 9.512244 8.021850 9.696249 9.890633
##      Pex16      Pex19      Pex26      Pex3      Pex5      Pex5l      Pex6
## 1 10.358171 12.79717 9.254765 10.453405 12.394513 11.962224 11.907321
## 2 10.016995 12.23951 8.669213 9.736924 11.348429 11.504967 11.703403
## 3 9.982047 11.86632 7.587070 9.319115 8.929949 8.164790 8.227272
## 4 8.676468 10.52046 5.049192 9.505141 7.930394 7.584639 6.689767
## 5 10.375567 12.59832 9.027310 10.095430 11.707186 11.863736 12.062187
## 6 9.167629 11.60545 8.065877 9.262771 11.202881 10.770715 10.715831
##      Pex7      Pf4      Pfas      Pfdn1      Pfdn2      Pfdn4      Pfdn5
## 1 10.661523 9.773424 11.056787 11.436586 10.868461 9.859175 12.37366

```

```

## 2 10.143647 8.879053 10.523486 10.636725 10.257501 9.032229 11.59690
## 3 7.080094 9.907655 11.739311 12.083759 10.326053 10.998551 13.09067
## 4 5.813746 9.743594 9.765986 10.919724 8.665212 9.517676 12.04734
## 5 10.502244 9.237256 10.882149 10.995404 10.616120 9.390500 11.95568
## 6 9.470708 8.583602 9.865692 10.245285 9.677490 8.669229 11.18203
##      Pfkfb1      Pfkfb2      Pfkfb3      Pfkfb4      Pfk1      Pfkm      Pfkp
## 1 4.784570e+00 11.670579 13.307438 10.292194 12.71385 12.70246 11.765244
## 2 5.019446e+00 11.327952 13.052124 10.292816 12.29294 12.54625 11.690858
## 3 3.470688e+00 9.343892 9.165690 7.577469 10.90160 11.25858 9.468813
## 4 1.248686e-07 7.063027 6.312972 7.892112 10.51494 11.28048 10.250987
## 5 5.368480e+00 11.686707 13.410966 10.651441 12.65176 12.90508 12.049641
## 6 3.659596e+00 10.479176 12.115642 9.101719 11.52215 11.51076 10.573804
##      Pfn1      Pfn2      Pfn4      Pgam1      Pgam2      Pgam5      Pgap1
## 1 14.570090 13.50634 7.505224 10.783474 8.345940 10.684636 11.547848
## 2 13.752642 13.11244 7.424574 10.145296 7.960493 10.700321 11.060170
## 3 10.044128 11.79614 7.482184 7.034429 4.529730 8.522903 10.330115
## 4 9.536546 11.05019 5.453089 6.969645 7.990921 5.926389 7.940481
## 5 14.111498 13.47128 7.781599 10.503894 8.318094 11.059009 11.418900
## 6 13.378184 12.31451 6.323624 9.592565 7.159763 9.493802 10.356496
##      Pgap2      Pgap3      Pgbd1      Pgbd5      Pgc      Pgd      Pgf
## 1 10.155976 8.749845 6.752706 9.440924 1.568253e+00 12.648283 8.291511
## 2 9.444875 8.502541 6.676355 9.319414 1.075150e+00 12.155588 7.547062
## 3 9.766223 6.260656 7.242920 10.594519 1.910901e+00 10.540209 7.077223
## 4 8.554557 6.858479 0.886763 11.035694 8.017527e-08 9.429938 7.779872
## 5 9.803297 8.860542 7.032119 9.677795 1.274654e+00 12.514398 7.904238
## 6 8.965651 7.562253 5.578169 8.251662 8.998612e-01 11.456595 7.105557
##      Pggt1b      Pgk1      Pgl5      Pglyrp1      Pglyrp2      Pgm1      Pgm2
## 1 9.690694 10.447973 11.561460 12.446137 1.986322e+00 11.117417 11.38201
## 2 9.921864 9.732241 10.967167 11.428631 1.664513e+00 10.553990 10.92655
## 3 8.373414 8.520530 7.516411 8.918343 2.439983e+00 8.961197 11.24424
## 4 5.453625 8.271432 5.135184 10.307129 1.300992e-07 7.223703 10.27847
## 5 10.280415 10.090746 11.325887 11.787395 1.919417e+00 10.912657 11.28527
## 6 8.501000 9.257344 10.370103 11.254492 1.203788e+00 9.926286 10.19074
##      Pgm2l1      Pgm3      Pgm5      Pgp      Pgpep1      Pgr      Pgrmc1
## 1 10.733430 9.222193 10.279908 11.602965 11.275354 7.180737 12.86996
## 2 10.586802 9.909682 10.201675 11.201449 10.929172 6.941936 12.32543
## 3 8.801962 8.843610 6.727414 7.312932 11.426875 2.807972 11.68077
## 4 10.704307 5.624584 3.170122 6.034573 8.363281 6.990010 11.75741
## 5 10.945474 10.268230 10.560283 11.560193 11.287887 7.298224 12.68425
## 6 9.542559 8.033377 9.089446 10.411590 10.084134 6.001742 11.67823
##      Pgrmc2      Pgs1      Phactr1      Phactr2      Phactr3      Phactr4      Phax
## 1 11.740129 11.670620 12.51727 10.463588 12.733589 11.120449 10.729656
## 2 10.988887 11.517322 12.18400 9.944545 12.724870 11.024991 10.478322
## 3 9.140840 7.300725 11.67959 7.945065 10.154354 9.572322 11.631853
## 4 9.258336 5.404079 10.65777 7.738673 8.578864 8.351242 9.859081
## 5 11.347609 11.876093 12.54281 10.303101 13.083701 11.383717 10.836978
## 6 10.548698 10.479217 11.32561 9.272945 11.541883 9.929316 9.538787
##      Phb      Phb2      Phc1      Phc2      Phc3      Phex      Phf1
## 1 9.491967 12.571805 12.556066 13.615630 12.019083 3.710077e+00 10.977498
## 2 9.034660 12.039036 12.529867 12.844858 11.464765 3.526852e+00 10.727273
## 3 10.525840 8.965462 10.163237 9.281215 9.284463 8.999750e-01 5.123975
## 4 9.103457 7.944646 8.741498 7.194828 6.917954 1.048997e-07 2.410204
## 5 9.392932 12.397839 12.888692 13.203694 11.823531 3.857858e+00 11.085964
## 6 8.302611 11.380132 11.364397 12.423797 10.827555 2.655535e+00 9.786453

```

##	Phf10	Phf12	Phf13	Phf14	Phf19	Phf2	Phf20
## 1	11.081181	11.728783	10.658331	11.828408	8.427546	12.060345	11.29214
## 2	10.676595	11.389798	10.250019	11.012532	8.605969	11.553450	11.31193
## 3	6.163236	9.059462	6.941474	9.641719	6.414080	7.651762	10.96935
## 4	5.838340	7.766916	5.793418	8.776585	1.107575	6.051618	9.45247
## 5	11.035280	11.748559	10.608637	11.371257	8.964031	11.912223	11.67068
## 6	9.890071	10.537357	9.467518	10.636945	7.241051	10.868805	10.10091
##	Phf2011	Phf21a	Phf21b	Phf23	Phf3	Phf5a	Phf6
## 1	11.836666	11.471827	10.748524	12.123744	11.832326	10.791824	11.074597
## 2	11.880667	11.387090	9.932465	11.884541	11.741317	10.211591	10.217946
## 3	9.549038	9.514685	8.462951	9.367251	9.537788	11.171475	11.141625
## 4	6.681239	7.214243	3.116062	8.448511	7.611986	9.560128	8.845849
## 5	12.239461	11.745850	10.291019	12.243335	12.100103	10.570202	10.576558
## 6	10.645200	10.280510	9.557641	10.932185	10.640862	9.600908	9.883491
##	Phf7	Phf8	Phgdh	Phip	Phka1	Phka2	Phkb
## 1	9.204162	11.021457	12.45388	11.798735	11.481368	10.307227	11.121547
## 2	7.942568	10.749654	11.86836	11.569608	11.406004	10.878499	10.949029
## 3	6.368666	9.320209	11.86869	10.686487	9.043982	7.815644	10.016445
## 4	1.646820	6.361986	10.26169	8.766104	7.105155	5.159814	7.744057
## 5	8.300153	11.108348	12.22716	11.928382	11.764765	11.237208	11.307747
## 6	8.015385	9.830384	11.26223	10.607283	10.290046	9.116737	9.930413
##	Phkg1	Phkg2	Phlda1	Phlda2	Phlda3	Phldb1	Phldb2
## 1	10.039759	10.167534	11.975866	2.461808e+00	11.904184	15.349439	10.484820
## 2	9.311148	10.349597	11.327058	2.231362e+00	11.624680	14.700348	9.622247
## 3	9.195638	8.720832	7.809284	3.123300e-01	5.356427	9.441188	8.608805
## 4	8.897406	6.662802	6.890971	1.026616e-07	4.609687	7.655905	7.450731
## 5	9.669526	10.708232	11.685813	2.520861e+00	11.983458	15.059215	9.980722
## 6	8.849574	8.977195	10.784352	1.576132e+00	10.712695	14.157500	9.294157
##	Phldb3	Phlpp1	Phlpp2	Phospho1	Phospho2	Phpt1	Phrf1
## 1	6.325668	13.325060	10.774885	7.372483e+00	9.607230	11.66476	11.752582
## 2	5.743136	12.677121	10.905302	7.416497e+00	8.604723	10.95262	11.611448
## 3	2.871093	10.610028	7.558965	2.741328e-01	8.194732	12.14951	9.373664
## 4	2.984871	9.831859	6.687734	7.554569e-08	8.434785	10.43283	7.693965
## 5	6.096061	13.035951	11.264015	7.773512e+00	8.962784	11.31134	11.970226
## 6	5.157088	12.133261	9.583982	6.191879e+00	8.417672	10.47336	10.561146
##	Phtf1	Phtf2	Phyh	Phyhd1	Phyhip	Phyhip1	Pi15
## 1	10.214885	9.572457	10.434892	12.109134	9.282764	13.824492	2.506056
## 2	9.537033	9.629640	10.171404	11.434936	9.571686	13.063697	1.869485
## 3	8.494407	8.583875	11.307420	8.464269	8.153070	9.311164	2.212220
## 4	6.529602	6.327898	10.164944	9.917658	10.603539	9.495358	5.556599
## 5	9.895483	9.988118	10.530007	11.793700	9.930147	13.422539	2.138589
## 6	9.024494	8.382958	9.244276	10.917579	8.093817	12.632639	1.612068
##	Pi16	Pi4k2a	Pi4k2b	Pi4ka	Pi4kb	Pias1	Pias2
## 1	5.545654e+00	11.709545	8.881600	12.564741	12.148565	10.849477	11.819584
## 2	4.487507e+00	11.570731	8.249157	12.569539	11.197303	10.573631	11.443840
## 3	2.033848e+00	8.889885	7.430910	10.122025	8.719248	11.921017	9.899207
## 4	1.105757e-07	8.198059	4.618945	8.960689	7.653610	10.820344	7.747377
## 5	4.832130e+00	11.929506	8.606990	12.928366	11.556046	10.932301	11.802605
## 6	4.393612e+00	10.518127	7.693626	11.373070	10.956998	9.658519	10.628124
##	Pias3	Pias4	Pibf1	Picalm	Pick1	Pid1	Pif1
## 1	10.757521	10.328141	8.716083	14.645705	10.819975	11.119836	6.6123254
## 2	10.469443	10.304549	8.996775	13.988799	10.450088	10.596601	6.1125162
## 3	9.274938	6.268113	9.277626	10.973933	7.038954	7.107113	5.9778596
## 4	7.575997	3.895253	6.370249	9.867708	5.473075	8.537720	0.6478946

```

## 5 10.828098 10.663177 9.355031 14.347658 10.808740 10.955275 6.4667883
## 6 9.566630 9.137630 7.528595 13.453795 9.629039 9.928703 5.4395586
##      Piga      Pigb      Pigc      Pigf      Pigg      Pigh      Pigk
## 1 10.389444 8.836748 10.386435 9.146207 9.853912 8.867030 11.396921
## 2 10.078318 8.169733 9.961732 8.419168 9.054323 7.937631 10.658661
## 3 8.149257 7.629958 9.590150 9.882779 7.482959 9.013753 10.036480
## 4 6.657458 7.393377 8.532391 9.415164 7.856426 8.124259 10.313023
## 5 10.436902 8.527507 10.320291 8.777116 9.412603 8.295211 11.017343
## 6 9.198872 7.648899 9.195866 7.957561 8.663973 7.679095 10.205639
##      Pigl      Pigm      Pign      Pigo      Pigp      Pigq      Pigs
## 1 8.332871 10.844674 11.091759 10.887576 10.254919 13.475563 12.48493
## 2 8.373027 10.329930 10.507323 10.481834 9.509298 12.858242 12.32736
## 3 7.608680 9.300052 7.773336 8.226057 10.258542 10.592216 11.25110
## 4 4.460390 7.918314 7.389036 7.631134 9.691891 9.807349 10.58319
## 5 8.730945 10.688561 10.865983 10.840490 9.867740 13.217078 12.68618
## 6 7.146747 9.653720 9.900643 9.696591 9.064484 12.283745 11.29328
##      Pigt      Pigu      Pigv      Pigw      Pigx      Pigyl      Pigz
## 1 13.211873 11.234700 9.772737 7.115327 10.423576 10.664917 9.546723
## 2 12.623820 10.955827 9.085622 6.945231 9.174810 9.724657 8.544214
## 3 9.267666 10.892788 8.125027 5.448495 8.479628 10.879052 9.412251
## 4 8.763519 9.784717 7.044537 5.473879 6.916769 9.976427 7.395745
## 5 12.982649 11.314546 9.443915 7.301525 9.533138 10.083160 8.902240
## 6 12.020089 10.043502 8.582916 5.936931 9.232971 9.474099 8.357269
##      Pih1d1 Pih1d2 Pik3ap1 Pik3c2a Pik3c2b Pik3c2g Pik3c3
## 1 10.834464 5.480660 11.439131 11.985236 10.538130 5.856643 10.932580
## 2 9.738165 5.492164 11.320553 11.863846 10.329980 5.536491 10.638266
## 3 10.246838 7.102501 4.678981 9.165095 8.661637 1.928375 10.482696
## 4 8.870322 5.081057 6.619254 7.501035 6.732290 6.838479 8.597105
## 5 10.096671 5.843956 11.679307 12.222640 10.688612 5.888497 10.996945
## 6 9.643516 4.330430 10.247829 10.793719 9.347419 4.696947 9.741565
##      Pik3ca Pik3cb Pik3cd Pik3cg Pik3ip1 Pik3r1 Pik3r2
## 1 11.529468 10.505848 11.959296 10.579330 11.318661 12.696960 13.003493
## 2 11.231132 10.474773 11.655024 10.180083 11.109929 12.482106 12.330925
## 3 10.786469 5.482057 7.066180 6.443009 9.232238 10.232017 9.105683
## 4 8.832848 5.907839 7.987276 8.877137 7.790045 8.585221 7.531377
## 5 11.589878 10.833428 12.013804 10.538687 11.468664 12.840930 12.689742
## 6 10.338124 9.315166 10.767787 9.388583 10.127418 11.505261 11.811740
##      Pik3r3 Pik3r4 Pik3r5 Pik3r6 Pikfyve Pilra Pilrb1
## 1 13.063660 11.021856 11.655562 10.425338 11.038846 7.031333 2.7813780
## 2 12.575166 10.367229 11.174982 10.341652 10.775664 7.162204 3.1011529
## 3 10.642845 8.917612 1.097861 4.785545 9.478682 3.564550 1.7335492
## 4 8.868523 8.079681 7.033618 6.747934 8.181261 6.530036 0.5455475
## 5 12.933993 10.725867 11.533723 10.700286 11.134362 7.518860 3.4224702
## 6 11.871898 9.830783 10.464165 9.234731 9.847762 5.853748 1.8400776
##      Pilrb2 Pim1 Pim2 Pim3 Pin1 Pin4 Pink1
## 1 3.0431654 12.069776 10.125554 13.722144 11.56619 4.344002 14.162344
## 2 3.5196620 11.658273 9.108266 13.161814 10.92109 3.772757 13.514923
## 3 2.4857926 5.681968 7.870176 7.931449 11.51522 3.694002 9.658708
## 4 0.4923909 3.383193 8.131457 6.968527 10.38367 3.232286 9.531843
## 5 3.8505278 12.017053 9.466568 13.520658 11.27980 4.108166 13.873774
## 6 2.0633350 10.878233 8.935264 12.530300 10.37483 3.242175 12.970463
##      Pinx1 Pip4k2a Pip4k2b Pip4k2c Pip5k1a Pip5k1b Pip5k1c
## 1 8.437502 12.835139 12.354627 12.004987 11.318445 9.757389 13.274657
## 2 8.395791 12.291641 11.701568 11.358528 11.540888 9.115905 13.328069

```

```

## 3 8.641106 9.670176 7.692180 8.602859 8.442788 5.707792 8.841971
## 4 6.512873 8.832229 5.753229 8.152898 7.610832 8.113071 7.858764
## 5 8.753725 12.650456 12.060351 11.717285 11.899660 9.474210 13.686917
## 6 7.250969 11.643414 11.163005 10.813464 10.127202 8.567591 12.082864
##      Pip5kl1      Pipox      Pir      Pirt      Pitpna      Pitpnb      Pitpnc1
## 1 5.932612e+00 6.929249 8.199685 3.673075e+00 13.623863 11.811236 11.77060
## 2 5.050156e+00 7.270171 7.595262 1.684881e+00 12.955349 11.388227 11.34299
## 3 3.177677e+00 8.050650 9.819205 5.630534e-08 9.570796 11.583831 13.03893
## 4 6.088010e-08 3.256493 8.659515 2.641373e-08 9.804609 9.810353 11.53583
## 5 5.399398e+00 7.626987 7.952494 1.941295e+00 13.314188 11.746987 11.70175
## 6 4.771279e+00 5.752714 7.014127 2.621923e+00 12.432029 10.619779 10.57916
##      Pitpnm1      Pitpnm2      Pitpnm3      Pitrm1      Pitx3      Piwil1
## 1 11.661736 11.945717 9.056710 11.003929 1.286464e+00 2.164092e+00
## 2 11.394580 11.549155 8.887715 10.997723 2.570190e+00 1.448204e+00
## 3 6.817109 8.025312 4.121751 10.456731 4.630858e-08 4.384580e-08
## 4 5.962341 9.622630 1.962362 7.842224 1.618255e-08 2.262830e-08
## 5 11.753341 11.907928 9.245922 11.356446 2.874484e+00 1.685576e+00
## 6 10.470337 10.754213 7.868278 9.812867 7.089903e-01 1.339902e+00
##      Piwil2      Piwil4      Pja1      Pja2      Pkd1      Pkd1l3      Pkd2
## 1 5.1971580 3.586526 12.40069 12.69326 13.012805 7.492412 10.879960
## 2 4.6915948 2.266758 11.99311 12.57377 12.627008 7.360501 10.505829
## 3 0.8397509 4.678952 12.04298 11.72878 9.094157 3.016286 8.566277
## 4 0.7388796 4.355490 11.10710 11.15156 7.197134 2.521780 7.081740
## 5 5.0381063 2.557977 12.35191 12.93260 12.985836 7.717442 10.864489
## 6 4.0558257 2.543619 11.20906 11.50156 11.821050 6.310904 9.688981
##      Pkd2l1      Pkd2l2      Pkdcc      Pkdrej      Pkhd1l1      Pkia      Pkib
## 1 6.083271e+00 8.110543 9.799555 6.153377 3.497304e+00 12.58186 7.861312
## 2 6.707584e+00 7.659387 9.257443 5.149618 2.796126e+00 12.19074 8.040109
## 3 2.682191e+00 6.597608 5.039905 2.049297 1.432241e+00 11.80911 5.962683
## 4 1.181184e-07 3.569490 3.855565 2.710094 7.955949e-08 10.52113 6.805423
## 5 7.063415e+00 8.016691 9.615801 5.499504 3.108459e+00 12.54955 8.397778
## 6 4.918930e+00 6.925394 8.609694 4.987737 2.463373e+00 11.39018 6.677447
##      Pkig      Pklr      Pkmyt1      Pkn1      Pkn2      Pkn3      Pknox1
## 1 11.157017 3.381484e+00 8.703936 12.939269 11.423877 8.1167459 10.284600
## 2 10.655615 3.782282e+00 7.960749 13.031536 11.067110 7.7469314 10.009626
## 3 10.244863 2.266793e+00 4.776171 7.030026 8.816565 4.8896113 8.964475
## 4 10.266904 5.066825e-08 3.453186 7.115290 5.728271 0.4357441 7.217533
## 5 11.014297 4.117847e+00 8.318350 13.390377 11.425840 8.1043281 10.368197
## 6 9.965863 2.359966e+00 7.516486 11.747526 10.232582 6.9315670 9.094134
##      Pknox2      Pkp1      Pkp2      Pkp3      Pkp4      Pla1a      Pla2g12a
## 1 10.388122 0.4961193 5.572475 2.732793 13.765550 5.551235 10.522529
## 2 10.234973 0.3336693 5.272930 2.203294 13.621650 6.010475 9.761129
## 3 8.184750 6.8490786 6.597563 7.007414 8.786395 6.404338 7.146728
## 4 8.409888 8.0501876 4.318407 6.875771 8.970841 5.616481 7.587659
## 5 10.593588 0.4153994 5.623555 2.491397 13.980503 6.364408 10.119642
## 6 9.197550 0.2405865 4.419708 1.799312 12.573702 4.399040 9.331832
##      Pla2g15      Pla2g16      Pla2g2c      Pla2g2d      Pla2g2f      Pla2g3      Pla2g4a
## 1 13.915445 11.74366 1.5102586 5.139720 5.483837 10.839953 10.871003
## 2 13.985890 10.97975 3.3208729 4.908551 4.978733 10.239424 9.990392
## 3 8.137161 11.57862 1.1486979 6.846268 5.090577 7.062602 7.135310
## 4 9.560370 10.01333 1.4262503 5.069389 6.141961 5.194391 7.828056
## 5 14.344749 11.33847 3.6475548 5.256796 5.327485 10.598040 10.348958
## 6 12.723583 10.55223 0.8596188 4.000405 4.333517 9.649002 9.680030
##      Pla2g4b      Pla2g4c      Pla2g4d      Pla2g4e      Pla2g4f      Pla2g5      Pla2g6

```

```
## 1 8.619664 4.6715172 5.3863847 7.810057 4.631097 3.643532 11.337703
## 2 8.699857 3.5203958 5.2687627 8.359330 4.228681 3.971906 10.691807
## 3 6.322726 4.1338596 2.2007040 4.816357 3.253978 3.757180 9.623912
## 4 1.739187 0.4627717 0.2701119 5.235667 3.943616 6.603955 8.969042
## 5 9.057971 3.8512760 5.6193634 8.717240 4.570487 4.310362 11.050494
## 6 7.432485 3.5518611 4.2389280 6.626485 3.513441 2.595145 10.146451
##      Pla2g7      Pla2r1      Plaa      Plac8      Plag1      Plagl1      Plagl2
## 1 12.17989 4.988976e+00 11.490160 7.138612 6.056924 10.294771 10.758966
## 2 11.53709 4.737224e+00 10.404166 5.385168 6.266183 10.003056 10.172597
## 3 14.89090 4.363589e+00 9.380324 1.190361 3.667429 8.603916 8.040198
## 4 13.95713 4.937392e-08 9.023754 7.419753 3.347357 5.405913 5.358165
## 5 11.89586 5.084122e+00 10.762811 5.736412 6.620921 10.361625 10.531200
## 6 10.98832 3.855339e+00 10.298834 5.960001 4.893087 9.104294 9.568075
##      Plat      Plau      Plaur      Plb1      Plbd1      Plbd2      Plcb1
## 1 14.20871 12.898089 11.971429 4.288007 5.701401 12.585362 11.024246
## 2 13.50908 12.684031 11.134524 5.247449 5.554401 12.067667 10.859300
## 3 10.92474 6.245924 5.867496 4.318973 3.626621 8.663109 9.666158
## 4 10.77862 6.306300 5.482835 3.844152 4.248188 8.919751 8.546991
## 5 13.86794 13.042862 11.493262 5.597927 5.906493 12.426471 11.218007
## 6 13.01682 11.706354 10.779917 3.189627 4.545325 11.393687 9.833171
##      Plcb2      Plcb3      Plcb4      Plcd1      Plcd3      Plcd4      Plce1
## 1 10.793507 12.163237 10.012893 9.924459 7.705598 10.100002 10.066448
## 2 10.583842 11.802304 10.197649 9.738721 7.425634 9.669347 10.078798
## 3 1.599889 6.642428 7.122451 10.502143 4.589403 10.057388 7.798373
## 4 3.124951 5.519469 4.278875 6.958951 2.442003 9.077130 4.064379
## 5 10.942514 12.161094 10.556257 10.097228 7.782660 10.027836 10.437382
## 6 9.602590 10.971666 8.822741 8.734423 6.522655 8.909742 8.876229
##      Plcg1      Plcg2      Plch1      Plch2      Plcl1      Plcl2      Plcxd1
## 1 12.670760 12.091979 7.497897 10.200804 11.584609 11.932155 7.596778
## 2 12.558582 11.965031 7.787364 10.305617 10.739942 11.146113 7.426787
## 3 8.861867 4.546772 6.850713 4.937468 9.417198 6.346523 4.445226
## 4 6.597032 6.422855 3.157412 5.038891 8.853063 7.614843 3.657348
## 5 12.917408 12.323830 8.144801 10.664245 11.098635 11.504852 7.783815
## 6 11.479067 10.900429 6.316349 9.010428 10.393242 10.740656 6.414542
##      Plcxd2      Plcxd3      Plcz1      Pld1      Pld2      Pld3      Pld4
## 1 10.211569 4.5148220 3.327496e+00 11.443964 12.295203 13.48598 14.240546
## 2 9.664054 5.0456715 3.878722e+00 10.976469 12.033885 13.45928 13.870999
## 3 9.710786 3.5580892 4.197990e-08 9.465444 8.791629 12.34849 9.287506
## 4 6.545807 0.2811403 1.651239e-08 7.926271 8.007231 12.46679 12.303579
## 5 10.022541 5.3948833 4.215806e+00 11.335190 12.392688 13.81813 14.229857
## 6 9.021181 3.4032213 2.312072e+00 10.252660 11.103596 12.29416 13.048660
##      Pld5      Pld6      Plec      Plek      Plek2      Plekha1      Plekha2
## 1 5.1559657 7.216973 11.326143 13.577958 6.019803 13.958645 11.083700
## 2 4.4753558 5.532728 10.666573 13.138218 6.149037 13.538454 10.679175
## 3 0.5653558 4.148572 9.792451 8.129185 2.645635 9.927531 8.908585
## 4 4.0523609 3.946078 10.366777 10.068530 6.482218 8.689309 9.391129
## 5 4.8198577 5.884716 11.025257 13.497061 6.503425 13.897306 11.037859
## 6 4.0160725 6.037658 10.134896 12.386129 4.856692 12.766780 9.892588
##      Plekha3      Plekha4      Plekha5      Plekha6      Plekha7      Plekha8      Plekha1
## 1 10.162597 6.248895 10.709497 10.777903 10.069734 10.283541 16.60939
## 2 9.600186 6.083479 10.247211 10.581243 10.514647 9.535872 15.81421
## 3 8.973180 3.763218 7.445724 7.163146 5.815068 8.736649 12.22660
## 4 7.551232 3.008711 7.236690 4.161977 4.529812 2.692088 11.81053
## 5 9.958655 6.437657 10.605828 10.939914 10.873309 9.894322 16.17309
```

```

## 6 8.972264 5.081583 9.518643 9.586997 8.879511 9.093075 15.41743
## Plekhh2 Plekhf1 Plekhf2 Plekhg1 Plekhg2 Plekhg3 Plekhg4
## 1 12.97563 8.012745 10.982917 12.154248 10.692093 11.778550 6.043349e+00
## 2 12.69605 8.499458 10.165825 12.096041 10.773442 10.896683 6.117959e+00
## 3 11.45349 6.471270 8.909848 7.981916 8.004111 7.306556 7.055358e-08
## 4 11.23429 6.500268 7.550198 5.983967 5.279569 6.220759 3.151541e-08
## 5 13.05488 8.857457 10.524427 12.454847 11.132139 11.255395 6.472248e+00
## 6 11.78388 6.828073 9.791868 10.962680 9.501254 10.587105 4.879775e+00
## Plekhg5 Plekhg6 Plekhh1 Plekhh2 Plekhh3 Plekhj1 Plekhm1
## 1 11.729973 5.282374 12.679730 9.530318 10.580981 10.727946 10.808220
## 2 11.294611 4.850163 12.036574 8.665104 9.834741 9.970384 11.111435
## 3 6.320805 2.144610 8.061952 5.649659 5.400884 9.625661 8.429664
## 4 8.929564 1.091059 6.528657 5.734989 3.616626 8.811003 6.738018
## 5 11.653364 5.197966 12.395377 9.023199 10.193272 10.328946 11.470170
## 6 10.538546 4.138188 11.488035 8.340893 9.390233 9.537078 9.617292
## Plekhm2 Plekhm3 Plekhn1 Plekho1 Plekho2 Plg
## 1 12.905465 9.946583 9.268366 13.295514 13.057083 2.020904e+00
## 2 12.523795 10.336760 8.929824 13.165246 12.876587 1.987877e+00
## 3 6.709792 7.545635 5.153213 8.335631 10.336930 5.751967e-08
## 4 5.076847 6.332411 3.518313 7.528013 6.914285 2.736582e-08
## 5 12.882619 10.695392 9.288051 13.524090 13.235424 2.264256e+00
## 6 11.713728 8.756517 8.079450 12.103718 11.865321 1.229961e+00
## Plin1 Plin2 Plin3 Plin4 Plin5 Plk1 Plk2
## 1 1.673160e+00 11.842668 11.465077 3.4989655 3.2481380 7.815764 14.417787
## 2 2.390803e+00 11.671692 10.653699 3.6561544 4.0865617 7.512831 13.648501
## 3 8.605578e-01 10.537067 11.563625 3.6068446 2.0226560 9.423706 10.212291
## 4 1.110292e-07 8.684579 10.183723 0.2985455 0.3056949 5.208933 9.344932
## 5 2.687716e+00 12.030473 11.012380 3.9895709 4.4265884 7.869966 14.007356
## 6 9.738797e-01 10.651200 10.273763 2.4648627 2.2420429 6.632158 13.225889
## Plk3 Plk4 Plk5 Pllp Pln Plod1 Plod2
## 1 12.726146 8.112414 7.058086 14.98128 5.301736 14.59372 11.195321
## 2 11.663158 8.246187 7.037022 14.10009 4.581674 14.47148 10.551207
## 3 7.225109 6.656994 4.318123 11.83216 6.087552 11.59090 7.824337
## 4 6.160938 4.266684 5.863740 11.60289 9.905442 10.67095 6.861990
## 5 12.021938 8.604017 7.393475 14.45895 4.927202 14.83034 10.909874
## 6 11.534442 6.927255 5.880238 13.78936 4.156923 13.40181 10.004145
## Plod3 Plp1 Plp2 Plrg1 Pls1 Pls3 Plscr1
## 1 13.304427 19.56121 6.823673 11.159932 10.259328 12.72578 8.119931
## 2 12.894203 18.78803 6.291668 10.544806 9.531316 12.26705 7.345411
## 3 9.301892 17.14182 8.032435 11.289611 10.001127 11.04473 8.734454
## 4 8.753932 15.56975 4.711899 9.329677 9.984583 10.97293 7.634994
## 5 13.253040 19.14691 6.646479 10.903472 9.889765 12.62587 7.702332
## 6 12.112630 18.36923 5.648304 9.968776 9.068889 11.53408 6.934737
## Plscr2 Plscr3 Plscr4 Pltp Plvap Plxdc1 Plxdc2
## 1 5.197487 10.517887 6.986894 14.20573 7.665284 9.681807 12.441271
## 2 3.980087 10.643117 6.968914 13.51106 7.983978 9.060236 12.261283
## 3 6.463113 9.451582 8.166357 11.40582 4.800491 6.751873 8.187747
## 4 7.670289 7.528231 6.625854 11.53384 5.774710 5.833842 8.144104
## 5 4.318659 11.001797 7.325250 13.86991 8.341600 9.418519 12.620097
## 6 4.056144 9.327195 5.809757 13.01385 6.482596 8.492127 11.249628
## Plxna1 Plxna2 Plxna3 Plxna4 Plxnb1 Plxnb2 Plxnb3
## 1 11.621104 11.391014 12.36834 11.334811 13.942548 14.533021 14.846434
## 2 11.615676 11.259222 11.72375 11.085858 13.492064 14.190613 13.704285
## 3 7.877619 11.508831 10.03630 8.983097 10.841347 10.932257 8.127130

```

```

## 4 6.803621 8.886179 7.22022 9.819944 9.190047 9.803439 8.769852
## 5 11.974453 11.617971 12.08254 11.444590 13.850915 14.549475 14.063140
## 6 10.429722 10.199735 11.17672 10.143560 12.750685 13.341117 13.654514
##      Plxnc1      Plxnd1      Pm20d1      Pm20d2      Pmaip1      Pmch      Pmel
## 1 10.465902 13.262730 7.808338 8.635428 11.042161 1.525794e+00 8.543134
## 2 10.358641 12.729075 6.474200 8.609299 10.689493 1.278789e+00 8.623653
## 3 9.615595 6.026746 6.141607 6.193294 4.111787 2.205821e+00 3.917659
## 4 7.431408 6.807248 7.512147 4.769152 4.011298 1.675526e-08 6.981466
## 5 10.717277 13.087907 6.829495 8.967362 11.048179 1.500291e+00 8.981725
## 6 9.275256 12.070939 6.624776 7.448197 9.851075 8.703511e-01 7.356217
##      Pmepa1      Pmf1      Pmfbp1      Pml      Pmm1      Pmm2      Pmp22
## 1 12.367895 9.737463 1.783716e+00 9.472279 12.10281 10.842198 13.76509
## 2 11.861437 8.613786 1.618622e+00 9.795780 11.46383 10.568103 13.05695
## 3 9.760186 10.503935 4.052650e-08 8.604577 11.68739 10.644093 11.00074
## 4 9.310331 7.499218 1.965666e-08 6.151817 11.66930 8.426443 11.22576
## 5 12.220231 8.971852 1.870040e+00 10.154301 11.82260 10.926772 13.41579
## 6 11.176269 8.547696 1.053546e+00 8.282959 10.91125 9.651245 12.57325
##      Pmpca      Pmpcb      Pms1      Pms2      Pmvk      Pnck      Pnkd
## 1 12.007728 11.46692 8.069636 9.080422 12.16136 10.330110 12.03646
## 2 11.444530 10.89034 7.807159 8.956581 11.56020 9.830055 11.66186
## 3 9.982798 11.70467 8.048558 9.277813 11.36474 10.098821 10.48127
## 4 9.220417 10.50191 5.624589 7.124987 10.29007 10.023093 10.31739
## 5 11.803295 11.24906 8.164616 9.314819 11.91898 10.188584 12.02064
## 6 10.816204 10.27560 6.884682 7.891932 10.96979 9.139596 10.84493
##      Pnkp      Pnlcd1      Pnlip      Pnliprp1      Pnliprp2      Pnma1
## 1 11.081996 4.361119e+00 8.3059628 1.079089e+00 0.15189098 6.8374811
## 2 10.757480 4.080035e+00 8.5150158 2.235383e+00 0.07721936 6.3355844
## 3 9.362959 4.299622e+00 0.2380824 9.860202e-08 6.10314388 3.3708246
## 4 8.091229 9.889898e-08 5.2338022 3.316396e-08 0.68661625 0.3007525
## 5 11.116175 4.419976e+00 8.8730245 2.525080e+00 0.09829182 6.6905174
## 6 9.890885 3.258263e+00 7.1199493 5.762714e-01 0.06922368 5.6619544
##      Pnma2      Pnma3      Pnma5      Pnma11      Pnma12      Pnmt      Pnn
## 1 7.910880 8.338379 1.797063 9.552632 12.651850 1.704405e+00 12.153805
## 2 8.645810 9.115253 2.592165 9.552782 12.377942 1.368504e+00 12.193617
## 3 7.810093 5.564928 1.379766 8.533066 9.246776 3.406500e-08 10.560313
## 4 6.667548 4.355774 0.000000 8.541978 9.702066 1.693347e-08 8.482396
## 5 9.003894 9.473558 2.897299 9.911237 12.736761 1.598663e+00 12.552428
## 6 6.726742 7.152233 1.063276 8.363167 11.460160 9.962243e-01 10.962237
##      Pno1      Pnoc      Pnp      Pnp2      Pnpla1      Pnpla2      Pnpla3
## 1 10.232079 8.208169 12.462698 5.348909 1.996435 12.074011 9.818995
## 2 10.047321 8.445009 11.969141 5.505824 1.970204 11.762134 9.757649
## 3 9.478363 2.265045 9.654426 3.938317 2.802055 10.217215 4.972900
## 4 7.167688 7.407613 9.662301 4.361859 3.247940 9.947628 5.602169
## 5 10.405899 8.802975 12.327941 5.857682 2.245538 12.120921 10.116160
## 6 9.041669 7.022574 11.271049 4.202605 1.211426 10.882466 8.629106
##      Pnpla6      Pnpla7      Pnpla8      Pnp0      Pnp1      Pnrc1      Pnrc2
## 1 12.410749 11.999328 11.744160 10.733476 10.674769 12.890148 12.57781
## 2 11.592291 11.674136 11.317535 9.902497 9.961945 12.095901 11.81608
## 3 9.997281 10.334403 9.646584 8.972988 8.068147 9.752194 12.09604
## 4 8.931815 9.116438 7.343139 9.645364 6.684333 8.530000 10.53345
## 5 11.951066 12.032917 11.676289 10.261044 10.320505 12.454707 12.17487
## 6 11.219113 10.807807 10.552729 9.542604 9.483943 11.698414 11.38614
##      Poc1a      Poc1b      Poc5      Podn      Podn11      Podx1      Podx12
## 1 7.438102 9.779747 9.971759 6.210168 3.403051e+00 12.809611 12.053858

```



```

## 2 7.661525 9.890080 9.872573 7.141026 2.903237e+00 12.385404 11.405649
## 3 7.062372 7.778936 9.098729 2.844788 2.738788e+00 6.192066 4.843475
## 4 3.097270 7.141391 7.437024 1.009776 1.025838e-07 7.697085 2.765073
## 5 8.018832 10.248624 10.231113 7.497648 3.218950e+00 12.744223 11.764410
## 6 6.256994 8.589916 8.781660 5.043521 2.379154e+00 11.617891 10.862320
##      Pof1b      Pofut1      Pofut2      Pogk      Poglut1      Pogz      Pola1
## 1 3.894866 11.538887 11.515194 12.394441 11.395640 11.803744 8.877771
## 2 3.105431 11.425692 11.262211 12.235867 10.847652 11.297981 8.276778
## 3 4.879957 8.755937 9.732403 10.028264 11.312372 10.275513 8.917450
## 4 5.018390 4.751306 9.126660 7.165776 9.426347 8.617365 6.491830
## 5 3.426861 11.784455 11.620960 12.594680 11.206358 11.656734 8.634630
## 6 2.824521 10.347540 10.323857 11.202809 10.204359 10.612290 7.689806
##      Pola2      Polb      Pold1      Pold2      Pold3      Pold4      Poldip2
## 1 9.801427 11.069422 9.514350 10.778329 9.916967 10.638252 11.909739
## 2 9.906121 10.667301 9.394490 9.956383 9.747311 10.355368 11.659061
## 3 8.235193 10.880417 8.769104 10.352676 9.906352 9.396572 9.436147
## 4 3.855708 9.459703 4.984855 8.673713 7.506498 7.559445 6.598926
## 5 10.264668 11.025985 9.752895 10.314941 10.105820 10.714004 12.017842
## 6 8.611564 9.878319 8.324953 9.587423 8.726941 9.447456 10.718247
##      Poldip3      Pole      Pole2      Pole3      Pole4      Polg      Polg2
## 1 12.51556 8.977993 6.739933 10.036251 10.888596 12.697163 8.879138
## 2 11.97052 8.489619 6.882989 9.600130 10.010643 11.776989 8.160313
## 3 12.92520 7.982074 7.931341 9.784916 10.613821 7.964549 7.520054
## 4 11.41515 3.686250 1.844276 5.674596 9.379614 7.725644 5.910113
## 5 12.32932 8.847612 7.239169 9.958599 10.369214 12.135777 8.518079
## 6 11.32390 7.789759 5.565550 8.846069 9.697611 11.505464 7.691170
##      Polh      Poli      Polk      Poll      Polm      Poln      Polq
## 1 8.621065 8.111059 9.319884 9.752956 9.528194 4.6923835 7.6688655
## 2 8.754757 8.274927 9.369771 9.309273 9.002296 4.6310600 6.9064420
## 3 6.895488 8.203015 7.842165 9.987334 7.378203 4.1290929 6.4338986
## 4 1.959195 5.156221 6.310459 9.369939 6.042284 0.3297664 0.6714163
## 5 9.112899 8.632778 9.728168 9.667651 9.360554 4.9770392 7.2626656
## 6 7.433883 6.925907 8.130860 8.563165 8.338772 3.5717158 6.4861552
##      Polr1a      Polr1b      Polr1c      Polr1d      Polr1e      Polr2a      Polr2b
## 1 11.241391 9.783873 11.291332 11.49897 8.680220 12.988096 11.517120
## 2 10.441149 9.579141 10.571211 10.78615 8.424108 12.446433 11.006304
## 3 9.387788 9.454325 11.403798 10.77893 8.777786 9.460032 11.360498
## 4 8.320541 6.514165 9.835977 10.37159 5.206456 8.682750 9.734798
## 5 10.799799 9.937604 10.929881 11.14485 8.782060 12.805255 11.365028
## 6 10.050190 8.594035 10.100104 10.30764 7.492845 11.796345 10.325783
##      Polr2c      Polr2d      Polr2e      Polr2f      Polr2g      Polr2h      Polr2i
## 1 9.445087 11.227562 11.41730 10.645986 11.90984 9.872279 9.989287
## 2 8.829984 10.651515 10.91122 10.187599 11.17017 8.973034 9.355675
## 3 9.472625 12.077991 12.11829 11.845339 12.13919 10.251274 11.028665
## 4 8.255648 9.892105 10.49571 9.866153 11.31047 8.098462 9.571078
## 5 9.188163 11.010196 11.26994 10.546205 11.52891 9.331280 9.714068
## 6 8.255818 10.036368 10.22601 9.455184 10.71835 8.682314 8.799165
##      Polr2j      Polr2k      Polr2l      Polr2m      Polr3a      Polr3b      Polr3c
## 1 10.632099 6.734355 8.263676 12.679757 10.560829 10.354216 10.668705
## 2 10.326911 6.011878 7.705319 12.209570 10.432261 10.263554 9.742041
## 3 11.378108 7.126057 8.970674 9.948114 8.551459 8.680710 9.479132
## 4 9.190443 6.132038 6.574628 8.230069 6.905302 6.192701 7.679944
## 5 10.685543 6.365816 8.062672 12.568382 10.790909 10.622174 10.100548
## 6 9.441308 5.560040 7.077839 11.488061 9.370098 9.163679 9.477884

```

##	Polr3d	Polr3e	Polr3f	Polr3g	Polr3gl	Polr3h	Polr3k
## 1	10.523420	11.341505	9.922668	8.332121	9.646315	12.207067	10.718280
## 2	10.224153	10.455624	10.231813	7.141273	9.481930	11.464390	9.812584
## 3	7.361838	9.583025	9.109649	6.760170	8.295202	10.833029	12.004503
## 4	4.163844	8.284719	5.944825	7.342450	6.773614	9.733899	10.036140
## 5	10.582766	10.814276	10.590427	7.497896	9.840364	11.823157	10.171109
## 6	9.332722	10.150251	8.732634	7.146000	8.456692	11.015483	9.527420
##	Polrmt	Pom121	Pomc	Pomgnt1	Pomp	Pomt1	Pomt2
## 1	10.791894	11.857868	8.544320	12.587181	12.61782	10.987001	11.672987
## 2	9.838726	11.542103	7.595404	11.945140	11.96927	10.557061	11.066164
## 3	8.073852	8.255267	7.115490	8.700145	12.60678	8.961325	9.398395
## 4	6.930642	8.099768	3.743296	8.103661	11.76325	7.920233	8.453837
## 5	10.197257	11.900875	7.952636	12.303939	12.32807	10.915729	11.424895
## 6	9.600978	10.666395	7.357399	11.395505	11.42613	9.795950	10.481583
##	Pon2	Pon3	Pop1	Pop4	Pop5	Pop7	Popdc2
## 1	12.58504	9.625329	8.496708	9.685452	11.123487	9.655410	2.8978542
## 2	11.85996	9.095744	8.213060	9.660645	10.658840	9.032928	3.7316933
## 3	10.81890	7.210341	7.822743	10.625329	8.429839	10.122403	2.6658968
## 4	10.47538	8.745114	5.428716	8.299115	6.997803	9.477606	0.2874386
## 5	12.21875	9.454041	8.570866	10.019131	11.017522	9.391199	4.0664194
## 6	11.39337	8.435740	7.309956	8.495766	9.932351	8.465773	1.9386803
##	Popdc3	Por	Porcn	Postn	Pot1a	Pot1b	Pou2af1
## 1	3.418268	13.09949	11.278910	8.067099	10.628194	8.326264	4.842812e+00
## 2	2.987991	12.88605	10.795169	7.305594	9.658246	7.920142	5.564912e+00
## 3	1.479304	11.93178	10.300746	6.709394	10.270632	6.769885	9.948008e-01
## 4	4.448706	10.35353	9.282235	7.083052	7.911847	4.625076	1.194232e-07
## 5	3.306201	13.24489	11.153869	7.662460	10.016731	8.277706	5.917052e+00
## 6	2.392711	11.90773	10.087688	6.882158	9.437407	7.140167	3.715248e+00
##	Pou2f1	Pou2f2	Pou2f3	Pou3f1	Pou3f2	Pou3f3	Pou3f4
## 1	10.815051	8.969708	2.566285	10.088886	10.617334	12.257432	7.970520
## 2	10.934956	9.300840	2.297265	9.867528	10.371256	12.096930	7.004687
## 3	9.814133	4.674672	5.395166	5.165204	11.166519	11.132092	7.346519
## 4	6.220707	4.783947	6.244921	5.776230	8.087230	7.878264	5.427130
## 5	11.293672	9.659215	2.589932	10.226067	10.729895	12.455736	7.361086
## 6	9.624118	7.781496	1.661308	8.898640	9.426556	11.065835	6.786065
##	Pou4f1	Pou4f2	Pou4f3	Pou5f2	Pou6f1	Pou6f2	
## 1	5.7512530	9.338331e-01	1.537719e+00	1.7473426	11.601284	5.696382	
## 2	3.8759354	1.731415e+00	1.892732e+00	2.0271339	11.846747	5.372910	
## 3	4.0740529	5.207128e-08	5.389661e-08	3.0197623	9.469985	3.107444	
## 4	0.2856606	1.965997e-08	2.279489e-08	0.3339344	6.813717	5.130974	
## 5	4.2129767	1.991193e+00	2.163316e+00	2.3057898	12.205539	5.724088	
## 6	4.5939734	4.873846e-01	8.786130e-01	1.0271503	10.409909	4.540430	
##	Ppa1	Ppa2	Ppan	Ppap2a	Ppap2b	Ppap2c	Ppapdc1a
## 1	10.748467	10.346052	11.136275	10.535196	14.43543	11.035303	9.701703
## 2	10.021716	9.750397	10.570889	9.638460	13.80161	10.423025	9.406170
## 3	11.588560	8.866132	8.182947	6.645265	13.97960	8.516051	5.491002
## 4	10.166655	7.918136	8.060706	8.586793	13.09249	6.699417	8.200445
## 5	10.380289	10.108907	10.929559	9.996939	14.16047	10.781672	9.764580
## 6	9.557584	9.155522	9.945132	9.344488	13.24353	9.844221	8.511992
##	Ppapdc1b	Ppapdc2	Ppapdc3	Ppara	Ppard	Pparg	Ppargc1a
## 1	10.382521	10.504201	8.989616	8.527952	12.036613	3.481770	10.455475
## 2	9.555352	10.288912	8.382379	7.999839	11.334129	4.018986	10.394868
## 3	9.442699	5.906520	8.764328	7.278050	6.821412	1.122857	8.727771
## 4	8.659954	6.708178	7.791650	4.827888	4.823898	0.507537	8.376365

```

## 5 9.913808 10.647537 8.740304 8.357474 11.692885 4.358103 10.753511
## 6 9.191955 9.313521 7.801352 7.341089 10.845080 2.449453 9.264839
## Ppargc1b Ppat Ppbp Ppcdc Ppcs Ppdpf Ppef1
## 1 6.106599 9.391064 4.333306 10.632836 8.819283 11.732962 4.915770e+00
## 2 6.276626 8.679311 3.375167 10.464583 7.157520 11.064207 5.761107e+00
## 3 3.464685 8.916677 2.491007 9.418970 6.946497 10.698026 8.493612e-01
## 4 3.883579 8.213208 1.786552 8.891729 6.763251 8.755968 5.042514e-08
## 5 6.631394 9.037414 3.703050 10.823236 7.514168 11.422937 6.114106e+00
## 6 4.941819 8.201898 3.232128 9.442045 7.631485 10.541534 3.785102e+00
## Ppef2 Ppfia1 Ppfia2 Ppfia3 Ppfia4 Ppfibp1 Ppfibp2
## 1 4.289810e+00 11.826217 9.392404 12.358631 10.316931 12.831595 10.245807
## 2 4.177505e+00 11.785153 9.999389 11.742312 10.759349 12.268451 9.853959
## 3 3.495287e+00 8.204930 8.199415 6.490110 6.229106 7.505563 8.343732
## 4 8.267787e-08 6.872575 8.973148 6.387186 6.118947 8.173608 6.359008
## 5 4.518690e+00 12.143942 10.357957 12.101098 11.118044 12.627265 10.212494
## 6 3.191317e+00 10.634754 8.203235 11.167008 9.126431 11.639871 9.055382
## Pphln1 Ppia Ppib Ppic Ppid Ppie Ppif
## 1 10.698703 7.272952 13.00052 12.025579 10.467192 10.213714 9.069139
## 2 10.427184 6.453730 12.30455 11.438273 9.934005 10.029995 8.625082
## 3 9.958669 6.716562 12.35589 8.168662 11.101318 11.339679 6.099989
## 4 8.222922 5.310467 11.55616 6.992340 9.560444 8.077572 6.568236
## 5 10.785831 6.808974 12.66337 11.797037 10.292559 10.388570 8.983155
## 6 9.507859 6.093157 11.80877 10.834049 9.276545 9.023324 7.880676
## Ppig Ppih Ppil1 Ppil2 Ppil3 Ppil4 Ppil6
## 1 11.003405 7.208281 10.024256 11.99290 9.481376 10.087339 7.021718
## 2 11.046957 7.342964 9.201380 11.39413 9.079071 10.089803 6.486497
## 3 10.750264 6.439441 11.197056 11.38891 10.343347 10.501048 7.162446
## 4 9.303061 4.567528 8.232322 10.38866 8.279661 7.589746 6.689290
## 5 11.405686 7.699882 9.559719 11.75289 9.437361 10.448390 6.841822
## 6 9.812344 6.029042 8.834090 10.80138 8.292039 8.897094 5.844228
## Ppip5k1 Ppip5k2 Ppl Ppm1a Ppm1b Ppm1d Ppm1e
## 1 10.376772 10.548971 2.895294 12.710315 11.498352 10.388096 11.322254
## 2 10.368833 10.281043 2.432511 12.542752 10.972834 9.886617 11.115729
## 3 6.955321 9.019020 6.126031 9.781670 8.989485 7.993113 8.193677
## 4 6.694221 5.490715 7.033759 8.056213 7.456148 5.604770 9.074043
## 5 10.727472 10.639666 2.731227 12.901577 11.331554 10.245159 11.474464
## 6 9.186211 9.358251 1.936500 11.518614 10.307023 9.197524 10.131009
## Ppm1f Ppm1g Ppm1h Ppm1j Ppm1k Ppm1l Ppm1m
## 1 12.622480 12.195238 11.239062 7.505301e+00 10.265560 10.714453 10.284350
## 2 12.633615 11.760147 10.558587 6.866996e+00 9.784517 10.622317 10.603358
## 3 9.836231 9.221903 9.774093 1.303432e-07 10.770378 7.818623 6.192028
## 4 7.968858 8.253257 10.989145 2.690690e-01 10.397792 7.968537 4.080365
## 5 12.992444 12.118934 10.917255 7.223146e+00 10.143035 10.980994 10.962032
## 6 11.430796 11.003658 10.047862 6.323700e+00 9.075113 9.523596 9.093883
## Ppm1n Ppme1 Ppox Ppp1ca Ppp1cb Ppp1cc Ppp1r10
## 1 3.687702e+00 12.259175 11.078469 14.22029 13.52519 9.840377 11.981461
## 2 3.050531e+00 11.852774 10.584459 13.66758 12.74754 9.669512 11.259407
## 3 6.144811e-08 10.165346 9.848932 13.13510 13.08615 5.369684 10.028717
## 4 3.116896e-08 8.564504 7.588552 11.60346 12.30242 3.975874 9.187656
## 5 3.370489e+00 12.211567 10.943131 14.02644 13.10637 10.028000 11.618156
## 6 2.635201e+00 11.067577 9.887361 13.02840 12.33337 8.650457 10.789945
## Ppp1r11 Ppp1r12a Ppp1r12b Ppp1r12c Ppp1r13b Ppp1r13l Ppp1r14a
## 1 10.857615 12.055627 9.377909 13.181337 11.686847 7.984653 12.546621
## 2 10.226587 11.747450 9.329179 12.619613 11.309610 7.656988 10.854657

```

```

## 3 11.746414 9.717891 5.330821 8.320414 9.235577 5.254410 8.403334
## 4 10.916588 9.174290 3.940199 5.562052 6.992024 4.746570 6.680382
## 5 10.585200 12.106236 9.687563 12.978441 11.668364 8.014289 11.213364
## 6 9.666651 10.864088 8.188768 11.989557 10.495438 6.800125 11.354954
## Ppp1r14b Ppp1r14c Ppp1r15a Ppp1r15b Ppp1r16a Ppp1r16b Ppp1r17
## 1 11.004062 10.176343 14.956085 13.067229 11.989670 14.38349 4.722802e+00
## 2 10.529148 9.636249 14.652036 12.719831 10.960678 13.79562 4.466421e+00
## 3 8.797394 8.257389 9.474196 9.311929 7.617408 11.86743 2.488921e+00
## 4 5.715293 4.915048 7.432040 8.994947 5.718693 11.49061 8.581241e-08
## 5 10.887811 9.994728 15.010903 13.078663 11.319398 14.15448 4.810833e+00
## 6 9.813000 8.985995 13.764161 11.875465 10.798151 13.19160 3.600684e+00
## Ppp1r18 Ppp1r1a Ppp1r1b Ppp1r2 Ppp1r26 Ppp1r27 Ppp1r32
## 1 13.243456 10.090434 8.150190 11.956388 9.276420 2.052675e+00 4.1307811
## 2 13.155942 9.948655 7.838077 11.341347 9.201230 2.251329e+00 5.1235042
## 3 7.745634 7.737152 6.847174 8.114628 7.097342 1.063451e+00 4.5532107
## 4 7.383504 7.927139 7.885113 7.366219 4.996548 1.047034e-07 0.2747226
## 5 13.514786 10.307212 8.195564 11.700103 9.559568 2.541804e+00 5.4732254
## 6 12.051668 8.900186 6.964856 10.764881 8.087486 1.254139e+00 3.0427730
## Ppp1r35 Ppp1r36 Ppp1r37 Ppp1r3b Ppp1r3c Ppp1r3d Ppp1r3e
## 1 9.790909 4.035238 12.435906 8.115013 11.734333 8.675341 8.070751e+00
## 2 8.805596 3.768531 12.164842 7.630267 11.157577 8.471936 7.994397e+00
## 3 4.940300 8.243146 4.575720 5.025732 9.893836 3.022889 2.799631e+00
## 4 7.141557 1.385597 4.202675 5.620106 9.284740 5.754885 1.182548e-07
## 5 9.163764 4.103871 12.523651 7.987539 11.516317 8.829918 8.352028e+00
## 6 8.601062 2.954064 11.244264 6.929842 10.542905 7.487981 6.885792e+00
## Ppp1r3f Ppp1r3g Ppp1r42 Ppp1r7 Ppp1r8 Ppp1r9a Ppp1r9b
## 1 9.4446064 9.6222062 2.360055e+00 10.370627 11.344465 12.08482 14.305498
## 2 8.8258764 8.7833210 2.128792e+00 10.321424 10.583878 11.95397 13.997304
## 3 6.0752903 0.7982364 3.390452e+00 10.914583 10.042039 10.57395 8.684027
## 4 0.9210163 6.1308339 9.034260e-08 9.193955 8.658988 10.23930 8.529772
## 5 9.1840538 9.1414774 2.413047e+00 10.680054 10.942550 12.31277 14.356164
## 6 8.2553375 8.4326232 1.494283e+00 9.180073 10.153209 10.89327 13.113608
## Ppp2ca Ppp2cb Ppp2r1a Ppp2r1b Ppp2r2a Ppp2r2b Ppp2r2c
## 1 14.37805 12.498052 14.55063 11.067738 12.419502 11.536298 13.678386
## 2 13.67907 11.910906 14.22106 11.335638 11.837959 11.166644 13.625692
## 3 11.15242 8.650864 13.57804 9.659479 9.915461 10.664269 7.383751
## 4 10.49284 8.280604 12.19487 7.937781 9.353054 9.430749 9.062200
## 5 14.03793 12.269702 14.57993 11.694394 12.196751 11.525385 13.984546
## 6 13.18616 11.306396 13.35873 9.876636 11.227864 10.344952 12.486546
## Ppp2r2d Ppp2r3a Ppp2r3c Ppp2r4 Ppp2r5a Ppp2r5b Ppp2r5c
## 1 12.278978 12.033011 10.086058 13.62637 11.145411 12.603772 12.90113
## 2 11.310195 11.647745 9.446292 13.00050 10.744621 12.239921 12.25881
## 3 9.232441 10.152150 10.016551 11.11387 7.632553 6.916613 11.84437
## 4 8.568851 8.839248 7.737157 10.50851 5.350885 5.636734 10.17823
## 5 11.668948 12.006525 9.804715 13.35934 11.103314 12.598734 12.61762
## 6 11.087375 10.841479 8.895815 12.43454 9.954263 11.412093 11.70939
## Ppp2r5d Ppp2r5e Ppp3ca Ppp3cb Ppp3cc Ppp3r1 Ppp3r2
## 1 12.532886 11.836505 12.19966 12.370874 10.878293 12.935893 5.872998e+00
## 2 12.237253 11.311049 11.95423 11.744678 9.305708 12.616885 4.495716e+00
## 3 9.021794 9.101164 10.67195 9.921831 5.878787 9.174161 3.443292e-08
## 4 8.132003 7.240108 12.26268 10.153464 6.252544 10.000933 1.789847e-08
## 5 12.596066 11.669803 12.31303 12.103464 9.664084 12.975713 4.840421e+00
## 6 11.341222 10.645039 11.00807 11.179248 9.687315 11.744150 4.712943e+00
## Ppp4c Ppp4r1 Ppp4r2 Ppp4r4 Ppp5c Ppp6c Ppp6r1

```

```

## 1 11.981210 11.967749 10.948806 8.390234 12.267164 11.384125 13.914253
## 2 11.411966 11.389547 10.037668 8.186825 12.220701 10.602700 13.402111
## 3 10.509260 9.687368 8.367370 4.294006 10.499499 10.926844 6.692508
## 4 8.730011 7.420579 7.192737 5.760773 8.379532 9.621441 5.712357
## 5 11.770728 11.748307 10.396244 8.544611 12.579513 10.961374 13.760960
## 6 10.789694 10.776237 9.757780 7.203882 11.075564 10.192850 12.722392
##      Ppp6r2    Ppp6r3      Pprc1      Ppt1      Ppt2      Pptc7      Ppwd1
## 1 11.817555 12.77178 11.201021 13.35305 11.339194 10.270885 8.883343
## 2 11.888915 12.44067 10.796932 12.89647 11.208026 9.801368 8.458050
## 3 7.399467 10.35854 7.586955 12.98450 9.682223 9.053039 8.548531
## 4 5.426207 8.79805 5.400586 12.20330 8.683734 8.142398 5.819086
## 5 12.247710 12.79949 11.155632 13.25531 11.566770 10.159891 8.816024
## 6 10.626095 11.58007 10.009841 12.16125 10.147941 9.080433 7.695363
##      Pqbp1      Pqlc1      Pqlc2      Pqlc3      Praf2      Pram1      Prap1
## 1 11.958099 10.600693 9.812977 6.579622 11.45672 6.639628e+00 2.328960e+00
## 2 11.559999 10.553265 9.166359 6.504639 10.90347 6.522519e+00 2.153820e+00
## 3 11.576833 9.412289 8.252898 5.306849 11.64165 4.140375e+00 3.106964e-01
## 4 9.924566 9.217841 7.582878 4.275780 10.74394 1.297351e-07 9.200129e-08
## 5 11.918773 10.911932 9.524684 6.860009 11.26218 6.877932e+00 2.439391e+00
## 6 10.766591 9.409928 8.623097 5.407293 10.26541 5.466503e+00 1.469496e+00
##      Prc1      Prcc      Prcp      Prdm1      Prdm10      Prdm11      Prdm12
## 1 9.325836 11.522780 12.359190 10.607809 8.494816 7.390749 2.909323e+00
## 2 8.929084 11.100258 11.489767 9.873739 8.340946 7.116919 1.224668e+00
## 3 11.617914 8.193698 9.218862 3.633870 6.073773 3.106702 8.259831e-08
## 4 6.777304 5.632667 9.606339 6.096555 4.273006 3.263307 3.931978e-08
## 5 9.287310 11.458992 11.848535 10.232279 8.698843 7.473504 1.440655e+00
## 6 8.136800 10.331440 11.167567 9.417039 7.308071 6.210002 1.948454e+00
##      Prdm15      Prdm16      Prdm2      Prdm4      Prdm5      Prdm6      Prdm8
## 1 9.762874 9.794742 11.973053 10.505759 8.933016 1.048978e+00 6.292898
## 2 9.924102 9.864948 11.839876 10.433373 8.998269 3.138101e-01 5.691114
## 3 7.403744 9.221888 10.155723 7.833880 8.570722 3.822081e+00 9.591486
## 4 5.825295 5.995823 7.861026 5.492146 5.955104 1.633748e-14 6.652934
## 5 10.282654 10.223485 12.198668 10.792022 9.356525 3.913021e-01 6.043820
## 6 8.573068 8.604888 10.781540 9.315077 7.744901 5.575658e-01 5.124851
##      Prdm9      Prdx1      Prdx2      Prdx3      Prdx4      Prdx5      Prdx6
## 1 7.853766 13.67299 13.56932 11.410238 11.156194 12.63906 13.32870
## 2 8.016135 12.73037 13.08333 10.714849 10.294718 11.94266 12.77669
## 3 5.559785 14.62533 14.51477 11.711796 11.891927 11.79255 15.28478
## 4 4.252826 13.69331 11.81880 11.238487 10.324495 11.88248 14.28581
## 5 8.373784 13.08920 13.44217 11.073539 10.653344 12.30145 13.13552
## 6 6.669944 12.48115 12.37749 10.218950 9.965040 11.44738 12.13690
##      Preb      Prelid1      Prelid2      Prelp      Prep      Prepl      Prex1
## 1 12.383687 12.148188 5.739433 7.616291 10.891200 12.103443 14.487053
## 2 12.054342 11.740143 5.145857 7.643049 11.068927 11.685303 14.643464
## 3 9.701932 10.393382 6.869323 12.210017 7.768327 10.216177 8.840705
## 4 8.254070 8.656177 5.213595 9.857110 5.616662 9.719682 9.139623
## 5 12.413147 12.098929 5.495719 8.000335 11.427657 12.044086 15.002330
## 6 11.192058 10.956621 4.582435 6.433924 9.700212 10.911889 13.295152
##      Prex2      Prf1      Prg2      Prg3      Prg4      Prickle1
## 1 11.192791 3.494616e+00 6.100723e+00 3.162242e+00 4.165423 12.600456
## 2 10.746647 2.276760e+00 4.246198e+00 9.377872e-01 4.172351 11.824303
## 3 10.774321 1.511503e+00 4.306230e-08 4.681972e-08 4.814649 8.730791
## 4 8.615050 7.293765e-08 2.162809e-08 1.962777e-08 3.217219 8.409065
## 5 11.105341 2.568458e+00 4.588210e+00 1.120375e+00 4.513473 12.183094

```

```

## 6 10.001616 2.460963e+00 4.936052e+00 2.166762e+00 3.075039 11.408777
##      Prickle2 Prickle3      Prim1      Prim2      Prima1      Prkaa1      Prkaa2
## 1 11.520079 7.468026 8.627236 9.684481 9.330726 10.749858 9.470021
## 2 10.790868 7.223137 8.119882 9.282562 8.855627 10.121846 9.319104
## 3 9.342098 4.066987 10.532755 10.161865 6.649639 9.436352 7.052238
## 4 9.976775 2.251868 6.955764 6.867375 4.376393 7.200560 5.719416
## 5 11.149567 7.579884 8.477616 9.640930 9.213819 10.480439 9.677485
## 6 10.328740 6.286696 7.440032 8.494797 8.141680 9.558974 8.280705
##      Prkab1      Prkab2      Prkaca      Prkacb      Prkag1      Prkag2      Prkag3
## 1 12.242405 10.383666 12.47411 13.31427 11.711771 10.501165 3.401896e+00
## 2 11.461979 10.287985 12.01582 12.70395 11.143665 9.801281 2.554933e+00
## 3 7.848379 7.617563 10.45119 11.53645 11.011010 9.394290 4.511658e-08
## 4 5.939528 5.409991 9.35674 11.43017 9.513273 9.131229 2.332820e-08
## 5 11.820745 10.646609 12.37462 13.06278 11.502403 10.159803 2.858636e+00
## 6 11.050812 9.193099 11.28246 12.12247 10.520352 9.310487 2.378125e+00
##      Prkar1a      Prkar1b      Prkar2a      Prkar2b      Prkca      Prkcb      Prkcd
## 1 14.94958 12.050873 11.312851 10.640604 10.619686 12.81901 12.975002
## 2 14.34791 11.837817 11.202040 10.838411 10.210730 12.53380 12.067710
## 3 13.19865 9.958025 8.054995 6.957136 8.569134 10.51808 7.002394
## 4 12.44789 10.382576 7.614122 5.965975 8.105784 10.66598 9.052566
## 5 14.70677 12.196609 11.560784 11.197116 10.569341 12.89263 12.426515
## 6 13.75766 10.859335 10.121611 9.449806 9.428905 11.62729 11.783254
##      Prkcdbp      Prkce      Prkch      Prkci      Prkcq      Prkcsh      Prkcz
## 1 10.019070 10.882194 11.144765 11.360372 12.235802 13.255316 12.683968
## 2 9.273921 10.738202 10.361686 10.536134 12.183918 12.773000 11.993173
## 3 9.470128 9.462536 5.989213 8.879121 7.246631 10.408454 8.989035
## 4 7.852401 11.073533 5.293876 8.423390 7.351009 9.678562 9.563190
## 5 9.632286 11.096895 10.720323 10.894799 12.542729 13.131834 12.351974
## 6 8.828910 9.691213 9.953618 10.169109 11.044211 12.063526 11.492272
##      Prkd1      Prkd2      Prkd3      Prkdc      Prkg1      Prkg2      Prkra
## 1 9.965426 10.943881 12.057198 10.794642 8.393287 8.457156 10.720083
## 2 9.288188 10.570802 12.131992 10.209338 8.265033 8.220926 9.938884
## 3 8.398403 6.200703 9.840272 7.937856 5.141337 2.900779 10.560221
## 4 7.908000 4.661005 7.372882 7.294173 5.907646 4.651347 8.730859
## 5 9.646558 10.929472 12.490800 10.567948 8.622877 8.578738 10.297438
## 6 8.775335 9.752858 10.865658 9.603724 7.206924 7.270550 9.529222
##      Prkrip1      Prkrir      Prkx      Prlhr      Prlr      Prmt1      Prmt10
## 1 10.035200 12.142514 10.883296 4.9672359 3.527547 12.672728 10.309880
## 2 9.218979 11.818904 10.398705 4.0084561 2.600177 11.935909 9.471147
## 3 10.308495 10.005448 9.316559 0.2949124 3.684924 10.575329 7.023883
## 4 8.876864 8.151073 7.520813 2.7639923 7.070659 9.326148 7.260402
## 5 9.577323 12.177695 10.757348 4.3474268 2.905614 12.294707 9.829578
## 6 8.845020 10.950949 9.692315 3.8344649 2.490518 11.481035 9.119387
##      Prmt2      Prmt3      Prmt5      Prmt6      Prmt7      Prmt8      Prnd
## 1 11.66896 10.422841 11.251731 10.815208 11.080133 9.233353 11.940372
## 2 10.91226 9.997513 11.077386 9.847464 10.355332 8.659451 11.321636
## 3 12.18801 7.955504 11.859471 8.318217 11.116267 9.350680 6.605358
## 4 10.35793 5.604055 9.268061 5.431426 10.398802 9.322584 1.554393
## 5 11.27097 10.356081 11.436118 10.205998 10.713968 9.017543 11.680391
## 6 10.47755 9.232236 10.060523 9.624275 9.889023 8.044512 10.748870
##      Prnp      Proca1      Procr      Prodh      Prok2      Prokr1      Prokr2
## 1 14.97974 7.148486 8.854731 9.969845 5.123140e+00 5.237099 6.740919
## 2 14.37452 7.120854 9.446561 9.318359 4.893378e+00 4.839321 7.190864
## 3 13.44167 8.687297 2.854806 9.652412 8.049025e-08 6.103650 3.049998

```

```

## 4 13.53849 4.470182 3.589219 10.478356 3.835985e-08 4.229358 4.065277
## 5 14.73338 7.477445 9.804983 9.676740 5.241510e+00 5.187041 7.547563
## 6 13.78781 5.969783 7.666831 8.779748 3.984422e+00 4.094408 5.566524
##      Prom1      Prom2      Prop1      Pros1      Prosc      Prox1      Prox2
## 1 13.083911 3.136914 3.094584e+00 11.887614 11.644387 10.168526 7.117603
## 2 13.011129 2.878073 2.451554e+00 11.160722 11.176738 9.913683 6.847900
## 3 10.413569 4.642280 3.791634e-08 8.614993 10.296446 10.980669 5.408128
## 4 9.421184 4.384070 1.941547e-08 10.347003 8.843935 8.355391 1.030695
## 5 13.369970 3.193015 2.751074e+00 11.519462 11.535479 10.272231 7.204014
## 6 11.892146 2.144670 2.107859e+00 10.696130 10.452994 8.978187 5.939186
##      Proz      Prpf18      Prpf19      Prpf3      Prpf31      Prpf38a      Prpf38b
## 1 6.319030 10.656432 13.656120 9.841222 11.108386 10.790571 12.319800
## 2 5.878146 10.672288 12.882226 9.995541 10.457617 9.891989 11.581346
## 3 3.920549 10.267967 8.927316 9.575377 11.033099 10.881093 8.748192
## 4 1.786623 8.595790 8.671688 6.041288 9.268435 9.080635 9.174314
## 5 6.231604 11.030972 13.241062 10.354108 10.816269 10.250533 11.940121
## 6 5.150557 9.465621 12.464283 8.651301 9.917259 9.599656 11.128186
##      Prpf39      Prpf4      Prpf40a      Prpf40b      Prpf4b      Prpf6      Prpf8
## 1 11.471920 10.917703 11.24976 11.362350 12.24934 11.021350 13.76639
## 2 11.419627 10.509754 11.19389 11.256377 12.29560 11.431678 13.30773
## 3 10.539147 9.976303 11.27291 8.810276 10.26043 10.639299 11.27980
## 4 6.884485 8.068847 8.72981 4.215582 8.04356 8.550931 10.62324
## 5 11.778389 10.868414 11.55264 11.615126 12.65442 11.790442 13.66657
## 6 10.280602 9.726698 10.05855 10.171085 11.05775 9.830277 12.57454
##      Prph      Prps1      Prps111      Prps113      Prps2      Prpsap1
## 1 5.738224e+00 10.257447 2.732107e+00 10.157041 10.828761 11.934937
## 2 3.826980e+00 9.665854 1.012592e+00 10.003570 10.646311 11.773727
## 3 8.316360e-08 10.023750 7.382439e-08 10.093603 10.951876 9.189830
## 4 1.045216e+00 9.257270 3.467303e-08 7.531650 9.252599 6.914094
## 5 4.163262e+00 10.024341 1.204616e+00 10.362138 11.004991 12.132515
## 6 4.581255e+00 9.067009 1.798738e+00 8.966715 9.637818 10.743436
##      Prpsap2      Prr11      Prr12      Prr14      Prr15      Prr151      Prr16
## 1 10.359681 8.227421 11.507764 11.244405 5.410019 1.1723334 6.146488
## 2 10.001354 7.965222 10.886371 10.944447 5.252436 0.4105559 5.264973
## 3 9.147488 8.056085 7.831898 9.724764 0.352682 0.4968918 3.920957
## 4 7.380741 3.779875 5.960196 7.941664 2.716661 3.4698375 2.225461
## 5 10.359923 8.322827 11.245081 11.303164 5.602943 0.5080453 5.615552
## 6 9.169138 7.041740 10.316431 10.053201 4.261851 0.6351120 4.980973
##      Prr18      Prr19      Prr22      Prr24      Prr3      Prr5      Prr51
## 1 14.402719 3.041172 4.382465e+00 10.446828 11.112535 10.021046 12.179889
## 2 13.053384 2.252929 4.679589e+00 9.808755 10.254501 9.266763 10.775992
## 3 7.383534 5.361217 1.733427e+00 6.948058 9.996277 7.485342 9.537597
## 4 6.711811 0.663116 8.124159e-08 5.557877 7.527605 6.037752 8.032051
## 5 13.412225 2.543481 5.025997e+00 10.167279 10.613119 9.625125 11.134690
## 6 13.210823 2.061613 3.278342e+00 9.256200 9.921406 8.830883 10.988314
##      Prr7      Prr9      Prrc1      Prrc2a      Prrc2b      Prrc2c      Prrg1
## 1 10.401784 2.156830e-08 10.975759 14.545156 13.713467 13.130153 10.200891
## 2 9.192299 1.240993e-08 10.372340 14.233079 13.603602 13.142956 8.987047
## 3 2.914960 1.706529e+00 9.263585 8.473977 11.243811 11.166936 9.478680
## 4 3.059200 2.663530e+00 8.935258 6.690068 9.438078 9.288045 9.189541
## 5 9.550634 1.591367e-08 10.730979 14.591941 13.962455 13.501800 9.345298
## 6 9.211199 9.553603e-09 9.784715 13.353251 12.521624 11.938380 9.010515
##      Prrg2      Prrg3      Prrg4      Prrt1      Prrt2      Prrt3      Prrt4
## 1 10.242517 9.886358 4.335331 9.080402 10.667489 8.065545 8.0659995

```

```

## 2 9.555585 9.580316 3.615266 8.934237 10.566176 7.555377 7.2458701
## 3 7.842823 5.437656 4.005043 7.004337 7.429029 6.019162 1.9548976
## 4 6.176880 2.901568 1.800065 4.677710 8.859270 5.930430 0.3175683
## 5 9.914041 9.938779 3.947944 9.292466 10.924845 7.912563 7.6026508
## 6 9.052096 8.696374 3.234029 7.891912 9.476669 6.880611 6.8810635
##      Prrx1      Prrx2      Prrx11  Prss12  Prss23  Prss27  Prss35
## 1 10.811022 6.054185e+00 2.096654e+00 7.700105 9.773860 1.4939032 8.181277
## 2 9.496440 5.995652e+00 1.182042e+00 7.342215 9.370052 1.6647893 7.176869
## 3 6.943140 3.527365e+00 1.397643e-06 1.760694 8.488676 2.1483888 4.279997
## 4 6.366049 8.917093e-08 7.547149e-01 6.515248 9.041242 0.9679868 8.306742
## 5 9.854878 6.349534e+00 1.393521e+00 7.699131 9.728450 1.9197141 7.533547
## 6 9.620092 4.890401e+00 1.287811e+00 6.517197 8.584037 0.8483582 6.995801
##      Prss36      Prss38      Prss45      Prss48      Prss50      Prss53
## 1 8.383551 3.119363e+00 3.818681e+00 2.333190e+00 4.955406e+00 6.867422
## 2 8.172113 1.694002e+00 2.186884e+00 1.754612e-01 5.807421e+00 6.907742
## 3 8.855700 5.752020e-01 7.541732e-01 1.281371e-15 7.719786e-08 4.174023
## 4 7.101173 5.038156e-08 8.027665e-08 2.125935e+00 1.966744e+00 1.178983
## 5 8.529888 1.951085e+00 2.474157e+00 2.213620e-01 6.160606e+00 7.263968
## 6 7.197226 2.129391e+00 2.754629e+00 1.472861e+00 3.823111e+00 5.691559
##      Prss56      Prss57      Prss8      Prtg      Prtn3      Prune
## 1 1.215221e+01 0.9853506 0.9928154 6.505379 5.593055e+00 10.625106
## 2 1.060784e+01 0.6646481 0.5296898 6.745076 4.331791e+00 10.078595
## 3 5.157897e-08 2.1483232 2.0386768 4.482612 3.913632e+00 9.175659
## 4 2.720700e-08 3.4781795 2.9329766 7.302692 5.880437e-08 8.729998
## 5 1.096651e+01 0.8076515 0.6496973 7.100985 4.674780e+00 10.437180
## 6 1.096064e+01 0.5185192 0.5230664 5.334079 4.439740e+00 9.434321
##      Prune2      Prx      Psap      Psapl1      Psat1      Psd      Psd2
## 1 10.510295 7.946988 17.23647 1.4645225 14.43704 12.241428 11.733395
## 2 10.243015 7.111284 16.76816 1.0674629 13.91016 12.215546 11.000595
## 3 9.349719 3.617166 13.12641 5.7884464 12.96805 8.439396 8.851718
## 4 11.172386 1.502377 13.21210 5.8766822 11.74027 9.542972 7.536420
## 5 10.601631 7.467859 17.12703 1.2660674 14.26901 12.574358 11.359318
## 6 9.319609 6.762657 16.04449 0.8282281 13.24514 11.049835 10.541968
##      Psd3      Psd4      Psen1      Psen2      Psenen      Psip1      Pskh1
## 1 12.593188 9.872142 12.43672 10.192231 8.619395 12.141050 10.437819
## 2 12.271203 9.448449 12.35870 9.504192 7.872822 12.099993 10.375469
## 3 8.936946 5.065418 11.59938 9.434783 9.161431 10.236467 7.518166
## 4 9.429388 4.150693 10.32963 6.907040 8.143552 7.497973 4.564585
## 5 12.630017 9.806873 12.71752 9.862633 8.230342 12.458799 10.734109
## 6 11.401511 8.682177 11.24508 9.001865 7.432218 10.949485 9.247200
##      Psma1      Psma2      Psma3      Psma4      Psma5      Psma6      Psma7
## 1 12.00210 12.06468 10.484420 11.153193 9.325305 12.52529 12.73164
## 2 11.27430 11.46680 9.926584 10.532792 8.735431 11.73432 12.02393
## 3 12.57348 12.55589 10.281996 11.704368 11.158229 13.30547 13.34705
## 4 11.25056 11.12713 9.039431 10.208069 10.063353 11.95498 12.00795
## 5 11.63305 11.82557 10.285135 10.891456 9.093563 12.09311 12.38274
## 6 10.81058 10.87314 9.293757 9.962040 8.136270 11.33363 11.53994
##      Psma8      Psmb1      Psmb10      Psmb11      Psmb2      Psmb3      Psmb4
## 1 6.877915 13.45405 11.066530 1.4702589 12.23503 10.400511 13.34626
## 2 6.406949 12.77628 10.521175 1.5187150 11.56152 9.774921 12.50544
## 3 3.151571 13.58267 10.332517 2.4356232 13.47959 11.639980 11.29023
## 4 3.583937 12.37930 9.969380 3.5717965 12.00092 10.325120 10.36760
## 5 6.762073 13.13512 10.879838 1.7621167 11.92030 10.133436 12.86426
## 6 5.701936 12.26224 9.875429 0.8321484 11.04344 9.209928 12.15446

```


##		Psmb5	Psmb6	Psmb7	Psmb8	Psmb9	Psmc1	Psmc2
##	1	10.934644	12.91094	12.97651	10.203546	8.408956	12.18343	12.19882
##	2	10.272933	12.14422	12.14690	9.644151	8.008405	11.70025	11.61633
##	3	10.382545	13.55075	12.31769	8.536462	7.308681	12.45209	12.59544
##	4	9.463537	12.26587	11.31557	9.680700	6.817846	11.46625	11.46737
##	5	10.631555	12.50303	12.50570	10.002632	8.366048	12.05904	11.97511
##	6	9.743627	11.71920	11.78477	9.013167	7.222532	10.99185	11.00723
##		Psmc3	Psmc3ip	Psmc4	Psmc5	Psmc6	Psmc1	Psmc2
##	1	13.31453	7.607515	12.39820	12.31090	12.01530	12.54999	9.798956
##	2	12.67527	7.411319	11.86202	11.82947	11.19552	12.28792	8.844568
##	3	12.80269	10.006089	12.81790	12.52895	12.41315	12.16573	10.710460
##	4	12.01460	4.937635	11.37041	11.59067	11.13484	10.87419	10.285682
##	5	13.03410	7.768328	12.22082	12.18826	11.55426	12.64674	9.202755
##	6	12.12273	6.425207	11.20656	11.11929	10.82377	11.35832	8.609096
##		Psmc11	Psmc12	Psmc13	Psmc14	Psmc2	Psmc3	Psmc4
##	1	10.504866	11.536798	12.617317	11.74804	13.42179	13.163638	12.68802
##	2	10.235645	11.030558	11.905992	10.95665	12.78600	12.943930	12.00517
##	3	10.814719	11.480176	11.340120	12.55853	12.12160	8.586013	11.90046
##	4	8.878011	9.951511	9.595557	11.21562	11.35470	6.682314	10.76874
##	5	10.594260	11.389285	12.264788	11.31537	13.14483	13.302769	12.36397
##	6	9.314185	10.345452	11.425634	10.55660	12.22998	11.971860	11.49633
##		Psmc5	Psmc6	Psmc7	Psmc8	Psmc9	Psmc1	Psmc2
##	1	10.850780	11.98642	12.38544	13.46066	10.969468	11.78664	8.717417
##	2	10.266119	11.44955	11.69243	12.70325	10.471672	11.12314	7.925531
##	3	9.099987	11.87548	11.97538	12.10680	10.542931	11.37287	8.235025
##	4	6.819524	10.57948	10.96289	11.26057	9.333979	10.03935	7.555098
##	5	10.624740	11.80832	12.05122	13.06208	10.830327	11.48188	8.283100
##	6	9.659822	10.79490	11.19381	12.26885	9.778428	10.59519	7.529925
##		Psmc3	Psmc4	Psmf1	Psmg1	Psmg2	Psmg3	Psmg4
##	1	12.041573	12.213032	11.007029	9.811396	10.121243	9.348654	9.174510
##	2	11.432798	11.494315	10.797151	8.824011	9.480583	8.618660	8.263356
##	3	8.812946	9.633089	11.210733	8.708651	11.327948	10.780482	10.048894
##	4	9.289625	7.004348	8.148381	7.741186	10.229053	9.165585	8.534913
##	5	11.791562	11.853083	11.155851	9.182187	9.839016	8.976730	8.621198
##	6	10.850038	11.021447	9.815965	8.621518	8.930958	8.159571	7.985800
##		Psors1c2	Pspc1	Psph	Pspn	Psrc1	Pstk	Pstpip1
##	1	5.699418	11.225462	11.268860	3.8516019	7.388219	8.950034	6.282960
##	2	5.125559	10.917797	10.579262	4.2147197	6.927755	8.727489	4.859650
##	3	2.096095	7.727892	12.435191	0.9095393	8.987362	7.777824	5.991693
##	4	2.287016	6.017493	10.531973	1.1622810	5.563504	5.592070	4.258372
##	5	5.475293	11.276511	10.937933	4.5563582	7.284018	9.085617	5.207527
##	6	4.543391	10.034268	10.077644	2.7847930	6.207492	7.761874	5.115078
##		Pstpip2	Ptafr	Ptar1	Ptbp1	Ptbp2	Ptcd1	Ptcd2
##	1	9.675607	11.060606	10.115299	13.441036	12.18720	10.274752	9.730952
##	2	8.846723	11.286318	9.147057	13.385156	11.61257	9.807712	9.540504
##	3	6.473321	5.065283	7.764766	10.488069	11.91051	9.294347	10.598731
##	4	5.405098	5.788248	6.124683	8.279105	10.56502	7.152447	8.436301
##	5	9.204910	11.645069	9.505375	13.744006	11.97135	10.166236	9.898956
##	6	8.485936	9.869509	8.925022	12.249223	10.99562	9.084296	8.541194
##		Ptcd3	Ptch1	Ptch2	Ptchd1	Ptchd2	Ptcra	Ptdss1
##	1	10.261474	12.020138	6.467571	6.012902	10.562204	2.162163e+00	12.69145
##	2	10.309005	11.701251	6.144549	6.660841	10.437030	2.615612e+00	12.04367
##	3	10.533385	8.319939	4.704426	4.091612	9.276299	2.901627e+00	10.53173
##	4	7.661392	6.537041	3.817470	9.060545	8.676384	8.173104e-08	10.20422

```

## 5 10.667634 12.060035 6.498922 7.016571 10.795680 2.921629e+00 12.40248
## 6 9.071032 10.828610 5.296816 4.849928 9.371472 1.338404e+00 11.49975
##      Ptdss2      Pten      Pter      Ptgdr      Ptgds      Ptger1
## 1 12.165975 12.207089 8.333861 1.710350e+00 11.49144 11.400120
## 2 11.286333 11.730447 8.317605 1.943384e+00 10.43961 10.829280
## 3 9.441968 10.272433 8.648593 4.750265e+00 15.91268 6.296284
## 4 8.685473 8.792514 7.609088 4.987331e-08 14.46625 5.080699
## 5 11.645085 12.089232 8.675486 2.217104e+00 10.79826 11.187984
## 6 10.974403 11.015505 7.147734 1.000491e+00 10.30012 10.208837
##      Ptger2      Ptger3      Ptger4      Ptges      Ptges2      Ptges3
## 1 3.923004e+00 5.723974e+00 8.214844 10.785203 10.371124 11.508653
## 2 4.021203e+00 4.932281e+00 7.553125 10.239528 10.086337 10.519947
## 3 3.211380e-01 3.161370e-01 2.930994 8.829349 7.173189 13.964904
## 4 5.136191e-08 1.303596e-07 1.372444 6.335051 7.275017 13.060708
## 5 4.360350e+00 5.280700e+00 7.910309 10.598144 10.444923 10.878609
## 6 2.850410e+00 4.567349e+00 7.029218 9.594292 9.180570 10.317318
##      Ptgfr      Ptgfrn      Ptgir      Ptgis      Ptgr1      Ptgr2      Ptgs1
## 1 4.096395 12.206016 3.575415e+00 10.278284 7.422918 11.419006 12.915381
## 2 3.224636 11.977673 3.892825e+00 9.142185 6.904906 11.297355 12.699466
## 3 7.478719 6.524924 1.281802e-07 7.007160 8.939610 10.398086 7.825106
## 4 1.802001 6.686124 1.692620e+00 6.669901 7.730657 8.201621 11.215807
## 5 3.549071 12.336473 4.230122e+00 9.500501 7.261127 11.656107 13.058297
## 6 3.010799 11.014433 2.533599e+00 9.087824 6.241924 10.227713 11.723642
##      Ptgs2      Pth1r      Pth2r      Pth1h      Ptk2      Ptk2b      Ptk6
## 1 10.327295 8.691002 5.461137e+00 4.417685 12.711677 10.997291 1.8454664
## 2 10.415339 7.770010 4.038870e+00 4.306539 12.378218 10.795536 1.3571830
## 3 2.691962 7.832225 6.983413e-08 1.899213 11.354799 8.236115 1.6150048
## 4 7.014073 7.416284 3.618299e-08 1.277938 9.303874 11.669858 2.1383474
## 5 10.773985 8.127430 4.378259e+00 4.649246 12.737037 11.154236 1.5862818
## 6 9.136785 7.503592 4.311467e+00 3.311509 11.519975 9.806233 1.0987652
##      Ptk7      Ptma      Ptn      Ptov1      Ptp4a1      Ptp4a2      Ptp4a3
## 1 10.638874 13.97105 15.29435 13.455523 10.450136 13.37237 12.056392
## 2 10.433493 13.33476 14.62747 12.982386 9.772321 12.68583 12.177249
## 3 5.957918 13.39713 13.81039 9.927944 9.779412 13.07817 8.091292
## 4 5.408641 10.83970 12.56056 7.856209 7.510938 12.26877 7.881374
## 5 10.792142 13.69361 14.98633 13.341226 10.130836 13.04466 12.536059
## 6 9.448078 12.77918 14.10242 12.263707 9.259505 12.18057 10.864853
##      Ptpdc1      Ptpla      Ptplad1      Ptplad2      Ptplb      Ptpn1      Ptpn11
## 1 12.239890 9.281680 13.30321 7.176484 11.221399 13.303436 13.971750
## 2 11.631215 8.685031 12.85533 6.794274 10.558289 12.936806 13.562767
## 3 8.752832 7.585029 12.49369 8.740663 8.093965 8.529702 8.623335
## 4 5.914244 5.830103 11.95127 5.497731 8.855835 8.727137 8.108746
## 5 11.989993 9.043137 13.21417 7.150283 10.916957 13.295645 13.921620
## 6 11.048297 8.092735 12.11142 5.997528 10.030208 12.111640 12.779884
##      Ptpn12      Ptpn13      Ptpn14      Ptpn18      Ptpn2      Ptpn20      Ptpn21
## 1 11.809200 10.469314 9.984011 10.450226 9.983991 3.939533e+00 9.385312
## 2 11.552803 10.414275 9.688457 9.676265 9.872537 3.148095e+00 9.015910
## 3 9.706315 8.307601 6.018647 4.936830 10.045143 6.934483e-08 7.853389
## 4 8.039792 6.611722 5.205012 7.360529 7.909324 3.568547e-08 4.945015
## 5 11.911576 10.772921 10.046950 10.034755 10.231076 3.470630e+00 9.374174
## 6 10.617743 9.278665 8.793896 9.259595 8.793876 2.865637e+00 8.196157
##      Ptpn22      Ptpn23      Ptpn3      Ptpn4      Ptpn5      Ptpn6      Ptpn7
## 1 5.6654221 12.548600 6.398623 10.366533 10.869051 12.253497 5.032638e+00
## 2 5.8040567 12.369813 6.480522 10.083869 10.741960 11.961914 3.887220e+00

```

```

## 3 3.8939613 8.392189 4.753571 6.353774 7.810922 6.788282 2.073692e+00
## 4 0.2924684 4.728865 6.389536 5.239323 9.102244 8.934010 7.799573e-08
## 5 6.1572285 12.728632 6.835833 10.442454 11.100653 12.320713 4.224432e+00
## 6 4.5102409 11.356933 5.228899 9.175983 9.678079 11.061901 3.897297e+00
##      Ptpn9      Ptpna      Ptpnb      Ptpnc      Ptpncap      Ptpnd      Ptpne
## 1 11.242890 13.22455 13.851981 9.610367 5.3880228 13.93267 11.636729
## 2 10.936931 12.66203 13.320273 8.434864 5.8421664 13.41655 10.770426
## 3 7.910004 11.33184 7.583826 6.655478 1.6462103 11.30453 7.549842
## 4 6.790977 10.99295 8.367703 8.798028 0.9952239 10.10462 10.067249
## 5 11.295648 13.02086 13.679121 8.792823 6.1954873 13.77540 11.129123
## 6 10.051688 12.03277 12.660125 8.420804 4.2405164 12.74081 10.445340
##      Ptpnf      Ptpng      Ptpnh      Ptpnj      Ptpnk      Ptpnm      Ptpnn
## 1 12.931648 13.745735 2.353997 11.841908 11.384367 12.298260 12.767879
## 2 12.730244 13.521162 3.352978 11.764145 11.799056 12.496847 12.632614
## 3 10.132630 11.073569 0.000000 6.285835 6.658026 6.273965 6.873740
## 4 9.011444 8.746971 1.213213 9.574039 7.048467 7.265669 9.724768
## 5 13.089076 13.880014 3.680376 12.122932 12.157846 12.855671 12.991443
## 6 11.739907 12.553889 1.489445 10.650440 10.193091 11.106652 11.576167
##      Ptpnr2      Ptpro      Ptprq      Ptprr      Ptprs      Ptprt      Ptpru
## 1 11.967278 13.085735 2.994625 8.095802 14.65315 10.908158 9.842343
## 2 11.686055 12.210769 3.505990 8.258018 14.17692 10.986079 9.292319
## 3 6.295237 8.744674 4.508283 5.565830 14.57840 6.848446 5.605743
## 4 7.915386 10.262138 2.620076 7.666724 12.49787 5.158277 3.806237
## 5 12.044837 12.569581 3.836586 8.615857 14.53578 11.344801 9.650690
## 6 10.775767 11.893969 2.021499 6.910722 13.46124 9.717159 8.652420
##      Ptprz1      Ptrf      Ptrh1      Ptrh2      Pts      Pttg1      Pttglip
## 1 16.79103 11.78859 7.122039 9.250692 10.398909 8.187507 13.73876
## 2 16.44575 10.95090 6.704567 8.944155 9.638774 7.634153 13.19165
## 3 13.94665 10.53848 5.481075 10.316974 11.219772 11.212004 13.19067
## 4 12.10360 11.46611 4.030541 8.601069 9.609793 10.322681 12.22735
## 5 16.80463 11.30962 7.060391 9.302388 9.997254 7.991429 13.55049
## 6 15.59907 10.59714 5.943582 8.061813 9.208327 7.002003 12.54692
##      Ptx3      Ptx4      Puf60      Pum1      Pum2      Pura      Purb
## 1 8.919832 0.9925013 13.58390 12.57091 12.993490 9.783378 13.46356
## 2 8.301048 1.3472053 12.95306 11.89872 12.770123 9.359743 13.38039
## 3 9.864816 1.9892868 12.73035 11.61347 11.467532 7.645647 11.19716
## 4 3.147957 6.4654795 10.99894 10.54121 9.845329 6.846781 10.34033
## 5 8.658917 1.5753621 13.31190 12.25751 13.128957 9.718138 13.73924
## 6 7.731752 0.5228749 12.39207 11.37924 11.801738 8.593541 12.27174
##      Purg      Pus1      Pus10      Pus3      Pus7      Pus7l      Pus11
## 1 10.164593 10.100625 9.265486 9.011896 10.990357 8.022645 9.576437
## 2 9.634962 9.734768 9.811390 8.789144 10.432868 8.303643 9.344262
## 3 7.737348 8.379659 8.083891 8.414938 7.267617 6.738371 8.961631
## 4 4.654098 5.462218 6.296018 5.794850 6.044507 4.111624 4.443233
## 5 9.993441 10.093274 10.169915 9.147303 10.791516 8.661514 9.702651
## 6 8.974258 8.910364 8.076576 7.823576 9.799304 6.837924 8.386931
##      Pvalb      Pvr      Pvr11      Pvr12      Pvr13      Pvr14      Pwp1
## 1 5.928090e+00 10.747103 11.463516 12.075172 10.740959 8.993141 10.700544
## 2 6.020694e+00 10.452954 11.403935 11.342903 10.127814 8.196147 10.226878
## 3 2.950421e+00 6.940947 9.245580 7.922835 8.250097 6.675457 10.735022
## 4 8.483103e-08 6.625365 9.163592 7.846530 6.181251 6.222102 8.579818
## 5 6.374663e+00 10.811606 11.762696 11.701659 10.486409 8.553940 10.585491
## 6 4.766853e+00 9.556221 10.272203 10.883627 9.550082 7.804869 9.509697
##      Pwp2      Pwvp2a      Pwvp2b      Pxdn      Pvk      Pxmp2      Pxmp4

```

```

## 1 10.449696 10.472979 10.075192 12.184242 10.785181 7.701165 9.828342
## 2 10.153494 10.001614 9.791694 11.560137 10.686763 6.768165 9.346084
## 3 8.789372 9.447716 5.996118 9.069636 7.932484 10.278107 9.994821
## 4 8.342717 7.831479 6.324432 8.410874 6.624281 9.356896 7.842983
## 5 10.512093 10.360182 10.150214 11.918911 11.045449 7.124121 9.704474
## 6 9.259066 9.282327 8.884962 10.992665 9.594270 6.518250 8.638439
##      Pxn      Pycard      Pycr1      Pycr2      Pycr1      Pygb      Pyg1
## 1 13.411691 10.716998 9.402795 11.874369 10.273683 13.36985 8.158472
## 2 13.003067 9.905174 9.230965 10.955368 9.643444 12.85178 8.083025
## 3 7.849410 8.707239 8.645256 9.078003 11.100554 12.99003 8.464871
## 4 5.932832 9.609492 6.772057 7.904501 10.003085 11.60391 5.030193
## 5 13.361907 10.263721 9.589315 11.314087 10.001925 13.21061 8.440730
## 6 12.219881 9.526138 8.213606 10.682890 9.083228 12.17805 6.973099
##      Pygm      Pygo1      Pygo2      Pyroxd1      Pyroxd2      Qars      Qdpr
## 1 9.941289 8.149975 11.569751 7.678829 9.489497 12.401290 14.77130
## 2 9.355548 8.736854 11.259810 7.128868 9.224375 12.029384 13.45679
## 3 7.821747 5.855740 8.584814 7.650687 7.827987 11.016563 12.71803
## 4 7.997506 2.226969 6.229658 4.762994 2.495956 9.371222 12.00923
## 5 9.713941 9.094987 11.618560 7.485471 9.582721 12.388187 13.81564
## 6 8.751230 6.964642 10.378390 6.496055 8.300145 11.209656 13.57938
##      Qk      Qpct      Qpct1      Qprt      Qrfp      Qrich1
## 1 15.94508 10.955555 10.268849 5.057386e+00 4.879384 12.273126
## 2 15.21223 10.187782 9.799496 5.376473e+00 4.774162 11.750188
## 3 14.27258 9.889160 9.207760 1.748533e+00 1.758398 11.021732
## 4 13.82353 11.260559 8.193216 5.562901e-08 1.041010 9.475784
## 5 15.57110 10.546388 10.158018 5.727671e+00 5.121364 12.108975
## 6 14.75313 9.764525 9.078399 3.921102e+00 3.750246 11.081525
##      Qrich2      Qrs11      Qser1      Qsox1      Qsox2      Qtrt1      Qtrtd1
## 1 2.419909e+00 9.300582 10.768963 13.117206 9.672985 9.581555 9.821654
## 2 2.662739e+00 8.536245 10.697423 12.562513 9.613326 9.797294 9.433267
## 3 3.949230e-08 8.179723 9.924013 10.456131 6.403863 10.077897 10.367256
## 4 1.747382e-08 8.543531 6.313578 9.694992 7.130893 6.879020 6.404880
## 5 2.970484e+00 8.894266 11.056111 12.921339 9.971799 10.155816 9.791686
## 6 1.542294e+00 8.111597 9.578065 11.925436 8.483319 8.392040 8.631762
##      R3hcc1      R3hdm1      R3hdm2      R3hdm1      Rab1      Rab10      Rab11a
## 1 10.929696 12.07600 12.429128 7.325526e-01 13.30945 14.00586 13.073456
## 2 10.781935 11.81854 12.206997 8.811729e-01 12.44241 13.26135 12.300353
## 3 8.840982 10.95262 8.846022 2.388057e+00 11.52567 10.79901 10.704042
## 4 5.249539 8.28699 6.845217 1.275986e-07 11.08131 10.10502 9.573754
## 5 11.140633 12.17733 12.565809 1.056243e+00 12.80123 13.62020 12.659169
## 6 9.738682 10.88445 11.237487 3.699208e-01 12.11766 12.81399 11.881692
##      Rab11b      Rab11fip1      Rab11fip2      Rab11fip3      Rab11fip4      Rab11fip5      Rab12
## 1 12.19767 9.371049 10.928243 11.928796 11.388525 11.776643 12.040656
## 2 11.75774 8.915275 10.533347 11.340066 10.790393 11.758293 11.897092
## 3 12.08534 4.434271 8.629136 8.699208 4.505005 7.296671 9.106421
## 4 10.87233 5.317246 6.183794 7.389860 3.689821 6.730115 8.461518
## 5 12.11653 9.273494 10.892011 11.698822 11.149092 12.117080 12.255888
## 6 11.00609 8.181922 9.737231 10.737298 10.197247 10.585199 10.849122
##      Rab13      Rab14      Rab17      Rab18      Rab19      Rab1b      Rab20
## 1 9.109789 13.38753 3.654288e+00 12.73073 3.457894e+00 13.76636 10.953719
## 2 8.951229 12.86518 4.762384e+00 12.15068 3.328301e+00 13.08262 10.384641
## 3 9.371265 11.77900 1.081411e+00 12.31358 2.778953e+00 11.37908 4.376389
## 4 5.345219 10.50313 6.810263e-08 10.45352 1.197196e-07 10.88156 5.246691
## 5 9.309465 13.22402 5.109490e+00 12.50948 3.655150e+00 13.44147 10.743282

```

```

## 6 7.921229 12.19572 2.604888e+00 11.53903 2.428088e+00 12.57451 9.762690
##      Rab21      Rab22a      Rab23      Rab24      Rab25      Rab26      Rab27a
## 1 11.632647 11.378151 10.098183 11.846595 3.556632 5.818832 8.076040
## 2 11.095099 10.792596 10.213492 10.853012 3.134373 6.845327 8.579491
## 3 8.778435 7.963520 8.648073 7.817202 3.001624 5.049021 5.260503
## 4 7.846831 5.283078 6.787033 6.326643 4.175485 2.823735 4.942017
## 5 11.453833 11.151296 10.572103 11.211719 3.456556 7.201436 8.937538
## 6 10.441260 10.186879 8.907925 10.655126 2.516677 4.659984 6.891056
##      Rab27b      Rab28      Rab2a      Rab2b      Rab30      Rab31      Rab32
## 1 8.305908 10.957162 13.20381 11.220465 9.322712 14.45823 9.725447
## 2 7.897021 10.464558 12.81626 10.562939 8.850824 13.88628 9.549501
## 3 3.830030 9.640351 10.60494 11.272719 9.382382 12.25640 6.907268
## 4 4.556007 8.274843 10.59581 9.726568 6.745488 11.57254 6.606742
## 5 8.254564 10.823212 13.17509 10.921608 9.209014 14.24514 9.907955
## 6 7.119895 9.766131 12.01203 10.029274 8.133683 13.26633 8.535698
##      Rab33a      Rab33b      Rab34      Rab35      Rab36      Rab37      Rab38
## 1 11.705238 10.675782 12.126931 11.853855 9.428657 8.982058 4.042007
## 2 10.844570 10.452200 11.242752 11.659107 9.258315 8.346567 3.956996
## 3 9.971567 10.686599 8.896123 8.160196 9.405670 5.310745 2.921896
## 4 9.496679 8.622926 7.229021 6.468986 5.835004 0.307216 5.586558
## 5 11.203276 10.810852 11.601500 12.017888 9.616674 8.704468 4.295239
## 6 10.513821 9.484955 10.935371 10.662383 8.239418 7.793814 2.960335
##      Rab39      Rab39b      Rab3a      Rab3b      Rab3c      Rab3d      Rab3gap1
## 1 6.874916 10.673849 12.59669 8.705519 10.481644 9.282183 11.79298
## 2 6.170863 9.823746 11.80023 8.079242 9.854652 8.720031 11.11053
## 3 5.445959 8.675794 10.30290 7.773486 9.490306 9.310647 10.22241
## 4 5.913966 8.516633 10.42735 6.592044 7.384066 5.213582 10.67353
## 5 6.525318 10.182274 12.15902 8.436944 10.213187 9.078155 11.46927
## 6 5.698970 9.483024 11.40501 7.518064 9.290984 8.093237 10.60153
##      Rab3gap2      Rab3i1l      Rab3ip      Rab40b      Rab40c      Rab43      Rab44
## 1 12.532049 12.171467 10.200770 7.012330 11.509962 11.840770 5.5739916
## 2 12.217848 12.368326 10.232265 7.237064 11.406760 11.700872 6.1291594
## 3 9.222642 7.663941 7.012732 4.928850 8.379575 6.579382 2.4062373
## 4 7.544483 8.941841 8.212467 6.784005 6.192308 3.504887 0.6709139
## 5 12.576660 12.727144 10.590879 7.593832 11.765522 12.059656 6.4834844
## 6 11.340385 10.979894 9.010395 5.834935 10.318627 10.649303 4.4211835
##      Rab4a      Rab4b      Rab5a      Rab5b      Rab5c      Rab6a      Rab6b
## 1 11.316985 11.938520 12.315216 12.494281 14.266927 13.86734 12.750158
## 2 11.077270 11.664585 11.775305 12.147786 13.427007 13.18698 12.332074
## 3 9.726631 10.308569 7.683933 9.952436 9.930271 11.07424 10.195866
## 4 8.218346 8.811467 6.950044 9.257208 9.410521 10.43584 9.383743
## 5 11.436001 12.023366 12.134093 12.506595 13.785857 13.54583 12.690891
## 6 10.125743 10.747019 11.123603 11.302625 13.075039 12.67548 11.558449
##      Rab7      Rab8a      Rab8b      Rab9      Rab9b      Rabac1      Rabep1
## 1 12.036666 11.91461 11.814060 11.281827 7.803467 13.01927 12.136135
## 2 11.653233 11.29118 11.583757 10.315987 8.279226 12.27683 11.665647
## 3 9.752365 11.50147 10.536676 11.462732 5.761758 12.09658 9.602603
## 4 8.334693 10.13464 9.199014 10.830504 6.410555 11.92985 7.497234
## 5 12.012013 11.64994 11.942532 10.674616 8.637081 12.63565 12.024428
## 6 10.845133 10.72312 10.622602 10.090603 6.619933 11.82752 10.944572
##      Rabep2      Rabepk      Rabgap1      Rabgap1l      Rabgef1      Rabggtta      Rabggtb
## 1 10.722756 9.412307 11.850689 11.699255 11.319622 11.116631 11.537786
## 2 9.767522 8.780087 11.638520 10.836919 11.035663 10.526173 11.006476
## 3 7.784093 10.242629 11.119962 9.305353 9.430451 10.586216 10.294431

```

```

## 4 8.393979 8.994131 8.634737 9.157189 8.398123 9.699204 9.583797
## 5 10.126036 9.138241 11.997300 11.195624 11.394391 10.884836 11.365201
## 6 9.531893 8.223100 10.659218 10.507841 10.128379 9.925500 10.346439
##      Rab1f      Rab12      Rab13      Rac1      Rac2      Rac3      Racgap1
## 1 10.546665 9.558677 8.564803 14.97372 11.841047 10.6157497 10.074291
## 2 9.720580 8.786684 8.489213 14.27336 11.509103 9.8674852 10.198178
## 3 10.367188 9.678053 8.068514 11.74419 7.867221 3.9873879 10.001903
## 4 9.389343 6.553649 4.848413 11.38855 9.429477 0.8371607 5.000590
## 5 10.079082 9.144842 8.847206 14.63222 11.867873 10.2260234 10.556786
## 6 9.355946 8.369202 7.377810 13.78179 10.649579 9.4249723 8.884062
##      Rad1      Rad17      Rad18      Rad21      Rad21l      Rad23a      Rad23b
## 1 8.047849 9.933738 7.495924 12.827848 1.781752e+00 11.182325 13.032663
## 2 7.011950 9.345362 7.287919 12.650733 2.472690e+00 10.867387 12.811626
## 3 9.469322 9.140557 8.371724 11.167134 1.981870e+00 9.902107 8.245487
## 4 8.646208 7.815187 3.265316 8.905403 5.744136e-08 8.990316 6.783480
## 5 7.368361 9.703751 7.644760 13.009563 2.773091e+00 11.226096 13.170461
## 6 6.863003 8.743689 6.314390 11.636125 1.052116e+00 9.991156 11.840906
##      Rad50      Rad51 Rad51ap1      Rad51ap2      Rad51c      Rad52      Rad54b
## 1 8.915326 7.385327 8.272474 3.259316e+00 7.667459 9.109862 7.252160
## 2 9.068005 7.118461 7.776133 2.131758e+00 6.151512 9.322858 7.223989
## 3 9.200836 8.715491 8.396600 3.760081e-08 8.371608 8.975449 7.531067
## 4 7.017569 6.040218 5.644840 1.945507e-08 6.389895 6.846758 3.920748
## 5 9.426291 7.475047 8.133559 2.416170e+00 6.505907 9.681240 7.580737
## 6 7.727259 6.204622 7.086600 2.251879e+00 6.484758 7.921301 6.072541
##      Rad54l      Rad54l2      Rad9b      Radil      Rae1      Raf1      Rag1
## 1 6.873570 11.125458 7.790594 7.122315 10.992104 12.977149 3.0577943
## 2 6.727929 11.050470 7.982823 7.168271 10.821392 12.682085 2.8594531
## 3 9.114127 7.040848 6.239887 4.176712 8.985570 9.862925 1.5591199
## 4 4.487699 6.577215 4.474630 3.664020 6.296748 7.675980 0.4290529
## 5 7.083802 11.409199 8.340444 7.524936 11.180095 13.040916 3.1738154
## 6 5.697639 9.934322 6.607136 5.943855 9.801049 11.785400 2.0759810
##      Rail      Rail4      Rai2      Rala      Ralb      Ralbp1 Ralgapa1
## 1 12.098090 11.553992 7.256295 12.079222 12.219295 11.676133 12.213562
## 2 11.762110 10.703030 6.322392 11.772033 11.351727 11.213820 11.583852
## 3 7.264267 7.354944 7.865785 9.166919 9.486573 9.291746 9.077846
## 4 6.527744 6.712721 5.284948 8.153180 9.229114 8.487852 9.150187
## 5 12.120898 11.061718 6.677289 12.130821 11.710485 11.572565 11.942627
## 6 10.906538 10.362638 6.076640 10.887676 11.027708 10.484728 11.021977
##      Ralgapa2 Ralgapb      Ralgds      Ralgps1      Ralgps2      Raly      Raly1
## 1 10.874871 12.298310 14.380776 10.554654 11.079173 13.616322 8.779130
## 2 10.823954 11.472210 13.987700 10.082229 11.107900 12.881917 8.567808
## 3 7.094044 8.709897 9.980524 8.741245 9.005966 7.541406 9.607107
## 4 5.526284 8.836237 9.007116 5.360316 7.859122 7.160183 6.984013
## 5 11.182658 11.830977 14.346559 10.440814 11.466635 13.240754 8.925848
## 6 9.683895 11.106703 13.188881 9.363928 9.888064 12.424489 7.591450
##      Ramp1      Ramp2      Ramp3      Ran      Ranbp1      Ranbp10      Ranbp17
## 1 12.27143 12.001756 8.092638 12.61572 11.536631 12.301035 8.734467
## 2 11.55136 11.389655 7.362037 11.83965 10.719325 11.248685 8.342395
## 3 11.47444 9.370374 4.209089 12.22696 11.318430 8.768984 7.651532
## 4 11.76079 9.371870 8.250200 10.72130 8.970397 6.959732 4.459637
## 5 11.91014 11.748415 7.718980 12.19844 11.078015 11.607433 8.700293
## 6 11.07983 10.810234 6.907574 11.42403 10.345284 11.109426 7.546922
##      Ranbp2      Ranbp3      Ranbp3l      Ranbp6      Ranbp9      Rangap1      Rangr1f
## 1 12.646486 12.259810 7.316855 10.649390 11.879888 12.304497 6.853294

```

```

## 2 11.861337 11.955039 7.330418 10.021607 11.043977 12.099503 6.016211
## 3 9.492900 10.497208 8.323270 9.349074 8.950959 10.658057 6.752296
## 4 8.216111 8.768593 5.504665 9.518955 8.311277 8.681159 5.415875
## 5 12.220130 12.313838 7.687318 10.380180 11.402705 12.458310 6.370165
## 6 11.454797 11.068213 6.136697 9.458585 10.688406 11.112888 5.677589
##      Rap1a      Rap1b      Rap1gap      Rap1gap2      Rap1gds1      Rap2a      Rap2b
## 1 12.144256 13.571349 13.484992 11.088969 13.726694 13.762360 11.062672
## 2 11.299654 12.535888 13.220482 11.404564 13.508438 13.246136 10.194537
## 3 9.397351 9.967704 6.059312 5.151654 9.745992 8.762260 10.795211
## 4 8.030440 10.532959 7.762107 7.874878 8.844050 9.949498 10.553056
## 5 11.658406 12.894714 13.579328 11.763325 13.867290 13.604982 10.553144
## 6 10.952690 12.379520 12.293174 9.897854 12.534850 12.570513 9.871574
##      Rap2c      Rapgef1      Rapgef2      Rapgef3      Rapgef4      Rapgef5      Rapgef6
## 1 11.200972 13.728061 11.793206 11.626600 12.746231 11.971978 11.234730
## 2 10.779103 13.414782 11.374500 11.660479 12.591082 11.955158 11.137001
## 3 8.462731 9.040251 8.444194 7.674622 7.520617 5.497408 9.237532
## 4 6.695867 8.317102 9.672640 6.914527 9.036867 8.632373 8.337562
## 5 11.137801 13.773632 11.733259 12.019260 12.949910 12.313957 11.495739
## 6 10.009792 12.536217 10.601756 10.435215 11.554523 10.780466 10.043531
##      Rapgef11      Raph1      Rapsn      Rara      Rarb      Rarg      Rarres1
## 1 9.724165 10.896152 6.537654 9.797098 6.857169 9.391541 7.204671
## 2 9.729233 10.569933 7.074863 9.574929 7.440711 8.997342 6.878735
## 3 7.029058 7.950903 3.553397 3.579840 5.152570 5.716806 3.055441
## 4 8.966491 5.579038 4.367367 5.045116 4.273974 4.580491 3.561527
## 5 10.087737 10.928602 7.431379 9.933391 7.797757 9.355598 7.234907
## 6 8.534418 9.705162 5.365900 8.607241 5.681421 8.202374 6.025463
##      Rarres2      Rars      Rars2      Rasa1      Rasa2      Rasa3      Rasa4
## 1 6.890505 11.209133 9.065643 11.585415 11.557032 13.071375 11.108416
## 2 6.195753 10.558156 9.177503 11.156189 11.276350 12.788540 11.160555
## 3 9.933433 11.204751 9.408863 10.272504 9.280072 10.687501 3.559852
## 4 8.449360 9.371189 5.686606 8.300146 8.396951 9.603836 3.692477
## 5 6.550284 10.916824 9.535832 11.514929 11.635101 13.147374 11.519295
## 6 5.714388 10.017948 7.877189 10.394047 10.365676 11.879612 9.917290
##      Rasal1      Rasal2      Rasal3      Rasd1      Rasd2      Rasgef1a
## 1 10.163798 11.511462 12.1254357 10.262121 9.950329 2.673356e+00 8.647228
## 2 10.287552 11.388020 11.7605085 9.033291 10.116436 2.604261e+00 9.349467
## 3 5.170225 9.688891 0.3030327 6.278432 3.490018 1.372557e+00 4.723104
## 4 5.119081 8.283100 4.2530881 7.161423 2.353536 5.494352e-08 7.369018
## 5 10.646176 11.746781 12.1192957 9.391563 10.475028 2.909852e+00 9.707858
## 6 8.973464 10.320126 10.9338757 9.071678 8.760258 1.749741e+00 7.459959
##      Rasgef1b      Rasgef1c      Rasgrf1      Rasgrf2      Rasgrp1      Rasgrp2      Rasgrp3
## 1 13.714999 7.375822e+00 10.022265 8.397723 9.293250 9.604425 12.677478
## 2 12.928592 7.887889e+00 10.391042 8.840383 9.749315 9.107645 12.057440
## 3 11.886681 3.927675e+00 7.347431 4.466236 7.321421 6.897735 8.715361
## 4 9.900888 1.113597e-07 11.897709 8.910597 6.886600 6.413048 8.605841
## 5 13.287430 8.245424e+00 10.749684 9.198567 10.107824 9.465947 12.416244
## 6 12.523156 6.195192e+00 8.832101 7.211343 8.104281 8.414871 11.485783
##      Rasgrp4      Rasip1      Rasl10a      Rasl10b      Rasl11a      Rasl11b      Rasl12
## 1 9.209503 12.391204 6.223745 11.211092 8.395793 10.319528 8.920362
## 2 8.900017 11.607778 5.890303 11.792538 8.456509 9.654054 8.015245
## 3 4.027182 8.130166 2.900956 6.260078 6.188698 6.996258 8.644788
## 4 5.216788 7.151202 8.509391 7.601976 6.102022 5.454128 8.083479
## 5 9.258230 11.966555 6.243806 12.151327 8.814482 10.012538 8.372894
## 6 8.020714 11.199573 5.056863 10.019907 7.209420 9.129025 7.732281

```

	##	Rassf1	Rassf10	Rassf2	Rassf3	Rassf4	Rassf5	Rassf6
##	1	11.625281	9.233044	13.028166	12.272022	11.303871	10.533750	4.6240041
##	2	11.359422	8.898005	12.763074	11.284713	11.156029	9.991014	4.5525106
##	3	9.485408	4.173077	10.645814	5.856556	7.008850	5.935829	3.2518172
##	4	6.718614	4.528240	8.876406	7.267914	7.942907	7.697988	0.6218165
##	5	11.718180	9.256217	13.121907	11.643464	11.514769	10.349580	4.8977647
##	6	10.433897	8.044203	11.836409	11.080421	10.112636	9.343043	3.5067038
	##	Rassf7	Rassf8	Rassf9	Raver1	Raver2	Rb1	Rb1cc1
##	1	6.053902	10.596544	10.487338	10.739630	9.911925	11.989149	11.377038
##	2	5.457791	10.376506	9.115079	10.320863	10.168359	11.447856	10.941500
##	3	6.608180	3.354209	4.538308	8.458497	5.978255	9.389049	9.951265
##	4	3.018129	3.068602	4.837703	6.301122	4.803061	7.310181	8.406283
##	5	5.809411	10.735146	9.473384	10.679494	10.526961	11.806621	11.300217
##	6	4.890124	9.405782	9.296673	9.548753	8.721905	10.797631	10.185766
	##	Rbak	Rbbp4	Rbbp5	Rbbp6	Rbbp7	Rbbp8	Rbbp9
##	1	9.895172	13.79412	10.813237	12.51657	11.950395	9.568015	10.348102
##	2	9.188169	13.05542	10.747989	11.78017	11.537895	9.249825	10.114866
##	3	7.776420	13.25309	9.337411	10.13723	10.922074	8.577828	11.480203
##	4	6.879418	11.96826	7.798800	9.40549	9.453823	4.807206	10.099650
##	5	9.546502	13.41426	11.106683	12.13896	11.896667	9.608182	10.473458
##	6	8.705175	12.60227	9.622305	11.32491	10.758890	8.378523	9.157570
	##	Rbck1	Rbfa	Rbfox1	Rbfox2	Rbfox3	Rbks	Rb11
##	1	12.794192	10.297532	9.236488	12.295090	9.467792	8.139406	9.113268
##	2	12.105575	10.270966	9.249347	12.236504	9.555608	7.049305	9.420099
##	3	9.191796	5.841660	9.499311	9.748512	9.197521	7.085053	6.829710
##	4	8.471177	6.043561	10.256098	7.473521	8.063109	4.520684	4.641149
##	5	12.464381	10.629588	9.607703	12.595317	9.914064	7.405779	9.778513
##	6	11.602475	9.107052	8.047640	11.103483	8.278480	6.954121	7.924700
	##	Rb12	Rbm10	Rbm11	Rbm12	Rbm14	Rbm15	Rbm15b
##	1	11.362943	10.602968	8.362146	10.524477	11.237903	10.352725	11.367906
##	2	10.946497	9.856021	8.278458	10.053919	10.657148	9.770937	11.056432
##	3	8.729347	9.071737	4.429772	9.450861	9.564353	9.584823	7.877622
##	4	7.731167	7.136147	6.819025	6.853168	8.024014	8.232223	5.868881
##	5	11.305215	10.214556	8.636312	10.412499	11.015829	10.129452	11.415162
##	6	10.171678	9.412201	7.175905	9.333778	10.046703	9.162189	10.176638
	##	Rbm17	Rbm18	Rbm19	Rbm20	Rbm22	Rbm24	Rbm25
##	1	11.370490	11.140394	10.194646	9.095316	11.718615	7.155517	12.652389
##	2	10.700539	11.045543	9.835417	8.436966	11.792907	7.027614	12.446486
##	3	8.532856	11.457433	7.501826	7.990417	11.206395	7.803011	11.845220
##	4	7.188163	8.692622	6.617300	6.296728	8.884577	6.582795	9.465795
##	5	11.059227	11.404271	10.193947	8.794926	12.151697	7.384052	12.805308
##	6	10.179222	9.949249	9.004277	7.906790	10.527193	5.976750	11.460699
	##	Rbm26	Rbm27	Rbm28	Rbm3	Rbm33	Rbm34	Rbm38
##	1	11.617303	10.524911	11.049762	10.339951	12.325725	9.505375	10.572771
##	2	10.996110	10.446169	11.181549	9.703780	12.390436	9.580466	9.782727
##	3	10.133784	9.075230	9.932591	8.005938	8.790754	8.266130	7.293845
##	4	8.809424	7.671191	7.544263	5.751205	6.491591	5.425102	6.076375
##	5	11.354833	10.804820	11.540291	10.062277	12.749256	9.938930	10.141244
##	6	10.425922	9.334212	9.858671	9.149427	11.134110	8.315994	9.382030
	##	Rbm39	Rbm4	Rbm41	Rbm42	Rbm43	Rbm44	Rbm45
##	1	13.671470	9.748597	9.505931	12.609777	8.396570	2.738828e+00	10.387022
##	2	13.350585	9.549336	10.037867	11.546581	7.591865	2.179248e+00	10.170987
##	3	11.604604	10.102134	7.454109	9.323063	7.652058	7.938685e-08	7.926747
##	4	9.189422	8.259685	5.070943	9.339623	7.333807	4.010982e-08	6.496222


```

## 5 13.709434 9.907790 10.396444 11.905354 7.949093 2.466131e+00 10.529589
## 6 12.479631 8.558813 8.316549 11.418096 7.210194 1.804363e+00 9.196452
##      Rbm46      Rbm47      Rbm4b      Rbm5      Rbm6      Rbm7      Rbm8a
## 1 4.586640 8.442996 10.215902 12.593589 10.834563 11.552116 10.879955
## 2 4.009145 8.278981 9.313670 12.624586 10.495498 10.664937 10.039261
## 3 7.446736 6.694873 10.751879 12.486794 10.042095 10.865399 11.622807
## 4 1.037805 8.513784 8.794226 9.384944 6.974237 10.030159 9.867131
## 5 4.348125 8.636835 9.672049 12.983414 10.854157 11.023620 10.397837
## 6 3.471245 7.256442 9.025509 11.401911 9.643616 10.360763 9.688976
##      Rbms1      Rbms2      Rbms3      RbmX      RbmX2      RbmX11      Rbp1
## 1 11.060070 10.742151 10.197512 12.185301 8.232452 10.047385 9.908513
## 2 9.911319 10.286690 9.120419 11.603305 7.810388 9.564699 8.956444
## 3 8.123123 9.399437 9.509125 12.343433 8.705584 9.799624 9.202457
## 4 8.365422 7.770457 8.894544 9.460187 7.303688 8.147368 9.718182
## 5 10.269868 10.645314 9.478726 11.962082 8.167848 9.923158 9.314682
## 6 9.868973 9.551272 9.007140 10.993724 7.046750 8.857190 8.718498
##      Rbp2      Rbp4      Rbp7      Rbpj      Rbpj1      Rbpms
## 1 1.5362909 6.632171 2.242788e+00 10.706652 7.928953e+00 10.574848
## 2 1.3117164 5.817269 2.788124e+00 10.354369 7.810031e+00 9.122066
## 3 3.1541423 6.459713 2.245596e-01 9.148200 2.506106e+00 5.827236
## 4 2.8554316 5.356924 1.275439e-07 7.239751 1.044839e-07 4.639977
## 5 1.5364643 6.170493 3.100194e+00 10.713005 8.167491e+00 9.480374
## 6 0.8776225 5.459143 1.401370e+00 9.515801 6.744717e+00 9.384105
##      Rbpms2      Rbx1      Rc3h1      Rc3h2      Rcan1      Rcan2      Rcan3
## 1 7.386704 11.383432 11.976648 11.534464 14.594144 11.85567 11.628813
## 2 6.318027 10.592911 11.373257 11.293326 14.241865 11.58743 11.367801
## 3 5.139319 12.788818 10.195379 9.799919 8.170887 10.06038 8.693054
## 4 6.647349 11.290438 9.748528 8.182745 7.251040 9.43296 7.292217
## 5 6.672912 10.951584 11.732016 11.652078 14.600727 11.94621 11.726559
## 6 6.205989 10.192157 10.785134 10.343118 13.402237 10.66420 10.437427
##      Rcbtb1      Rcbtb2      Rcc1      Rcc2      Rccd1      Rce1      Rchy1
## 1 12.000377 10.732738 10.154886 13.069847 9.009170 10.733840 11.21222
## 2 11.144970 10.673314 10.141565 12.910237 8.461881 10.553314 10.26949
## 3 9.692532 10.537995 7.715314 10.432751 7.142454 7.615088 10.32717
## 4 8.077964 8.117133 4.573418 8.518177 1.546951 7.624618 9.16956
## 5 11.503708 11.031998 10.500163 13.269075 8.819857 10.911981 10.62811
## 6 10.808856 9.541867 8.964563 11.878083 7.820857 9.542968 10.02103
##      Rcl1      Rcn1      Rcn2      Rcn3      Rcor1      Rcor2      Rcor3
## 1 10.198415 11.565771 12.80200 10.280223 9.971790 9.863316 9.369834
## 2 9.203329 11.201037 12.03888 10.079159 9.716937 9.349691 8.982392
## 3 8.177630 8.579649 11.68113 11.280351 7.626124 8.136727 7.101559
## 4 6.875758 7.338969 11.28259 7.892586 7.122306 3.751575 5.712726
## 5 9.561668 11.559781 12.39768 10.437743 10.075437 9.708082 9.340642
## 6 9.008041 10.374411 11.61029 9.089761 8.781691 8.673364 8.180709
##      Rcsl1      Rcvrn      Rd3      Rdh1      Rdh10      Rdh11      Rdh12
## 1 12.986306 3.642572e+00 6.097995 3.361964 9.298778 11.423716 6.779689
## 2 12.634349 3.814168e+00 5.985358 2.630640 9.205240 11.293895 6.201700
## 3 6.195038 9.332262e-01 5.450044 2.701466 7.007022 10.081166 6.709515
## 4 7.137913 1.203028e-07 4.203324 3.011840 6.135652 7.799375 4.840097
## 5 12.993178 4.150247e+00 6.339205 2.937214 9.563579 11.652647 6.556249
## 6 11.794556 2.594276e+00 4.933376 2.342626 8.109798 10.232421 5.604831
##      Rdh13      Rdh14      Rdh5      Rdh9      Rdm1      Rdx      Rec8
## 1 10.289319 9.806061 8.343465 5.964294 9.130109 13.421730 4.834211
## 2 9.836980 9.206623 7.179902 4.709803 8.478674 12.890918 4.1919203

```

```

## 3 10.741922 8.176224 9.288895 4.694206 10.819208 11.246538 4.2847583
## 4 9.458637 8.621003 8.695626 3.342245 9.218637 9.551072 0.6440579
## 5 10.195511 9.564963 7.536585 5.056470 8.836660 13.249755 4.5332825
## 6 9.098848 8.616191 7.157299 4.802303 7.941500 12.229919 3.7070240
##      Reck      Recql      Recql4      Recql5      Reep1      Reep2      Reep3
## 1 9.683884 9.229036 7.2799106 10.078467 12.483930 10.785934 13.79545
## 2 9.474876 9.233180 7.7424823 10.419797 12.102099 10.743768 13.11122
## 3 6.443693 8.533559 4.0824535 8.371540 8.956514 9.563572 11.16073
## 4 5.651982 6.674672 0.5696704 4.829272 8.784078 9.645619 10.09897
## 5 9.833308 9.591530 8.0998744 10.778444 12.460906 11.102462 13.47006
## 6 8.494201 8.040204 6.1000570 8.888234 11.292277 9.595022 12.60360
##      Reep4      Reep5      Reep6      Rel      Rela      Relb      Rel11
## 1 8.846839 14.81379 7.599705 10.523946 12.765353 11.327471 12.497250
## 2 8.118266 14.14045 7.720028 9.082653 12.798111 10.854047 11.789668
## 3 6.781831 12.71719 4.391329 3.740052 10.731418 5.625640 9.210872
## 4 4.839305 12.15675 1.091122 6.193197 8.741253 4.615643 8.298132
## 5 8.475999 14.49932 8.077396 9.440945 13.156945 11.212754 12.148457
## 6 7.658962 13.62187 6.417448 9.333248 11.573641 10.136224 11.305593
##      Rel12      Reln      Relt      Rem1      Rem2      Renbp      Rep15
## 1 8.1827980 16.134814 10.340892 5.038107 8.617442 10.870882 5.297261e+00
## 2 7.8953029 16.194045 10.410534 4.044967 8.819057 10.716694 5.445339e+00
## 3 0.5965601 5.897027 4.736973 3.605717 3.514099 8.956443 1.942314e+00
## 4 3.6302181 10.960390 5.982793 4.694357 1.077484 8.383286 5.173076e-08
## 5 8.2528445 16.552920 10.769179 4.384438 9.177231 11.075384 5.796896e+00
## 6 6.9973153 14.942856 9.150367 3.902557 7.430271 9.679909 4.152593e+00
##      Repin1      Reps1      Reps2      Rer1      Rere      Rerg      Resp18
## 1 10.492492 11.413847 9.434203 12.55038 12.937893 5.527427 9.045451
## 2 10.188028 10.794152 9.439514 11.66978 12.691033 5.540163 8.747595
## 3 9.449283 8.465152 5.991024 10.92046 9.746799 9.264127 6.504169
## 4 7.757234 7.250108 6.359043 10.58007 8.310088 6.726568 10.130227
## 5 10.546635 11.152851 9.797934 12.02856 13.049864 5.892187 9.105733
## 6 9.301823 10.222557 8.244954 11.35872 11.746151 4.375884 7.857047
##      Rest      Ret      Retn      Retnla      Retnlg      Retsat
## 1 9.479033 8.6160227 2.446944e+00 7.520520e+00 6.094247e+00 10.190741
## 2 9.639636 8.8335043 1.860126e+00 4.748884e+00 5.430141e+00 9.888852
## 3 6.740129 2.0678579 7.182847e-08 1.896836e+00 4.729369e-08 9.551965
## 4 4.416217 0.7768241 2.775832e+00 9.431032e-08 2.405367e-08 9.875921
## 5 9.998116 9.1916854 2.128628e+00 5.095879e+00 5.781620e+00 10.247395
## 6 8.289700 7.4288566 1.564106e+00 6.338810e+00 4.929698e+00 9.000376
##      Rev1      Rev31      REXO1      REXO2      REXO4      Rfc1      Rfc2
## 1 10.077420 12.383279 12.109833 11.707401 10.739569 11.140139 11.450326
## 2 10.301828 11.959268 11.825062 11.101660 10.710027 10.805198 10.906294
## 3 6.884752 8.821114 7.758309 9.711520 9.220631 10.914010 11.371967
## 4 4.925194 7.783215 6.332153 7.372325 7.748583 9.324989 9.176341
## 5 10.660454 12.318067 12.183854 11.460394 11.068716 11.163899 11.265007
## 6 8.887187 11.191650 10.918277 10.515983 9.548693 9.948994 10.259019
##      Rfc3      Rfc4      Rfc5      Rfesd      Rff1      Rfk      Rfng
## 1 9.464414 8.445736 9.107813 8.174940 11.849282 11.75420 11.429356
## 2 8.666710 7.587675 8.530583 8.072196 11.017667 10.86436 10.913142
## 3 10.279818 11.224693 7.563369 8.677079 7.538965 10.22273 8.050315
## 4 8.158049 7.932094 4.869978 6.968121 7.212049 9.48777 6.124819
## 5 9.024805 7.944899 8.888601 8.429892 11.376392 11.22307 11.271856
## 6 8.275109 7.259173 7.919258 6.989492 10.657812 10.56277 10.238059
##      Rfpl14      Rft1      Rftn1      Rftn2      Rfwd2      Rfwd3      Rfx1

```

```

## 1 9.004290e-01 10.070382 11.181791 11.577149 10.119230 9.830764 10.169093
## 2 1.684870e+00 10.320727 11.022987 11.246992 9.391892 9.595782 10.211263
## 3 8.330645e-01 8.160380 6.706216 12.200178 8.567178 8.476122 6.629277
## 4 1.068306e-07 6.939934 4.561852 9.446041 7.167633 6.033543 4.350288
## 5 1.941283e+00 10.679357 11.381713 11.605740 9.750298 9.954250 10.569874
## 6 4.674283e-01 8.880159 9.990622 10.385785 8.928947 8.640858 8.978753
##      Rfx2      Rfx3      Rfx4      Rfx5      Rfx7      Rfx8      Rfxank
## 1 8.103344 10.580198 10.213049 10.897004 11.355964 4.8781229 9.802983
## 2 8.292149 10.161064 10.169753 10.142079 11.302176 4.5088105 8.889800
## 3 7.393861 10.948980 10.107472 7.130344 9.310456 4.4382021 10.206443
## 4 5.728705 9.895983 7.980772 5.253848 6.616402 0.2941055 8.263901
## 5 8.650013 10.519665 10.528356 10.500676 11.660929 4.8536435 9.248008
## 6 6.918229 9.389451 9.022659 9.706013 10.164703 3.7490380 8.613117
##      Rfxap      Rgag1      Rgag4      Rgl1      Rgl2      Rgl3      Rgma
## 1 9.985847 7.8955922 10.531817 11.804668 12.488282 9.531563 12.633493
## 2 9.948208 7.2573385 10.035369 11.652125 12.105962 9.371398 11.732850
## 3 6.703076 1.8202928 6.962625 7.964112 7.815020 4.233236 9.275159
## 4 4.694892 0.4028714 2.401976 7.315120 5.376606 5.625074 8.367852
## 5 10.306765 7.6141358 10.393944 12.010905 12.464769 9.729797 12.091636
## 6 8.795730 6.7115373 9.341112 10.613213 11.296627 8.342135 11.441807
##      Rgmb      Rgn      Rgp1      Rgr      Rgs1      Rgs10      Rgs11
## 1 10.956164 2.711836 11.692019 1.699241e+00 12.040896 12.935538 8.236673
## 2 10.618042 2.352701 11.184956 1.911252e+00 11.670673 12.329843 8.505266
## 3 8.107555 3.291435 7.153438 3.313743e+00 6.332354 8.509308 5.284322
## 4 7.831993 0.421331 4.862872 1.299016e-07 7.998672 11.726563 3.951552
## 5 10.976719 2.647919 11.543699 2.182996e+00 12.029454 12.688660 8.863269
## 6 9.765133 1.781795 10.500607 9.925220e-01 10.849361 11.743796 7.050953
##      Rgs12      Rgs13      Rgs14      Rgs16      Rgs17      Rgs18      Rgs19
## 1 12.251008 1.635164e+00 8.374724 11.509339 9.402155 2.925703 10.473129
## 2 11.716089 1.802721e+00 8.577664 11.594084 9.084509 2.561767 9.823372
## 3 9.013532 4.464086e+00 3.915147 6.129366 9.373621 5.786253 9.252826
## 4 7.984739 6.731529e-08 6.470622 3.224920 8.084215 2.696311 8.919702
## 5 12.074873 2.067435e+00 8.935710 11.952860 9.442802 2.865735 10.181899
## 6 11.059413 9.468916e-01 7.188433 10.318005 8.212967 1.962433 9.282477
##      Rgs2      Rgs20      Rgs22      Rgs3      Rgs4      Rgs5      Rgs6
## 1 12.650277 9.888185 4.315044 12.030722 11.44640 11.93365 8.617552
## 2 12.102907 9.623126 5.151312 11.859631 10.90955 11.30225 7.721809
## 3 8.929997 10.513671 3.976659 7.204203 10.66116 12.86265 4.136705
## 4 10.010448 7.150838 3.585063 6.555634 11.29004 11.93194 2.031016
## 5 12.461713 9.981601 5.501208 12.218424 11.26826 11.66101 8.079179
## 6 11.458588 8.698198 3.214984 10.839190 10.25510 10.74215 7.430381
##      Rgs7      Rgs7bp      Rgs8      Rgs9      Rgs9bp      Rgs11      Rhbdd1
## 1 10.409419 10.312100 8.257302 10.561438 4.0223945 3.680452e+00 10.146698
## 2 10.617356 10.567347 8.137852 10.577717 2.5825188 2.974680e+00 9.911671
## 3 3.494478 7.302070 6.129531 6.248935 2.8779052 2.213588e+00 8.739763
## 4 5.881166 9.157641 6.545328 3.598622 0.5359962 1.023454e-07 8.919032
## 5 10.976032 10.926017 8.495600 10.936387 2.8872859 3.292507e+00 10.270219
## 6 9.218827 9.121605 7.071492 9.370707 2.9421718 2.628619e+00 8.956384
##      Rhbdd2      Rhbdd3      Rhbdf1      Rhbdf2      Rhbd11      Rhbd12      Rhbd13
## 1 11.458188 9.862875 12.138036 11.487543 10.028349 8.347026 8.489693
## 2 11.017764 9.599080 11.741690 11.448274 10.208321 8.499767 8.042570
## 3 9.160502 8.857489 6.979993 4.740418 5.464327 7.450294 7.180838
## 4 8.842790 7.447496 5.107779 6.176247 5.014374 3.982872 3.394729
## 5 11.376489 9.957548 12.100476 11.807039 10.566931 8.857766 8.400241

```

```

## 6 10.266877 8.672924 10.946472 10.296219 8.838178 7.160845 7.302967
##      Rhbg      Rhcg      Rhd      Rheb      Rheb11      Rho      Rhob
## 1 3.464015 6.888814 2.609380 12.218587 8.202288 3.993231e+00 16.93335
## 2 3.251061 6.521778 3.071711 11.213006 7.782389 4.102057e+00 16.08088
## 3 3.621084 7.828272 3.981713 9.770675 8.657305 1.321909e-07 11.74561
## 4 2.254344 3.016335 2.022421 9.784718 5.000691 5.693647e-01 11.08137
## 5 3.576128 6.877189 3.392244 11.571751 8.139822 4.442286e+00 16.43976
## 6 2.433562 5.712715 1.696765 11.027001 7.016719 2.915197e+00 15.74138
##      Rhobtb1 Rhobtb2 Rhobtb3      Rhoc      Rhod      Rhof      Rhog
## 1 9.952107 10.946538 10.966212 13.404243 9.058384 8.965821 13.69184
## 2 10.166562 10.741704 11.034646 12.542886 8.474731 9.340862 13.10585
## 3 5.234381 8.761434 9.811771 10.044559 6.754386 5.638896 10.44970
## 4 4.414937 7.289999 6.966308 9.140956 3.517414 6.122890 10.54173
## 5 10.525164 11.100397 11.393373 12.901711 8.832715 9.699250 13.46470
## 6 8.762033 9.755513 9.775175 12.212434 7.869947 7.777619 12.49999
##      Rhoh      Rhoj      Rhoq      Rhot1      Rhot2      Rhou      Rhov
## 1 11.684032 11.384871 11.898160 11.903857 11.303271 11.457835 6.818602
## 2 10.829198 10.772663 11.690061 11.696213 11.311212 11.550111 6.342692
## 3 6.841541 8.351040 8.277767 8.459124 8.053096 8.013089 3.389358
## 4 8.356011 6.700719 7.679719 7.669751 7.245196 7.521837 2.601150
## 5 11.187902 11.131360 12.048844 12.054996 11.669965 11.908884 6.697645
## 6 10.492624 10.193596 10.706672 10.712367 10.112036 10.266525 5.643290
##      Rhpn1 Rhpn2 Ribc1 Ribc2 Ric3 Ric8 Ric8b
## 1 8.858299 8.119469 5.599980 2.7673251 10.438433 11.925570 10.579138
## 2 8.528194 8.525459 4.209865 3.4012069 10.682863 11.964794 10.727940
## 3 8.151177 6.540668 6.735023 5.2206772 8.764329 9.677359 7.259588
## 4 4.664053 3.266571 3.879289 0.5107167 8.035530 9.041992 6.356707
## 5 8.886211 8.883474 4.551445 3.7296508 11.041548 12.323593 11.086631
## 6 7.670389 6.934277 4.446483 1.8282638 9.247813 10.734073 9.388391
##      Rictor Rif1 Riia1 Riia2 Riia3 Riia4 Riia5
## 1 12.433054 10.879282 4.693226 6.810039 11.686134 12.289793 9.093930
## 2 11.920474 10.961258 4.151572 6.864959 12.040487 12.261052 9.058277
## 3 9.441724 10.106970 10.433256 3.339939 6.950176 9.287169 1.759342
## 4 8.919195 7.779786 5.664245 3.515774 7.755978 6.548558 6.147733
## 5 12.279271 11.319977 4.492434 7.221105 12.399290 12.619866 9.416559
## 6 11.241412 9.688304 3.572518 5.634826 10.494724 11.098187 7.905407
##      Rimpb3 Rimkla Rimklb Rims1 Rims2 Rims3
## 1 5.013561 9.664592 11.76628 10.226965 11.539237 8.336851e+00
## 2 5.148821 9.753186 11.29386 10.388614 11.052369 8.347813e+00
## 3 2.705533 6.203925 10.62475 4.323137 8.487124 2.373729e+00
## 4 1.000537 2.733602 8.09152 6.672540 7.314226 5.385178e-08
## 5 5.498702 10.111696 11.65261 10.747256 11.411099 8.705714e+00
## 6 3.878958 8.474940 10.57484 9.036560 10.347889 7.150711e+00
##      Rims4 Rin1 Rin2 Rin3 Ring1 Rinl Rint1
## 1 7.526748e+00 7.686018 12.593032 10.759266 11.094415 10.009002 9.291064
## 2 7.428430e+00 8.458440 11.982667 11.272007 10.538400 9.157934 9.237269
## 3 6.515832e-08 2.579019 9.657269 4.673114 5.727952 6.498401 9.037553
## 4 3.012840e-08 5.923800 10.048803 2.166044 4.216249 4.869689 6.449975
## 5 7.785460e+00 8.816414 12.341467 11.630757 10.897065 9.516256 9.595621
## 6 6.344994e+00 6.503198 11.401355 9.568374 9.903297 8.818855 8.102100
##      Riok1 Riok3 Ripk1 Ripk2 Ripk3 Ripk4 Ripply2
## 1 9.769096 12.179271 10.988243 9.481549 8.1887954 9.082378 4.958915
## 2 9.805644 11.859341 10.700940 8.963761 7.5423480 8.215898 4.927762
## 3 9.452269 9.948446 6.948476 5.919492 2.3455545 3.871845 2.131758

```

```

## 4 7.491414 8.291854 5.196317 2.714531 0.6170213 5.018804 4.178335
## 5 10.164167 12.218134 11.059628 9.322003 7.8995187 8.573706 5.276148
## 6 8.579281 10.987695 9.797191 8.292212 7.0032857 7.893883 3.826479
##      Ripply3      Rit1      Rit2      Rlbp1      Rlf      Rlim      Rln1
## 1 5.317950e+00 11.357469 9.408777 12.12952 11.117375 11.918736 5.857060
## 2 5.420714e+00 10.823483 9.211347 11.84368 11.339285 11.687755 5.608731
## 3 6.203159e-08 10.740186 6.604003 11.61721 7.082586 10.539616 4.380713
## 4 3.708987e+00 9.679347 9.436341 10.76344 6.393759 8.719476 3.786887
## 5 5.772145e+00 11.182186 9.569689 12.20248 11.698041 12.046538 5.961074
## 6 4.172620e+00 10.166206 8.219576 10.93796 9.926244 10.727242 4.697356
##      Rln3      RltpR      Rmi1      Rmnd1      Rmnd5a      Rmnd5b      Rnase1
## 1 1.065968e+00 9.068788 9.479290 1.630559e+00 12.311878 11.574105 3.878673
## 2 1.052240e+00 8.887228 9.324728 1.257999e+00 11.938525 11.175513 4.081010
## 3 1.941595e+00 4.483323 8.474552 9.538196e-01 9.665540 9.755487 5.314129
## 4 1.004541e-07 5.078089 7.625966 5.809499e-08 8.944539 8.840821 6.616658
## 5 1.249046e+00 9.245435 9.683110 1.477409e+00 12.297323 11.534254 4.420963
## 6 5.681025e-01 7.880326 8.289956 9.436341e-01 11.120266 10.382743 2.809640
##      Rnase10      Rnase12      Rnase13      Rnase4      Rnase6      Rnaseh1      Rnaseh2a
## 1 6.5945861 3.030692e+00 0.3497958 13.316795 4.161352 9.120820 9.796158
## 2 7.8536970 2.228901e+00 0.5600371 12.524889 3.756768 8.836177 9.446565
## 3 1.7939875 5.673011e-01 0.8762281 9.401299 3.760115 8.155787 10.324019
## 4 0.3221438 5.015844e-08 2.8146591 12.209472 5.816129 4.557561 8.233930
## 5 8.2111994 2.518278e+00 0.6854373 12.883714 4.091914 9.194360 9.804988
## 6 5.4220553 2.052566e+00 0.1652831 12.124997 3.071245 7.932233 8.606302
##      Rnaseh2b      Rnaseh2c      Rnasek      Rnase1      Rnaset2b      Rnd1      Rnd2
## 1 9.756365 10.268948 12.58528 6.771988 6.057040 9.887752 13.550796
## 2 8.872686 9.280406 12.05349 5.992876 5.406524 8.654738 12.712441
## 3 9.952269 8.308821 12.59372 8.826078 5.534581 4.360533 9.363455
## 4 8.576644 7.544972 12.34565 5.842100 5.880147 5.823226 8.075755
## 5 9.230885 9.638773 12.41229 6.346749 5.757881 9.012827 13.071272
## 6 8.566568 9.078498 11.39360 5.597221 4.893201 8.697766 12.358970
##      Rnd3      Rnf10      Rnf103      Rnf11      Rnf111      Rnf112      Rnf113a1
## 1 9.725233 13.809026 11.372262 12.455987 11.081258 11.117761 7.509708
## 2 8.641212 13.200965 10.687167 12.184932 11.012501 11.358854 7.430480
## 3 10.547559 10.093015 8.433885 9.494171 9.121486 5.250170 6.988241
## 4 8.301578 9.467057 8.527175 7.822308 8.061445 7.110086 5.508961
## 5 8.999293 13.559810 11.045853 12.543743 11.371226 11.717612 7.787513
## 6 8.535485 12.617174 10.180992 11.264340 9.890148 9.926629 6.328075
##      Rnf113a2      Rnf114      Rnf115      Rnf121      Rnf122      Rnf123      Rnf125
## 1 9.484458 12.34161 11.405482 10.700262 12.385553 11.541844 8.416146
## 2 8.458171 11.87623 10.434993 10.298245 11.824466 11.626459 7.880341
## 3 9.426093 11.57243 9.116353 9.297662 10.650947 8.174096 5.684959
## 4 8.549388 10.04218 8.410136 8.117269 9.343351 7.649602 4.528525
## 5 8.816145 12.23502 10.793642 10.656871 12.183257 11.985237 8.237869
## 6 8.295115 11.14999 10.214197 9.509416 11.193923 10.350495 7.229695
##      Rnf126      Rnf128      Rnf13      Rnf130      Rnf135      Rnf138      Rnf139
## 1 11.099432 9.137964 13.93744 13.151907 9.685417 10.628556 11.630698
## 2 10.436847 9.144388 13.08956 12.127270 8.885999 10.345272 11.088244
## 3 4.795135 3.845793 13.37945 8.689077 8.097355 10.372753 9.677145
## 4 3.396677 7.612011 12.44461 8.614939 5.472857 7.314836 9.094868
## 5 10.795496 9.502704 13.44840 12.486078 9.244205 10.703906 11.446976
## 6 9.908311 7.949337 12.74557 11.960132 8.495732 9.437768 10.439312
##      Rnf14      Rnf141      Rnf144a      Rnf144b      Rnf145      Rnf146      Rnf149
## 1 12.90329 10.074023 11.780829 11.948234 12.694822 11.032021 10.807794

```

```

## 2 12.33453 9.230228 11.901856 11.245476 12.244562 10.552036 10.284088
## 3 11.68786 8.115671 9.313609 6.585092 8.958534 9.862622 9.430912
## 4 10.99327 7.149524 7.416996 7.687752 8.917830 7.741243 8.984370
## 5 12.69335 9.588577 12.260652 11.604224 12.603376 10.910703 10.642712
## 6 11.71155 8.883795 10.589383 10.756729 11.503123 9.840941 9.616866
##      Rnf150      Rnf151      Rnf152      Rnf157      Rnf165      Rnf166      Rnf167
## 1 8.413217 1.579025e+00 9.510845 11.473100 9.559705 10.501679 12.27298
## 2 8.548885 2.021652e+00 8.638529 11.294058 9.134011 10.595308 11.62800
## 3 6.287897 3.558728e-01 8.286359 8.640518 9.313087 6.835126 11.79177
## 4 7.201890 7.707698e-08 6.693253 8.845436 6.335077 6.216267 11.25297
## 5 8.906914 2.299994e+00 8.996609 11.652811 9.492323 10.953981 11.98677
## 6 7.226777 9.073897e-01 8.321454 10.281782 8.370228 9.311001 11.08138
##      Rnf168      Rnf169      Rnf17      Rnf170      Rnf180      Rnf181      Rnf182
## 1 10.264631 10.209348 1.500983e+00 9.535428 10.227666 11.85074 9.182159
## 2 9.992496 9.946929 2.073657e+00 8.897699 10.022802 11.50736 8.790816
## 3 8.175814 8.868898 1.871654e+00 7.053486 9.059285 11.61180 10.682580
## 4 6.210851 6.836928 1.208914e-07 7.397171 8.235647 10.10853 7.728403
## 5 10.351063 10.305486 2.354927e+00 9.255910 10.381375 11.86613 9.148977
## 6 9.074185 9.018962 8.532275e-01 8.345993 9.037261 10.65927 7.993431
##      Rnf183      Rnf185      Rnf187      Rnf19a      Rnf19b      Rnf2      Rnf20
## 1 4.471455e+00 11.354997 13.572143 11.689657 12.597045 11.305375 12.279488
## 2 4.010783e+00 11.114015 13.237705 11.267492 12.203133 11.051862 11.825578
## 3 4.395549e-08 10.084601 10.194949 8.977483 6.448822 10.986806 11.068703
## 4 2.181126e-08 8.744614 8.649885 7.993795 6.003235 9.040669 9.760125
## 5 4.349786e+00 11.472751 13.596551 11.626241 12.561945 11.410591 12.184370
## 6 3.362233e+00 10.163736 12.380315 10.498247 11.405367 10.114139 11.087885
##      Rnf207      Rnf208      Rnf214      Rnf215      Rnf216      Rnf217      Rnf219
## 1 4.131574e+00 10.950409 11.357905 11.812800 11.893266 8.974328 8.068208
## 2 3.570605e+00 10.434281 11.038168 11.497937 11.101175 8.679306 8.163177
## 3 8.804416e-08 8.162793 9.933701 7.612741 9.113419 5.561400 9.448424
## 4 4.428176e-08 7.547533 8.887661 7.557716 9.322577 5.717243 6.457813
## 5 3.902451e+00 10.792930 11.396895 11.856706 11.459909 9.037409 8.520945
## 6 3.043511e+00 9.759382 10.166642 10.621343 10.701780 7.786104 6.883261
##      Rnf220      Rnf222      Rnf24      Rnf25      Rnf26      Rnf31      Rnf32
## 1 12.881052 1.8373751 11.202562 10.160836 9.967286 11.001264 8.007720
## 2 12.432669 1.5576603 11.005171 10.059344 9.366850 10.150100 8.428444
## 3 9.238908 0.8579184 8.384944 8.647027 7.067604 7.835648 7.697427
## 4 7.833526 2.5656018 6.437759 6.670506 6.141299 7.510148 6.315522
## 5 12.791490 1.8042582 11.363895 10.417925 9.725246 10.508698 8.786398
## 6 11.689319 1.0928110 10.011381 8.970505 8.777192 9.810204 6.823074
##      Rnf34      Rnf38      Rnf39      Rnf4      Rnf40      Rnf41      Rnf43
## 1 11.340553 11.417170 4.613123 12.37043 12.131067 11.390402 10.228202
## 2 10.404403 10.888581 4.492220 11.98662 11.975300 11.368386 9.729213
## 3 10.448538 9.841174 1.765295 11.20702 9.342728 10.248319 7.934035
## 4 8.370198 6.989399 3.739238 10.25201 7.531959 8.089195 6.258180
## 5 10.763047 11.247292 4.836890 12.34542 12.334100 11.727144 10.087717
## 6 10.149299 10.225878 3.496373 11.17880 10.939505 10.199124 9.037796
##      Rnf44      Rnf5      Rnf6      Rnf7      Rnf8      Rnft1      Rnft2
## 1 12.642765 11.74717 10.021699 12.40898 10.065713 10.216811 11.366130
## 2 12.486702 11.07445 9.807939 11.58379 9.955429 9.270292 11.246540
## 3 9.366029 11.48490 10.856271 12.40307 8.093018 9.612800 7.351013
## 4 7.641167 10.56541 10.083904 11.35230 5.745230 9.043217 4.326408
## 5 12.845525 11.43318 10.166463 11.94256 10.313988 9.628655 11.605288
## 6 11.451078 10.55574 8.831536 11.21735 8.875495 9.026417 10.174863

```

##	Rngtt	Rnh1	Rnls	Rnmt	Rnmtl1	Rnpc3	Rnpep
## 1	9.800426	12.59376	7.935004	10.750176	7.992815	10.896889	12.35562
## 2	10.141297	12.11496	6.758313	10.528440	7.721334	9.960543	11.69452
## 3	9.573601	11.88063	7.965961	10.795553	8.233841	8.733868	8.05903
## 4	6.805628	10.76457	6.701065	8.658261	5.810065	5.367923	8.75613
## 5	10.499894	12.47376	7.114250	10.887103	8.078704	10.319102	12.05330
## 6	8.610564	11.40209	6.750736	9.559292	6.808245	9.705898	11.16400
##	Rnpep11	Rnps1	Robo1	Robo2	Robo3	Robo4	Rock1
## 1	12.804088	10.061968	10.929295	11.109464	7.863653e+00	11.945545	11.565241
## 2	12.320809	10.003105	10.534815	11.571564	6.701404e+00	11.361109	11.062037
## 3	8.935445	9.693039	8.875852	8.438829	5.866307e-08	5.231673	11.134046
## 4	6.882470	7.200459	8.993184	8.507716	4.080682e+00	7.924810	9.902602
## 5	12.679626	10.361674	10.893479	11.930339	7.057222e+00	11.719867	11.420767
## 6	11.612369	8.871755	9.738282	9.918337	6.679775e+00	10.754041	10.373882
##	Rock2	Rogdi	Rom1	Romo1	Ropn11	Ror1	Ror2
## 1	12.193192	12.17882	8.842303	10.652427	6.5038001	7.079819	6.922162
## 2	11.653338	11.93722	7.363425	9.850063	6.0914317	6.155660	5.952589
## 3	9.734810	10.72773	6.768309	11.488429	6.7934895	3.900816	2.501344
## 4	9.597942	11.21666	5.663620	10.200933	0.7244717	1.818224	1.531160
## 5	12.012118	12.29602	7.720370	10.208597	6.4456358	6.510068	6.306320
## 6	11.001613	10.98724	7.654439	9.461619	5.3325231	5.901761	5.745702
##	Rora	Rorb	Rorc	Rp1	Rp111	Rp2h	Rp9
## 1	8.904174	9.870100	3.794636	4.268532e+00	1.936694e+00	9.637568	10.770042
## 2	8.598387	9.411176	3.749786	2.892628e+00	1.414961e+00	9.494176	9.798435
## 3	6.921118	9.924530	8.227677	1.033801e+00	3.079215e-01	9.208333	7.959727
## 4	4.203727	10.618262	3.017855	1.106346e-07	5.793276e-08	7.768725	7.473469
## 5	8.956445	9.769588	4.084815	3.208017e+00	1.649377e+00	9.852614	10.156957
## 6	7.716137	8.680138	2.732634	3.171380e+00	1.166492e+00	8.447960	9.579143
##	Rpa1	Rpa2	Rpa3	Rpain	Rpap1	Rpap2	Rpap3
## 1	11.35655	9.971831	9.567370	9.879084	11.152590	9.461031	10.311216
## 2	11.35705	9.206718	8.607403	9.042371	10.333769	8.979967	10.098207
## 3	11.91282	11.551791	10.506503	10.222787	9.363810	9.173871	9.630126
## 4	8.82513	8.934060	8.948422	8.091647	8.436813	8.646847	7.536092
## 5	11.71581	9.565058	8.965466	9.400646	10.692401	9.338216	10.456796
## 6	10.16529	8.781731	8.377880	8.689110	9.961438	8.271731	9.120722
##	Rpe	Rpe65	Rpf1	Rpf2	Rpgr	Rpgrip1	Rpgrip11
## 1	10.360699	3.081804e+00	9.579772	9.273155	8.672229	4.195560e+00	9.263748
## 2	9.641194	9.336701e-01	8.699968	8.384691	8.470457	3.829354e+00	8.899200
## 3	8.271462	4.086475e-08	9.512553	11.021727	8.556207	4.246359e+00	7.574951
## 4	7.004561	1.774442e-08	8.655669	10.152027	5.791859	8.707509e-08	6.840087
## 5	9.999675	1.115722e+00	9.058082	8.742617	8.828439	4.165673e+00	9.257412
## 6	9.170154	2.096773e+00	8.390261	8.084228	7.484879	3.103151e+00	8.074842
##	Rph3a	Rph3a1	Rpia	Rpl10	Rpl10a	Rpl11	Rpl12
## 1	11.384849	5.754719	9.762718	10.049938	10.450885	7.711591	10.043831
## 2	11.690704	6.404250	9.124074	9.515448	10.204813	7.186170	9.606175
## 3	6.368560	2.496162	6.446319	7.899340	6.115421	5.902783	6.392154
## 4	8.163324	2.559895	3.600523	4.935447	4.646569	3.431857	4.415623
## 5	12.049486	6.759367	9.482383	9.873892	10.563423	7.542862	9.964646
## 6	10.193573	4.597357	8.572912	8.859739	9.260254	6.528611	8.853640
##	Rpl13	Rpl13a	Rpl14	Rpl15	Rpl18	Rpl18a	Rpl19
## 1	10.214974	14.52477	11.69267	10.935801	11.021380	11.46522	10.647796
## 2	9.464344	13.78387	11.05252	10.343445	10.347758	10.78075	10.002211
## 3	9.353838	12.82975	13.32625	11.091865	10.308092	11.68863	10.439009
## 4	8.828616	11.67271	12.28693	9.767820	8.887789	10.38941	9.120106

```

## 5 9.822772 14.14273 11.41125 10.702079 10.706392 11.13945 10.360780
## 6 9.024582 13.33287 10.50126 9.744784 9.830307 10.27391 9.456992
##      Rpl21      Rpl22      Rpl22l1      Rpl23      Rpl23a      Rpl24      Rpl27
## 1 9.123023 13.23578 10.902598 10.399651 8.903425 7.469987 8.534958
## 2 8.721906 12.62295 10.113069 9.722035 8.185948 7.211088 7.932533
## 3 9.692519 12.36709 10.970882 11.128572 5.803607 6.347353 6.907597
## 4 8.446687 10.80023 9.473074 9.390914 4.885241 4.337976 5.102226
## 5 9.080031 12.98178 10.471661 10.080537 8.543734 7.567818 8.290109
## 6 7.934431 12.04399 9.711603 9.209069 7.715390 6.288642 7.348070
##      Rpl27a      Rpl29      Rpl3      Rpl30      Rpl31      Rpl32      Rpl34      Rpl35
## 1 10.836704 5.691423 11.92677 5.142996 8.013426 13.53794 6.190448 8.636412
## 2 10.187456 5.288969 11.35123 4.472913 7.443466 12.84736 4.786666 7.976727
## 3 9.545216 8.846795 11.52091 5.279371 6.533264 13.95016 5.529041 8.269930
## 4 9.042462 7.326320 10.39269 4.143674 5.655599 12.61988 4.258450 6.006192
## 5 10.546062 5.639685 11.70999 4.817391 7.800516 13.20619 5.133969 8.334342
## 6 9.645755 4.535593 10.73528 4.003565 6.828751 12.34611 5.024147 7.449178
##      Rpl35a      Rpl36      Rpl36a      Rpl36a1      Rpl37      Rpl37a      Rpl38
## 1 9.497603 9.060995 7.282489 10.948219 8.169772 7.875064 10.624687
## 2 8.744731 8.354174 6.583801 10.220898 7.470589 7.064891 9.929538
## 3 9.064677 9.719641 6.497966 10.150467 11.243555 11.103190 8.013338
## 4 8.208075 8.737334 4.824568 9.368827 10.182305 9.874787 7.296286
## 5 9.102868 8.712080 6.939358 10.579510 7.827673 7.421391 10.288090
## 6 8.308236 7.872552 6.102614 9.757194 6.984348 6.691122 9.433902
##      Rpl39l      Rpl3l      Rpl4      Rpl5      Rpl6      Rpl7      Rpl7a
## 1 4.7624963 4.086512e+00 15.12597 7.480324 10.906253 13.24020 10.872497
## 2 4.0696711 3.324510e+00 14.61645 7.122246 10.266575 12.52023 10.159055
## 3 1.2951116 7.989833e-08 14.61923 5.650939 10.832082 12.89995 10.925546
## 4 0.2561494 4.084042e-08 12.87417 3.310118 9.249505 11.38854 9.516888
## 5 4.4094743 3.651274e+00 14.97532 7.478838 10.625195 12.87905 10.517656
## 6 3.6385296 3.001618e+00 13.93404 6.298903 9.715255 12.04841 9.681523
##      Rpl7l1      Rpl8      Rplp0      Rplp1      Rplp2      Rpn1      Rpn2
## 1 11.395006 15.29134 14.56389 14.56219 11.47002 13.66537 14.04749
## 2 10.737630 14.71804 13.79199 13.91836 10.77319 13.12233 13.59077
## 3 12.197134 14.38885 14.11370 13.14260 11.15699 11.86457 13.02091
## 4 10.681719 13.03054 12.48592 12.32070 10.13881 11.34646 12.43046
## 5 11.096322 15.07690 14.15085 14.27722 11.13189 13.48117 13.94962
## 6 10.203726 14.09940 13.37199 13.37028 10.27870 12.47353 12.85562
##      Rpp14      Rpp21      Rpp25      Rpp30      Rpp38      Rpp40      Rprd1a
## 1 9.864719 9.110096 7.1987452 9.759756 7.044187 7.280337 10.743818
## 2 9.798066 8.823231 7.1402848 8.881323 6.418941 7.138032 10.509560
## 3 10.729452 10.547394 0.9138537 11.038570 9.470761 7.925227 8.287857
## 4 8.975973 8.650240 0.2988158 10.116467 7.420647 6.470926 6.690859
## 5 10.156587 9.181407 7.4969060 9.239527 6.774095 7.494650 10.868221
## 6 8.674764 7.921535 6.0195903 8.569954 5.866475 6.100480 9.552938
##      Rprd1b      Rprd2      Rprm      Rprm1      Rps10      Rps11      Rps13
## 1 10.096775 10.853060 9.818000 6.417899 8.912708 14.47118 7.916780
## 2 9.901017 10.595316 9.931110 7.200990 8.236374 13.75215 7.378718
## 3 9.296633 9.202499 8.594562 1.147279 7.407018 13.81567 5.257913
## 4 7.568534 7.781378 6.704415 1.969275 6.147608 12.97030 3.164629
## 5 10.259563 10.953989 10.289663 7.557705 8.594198 14.11101 7.735684
## 6 8.906519 9.662100 8.628112 5.247881 7.724648 13.27928 6.732610
##      Rps14      Rps15      Rps15a      Rps16      Rps17      Rps18      Rps19
## 1 14.11969 13.82518 12.53475 7.623923 12.474941 7.767943 11.68321
## 2 13.36217 13.16820 11.77751 6.841271 11.715495 6.973997 11.05575

```



```

## 3 13.58642 12.73324 11.40889 6.812070 8.640544 11.340998 12.40480
## 4 12.24582 11.57633 9.90457 5.855716 7.434106 9.872517 11.12791
## 5 13.72102 13.52705 12.13630 7.197371 12.074279 7.330342 11.41448
## 6 12.92781 12.63333 11.34309 6.441505 11.283289 6.584619 10.49180
## Rps19bp1 Rps20 Rps21 Rps23 Rps24 Rps25 Rps26 Rps27
## 1 9.676284 13.22379 13.48519 7.283419 12.56266 11.50364 11.83063 7.592350
## 2 9.443038 12.56716 12.78133 6.393586 11.84550 10.80607 11.12359 7.251110
## 3 7.132752 11.79394 11.58957 7.219635 12.09635 11.62272 12.46808 5.373878
## 4 6.192245 10.63088 10.43334 5.604347 10.52654 10.73305 10.65730 2.979941
## 5 9.801460 12.92599 13.14016 6.748674 12.20429 11.16477 11.48233 7.607898
## 6 8.486613 12.03200 12.29337 6.103536 11.37098 10.31231 10.63917 6.410143
## Rps27a Rps27l Rps28 Rps29 Rps3 Rps4x Rps5 Rps6
## 1 8.743456 10.652952 9.128292 6.705550 15.69855 13.56695 15.03244 9.606320
## 2 7.902060 9.970436 8.518579 6.064039 14.99344 12.84275 14.27632 8.905560
## 3 7.918910 11.776319 9.343441 5.091212 15.18740 12.19648 14.89268 9.370554
## 4 6.996733 10.307935 7.892223 3.235424 13.83222 11.18026 13.24866 7.792435
## 5 8.259607 10.328998 8.876590 6.418153 15.35231 13.20158 14.63518 9.263775
## 6 7.555883 9.462144 7.939688 5.531588 14.50660 12.37513 13.84051 8.416764
## Rps6ka1 Rps6ka2 Rps6ka3 Rps6ka4 Rps6ka5 Rps6ka6 Rps6kb1
## 1 12.963102 9.941961 10.944583 11.43334 9.975574 9.102323 11.225966
## 2 13.571512 10.108977 10.712862 10.71636 9.537233 8.635230 11.148120
## 3 7.563792 6.473942 5.825465 6.29401 7.942719 7.065720 10.765491
## 4 8.115703 6.554673 5.505246 7.70890 4.755649 2.572092 6.879346
## 5 13.930365 10.467568 11.071551 11.07505 9.895683 8.993308 11.506859
## 6 11.771355 8.751901 9.753560 10.24204 8.785469 7.913780 10.034773
## Rps6kb2 Rps6kc1 Rps6kl1 Rps7 Rps8 Rps9 Rpsa
## 1 10.650904 11.469726 9.409714 8.463826 10.670483 14.97027 12.400326
## 2 10.246458 10.677556 9.519200 7.871122 9.917620 14.18351 11.787708
## 3 8.290605 8.877827 7.084796 8.659986 11.218103 14.45500 11.375649
## 4 2.138062 7.206742 5.451850 7.531536 10.234723 13.16947 9.797794
## 5 10.605074 11.036240 9.877645 8.228640 10.276169 14.54237 12.146497
## 6 9.460098 10.278409 8.220511 7.277195 9.479661 13.77834 11.208693
## Rptn Rptor Rpusd1 Rpusd2 Rpusd3 Rpusd4 Rqcd1
## 1 4.722024e-08 12.413731 9.259566 7.971776 7.061629 9.117384 11.060012
## 2 2.649813e-08 12.306067 8.912819 7.341650 8.274004 8.742532 10.641649
## 3 3.185340e+00 8.979039 9.038165 7.227643 6.143896 8.449662 11.001263
## 4 3.365975e+00 8.179239 8.975173 6.490977 3.980803 7.118677 9.525484
## 5 3.397946e-08 12.664883 9.271038 7.698565 8.631855 9.100667 11.000329
## 6 2.091604e-08 11.222094 8.070668 6.787314 5.883746 7.928806 9.868915
## Rrad Rraga Rragb Rragc Rragd Rras Rras2
## 1 10.198714 12.126868 10.753277 12.797591 10.639443 10.956707 12.230649
## 2 9.963457 11.235595 10.237890 12.166951 10.516638 10.137004 11.538879
## 3 5.692244 9.925548 7.165413 8.177418 8.633361 6.955846 6.687613
## 4 4.661708 9.474526 5.382046 7.744786 8.160683 7.237864 6.474147
## 5 10.322017 11.594341 10.596506 12.525761 10.875299 10.495600 11.897651
## 6 9.008340 10.935307 9.562390 11.605873 9.448645 9.765675 11.039060
## Rrbp1 Rreb1 Rrh Rrm1 Rrm2 Rrm2b Rrn3
## 1 13.466139 11.074002 3.270623e+00 11.079003 9.021780 9.815541 11.70915
## 2 13.175253 10.753381 2.104089e+00 10.960182 8.770290 9.013657 10.92797
## 3 9.270535 6.559069 5.800781e-08 12.221749 11.957200 8.382041 12.40421
## 4 7.777697 7.381838 3.491458e+00 9.118046 7.285530 6.946021 10.94296
## 5 13.534098 11.112076 2.387022e+00 11.318901 9.128440 9.371920 11.28668
## 6 12.274323 9.882897 2.261839e+00 9.887894 7.833434 8.625657 10.51774
## Rrnad1 Rrp1 Rrp12 Rrp15 Rrp1b Rrp36 Rrp7a

```

```

## 1  9.817110 13.42500 10.224956 9.087339  9.851822 10.445465 10.694997
## 2  9.797745 12.99203 10.300732 8.369832 10.402879  9.406613 10.457329
## 3  8.676045 11.39294  7.949860 9.254831  9.176449  9.454573  9.164000
## 4  5.405178 10.17164  7.059048 8.759150  6.019520  8.130636  7.281247
## 5 10.156267 13.35087 10.659359 8.727749 10.761523  9.765023 10.815981
## 6  8.627224 12.23319  9.034554 7.898832  8.661886  9.254839  9.504155
##      Rrp8      Rrp9      Rrs1      Rs1      Rsad1      Rsad2      Rsbn1
## 1 10.099745 10.961213 10.721526 3.8727217 8.989771 7.312981 10.041878
## 2  9.829490  9.704947  9.841925 2.9976148 8.555870 6.637045  9.473768
## 3  8.816965  9.078006  7.604007 2.9666983 6.531987 5.620620  7.148100
## 4  6.590592  8.207672  7.233967 0.3254837 1.009948 7.055874  6.658303
## 5 10.188019 10.063444 10.200457 3.3160988 8.913903 6.992723  9.832199
## 6  8.909486  9.770179  9.530663 2.8041742 7.801507 6.132853  8.851689
##      Rsbn1l      Rsf1      Rsl1d1      Rsl24d1      Rsph1      Rsph3a      Rsph3b
## 1 10.361107 11.735384 11.94003 10.238604 4.398035 7.992059 7.608134
## 2 10.085756 11.549862 11.22555  9.491159 4.501023 7.037782 6.710293
## 3  8.304750 10.287337 11.96173 11.109157 7.441319 7.861731 6.552225
## 4  6.409710  8.537643 10.61769 10.180041 5.486944 6.080485 5.564819
## 5 10.444342 11.908634 11.58430  9.849595 4.845780 7.394237 7.066129
## 6  9.170562 10.543955 10.74853  9.048187 3.292998 6.807493 6.425821
##      Rsph4a      Rsph9      Rspo1      Rspo2      Rspo3      Rspo4
## 1 5.649299  8.599671 6.4785911 5.108711e+00 5.745161 2.055339e+00
## 2 6.412058  8.077846 6.2372634 5.119862e+00 6.054025 2.103542e+00
## 3 4.960894 11.165199 0.3115656 9.277843e-08 2.133748 6.598453e-08
## 4 4.554969 10.134583 2.2762361 8.085050e-01 5.023628 2.991162e-08
## 5 6.767195  8.435547 6.5919177 5.469559e+00 6.408107 2.386445e+00
## 6 4.494526  7.412560 5.3076762 3.970518e+00 4.588026 1.256171e+00
##      Rspry1      Rsrc1      Rsrc2      Rsu1      Rtbdn      Rtdr1      Rtel1
## 1 10.609322  9.966505 12.208409 11.96706 5.9561415 1.341822e+00 10.631489
## 2 10.418926  9.826271 11.884328 11.37641 5.5383281 1.330132e+00 10.116716
## 3  9.520092  9.721028 11.590789 11.14710 0.5435474 3.624074e+00 8.470749
## 4  7.964841  8.261810  8.719214 10.41055 0.7849093 5.339869e-08 2.944117
## 5 10.777573 10.184799 12.243123 11.73517 5.8903430 1.556660e+00 10.475309
## 6  9.418550  8.776413 11.016825 10.77555 4.7943183 7.455477e-01 9.440698
##      Rtf1      Rtkn      Rtkn2      Rtl1      Rtn1      Rtn2      Rtn3
## 1 10.927766 13.269265  9.646510 5.002182e+00 14.37120 11.296835 15.18957
## 2 11.053577 12.664916  9.675027 3.867906e+00 13.79085 10.412551 14.56038
## 3  8.894222 10.069255  8.405661 5.787389e-08 13.25469  9.671364 12.26765
## 4  6.252771  8.738603  7.032839 1.024223e+00 13.90814  8.884346 12.14342
## 5 11.412307 13.023746 10.033516 4.204825e+00 14.14971 10.771197 14.91925
## 6  9.736754 12.077473  8.456887 3.868024e+00 13.17930 10.105604 13.99764
##      Rtn4      Rtn4ip1      Rtn4r      Rtn4rl1      Rtn4rl2      Rtp3      Rtp4
## 1 14.95153 9.532388 8.509581 10.648018 5.619340 5.8319246 7.708490
## 2 14.17049 8.773869 8.094015 10.906872 5.089155 5.4393701 6.643763
## 3 11.23775 8.916860 5.852609  4.011577 1.391790 0.6487171 8.547958
## 4 10.84579 7.934185 7.377832  8.457489 1.133701 3.4060220 8.973672
## 5 14.52935 9.132021 8.451729 11.265585 5.438655 5.7908964 6.999456
## 6 13.75960 8.342959 7.322784  9.457214 4.465337 4.6727805 6.525529
##      Rtttn      Rufy1      Rufy2      Rufy3      Rufy4      Rundc1      Rundc3a
## 1 8.578197 10.957699 11.288738 12.35599 5.023756e+00 10.911384 12.788073
## 2 8.939021 10.521335 10.753634 11.85521 4.372322e+00 10.186339 12.809344
## 3 6.179090  8.995695  8.987351 12.10797 6.020506e-08  8.090239  8.499978
## 4 4.169825  7.150476  6.995135 10.48984 3.059043e-08  8.265495  6.931399
## 5 9.297251 10.879998 11.112328 12.21401 4.715754e+00 10.544945 13.168179

```

```

## 6 7.391159 9.766667 10.097511 11.16436 3.888757e+00 9.720383 11.596357
## Rundc3b Runx1 Runx1t1 Runx2 Runx3 Rusc1 Rusc2
## 1 9.297168 10.011928 8.237900 5.456600 5.1405189 10.964084 13.102068
## 2 9.764993 9.590833 7.793674 5.751310 3.6870798 11.414868 12.378391
## 3 5.857345 3.919523 7.555355 4.204679 2.4554610 7.028749 7.200800
## 4 5.299724 7.140307 6.936155 1.802999 0.8791917 6.235699 5.513913
## 5 10.123506 9.949299 8.151118 6.104269 4.0210410 11.773631 12.737210
## 6 8.108191 8.821777 7.052174 4.307061 4.0011756 9.773048 11.910300
## Ruvb11 Ruvb12 Rwdd1 Rwdd2a Rwdd2b Rwdd3 Rwdd4a
## 1 8.814110 11.156778 9.541673 7.437467 8.647189 7.302793 10.415391
## 2 8.289869 11.045023 9.002691 7.273236 9.358525 6.552722 9.612021
## 3 9.070011 10.950496 7.155675 7.854730 6.830456 10.051569 8.955323
## 4 7.939119 8.896504 5.864789 7.288485 3.844990 8.123244 7.286385
## 5 8.647731 11.403751 9.360950 7.630056 9.716919 6.908207 9.970493
## 6 7.626327 9.965623 8.352228 6.256363 7.459920 6.122749 9.224793
## Rxfp1 Rxfp2 Rxfp3 Rxfp4 Rxra Rxrb
## 1 5.449556e+00 2.123900e+00 4.0060331 2.551837e+00 11.855351 12.412679
## 2 5.633799e+00 2.843121e+00 3.5764308 2.082433e+00 11.661711 11.799123
## 3 5.129898e-08 1.739419e+00 0.3415999 5.393521e-01 7.840602 8.209313
## 4 2.223766e-08 6.555929e-08 0.5147230 1.046661e-07 7.837975 7.383369
## 5 5.986255e+00 3.156969e+00 3.9083874 2.364186e+00 12.020492 12.157913
## 6 4.300222e+00 1.308791e+00 2.9270333 1.649462e+00 10.663878 11.221042
## Rxrg Rybp Ryk Ryr1 Ryr2 Ryr3 S100a1
## 1 7.806709e+00 10.357466 11.415026 7.509878 8.929983 8.922287 12.73694
## 2 8.036181e+00 10.009393 10.668095 7.418901 8.910383 9.848561 12.18267
## 3 4.701099e+00 6.938682 9.552288 8.648653 5.375237 2.581963 13.00476
## 4 1.270016e-07 6.230818 8.816173 5.946453 9.405995 5.696282 12.65138
## 5 8.393847e+00 10.367963 11.026778 7.775919 9.268600 10.207095 12.54148
## 6 6.623157e+00 9.166925 10.223736 6.328244 7.741877 7.734201 11.54524
## S100a10 S100a11 S100a13 S100a14 S100a16 S100a3 S100a4 S100a6
## 1 8.044940 8.273598 11.82607 5.271088 14.31715 7.411472 8.653725 11.42517
## 2 7.358069 7.395717 11.16317 4.445931 13.68865 6.820108 7.774033 10.80108
## 3 11.614554 9.925681 11.30654 7.010863 13.67882 2.253755 7.015911 11.65722
## 4 8.533807 8.018853 11.14283 6.499805 13.11957 2.034734 6.647671 10.05450
## 5 7.715006 7.752705 11.52191 4.790135 14.04750 7.176168 8.131458 11.15978
## 6 6.860108 7.087719 10.63461 4.127270 13.12526 6.230565 7.466435 10.23387
## S100a7a S100a8 S100a9 S100b S100pbp S1pr1 S1pr2
## 1 4.3972088 6.937959e+00 8.8363650 14.409548 8.742503 13.93894 9.366979
## 2 4.1055628 7.575312e+00 7.8659914 13.912297 8.800514 13.21775 9.212957
## 3 1.3414961 2.311390e-01 0.7626616 9.458189 6.254975 12.73717 5.420691
## 4 0.2935881 7.599257e-08 1.0177442 11.530621 5.619030 12.39944 4.664198
## 5 4.4458377 7.932521e+00 8.2235055 14.271155 9.158679 13.57660 9.571299
## 6 3.2922200 5.761332e+00 7.6485177 13.217651 7.554933 12.74708 8.177860
## S1pr3 S1pr4 S1pr5 Saa11 Sac3d1 Sacm11 Sacs
## 1 8.946040 8.455520 12.506645 9.389989 9.396929 11.365214 7.713876
## 2 8.991796 8.019297 11.298802 9.226909 8.477546 10.802571 7.250073
## 3 10.221566 3.007544 7.567149 10.336559 6.562170 10.155644 5.216001
## 4 8.194017 3.751447 7.706694 6.579942 4.592806 9.635255 2.697371
## 5 9.350049 8.376949 11.657554 9.585257 8.835532 11.161272 7.606860
## 6 7.757890 7.268920 11.314987 8.200825 8.207751 10.173948 6.530882
## Sae1 Safb Safb2 Sag Sall1 Sall2 Sall3
## 1 11.916365 12.111819 12.046193 5.497569 12.059388 11.149667 11.158081
## 2 11.290288 12.025970 11.823196 5.097636 11.951898 11.274979 11.663447
## 3 11.544400 8.142689 7.821498 1.253865 9.891485 9.922379 5.653842

```

```

## 4 9.859787 6.061854 5.388757 3.357329 8.809701 7.510554 6.870605
## 5 11.649040 12.384772 12.181987 5.447190 12.310697 11.633730 12.022228
## 6 10.724871 10.920263 10.854657 4.346859 10.867847 9.958517 9.966926
##      Samd1      Samd10      Samd12      Samd14      Samd3      Samd4      Samd5
## 1 10.971718 8.782622 6.479644 11.595206 6.626096 10.254726 7.588787
## 2 10.734910 8.754930 6.318315 11.111891 5.877600 9.655202 7.205842
## 3 7.680585 8.927208 5.407143 8.343664 2.690236 7.976296 7.209823
## 4 5.129145 5.567771 2.870727 4.994475 5.210232 6.696483 2.231757
## 5 11.093602 9.113072 6.673201 11.470626 6.231056 10.013686 7.562564
## 6 9.780677 7.594931 5.308713 10.403834 5.453148 9.064291 6.406604
##      Samd8      Samd9l      Samhd1      Samm50      Samsn1      Sap130      Sap18
## 1 12.62040 9.100939 10.692271 12.054593 9.940850 11.082632 10.034845
## 2 12.23682 8.319657 10.357320 11.685814 9.102986 10.964667 9.928776
## 3 11.39337 6.225951 7.750155 9.464993 4.550659 8.231979 9.903320
## 4 10.81579 4.804722 8.656405 8.297660 9.788428 7.133806 8.661560
## 5 12.59563 8.677540 10.715957 12.044596 9.461286 11.323386 10.287328
## 6 11.42872 7.912399 9.501431 10.863054 8.750792 9.891521 8.844665
##      Sap30      Sap30bp      Sap30l      Sar1a      Sar1b      Sardh      Sarm1
## 1 10.450247 11.320486 9.964975 13.42551 12.23746 10.926315 10.585263
## 2 10.088518 11.043927 10.244000 12.90468 11.52911 10.253665 10.752033
## 3 7.631579 11.084371 6.312728 11.76369 12.78101 8.743231 7.425015
## 4 4.833647 9.160106 4.799191 11.19930 12.02831 7.149088 5.809979
## 5 10.447105 11.402655 10.602617 13.26352 11.88788 10.612283 11.110728
## 6 9.259616 10.129242 8.774885 12.23369 11.04586 9.735304 9.394511
##      Sarnp      Sars      Sars2      Sart1      Sart3      Sash1      Sash3
## 1 8.361576 13.37803 9.528105 11.634381 11.585229 13.617401 10.845810
## 2 7.371452 12.87715 9.412789 11.438774 11.118174 13.027789 11.554081
## 3 9.907271 12.87683 8.306865 7.833767 7.861958 8.499934 3.506296
## 4 8.150547 11.19345 4.931953 6.547787 5.912568 8.114081 7.470505
## 5 7.728408 13.23599 9.771201 11.797538 11.476910 13.386630 11.912854
## 6 7.175338 12.18622 8.338684 10.442993 10.393862 12.425568 9.654855
##      Sass6      Sat1      Sat2      Satb1      Satb2      Sav1      Sbd5
## 1 7.762425 13.99080 9.190113 11.290431 7.441408e+00 10.868907 12.100945
## 2 7.631742 13.39500 8.307672 10.800662 7.287156e+00 10.240536 11.808658
## 3 9.228526 11.57684 8.828393 10.172789 3.925779e+00 7.583661 11.658008
## 4 4.739002 10.66314 6.890835 7.423053 7.851019e-08 6.246556 9.604738
## 5 7.989015 13.75385 8.665547 11.159362 7.643996e+00 10.599152 12.167448
## 6 6.579134 12.79894 8.001367 10.099203 6.260275e+00 9.677935 10.909393
##      Sbf1      Sbf2      Sbk1      Sbk2      Sbn01      Sbn02      Sbsn
## 1 14.485225 12.562926 13.238537 1.7126640 11.98549 12.043565 7.051157
## 2 14.251953 12.381771 12.647797 1.5246452 11.86354 11.854030 6.222511
## 3 9.196919 9.383573 10.450229 1.6053434 11.32139 6.791494 8.916104
## 4 8.457988 8.328243 6.827951 0.3551306 10.07726 5.866068 8.332822
## 5 14.610815 12.740590 13.006627 1.7685396 12.22234 12.212823 6.577122
## 6 13.293324 11.371255 12.046749 1.0021530 10.79398 10.852030 5.873377
##      Sc5d      Scaf1      Scaf11      Scaf4      Scaf8      Scai      Scamp1
## 1 12.62756 12.571004 11.969536 11.174351 11.964546 11.438695 12.70331
## 2 11.86924 12.606727 11.874997 10.147101 11.477321 11.110153 12.25378
## 3 11.58005 8.120040 10.081382 6.804300 9.081747 9.446871 11.16252
## 4 10.58778 6.996566 8.188239 6.920379 6.958009 8.012925 11.35737
## 5 12.22804 12.965555 12.233791 10.505700 11.836088 11.468888 12.61260
## 6 11.43587 11.379332 10.778024 9.983186 10.773036 10.247393 11.51161
##      Scamp2      Scamp3      Scamp4      Scamp5      Scand1      Scap      Scaper
## 1 13.38908 11.79984 11.80655 14.564597 11.037542 13.222046 10.393996

```

```

## 2 12.90869 11.36236 11.26353 13.877911 10.252802 12.644681 10.264216
## 3 11.68365 11.01626 11.61131 9.605686 3.623346 8.928144 9.444213
## 4 10.82039 10.81486 11.16837 10.342151 2.201362 8.777708 7.601828
## 5 13.26753 11.72112 11.62228 14.236769 10.611420 13.003510 10.622836
## 6 12.19728 10.60839 10.61510 13.372691 9.846459 12.030261 9.203419
##      Scara3      Scara5      Scarb1      Scarb2      Scarf1      Scarf2      Sccpdh
## 1 10.074491 3.157374 13.069671 14.023518 10.453818 8.143035 13.36968
## 2 9.590174 3.529928 12.195989 13.090927 10.113135 8.398982 12.41173
## 3 9.265715 2.775108 8.966829 9.006999 4.574750 4.573743 10.97752
## 4 9.035264 4.039981 9.194520 9.514479 6.208946 2.894335 10.30627
## 5 9.948640 3.860994 12.554800 13.449770 10.471727 8.756918 12.77055
## 6 8.884263 2.162513 11.877908 12.831648 9.263184 6.957733 12.17787
##      Scd1      Scd2      Scd3      Scd4      Scel      Scfd1      Scfd2
## 1 14.812714 17.96167 6.361947 3.838322e+00 7.749723 10.487220 9.964455
## 2 14.212346 17.50989 5.892615 3.945782e+00 7.034322 10.262705 10.191736
## 3 10.689345 15.23705 7.044965 2.295310e+00 4.168942 10.644444 8.329345
## 4 9.544603 13.71724 5.080773 5.533561e-08 4.426145 8.519631 6.481493
## 5 14.571208 17.86877 6.246127 4.283862e+00 7.390771 10.621325 10.550343
## 6 13.620796 16.76969 5.192792 2.772618e+00 6.566509 9.296554 8.774365
##      Scg2      Scg3      Scg5      Scgb1c1      Scgb3a1      Scgn      Schip1
## 1 10.540949 13.76959 12.31101 1.540201e+00 6.929911 2.232838 8.057372
## 2 10.373654 13.35240 11.86554 2.012726e+00 7.929657 2.695037 7.660964
## 3 8.551649 13.35618 13.21278 5.796545e-08 2.561712 3.364846 7.834897
## 4 11.824783 12.11244 12.43460 2.584363e-08 1.853956 3.089008 6.927534
## 5 10.732293 13.71124 12.22433 2.290554e+00 8.287230 3.003933 8.018269
## 6 9.350235 12.57774 11.11940 8.803353e-01 5.753369 1.393559 6.872478
##      Scin      Sclt1      Sclly      Scmh1      Scml2      Scml4      Scn10a
## 1 2.191839e+00 8.786378 10.049771 11.105505 7.426474 7.421071 2.353516e+00
## 2 1.688885e+00 8.780828 9.632017 10.932391 7.635627 7.909584 1.790602e+00
## 3 1.123598e+00 6.329006 8.605597 9.048209 4.573315 2.790308 5.648867e-08
## 4 8.857824e-08 5.355051 7.259788 7.004819 1.719765 1.216890 2.868373e-08
## 5 1.945593e+00 9.138983 9.990495 11.291107 7.992905 8.267139 2.054495e+00
## 6 1.361492e+00 7.598676 8.859573 9.914380 6.245453 6.240092 1.489062e+00
##      Scn11a      Scn1a      Scn1b      Scn2a1      Scn2b      Scn3a      Scn3b
## 1 3.044660 9.324421 10.540136 10.697608 9.330357 10.879026 11.187939
## 2 2.784030 8.706756 10.828848 10.338273 9.302208 10.362143 11.278593
## 3 1.462871 4.917809 3.027002 8.738505 8.969541 9.519674 8.564528
## 4 2.202777 6.475713 6.786145 10.694663 12.379112 10.277155 10.624223
## 5 3.095965 9.064873 11.187552 10.696906 9.660583 10.720780 11.637344
## 6 2.064627 8.135388 9.349423 9.506764 8.141312 9.688048 9.996767
##      Scn4a      Scn4b      Scn5a      Scn7a      Scn8a      Scn9a      Scnm1
## 1 3.705094e+00 6.7920265 5.9729119 3.165654 11.526464 7.111222 9.449933
## 2 3.938768e+00 5.8527966 4.9938000 4.658885 11.319170 7.074524 8.876628
## 3 3.982054e-08 0.7977603 0.3239384 2.492845 8.787120 2.821521 10.732571
## 4 1.729420e-08 3.8892682 0.6160598 2.642629 9.869184 4.760975 9.079840
## 5 4.276747e+00 6.2061583 5.3426567 5.005112 11.677924 7.431039 9.234830
## 6 2.651004e+00 5.6170233 4.8107440 2.169742 10.335122 5.932866 8.260654
##      Scnn1a      Scnn1b      Scnn1g      Sco1      Scoc      Scp2      Scpep1
## 1 5.123015 3.409777 1.5523166 9.162683 10.288431 12.01375 11.546017
## 2 5.121102 3.034162 0.9514460 8.758240 9.555161 11.44063 10.882939
## 3 4.196406 2.588062 1.9735129 8.162844 10.546461 12.09410 10.742638
## 4 4.760376 1.654724 4.8946241 6.422514 10.526960 10.49826 9.936052
## 5 5.470808 3.353670 1.1357980 9.116384 9.913617 11.79939 11.241649
## 6 3.984302 2.385144 0.8887546 7.973999 9.097961 10.82222 10.354666

```

```

##      Scrg1      Scrib      Scrn1      Scrn2      Scrn3      Scrt1      Scrt2
## 1 12.34354 12.551041 12.035393 8.553262 9.332443 10.110678 7.056881
## 2 11.64739 12.552910 12.257484 8.735930 9.056490 10.324379 6.568381
## 3 12.82810 6.272879 9.543332 7.743786 8.916844 2.348026 8.424538
## 4 12.47565 5.652826 6.765784 2.732833 6.754866 2.032455 3.286215
## 5 12.00617 12.911736 12.616298 9.094062 9.414771 10.683009 6.923902
## 6 11.15192 11.359373 10.843860 7.366310 8.143393 8.920406 5.879045
##      Sct      Sctr      Scube1      Scube2      Scube3      Scx      Scyl1
## 1 2.624416e+00 8.568051 9.403424 6.4440991 9.163710 5.9963502 12.223043
## 2 1.832934e+00 7.483736 9.206903 5.3873018 8.457882 5.9317194 12.015784
## 3 2.136874e+00 5.491397 4.393354 0.7498919 1.949697 2.2162212 9.111882
## 4 5.281546e-08 4.944177 1.718618 1.0334853 1.833991 0.3751896 5.745159
## 5 2.099662e+00 7.840835 9.565243 5.7385572 8.815855 6.2853753 12.374586
## 6 1.709180e+00 7.381048 8.214233 5.2736899 7.975024 4.8337071 11.031456
##      Scyl2      Scyl3      Sdad1      Sdc1      Sdc2      Sdc3      Sdc4
## 1 10.780461 10.292839 10.351469 9.092624 11.138133 14.73613 12.69460
## 2 10.162262 9.746868 10.487638 8.468607 10.520017 14.28711 11.97459
## 3 6.936297 7.675211 9.180168 7.128378 12.269835 10.16385 13.89574
## 4 2.674398 5.872524 6.050944 5.543226 11.503776 10.51191 12.81246
## 5 10.520863 10.105376 10.846295 8.826588 10.878679 14.64597 12.33339
## 6 9.589553 9.102364 9.160934 7.904105 9.946990 13.54421 11.50290
##      Sdcbp      Sdcbp2      Sdccag3      Sdccag8      Sdf2      Sdf211      Sdf4
## 1 14.02936 7.372461 12.561197 9.848786 12.25782 10.847792 13.99040
## 2 13.26258 7.242255 11.849186 9.652810 11.50474 10.302757 13.36225
## 3 12.89243 5.254394 8.578458 9.637038 12.35283 7.495626 12.56827
## 4 12.32175 4.888227 8.404009 7.966706 12.10083 8.136113 12.11904
## 5 13.62142 7.599030 12.207979 10.011294 11.86351 10.661384 13.72110
## 6 12.83749 6.191857 11.369526 8.658854 11.06623 9.656835 12.79853
##      Sdha      Sdhaf1      Sdhaf2      Sdhb      Sdhc      Sdhd      Sdk1
## 1 13.28244 10.263059 10.470547 12.96025 12.36121 12.51641 10.194487
## 2 12.75252 9.624086 9.782923 12.26568 11.68917 11.82895 9.478944
## 3 13.08305 5.890977 10.766334 13.13371 12.41560 12.59675 4.146762
## 4 12.54145 7.880403 9.453597 12.18989 11.47906 11.93757 1.256938
## 5 13.11135 9.982562 10.141441 12.62450 12.04796 12.18774 9.837377
## 6 12.09064 9.072616 9.279897 11.76850 11.16958 11.32475 9.004118
##      Sdk2      Sdpr      Sdr16c5      Sdr39u1      Sdr42e1      Sdr9c7
## 1 8.883154 11.184424 0.14254234 10.099831 8.249634 4.487031e-08
## 2 8.291799 10.981328 0.08612184 9.494590 8.488092 4.126958e-08
## 3 2.894153 6.793891 2.50496796 9.632923 6.455498 2.900612e+00
## 4 2.601781 6.948622 3.40459373 9.136558 7.396733 3.774226e+00
## 5 8.649662 11.340050 0.10953282 9.853028 8.846085 5.292140e-08
## 6 7.695174 9.993254 0.06485048 8.909571 7.063857 1.987514e-08
##      Sds      Sds1      Sebox      Sec11a      Sec11c      Sec13      Sec1411
## 1 6.100981e+00 6.411851 1.980718 11.71574 11.99783 12.60009 13.310879
## 2 5.704390e+00 6.135627 2.400976 10.88827 11.10890 11.72448 12.938116
## 3 5.377483e-08 7.385759 3.882421 12.29265 11.30768 12.04032 8.820789
## 4 2.635863e-08 4.290099 0.302082 11.36498 11.59347 11.24831 9.328511
## 5 6.057153e+00 6.489972 2.698334 11.24698 11.46763 12.08326 13.296955
## 6 4.936306e+00 5.241925 1.199561 10.52432 10.80631 11.40841 12.119082
##      Sec1412      Sec1413      Sec1415      Sec16a      Sec16b      Sec22a      Sec22b
## 1 11.035351 3.169549 9.760870 12.402549 5.069782 10.264998 11.117953
## 2 10.802788 3.144850 9.675004 11.930233 5.160076 9.529261 10.866322
## 3 7.086620 3.498801 5.555820 9.464119 3.656566 10.885880 10.732847
## 4 6.429834 5.761370 1.488101 8.699431 2.152862 10.313789 9.228521

```

```

## 5 11.161489 3.467302 10.033493 12.289030 5.510027 9.887709 11.225030
## 6 9.844269 2.173144 8.571067 11.210915 3.933031 9.074552 9.926821
##      Sec22c      Sec23a      Sec23b      Sec23ip      Sec24a      Sec24b      Sec24c
## 1 10.438474 11.678259 12.17982 11.036836 11.192844 11.526998 12.772406
## 2 10.408924 11.454574 11.51870 10.432595 10.446041 11.179432 12.505608
## 3 7.278728 11.126314 11.11801 10.798089 9.332087 8.678138 10.943050
## 4 6.214278 9.129079 10.71664 9.872999 9.225556 7.922627 9.211367
## 5 10.767569 11.813339 11.87747 10.791244 10.804692 11.538173 12.864432
## 6 9.247854 10.486853 10.98824 9.845753 10.001669 10.335656 11.580693
##      Sec24d      Sec31a      Sec31b      Sec61a1      Sec61a2      Sec61b      Sec61g
## 1 10.670368 12.549128 4.706480e+00 14.02069 11.708996 10.206068 6.953666
## 2 10.602286 12.340881 4.657871e+00 13.28968 11.343291 9.534878 6.427572
## 3 8.228561 10.203994 3.566277e+00 12.88003 10.594290 10.968657 6.291557
## 4 6.663528 9.366625 1.075247e-07 12.23918 9.231578 9.134493 5.100994
## 5 10.960960 12.699698 5.004089e+00 13.64853 11.702047 9.893328 6.782749
## 6 9.479545 11.357460 3.585136e+00 12.82882 10.517578 9.015687 5.776873
##      Sec62      Sec63      Secisbp2      Secisbp2l      Sectm1a      Seh1l      Sel1l
## 1 12.74487 12.320845 10.371891 14.26050 5.272364 10.993479 13.41366
## 2 12.14617 12.278450 10.039444 13.54744 4.806070 10.371468 12.99022
## 3 12.77890 9.661463 8.419660 11.33535 1.052843 10.732496 10.46890
## 4 11.96579 7.771169 7.502908 10.39782 1.177809 9.782036 10.40094
## 5 12.50498 12.637265 10.398021 13.90629 5.153528 10.730107 13.34906
## 6 11.55316 11.129231 9.181336 13.06861 4.128505 9.802423 12.22185
##      Sel1l2      Sel1l3      Sele      Selenbp1      Selenbp2      Selk      Sell
## 1 2.087771e+00 9.813926 6.407462e+00 8.806865 5.030062 12.53806 4.349478
## 2 6.932680e-01 9.731000 5.735632e+00 8.950204 4.735494 11.68567 3.194288
## 3 4.200538e-08 9.271664 5.861686e-08 9.329078 4.335239 13.63710 1.023022
## 4 1.974662e-08 6.551459 2.985735e-08 7.685025 1.972334 12.82632 6.387100
## 5 8.408341e-01 10.089505 6.088526e+00 9.308440 5.082378 12.04445 3.517981
## 6 1.280991e+00 8.624044 5.237603e+00 7.619103 3.894820 11.34639 3.247320
##      Selm      Selp      Selplg      Sema3a      Sema3b      Sema3c      Sema3d
## 1 11.67027 4.761530e+00 15.748240 6.039473 6.414433 10.773995 11.669996
## 2 11.04160 5.547034e+00 15.593089 6.437838 6.208572 10.016759 11.121814
## 3 12.35115 3.409009e-01 7.108119 9.049554 5.891278 11.039080 6.228951
## 4 11.23643 1.241796e-07 12.390419 5.419295 1.939929 8.288048 7.007312
## 5 11.40033 5.899090e+00 15.951962 6.793041 6.563141 10.375331 11.480550
## 6 10.47887 3.637608e+00 14.556291 4.875975 5.244469 9.583092 10.478593
##      Sema3e      Sema3f      Sema3g      Sema4a      Sema4b      Sema4c      Sema4d
## 1 8.165109 8.072554 1.009093e+01 12.001365 12.085838 12.187816 15.053703
## 2 7.763442 7.348503 9.281078e+00 11.547286 11.399879 11.459237 14.578062
## 3 8.181834 2.705050 1.774582e+00 8.215636 9.273191 6.305856 9.869224
## 4 5.768604 3.134101 5.020443e-08 9.449530 8.743059 4.779921 9.927764
## 5 8.120856 7.705428 9.639446e+00 11.906059 11.758640 11.818003 14.936927
## 6 6.979706 6.887586 8.900684e+00 10.809843 10.894290 10.996238 13.861775
##      Sema4f      Sema4g      Sema5a      Sema5b      Sema6a      Sema6b      Sema6c
## 1 10.374893 12.089031 13.48707 12.342030 13.442254 11.005649 10.4651076
## 2 10.656299 12.154058 13.23871 11.531815 12.814320 10.745717 9.6233634
## 3 6.126391 8.242172 10.40785 9.300448 9.693188 6.218819 2.9910866
## 4 7.123602 4.796917 11.20394 8.297632 8.973452 6.037911 0.8187039
## 5 11.014980 12.512867 13.59756 11.890586 13.173155 11.104411 9.9818388
## 6 9.184334 10.897481 12.29525 11.150411 12.250440 9.814586 9.2744628
##      Sema6d      Sema7a      Senp1      Senp2      Senp3      Senp5      Senp6
## 1 13.45060 13.720405 10.537328 11.511202 11.821858 11.342371 12.026853
## 2 13.11449 12.500995 10.067396 11.164454 11.481991 11.000315 11.876402

```

```

## 3 10.28758 6.257957 9.382148 8.954288 8.679014 7.767953 9.659776
## 4 8.85830 7.078453 4.588469 7.277557 6.891893 6.885675 8.467985
## 5 13.47333 12.859819 10.425978 11.523194 11.840758 11.359039 12.235197
## 6 12.25879 12.528562 9.346617 10.319867 10.630397 10.151116 10.835323
##      Snp7      Snp8      Sephs1      Sephs2      Sepn1      Sepp1      Sepsecs
## 1 10.650048 7.424194 11.519628 11.082886 12.416072 16.38824 8.091993
## 2 9.851469 6.886212 11.410616 10.374475 11.622382 15.74469 8.317898
## 3 9.486519 9.638161 10.421230 9.781597 9.309193 13.06949 6.304721
## 4 7.990463 8.310381 7.842506 9.513125 8.352570 13.97719 4.654331
## 5 10.210003 7.242398 11.769378 10.733114 11.981160 16.10356 8.675780
## 6 9.459242 6.243190 10.328289 9.891775 11.224435 15.19627 6.906932
##      Sepw1      Serac1      Serbp1      Serf1      Sergef      Serhl      Serinc1      Serinc2
## 1 14.07696 9.935561 13.20299 9.324757 8.960161 9.288925 14.74542 7.650531
## 2 13.42632 9.242870 12.83542 8.871655 8.387403 8.583946 14.24230 7.692945
## 3 14.94729 8.457302 11.69739 11.397795 9.021223 8.267606 13.44878 8.460952
## 4 14.12987 5.764398 10.55903 8.027439 5.688340 8.066831 13.58808 4.720151
## 5 13.78517 9.601224 13.19426 9.229855 8.745331 8.941996 14.60116 8.050285
## 6 12.88509 8.745509 12.01120 8.135723 7.771974 8.099965 13.55350 6.467939
##      Serinc3      Serinc4      Serinc5      Serp1      Serp2      Serpina10
## 1 15.51989 7.292302e+00 14.486993 12.707858 9.468207 1.500610e+00
## 2 14.71242 7.120507e+00 13.741754 12.128690 9.413615 1.234095e+00
## 3 11.40136 4.288523e+00 10.270554 9.354359 6.630590 7.537847e-08
## 4 12.55548 7.087672e-08 9.742792 9.145782 5.562435 3.718274e-08
## 5 15.07129 7.477098e+00 14.100609 12.487498 9.772027 1.451058e+00
## 6 14.32795 6.112346e+00 13.295092 11.516157 8.278895 8.529711e-01
##      Serpina12      Serpina3c      Serpina3f      Serpina3g      Serpina3i      Serpina3m      Serpina3n
## 1 0.6425030 0.13132544 5.702020 5.9077824 4.9878053 3.984561 9.179965
## 2 0.3868063 0.09259400 5.522629 5.5813410 3.7799606 4.018363 9.220540
## 3 4.4711387 3.25132440 2.672637 0.7522834 0.8047318 3.894144 9.206931
## 4 5.6684746 1.40564830 3.717622 1.6496816 0.5049547 4.734877 10.528684
## 5 0.4795354 0.11769367 5.874569 5.9335580 4.1154877 4.357471 9.578885
## 6 0.3195517 0.05962285 4.545929 4.7469756 3.8542140 2.907186 7.991242
##      Serpina9      Serpinb12      Serpinb1a      Serpinb1b      Serpinb1c      Serpinb2      Serpinb3a
## 1 1.2812366 2.150879 6.893129 3.261050 3.2181032 2.767016 2.615425e-08
## 2 1.4485164 1.957356 5.474114 3.265250 0.7894464 2.200188 1.793378e-08
## 3 1.9818432 3.726050 10.841047 4.906010 0.2110761 2.923227 4.882328e+00
## 4 1.9603675 5.245239 10.216192 4.402611 0.4795197 3.747614 5.669726e+00
## 5 1.6859156 2.231920 5.825815 3.590652 0.9516024 2.488134 2.299709e-08
## 6 0.7055621 1.329653 5.716984 2.253406 2.2156575 1.828004 1.158493e-08
##      Serpinb3b      Serpinb3c      Serpinb5      Serpinb6a      Serpinb6b      Serpinb6c
## 1 2.296588e-08 2.965099e-08 0.29163540 10.918500 9.792553 1.2313844
## 2 1.410834e-08 1.999254e-08 0.13142087 10.531332 9.716496 1.1742982
## 3 2.125709e+00 1.625863e+00 5.47759389 10.751102 4.896131 1.7699678
## 4 2.689241e+00 3.267221e+00 5.68975197 9.290198 4.857455 0.8503986
## 5 1.809161e-08 2.563712e-08 0.16645325 10.889996 10.074997 1.3849420
## 6 1.017266e-08 1.313380e-08 0.13636249 9.727494 8.602702 0.6730836
##      Serpinb7      Serpinb8      Serpinb9      Serpinb9b      Serpinc1      Serpind1      Serpine1
## 1 0.14330539 5.741528 9.613165 4.059980e+00 3.257912 7.633472 11.284994
## 2 0.09513412 5.493927 8.717764 2.683887e+00 3.003175 6.547778 11.533790
## 3 2.78120046 6.552077 8.224796 6.896389e-08 5.356593 8.162448 1.418202
## 4 3.57401040 4.003387 8.372967 3.555600e-08 3.098925 4.629644 2.771841
## 5 0.12089395 5.845727 9.075887 2.992389e+00 3.321817 6.903251 11.892562
## 6 0.06520687 4.584480 8.423597 2.976996e+00 2.250644 6.450992 10.093769
##      Serpine2      Serpine3      Serpinf1      Serpinf2      Serping1      Serpinh1      Serpini1

```



```

## 1 14.62158 3.854152 11.825585 4.927826e+00 7.274646 14.01229 9.604581
## 2 13.87206 3.351881 11.123463 6.415702e+00 6.461506 12.94654 9.083568
## 3 12.51881 4.643525 9.123978 2.815658e-06 11.520834 11.40085 9.882994
## 4 12.69162 3.947757 9.680334 2.496189e+00 8.685257 10.09803 9.397410
## 5 14.23092 3.679255 11.482199 6.770848e+00 6.816769 13.30538 9.441860
## 6 13.42967 2.787132 10.634123 3.796658e+00 6.094837 12.82042 8.415027
##      Sertad1      Sertad2      Sertad3      Sertad4      Sesn1      Sesn2      Sesn3
## 1 11.511852 11.421621 9.559941 8.359839 11.84160 10.650289 11.447692
## 2 10.797364 11.012682 8.517922 8.259023 11.10597 10.122070 10.744739
## 3 7.621187 9.095627 8.732191 8.238837 10.71668 4.740623 7.811287
## 4 7.973296 7.462208 7.385666 4.576842 10.62329 2.549924 7.200647
## 5 11.156064 11.371407 8.875933 8.616863 11.46470 10.480663 11.103433
## 6 10.320517 10.230328 8.370464 7.173607 10.65013 9.459483 10.256386
##      Setd1      Set      Setbp1      Setd1a      Setd2      Setd3      Setd4
## 1 11.531569 12.01959 10.693293 11.743382 12.088439 12.279635 7.758600
## 2 11.348878 11.25502 10.613951 11.738546 12.262199 11.837933 7.572050
## 3 9.312893 13.48727 10.159372 7.935644 9.669628 9.272838 6.967340
## 4 6.747459 11.86275 7.245809 6.263131 7.628319 7.967872 3.369211
## 5 11.707635 11.61376 10.972627 12.097332 12.621013 12.196725 7.929256
## 6 10.340225 10.82807 9.502453 10.551950 10.896890 11.088032 6.575332
##      Setd5      Setd6      Setd7      Setd8      Setdb1      Setdb2      Setmar
## 1 12.958889 8.227762 12.186782 12.136194 11.646664 8.500190 6.689583
## 2 12.343075 7.659103 11.929866 11.734053 10.847780 8.760337 6.038876
## 3 8.766918 6.612882 8.687820 9.898345 9.613349 6.319075 6.624719
## 4 7.573983 4.330564 8.030679 7.751682 8.572093 1.286881 7.910568
## 5 12.701893 8.016407 12.288663 12.092839 11.206487 9.118482 6.392906
## 6 11.767143 7.042080 10.995205 10.944630 10.455270 7.313426 5.515821
##      Setx      Sez6      Sez6l      Sez6l2      Sf1      Sf3a1      Sf3a2
## 1 11.680586 11.334595 13.385161 12.95143 13.544504 12.413692 10.837122
## 2 11.287539 11.330665 13.293086 12.30056 13.197766 11.947222 10.652401
## 3 9.192543 8.309937 7.616827 10.20598 10.155882 11.298248 8.909591
## 4 8.128381 6.879974 10.513925 11.32321 8.300148 9.762703 6.609010
## 5 11.646291 11.689420 13.651933 12.65937 13.556612 12.306020 11.011082
## 6 10.489179 10.143345 12.193354 11.75968 12.352678 11.222055 9.646173
##      Sf3a3      Sf3b1      Sf3b2      Sf3b3      Sf3b4      Sf3b5      Sfi1
## 1 10.569290 14.18436 13.47698 12.423730 9.995347 10.889865 11.118606
## 2 10.518358 13.77790 13.45612 12.098051 9.725706 10.294037 9.818090
## 3 10.729492 12.61524 12.82177 11.516896 9.189764 11.580774 8.319116
## 4 8.145259 10.45978 10.61799 9.597552 7.550040 10.474016 7.800039
## 5 10.877020 14.13676 13.81497 12.456857 10.084209 10.652663 10.176616
## 6 9.378552 12.99248 12.28516 11.232091 8.805217 9.698879 9.927473
##      Sfmbt1      Sfmbt2      Sfn      Sfpq      Sfr1      Sfrp1      Sfrp2
## 1 10.820880 7.946864 5.526336 14.046872 12.04832 10.372772 7.254930
## 2 10.148512 8.631136 4.731255 13.411136 11.59265 10.214062 7.045033
## 3 8.720146 4.376324 7.729425 11.829258 12.10108 11.505183 5.412402
## 4 7.029594 3.578059 7.723879 9.757363 10.31139 6.450844 4.665737
## 5 10.507111 8.989212 5.078103 13.769986 11.95142 10.572673 7.401500
## 6 9.629943 6.762533 4.374824 12.855000 10.85678 9.182215 6.075287
##      Sfrp4      Sfrp5      Sfswap      Sft2d1      Sft2d2      Sft2d3      Sftpc
## 1 7.979873 5.887963e+00 11.856425 10.691722 12.670145 9.483236 5.302595
## 2 7.341613 6.524122e+00 11.723305 9.885619 11.970998 8.804936 4.443855
## 3 7.394258 9.562590e-01 8.180366 8.126257 10.586752 7.195844 3.407805
## 4 4.962637 9.485553e-08 4.583103 8.762156 9.623312 5.140297 7.326883
## 5 7.698529 6.879539e+00 12.082090 10.244161 12.329798 9.163103 4.788038

```

```

## 6 6.795370 4.727582e+00 10.664952 9.500883 11.478452 8.293895 4.157755
##      Sfxn1      Sfxn2      Sfxn3      Sfxn4      Sfxn5      Sgca      Sgcb
## 1 11.233329 8.302127 11.316647 8.969694 12.72493 2.814138e+00 11.855449
## 2 11.041855 8.413083 10.620577 8.211966 12.13822 2.764785e+00 11.693188
## 3 11.400394 8.301607 10.950909 10.102172 13.32295 2.734586e+00 9.540736
## 4 9.645317 6.356132 9.263315 9.292519 11.28127 9.596085e-08 8.084335
## 5 11.400583 8.771028 10.979254 8.569771 12.49703 3.076079e+00 12.051971
## 6 10.042132 7.116130 10.125406 7.781482 11.53323 1.867688e+00 10.663976
##      Sgcd      Sgce      Sgcg      Sgcz      Sgip1      Sgk1      Sgk2
## 1 6.026910 11.425603 1.9245277 5.901378e+00 11.021073 15.60228 9.658661
## 2 5.910216 11.085944 2.9537056 4.920039e+00 11.140505 14.86132 8.862035
## 3 1.153754 11.278903 1.8135310 1.499150e+00 9.396930 12.43684 8.012910
## 4 0.292808 9.817357 0.6883805 5.157829e-08 7.567942 12.60190 6.540503
## 5 6.263793 11.444676 3.2709234 5.268368e+00 11.499243 15.22019 9.220230
## 6 4.863658 10.234307 1.1573976 4.740709e+00 9.830000 14.41034 8.469018
##      Sgk3      Sgms1      Sgms2      Sgol1      Sgol2      Sgpl1      Sgpp1
## 1 10.480257 12.662423 9.541537 6.841580 7.812541 13.85602 11.727640
## 2 9.418972 11.743514 9.246899 6.305298 6.963516 13.29304 10.746511
## 3 8.027961 9.261066 6.320990 8.976932 8.549100 10.67150 8.905507
## 4 8.254735 10.831503 7.213479 3.299676 6.318361 9.99647 9.234783
## 5 9.777386 12.102300 9.605254 6.660147 7.319843 13.65188 11.105205
## 6 9.289599 11.470731 8.352092 5.666007 6.628955 12.66416 10.536215
##      Sgpp2      Sgsh      Sgsm1      Sgsm2      Sgsm3      Sgta      Sgtb
## 1 8.634917 9.861835 10.901156 11.340649 11.062238 13.00872 10.529202
## 2 8.346007 9.470421 10.394581 10.845773 10.946076 12.56040 9.976736
## 3 4.870689 7.317890 8.252370 8.071292 10.393784 12.78044 6.912271
## 4 5.127523 6.878181 6.133002 7.614802 8.372718 10.99408 5.841092
## 5 8.703908 9.828851 10.753224 11.204479 11.304794 12.91923 10.335299
## 6 7.447688 8.671885 9.710162 10.149395 9.871139 11.81696 9.338499
##      Sh2b1      Sh2b2      Sh2b3      Sh2d2a      Sh2d3c      Sh2d4a      Sh2d4b
## 1 12.268052 11.089156 11.728766 4.165681e+00 11.189063 3.119323 5.1540983
## 2 11.665563 10.610620 11.180893 3.107745e+00 10.686736 2.754278 5.6164422
## 3 8.347026 5.998703 5.182853 7.766341e-08 7.935412 3.423314 0.5636302
## 4 7.159399 5.883293 4.356975 4.036422e-08 7.403476 2.666002 0.2961631
## 5 12.024344 10.969296 11.539635 3.429236e+00 11.045421 3.065219 5.9688197
## 6 11.076453 9.898041 10.537340 3.075279e+00 9.997890 2.129356 4.0142712
##      Sh2d5      Sh3bgr      Sh3bgr1      Sh3bgr12      Sh3bgr13      Sh3bp1      Sh3bp2
## 1 7.787574 5.169072 12.44134 9.684614 12.46469 10.785873 11.506946
## 2 8.929225 5.655266 11.84463 9.384317 11.87744 11.087056 11.392839
## 3 3.956040 6.442272 13.18138 9.362539 12.06678 5.652153 7.487394
## 4 5.092064 3.692123 10.58067 7.205319 11.94576 5.431756 4.172272
## 5 9.287451 6.007817 12.20342 9.742720 12.23623 11.445788 11.751600
## 6 6.604134 4.028716 11.24970 8.494929 11.27304 9.594961 10.315613
##      Sh3bp4      Sh3bp5      Sh3bp51      Sh3d19      Sh3gl1      Sh3gl2      Sh3gl3
## 1 12.914708 12.073779 12.123671 11.204542 12.519956 10.954975 13.907974
## 2 13.026139 11.786840 11.342034 10.835102 12.008315 11.127854 12.880997
## 3 7.595588 8.113235 8.419486 7.955041 9.006701 8.616104 8.277090
## 4 8.376560 7.361976 8.023386 6.857436 8.280042 7.823692 7.027375
## 5 13.384980 12.145629 11.700790 11.193806 12.367116 11.486590 13.239834
## 6 11.722969 10.882235 10.932112 10.013360 11.328295 9.763945 12.716113
##      Sh3glb1      Sh3glb2      Sh3kbp1      Sh3pxd2a      Sh3pxd2b      Sh3rf1      Sh3rf2
## 1 13.725206 12.91483 11.460968 11.681874 12.181975 11.003807 1.3956080
## 2 13.048265 12.36951 11.123827 10.868277 11.613805 10.336727 0.9524782
## 3 10.271608 10.20652 9.608824 5.711310 8.972608 10.879135 3.4120330

```

```

## 4 9.362637 10.07078 8.424598 8.133909 5.538454 9.241812 4.4040217
## 5 13.407106 12.72833 11.482563 11.226985 11.972582 10.695360 1.1369628
## 6 12.533362 11.72309 10.269656 10.490467 10.990399 9.812745 0.7815131
##      Sh3rf3      Sh3tc1      Sh3tc2      Sh3yl1      Shank1      Shank2      Sharpin
## 1 9.003992 11.459473 10.270986 8.230827 11.323455 9.326823 11.297875
## 2 9.200309 11.246853 9.467760 7.808660 11.450915 10.255890 10.409883
## 3 9.436757 2.536403 5.671725 8.545422 8.404715 5.006544 8.109162
## 4 5.521854 6.529204 7.010520 6.723141 9.239598 3.897227 7.132150
## 5 9.558646 11.605601 9.826190 8.166118 11.809680 10.614509 10.768528
## 6 7.815692 10.268162 9.080534 7.045132 10.132210 8.137785 10.106643
##      Shb      Shbg      Shc1      Shc2      Shc3      Shc4      Shcbp1
## 1 10.917226 3.722321 10.920590 10.3241246 9.251243 10.282322 7.253134
## 2 10.965182 1.849122 11.117486 9.7993915 9.392287 10.627431 6.878035
## 3 6.806495 5.142301 7.248768 6.7887265 5.150213 5.592881 8.883997
## 4 3.223395 5.199513 4.685452 0.8221738 3.564641 3.949370 3.723238
## 5 11.323902 2.116910 11.476222 10.1579132 9.750693 10.986109 7.234206
## 6 9.726222 2.666674 9.729583 9.1336172 8.062363 9.091858 6.073506
##      Shd      She      Shf      Shh      Shisa2      Shisa3      Shisa4
## 1 10.290543 10.573507 9.837404 6.1452959 7.581680 3.166497e+00 14.11585
## 2 9.736590 10.179863 9.112653 4.5821068 6.105861 3.442462e+00 13.16160
## 3 9.104842 3.293213 7.082459 0.6462942 8.335838 7.408163e-08 11.02453
## 4 5.941538 6.996635 4.464950 4.3488180 6.745814 3.229316e-08 11.01686
## 5 10.095095 10.538468 9.470957 4.9276387 6.460111 3.771772e+00 13.52045
## 6 9.100070 9.382766 8.647489 4.9798028 6.399545 2.170478e+00 12.92397
##      Shisa5      Shisa6      Shisa7      Shisa9      Shkbp1      Shmt1      Shmt2
## 1 12.10704 9.730925 11.459750 10.659135 11.191007 9.202992 11.387688
## 2 11.57233 9.356909 11.133119 10.805458 10.466906 9.270797 11.131423
## 3 10.55938 4.073057 5.372166 4.356553 8.123983 8.937573 11.277802
## 4 10.92777 7.483486 8.764592 8.128568 8.297045 4.557253 8.463785
## 5 11.93110 9.715302 11.491857 11.164159 10.825560 9.629160 11.490160
## 6 10.91549 8.541168 10.268439 9.468322 9.999833 8.014218 10.196411
##      Shoc2      Shpk      Shprh      Shq1      Shroom1      Shroom2      Shroom3
## 1 11.240617 7.9203895 10.674887 8.305312 9.066531 12.550685 8.236137
## 2 10.762922 7.7353477 10.430156 7.119368 10.024954 12.216492 7.583305
## 3 10.048286 4.9306800 8.510033 8.653680 4.378872 10.187880 8.228805
## 4 9.086317 0.8918043 6.263613 7.232982 2.316399 8.940503 4.510592
## 5 11.121618 8.0927324 10.788804 7.475956 10.383527 12.575304 7.940523
## 6 10.049416 6.7361999 9.484061 7.119301 7.878074 11.359017 7.050419
##      Shroom4      Siae      Siah1a      Siah1b      Siah2      Siah3      Sidt1
## 1 9.488250 9.400843 10.668341 7.985902 11.327442 6.304423 6.671211
## 2 9.174261 9.289521 9.645740 8.702569 10.681674 5.826403 6.989502
## 3 3.862836 10.075533 8.807974 5.969129 6.844633 7.662718 4.022586
## 4 3.368070 8.705099 8.106987 2.814948 5.362721 1.788391 8.262324
## 5 9.532589 9.647891 10.004222 9.060684 11.040359 6.179662 7.345874
## 6 8.298901 8.211657 9.477520 6.801367 10.136195 5.136188 5.497681
##      Sidt2      Sigirr      Siglec1      Siglece      Siglecg      Siglech      Sigmar1
## 1 13.724987 9.950733 8.286046 9.871652 5.572877e+00 12.357960 12.067441
## 2 12.812021 8.912785 7.783301 9.886238 5.124398e+00 12.022512 11.634705
## 3 9.936624 5.405839 3.987442 6.527654 1.545040e+00 5.890035 11.153731
## 4 9.929247 8.096691 2.027353 8.126439 5.013067e-08 11.666240 9.897198
## 5 13.170856 9.271003 8.140734 10.244781 5.474125e+00 12.381314 11.993484
## 6 12.533143 8.760662 7.100115 8.681688 4.420099e+00 11.166337 10.875898
##      Sik1      Sik2      Sik3      Sike1      Sill      Sin3a      Sin3b
## 1 13.123137 10.415392 12.737492 11.142792 10.856716 11.197463 12.578160

```

```

## 2 12.519461 9.802167 12.609778 10.436120 10.355754 11.234595 12.146531
## 3 7.222216 4.080284 8.711663 7.458344 11.204570 9.844836 11.111351
## 4 6.584273 4.691255 7.298534 5.308879 10.035452 6.757594 9.900815
## 5 12.878285 10.160689 12.968606 10.794770 10.714390 11.593342 12.505340
## 6 11.931365 9.224794 11.545786 9.951646 9.665753 10.006286 11.386486
## Sipal Sipall1 Sipall2 Sipall3 Sirpa Sirpb1a Sirt1
## 1 13.130134 11.350232 13.367789 11.040994 15.54564 1.4647448 10.410947
## 2 12.974744 11.415168 12.978110 10.486500 14.92247 1.7226560 9.725150
## 3 6.340534 9.403927 7.007455 7.664455 11.16249 1.9057141 8.089367
## 4 7.197892 9.059886 8.714220 6.633416 11.87031 4.0449350 6.393764
## 5 13.333583 11.773930 13.336949 10.845158 15.28134 1.9818098 10.083653
## 6 11.938361 10.158974 12.175984 9.849909 14.35370 0.8283799 9.220354
## Sirt2 Sirt3 Sirt4 Sirt5 Sirt6 Sirt7 Sis
## 1 16.54115 10.306494 9.196094 8.172268 9.725457 11.223843 6.833071e+00
## 2 16.12631 10.176119 8.787052 7.823001 8.766899 11.038045 4.923636e+00
## 3 12.41801 10.326229 9.047159 9.538961 9.489494 7.801239 7.237645e-08
## 4 11.99321 8.929365 5.826184 6.660044 8.077366 5.784131 3.618775e-08
## 5 16.48518 10.534723 9.145210 8.180474 9.125047 11.396772 5.271992e+00
## 6 15.34919 9.116004 8.007335 6.986833 8.535708 10.032651 5.657594e+00
## Sit1 Siva1 Six1 Six2 Six3 Six4
## 1 2.826677e+00 9.123274 1.756843e+00 1.945169e+00 5.846968 5.957976e+00
## 2 8.488163e-01 8.385961 1.972151e+00 2.017383e+00 4.485478 5.152013e+00
## 3 8.860374e-08 9.723367 2.281600e+00 2.488600e-01 1.203125 5.704519e-01
## 4 3.887580e-08 7.469593 6.516811e-08 7.270681e-08 4.421463 5.927619e-08
## 5 1.019437e+00 8.743888 2.247601e+00 2.295479e+00 4.830081 5.501914e+00
## 6 1.878282e+00 7.934681 1.034027e+00 1.172839e+00 4.687488 4.796115e+00
## Six5 Ska1 Skap1 Skap2 Ski Skil Skiv2l
## 1 8.570464 6.785441 4.425401 10.266957 13.284232 13.06787 12.251211
## 2 8.123772 6.241686 4.520060 9.896379 13.107381 12.39822 12.044814
## 3 5.335329 8.324884 3.310245 8.944805 9.501984 10.55352 9.710693
## 4 3.266972 2.971451 4.046399 8.976988 9.105846 11.21835 8.305860
## 5 8.481509 6.596353 4.865003 10.254924 13.466224 12.75704 12.403617
## 6 7.383452 5.610514 3.318781 9.076509 12.092438 11.87611 11.059615
## Skiv2l2 Skor1 Skp1a Skp2 Sla Sla2
## 1 11.268176 3.917330e+00 13.41979 8.429885 11.983825 2.390443e+00
## 2 10.923195 4.127904e+00 12.69596 8.238211 11.497649 2.085883e+00
## 3 10.529986 4.469606e-08 14.69564 9.310446 6.893279 5.386361e-01
## 4 9.486608 1.977830e-08 13.58626 5.506346 9.762181 9.845270e-08
## 5 11.281911 4.468466e+00 13.05479 8.596035 11.856418 2.367825e+00
## 6 10.076960 2.845186e+00 12.22798 7.243381 10.792308 1.518609e+00
## Slain1 Slain2 Slamf1 Slamf6 Slamf7 Slamf8 Slamf9
## 1 12.985780 11.276568 5.292643e+00 4.329055 4.417272 8.784277 7.439757
## 2 12.250967 10.807479 4.979245e+00 6.408131 3.647572 10.327401 7.605642
## 3 9.774532 8.271625 8.687637e-08 1.180980 2.269908 1.145800 4.435661
## 4 7.704336 6.229838 4.197895e-08 1.888464 1.302317 5.695936 7.387252
## 5 12.609780 11.166180 5.328000e+00 6.763258 3.980836 10.686032 7.962886
## 6 11.794029 10.085348 4.148123e+00 3.228135 3.311120 7.596582 6.258637
## Slbp Slc10a1 Slc10a3 Slc10a4 Slc10a5 Slc10a6 Slc10a7
## 1 9.755735 4.361951 9.442395 8.400837e+00 1.686970e+00 4.870629 9.496332
## 2 9.961847 4.699214 8.776741 6.653507e+00 1.696656e+00 4.494790 9.077087
## 3 10.057046 2.627331 7.634702 7.766067e-08 1.487496e+00 4.915903 8.592421
## 4 7.124306 2.015394 7.920985 3.990874e-08 8.287156e-08 3.803229 5.371178
## 5 10.320406 5.045791 9.134895 7.009221e+00 1.953932e+00 4.839485 9.435376
## 6 8.565940 3.259045 8.253131 7.214444e+00 9.837387e-01 3.741864 8.306968

```

```

##      Slc11a1  Slc11a2      Slc12a1 Slc12a2      Slc12a3  Slc12a4
## 1 10.934310 13.078914 2.719420e+00 13.93844 4.010458e+00 12.846321
## 2 11.405722 12.248138 2.909100e+00 12.91211 4.494504e+00 12.632858
## 3  5.737284  9.364827 4.829344e-08 11.54405 1.420172e+00  9.398552
## 4  7.981860  9.965168 2.123661e-08 10.43359 6.845005e-08  9.055893
## 5 11.764484 12.606952 3.224990e+00 13.27095 4.839196e+00 12.991687
## 6  9.743294 11.887149 1.788129e+00 12.74658 2.931127e+00 11.654595
##      Slc12a5  Slc12a6  Slc12a7 Slc12a8  Slc12a9  Slc13a1      Slc13a2
## 1 10.769775 12.033685 10.924572 4.980479 12.771194 4.2567238 1.928436e+00
## 2 10.633479 11.848809 10.521610 4.926688 12.426594 5.1022130 1.217321e+00
## 3  4.331527  9.194262  9.017672 4.943200  8.223416 0.5339748 1.943205e+00
## 4  9.315416  9.425779  6.652708 2.492485  8.108181 4.0894659 3.277399e-08
## 5 10.992158 12.207601 10.880272 5.275066 12.785415 5.4517975 1.432541e+00
## 6  9.578875 10.842153  9.733562 3.847178 11.579481 3.1603242 1.160317e+00
##      Slc13a3 Slc13a4  Slc13a5  Slc14a1  Slc14a2  Slc15a1  Slc15a2
## 1 11.752731 4.981098 11.553375 11.030980 7.1149886 1.7338995 12.81351
## 2 10.987153 4.575111 10.915631 10.532559 6.6310279 1.3707637 12.11844
## 3 10.847276 9.331310  8.978329 12.281221 6.4942621 4.9967146 11.04929
## 4  8.572127 7.667350  8.031898 10.380100 0.7989452 5.1510524  9.80742
## 5 11.345875 4.920578 11.274345 10.891224 6.9866924 1.6011332 12.47724
## 6 10.561296 3.847773 10.362021  9.839901 5.9365967 1.0174406 11.62179
##      Slc15a3 Slc15a4      Slc15a5  Slc16a1 Slc16a10 Slc16a11 Slc16a12
## 1 14.318991 12.637348 2.361632e+00 15.668877 8.995740 8.0312943 7.414689
## 2 13.056217 12.253309 1.480999e+00 14.871011 9.129521 7.8528406 6.888274
## 3  3.068917  8.105929 5.254920e-08  9.648324 5.196483 3.1033637 7.776993
## 4  5.119157  7.432762 2.700024e-08  9.752578 6.233904 0.5711145 1.049679
## 5 13.415059 12.612123 1.721215e+00 15.229880 9.487831 8.2103422 7.244464
## 6 13.127100 11.445662 1.495543e+00 14.476930 7.807460 6.8465295 6.233758
##      Slc16a13 Slc16a14 Slc16a2  Slc16a3  Slc16a4  Slc16a5  Slc16a6
## 1  9.940793 6.591888 11.79697 10.7163744 11.533170 1.1543243 10.222678
## 2  9.813461 6.640415 11.26309  9.9286898 10.718107 1.7021770 10.189813
## 3  8.916669 5.599912 10.36100  2.8181801  6.597622 1.9817304  6.562085
## 4  7.440019 4.463877 10.05189  0.6250875  8.488128 1.1386072  6.586189
## 5 10.171986 6.996100 11.62184 10.2872421 11.076797 1.9598548 10.548420
## 6  8.750734 5.419393 10.60552  9.5255157 10.341825 0.6236404  9.032278
##      Slc16a7  Slc16a8 Slc16a9  Slc17a5  Slc17a6  Slc17a7      Slc17a8
## 1 8.807988 7.3129781 9.354919 10.317502 11.023125 11.068373 7.093209e+00
## 2 8.378440 7.1571116 8.325966  9.611284 10.886634 11.552878 7.320233e+00
## 3 5.546695 0.9192065 5.752975  9.365656  9.090160  5.506767 1.898242e+00
## 4 5.392656 0.5131941 4.313553  9.287106  8.647717 10.408739 6.373207e-08
## 5 8.736362 7.5137590 8.683852  9.969756 11.245345 11.911651 7.677119e+00
## 6 7.620223 6.1328508 8.165824  9.127001  9.832051  9.877271 5.915023e+00
##      Slc17a9 Slc18a1 Slc18a2      Slc18a3  Slc19a1 Slc19a2  Slc19a3
## 1 6.7049564 3.361073 7.830138 7.089057e+00 10.512618 9.317870 10.009878
## 2 6.2702893 2.663648 7.746691 5.329194e+00  9.844800 9.075831  9.510263
## 3 2.0394208 4.087439 9.153678 8.456042e-08 10.910774 6.926023  6.870442
## 4 0.3764454 5.187761 8.385986 4.320737e-08  9.723539 6.560538  7.455383
## 5 6.6250393 2.971426 8.104087 5.680135e+00 10.203333 9.434120  9.868706
## 6 5.5310025 2.341835 6.646450 5.910910e+00  9.321930 8.128850  8.819730
##      Slc1a1  Slc1a2  Slc1a3  Slc1a4  Slc1a5  Slc1a6      Slc1a7
## 1 13.197545 16.33695 15.72068 14.295884 9.333454 8.363490 2.491834e+00
## 2 13.205052 15.86749 15.30731 13.677823 8.756831 8.544625 1.965721e+00
## 3  7.649634 15.53402 17.33775 10.560262 6.840563 3.610775 6.627974e-08
## 4 10.781619 14.51852 15.11890  9.424386 2.731981 5.470653 3.348078e-08

```

```

## 5 13.563897 16.22636 15.66618 14.036677 9.114974 8.902652 2.240787e+00
## 6 12.005762 15.14499 14.52873 13.103995 8.144402 7.177243 1.600496e+00
##      Slc20a1      Slc20a2      Slc22a12      Slc22a13 Slc22a15 Slc22a17 Slc22a18
## 1 12.89624 12.035830 5.417381e+00 1.312258e+00 9.849788 15.18043 5.250111
## 2 12.22047 11.801381 5.646156e+00 1.720302e+00 8.797342 14.65586 4.324615
## 3 10.84422 10.723862 2.386293e+00 4.457931e-08 6.773063 11.15355 6.073881
## 4 9.83730 9.192397 6.052244e-08 1.917615e-08 5.745436 11.98578 3.174457
## 5 12.57929 12.160171 5.998667e+00 1.979287e+00 9.155505 15.01472 4.667525
## 6 11.70451 10.844297 4.268993e+00 7.259657e-01 8.659855 13.98849 4.106986
##      Slc22a2 Slc22a21 Slc22a23 Slc22a3      Slc22a4      Slc22a5      Slc22a6
## 1 1.2097813 9.121691 14.152640 6.609264 7.763645 11.503028 6.703972
## 2 0.6556198 8.763916 13.895578 7.379817 7.275331 10.701019 6.610508
## 3 4.6923364 6.211557 8.903684 2.031355 10.075015 7.829422 9.058042
## 4 0.3396212 2.186241 8.569283 4.123678 6.910366 7.935390 4.288093
## 5 0.7971620 9.122063 14.254436 7.736783 7.632154 11.059707 6.966127
## 6 0.6591289 7.933102 12.960760 5.436538 6.580347 10.311697 5.530031
##      Slc22a8      Slc23a1      Slc23a2      Slc23a3      Slc24a1      Slc24a2      Slc24a3
## 1 13.03816 5.7414158 12.998105 3.881173e+00 5.2433811 12.195249 11.847554
## 2 12.45241 5.4325480 12.581952 3.596996e+00 3.8479683 11.568939 11.741249
## 3 10.71869 4.0669918 9.156476 4.986252e-08 0.7525924 7.252105 6.893837
## 4 10.57923 0.3007398 10.132119 2.687476e+00 1.0472382 8.626729 8.655865
## 5 12.81124 5.7840394 12.940779 3.929337e+00 4.1845789 11.927713 12.100035
## 6 11.84640 4.5843706 11.806353 2.811937e+00 4.1004805 11.003669 10.656084
##      Slc24a4      Slc24a5      Slc25a1      Slc25a10 Slc25a11 Slc25a12 Slc25a13
## 1 5.853113 6.598123 13.586201 11.408051 12.36997 11.98935 7.970558
## 2 5.803814 6.260655 12.934559 11.127591 11.63959 11.56388 7.161632
## 3 4.594108 5.238381 8.797880 9.360779 10.60378 10.62448 7.139183
## 4 5.553695 5.938350 7.186639 7.518089 10.26991 10.05287 6.557074
## 5 6.156985 6.615377 13.293397 11.486328 11.99837 11.92266 7.518286
## 6 4.693496 5.425545 12.394372 10.216764 11.17834 10.79783 6.786103
##      Slc25a14      Slc25a15      Slc25a16      Slc25a17      Slc25a18      Slc25a19      Slc25a2
## 1 9.061741 10.403942 9.659226 11.438906 11.116950 10.882727 3.7804793
## 2 9.137720 10.148711 9.224879 10.631619 10.594197 10.672643 3.7537677
## 3 8.934597 7.650679 8.161331 12.307619 12.799356 10.464378 3.7403931
## 4 9.095248 7.109509 7.181039 11.208322 10.647047 8.430591 0.3302379
## 5 9.496034 10.507310 9.583226 10.990297 10.952870 11.031327 4.0888635
## 6 7.873296 9.213355 8.469582 10.247604 9.925819 9.691746 2.7196984
##      Slc25a20      Slc25a21      Slc25a22      Slc25a23      Slc25a24      Slc25a25      Slc25a26
## 1 11.159963 3.248118 10.978913 13.661761 8.464131 12.631081 8.822019
## 2 10.313834 3.584503 10.906903 13.340206 8.295304 13.180979 8.814701
## 3 9.412797 3.454033 9.844764 10.092458 3.846431 7.874160 8.150351
## 4 8.965186 4.121710 8.062411 9.256972 5.076475 6.746438 3.083967
## 5 10.672463 3.916611 11.265616 13.699054 8.653170 13.539823 9.172873
## 6 9.968806 2.242025 9.787867 12.469923 7.277499 11.439396 7.634212
##      Slc25a27      Slc25a28      Slc25a29      Slc25a3      Slc25a30      Slc25a31      Slc25a32
## 1 10.493485 10.373824 9.589895 14.28288 8.600446 1.031088e+00 9.589716
## 2 10.231136 10.364542 9.642874 13.53492 8.809412 1.568317e+00 8.179227
## 3 9.170783 6.841835 6.033516 11.16046 7.367268 3.238374e+00 6.276277
## 4 5.793749 6.056057 6.644425 10.80211 4.050073 5.347555e-08 7.076446
## 5 10.589750 10.723179 10.001355 13.89377 9.167581 1.815774e+00 8.537008
## 6 9.302814 9.183266 8.400366 13.09100 7.413333 5.465211e-01 8.400188
##      Slc25a33      Slc25a34      Slc25a35      Slc25a36      Slc25a37      Slc25a38      Slc25a39
## 1 11.104735 9.839743e+00 8.103928 11.228941 11.108960 11.614984 12.493154
## 2 10.659929 8.069888e+00 7.892770 10.891009 10.195429 11.069196 11.831987

```

```
## 3 7.867969 7.061064e-08 6.533705 7.839263 7.919628 8.427298 9.441187
## 4 6.796936 3.674398e+00 6.481667 5.282306 8.245984 6.177488 9.342467
## 5 11.018611 8.427582e+00 8.250309 11.249720 10.554036 11.427926 12.190779
## 6 9.913611 8.649825e+00 6.918810 10.037745 9.917833 10.423604 11.301499
## Slc25a4 Slc25a40 Slc25a41 Slc25a42 Slc25a43 Slc25a44 Slc25a45
## 1 14.26606 9.586110 7.261893e-01 9.851801 3.7905704 12.35888 11.604480
## 2 13.70287 8.163185 1.798946e+00 9.994623 3.2668684 12.04169 10.871502
## 3 14.31018 7.808847 6.207566e-08 7.169740 0.5953302 10.61829 7.140887
## 4 13.39468 6.970093 2.235022e-08 6.226765 0.5330801 10.49652 6.680519
## 5 14.06172 8.520954 2.063405e+00 10.353190 3.5923082 12.40049 11.230211
## 6 13.07417 8.396588 3.663169e-01 8.661865 2.7289177 11.16726 10.413105
## Slc25a46 Slc25a47 Slc25a48 Slc25a5 Slc26a1 Slc26a10 Slc26a11 Slc26a2
## 1 11.376395 6.284571 3.146909 14.03998 7.600802 6.644205 9.334762 8.772430
## 2 10.568620 5.026928 2.737213 13.25495 7.522086 6.350391 9.173825 8.643925
## 3 9.269422 5.541876 3.522262 13.81481 7.941213 3.334842 8.109632 5.406076
## 4 8.163862 1.330790 2.501855 13.47371 4.503000 6.593131 6.704163 4.622247
## 5 10.927289 5.376013 3.047573 13.61380 7.879232 6.705364 9.532153 9.002008
## 6 10.185123 5.116662 2.153382 12.84811 6.418538 5.471021 8.145708 7.584770
## Slc26a3 Slc26a4 Slc26a5 Slc26a6 Slc26a7 Slc26a9
## 1 1.470142e+00 1.5665398 3.903253e+00 9.802912 2.770182e+00 2.368961
## 2 1.351639e+00 2.7730630 4.890983e+00 9.527583 3.288174e+00 2.061219
## 3 1.511683e+00 4.3240160 1.331918e+00 7.380818 8.172084e-08 2.365355
## 4 6.834256e-08 5.5176718 7.664895e-08 7.977595 1.141216e+00 2.117438
## 5 1.580216e+00 3.0846337 5.239097e+00 9.886031 3.614110e+00 2.341798
## 6 8.320682e-01 0.8986656 2.832233e+00 8.613047 1.830664e+00 1.501402
## Slc27a1 Slc27a2 Slc27a3 Slc27a4 Slc27a5 Slc27a6 Slc28a1
## 1 12.77768 5.393404 8.361227 12.902691 3.936706e+00 7.589982 3.133665e+00
## 2 12.12804 3.087994 8.496871 12.664496 3.352733e+00 7.079318 2.383274e+00
## 3 11.98887 3.029556 7.145528 8.299367 2.980564e+00 4.589950 3.879569e-08
## 4 11.04913 4.029819 5.858190 8.821117 5.173557e-08 4.837785 1.989638e-08
## 5 12.48685 3.408962 8.854868 13.023326 3.680126e+00 7.435841 2.679856e+00
## 6 11.58596 4.245735 7.174990 11.710954 2.863032e+00 6.407791 2.141840e+00
## Slc28a2 Slc28a3 Slc29a1 Slc29a2 Slc29a3 Slc29a4 Slc2a1
## 1 3.543072e+00 1.0923038 12.644947 9.162651 12.628592 10.173274 15.11258
## 2 2.391182e+00 0.8279099 11.856440 9.074463 12.086854 9.837978 14.29975
## 3 4.745409e-08 4.6150370 11.301009 9.257112 9.295013 7.982489 11.18808
## 4 2.460513e-08 5.0900518 9.443342 8.143928 9.657554 9.670905 12.38920
## 5 2.688111e+00 0.9955954 12.215233 9.432752 12.445659 10.196509 14.65861
## 6 2.504475e+00 0.5845265 11.453258 7.973967 11.436907 8.982930 13.92065
## Slc2a10 Slc2a12 Slc2a13 Slc2a2 Slc2a3 Slc2a4 Slc2a5
## 1 7.288583 8.600374 11.378460 1.780097e+00 11.127059 6.997479 13.728811
## 2 7.821792 8.281806 11.051263 1.999363e+00 10.895773 6.417561 12.715693
## 3 8.714836 8.101012 7.984649 5.944086e-08 9.080700 7.739897 6.387786
## 4 5.817814 6.547501 9.543336 2.595088e-08 9.986139 6.529990 11.041059
## 5 8.179263 8.639662 11.409992 2.276415e+00 11.254485 6.772713 13.074525
## 6 6.108657 7.413261 10.187187 1.050911e+00 9.935921 5.820235 12.536967
## Slc2a6 Slc2a8 Slc2a9 Slc30a1 Slc30a10 Slc30a2 Slc30a3
## 1 8.823084 10.899432 8.183248 12.120349 12.118235 2.776852 7.408753
## 2 9.213208 10.866213 7.526595 11.345776 11.087044 3.689211 7.482543
## 3 6.117576 6.501387 7.480276 8.073528 8.285221 2.805257 4.630287
## 4 8.031315 6.807750 1.855725 8.215304 8.413685 2.884838 10.485131
## 5 9.571550 11.224921 7.883747 11.704533 11.445777 4.023209 7.839641
## 6 7.635275 9.708439 6.997763 10.928791 10.926677 1.836271 6.227867
## Slc30a4 Slc30a5 Slc30a6 Slc30a7 Slc30a9 Slc31a1 Slc31a2
```

```

## 1 11.449502 11.430618 9.634003 11.357113 12.411188 13.13835 10.116804
## 2 11.215032 11.094951 9.116608 11.023219 12.061969 12.62879 9.184360
## 3 8.920209 8.937113 9.846435 9.557532 9.407430 10.53156 8.763128
## 4 7.513201 8.099089 9.282113 7.645691 8.235625 10.17595 8.620355
## 5 11.573777 11.453684 9.474914 11.381945 12.420774 12.98762 9.542692
## 6 10.258196 10.239320 8.444401 10.165851 11.219552 11.94657 8.926524
##      Slc32a1  Slc33a1  Slc34a2  Slc34a3  Slc35a1  Slc35a2  Slc35a3
## 1 9.9602555 10.700795 0.6219824 7.449965 10.139157 11.917011 10.950242
## 2 9.9678148 9.809717 0.5363210 5.768831 9.837109 11.340790 10.055493
## 3 0.9031327 8.615003 4.0259879 4.375926 10.337429 10.157895 6.327233
## 4 3.1729251 9.607326 3.7297255 6.185855 9.401219 9.741955 6.000482
## 5 10.3263759 10.168241 0.6575183 6.121862 10.195640 11.699546 10.414073
## 6 8.7701713 9.509948 0.3082641 6.268768 8.948851 10.725517 9.759215
##      Slc35a4  Slc35a5  Slc35b1  Slc35b2  Slc35b3  Slc35b4  Slc35c1
## 1 12.29759 11.266221 12.08026 13.45795 10.025827 11.024110 9.872590
## 2 11.86262 10.839637 11.48972 12.70189 9.431524 10.566776 9.906965
## 3 11.81461 11.064271 12.07245 11.01545 7.892829 9.996959 8.037000
## 4 10.79501 9.688287 10.74453 10.29999 7.167921 9.741258 7.824993
## 5 12.22141 11.198342 11.84848 13.06072 9.789942 10.925445 10.265513
## 6 11.10598 10.075006 10.88871 12.26614 8.835658 9.833035 8.682625
##      Slc35c2  Slc35d1  Slc35d2  Slc35d3  Slc35e1  Slc35e2  Slc35e3
## 1 12.04751 10.126302 7.205018 6.2724160 12.033575 10.956545 10.758245
## 2 11.65721 9.623783 6.619933 5.5554482 11.884735 10.905557 10.287053
## 3 10.87467 9.158785 6.043185 0.3190966 8.617250 9.442537 8.276921
## 4 10.22001 8.070761 5.837865 0.6257141 7.458411 7.970564 7.337207
## 5 12.01599 9.982259 6.975573 5.9075442 12.243530 11.264270 10.645677
## 6 10.85597 8.936012 6.025808 5.1047087 10.842042 9.765514 9.567354
##      Slc35e4  Slc35f1  Slc35f2  Slc35f3  Slc35f4  Slc35f5  Slc36a1
## 1 11.524818 12.211222 11.316973 7.768686 5.6859322 11.140787 11.801793
## 2 11.005553 11.983157 11.167768 6.966739 5.1999242 10.570313 10.839139
## 3 8.030085 8.752174 4.380461 4.959694 0.5316296 9.128191 6.627769
## 4 8.530302 7.656257 7.531212 8.246761 5.2582527 7.164443 8.523292
## 5 11.364278 12.341957 11.526509 7.323071 5.5501192 10.928982 11.197844
## 6 10.333477 11.019637 10.125732 6.585358 4.5302385 9.949642 10.610339
##      Slc36a2  Slc36a4  Slc37a1  Slc37a2  Slc37a3  Slc37a4  Slc38a1
## 1 6.0253208 10.335745 6.468531 11.932729 11.23647 10.544399 11.796419
## 2 5.2665277 9.205532 6.566706 11.048982 11.14195 10.337654 11.684910
## 3 3.4864288 7.245478 5.403353 6.017066 10.37675 9.848407 11.832615
## 4 0.7323946 7.424958 5.003723 7.181484 8.86044 9.309753 8.856808
## 5 5.6171155 9.563872 6.922223 11.407711 11.50069 10.696287 12.043693
## 6 4.8621005 9.145226 5.297763 10.741230 10.04527 9.353683 10.604967
##      Slc38a10 Slc38a11 Slc38a2 Slc38a3 Slc38a4 Slc38a5 Slc38a6
## 1 13.671691 6.856804 14.98268 14.67381 6.523563 13.309511 9.119800
## 2 13.478750 5.803578 14.34288 13.96098 6.148638 12.004987 8.383142
## 3 9.051077 6.074049 11.84686 10.24867 4.015795 7.123751 6.812289
## 4 9.005718 5.850364 11.39264 11.63463 4.816429 8.413586 1.777252
## 5 13.837601 6.156748 14.70174 14.31984 6.503024 12.363788 8.741068
## 6 12.479852 5.681060 13.79076 13.48189 5.352006 12.117714 7.931216
##      Slc38a7  Slc38a8  Slc38a9  Slc39a1  Slc39a10 Slc39a11 Slc39a12
## 1 10.853932 2.0974503 10.032491 13.24142 13.705396 9.866929 12.16513
## 2 11.345140 0.8814076 9.850593 12.31338 13.527303 9.876329 11.26668
## 3 7.897591 4.2317074 9.244199 11.15823 10.845621 9.542899 10.42839
## 4 6.855037 0.5000181 8.455361 10.56327 9.753298 6.011463 11.38332
## 5 11.703897 1.0565097 10.209128 12.67220 13.886155 10.234869 11.62543

```



```

## 6 9.662971 1.2884233 8.842315 12.04963 12.513554 8.676972 10.97356
## Slc39a13 Slc39a14 Slc39a2 Slc39a3 Slc39a4 Slc39a5 Slc39a6
## 1 10.787096 10.783795 6.297083 12.600559 6.635770e+00 4.294551 12.010839
## 2 10.282869 11.028118 6.838163 11.878672 6.541011e+00 3.855740 11.516283
## 3 8.577703 5.950667 3.020315 8.782146 3.289831e+00 2.903713 9.773705
## 4 5.713202 7.384346 3.713460 8.914514 1.239114e-07 1.392702 10.275621
## 5 10.641493 11.386844 7.194258 12.237466 6.896468e+00 4.192471 11.875053
## 6 9.596184 9.592885 5.128967 11.408880 5.462695e+00 3.195762 10.819314
## Slc39a7 Slc39a8 Slc39a9 Slc3a1 Slc3a2 Slc40a1 Slc41a1
## 1 13.688845 12.878208 11.965480 3.553136e+00 15.36064 12.995052 12.030688
## 2 13.089633 12.197645 11.827281 2.942772e+00 14.63858 11.793244 11.774695
## 3 11.228064 4.518250 10.192011 9.546378e-01 11.32259 7.812755 9.777539
## 4 9.980069 5.662251 8.971676 8.169579e-08 10.92624 8.813556 9.264808
## 5 13.448476 12.556456 12.186072 3.259669e+00 14.99744 12.152033 12.133483
## 6 12.497005 11.686476 10.773969 2.513530e+00 14.16871 11.803300 10.839157
## Slc41a2 Slc41a3 Slc43a1 Slc43a2 Slc43a3 Slc44a1 Slc44a2
## 1 8.724208 10.190239 7.074205 12.897421 8.725535 15.237935 13.215823
## 2 8.932105 9.472646 6.718694 12.604737 9.925590 14.495519 12.437468
## 3 5.760603 5.476296 4.538493 9.884782 4.682567 10.011723 11.036838
## 4 7.182544 5.259717 1.128274 8.663093 2.992589 9.549115 9.888577
## 5 9.290332 9.831077 7.074548 12.963564 10.284142 14.854385 12.796290
## 6 7.536695 8.999876 5.896201 11.705686 7.538018 14.046000 12.024038
## Slc44a3 Slc44a4 Slc44a5 Slc45a1 Slc45a2 Slc45a3 Slc45a4
## 1 3.7152255 2.216474e+00 10.135764 9.471777 1.4281259 11.282643 10.840160
## 2 3.4411062 1.129737e+00 9.750164 9.581670 0.8059577 10.079358 10.823129
## 3 3.7848327 3.159543e-01 4.793907 7.028549 0.6131051 7.111507 5.638728
## 4 0.2843054 6.379423e-08 8.983894 7.738648 1.5086253 1.593096 6.542618
## 5 3.7703886 1.335479e+00 10.108673 9.940133 0.9705080 10.437943 11.181832
## 6 2.6602178 1.380737e+00 8.945462 8.282457 0.8034679 10.091419 9.649209
## Slc46a1 Slc46a2 Slc46a3 Slc47a1 Slc48a1 Slc4a1 Slc4a10
## 1 11.170576 1.4625616 10.478987 2.383733 14.44665 6.838641e+00 10.187427
## 2 10.880942 1.1581066 10.682542 1.485351 13.40521 4.863172e+00 9.573898
## 3 11.182907 4.0296119 7.439083 4.505765 11.34915 7.123413e-08 6.131234
## 4 10.439219 3.2100143 7.951220 4.505630 11.17493 3.501824e-08 10.589205
## 5 11.239652 1.3669888 11.041228 1.725939 13.76406 5.211075e+00 9.932360
## 6 9.979413 0.8268891 9.288329 1.513229 13.25475 5.663101e+00 8.997066
## Slc4a11 Slc4a1ap Slc4a2 Slc4a3 Slc4a4 Slc4a5 Slc4a7
## 1 5.154438 9.894617 13.446771 11.848712 14.22002 2.328933 11.428857
## 2 5.019727 9.544479 12.253470 11.335554 13.74552 2.629180 11.215652
## 3 4.585763 7.930100 8.567438 8.070062 10.05074 1.922577 8.418460
## 4 1.356230 7.141258 7.956690 8.262712 11.58596 4.777796 7.411876
## 5 5.368762 9.902932 12.612284 11.694309 14.10437 2.935700 11.574397
## 6 4.014599 8.704622 12.254957 10.657241 13.02813 1.469474 10.237560
## Slc4a8 Slc4a9 Slc50a1 Slc5a1 Slc5a10 Slc5a11
## 1 11.203765 1.7272233 11.240983 1.1940876 6.662652 7.362733e+00
## 2 11.466725 1.1886019 10.856557 0.7028483 7.516665 7.257410e+00
## 3 6.694576 1.0010591 10.970434 1.4768202 1.317431 4.492247e+00
## 4 7.770316 2.0518116 9.599185 2.2355527 2.748442 7.753009e-08
## 5 11.825492 1.4007838 11.215264 0.8519185 7.873805 7.614208e+00
## 6 10.012583 1.0126276 10.049781 0.6490372 5.489231 6.182205e+00
## Slc5a12 Slc5a2 Slc5a3 Slc5a5 Slc5a6 Slc5a7
## 1 8.780831e-01 2.226068e+00 10.448176 6.880320 10.359394 7.858393e+00
## 2 5.326908e-01 1.978964e+00 10.088762 5.874784 10.666584 7.747715e+00
## 3 2.338912e+00 1.794668e+00 9.887989 6.311325 7.658373 4.458167e-01

```

```

## 4 6.096624e-06 1.159071e-07 9.560632 1.168733 5.807715 9.943473e-08
## 5 6.532375e-01 2.254818e+00 10.447349 6.228230 11.025267 8.105112e+00
## 6 4.541804e-01 1.388250e+00 9.257547 5.704315 9.168851 6.674545e+00
##      Slc5a8      Slc5a9      Slc6a1      Slc6a11      Slc6a12      Slc6a13      Slc6a15
## 1 2.6271567 3.877918 14.99805 14.71207 2.894210e+00 8.200660 9.644797
## 2 2.2259049 3.157683 14.38019 13.91064 2.543078e+00 7.375348 9.232341
## 3 0.3085853 1.583162 12.54715 11.27320 5.657118e+00 11.216559 6.472657
## 4 2.0766410 1.768127 12.42455 11.21699 5.175846e-08 8.663444 10.425112
## 5 2.5151345 3.480461 14.73905 14.26950 2.846317e+00 7.732309 9.590691
## 6 1.7114453 2.808947 13.80612 13.52016 1.935577e+00 7.015097 8.455177
##      Slc6a17      Slc6a19      Slc6a2      Slc6a20a      Slc6a20b      Slc6a3
## 1 11.079146 6.033732 1.2329476 8.039125 3.173186e+00 4.912354
## 2 11.120214 5.720264 1.6341482 7.167677 2.373789e+00 6.322801
## 3 6.672751 4.635289 0.2435746 10.305786 1.494793e+00 1.536754
## 4 7.817048 3.825098 0.4857582 7.784139 6.569669e-08 3.133341
## 5 11.478950 6.073093 1.8867588 7.524341 2.669951e+00 6.677699
## 6 9.888037 4.870346 0.6740962 6.854321 2.176323e+00 3.781827
##      Slc6a4      Slc6a5      Slc6a6      Slc6a7      Slc6a8      Slc6a9      Slc7a1
## 1 2.167680e+00 2.464895e+00 14.37073 8.621434 13.018256 12.86965 14.345949
## 2 2.474596e+00 2.277764e+00 13.56031 8.182008 12.592155 12.16842 13.383726
## 3 9.172501e-01 7.871773e-08 10.48472 1.693115 9.116803 10.52260 8.255460
## 4 3.845794e-11 3.758128e-08 10.54497 6.197930 7.999636 10.36654 9.300228
## 5 2.775076e+00 2.569509e+00 13.91916 8.539790 12.950983 12.52723 13.742575
## 6 1.342688e+00 1.578632e+00 13.17883 7.434250 11.826500 11.67792 13.154056
##      Slc7a10      Slc7a11      Slc7a14      Slc7a2      Slc7a3      Slc7a4      Slc7a5
## 1 13.065996 11.73505 9.078277 11.498654 10.798457 9.511001 15.053423
## 2 12.276511 10.82268 8.792314 10.918109 10.205108 9.228189 14.425655
## 3 8.315235 11.60771 7.205785 8.273958 5.138036 10.730917 8.884197
## 4 9.533009 11.00463 11.017678 8.508951 7.333795 10.912618 9.262457
## 5 12.635325 11.18138 9.150475 11.276824 10.563717 9.586537 14.784520
## 6 11.874233 10.54362 7.889792 10.307325 9.607536 8.321610 13.861495
##      Slc7a6      Slc7a6os      Slc7a7      Slc7a8      Slc8a1      Slc8a2      Slc8a3
## 1 10.944445 10.850946 11.364894 12.479722 11.171771 11.258631 10.119383
## 2 11.210158 10.346961 11.676774 12.023147 11.186857 11.235331 10.299349
## 3 8.109916 7.199997 7.114240 8.853279 8.195785 4.498767 5.792425
## 4 6.449962 3.843677 7.102166 10.147214 8.615254 8.381473 5.996054
## 5 11.568902 10.705596 12.035556 12.381949 11.545600 11.594078 10.657975
## 6 9.753422 9.659987 10.173628 11.288070 9.980608 10.067420 8.929101
##      Slc9a1      Slc9a2      Slc9a3      Slc9a3r1      Slc9a3r2      Slc9a4      Slc9a5
## 1 11.618536 6.086242e+00 2.8336545 12.098025 12.996670 2.990364 9.600159
## 2 11.211145 5.460729e+00 3.0728674 11.749340 12.795727 2.805651 9.901587
## 3 8.580286 1.318578e-07 1.0877764 10.997008 8.157319 2.215855 4.841408
## 4 7.155735 7.560150e-01 0.3277558 9.488334 7.845008 3.759374 2.768676
## 5 11.569890 5.812364e+00 3.3934313 12.108126 13.154561 3.118295 10.260133
## 6 10.427155 4.921845e+00 1.8841824 10.906473 11.804918 2.017835 8.410613
##      Slc9a6      Slc9a7      Slc9a8      Slc9a9      Slco1a1      Slco1a4
## 1 12.193243 9.256045 11.352338 11.498651 8.040540e-01 13.145864
## 2 11.617195 8.890766 10.783232 11.227805 1.891740e+00 12.176108
## 3 9.068111 4.303156 8.993675 9.282495 7.072755e-08 9.557337
## 4 9.748118 5.386077 8.086893 8.628374 2.435956e-08 10.989078
## 5 11.975972 9.248974 11.141930 11.586551 2.162261e+00 12.534918
## 6 11.001663 8.067154 10.161078 10.307321 4.108799e-01 11.954089
##      Slco1a5      Slco1b2      Slco1c1      Slco2a1      Slco2b1      Slco3a1      Slco4a1
## 1 4.059913e+00 6.860051e+00 15.67061 8.070192 14.665149 11.808951 8.652763

```

```

## 2 5.112074e+00 6.005713e+00 15.22314 7.757740 14.378450 10.720887 9.384017
## 3 2.985898e+00 7.548983e-08 11.19931 7.319713 8.458994 8.211137 3.192280
## 4 1.299835e-07 3.913803e-08 12.04995 4.440536 11.488479 8.368282 4.180138
## 5 5.461722e+00 6.359631e+00 15.58201 8.115147 14.737314 11.079577 9.742420
## 6 2.976934e+00 5.684271e+00 14.47867 6.885235 13.473238 10.617495 7.465476
##      Slco4c1  Slco5a1      Slfn1      Slfn2      Slfn3      Slfn4
## 1 3.316082e+00 8.362257 1.984723e+00 10.663407 4.707868 2.264598e+00
## 2 1.080050e+00 7.692121 2.953358e+00 10.633370 4.342941 9.649347e-01
## 3 5.141862e-08 7.847550 1.615804e+00 7.786415 2.304789 4.683741e-08
## 4 2.178983e-08 1.327227 7.067599e-08 7.940266 4.206064 2.307514e-08
## 5 1.280125e+00 8.049460 3.270566e+00 10.992048 4.686053 1.151011e+00
## 6 2.301972e+00 7.176016 1.202581e+00 9.472591 3.586459 1.418533e+00
##      Slfn5      Slfn8      Slfn9      Slfn11  Slit1      Slit2      Slit3
## 1 10.958101 6.265159 6.298331 1.992344e+00 9.638173 9.062866 6.215969
## 2 10.282534 6.318572 6.568388 1.322321e+00 9.437253 8.568108 5.929254
## 3 5.964495 4.041309 6.726207 3.847477e-08 3.363292 6.015552 3.405389
## 4 6.400848 4.330587 4.037933 1.955844e-08 6.877622 6.934139 7.748871
## 5 10.641157 6.673458 6.923910 1.548097e+00 9.795673 8.926149 6.282901
## 6 9.767069 5.097573 5.130195 1.208335e+00 8.448564 7.874419 5.049221
##      Slitrk1  Slitrk2  Slitrk3  Slitrk4  Slitrk5  Slitrk6      Slk
## 1 9.902586 11.439202 10.039104 7.852731 10.462329 6.860989 12.304647
## 2 10.365072 10.726942 9.772823 7.296707 10.045436 5.970672 12.236334
## 3 6.152235 10.860862 6.641888 5.079226 6.610764 2.718294 8.339398
## 4 8.430952 11.227943 9.509739 7.292887 9.199572 1.893291 7.537695
## 5 10.723710 11.085633 10.131339 7.653560 10.404013 6.324468 12.595147
## 6 8.712579 10.247900 8.848919 6.668915 9.271687 5.685198 11.113037
##      Slmap      Slmo1      Slmo2      Slpi      Sltm      Slu7      Slurp1
## 1 11.129647 9.459517 10.647829 9.917604 11.547660 11.21109 0.3777998
## 2 10.922605 8.821154 10.326070 7.968054 11.520788 10.89139 0.2580642
## 3 8.065142 9.340130 10.068994 5.698480 9.808787 11.52083 1.9985201
## 4 8.184240 9.045883 8.705355 5.563588 7.780717 10.30576 2.3727636
## 5 11.281320 9.179329 10.684701 8.325662 11.879558 11.25010 0.3232727
## 6 9.938508 8.270220 9.457025 8.727577 10.356309 10.01990 0.1794135
##      Slx1b      Slx4      Smad1      Smad2      Smad3      Smad4      Smad5
## 1 9.951659 10.288391 11.722314 11.406740 12.638690 11.984324 12.320460
## 2 9.724834 10.066879 11.091038 11.351007 12.642573 11.221353 12.144727
## 3 9.401642 7.909890 10.328349 9.471618 7.975111 10.057045 10.586418
## 4 6.058218 5.346889 9.423955 7.752530 8.960679 8.841151 8.197733
## 5 10.083337 10.425461 11.449771 11.709764 13.001402 11.580099 12.503536
## 6 8.761586 9.097921 10.530890 10.215453 11.447003 10.792807 11.128847
##      Smad6      Smad7      Smad9      Smagp      Smap1      Smap2      Smarca1
## 1 8.369412 12.405660 7.469079 9.771432 11.205133 13.097510 9.364050
## 2 7.843824 11.814791 7.694999 9.935404 10.710839 12.940802 9.415875
## 3 2.163527 7.757165 6.613879 3.893210 8.358418 8.624671 8.852279
## 4 2.979707 7.707152 4.687115 3.438145 6.595047 8.229691 4.713812
## 5 8.201317 12.173581 8.052341 10.293958 11.069528 13.299640 9.774288
## 6 7.183142 11.214025 6.287741 8.581613 10.013951 11.905742 8.174937
##      Smarca2  Smarca4  Smarca5  Smarcad1  Smarca11  Smarcb1  Smarcc1
## 1 12.342878 13.041287 10.777828 10.933080 10.937906 12.13415 11.487602
## 2 12.127000 13.059941 10.144738 10.418192 10.991275 11.90100 11.061745
## 3 11.364818 10.884048 10.647225 9.698914 9.760928 12.75474 10.973029
## 4 9.431063 8.829996 8.663984 5.929248 8.303730 10.63858 8.582416
## 5 12.485808 13.418783 10.503336 10.776838 11.349998 12.25979 11.420475
## 6 11.151259 11.849528 9.586923 9.742064 9.746887 10.94259 10.296277

```

```

##      Smarcc2  Smarcd1  Smarcd2  Smarcd3  Smarce1  Smc1a  Smc1b
## 1 13.584537 12.561410 11.440557 11.050094 10.870123 12.047303 4.480177
## 2 13.301317 12.136270 11.013960 10.895154 10.661725 11.901130 4.258856
## 3 10.564664 10.202031 8.456626 7.647902 10.525345 11.849744 4.779282
## 4 8.927254 8.464268 7.058391 5.415947 7.804695 9.361889 3.352616
## 5 13.660164 12.495078 11.372685 11.253866 11.020407 12.259926 4.601017
## 6 12.392708 11.369739 10.249255 9.859003 9.679150 10.855767 3.370472
##      Smc2      Smc3      Smc4      Smc5      Smc6  Smchd1  Smcr8
## 1 9.953118 11.25559 10.802432 11.123121 10.867584 11.123624 11.785122
## 2 9.884342 11.43531 10.556112 10.975266 10.796138 10.921005 11.725306
## 3 10.925884 11.22661 10.261900 9.626892 10.482285 9.502417 8.011621
## 4 7.676874 9.21773 6.238311 7.214340 7.757560 7.335457 6.265178
## 5 10.242884 11.79407 10.914780 11.333986 11.154838 11.279720 12.084091
## 6 8.763043 10.06438 9.611508 9.931986 9.676613 9.932489 10.593675
##      Smek1      Smek2      Smg1      Smg5      Smg6      Smg7      Smn1
## 1 11.654041 11.834254 12.777241 12.641481 11.408366 12.41881 9.545710
## 2 10.917171 11.057638 12.286464 12.487960 11.298695 11.89925 9.196198
## 3 10.632728 10.513015 9.861033 7.746470 9.196297 11.43504 9.630500
## 4 9.768677 9.472976 7.265017 5.500792 7.266893 10.58568 7.475466
## 5 11.275886 11.416368 12.645279 12.846784 11.657448 12.25805 9.554534
## 6 10.462645 10.642789 11.585527 11.449794 10.217078 11.22718 8.356257
##      Smndc1      Smo      Smoc1      Smoc2      Smox      Smpd1      Smpd2
## 1 11.562832 11.319587 10.879140 8.961992 13.831164 12.59755 12.09559
## 2 11.126995 10.496011 10.844227 9.117938 13.215330 11.95394 11.30445
## 3 8.800265 8.662906 8.424722 5.544826 9.433683 11.32089 10.45983
## 4 7.743521 8.859989 6.160235 8.073200 9.556974 11.66630 10.25469
## 5 11.485732 10.854670 11.202933 9.476244 13.574175 12.31274 11.66320
## 6 10.371474 10.128344 9.688161 7.773800 12.639311 11.40587 10.90404
##      Smpd3      Smpd4      Smpd13a      Smpd13b      Sms      Smtn      Smtn12
## 1 9.833426 11.111638 12.379346 8.067264 9.837619 11.794386 9.317382
## 2 9.631212 11.026973 11.629580 7.933705 9.350679 10.542037 8.712039
## 3 8.365023 9.997756 10.783462 7.501625 7.677183 7.779859 4.861004
## 4 8.552362 7.326908 9.883161 5.192106 6.353224 5.622895 2.790893
## 5 9.989690 11.385700 11.988359 8.291282 9.709070 10.900702 9.070158
## 6 8.643517 9.920509 11.187718 6.882321 8.647704 10.602936 8.128363
##      Smu1      Smug1      Smurf1      Smurf2      Smyd1      Smyd2      Smyd3
## 1 12.11709 9.282347 13.334019 12.110835 6.8761286 11.472394 9.552875
## 2 11.29163 8.734061 12.765694 11.676933 5.5827323 11.211918 9.406554
## 3 11.89262 8.288041 8.389742 9.482941 1.4264982 7.926667 9.827557
## 4 10.59880 3.978574 6.265657 7.351277 0.3285065 6.150606 9.192367
## 5 11.65038 9.092193 13.124527 12.035714 5.9349557 11.570662 9.764963
## 6 10.92554 8.093401 12.142218 10.919279 5.7001694 10.281076 8.363410
##      Smyd4      Smyd5      Snai1      Snai2      Snai3      Snap23      Snap25
## 1 8.782119 10.096678 5.938068 6.599975 8.947203e-01 11.099549 11.77583
## 2 8.423924 9.517854 5.431442 6.282304 2.959721e+00 10.436259 11.62730
## 3 8.085598 10.310599 5.488758 3.245867 1.002172e-07 10.424928 11.75553
## 4 8.962605 9.153692 1.533987 2.189263 2.830974e-08 9.731268 13.17949
## 5 8.781876 9.876299 5.782927 6.637088 3.277114e+00 10.794908 11.98608
## 6 7.594430 8.906423 4.776621 5.427372 4.640361e-01 9.908428 10.58439
##      Snap29      Snap47      Snap91      Snapc1      Snapc2      Snapc3      Snapc4
## 1 11.656211 11.88212 12.198903 9.405053 10.765363 9.094602 10.610561
## 2 10.979655 11.54567 11.651045 9.074821 9.909713 8.853060 10.697128
## 3 8.695441 12.78504 8.722934 8.304819 8.799222 9.180624 8.483654
## 4 6.845323 11.63144 9.352902 7.168834 8.015347 5.756793 7.345628

```

```

## 5 11.338376 11.90444 12.009825 9.433110 10.268261 9.211250 11.055815
## 6 10.464814 10.69063 11.007322 8.215859 9.574467 7.906077 9.419788
##      Snapc5      Snapin      Snca      Sncaip      Sncb      Sncg      Snd1
## 1 9.011101 12.087015 10.559936 9.697269 10.128622 4.756793 12.716665
## 2 8.378597 11.225309 10.076927 9.532166 10.500457 4.194001 12.508663
## 3 10.447357 10.621260 9.076058 10.386510 6.911442 4.903852 10.556832
## 4 8.718100 9.438602 11.629712 5.421557 8.395417 9.276802 9.382687
## 5 8.736519 11.584055 10.435512 9.890615 10.859116 4.535388 12.867488
## 6 7.822783 10.895466 9.369207 8.507564 8.938328 3.633089 11.524963
##      Sned1      Snf8      Snip1      Snn      Snph      Snrk      Snrnp200
## 1 8.828351 10.485352 9.675559 13.646729 11.076431 12.286153 12.61034
## 2 8.333141 9.882709 10.324007 12.908851 11.075408 11.927265 12.57443
## 3 5.377166 7.621741 6.317005 9.421236 7.003054 8.686817 10.87356
## 4 2.621780 7.530039 4.483645 8.181067 8.496586 7.966172 9.34567
## 5 8.691033 10.241251 10.682637 13.267689 11.434140 12.286062 12.93326
## 6 7.640527 9.294688 8.485889 12.454893 9.885324 11.094548 11.41866
##      Snrnp25      Snrnp27      Snrnp35      Snrnp40      Snrnp48      Snrnp70      Snrpa
## 1 9.555483 10.582120 8.870156 10.837411 9.680347 13.703777 10.842650
## 2 8.808393 9.766968 8.976196 10.452236 9.618090 13.556219 10.287566
## 3 10.224749 11.544769 7.387588 9.879304 8.502136 9.244613 10.885243
## 4 8.623982 10.626805 6.441218 8.495915 4.331774 7.129706 9.046181
## 5 9.166562 10.125481 9.334443 10.810887 9.976564 13.915071 10.646190
## 6 8.366013 9.391371 7.682213 9.646461 8.490670 12.511935 9.651697
##      Snrpa1      Snrpb      Snrpb2      Snrpc      Snrpd1      Snrpd2      Snrpd3
## 1 10.615466 12.89224 10.325809 8.742136 10.259809 11.122587 11.54468
## 2 10.019666 12.36328 9.419930 7.984989 9.680560 10.574944 10.83624
## 3 11.479628 12.11306 11.728383 9.259100 11.804402 11.983580 12.34411
## 4 9.282037 10.33112 9.901885 7.218382 9.552068 9.966806 10.10934
## 5 10.378239 12.72209 9.778344 8.342611 10.039051 10.933614 11.19495
## 6 9.424689 11.70050 9.135300 7.554568 9.069368 9.931452 10.35333
##      Snrpe      Snrpf      Snrpg      Snrpn      Snta1      Sntb1      Sntb2
## 1 9.904907 7.315488 8.359404 4.768130 12.182383 7.094025 8.885906
## 2 9.081431 6.200086 7.687000 4.328612 11.576345 7.153822 9.171800
## 3 11.227567 6.103387 11.214712 4.374963 7.862217 4.385409 4.882180
## 4 9.121403 4.155725 9.020761 2.643078 7.146220 3.191533 5.387331
## 5 9.439722 6.554630 8.044334 4.671566 11.935120 7.510465 9.530127
## 6 8.714897 6.135340 7.173174 3.643905 10.990807 5.915831 7.697919
##      Sntg1      Sntg2      Sntn      Snpn      Snw1      Snx1      Snx10
## 1 8.261376 4.866796e+00 0.3987455 8.681232 11.43165 12.34156 10.377658
## 2 9.097819 4.649179e+00 0.2541051 8.383502 10.97430 11.92040 10.070965
## 3 4.173282 2.405988e+00 6.1241084 9.826281 12.47055 11.28683 10.511966
## 4 5.082413 9.591443e-08 1.1896992 7.934491 10.89653 10.28876 10.515502
## 5 9.456117 4.995320e+00 0.3184188 8.741428 11.33302 12.27919 10.429548
## 6 7.075550 3.738196e+00 0.1900695 7.493853 10.24035 11.14994 9.187096
##      Snx11      Snx12      Snx13      Snx14      Snx15      Snx16      Snx17
## 1 10.521520 11.638664 11.800672 11.407322 11.864989 9.159181 13.28169
## 2 10.859819 10.898751 11.707617 10.904736 11.038287 8.809890 13.03159
## 3 8.009990 10.107921 8.670203 9.366402 9.809654 8.348625 12.11400
## 4 5.517924 8.211744 9.154429 8.393326 8.873486 6.761141 11.10071
## 5 11.218527 11.257464 12.066401 11.263449 11.397015 9.168060 13.39043
## 6 9.330823 10.447274 10.609219 10.216035 10.673512 7.970505 12.08990
##      Snx18      Snx19      Snx2      Snx20      Snx21      Snx22      Snx24
## 1 12.438583 11.744631 11.256029 9.844570 9.802519 10.221481 9.636587
## 2 11.771048 11.710460 11.129154 9.676989 9.239191 10.372478 9.685269

```

```

## 3 10.392493 9.652046 10.864101 2.010231 6.889155 7.611637 7.754054
## 4 9.935683 9.016602 9.308798 4.976486 6.252341 4.431325 7.916111
## 5 12.129835 12.069244 11.487891 10.035479 9.597543 10.731117 10.043761
## 6 11.246941 10.553199 10.064820 8.654645 8.612654 9.031083 8.446980
##      Snx25      Snx27      Snx29      Snx3      Snx30      Snx31      Snx32
## 1 10.759461 12.515326 10.232242 13.60218 12.238352 2.669325e+00 11.716269
## 2 10.727367 12.076654 9.875555 12.69192 12.116442 6.964772e-01 10.601071
## 3 6.402734 10.764757 6.252065 11.78764 7.960511 7.980516e-08 10.443531
## 4 7.085355 9.920889 5.695700 10.87817 6.980087 3.495683e-08 8.570743
## 5 11.086058 12.435460 10.234095 13.05075 12.475249 8.445484e-01 10.959745
## 6 9.568569 11.323666 9.041832 12.41035 11.046760 1.746392e+00 10.524848
##      Snx33      Snx4      Snx5      Snx6      Snx7      Snx8      Snx9
## 1 10.856865 11.871031 13.62786 12.12180 9.372444 11.819463 10.658874
## 2 10.686959 11.412274 12.91338 11.55404 9.250928 12.305717 10.627530
## 3 9.456946 10.207312 11.14380 12.35248 5.515522 6.984638 6.906740
## 4 7.429958 9.299799 11.60452 10.51329 5.076849 4.007280 4.816861
## 5 11.045645 11.771036 13.27222 11.91281 9.609284 12.664533 10.986207
## 6 9.665902 10.679553 12.43602 10.93024 8.183315 10.628003 9.468061
##      Soat1      Soat2      Sobp      Socs1      Socs2      Socs3      Socs4
## 1 11.62072 4.038721e+00 10.334600 7.679574 8.970763 14.970222 8.909481
## 2 10.84670 3.668621e+00 10.315676 7.827839 8.586435 14.159319 9.238096
## 3 12.36220 3.378158e-08 8.751152 2.140242 8.631959 4.903669 4.924030
## 4 11.55118 1.655644e-08 7.206650 2.529106 5.165824 7.779868 3.607623
## 5 11.20540 4.002259e+00 10.674305 8.185316 8.944486 14.518181 9.596447
## 6 10.42934 2.957291e+00 9.144082 6.496795 7.782548 13.778297 7.721430
##      Socs5      Socs6      Socs7      Sod1      Sod2      Sod3      Son
## 1 11.043331 10.323055 11.849310 12.28231 12.02743 9.744123 14.78313
## 2 10.894438 10.083623 11.897950 11.60982 11.38510 8.788929 14.35996
## 3 8.239786 7.279460 9.166126 12.52791 11.00031 8.079304 12.75636
## 4 6.509574 4.020239 7.513676 11.60540 10.20908 7.909578 11.52591
## 5 11.253150 10.442209 12.256746 11.96860 11.74386 9.147088 14.71882
## 6 9.852244 9.132548 10.657840 11.09071 10.83590 8.554346 13.59121
##      Sorbs1      Sorbs2      Sorbs3      Sorcs1      Sorcs2      Sorcs3      Sord
## 1 11.95434 11.307560 12.520058 10.898883 11.797669 9.473095 9.855846
## 2 11.64119 10.697152 12.035120 10.978189 11.475756 9.458986 9.534224
## 3 12.49147 10.577489 10.860936 6.205349 9.044051 4.122729 9.685475
## 4 10.54794 10.990691 9.743207 6.823016 8.844856 6.553286 7.947291
## 5 11.99997 11.055839 12.393923 11.336910 11.834523 9.817413 9.892673
## 6 10.76283 10.116323 11.328396 9.707890 10.606217 8.283773 8.665904
##      Sorl1      Sort1      Sos1      Sos2      Sost      Sostdc1      Sowaha
## 1 11.697054 13.84901 11.661664 11.465269 3.139101e+00 5.880316 9.587033
## 2 11.359038 13.64227 11.042030 11.046751 2.699042e+00 5.072344 9.832718
## 3 8.730806 10.76920 10.276904 8.485345 4.417743e-08 5.943194 7.998829
## 4 11.282272 10.78880 8.721654 7.902373 2.197540e-08 8.714571 7.927762
## 5 11.717796 14.00113 11.400758 11.405479 3.008079e+00 5.421733 10.191248
## 6 10.505641 12.65715 10.470265 10.273955 2.146576e+00 4.720101 8.397509
##      Sowahb      Sowahc      Sox1      Sox10      Sox11      Sox12      Sox13
## 1 3.882630e+00 11.101031 10.020821 14.146295 11.61668 10.895998 10.536278
## 2 4.603808e+00 10.593071 9.965135 13.257670 11.41527 10.720758 10.303653
## 3 6.941835e-08 8.638730 10.014718 8.941967 16.34932 8.547188 6.876904
## 4 5.064518e-01 8.743967 6.264539 9.301690 10.97942 7.092052 5.689066
## 5 4.949540e+00 10.951744 10.323696 13.616516 11.77403 11.079449 10.662280
## 6 2.813274e+00 9.909909 8.830658 12.954415 10.42530 9.705007 9.345569
##      Sox14      Sox15      Sox17      Sox18      Sox2      Sox21      Sox3

```

```

## 1 2.558056e+00 5.346333 11.819549 10.423009 12.548889 10.947415 8.443629
## 2 2.499351e-08 5.250914 9.401625 8.540257 11.984331 10.778419 8.884029
## 3 8.428343e-09 1.493364 1.335165 3.017093 10.664792 7.822615 5.717230
## 4 2.791936e-09 1.485286 4.586585 5.445445 9.477516 7.448591 2.580003
## 5 3.205004e-08 5.601411 9.760033 8.898281 12.343131 11.137117 9.242234
## 6 1.654558e+00 4.200109 10.628089 9.232404 11.357221 9.756390 7.257073
##      Sox30      Sox4      Sox5      Sox6      Sox7      Sox8      Sox9
## 1 3.024467e+00 12.531656 10.529020 12.121049 12.621038 13.203524 11.94697
## 2 2.689906e+00 12.130656 10.253152 11.936514 11.472163 12.673830 11.53961
## 3 1.405390e+00 10.574099 10.790541 10.453458 5.219166 9.824165 13.84012
## 4 6.735836e-08 5.841977 7.642054 8.131002 2.878507 8.430882 11.72912
## 5 2.998621e+00 12.489464 10.611770 12.295311 11.830930 13.032660 11.89838
## 6 2.047197e+00 11.339992 9.338317 10.929491 11.429355 12.011741 10.75546
##      Sp1      Sp100      Sp110      Sp140      Sp2      Sp3      Sp4
## 1 11.940347 7.838807 8.967749 7.085067 10.054873 11.784919 10.051074
## 2 11.590459 6.673728 8.210283 7.172478 10.248555 11.269168 10.229167
## 3 9.672215 6.276164 4.915119 3.149152 8.622726 10.583402 9.620333
## 4 8.624508 8.036155 5.852348 3.584298 6.743049 9.293866 6.301969
## 5 11.949235 7.029486 8.568087 7.529149 10.607172 11.627918 10.587781
## 6 10.748845 6.655070 7.779542 5.906959 8.864668 10.593472 8.860874
##      Sp5      Sp6      Sp7      Sp8      Sp9      Spa17
## 1 7.2494254 6.062172 9.210975e+00 8.985344 8.721560e+00 6.412542
## 2 8.1103903 5.517196 7.962204e+00 8.017480 7.834626e+00 5.408889
## 3 2.0039460 3.830245 4.856142e+00 9.349767 3.107338e+00 8.512101
## 4 0.3039121 3.913917 7.591344e-08 3.659703 5.738124e-08 7.363870
## 5 8.4681171 5.869109 8.319806e+00 8.375130 8.192110e+00 5.760258
## 6 6.0698297 4.898234 8.022183e+00 7.797091 7.534055e+00 5.242606
##      Spaca1      Spaca4      Spaca5      Spag1      Spag16      Spag17
## 1 1.655313e+00 1.881771e+00 1.6224214 8.634645 2.082583e+00 4.549123
## 2 1.466166e+00 7.741831e-01 2.0778573 7.993595 2.756297e+00 3.881738
## 3 3.628138e-08 8.789400e-08 0.9756016 7.368051 4.342728e+00 4.136337
## 4 1.758727e-08 4.359764e-08 0.0000000 3.503994 8.067937e-08 2.199555
## 5 1.705104e+00 9.340977e-01 2.3593589 8.351225 3.067306e+00 4.218867
## 6 9.611781e-01 1.125587e+00 0.9378859 7.447417 1.277012e+00 3.435687
##      Spag4      Spag5      Spag6      Spag7      Spag8      Spag9      Sparc
## 1 7.099464 9.718163 5.029627 10.997164 5.698310 14.810082 17.59504
## 2 6.751918 9.123542 5.055635 10.396526 5.376993 14.427881 17.13921
## 3 5.126572 9.408839 7.311004 12.224966 7.097555 11.532283 15.19948
## 4 0.642329 6.220528 7.675137 10.976916 3.697554 9.576677 14.53914
## 5 7.107842 9.481850 5.404914 10.755169 5.728193 14.786746 17.49808
## 6 5.921218 8.528426 3.894402 9.806107 4.542310 13.618164 16.40307
##      Sparc11      Spast      Spata13      Spata17      Spata18      Spata19      Spata2
## 1 16.78033 12.414223 12.482297 2.606547 2.917066 3.099006e+00 11.807765
## 2 16.47030 11.500478 11.697716 3.548424 3.397964 7.959112e-01 11.959347
## 3 15.82006 10.257977 10.050383 5.290268 4.315729 2.653775e+00 8.631779
## 4 14.62604 8.798394 9.447973 3.137006 1.041497 2.232625e-08 7.166244
## 5 16.82918 11.859247 12.056499 3.879847 3.726339 9.590084e-01 12.318146
## 6 15.58836 11.222586 11.290644 1.694429 1.955059 2.111698e+00 10.616310
##      Spata20      Spata21      Spata22      Spata24      Spata21      Spata3      Spata4
## 1 2.5607217 2.650531e+00 2.3045568 8.270338 8.538328 4.343335 2.912200e+00
## 2 2.9208307 1.618843e+00 3.1025558 7.801537 8.453724 4.081572 2.499919e+00
## 3 4.5058277 4.107097e+00 0.3926793 8.235974 5.390705 5.432181 1.501728e+00
## 4 0.2975017 4.154559e-08 0.2483665 4.489842 6.790736 3.981572 5.934424e-08
## 5 3.2370743 1.870278e+00 3.4239101 8.158988 8.811695 4.421533 2.801435e+00

```

```

## 6 1.6567442 1.730795e+00 1.4501177 7.084474 7.351428 3.241548 1.950907e+00
##      Spata5      Spata6      Spata7      Spata9      Spats1      Spats2      Spats21
## 1 9.020833 9.507057 8.390651 5.533042e+00 5.716548 10.530904 9.849237
## 2 9.119710 10.106365 8.463599 4.611363e+00 5.438875 10.888462 9.412100
## 3 7.287048 4.693265 7.981801 3.734102e+00 5.184049 7.285116 8.090344
## 4 6.502332 3.422054 6.770222 5.113953e-08 5.719619 4.592456 5.233038
## 5 9.478016 10.464955 8.821576 4.957164e+00 5.790398 11.247173 9.770512
## 6 7.832490 8.317674 7.204297 4.381345e+00 4.560102 9.340200 8.659304
##      Spc24      Spc25      Spcs1      Spcs2      Spcs3      Spdef      Spdya
## 1 7.135117 8.103352 12.53969 12.58849 11.95628 4.888489e+00 5.7701707
## 2 6.900131 7.662046 11.78498 11.93855 11.37135 4.885197e+00 5.3292214
## 3 9.397607 10.800737 12.87546 12.92574 11.64751 3.508966e-01 6.1837165
## 4 4.784183 6.564639 12.61337 12.44145 11.54432 1.023109e-07 0.3403222
## 5 7.256343 8.019353 12.14377 12.29735 11.73011 5.233268e+00 5.6801628
## 6 5.956537 6.918237 11.34803 11.39681 10.76477 3.758964e+00 4.6124447
##      Specc1      Specc11      Spef1      Spef2      Speg      Spem1      Spen
## 1 13.197104 12.420419 9.521931 4.077919 10.894099 4.317657e+00 11.929755
## 2 13.132262 12.325915 9.177136 3.642981 9.890030 4.136339e+00 12.045422
## 3 8.417726 9.311496 5.145272 7.324908 5.182386 2.723658e+00 9.595596
## 4 7.150201 7.021394 1.418513 3.578880 7.042100 6.993000e-08 7.796123
## 5 13.491105 12.684732 9.535465 3.976162 10.248573 4.477009e+00 12.404226
## 6 12.005321 11.228781 8.332521 2.993640 9.703110 3.217436e+00 10.738257
##      Spg11      Spg20      Spg21      Spg7      Sphk1      Sphk2      Sphkap
## 1 10.975692 11.862376 11.795244 11.552415 8.084537 11.796192 9.036316
## 2 10.511777 11.674542 11.127751 11.578467 7.186054 11.464738 9.666304
## 3 7.861133 10.434172 9.020387 8.433123 5.670165 9.614147 8.153418
## 4 3.755899 8.651523 7.878807 7.137816 3.349950 7.706073 9.668163
## 5 10.870438 12.033324 11.486488 11.937242 7.542746 11.823504 10.024791
## 6 9.784648 10.670901 10.603793 10.361062 6.899511 10.604741 7.847934
##      Spib      Spic      Spice1      Spin1      Spin4      Spink2
## 1 5.519316e+00 4.0952240 9.121215 12.339595 7.453715 1.644252e+00
## 2 4.495487e+00 3.0321298 8.985988 11.805463 6.785040 1.248627e+00
## 3 7.651848e-08 4.3319797 8.909372 11.841827 7.910933 6.963314e+00
## 4 3.990916e-08 0.3463283 6.862214 9.998936 6.056308 1.313989e-07
## 5 4.840189e+00 3.3515816 9.344240 12.164253 7.141030 1.467083e+00
## 6 4.367999e+00 3.0097107 7.932627 11.147977 6.272491 9.533283e-01
##      Spink4      Spink5      Spink8      Spint1      Spint2      Spire1      Spire2
## 1 1.490734e+00 1.9596608 1.5013138 2.326690 7.258847 12.489502 8.583563
## 2 2.131885e+00 1.3973748 2.0685694 2.232216 6.630781 12.103773 8.842925
## 3 1.185198e+00 6.2681518 0.8174060 3.495884 7.468910 10.645739 4.879535
## 4 9.903857e-08 5.9399836 4.6273343 5.021483 7.169194 8.692924 2.524375
## 5 2.416303e+00 1.6301969 2.3495578 2.521757 6.986445 12.462579 9.201111
## 6 8.461805e-01 1.1837130 0.8534554 1.467690 6.079171 11.297848 7.396507
##      Spn      Spns1      Spns2      Spns3      Spock1      Spock2      Spock3
## 1 6.363733e+00 12.83716 12.803912 6.422254 10.316666 15.540827 10.114783
## 2 4.946104e+00 12.21370 11.803593 7.656148 10.014666 14.910001 9.632584
## 3 9.100488e-01 10.92550 7.371946 1.351969 8.415846 7.743444 7.832168
## 4 6.511288e-08 11.05399 8.218245 3.815665 8.105638 9.746617 9.384859
## 5 5.294623e+00 12.57251 12.162383 8.013448 10.373238 15.268870 9.991062
## 6 5.194549e+00 11.64544 11.612193 5.252171 9.126166 14.348882 8.924506
##      Spon1      Spon2      Spop      Spopl      Spp1      Spp2      Spp13
## 1 12.606301 6.4224549 13.190128 9.470374 6.878675 0.3759939 12.29091
## 2 12.371131 5.3202590 12.594245 8.610825 6.139775 0.4922072 11.51226
## 3 7.569464 6.6034389 10.885187 5.985204 8.728623 3.9098372 10.55132

```



```

## 4 11.765579 0.6694033 9.502796 1.446207 5.187139 0.2926120 10.62586
## 5 12.729950 5.6711507 12.953073 8.968890 6.494133 0.6053665 11.87103
## 6 11.414621 5.2523692 11.998347 8.281057 5.702688 0.1784982 11.09930
##      Spr      Spred1      Spred2      Spred3      Sprn      Sprr1a
## 1 10.892068 12.045805 10.565720 10.582183 10.452960 6.718988e-06
## 2 10.119113 12.150224 10.540175 10.248730 10.607563 2.116695e-06
## 3 8.235888 7.683939 6.517838 5.000513 5.359897 5.063160e+00
## 4 6.797001 6.285939 6.989083 4.144046 8.903632 4.373346e+00
## 5 10.477706 12.509033 10.898840 10.607347 10.966238 2.714310e-06
## 6 9.701081 10.854270 9.374985 9.391434 9.262327 2.976155e-06
##      Sprr1b      Spry1      Spry2      Spry4      Spryd3      Spryd4      Spsb1
## 1 2.550227e-08 13.115222 12.54783 11.062506 11.418374 8.990232 11.671736
## 2 1.660059e-08 11.915283 11.70231 10.681539 10.428194 7.861013 11.519070
## 3 3.123149e+00 6.502109 12.32452 8.175995 8.368675 8.687221 8.359665
## 4 4.291747e+00 8.019091 11.15145 8.421860 8.282110 7.437444 7.009133
## 5 2.128750e-08 12.274080 12.06110 11.040224 10.786842 8.218523 11.877840
## 6 1.129614e-08 11.923452 11.35617 9.871407 10.227082 7.801966 10.480333
##      Spsb2      Spsb3      Spsb4      Sptlc1      Sptlc2      Sptlc3      Spty2d1
## 1 9.639675 10.798374 9.066469 12.144118 12.302861 0.5081388 11.509188
## 2 9.602895 10.743520 8.427659 11.312105 10.809156 0.3132846 11.257370
## 3 7.032385 10.074476 4.731682 10.559475 7.431664 3.4206535 9.492119
## 4 3.892671 8.345104 6.078706 9.672773 6.834396 3.0362888 6.307183
## 5 9.961364 11.102213 8.785614 11.670859 11.167857 0.3906634 11.616119
## 6 8.450063 9.607454 7.878013 10.952553 11.111252 0.2469337 10.317854
##      Sqle      Sqrd1      Sqstm1      Sra1      Srbdl      Src      Srcin1
## 1 13.67771 11.461924 15.15659 10.800505 9.762824 12.819172 14.142994
## 2 13.14490 11.040356 14.49591 9.973655 9.916610 12.258819 13.633915
## 3 11.75040 9.270247 10.92243 11.032980 7.771964 8.502643 8.332262
## 4 10.28177 8.308781 10.47433 10.226665 4.269286 6.800767 7.502855
## 5 13.50375 11.399084 14.85477 10.332217 10.275159 12.617633 13.992768
## 6 12.48587 10.270611 13.96466 9.609582 8.573018 11.627450 12.951115
##      Srcrb4d      Srd5a1      Srd5a3      Srebf1      Srebf2      Srek1      Srek1ip1
## 1 5.137217 11.41188 10.371649 13.067626 13.966792 12.143809 8.801870
## 2 6.011192 11.19128 10.081648 12.505005 13.784873 11.403467 8.067806
## 3 2.170557 10.09736 6.310015 9.940691 9.175952 11.241595 10.463799
## 4 1.478376 6.80400 7.179891 9.984124 7.946625 9.565693 9.890903
## 5 6.365129 11.55003 10.440233 12.863829 14.143729 11.762228 8.425498
## 6 3.997992 10.22059 9.181093 11.875863 12.774926 10.952244 7.614123
##      Srf      Srfbp1      Srgap1      Srgap2      Srgap3      Srgn      Sri
## 1 12.902334 9.016660 11.058819 13.280465 13.113485 12.140407 12.58565
## 2 12.386210 9.039170 11.169133 13.176279 13.015813 11.105993 11.90554
## 3 7.061329 8.878249 6.124473 9.124346 10.882211 9.292396 11.77938
## 4 6.093536 6.552880 6.758338 8.872151 9.861749 10.695682 10.99468
## 5 12.745029 9.397444 11.527874 13.535123 13.374654 11.464727 12.26433
## 6 11.710597 7.828327 9.867723 12.088672 11.921715 10.948843 11.39397
##      Srl      Srm      Srms      Srp14      Srp19      Srp54a      Srp68
## 1 8.074972 11.874112 5.550268 12.79251 10.975095 8.337273 11.884309
## 2 8.170398 11.125330 6.324014 12.01685 10.102630 7.076230 11.743301
## 3 7.723814 8.654872 2.000820 13.00499 11.169961 6.977372 10.109519
## 4 4.584537 8.084399 4.044065 11.99545 10.029455 4.304596 8.496419
## 5 8.528172 11.484067 6.678915 12.37566 10.461220 7.432748 12.102087
## 6 6.889993 10.682633 4.398100 11.60079 9.784051 7.151132 10.692826
##      Srp72      Srp9      Srp14      Srp19      Srp54a      Srp68
## 1 12.237893 8.909762 11.487629 12.007307 1.044396e+01 12.234957 12.17336

```

```

## 2 12.262794 8.074579 10.899436 11.783164 9.730635e+00 12.210979 11.58027
## 3 11.561011 9.843900 9.918679 12.168228 4.482951e+00 9.857360 11.95007
## 4 9.332302 9.053485 8.250537 9.983308 6.696434e-08 9.367561 11.16284
## 5 12.621609 8.432277 11.258149 12.141953 1.008914e+01 12.569790 11.93905
## 6 11.046301 7.721709 10.296305 10.815783 9.253337e+00 11.043366 10.98178
##      SrpX      SrpX2      Srr      Srrd      Srrm1      Srrm2      Srrm3
## 1 6.080424e+00 5.2283966 10.726580 9.909877 12.79425 14.725119 9.956425
## 2 6.308388e+00 4.4127679 10.432439 9.400687 12.42316 14.307565 9.251000
## 3 4.410217e+00 7.5992441 9.641540 4.957507 11.82451 11.060241 5.137142
## 4 1.165561e-07 0.9018389 8.436268 3.581165 9.60354 9.573549 2.866758
## 5 6.663246e+00 4.7566291 10.791088 9.759095 12.78199 14.666428 9.609356
## 6 4.916137e+00 4.0859992 9.535714 8.719861 11.60254 13.533205 8.766346
##      Srrm4      Srrt      Srsf1      Srsf10      Srsf11      Srsf12      Srsf2
## 1 9.048661 12.592830 13.080131 12.09656 12.631119 9.071436 13.48072
## 2 9.349340 12.470658 12.682952 11.57092 12.586995 8.906005 13.01166
## 3 10.074810 9.426664 10.914238 11.40993 10.560192 8.098254 12.82697
## 4 6.798302 7.388884 8.745041 10.03360 7.823848 5.969649 10.35967
## 5 9.707731 12.829481 13.041782 11.92970 12.945822 9.264220 13.37050
## 6 7.860248 11.401152 11.888366 10.90501 11.439434 7.882968 12.28890
##      Srsf3      Srsf4      Srsf5      Srsf6      Srsf7      Srsf9      Srxn1
## 1 12.88623 11.871412 13.388080 13.911848 12.61957 11.809549 12.215830
## 2 12.22564 11.483785 12.646861 13.470402 12.22649 10.775706 11.333397
## 3 12.78842 8.260363 11.154734 10.024680 13.44239 9.882881 8.293257
## 4 10.91642 7.178272 9.213457 7.730796 10.47728 9.747999 6.694275
## 5 12.58445 11.842553 13.005690 13.829253 12.58530 11.134403 11.692153
## 6 11.69450 10.679934 12.196273 12.719987 11.42789 10.618093 11.024245
##      Ss18      Ss18l1      Ssb      Ssbp1      Ssbp2      Ssbp3      Ssbp4
## 1 11.772416 10.177507 12.20331 8.876120 10.977704 10.97556 12.527078
## 2 11.131317 10.170829 11.70886 8.183306 10.358689 10.67679 12.232233
## 3 11.159600 9.357690 12.28880 9.780028 10.943806 11.98105 4.137385
## 4 9.486258 5.806514 10.53878 7.935143 10.469436 9.61955 4.114140
## 5 11.490054 10.529432 12.06765 8.541089 10.717326 11.03547 12.591046
## 6 10.580973 8.987157 11.01173 7.688160 9.786659 9.78452 11.335415
##      Ssfa2      Ssh1      Ssh2      Ssh3      Ssna1      Sspn      Sspo
## 1 12.429359 9.428028 11.986467 11.644802 11.61430 10.611311 8.500329
## 2 12.164654 9.397265 11.913463 11.661770 10.81847 10.081395 7.287277
## 3 8.735688 5.158173 9.849649 8.466937 11.73292 9.007050 4.881373
## 4 8.584492 3.091779 9.460256 7.111095 10.18816 8.440617 1.705683
## 5 12.523464 9.755672 12.272259 12.020550 11.17717 10.439980 7.644117
## 6 11.237719 8.238790 10.794950 10.453409 10.42292 9.420537 7.313564
##      Ssr1      Ssr2      Ssr3      Ssr4      Ssrp1      Sssca1      Sst
## 1 13.40873 12.93054 14.14875 12.22211 12.99913 9.680579 11.858767
## 2 12.78271 12.28509 13.67373 11.40634 12.48486 9.005977 11.800216
## 3 14.50517 12.79017 13.69201 12.01358 12.41968 10.613274 3.342795
## 4 13.42218 12.05086 12.27944 11.49361 10.61106 8.851375 7.298481
## 5 13.14154 12.64391 14.03258 11.76510 12.84368 9.364237 12.159006
## 6 12.21693 11.73880 12.95687 11.03052 11.80738 8.490901 10.667293
##      Sstr1      Sstr2      Sstr3      Sstr4      Sstr5      Ssu72
## 1 10.715613 5.328259 5.404461 5.199449e+00 2.760457e+00 11.83294
## 2 10.848214 5.093779 5.608285 4.451834e+00 1.983388e+00 11.16679
## 3 3.486409 10.290823 2.636262 5.149243e-08 7.433726e-08 11.37772
## 4 8.724644 5.732967 1.110171 4.602183e+00 3.824489e-08 10.77587
## 5 11.206920 5.443309 5.960625 4.796098e+00 2.259503e+00 11.52553
## 6 9.524755 4.182601 4.256458 4.058038e+00 1.822496e+00 10.64147

```

```

##      Ssx2ip      St13      St14      St18      St3gal1      St3gal2      St3gal3
## 1 10.564225 12.721261 8.570948 10.230036 10.121237 11.989273 11.244164
## 2 10.567257 12.571802 8.149831 9.881896 9.690177 12.089280 10.551338
## 3 8.517709 11.455564 3.662687 7.998595 7.056090 8.260281 5.432169
## 4 7.281051 9.487197 4.296794 7.336768 6.988602 7.545816 1.971692
## 5 10.925926 12.930628 8.507589 10.240438 10.048670 12.448086 10.910005
## 6 9.373491 11.529558 7.383934 9.039628 8.930952 10.797755 10.052961
##      St3gal4      St3gal5      St3gal6      St5      St6gal1      St6gal2      St6galnac2
## 1 11.855079 11.685320 11.861969 11.672161 11.684255 8.104306 9.573966
## 2 10.731341 11.402973 11.589031 11.080717 11.092124 7.480496 8.583033
## 3 9.903164 9.895541 6.907173 8.324262 10.029733 2.184817 6.753400
## 4 7.929570 9.391588 8.538455 9.143507 8.972992 3.657172 7.796072
## 5 11.090033 11.761734 11.947807 11.439449 11.450857 7.837592 8.941082
## 6 10.663607 10.493911 10.670494 10.480757 10.492846 6.919186 8.384465
##      St6galnac3      St6galnac4      St6galnac5      St6galnac6      St7      St7l
## 1 10.304430 12.478959 10.504750 10.719554 10.303551 11.147472
## 2 10.020162 12.021489 10.266509 10.740120 10.207899 10.567719
## 3 9.038871 8.880455 8.842584 7.903873 10.493001 9.357941
## 4 7.486973 9.293374 9.109378 7.308423 8.586847 7.741882
## 5 10.378734 12.380292 10.625129 11.098812 10.566509 10.926388
## 6 9.113943 11.287307 9.314069 9.528693 9.113065 9.956323
##      St8sia1      St8sia2      St8sia3      St8sia4      St8sia5      St8sia6      Stab1
## 1 10.039180 9.688600 10.870229 11.893360 7.708461 6.108920 14.163348
## 2 9.491622 9.381633 10.400291 10.933509 7.569248 6.250393 14.081572
## 3 7.859206 9.862323 10.562028 8.276339 5.387541 1.234569 9.110708
## 4 6.450066 6.771040 10.284529 8.809963 5.077178 1.011273 8.077047
## 5 9.850058 9.740035 10.758935 11.292225 7.926450 6.605086 14.440432
## 6 8.848995 8.498909 9.679256 10.701874 6.525501 4.944096 12.971468
##      Stab2      Stac      Stac2      Stac3      Stag1      Stag2      Stag3
## 1 5.083898 5.8424474 7.343973 6.2243531 11.787707 12.431120 7.552376
## 2 4.988586 4.9124130 8.965094 6.1714896 10.895257 12.055088 7.779411
## 3 1.428063 0.7905381 2.052837 1.3959752 10.676677 10.571333 5.241998
## 4 2.352092 5.6798469 2.837371 0.3268152 9.713516 9.095749 1.146328
## 5 5.337407 5.2606860 9.323336 6.5259465 11.253969 12.413892 8.136841
## 6 3.946620 4.6830675 6.163595 5.0574606 10.596259 11.239479 6.370443
##      Stam      Stam2      Stambp      Stambp11      Stap1      Stap2      Star
## 1 11.934635 11.505004 10.138384 9.669650 2.758070 10.144768 8.627258
## 2 11.533523 11.005669 9.747703 9.835713 2.410871 10.164396 8.005405
## 3 10.555526 10.077356 10.728020 4.844738 2.508463 4.166178 7.330073
## 4 8.718508 9.557243 9.448111 6.388914 2.837044 3.949626 5.112882
## 5 11.892295 11.364393 10.106212 10.194243 2.708658 10.522998 8.363045
## 6 10.743135 10.313671 8.948079 8.479989 1.820494 8.954456 7.440054
##      Stard10      Stard13      Stard3      Stard3n1      Stard4      Stard5      Stard6
## 1 10.054126 11.602113 12.73168 11.74556 11.298972 9.569319 5.120924e+00
## 2 9.513466 11.644452 11.99796 10.84076 10.990749 8.662500 4.991304e+00
## 3 6.817801 7.685544 10.44769 11.14576 7.186396 8.462972 2.279101e+00
## 4 4.617659 5.054587 10.42661 10.53672 4.761639 8.159306 1.132626e-07
## 5 9.871909 12.003232 12.35676 11.19946 11.349471 9.020594 5.340143e+00
## 6 8.863922 10.410738 11.53997 10.55413 10.107739 8.379825 3.982286e+00
##      Stard7      Stard8      Stat1      Stat2      Stat3      Stat4      Stat5a
## 1 12.459531 11.244887 10.839333 10.686115 13.579361 3.5922259 8.904567
## 2 11.958231 10.552907 10.329994 10.468056 13.193551 3.7286174 8.768844
## 3 11.019622 8.329347 9.575444 9.758457 10.446229 4.6140793 5.907950
## 4 8.992707 7.096717 9.134205 6.537140 8.798347 0.3171437 5.016111

```

```

## 5 12.317030 10.911574 10.688626 10.826710 13.552396 4.0632915 9.126993
## 6 11.267884 10.053684 9.648383 9.495280 12.387532 2.5487623 7.716529
##      Stat5b      Stat6      Stau1      Stau2      Stbd1      Stc1      Stc2
## 1 11.329277 12.622423 12.321997 10.490439 6.800247 9.088428 6.4314590
## 2 11.139853 11.881616 12.094521 10.512392 7.088026 8.451601 6.3738036
## 3 7.184774 7.487272 11.383730 8.751303 2.380537 6.957904 3.3422593
## 4 7.412833 9.209740 9.501042 6.928431 0.743090 8.154044 0.3289936
## 5 11.498590 12.240411 12.453327 10.871053 7.444563 8.809570 6.7288399
## 6 10.138029 11.430740 11.130383 9.299771 5.625148 7.899918 5.2612382
##      Steap1      Steap2      Steap3      Steap4      Stfa1      Stfa2      Stfa2l1
## 1 5.652592 10.240768 10.377561 3.858475 0.13284167 3.455684 3.1232330
## 2 5.032428 9.128455 9.921255 3.498606 0.09398196 2.824699 3.2910807
## 3 4.476901 7.991445 8.198222 6.346961 3.23730621 3.318667 0.6309079
## 4 8.088624 7.048337 6.838576 6.329252 4.45651307 4.663399 0.0000000
## 5 5.381550 9.486765 10.279806 3.829055 0.11944253 3.137959 3.6170833
## 6 4.497735 9.050348 9.187000 2.791097 0.06032824 2.426112 2.1327578
##      Stfa3      Stil      Stim1      Stim2      Stip1      Stk10      Stk11
## 1 3.427294 8.139163 12.207314 10.976812 12.74322 10.749948 11.880589
## 2 2.760905 7.976940 11.311544 10.610429 12.36380 10.689383 11.109402
## 3 5.753793 7.904393 8.733971 8.603274 12.25795 5.600380 9.190697
## 4 7.097358 3.220138 9.083594 9.515855 10.51106 2.636074 8.557218
## 5 3.072069 8.334555 11.670297 10.969105 12.72261 11.048069 11.468137
## 6 2.400761 6.953880 11.015731 9.785768 11.55151 9.559064 10.689107
##      Stk11ip      Stk16      Stk17b      Stk19      Stk24      Stk25      Stk3
## 1 11.165071 11.769457 10.923871 10.719467 11.211565 13.305075 9.992364
## 2 11.151569 10.929946 10.183882 9.634853 10.805318 12.502093 9.598129
## 3 8.093447 9.858117 7.870708 8.770168 7.345937 10.057664 9.639638
## 4 7.971189 8.414403 7.516682 8.638325 6.586888 9.987125 9.019639
## 5 11.510308 11.288662 10.542488 9.993331 11.164019 12.860917 9.956597
## 6 9.973912 10.578016 9.732862 9.528606 10.020379 12.113278 8.802238
##      Stk32a      Stk32b      Stk32c      Stk33      Stk35      Stk36      Stk38
## 1 9.205605 9.082445 8.861559 5.069322 11.315646 8.706940 11.870324
## 2 8.685025 9.544448 9.592747 5.758074 10.672662 8.636348 11.089595
## 3 3.658725 4.124640 1.220351 3.393282 8.321351 8.864278 9.717814
## 4 5.910270 3.705161 4.370366 2.971679 6.054916 5.774776 7.744103
## 5 9.043131 9.902900 9.951213 6.111060 11.031346 8.994427 11.448328
## 6 8.016825 7.893950 7.673640 3.932588 10.124405 7.519480 10.678846
##      Stk38l      Stk39      Stk4      Stk40      Stmn1      Stmn2      Stmn3
## 1 10.056519 11.887883 11.434162 12.210891 11.629143 13.00804 12.70793
## 2 9.583346 11.497423 11.050589 11.691506 10.738105 12.41674 12.17988
## 3 10.453685 8.116612 9.744097 7.101893 13.176685 13.04567 12.80487
## 4 8.899864 7.065850 8.389049 6.699393 10.531558 10.68158 12.11701
## 5 9.941810 11.856191 11.409318 12.050288 11.096798 12.77556 12.53869
## 6 8.866312 10.696399 10.242863 11.019307 10.437757 11.81628 11.51623
##      Stmn4      Stom      Stoml1      Stoml2      Stoml3      Ston1      Ston2
## 1 14.21591 11.665909 11.008458 11.386623 2.3423180 7.769608 11.331800
## 2 13.37071 11.034034 10.564182 10.604554 1.9827773 7.683386 10.713424
## 3 11.18936 9.541172 9.872739 10.102279 3.9125064 6.025654 8.138448
## 4 10.29708 8.605302 8.273582 9.697506 0.4334669 3.750152 7.138787
## 5 13.72956 11.392761 10.922851 10.963229 2.2588566 8.040716 11.072113
## 6 13.02402 10.474507 9.817393 10.195347 1.4801307 6.586274 10.140550
##      Stox1      Stox2      Stra13      Stra6      Strada      Stradb      Strap
## 1 6.845214 13.053745 10.150302 11.271941 10.788162 10.395282 12.840156
## 2 6.636055 12.696937 9.447660 11.175641 10.122525 10.514532 12.463333

```

```

## 3 6.155511 10.680826 11.010746 8.836025 9.482743 8.200135 9.975035
## 4 3.535776 8.672026 9.789734 6.899171 9.920298 6.530737 8.663920
## 5 6.991731 13.055768 9.806083 11.534382 10.481118 10.873194 12.822156
## 6 5.669600 11.861984 8.959983 10.080723 9.597249 9.204703 11.648430
##      Strbp      Strn      Strn3      Strn4      Stt3a      Stt3b      Stub1
## 1 11.639910 11.831398 12.240076 13.39623 12.31445 13.41454 10.882427
## 2 11.558190 11.179414 11.695330 13.02041 11.85573 12.67912 10.744434
## 3 10.949003 7.603063 10.516126 8.88927 11.70172 11.42118 7.770049
## 4 8.273093 5.903202 8.508679 8.46864 10.53821 11.07103 5.649528
## 5 11.916964 11.538156 12.054113 13.37925 12.21453 13.03795 11.103128
## 6 10.448519 10.639933 11.048483 12.20442 11.12284 12.22273 9.691446
##      Stx11      Stx12      Stx16      Stx17      Stx18      Stx19      Stx1a
## 1 7.1293460 12.867493 11.739532 10.404962 9.984469 4.483578 11.323923
## 2 7.0569540 12.583476 11.416460 10.368376 9.625972 3.887330 11.609913
## 3 1.3478853 11.739349 8.682744 8.433653 8.876371 3.968454 8.648518
## 4 0.5525858 9.793508 5.462256 6.652822 6.989021 1.095975 7.634483
## 5 7.4134408 12.942303 11.775222 10.727014 9.984448 4.224544 11.968690
## 6 5.9508202 11.675763 10.548102 9.214374 8.794353 3.373684 10.132677
##      Stx1b      Stx2      Stx3      Stx4a      Stx5a      Stx6      Stx7
## 1 10.620761 11.921851 9.280356 11.718814 12.59996 12.998910 12.712607
## 2 10.543675 11.296154 8.374669 11.225422 11.96582 12.692930 12.365036
## 3 6.012407 7.097547 8.061524 9.560081 11.12934 10.044487 11.331941
## 4 5.996179 5.609445 7.995990 7.564441 10.18610 8.676124 9.823075
## 5 10.902341 11.654906 8.732589 11.584168 12.32462 13.051761 12.723855
## 6 9.429979 10.730355 8.091414 10.527392 11.40828 11.807158 11.520906
##      Stx8      Stxbp1      Stxbp2      Stxbp3a      Stxbp4      Stxbp5      Stxbp5l
## 1 10.047455 13.03222 10.955418 11.170704 9.780804 11.391436 9.422090
## 2 9.346918 12.79479 10.605367 10.960998 9.886020 10.960713 8.832534
## 3 10.492811 10.31923 8.542095 9.460585 9.898990 8.024524 7.987367
## 4 9.764265 10.72651 8.278396 8.006449 7.302110 8.500489 8.426403
## 5 9.705308 13.15363 10.964041 11.319717 10.244562 11.319433 9.190715
## 6 8.857259 11.84047 9.764387 9.979541 8.590971 10.200157 8.232864
##      Stxbp6      Styk1      Styx      Styxl1      Sub1      Suc1a2      Suc1g1
## 1 10.373871 4.104197 7.231403 4.802216 12.54605 11.471947 11.94870
## 2 9.951052 4.764090 7.170278 4.050597 11.85719 10.746236 11.49246
## 3 8.391546 1.308112 5.963566 4.922433 13.61145 10.817344 12.06251
## 4 8.267493 0.000000 3.904680 3.760397 12.63921 10.637591 11.14701
## 5 10.309610 5.111210 7.526946 4.390145 12.21598 11.104930 11.85123
## 6 9.183314 3.018049 6.051963 3.676447 11.35439 10.280630 10.75720
##      Suc1g2      Sucnr1      Suds3      Sufu      Sugp1      Sugp2      Sugt1
## 1 9.779519 1.0139669 12.135911 10.032917 11.070036 11.681058 11.72871
## 2 9.369359 0.4058345 12.232764 9.413394 10.743511 11.737404 10.97087
## 3 8.429822 3.7524167 7.888559 4.766151 10.051211 7.685109 11.53655
## 4 6.838356 0.4905939 6.723237 4.526729 7.512034 6.938510 10.46643
## 5 9.727757 0.5023851 12.591576 9.771807 11.102205 12.096190 11.32959
## 6 8.589688 0.5359996 10.944348 8.842740 9.878933 10.489651 10.53729
##      Sulf1      Sulf2      Sult1a1      Sult2b1      Sult4a1      Sult6b1      Sumf1
## 1 8.474796 14.541767 9.501937 5.740459 11.492679 3.220196 10.920878
## 2 8.471804 14.522645 9.061281 5.359831 11.075691 4.172268 10.572538
## 3 6.029079 8.992683 7.524323 5.770448 8.796422 2.938658 7.405966
## 4 6.131773 9.908881 9.623095 6.318844 9.524294 2.819568 6.820630
## 5 8.829787 14.881510 9.419564 5.710939 11.434422 4.513388 10.931208
## 6 7.288125 13.349862 8.312563 4.583436 10.301352 2.217494 9.729870
##      Sumf2      Sumo1      Sumo2      Sumo3      Sun1      Sun2      Sun3

```

```

## 1 10.813222 11.102173 6.651598 12.62181 11.843644 13.119251 1.8517348
## 2 9.963509 10.243600 6.114238 12.01719 11.869551 12.619986 1.0500381
## 3 10.802714 11.685012 5.837283 12.21221 10.360449 7.091275 4.4196636
## 4 10.634031 10.586830 4.383159 10.50147 9.375445 6.977648 0.4352259
## 5 10.322069 10.602216 6.468515 12.37599 12.228345 12.978814 1.2465831
## 6 9.622290 9.911050 5.478319 11.43013 10.652175 11.927480 1.1033839
##      Suox      Supt71      Supv3l1      Surf1      Surf2      Surf4      Surf6
## 1 9.631746 9.535124 10.407229 11.101701 10.224171 13.71960 10.439506
## 2 8.898295 9.190826 9.492800 10.623462 9.789003 12.81785 10.195985
## 3 9.231210 9.504404 6.951735 10.769468 9.644041 10.89554 7.747421
## 4 8.532062 7.476295 6.509334 9.680303 8.411086 10.24334 6.694167
## 5 9.256506 9.549160 9.851237 10.982139 10.147522 13.17669 10.554593
## 6 8.442147 8.345690 9.216639 9.910578 9.033770 12.52775 9.248885
##      Susd1      Susd2      Susd3      Susd4      Susd5      Suv39h1      Suv39h2
## 1 8.272696 6.130948 11.150423 10.900117 10.659001 10.769459 8.125347
## 2 8.177957 4.983280 10.693458 11.279542 9.978737 10.029072 7.857693
## 3 5.079150 5.447523 5.684424 5.487929 5.697459 9.814900 6.609176
## 4 3.998650 4.214660 11.104121 8.922190 6.018385 8.183001 1.865660
## 5 8.535737 5.332063 11.052145 11.638293 10.337300 10.387646 8.215199
## 6 7.086821 4.965717 9.959272 9.709123 9.468188 9.578560 6.940128
##      Suv420h1      Suv420h2      Suz12      Sv2a      Sv2b      Sv2c      Svep1
## 1 12.195817 11.108357 11.170512 14.025736 9.801931 8.036542 7.876449e+00
## 2 11.432055 10.667258 11.214974 13.655866 9.991627 8.508144 7.847279e+00
## 3 9.712339 7.671485 9.216970 9.684317 6.124439 4.806728 3.792587e+00
## 4 8.079208 5.185008 7.326262 11.020008 7.116000 5.412398 1.116495e-07
## 5 11.790818 11.025941 11.573719 14.014720 10.350193 8.866149 8.204776e+00
## 6 11.004237 9.917230 9.979349 12.833865 8.612067 6.851751 6.692500e+00
##      Svim      Svip      Svop      Svop1      Swap70      Swi5      Syap1
## 1 10.716064 11.250723 10.300553 4.972166 12.653778 12.35529 11.088944
## 2 10.377552 10.739343 10.370898 3.422515 12.066293 11.46336 11.240750
## 3 7.405443 9.916061 8.312784 5.190314 8.372169 12.08056 7.526145
## 4 6.334868 8.580931 10.076842 0.000000 8.060565 11.17343 7.613130
## 5 10.736192 11.098036 10.729537 3.751409 12.425098 11.82212 11.599497
## 6 9.525206 10.059516 9.110069 3.839198 11.462089 11.16367 9.897829
##      Sybu      Syce1      Syce1l      Syce2      Sycp1      Sycp2
## 1 10.700638 2.401483e+00 3.208488e+00 7.397108 3.583240e+00 6.7431091
## 2 10.352062 2.028823e+00 1.993050e+00 6.949278 4.215214e+00 5.9437165
## 3 9.760953 6.575353e-08 5.601284e-01 9.576198 2.394699e+00 3.9590167
## 4 9.547112 3.256360e-08 5.342727e-08 6.393243 6.779798e-08 0.4472174
## 5 10.710698 2.307575e+00 2.269734e+00 7.305579 4.556858e+00 6.2974158
## 6 9.509792 1.527473e+00 2.207224e+00 6.216312 2.540655e+00 5.5686877
##      Sycp3      Syde1      Syde2      Syf2      Syk      Sympk      Syn1
## 1 7.163470 9.637543 9.373362 12.25077 12.416529 13.069384 11.867928
## 2 6.394783 8.914736 9.040148 11.64003 12.392510 13.109449 11.621569
## 3 6.469575 8.170373 5.030407 11.61843 5.222312 6.938937 7.371282
## 4 4.979240 5.866217 2.746214 10.58090 7.421378 5.824232 7.779311
## 5 6.749875 9.272955 9.398422 11.99881 12.751330 13.468292 11.980347
## 6 5.984631 8.447934 8.184230 11.05918 11.224892 11.877620 10.676451
##      Syn2      Syn3      Syna      Sync      Syncrip      Syne1      Syne2
## 1 12.216479 9.135792 6.462738 4.3798043 12.094806 12.380549 11.063131
## 2 12.184841 9.198073 6.833321 4.1506956 11.823836 12.179620 10.965761
## 3 9.883476 7.746775 2.392294 2.6787824 11.022670 7.438146 9.473912
## 4 9.603218 6.120530 6.872136 0.3752265 8.281838 11.057010 7.199870
## 5 12.543651 9.556410 7.189406 4.4915470 12.182628 12.538430 11.324480

```

```

## 6 11.024893 7.947170 5.292055 3.2758376 10.903255 11.188921 9.872032
##      Syngr1      Syngr2      Syngr3      Syngr4      Synj1      Synj2      Synj2bp
## 1 13.15396 12.905440 10.912241 2.439450 12.387772 10.733645 10.609423
## 2 12.50974 12.259529 10.589561 3.075411 11.885917 10.647735 10.019390
## 3 10.17784 9.534883 9.392608 3.641134 9.852401 6.872926 10.590349
## 4 10.24953 10.666134 11.122000 2.874816 10.409672 4.624504 9.360009
## 5 12.86856 12.618343 10.948233 3.396043 12.244711 11.006416 10.377963
## 6 11.96218 11.713703 9.721240 1.558052 11.196141 9.542773 9.418651
##      Synm      Synpo      Synpo2      Synpo2l      Synpr      Synrg      Syp
## 1 11.101977 9.743300 6.009163 3.245626e+00 9.907749 11.256986 12.948252
## 2 10.617718 9.678314 5.850567 3.317987e+00 9.293383 11.380999 12.749331
## 3 5.640098 6.719371 5.560138 6.397547e-08 11.156096 8.045576 9.888276
## 4 5.423940 8.332635 1.532675 2.965067e-08 13.373790 6.591223 11.069723
## 5 10.976394 10.036804 6.203920 3.644604e+00 9.651754 11.739758 13.108164
## 6 9.910855 8.553524 4.846263 2.239834e+00 8.717735 10.065776 11.756507
##      Syp1      Syp12      Syt1      Syt10      Syt11      Syt12      Syt13
## 1 12.86403 6.589973 12.148871 4.435095 15.87102 8.090672 9.932287
## 2 12.23479 6.808854 12.281544 5.096276 15.44414 7.924090 10.031670
## 3 12.15849 6.184231 7.727771 3.602542 15.63294 6.377252 4.469724
## 4 10.93866 4.221243 11.537290 6.604849 14.35144 5.680687 9.740502
## 5 12.59361 7.164891 12.640359 5.445822 15.80301 8.281658 10.390245
## 6 11.67230 5.417504 10.957304 3.327921 14.67907 6.905617 8.742240
##      Syt14      Syt15      Syt16      Syt17      Syt2      Syt3      Syt4
## 1 7.199808 7.664508e+00 9.847068 6.889812 4.839164e+00 9.300218 11.498424
## 2 7.793319 6.470845e+00 9.503031 7.236057 4.186088e+00 8.623182 11.533960
## 3 4.128362 7.423016e-01 7.732837 5.653635 5.058055e+00 6.078620 6.884773
## 4 3.975538 6.077913e-08 6.935186 7.412375 5.088076e-08 8.639911 11.747032
## 5 8.150762 6.826131e+00 9.861471 7.592823 4.527379e+00 8.981253 11.892732
## 6 6.020644 6.481826e+00 8.657139 5.713703 3.711760e+00 8.111234 10.307095
##      Syt5      Syt6      Syt7      Syt8      Syt9      Syt11      Syt12
## 1 9.936849 9.270523 11.408646 3.638083e+00 7.968985 5.338911 11.416642
## 2 9.536891 9.235941 10.925908 3.027761e+00 8.293607 4.784579 10.478783
## 3 8.747077 0.914046 7.924251 6.328010e-08 7.153261 2.957177 7.722732
## 4 10.389159 2.348362 9.102257 5.159465e-01 5.051960 3.479752 6.539910
## 5 9.895341 9.594292 11.284623 3.347091e+00 8.651472 5.131866 10.837439
## 6 8.746796 8.081602 10.217359 2.590212e+00 6.784538 4.192919 10.225350
##      Syt13      Syt14      Syt15      Syvn1      Szt2      T
## 1 2.276155e+00 5.9269522 7.604562e+00 11.844657 11.667540 4.591623e+00
## 2 2.428797e+00 5.3835188 6.950778e+00 11.647355 11.413042 4.091221e+00
## 3 2.702647e+00 4.4574379 3.365526e+00 8.713831 7.760016 4.700821e-08
## 4 9.090353e-08 0.4037165 7.418031e-08 8.105525 6.355441 2.345567e-08
## 5 2.727354e+00 5.7347542 7.307082e+00 12.006135 11.771804 4.431308e+00
## 6 1.427649e+00 4.7657385 6.422273e+00 10.653188 10.476139 3.475970e+00
##      Tab1      Tab2      Tab3      Tac1      Tac2      Tac4      Tacc1
## 1 11.099703 12.926272 9.964052 7.888917 6.765340 1.540354e+00 12.49994
## 2 10.868025 12.197924 9.437423 7.756782 5.717935 8.414023e-01 12.50025
## 3 10.193972 9.966896 7.334049 4.069019 10.935685 1.086463e+00 11.33285
## 4 7.961857 9.285781 7.427503 6.074448 5.261094 4.689093e-08 10.79741
## 5 11.226734 12.556735 9.795843 8.114189 6.070755 1.010988e+00 12.85907
## 6 9.908582 11.734532 8.773963 6.704899 5.590651 8.804415e-01 11.30828
##      Tacc2      Tacc3      Taco1      Tacr1      Tacr2      Tacr3
## 1 11.315716 9.886817 8.642768 7.524084e+00 8.667521e-01 7.488174e+00
## 2 11.045042 9.625783 8.491505 7.805600e+00 9.366568e-01 6.146910e+00
## 3 10.344074 9.640614 7.417045 8.857674e-08 3.781801e+00 1.122926e-07

```

```

## 4 7.473496 4.562451 6.301686 3.787556e+00 1.201386e-07 3.336678e+00
## 5 11.403771 9.984259 8.849499 8.163056e+00 1.119098e+00 6.501290e+00
## 6 10.124475 8.696832 7.455514 6.342349e+00 4.474942e-01 6.306696e+00
##      Tacstd2      Tada1      Tada2a      Tada2b      Tada3      Taf1      Taf10
## 1 2.706731 11.42395 10.395618 10.603675 10.650537 11.964421 10.195341
## 2 1.967435 11.09319 9.420397 9.921234 10.603552 11.811108 9.792350
## 3 5.989564 11.06107 9.885614 7.028971 8.688211 10.223408 6.298640
## 4 5.581275 10.04127 8.490199 7.481584 7.049286 8.883884 5.380436
## 5 2.242603 11.45192 9.778811 10.279784 10.962227 12.169898 10.150870
## 6 1.777535 10.23265 9.205039 9.412908 9.459731 10.772911 9.004971
##      Taf11      Taf12      Taf13      Taf15      Taf1b      Taf1c      Taf1d
## 1 11.155803 9.648154 10.744327 11.417885 9.713464 9.046569 10.798874
## 2 10.294014 9.076718 10.057192 11.319830 9.265134 9.357452 10.272025
## 3 10.019677 10.155312 9.715677 6.531136 9.434696 6.926892 9.461196
## 4 8.701486 7.423586 8.388796 4.683246 6.015702 5.181119 7.756897
## 5 10.652640 9.435008 10.415772 11.678585 9.623496 9.715846 10.630646
## 6 9.964649 8.458528 9.553447 10.226594 8.523734 7.858161 9.607953
##      Taf2      Taf3      Taf4a      Taf4b      Taf5      Taf5l      Taf6
## 1 11.036959 9.489217 10.069965 8.829834 8.206221 10.786222 10.905537
## 2 11.003415 9.437905 10.328517 8.960275 8.628951 10.961209 10.475438
## 3 8.903656 8.785661 6.755500 4.471648 6.523865 7.100846 10.628362
## 4 5.032072 7.573249 4.625925 4.830606 4.037967 5.635076 8.439285
## 5 11.362139 9.796325 10.687148 9.318515 8.987026 11.319928 10.834093
## 6 9.845876 8.299866 8.879741 7.642006 7.020633 9.595310 9.714540
##      Taf6l      Taf7      Taf7l      Taf8      Taf9      Taf9b      Tagap
## 1 8.831755 11.060604 2.282466e+00 10.397778 11.64963 10.998673 11.815477
## 2 8.689200 10.239555 2.167272e+00 10.123060 10.90108 10.608121 12.018136
## 3 5.013695 10.386357 4.399711e-08 9.212618 11.57199 10.469784 6.539502
## 4 1.416125 9.759103 3.659194e+00 7.870992 10.61370 9.980891 7.420968
## 5 9.047308 10.598171 2.453541e+00 10.481653 11.25979 10.966796 12.376938
## 6 7.643921 9.869507 1.432634e+00 9.207197 10.45824 9.807614 10.624019
##      Tagap1      Tagln      Tagln2      Tagln3      Tal1      Tal2      Taldo1
## 1 10.541660 8.456016 12.88586 11.58751 9.856187 2.007295e+00 14.68034
## 2 10.250099 7.096166 12.01559 10.89860 10.512082 2.504039e+00 13.89217
## 3 9.677416 9.178969 11.02147 13.45139 1.478767 1.023498e+00 13.50856
## 4 6.601207 11.613653 10.65653 11.68382 2.432236 4.949968e-08 12.54063
## 5 10.608717 7.452717 12.37439 11.25731 10.870743 2.805721e+00 14.25103
## 6 9.350946 7.269414 11.69412 10.39615 8.666245 1.219643e+00 13.48843
##      Tanc1      Tanc2      Tank      Taok1      Taok2      Taok3      Tap1
## 1 11.033588 12.69879 10.968137 12.69275 12.645660 11.222138 9.842458
## 2 11.196625 12.36606 10.355549 12.43911 12.629392 10.695615 9.316613
## 3 6.604369 10.13575 10.633765 12.38356 8.345769 9.427784 6.462060
## 4 7.815305 10.04290 9.365632 11.01438 6.735930 9.368056 8.332389
## 5 11.555368 12.72488 10.714185 12.79793 12.988221 11.054302 9.674992
## 6 9.842508 11.50709 9.777099 11.50105 11.453972 10.030947 8.652535
##      Tap2      Tapbp      Tapbp1      Tapt1      Tarbp2      Tardbp      Tars
## 1 10.733341 12.54044 8.943937 12.238331 9.546592 12.995892 11.182086
## 2 11.047786 11.94789 9.376407 11.904067 9.487155 12.383115 10.832549
## 3 6.912097 10.82366 7.724143 8.611498 7.959798 10.914248 11.123601
## 4 6.021936 10.52714 5.473482 8.486942 3.650205 8.734981 9.001760
## 5 11.406515 12.30669 9.734807 12.262863 9.845591 12.741934 11.191253
## 6 9.542469 11.34878 7.755793 11.046739 8.357138 11.804140 9.990917
##      Tars2      Tarsl2      Tas1r1      Tas1r2      Tas1r3      Tasp1      Tatdn1
## 1 10.922527 10.362514 4.984741 1.822803e+00 6.0051918 8.139289 8.386212

```



```

## 2 10.140501 9.952834 5.707026 2.025214e+00 6.3322537 7.891133 8.139516
## 3 10.248474 7.340126 3.245786 5.874591e-08 3.4790037 7.332818 8.570975
## 4 9.222201 5.544452 3.510554 2.634606e-08 0.3087583 6.314290 6.725417
## 5 10.499098 10.311392 6.059800 2.303760e+00 6.6871775 8.248671 8.497266
## 6 9.731518 9.171968 3.851272 1.082110e+00 4.8423714 6.954005 7.199876
##      Tatdn2  Tatdn3  Tax1bp1  Tax1bp3      Taz  Tbate  Tbcd1
## 1 12.457548 8.748818 12.299932 9.110533 11.700478 3.483807 11.071438
## 2 11.868877 9.011816 12.186316 8.557667 10.890060 4.095714 10.733619
## 3 6.552291 8.400243 11.660910 7.543544 9.259200 7.957949 8.480495
## 4 4.208695 5.377132 9.639456 5.733517 8.707854 3.956238 6.835297
## 5 12.227671 9.370078 12.545126 8.915701 11.248771 4.435860 11.092311
## 6 11.265901 7.561229 11.108324 7.921971 10.509063 2.451277 9.880334
##      Tbcd1d10a  Tbcd1d10b  Tbcd1d10c  Tbcd1d12  Tbcd1d13  Tbcd1d14  Tbcd1d15
## 1 13.152859 12.463202 6.636093 10.876218 12.248019 13.479293 11.64738
## 2 12.011798 12.116687 5.223264 10.766421 11.884589 13.246839 11.37462
## 3 6.180279 8.664877 4.451562 7.948955 7.147086 10.721690 11.03773
## 4 6.689484 7.791785 6.614075 6.714562 7.329676 9.433685 9.21263
## 5 12.370600 12.475494 5.573599 11.125118 12.243384 13.605685 11.73338
## 6 11.961084 11.271553 5.463015 9.685242 11.056425 12.287475 10.45599
##      Tbcd1d16  Tbcd1d17  Tbcd1d19  Tbcd1d2  Tbcd1d20  Tbcd1d22a  Tbcd1d22b
## 1 13.348167 11.899252 11.015134 7.440960 11.477011 11.758410 11.204872
## 2 13.182260 11.472479 10.583817 7.224583 11.539527 11.631113 11.073116
## 3 8.615442 11.246831 10.683291 3.978748 7.258020 8.828735 6.428813
## 4 5.543954 9.522545 7.995476 2.073078 5.042247 6.695443 5.777053
## 5 13.541105 11.831246 10.942489 7.581332 11.898299 11.989891 11.431847
## 6 12.156365 10.707764 9.824065 6.259831 10.285691 10.566973 10.013690
##      Tbcd1d23  Tbcd1d24  Tbcd1d25  Tbcd1d2b  Tbcd1d30  Tbcd1d4  Tbcd1d5
## 1 11.329329 11.923237 9.290182 11.320781 8.676611 10.100738 11.767863
## 2 11.195035 11.491052 8.890754 10.988420 8.884951 10.143446 11.179965
## 3 9.440119 9.059560 6.045017 7.529695 2.730169 8.957910 9.464491
## 4 8.199585 7.529513 4.925267 4.944235 4.450704 4.874722 8.430013
## 5 11.553778 11.849820 9.248962 11.347142 9.243156 10.502043 11.538707
## 6 10.138081 10.731741 8.101219 10.129537 7.489247 8.910478 10.576422
##      Tbcd1d7  Tbcd1d8  Tbcd1d8b  Tbcd1d9  Tbcd1d9b  Tbca  Tbcd
## 1 9.961380 10.002943 8.942455 11.816756 14.250246 10.229769 12.27403
## 2 9.219154 10.404215 8.751449 11.334702 14.092076 9.628365 11.35621
## 3 10.264648 5.510673 6.180846 8.221475 8.895621 11.780234 12.29415
## 4 9.167259 4.173051 7.099883 7.590564 7.087681 9.958759 11.27222
## 5 9.577499 10.762859 9.109590 11.693458 14.450936 9.986842 11.71496
## 6 8.771295 8.812803 7.754315 10.625297 13.058359 9.039361 11.08243
##      Tbcc  Tbccd1  Tbcd  Tbce  Tbcel  Tbck  Tbk1
## 1 9.050296 10.097503 12.230260 10.526444 11.442738 10.094224 10.601047
## 2 8.621571 9.846376 11.666793 10.442050 11.362710 9.311369 10.636887
## 3 7.035192 9.506913 8.840082 8.925237 8.749995 6.082006 8.725003
## 4 6.067753 7.959583 7.938244 6.719788 7.475494 7.020332 8.398477
## 5 8.979642 10.204910 12.025574 10.800701 11.721468 9.669747 10.995566
## 6 7.861879 8.907246 11.038670 9.335743 10.251434 8.903971 9.410282
##      Tbkbp1  Tbl1x  Tbl1xr1  Tbl2  Tbl3  Tbp  Tbp11
## 1 12.056630 10.906357 11.522137 10.973502 11.265838 10.086728 11.107387
## 2 11.572050 10.702698 11.085122 10.565539 10.722382 9.620176 10.407735
## 3 6.338583 8.136502 9.925341 9.361568 10.733224 10.231267 10.662215
## 4 2.067607 6.614944 9.586064 7.802807 10.166387 8.261877 9.719098
## 5 11.930825 11.061386 11.443855 10.924208 11.081072 9.978650 10.766379
## 6 10.865091 9.715360 10.330797 9.782460 10.074623 8.896484 9.916261

```

```

##          Tbr1      Tbrg1      Tbrg4      Tbx1      Tbx10      Tbx15      Tbx18
## 1 10.598114 11.61273 11.276898 7.641305 2.582915e+00 4.314787 6.692540
## 2  9.692491 11.24768 11.146728 7.171661 2.317738e+00 4.533004 7.021973
## 3  9.004170 11.73303  9.331234 0.651006 8.539048e-08 3.184439 5.872149
## 4  7.802020 10.09871  6.580348 1.508033 4.148218e-08 4.506908 3.281310
## 5 10.050985 11.60643 11.505467 7.528331 2.611360e+00 4.878072 7.378401
## 6  9.407352 10.42135 10.085677 6.458773 1.674969e+00 3.214742 5.518740
##          Tbx19      Tbx2      Tbx21      Tbx3      Tbx4      Tbx6      Tbx2r
## 1 2.521479e+00 7.421314 3.372804e+00 9.103434 7.5829646 6.819198 7.417442
## 2 3.279145e+00 6.312034 4.093493e+00 8.412130 7.0378751 5.599013 6.256068
## 3 7.482121e-08 3.805021 6.672889e-01 6.518507 0.3360257 6.381381 5.176062
## 4 2.803886e-08 1.777639 1.294545e-07 6.418954 1.6107984 4.602931 3.244249
## 5 3.604871e+00 6.666902 4.433611e+00 8.770074 7.3943301 5.951312 6.610777
## 6 1.624642e+00 6.240332 2.352252e+00 7.914889 6.4008212 5.643880 6.236490
##          Tbxas1      Tc2n      Tcap      Tcea1      Tcea2      Tcea3      Tcea11
## 1 11.830589 2.190788e+00 4.097441e+00 9.894068 9.700700 4.660616 9.650897
## 2 11.444665 8.418269e-01 5.084722e+00 9.625517 9.458297 4.374693 9.252039
## 3  6.539071 4.413001e-08 8.375138e-01 9.403984 6.984525 1.184149 10.895433
## 4  9.734669 2.142396e-08 9.372206e-08 7.762816 5.421772 4.010704 9.166903
## 5 11.803430 1.011472e+00 5.434193e+00 9.983993 9.816723 4.718151 9.610396
## 6 10.639125 1.360673e+00 3.011770e+00 8.704073 8.510990 3.541494 8.461267
##          Tcea13 Tcea15 Tcea16 Tcea17 Tcea18 Tceanc Tceb1
## 1 10.699030 8.982484 8.863519 3.071830 11.43930 7.834191 10.940312
## 2 10.677379 8.980042 9.215833 3.408381 10.92465 6.778165 10.276319
## 3  8.940775 6.555392 3.921935 1.038345 12.39002 9.179234 12.363073
## 4  7.826711 5.792344 6.329227 0.000000 10.94168 7.720690 10.941221
## 5 11.036064 9.338290 9.574177 3.736978 11.28337 7.134142 10.634942
## 6  9.508185 7.794239 7.675595 2.088130 10.24799 6.650480 9.749292
##          Tceb2 Tceb3 Tcerg1 Tcerg11 Tcf12 Tcf15 Tcf19
## 1 11.167688 11.76873 11.408236 6.6091898 12.725825 5.0955907 9.262088
## 2 10.473622 11.24255 11.735250 6.5786647 12.678405 3.7718766 8.988431
## 3 11.819701 11.52422  9.038023 4.0584714 10.018781 0.3114221 9.931867
## 4 10.960641 10.95259  6.824601 0.9809811  6.671604 0.3238557 4.288524
## 5 10.832277 11.60130 12.094036 6.9342102 13.037236 4.1072714 9.346683
## 6  9.976527 10.57729 10.216949 5.4364645 11.534121 3.9578794 8.073185
##          Tcf20 Tcf23 Tcf25 Tcf3 Tcf4 Tcf7 Tcf711
## 1 10.968760 4.837439 14.30798 12.371805 13.86952 10.532051 9.512033
## 2 10.825128 3.990119 13.92617 11.910096 13.61313  9.795075 8.802424
## 3  9.194276 3.898721 12.09807  8.358526 15.48946  3.946356 6.864669
## 4  7.488949 5.946972 11.06315  6.411345 12.10964  4.614850 5.916322
## 5 11.183831 4.328834 14.28503 12.268892 13.97198 10.153596 9.160590
## 6  9.777721 3.710111 13.11608 11.180178 12.67766  9.341346 8.322641
##          Tcf712 Tcf15 Tchh Tchp Tcirg1 Tcn2 Tcof1
## 1 10.279805 5.4622181 6.918738 9.720920 14.023747 14.00838 10.777419
## 2  9.577657 4.9773627 6.584162 9.451391 13.047477 13.51851 10.853804
## 3 11.863094 2.5812585 4.982218 7.417576  8.920559 11.42898  8.592189
## 4 10.668928 0.2909741 5.948360 4.770763  9.156565 11.38159  6.324704
## 5  9.936119 5.3261042 6.939720 9.809815 13.406318 13.87736 11.212511
## 6  9.089343 4.3125168 5.742315 8.531178 12.831877 12.81651  9.586514
##          Tcp1 Tcp11 Tcp1111 Tcp1112 Tcta Tcte1 Tctex1d1
## 1 12.77095 5.834883 9.569602 11.072593 11.544334 3.402093e+00 2.178911e+00
## 2 12.38468 5.198373 9.344310 10.709850 10.860527 3.133451e+00 6.195293e-01
## 3 12.70886 3.164000 5.736341 11.555491 10.792903 5.850796e-08 1.840606e+00
## 4 10.94489 0.861834 2.299801  9.858502  9.034714 2.834329e-08 9.457520e-08

```

```

## 5 12.74350 5.548559 9.702700 11.068539 11.219235 3.455611e+00 7.551228e-01
## 6 11.57923 4.675672 8.380108 9.881488 10.352984 2.378301e+00 1.351421e+00
## Tctex1d2 Tctex1d4 Tctn1 Tctn3 Tdg Tdo2 Tdp1
## 1 9.226028 3.357888 8.371234 10.053702 2.0121032 5.255144 10.143697
## 2 8.512683 3.007576 8.750602 9.846508 1.3314812 5.152284 9.629102
## 3 9.696298 6.611782 5.336130 9.474266 0.7660221 5.577800 10.124720
## 4 8.137770 3.297714 4.242585 7.703477 0.9796836 7.943279 8.202972
## 5 8.870691 3.326342 9.108742 10.205042 1.5581390 5.502186 9.987579
## 6 8.037203 2.339008 7.184956 8.863498 1.2232860 4.111852 8.953387
## Tdp2 Tdrd1 Tdrd12 Tdrd3 Tdrd5 Tdrd6
## 1 10.092466 0.8565325 3.981033e+00 10.618061 3.108828e+00 5.940189
## 2 9.860469 1.2753687 2.810608e+00 10.767485 3.105663e+00 6.580980
## 3 8.211136 0.7737105 3.247722e+00 10.629601 5.583409e-08 3.128107
## 4 5.164868 1.9298667 8.241492e-08 7.151635 2.568753e-08 1.923450
## 5 10.219005 1.4965286 3.123413e+00 11.126182 3.427099e+00 6.936531
## 6 8.902216 0.4414819 2.903926e+00 9.427282 2.120231e+00 4.778697
## Tdrd7 Tdrd9 Tdrkh Tead1 Tead2 Tead3 Tead4
## 1 11.555690 3.615654e+00 10.233867 11.176803 10.068962 9.637947 7.213513
## 2 11.276235 3.854724e+00 10.058663 10.919504 9.356054 9.419255 6.601495
## 3 7.625180 9.336664e-01 10.421995 10.249438 9.293256 4.342635 1.674076
## 4 7.785166 1.223924e-07 7.169273 6.630718 4.496477 4.584708 1.873378
## 5 11.634985 4.191440e+00 10.417243 11.278218 9.714447 9.777669 6.957092
## 6 10.364335 2.569923e+00 9.043455 9.985637 8.878740 8.448338 6.034228
## Tec Tecpr1 Tecpr2 Tecr Tecr1 Tecta
## 1 9.385821 12.143267 11.214893 14.22366 5.833497e+00 6.0451451
## 2 9.155196 12.120105 11.204429 13.57670 4.902247e+00 5.5119587
## 3 6.508453 8.477704 8.068801 14.24932 2.416713e+00 6.1751232
## 4 7.180072 7.778574 7.138115 13.88135 5.196777e-08 0.3663743
## 5 9.513517 12.478913 11.563173 13.93556 5.250445e+00 5.8638466
## 6 8.196665 10.951702 10.023706 13.03178 4.674318e+00 4.8815364
## Tectb Tef Tek Tekt1 Tekt2 Tekt4 Tekt5
## 1 3.948507e+00 13.27661 12.988246 3.984838 7.733417 4.3853918 5.576935
## 2 3.335214e+00 13.14548 12.119846 4.802890 7.217706 4.5064927 6.212116
## 3 7.494090e-08 10.96039 7.334445 8.551162 7.837995 2.5889814 6.776764
## 4 3.798922e-08 10.00307 6.944936 4.212917 0.913575 0.3185623 5.297209
## 5 3.662217e+00 13.50432 12.478654 5.150323 7.574445 4.8513030 6.566696
## 6 2.873909e+00 12.08482 11.796495 2.907442 6.550302 3.2810957 4.424048
## Telo2 Tenc1 Tep1 Tepp Terf1 Terf2 Terf2ip
## 1 10.766723 10.755526 10.119401 4.315863e+00 8.953841 10.545041 10.415221
## 2 9.856877 9.779169 9.244311 4.434181e+00 8.997167 10.642807 9.943481
## 3 9.709911 7.714153 7.318496 1.155394e+00 7.855225 8.251581 8.388007
## 4 8.636644 7.761804 8.704364 6.883521e-08 5.105329 6.159234 7.155091
## 5 10.215413 10.137686 9.602665 4.778265e+00 9.355423 11.001487 10.302037
## 6 9.575825 9.564637 8.929119 3.215752e+00 7.765671 9.354324 9.224623
## Tert Tes Tesc Task1 Task2 Tet1 Tet2
## 1 6.542252e+00 11.277912 6.319403 11.313610 10.448663 10.872842 11.416515
## 2 6.418054e+00 10.260041 6.454953 11.388026 9.139412 10.681793 11.276030
## 3 5.255875e+00 6.594580 3.324406 6.196825 7.372410 9.688672 10.422720
## 4 5.141573e-08 8.084904 3.551464 5.118177 7.683137 6.621177 8.206628
## 5 6.773207e+00 10.618660 6.810200 11.746786 9.497727 11.040479 11.634780
## 6 5.370434e+00 10.086691 5.150924 10.122370 9.258033 9.681867 10.225224
## Tet3 Tex10 Tex11 Tex12 Tex14 Tex15
## 1 12.721491 10.084990 3.262206e+00 4.525163 4.659767e+00 6.4857516
## 2 12.243946 10.153145 4.237695e+00 4.455226 4.152228e+00 7.2568547

```

```

## 3  9.373540  9.100222  9.669610e-08  4.089503  2.730758e+00  2.8582618
## 4  9.043438  6.059493  2.712564e+00  4.197831  7.819414e-08  0.2995359
## 5  12.602759  10.511744  4.579607e+00  4.799525  4.493098e+00  7.6136512
## 6  11.529788  8.894748  2.254424e+00  3.413005  3.540686e+00  5.3147331
##      Tex2      Tex22      Tex261      Tex264      Tex9      Tfam      Tfap2a
## 1  11.645661  3.192260e+00  11.651546  12.04417  9.771267  10.498289  2.648062
## 2  11.070463  2.590739e+00  11.046934  11.60791  9.076609  9.806480  2.346374
## 3  10.440672  9.810083e-01  10.165678  11.14156  9.376191  10.071548  3.780355
## 4  9.918379  6.552181e-08  9.826175  10.73746  4.539450  8.661898  4.100435
## 5  11.429194  2.895819e+00  11.405662  11.96669  9.434899  10.165003  2.641307
## 6  10.454268  2.193008e+00  10.460151  10.85264  8.581448  9.307614  1.728749
##      Tfap2b      Tfap2c      Tfap2d      Tfap2e      Tfap4      Tfb1m      Tfb2m
## 1  3.574497  5.006243  4.475332e+00  2.285730  7.797163  7.673262  8.909606
## 2  2.472887  4.985285  3.301309e+00  2.784144  7.606453  7.062444  8.045077
## 3  5.671594  7.633197  3.493158e-08  2.223395  7.981955  7.055925  7.642339
## 4  6.103175  2.997944  1.825956e-08  1.410040  4.616983  6.390072  6.444516
## 5  2.773296  5.334083  3.627546e+00  3.096082  7.963698  7.418940  8.402750
## 6  2.532772  3.871926  3.365895e+00  1.435214  6.613666  6.490524  7.721554
##      Tfcp2      Tfcp2l1      Tfdp1      Tfdp2      Tfe3      Tfeb      Tfec
## 1  10.587205  5.655230  10.955880  11.179069  12.08166  12.093495  7.2955042
## 2  9.951654  4.774433  10.508394  10.450712  12.29454  11.484585  4.8355889
## 3  9.100086  5.901662  9.135342  9.528013  7.70262  7.138314  1.3958260
## 4  8.302896  5.720299  8.126917  6.880441  7.02054  4.928647  0.5330298
## 5  10.310212  5.121638  10.867055  10.809363  12.65336  11.843353  5.1832796
## 6  9.396452  4.500307  9.764849  9.987901  10.89012  10.901944  6.1155209
##      Tfg      Tfip11      Tfpi      Tfpi2      Tfpt      Tfrc      Tg
## 1  11.744012  11.493102  10.803671  5.732021  10.124141  15.471266  4.021382e+00
## 2  11.666382  11.061914  10.335427  5.713213  9.694001  15.075137  4.242292e+00
## 3  9.958437  9.726457  8.245981  3.364842  9.362680  10.336819  3.271981e-01
## 4  8.686312  9.369727  7.657947  4.140190  6.966880  9.280459  6.019198e-08
## 5  12.025163  11.420644  10.694060  6.066013  10.052495  15.434007  4.584259e+00
## 6  10.552580  10.301775  9.612746  4.575201  8.933853  14.279324  2.941235e+00
##      Tgds      Tgfa      Tgfb1      Tgfb1i1      Tgfb2      Tgfb3      Tgfb1
## 1  8.901865  13.053934  13.176138  9.596732  10.722506  8.190252  10.597462
## 2  8.567821  12.875790  12.995120  9.118213  10.675475  7.779033  9.991928
## 3  9.227252  8.313365  1.767583  9.662769  10.325104  8.464863  8.539022
## 4  7.583435  9.518510  2.866927  7.508031  8.638667  7.096217  8.635018
## 5  8.925861  13.234627  13.353959  9.476520  11.034159  8.136462  10.350494
## 6  7.713835  11.862173  11.984359  8.407192  9.531643  7.004736  9.406700
##      Tgfbr1      Tgfbr2      Tgfbr3      Tgfbrap1      Tgif1      Tgif2      Tgm1
## 1  12.900984  13.088314  8.248029  12.553439  11.718979  10.484051  6.232362
## 2  12.324854  12.628484  7.987876  12.061099  11.235717  10.291085  5.634564
## 3  9.260859  7.722880  9.550955  8.384946  8.178579  7.959847  4.998612
## 4  10.725527  8.161757  8.064697  8.135772  7.096541  3.064710  5.776661
## 5  12.683671  12.987312  8.345501  12.419903  11.594464  10.649710  5.987023
## 6  11.709247  11.896547  7.062259  11.361770  10.527557  9.293388  5.065332
##      Tgm2      Tgm3      Tgm4      Tgm5      Tgm6      Tgoln1      Tgs1
## 1  13.990659  3.634638  8.558565  3.253971e-08  2.5719480  12.42184  10.309397
## 2  13.169448  3.154324  9.007626  2.371364e-08  1.8037581  11.92498  10.179609
## 3  6.306891  4.202454  4.849214  4.326078e+00  0.8181243  11.31406  10.448993
## 4  6.243647  4.826016  4.571211  1.514576e+00  0.2571515  11.11606  8.565303
## 5  13.528292  3.477018  9.365886  3.040881e-08  2.0685416  12.28378  10.538214
## 6  12.798792  2.587093  7.371594  1.441335e-08  1.6659567  11.23020  9.118905
##      Th      Thada      Thap1      Thap11      Thap2      Thap3      Thap4

```

```

## 1 6.345269e+00 10.091091 8.858413 10.505032 9.461886 9.723783 10.397256
## 2 5.923127e+00 9.618149 8.994228 10.554402 8.783762 9.596160 9.527324
## 3 9.086826e-01 7.833440 8.695675 7.397732 8.741387 8.609680 8.152021
## 4 8.525885e-08 7.449852 5.416746 4.896372 6.191018 6.581062 7.449003
## 5 6.276751e+00 9.976623 9.352483 10.913069 9.141918 9.954628 9.885771
## 6 5.176376e+00 8.900842 7.670503 9.314350 8.272585 8.534037 9.206675
##      Thap7      Thbd      Thbs1      Thbs2      Thbs3      Thbs4      Them4
## 1 9.643546 10.092569 10.660203 8.692498 11.001847 7.054346 9.145235
## 2 9.287946 9.141506 10.768322 9.022676 9.771819 6.506706 8.373729
## 3 9.220946 8.741546 5.691343 6.534161 9.319477 8.627066 11.552694
## 4 7.932785 9.842637 5.304944 5.311372 8.619379 5.062288 9.877063
## 5 9.646316 9.499821 11.127019 9.380943 10.130334 6.862081 8.731648
## 6 8.453928 8.902318 9.469389 7.505084 9.810787 5.876535 7.956591
##      Them5      Thg1l      Thns1l      Thns12      Thoc1      Thoc2      Thoc3
## 1 0.3589159 7.867517 8.693371 8.490385 10.865508 11.646106 10.920304
## 2 0.2584705 7.832750 8.179580 7.630944 10.063557 11.427786 10.317550
## 3 6.2637097 7.013532 8.992218 8.179023 10.123560 11.546784 7.856970
## 4 4.5600155 4.835668 8.178264 5.957680 9.010414 9.298418 5.858014
## 5 0.3237705 8.190232 8.537361 7.988217 10.422139 11.786549 10.676180
## 6 0.1698703 6.683618 7.505954 7.303656 9.674538 10.454713 9.729297
##      Thoc5      Thoc6      Thoc7      Thop1      Thpo      Thra      Thrap3
## 1 10.631206 9.980491 10.840725 11.217644 5.679004 14.355538 12.308746
## 2 10.584871 9.611167 10.212024 10.951162 6.476854 14.173099 11.825631
## 3 10.351053 9.618442 11.788667 8.448821 3.975993 9.430923 10.543786
## 4 8.097664 5.860911 9.770781 6.609701 4.351707 8.025324 8.946812
## 5 10.943543 9.969639 10.570634 11.309880 6.832155 14.531961 12.184423
## 6 9.440416 8.790381 9.649773 10.026456 4.523483 13.163645 11.117136
##      Thrb      Thrsp      Thsd1      Thsd4      Thsd7a      Thsd7b      Thtpa
## 1 8.430650 10.782234 11.221505 9.090677 10.846020 10.159848 10.906028
## 2 8.080058 10.197420 10.050521 8.805342 10.834183 11.283801 10.358403
## 3 8.556419 14.650456 7.047897 5.090910 7.500930 4.138673 10.846421
## 4 8.261319 11.938117 7.270106 6.639534 9.081193 6.071937 6.638171
## 5 8.437760 10.556028 10.409099 9.163509 11.192888 11.642552 10.717040
## 6 7.244143 9.591325 10.030314 7.902162 9.655065 8.969519 9.715030
##      Thumpd1      Thumpd2      Thumpd3      Thy1      Thyn1      Tia1      Tial1
## 1 10.928640 8.387195 10.281478 11.078362 8.781450 12.387270 12.52317
## 2 10.443476 7.837267 9.570632 10.744444 8.179124 12.074997 11.85028
## 3 8.758745 6.459879 10.526127 6.741291 10.097931 11.168142 11.78246
## 4 6.544768 4.808977 9.315539 10.399838 8.317992 8.561936 10.07231
## 5 10.802126 8.194753 9.929092 11.103137 8.536905 12.433802 12.20908
## 6 9.737628 7.200856 9.091015 9.887253 7.593763 11.195640 11.33151
##      Tiam1      Tiam2      Ticam1      Ticam2      Tie1      Tifa      Tifab
## 1 11.625096 9.986146 11.318569 8.402649 13.507600 11.214692 10.712904
## 2 11.407968 10.003050 11.058132 8.312892 13.149363 10.281292 10.400409
## 3 6.820032 8.629803 8.034272 5.483071 3.664066 8.105008 5.207871
## 4 8.376196 7.764204 6.417832 6.941438 6.197478 9.556094 9.487914
## 5 11.766730 10.361619 11.416861 8.670770 13.508207 10.639915 10.759053
## 6 10.433711 8.796028 10.127327 7.216249 12.315779 10.023505 9.522048
##      Tigd2      Tigd3      Tigd4      Tigit      Timd2      Timd4
## 1 9.634355 6.886744 2.152416e+00 3.072859e+00 2.249908e+00 5.325054
## 2 9.069021 6.352756 9.407034e-01 3.761308e+00 6.386280e-01 4.532302
## 3 8.206861 6.191171 1.479539e+00 8.549166e-01 5.164329e-08 6.086649
## 4 6.848568 1.430151 9.484307e-08 1.027864e-07 2.346893e-08 2.510550
## 5 9.427307 6.707736 1.123669e+00 4.096529e+00 7.773911e-01 4.877363

```

```

## 6 8.444752 5.710668 1.330845e+00 2.089021e+00 1.406967e+00 4.179498
##      Timeless      Timm10      Timm13      Timm17a      Timm17b      Timm22      Timm23
## 1 9.603321 8.692914 11.65308 11.20323 10.793379 11.017590 8.574751
## 2 9.212156 8.198328 10.94422 10.42655 9.971687 10.580696 7.817579
## 3 10.036592 10.329996 12.18351 11.28398 10.974477 11.324657 7.556340
## 4 6.831503 8.844118 11.20211 10.67243 9.716847 9.622823 6.640831
## 5 9.570499 8.556123 11.30293 10.78520 10.330249 10.939367 8.175047
## 6 8.413770 7.505499 10.46168 10.01205 9.602462 9.826519 7.387725
##      Timm44      Timm50      Timm8a1      Timm8a2      Timm8b      Timm9      Timp1
## 1 11.401755 11.297224 7.739273 2.061199e+00 10.976070 9.360116 7.2738731
## 2 11.083553 10.635924 7.297857 1.422736e+00 10.176526 9.129304 6.3444235
## 3 10.747507 9.423426 7.096428 4.303793e-08 11.628649 9.354929 5.5928039
## 4 8.812847 6.325957 4.915617 2.191894e-08 10.604333 8.303104 0.7833287
## 5 11.442286 10.994603 7.654712 1.657850e+00 10.535130 9.487615 6.6993806
## 6 10.210471 10.105992 6.556122 1.260646e+00 9.785026 8.171010 6.0940702
##      Timp2      Timp3      Timp4      Tinagl1      Tinf2      Tiparp      Tipin
## 1 13.97795 13.38780 11.71045 8.210074 10.605318 12.131619 9.937968
## 2 13.41314 12.97662 11.00507 7.837661 9.531055 12.346042 9.234312
## 3 10.16343 12.90590 11.15207 5.371584 8.744456 10.175333 11.204324
## 4 10.68732 12.19846 11.88244 8.020508 7.953930 6.227595 8.739383
## 5 13.77199 13.33546 11.36380 8.195149 9.889504 12.704860 9.592663
## 6 12.78608 12.19599 10.51903 7.024470 9.414550 10.940057 8.747914
##      Tipr1      Tirap      Tjap1      Tjp1      Tjp2      Tjp3      Tk1
## 1 11.37443 9.377163 12.594363 13.405962 12.746584 5.555557 7.747860
## 2 10.85928 9.323299 12.113869 13.149653 12.236310 5.106574 7.374491
## 3 11.16828 7.536287 8.045858 9.089577 9.664869 3.228359 9.315724
## 4 10.19926 5.455177 5.082590 8.018874 7.287898 2.650054 3.829881
## 5 11.21799 9.681681 12.472676 13.508497 12.595123 5.456187 7.731451
## 6 10.18316 8.188024 11.402685 12.214153 11.554876 4.403246 6.564657
##      Tk2      Tkt      Tktl1      Tlcd1      Tlcd2      Tle1      Tle2
## 1 10.993165 14.14159 4.192359e+00 11.372956 6.325869 11.618053 11.069231
## 2 10.582617 13.27353 3.981366e+00 10.610752 6.593053 10.866819 10.911038
## 3 8.625300 12.12631 9.330848e-01 9.188524 4.865949 8.703606 4.476404
## 4 7.417255 11.50188 5.828942e-08 9.544422 3.870797 8.682646 3.127425
## 5 10.941289 13.63238 4.319957e+00 10.969427 6.948632 11.225527 11.269751
## 6 9.802110 12.94971 3.100163e+00 10.181686 5.157286 10.426672 9.878128
##      Tle3      Tle4      Tle6      Tlk1      Tlk2      Tll1      Tll2
## 1 12.661002 11.660762 8.2554977 11.412974 11.048153 5.511528 5.3231456
## 2 12.456233 11.258109 7.9631020 11.172124 11.346379 4.592205 5.0689059
## 3 8.865020 10.250016 4.4016917 8.759108 8.503655 2.639196 2.6258148
## 4 6.732333 8.567513 0.2924041 7.763842 5.938711 1.255849 0.6864261
## 5 12.815056 11.616858 8.3207050 11.530865 11.705136 4.937831 5.4182726
## 6 11.469311 10.469363 7.0696962 10.221684 9.857063 4.360428 4.1776500
##      Tln1      Tln2      Tlr1      Tlr2      Tlr3      Tlr4      Tlr5
## 1 14.419105 12.089227 8.463876 12.695009 10.254631 8.093704 8.283975
## 2 14.339363 11.965554 7.069501 12.138487 9.821329 7.468957 7.492707
## 3 9.569552 8.520107 5.982728 5.797907 9.287455 6.778352 4.515187
## 4 8.636300 7.949453 6.471872 6.688067 9.615309 7.278038 5.141502
## 5 14.698226 12.324353 7.426008 12.497295 10.179856 7.826039 7.849818
## 6 13.227208 10.897678 7.277245 11.503310 9.064196 6.908634 7.098053
##      Tlr6      Tlr7      Tlr8      Tlr9      Tm2d1      Tm2d2      Tm2d3
## 1 8.874144 11.806003 4.568878 11.6237608 9.036486 12.25810 10.297065
## 2 7.485586 11.287945 3.455116 11.8920492 8.568870 11.52129 9.736785
## 3 5.438981 6.543921 4.900391 0.5632906 8.069141 12.43347 11.578879

```

```

## 4 4.725732 9.128533 1.710232 4.6255877 6.549593 11.92023 11.397219
## 5 7.842689 11.646696 3.784687 12.2508444 8.926910 11.88006 10.095291
## 6 7.686190 10.614548 3.454404 10.4323770 7.848104 11.06650 9.106586
##      Tm4sf1      Tm4sf19      Tm4sf20      Tm4sf4      Tm4sf5      Tm6sf1
## 1 11.994382 1.338093e+00 6.891956e-01 1.310766e+00 3.488962e+00 10.342769
## 2 10.734607 1.621490e+00 1.622307e+00 1.341370e+00 2.854774e+00 9.511910
## 3 10.291233 1.200575e+00 1.490619e+00 7.476713e-08 7.972823e-01 4.497105
## 4 10.223938 6.878395e-08 8.158851e-08 1.340306e+00 7.676785e-08 6.892424
## 5 11.093300 1.873130e+00 1.874009e+00 1.568973e+00 3.168989e+00 9.870353
## 6 10.802862 7.430705e-01 3.454994e-01 7.249812e-01 2.455896e+00 9.152243
##      Tm6sf2      Tm7sf2      Tm7sf3      Tm9sf1      Tm9sf2      Tm9sf3      Tm9sf4
## 1 4.752239e+00 11.866548 12.963229 12.01559 13.304895 13.70182 12.44776
## 2 4.326212e+00 11.145959 12.401190 11.45492 12.509132 12.92909 11.99524
## 3 4.012102e+00 9.242319 10.346570 10.18521 9.803051 10.74422 11.53940
## 4 1.041229e-07 7.891716 8.722043 9.17220 9.896442 10.35645 11.29369
## 5 4.669139e+00 11.504698 12.760010 11.81369 12.867956 13.28793 12.35404
## 6 3.628745e+00 10.675072 11.771482 10.82406 12.113098 12.50998 11.25612
##      Tmbim1      Tmbim4      Tmbim6      Tmc1      Tmc3      Tmc4      Tmc5
## 1 13.72970 11.64011 15.45861 2.152772e+00 5.593353 7.655867 3.993985e+00
## 2 12.80009 10.91084 14.93962 1.161949e+00 4.791551 6.522129 3.766613e+00
## 3 11.20330 11.89310 15.21784 4.160287e-08 5.632615 5.847320 3.211803e+00
## 4 10.85919 11.68170 14.55021 2.134787e-08 1.082503 3.804013 6.280967e-08
## 5 13.15892 11.26955 15.29849 1.371251e+00 5.138894 6.877541 4.101921e+00
## 6 12.53786 10.44872 14.26667 1.331120e+00 4.440030 6.473241 2.915894e+00
##      Tmc6      Tmc7      Tmc8      Tmcc1      Tmcc2      Tmcc3      Tmco1
## 1 10.683895 12.014475 7.938914 11.724905 13.454111 13.68591 11.91646
## 2 10.423185 11.778745 7.890404 11.721628 12.661248 13.19554 11.07185
## 3 6.582037 7.656188 1.563658 10.957904 8.071065 10.41037 12.18662
## 4 8.154425 6.501853 3.471784 8.212021 9.710019 10.09269 11.46618
## 5 10.781832 12.137533 8.247941 12.080412 13.020078 13.55438 11.43058
## 6 9.493062 10.822949 6.754625 10.533480 12.262295 12.49407 10.72496
##      Tmco3      Tmco4      Tmco6      Tmed1      Tmed10      Tmed2      Tmed3
## 1 12.229062 9.154362 9.163816 10.576869 12.99332 10.832113 11.81853
## 2 11.822475 7.962180 8.576926 9.855843 12.31515 10.125808 11.19430
## 3 11.475511 7.520885 7.129877 10.621140 12.17827 8.924636 11.66797
## 4 9.764829 8.042512 4.548467 9.892525 11.49749 8.401497 11.16304
## 5 12.181266 8.319782 8.934971 10.214378 12.67397 10.484402 11.55304
## 6 11.037472 7.965697 7.975130 9.386124 11.80157 9.641168 10.62707
##      Tmed4      Tmed5      Tmed6      Tmed7      Tmed8      Tmed9      Tmeff1
## 1 12.34217 12.31772 1.730927e+00 13.34735 10.790013 13.08835 13.143127
## 2 11.79684 11.56322 1.780380e+00 12.63533 10.827012 12.52430 12.313522
## 3 12.87789 11.47711 7.325517e-01 10.72996 6.777850 11.42593 9.994154
## 4 11.89667 11.21667 6.617252e-08 10.44934 5.607141 10.80137 9.393380
## 5 12.15563 11.92200 2.043575e+00 12.99416 11.185716 12.88312 12.672338
## 6 11.15055 11.12610 1.015297e+00 12.15554 9.599098 11.89659 11.951353
##      Tmeff2      Tmem100      Tmem101      Tmem104      Tmem106a      Tmem106b      Tmem106c
## 1 13.71011 11.081810 10.834377 12.016883 9.183842 13.078280 10.973605
## 2 12.93346 10.460883 10.156052 12.115819 8.793104 12.466110 10.293696
## 3 11.30878 12.382772 10.817758 8.374928 7.877901 10.262509 11.196707
## 4 11.22333 11.639770 10.160077 7.511188 4.223992 9.913504 9.896702
## 5 13.29229 10.819536 10.514652 12.474626 9.151265 12.824933 10.652321
## 6 12.51827 9.890700 9.643430 10.825356 7.995111 11.886516 9.782562
##      Tmem107      Tmem108      Tmem109      Tmem11      Tmem110      Tmem115      Tmem116
## 1 6.818564 10.599869 12.14240 11.013405 10.911158 11.600752 5.280712

```

```
## 2 6.297654 10.740626 11.57855 10.129490 10.280150 11.177141 4.662200
## 3 10.639323 6.796818 11.64223 10.075316 7.228730 9.868633 6.560409
## 4 8.931773 8.577622 12.03265 9.771304 6.534928 10.261304 4.351420
## 5 6.652481 11.099319 11.93732 10.488084 10.638773 11.535883 5.008456
## 6 5.643253 9.409105 10.95084 9.822337 9.720157 10.409378 4.136580
## Tmem117 Tmem119 Tmem120a Tmem120b Tmem121 Tmem123 Tmem125
## 1 10.224373 15.085505 10.594523 10.731533 9.519080 12.991125 12.784794
## 2 10.289749 14.594392 9.928632 9.708184 9.848959 12.050713 11.541411
## 3 4.069942 8.134824 8.548881 6.259426 3.528390 8.561316 8.715791
## 4 5.422289 11.346901 8.093643 5.530511 3.093925 9.075036 7.852058
## 5 10.648374 14.953259 10.287184 10.066682 10.207493 12.409517 11.900183
## 6 9.033971 13.893576 9.403763 9.540663 8.329675 11.799374 11.593078
## Tmem126a Tmem126b Tmem127 Tmem128 Tmem129 Tmem130 Tmem131
## 1 9.719802 8.336602 12.522051 11.402126 10.854882 11.831462 12.124748
## 2 9.084558 7.377073 12.427448 10.628507 10.248821 11.987337 11.790664
## 3 10.348708 9.765248 11.469340 11.664852 11.184104 6.569508 9.565270
## 4 9.059646 8.905487 9.531515 10.470379 10.264021 9.693056 7.568812
## 5 9.442850 7.734036 12.786269 10.987185 10.607439 12.346137 12.149453
## 6 8.530062 7.150463 11.330389 10.210842 9.663920 10.639997 10.933188
## Tmem132a Tmem132b Tmem132c Tmem132d Tmem132e Tmem135 Tmem136
## 1 13.161534 12.662638 7.216889 9.009501 8.768520 12.268393 9.899299
## 2 12.580396 12.513044 7.035586 9.236968 9.357572 11.518786 9.574793
## 3 8.282136 11.494643 8.730228 1.132436 1.096031 8.719539 8.060347
## 4 8.641506 9.872034 4.886539 5.156310 4.572717 9.758863 6.812060
## 5 12.939223 12.871869 7.392037 9.595319 9.715966 11.877556 9.933255
## 6 11.969757 11.470946 6.037574 7.821187 7.580871 11.076793 8.709296
## Tmem138 Tmem140 Tmem141 Tmem143 Tmem144 Tmem145 Tmem147
## 1 8.179245 5.432281 12.687952 9.484325 10.209764 10.136681 11.90329
## 2 7.822417 4.991642 11.721547 9.076913 9.500398 10.022016 11.11181
## 3 10.011216 3.443482 9.330856 7.768851 10.298703 4.709560 11.12339
## 4 8.304498 5.048868 8.974386 6.331473 9.469832 4.376856 10.56213
## 5 8.179889 5.340483 12.080331 9.435202 9.858838 10.380589 11.47055
## 6 6.993778 4.283452 11.496255 8.294983 9.019379 8.946378 10.71180
## Tmem14a Tmem14c Tmem150a Tmem150b Tmem150c Tmem151a Tmem151b
## 1 9.408859 11.83491 9.914501 4.363140e+00 8.744052 14.366678 10.490334
## 2 8.821749 11.10609 9.118486 4.240893e+00 8.460307 13.475540 10.177834
## 3 10.319273 11.00675 8.589048 1.532089e+00 7.128875 8.755157 7.928707
## 4 9.959662 10.42541 5.573920 6.573703e-08 7.593932 8.701374 7.552790
## 5 9.179925 11.46483 9.476793 4.582843e+00 8.818282 13.834391 10.536438
## 6 8.219658 10.64344 8.724478 3.260163e+00 7.556478 13.174784 9.299666
## Tmem154 Tmem158 Tmem159 Tmem160 Tmem161a Tmem161b Tmem163
## 1 9.293470 9.683385 11.747121 10.384569 11.903838 10.523432 13.398280
## 2 8.964415 9.296307 10.817935 10.125249 11.301387 10.245095 13.311647
## 3 3.150996 6.297368 10.325930 7.772456 10.102482 9.854041 6.667972
## 4 2.788898 4.994810 9.460489 5.931776 9.880961 8.165670 7.588583
## 5 9.322657 9.654680 11.176638 10.483843 11.660140 10.603712 13.670495
## 6 8.104500 8.493703 10.555688 9.194001 10.712348 9.332735 12.206472
## Tmem164 Tmem165 Tmem167 Tmem167b Tmem168 Tmem169 Tmem17
## 1 11.52725 11.058587 11.98486 11.646328 10.655262 8.501775 8.424868
## 2 11.41632 10.710215 11.27069 11.449676 10.365875 9.113977 7.642246
## 3 9.36316 8.826808 11.79892 11.442714 9.535331 6.334244 8.608216
## 4 5.83236 7.592603 10.67040 9.922728 8.070401 5.493902 5.883821
## 5 11.77508 11.068904 11.62944 11.808441 10.724513 9.472281 7.999531
## 6 10.33590 9.867490 10.79334 10.454935 9.464451 7.315005 7.238384
```



```

##      Tmem170 Tmem170b Tmem171 Tmem173 Tmem175 Tmem176a Tmem176b
## 1 8.561897 11.64782 2.703962 12.234627 10.402597 12.03356 13.75666
## 2 8.567480 11.46609 3.578772 12.045285 10.200128 11.45755 13.21526
## 3 3.230317 11.39875 1.183055 7.455227 10.421149 9.85522 12.23492
## 4 2.620217 10.37969 4.343606 9.694053 9.662983 11.74289 13.07334
## 5 8.925520 11.82486 3.910773 12.404088 10.558737 11.81631 13.57411
## 6 7.374915 10.45642 1.775225 11.043036 9.212012 10.84203 12.56482
##      Tmem177 Tmem178 Tmem179 Tmem18 Tmem180 Tmem181a Tmem182
## 1 8.235406 10.007753 11.081991 10.830829 10.760655 10.369209 5.335357e+00
## 2 7.407092 9.638341 11.131765 10.459938 9.770838 9.520863 5.210933e+00
## 3 10.489847 9.253506 4.513819 9.950255 9.170976 6.445306 1.036520e+00
## 4 8.665698 8.299689 9.767165 8.466033 8.946656 7.022665 1.259790e-07
## 5 7.764095 9.996820 11.490502 10.818591 10.129352 9.879308 5.561195e+00
## 6 7.049691 8.817608 9.890881 9.639884 9.569762 9.178656 4.189477e+00
##      Tmem183a Tmem184a Tmem184b Tmem184c Tmem185b Tmem186 Tmem189
## 1 11.911870 2.071161 12.891090 11.412414 10.338038 8.947061 12.915801
## 2 11.590935 1.631465 11.991950 10.862844 9.549629 8.585307 12.699715
## 3 8.908777 2.582219 8.537199 10.238027 7.724179 9.154673 7.678199
## 4 7.443061 1.531848 9.571088 8.498929 8.161919 6.206865 6.549972
## 5 11.949711 1.883871 12.350750 11.221552 9.908083 8.943358 13.058547
## 6 10.720378 1.268263 11.699356 10.221125 9.147517 7.758908 11.724062
##      Tmem19 Tmem190 Tmem191c Tmem192 Tmem194 Tmem194b Tmem196
## 1 11.744967 4.565197e+00 9.982983 9.968553 8.683290 9.100354 7.250842
## 2 11.092610 3.952111e+00 9.090765 9.487102 7.989455 8.975750 5.936603
## 3 10.596199 4.414529e-08 4.664979 6.518407 7.985869 9.451347 4.262019
## 4 8.964187 2.227667e-08 4.590545 5.564536 4.454406 5.421360 4.315881
## 5 11.451343 4.290283e+00 9.449060 9.845538 8.347081 9.333996 6.290276
## 6 10.553535 3.450916e+00 8.792869 8.778458 7.495904 7.911816 6.071234
##      Tmem198 Tmem199 Tmem2 Tmem200a Tmem200b Tmem200c Tmem201
## 1 9.360386 10.415164 12.034650 8.7645515 7.6802903 7.303475 11.873037
## 2 9.842605 10.083975 11.466185 8.3772916 6.2888753 7.641665 11.493512
## 3 3.875022 10.384141 10.575747 1.0747036 4.5290295 3.128924 8.684226
## 4 4.981305 8.956610 8.172654 0.2871556 0.8197914 1.921885 8.280039
## 5 10.201137 10.442561 11.824952 8.7352131 6.6436783 7.998950 11.852281
## 6 8.171280 9.224566 10.843117 7.5769149 6.4975071 6.123426 10.681558
##      Tmem202 Tmem203 Tmem204 Tmem205 Tmem206 Tmem208 Tmem209
## 1 4.871108 9.919265 11.83391 10.685709 11.879880 11.172783 10.796735
## 2 4.961487 9.182304 11.26917 10.041503 11.531187 10.519188 10.149507
## 3 2.644042 6.042890 10.17675 11.021819 10.718095 11.673757 11.231911
## 4 2.192659 5.298845 10.09111 10.319538 8.015304 11.044522 9.808135
## 5 5.310116 9.540635 11.62792 10.400080 11.889958 10.877850 10.508105
## 6 3.742323 8.729235 10.64244 9.494874 10.688399 9.981619 9.605816
##      Tmem210 Tmem212 Tmem214 Tmem215 Tmem216 Tmem217 Tmem218
## 1 4.034382e+00 2.280257 12.262241 3.506488 7.663416 2.8435163 9.727545
## 2 4.673131e+00 1.829869 11.688753 3.212842 7.337919 2.2314269 8.802033
## 3 6.143867e-01 8.484334 9.522605 6.321118 10.056041 5.5325121 9.998748
## 4 8.018357e-08 2.123072 9.024021 0.915676 6.810520 0.6164907 9.435779
## 5 5.019482e+00 2.096394 12.047535 3.536991 7.694829 2.5209289 9.160199
## 6 2.953271e+00 1.430889 11.070642 2.471610 6.480741 1.8925303 8.537793
##      Tmem219 Tmem220 Tmem221 Tmem222 Tmem229a Tmem229b Tmem231
## 1 10.716595 5.048103 4.0258419 11.89145 12.156575 11.786538 8.411229
## 2 10.071623 4.971968 5.2919947 11.14905 11.560052 11.714082 7.910942
## 3 10.090753 6.842795 1.3970474 11.97983 9.692984 7.827911 9.284590
## 4 9.230882 3.430305 0.6796222 11.73923 9.312084 7.512476 7.901108

```

```

## 5 10.430206 5.320672 5.6427281 11.50779 11.918826 12.072866 8.268498
## 6 9.525736 3.912170 2.9453632 10.69996 10.965006 10.595090 7.224796
##      Tmem232      Tmem25      Tmem26      Tmem28      Tmem29      Tmem30a      Tmem30b
## 1 2.1715212 9.313102 5.2143031 7.309849e+00 9.832413 13.69557 0.9666441
## 2 2.7263614 8.954698 4.5879936 7.589833e+00 9.122694 12.98627 1.1017434
## 3 1.6606390 8.924139 2.0646989 2.068294e+00 11.136569 10.64416 0.8886936
## 4 0.3818117 8.998448 0.3851724 7.655459e-08 8.904184 11.59757 2.6769754
## 5 3.0363495 9.312935 4.9335801 7.947059e+00 9.481002 13.34511 1.3043195
## 6 1.3456738 8.124092 4.0723835 6.129747e+00 8.642505 12.50372 0.5071640
##      Tmem30c      Tmem33      Tmem35      Tmem37      Tmem38a      Tmem38b      Tmem39a
## 1 4.299943e+00 12.95919 10.517888 9.377702 10.983131 9.803227 9.947311
## 2 3.901206e+00 12.19837 9.594949 8.931650 10.467437 9.158886 10.364528
## 3 3.048712e+00 11.85890 9.950259 9.561854 10.407833 8.917570 8.913894
## 4 6.773723e-08 11.50878 9.712165 9.201342 11.395084 7.840803 6.152901
## 5 4.238629e+00 12.55718 9.953417 9.289877 10.826091 9.517208 10.723165
## 6 3.200818e+00 11.76745 9.327195 8.188562 9.792082 8.613361 8.757244
##      Tmem39b      Tmem40      Tmem41a      Tmem41b      Tmem42      Tmem43      Tmem44
## 1 9.245351 8.663337 9.036572 11.278342 8.988938 11.87462 12.622267
## 2 8.651287 7.530949 7.672609 10.399416 8.347836 11.42140 11.963069
## 3 8.137420 4.043699 7.125938 9.097023 6.354236 12.01786 9.193385
## 4 6.376077 6.924302 6.608331 8.281193 6.481844 10.66206 9.160211
## 5 9.009374 7.888106 8.029927 10.758059 8.705738 11.78017 12.321868
## 6 8.056484 7.476016 7.848189 10.087121 7.800676 10.68314 11.430583
##      Tmem45a      Tmem45b      Tmem47      Tmem5      Tmem50a      Tmem50b      Tmem51
## 1 6.736895 1.3101265 11.52453 10.947664 13.27289 12.52927 10.388219
## 2 6.015941 0.9864228 10.99129 10.553574 12.54592 11.87911 9.144089
## 3 9.432962 2.2725795 13.61328 8.216341 13.44052 11.32752 7.574304
## 4 6.531756 0.4985987 11.79988 6.561225 12.96059 11.40378 7.756298
## 5 6.369893 1.1752079 11.35001 10.912242 12.90474 12.23790 9.502405
## 6 5.562548 0.7245591 10.33319 9.756639 12.08110 11.33760 9.197648
##      Tmem52      Tmem53      Tmem54      Tmem55a      Tmem55b      Tmem56      Tmem57
## 1 8.332545 6.311943 1.4354083 10.764660 12.589163 10.804921 11.766927
## 2 8.712764 5.217848 1.1070403 10.137661 11.729973 10.446825 11.846380
## 3 5.006589 7.600682 3.1441356 11.881249 8.430606 6.493604 9.255807
## 4 5.286756 5.835014 3.0362146 10.869236 6.678769 7.048080 7.748301
## 5 9.070884 5.568150 1.3102208 10.496258 12.088758 10.805476 12.205172
## 6 7.146423 5.143585 0.8084063 9.573764 11.397487 9.613996 10.575487
##      Tmem59      Tmem59l      Tmem60      Tmem62      Tmem63a      Tmem63b      Tmem63c
## 1 14.26829 9.783279 9.421988 10.905923 13.843979 13.307930 8.200619
## 2 13.51959 9.264667 8.803584 10.664281 13.239800 13.682159 8.506513
## 3 14.57554 10.970107 11.107325 7.851308 10.167870 8.769711 3.606900
## 4 14.27171 12.407385 10.793924 7.485807 9.777106 7.815439 6.472488
## 5 13.87844 9.623029 9.161751 11.022964 13.598646 14.041014 8.864516
## 6 13.07641 8.593443 8.232762 9.714925 12.652124 12.116132 7.015057
##      Tmem64      Tmem65      Tmem66      Tmem67      Tmem68      Tmem69      Tmem70
## 1 11.255052 11.919918 14.52542 8.618801 10.825911 8.381853 9.831176
## 2 10.713141 11.141109 14.11440 9.109199 10.323944 7.584462 9.011898
## 3 7.908013 8.539259 10.69767 8.547392 9.977590 8.636483 7.810942
## 4 8.404325 7.414995 11.00956 5.984589 10.189171 8.483765 6.603314
## 5 11.071830 11.499847 14.47326 9.467502 10.682575 7.941682 9.370160
## 6 10.063843 10.728423 13.33352 7.431626 9.634971 7.195535 8.641270
##      Tmem71      Tmem72      Tmem74      Tmem79      Tmem8      Tmem80      Tmem81
## 1 6.815665e+00 3.159817 5.907299 7.278821 8.877935 10.119975 8.509263
## 2 6.839152e+00 3.781339 5.544343 6.794755 8.516415 9.723978 7.905260

```

```

## 3 4.358890e+00 1.731240 5.678089 6.404588 7.390597 9.660916 6.548899
## 4 5.708153e-08 4.652722 6.243457 5.223462 5.024641 7.242754 7.744393
## 5 7.195248e+00 4.116888 5.896386 7.150765 8.874425 10.082481 8.262811
## 6 5.640388e+00 2.164645 4.746503 6.098976 7.689970 8.929692 7.322467
##      Tmem82      Tmem86a      Tmem86b      Tmem87a      Tmem87b      Tmem88
## 1 7.844793e+00 12.539416 8.858368e+00 11.460239 11.082511 9.169987
## 2 6.254593e+00 11.967465 8.509419e+00 11.031816 10.821283 8.431822
## 3 5.120520e-08 8.789943 3.936683e+00 10.008793 8.761945 4.445365
## 4 2.651374e-08 9.160356 6.883154e-08 8.952789 8.059218 7.606498
## 5 6.609298e+00 12.326265 8.867425e+00 11.390543 11.179986 8.789779
## 6 6.661021e+00 11.347750 7.670458e+00 10.268927 9.891400 7.981287
##      Tmem88b      Tmem89      Tmem8b      Tmem8c      Tmem9      Tmem91      Tmem95
## 1 14.743772 2.715940e+00 10.901724 7.334706 11.81052 6.853297 2.5609328
## 2 13.636797 1.661749e+00 11.070159 8.070603 11.13693 6.181645 2.8526435
## 3 10.328995 3.863501e+00 8.085243 1.677010 11.70180 5.752254 0.7388342
## 4 9.104889 9.331521e-08 6.631433 5.513637 11.04767 2.462267 0.5168147
## 5 13.995650 1.916446e+00 11.428890 8.428297 11.49566 6.536133 3.1667920
## 6 13.551857 1.785222e+00 9.710729 6.154402 10.61906 5.677591 1.6569174
##      Tmem97      Tmem98      Tmem9b      Tmf1      Tmie      Tmigd1      Tmod1
## 1 10.288550 11.91249 13.095764 11.76708 6.958575 2.9542078 10.655071
## 2 9.948917 11.05151 12.599554 11.13948 6.646511 3.8936731 10.325747
## 3 10.390409 11.65188 10.328828 11.54120 1.979675 2.6974880 9.341315
## 4 8.476462 10.77954 9.801021 9.89208 1.615080 0.2365079 6.606755
## 5 10.307474 11.41024 12.958382 11.49822 7.002210 4.2309831 10.684378
## 6 9.098079 10.72100 11.903997 10.57564 5.781731 1.9868126 9.464261
##      Tmod2      Tmod3      Tmod4      Tmpo      Tmppe      Tmprss11a
## 1 13.09029 12.026972 5.3367081 12.072682 9.468052 2.314768e+00
## 2 12.77456 11.685371 5.6133651 11.740702 9.142960 2.254348e+00
## 3 12.15474 10.829577 3.1571864 11.088532 7.522219 7.207668e-01
## 4 10.57844 9.375294 0.3115797 7.366145 8.772633 1.026905e-07
## 5 13.13339 12.044154 5.9657287 12.099488 9.501276 2.544970e+00
## 6 11.89853 10.835442 4.1907848 10.881137 8.278739 1.458218e+00
##      Tmprss11d Tmprss11e Tmprss11f Tmprss13      Tmprss15 Tmprss2
## 1 1.400151e+00 0.6986897 0.2557565 1.2517499 2.008620e+00 4.167649
## 2 1.477400e+00 0.4153061 0.1678978 1.0693857 2.550411e+00 3.295985
## 3 3.530483e-08 1.8861824 3.5121116 3.5046789 2.135238e-01 1.004381
## 4 1.594673e-08 2.1592735 4.1408930 3.4272508 1.032091e-07 1.276840
## 5 1.717307e+00 0.5137364 0.2119615 1.2682157 2.853937e+00 3.622101
## 6 7.845711e-01 0.3508202 0.1188083 0.6863052 1.220647e+00 3.077114
##      Tmprss3      Tmprss4      Tmprss5      Tmprss6      Tmprss7      Tmprss9
## 1 5.165130e+00 1.9200551 7.7724720 3.313212e+00 7.2317812 4.8858772
## 2 3.973683e+00 1.1022362 7.2677958 2.379662e+00 7.3728261 3.5508551
## 3 2.740168e-01 5.0464925 5.6422302 5.043692e-08 5.3197167 3.3342797
## 4 7.330144e-08 5.8395930 0.2978078 9.809461e-01 0.3173964 0.3214937
## 5 4.312165e+00 1.3048686 7.6246081 2.676084e+00 7.7297836 3.8823257
## 6 4.024913e+00 1.1540590 6.5891211 2.299434e+00 6.0523372 3.7564629
##      Tmsb15b1 Tmsb15b2      Tmsb4x      Tmtc1      Tmtc2      Tmtc3      Tmtc4
## 1 3.813766 1.870954 17.10159 11.011058 11.308155 10.185245 9.264265
## 2 3.533322 2.174539 16.29152 10.100972 10.927685 9.944195 8.936264
## 3 7.247933 3.514395 16.97671 6.339184 8.535725 7.771777 9.024997
## 4 3.988210 1.115073 16.03312 7.488580 6.315868 6.931352 6.545976
## 5 3.864454 2.461181 16.65039 10.459561 11.286401 10.302751 9.294493
## 6 2.750130 1.117577 15.90962 9.819992 10.116918 8.994887 8.075358
##      Tmub1      Tmub2      Tmx1      Tmx2      Tmx3      Tmx4      Tnc

```

```

## 1 9.364444 12.02161 12.11060 11.80574 12.53057 12.62577 13.126962
## 2 8.835903 11.36119 11.41300 11.14636 11.68710 12.11058 13.156433
## 3 10.629460 11.02493 11.61673 11.43252 10.96855 11.39866 10.710142
## 4 8.908060 10.49261 11.24370 11.27315 10.51532 11.77228 7.673405
## 5 9.194086 11.71995 11.77176 11.50510 12.04588 12.46938 13.515277
## 6 8.175330 10.83009 10.91904 10.61429 11.33890 11.43409 11.935189
##      Tnf  Tnfaip1  Tnfaip2  Tnfaip3  Tnfaip6  Tnfaip8  Tnfaip8l1
## 1 13.408836 12.92905 11.917640 14.147418 10.119528 9.978618 9.249646
## 2 13.686326 12.40853 11.780457 12.926913 9.375249 9.531835 9.275137
## 3 5.058276 11.84474 5.307932 4.738618 11.118883 9.136349 7.765774
## 4 4.404959 11.08262 5.762353 7.851732 9.775651 8.525066 5.956929
## 5 14.045181 12.76735 12.139245 13.285751 9.733649 9.890284 9.633502
## 6 12.217027 11.73731 10.726146 12.955539 8.929245 8.788509 8.060769
##      Tnfaip8l2 Tnfaip8l3 Tnfrsf10b Tnfrsf11a Tnfrsf11b Tnfrsf12a Tnfrsf13b
## 1 10.244745 6.161120 10.309112 9.062930 8.9264796 12.365153 6.615411
## 2 9.725625 6.573852 9.396831 9.423670 8.3933865 11.934089 6.471710
## 3 7.712573 1.568939 4.828012 5.136767 4.2229615 7.716843 2.769862
## 4 10.756077 5.428952 4.420326 6.104278 0.6706027 6.092874 4.232941
## 5 10.084128 6.929386 9.755237 9.782086 8.7513187 12.292886 6.826998
## 6 9.054321 4.995341 9.118620 7.874482 7.7383822 11.173528 5.442603
##      Tnfrsf13c Tnfrsf14 Tnfrsf17 Tnfrsf18 Tnfrsf19 Tnfrsf1a Tnfrsf1b
## 1 5.8440354 6.682152 7.379708 6.984875 13.962847 12.31703 12.673863
## 2 5.4417085 7.346636 7.379431 6.018777 13.293696 11.82111 12.301094
## 3 2.4437937 2.622934 3.295748 5.013494 10.791989 10.22152 4.849090
## 4 0.2921652 2.965672 5.665454 2.176258 9.555887 10.23793 6.680732
## 5 5.7932468 7.703559 7.736397 6.372740 13.652543 12.17991 12.659910
## 6 4.6846201 5.508484 6.199047 5.807758 12.770982 11.12542 11.482169
##      Tnfrsf21 Tnfrsf25 Tnfrsf4 Tnfrsf8 Tnfrsf9 Tnfsf10
## 1 12.617634 6.7947691 5.716293e+00 5.1820213 2.732973e+00 9.579623
## 2 12.246274 6.0718308 5.524318e+00 3.8354913 2.799854e+00 8.136690
## 3 8.383709 0.9935907 3.153819e-01 0.3011537 9.203627e-08 5.293623
## 4 9.559238 3.5854256 5.964143e-08 0.5510452 4.082026e+00 7.681947
## 5 12.605087 6.4259710 5.876266e+00 4.1719069 3.112309e+00 8.494437
## 6 11.425951 5.6197338 4.559854e+00 4.0412133 1.799462e+00 8.390112
##      Tnfsf11 Tnfsf12 Tnfsf13 Tnfsf13b Tnfsf14 Tnfsf15
## 1 1.833930e+00 8.071817 4.091744 4.7019211 6.273283e+00 2.595837e+00
## 2 1.452149e+00 7.455028 4.412506 4.3267333 5.267852e+00 1.329959e+00
## 3 2.234577e+00 7.140846 4.617948 0.2948242 4.810736e-08 6.058946e-08
## 4 1.102414e-07 6.547197 3.314679 0.4004082 2.518291e-08 3.051789e-08
## 5 1.689867e+00 7.812092 4.756365 4.6696667 5.618447e+00 1.556471e+00
## 6 1.090279e+00 6.886853 3.006478 3.5807957 5.105561e+00 1.685602e+00
##      Tnfsf18 Tnfsf8 Tnfsf9 Tnik Tnip1 Tnip2
## 1 5.273680e+00 3.2423538 8.151004 12.551093 11.437053 10.044874
## 2 4.344365e+00 1.9876380 7.172458 12.408526 11.306412 10.109704
## 3 1.503739e+00 0.3905013 8.212679 9.542890 8.612913 6.403930
## 4 9.149811e-08 0.3105659 8.094043 8.517258 6.657898 5.074937
## 5 4.687493e+00 2.2640038 7.529129 12.767346 11.665165 10.468295
## 6 4.129778e+00 2.2369565 6.965666 11.359425 10.245752 8.854682
##      Tnip3 Tnk1 Tnk2 Tnks Tnks1bp1 Tnks2
## 1 3.500058e+00 3.384374 13.104905 12.243642 11.637258 13.35152
## 2 2.268158e+00 2.834073 12.633967 12.120313 11.426991 12.84932
## 3 4.581750e-08 1.753967 7.578918 8.064497 6.964293 10.66007
## 4 2.370863e-08 1.947156 6.642293 6.465093 6.239773 9.17052
## 5 2.559445e+00 3.147633 12.992795 12.479120 11.785754 13.20816

```

```

## 6 2.465842e+00 2.362536 11.913137 11.052048 10.445868 12.15971
##          Tnn          Tnnc1          Tnnc2          Tnni1          Tnni2          Tnni3          Tnnt1
## 1 3.560705e+00 5.103340e+00 3.1570536 8.4727957 7.193280 4.072078 4.860191
## 2 3.896781e+00 5.164177e+00 3.3794466 7.5340231 7.370314 4.231741 5.820463
## 3 1.709684e+00 2.887170e+00 1.6122618 7.5690604 2.371808 3.542206 3.152566
## 4 1.278496e-07 4.950051e-08 0.3036122 0.8100255 5.258572 4.248798 2.473097
## 5 4.234137e+00 5.514154e+00 3.7074230 7.8911839 7.727268 4.573583 6.173700
## 6 2.520345e+00 3.965343e+00 2.1622326 7.2861316 6.014174 2.988220 3.731875
##          Tnnt2          Tnnt3          Tnp01          Tnp02          Tnp03          Tnr          Tnrc18
## 1 3.377896e+00 3.101087 12.285496 12.918129 11.542247 14.034603 12.264691
## 2 3.286300e+00 3.420203 12.053417 12.453417 11.367630 13.331455 11.959937
## 3 7.692855e-08 5.166028 8.329016 9.869622 10.785045 4.941675 8.492856
## 4 9.501730e-01 0.522978 6.678532 9.177466 8.902469 9.275684 5.808848
## 5 3.612192e+00 3.749049 12.412221 12.812239 11.726388 13.690303 12.318736
## 6 2.356777e+00 2.113506 11.093892 11.726390 10.350898 12.842732 11.073092
##          Tnrc6a          Tnrc6b          Tnrc6c          Tns1          Tns3          Tns4          Tnxb
## 1 12.235504 11.809694 11.341856 12.213715 14.262716 5.312728 6.308421
## 2 11.950688 11.497678 11.290619 11.723486 13.930754 4.392682 5.774241
## 3 9.656137 9.840756 10.706464 8.447982 9.078211 3.217472 5.247614
## 4 8.713248 8.324154 8.884015 8.455808 8.654904 6.029498 1.039998
## 5 12.309486 11.856447 11.649371 12.082271 14.289613 4.736331 6.127293
## 6 11.043913 10.618238 10.150601 11.022129 13.070829 4.167563 5.140121
##          Tob1          Toe1          Tollip          Tom1          Tom111          Tom112          Tomm20
## 1 12.359250 9.282213 13.298919 7.472035 10.158313 12.774697 12.818554
## 2 11.813565 8.724846 12.894540 6.506108 9.589193 12.467906 12.521379
## 3 10.903606 9.248235 11.057929 3.737121 9.852857 11.329281 8.550186
## 4 9.846951 7.490066 9.918101 4.155589 9.022412 9.994743 9.233629
## 5 12.172356 9.082973 13.253377 6.861482 9.947658 12.826729 12.880204
## 6 11.167627 8.093268 12.107123 6.290674 8.967985 11.582984 11.626832
##          Tomm22          Tomm34          Tomm40          Tomm40l          Tomm5          Tomm6          Tomm7
## 1 11.63320 11.005155 11.311709 11.149998 9.728831 10.654019 11.356360
## 2 10.95978 10.647814 11.117585 10.701671 9.108216 10.043316 10.652622
## 3 11.47300 11.458290 7.109533 10.481880 9.712095 12.167276 12.176153
## 4 10.39455 9.522701 6.155236 9.286597 8.402950 11.142554 10.910123
## 5 11.31850 11.006494 11.476321 11.060358 9.466518 10.401894 11.011303
## 6 10.44181 9.814092 10.120470 9.958847 8.539078 9.463210 10.165098
##          Tomm70a          Tomt          Tonsl          Top1          Top1mt          Top2a          Top2b
## 1 12.140634 7.413930 8.828694 12.100764 9.206831 10.653293 12.891369
## 2 11.496482 7.577814 8.566625 11.752462 9.258391 10.279796 12.609040
## 3 9.562432 5.532329 7.583087 11.355331 8.281806 12.196972 11.280293
## 4 9.780169 2.203251 1.946113 9.316611 4.727041 7.451747 7.983894
## 5 11.855251 7.935027 8.924665 12.111249 9.616750 10.638419 12.967868
## 6 10.949070 6.233005 7.640869 10.909212 8.018048 9.462484 11.699634
##          Top3a          Top3b          Topbp1          Topors          Tor1a          Tor1aip1          Tor1aip2
## 1 9.337868 11.116067 10.937678 12.052488 11.139865 11.865671 12.61145
## 2 9.612923 10.355382 10.722849 11.246336 10.376106 11.241055 12.01298
## 3 7.978441 8.668797 8.870647 9.080220 9.803358 9.592837 11.63309
## 4 4.353153 7.538692 4.799295 8.503657 8.574930 9.632010 10.66937
## 5 9.971396 10.714018 11.081539 11.605084 10.734745 11.599803 12.37178
## 6 8.148808 9.924936 9.746660 10.860950 9.948721 10.674195 11.41976
##          Tor1b          Tor2a          Tor3a          Tox          Tox2          Tox3          Tox4
## 1 11.816437 11.097337 11.391071 9.427513 8.2494336 10.044575 12.033834
## 2 11.190096 10.365773 10.598419 8.755936 7.6031602 9.860503 11.706714
## 3 9.833171 8.624905 8.332725 7.008008 2.5531754 9.260470 10.623373

```

##	4	9.674007	8.662871	8.942577	6.850690	0.4895562	5.142189	8.644216
##	5	11.548839	10.724411	10.957093	9.114079	7.9604014	10.219040	12.065498
##	6	10.624979	9.906217	10.199792	8.238276	7.0636581	8.854383	10.842302
##		Tpbg	Tpcn1	Tpcn2	Tpd52	Tpd5211	Tpd5212	Tph1
##	1	9.893995	12.528819	9.681933	12.438816	9.874275	12.12281	2.654687
##	2	9.216157	11.823870	8.753034	11.790084	9.316010	11.82592	2.390652
##	3	8.838312	9.073711	4.875636	9.612265	6.619835	12.02195	8.212125
##	4	8.618665	8.393984	6.479062	9.321079	9.143754	9.80526	2.802600
##	5	9.574501	12.182661	9.111175	12.148873	9.674390	12.18471	2.687558
##	6	8.704000	11.337156	8.492253	11.247173	8.684307	10.93125	1.734241
##		Tph2	Tpi1	Tpk1	Tpm1	Tpm2	Tpm3	Tpm4
##	1	5.9668966	13.46998	8.563771	12.933966	7.201410	13.41661	13.668352
##	2	5.4645979	13.08880	8.675326	12.208425	6.272221	12.83374	12.743868
##	3	2.3446234	12.06247	6.737898	9.719652	8.474355	11.19055	10.786308
##	4	0.4681262	11.28631	1.663913	10.964854	10.234066	10.14052	8.622982
##	5	5.8162520	13.44764	9.033426	12.567237	6.626976	13.19258	13.102701
##	6	4.8048519	12.27816	7.376782	11.742224	6.022232	12.22480	12.476514
##		Tpmt	Tpo	Tpp1	Tpp2	Tppp	Tppp3	Tpr
##	1	9.254440	2.555899e+00	13.33837	11.443315	14.90502	13.04713	12.134224
##	2	8.671409	2.332606e+00	12.75187	11.215459	14.41131	12.19681	11.939020
##	3	10.259897	2.409344e+00	12.18619	10.000147	11.53112	10.50093	10.484120
##	4	7.533721	6.283775e-08	12.14389	8.300719	10.55674	8.93034	8.092817
##	5	9.029507	2.626911e+00	13.11071	11.574204	14.77017	12.55562	12.297817
##	6	8.065554	1.652790e+00	12.14657	10.252011	13.71310	11.85537	10.942662
##		Tpra1	Tprg	Tprg1	Tprkb	Tprn	Tpsab1	Tpsb2
##	1	10.720564	5.276791e-08	13.505369	11.50766	12.766872	2.0646410	1.6546316
##	2	10.847848	2.515387e-08	12.747726	10.90019	12.200743	0.7509964	0.8852128
##	3	9.724720	3.936484e+00	9.931191	10.71307	9.608074	6.3661179	10.2866901
##	4	8.125718	2.546643e+00	9.399474	10.26905	7.021676	0.7438930	1.4265574
##	5	11.206555	3.225567e-08	13.106558	11.25891	12.559554	0.9074536	1.0608306
##	6	9.529702	2.337336e-08	12.313548	10.31632	11.575160	1.2632768	0.9606938
##		Tpsg1	Tpst1	Tpst2	Tpt1	Tpte	Tpx2	
##	1	4.099553e-01	11.892650	12.663969	12.900492	2.639311e+00	9.662370	
##	2	1.596560e+00	11.102148	11.865893	12.272597	1.822529e+00	9.056796	
##	3	5.956972e-01	8.138043	7.979788	7.632252	1.619820e+00	10.918830	
##	4	1.061579e-07	8.296770	8.578549	6.136831	1.244355e-07	7.102884	
##	5	1.846258e+00	11.460882	12.224686	12.631411	2.088568e+00	9.415078	
##	6	1.958030e-01	10.701164	11.472277	11.708756	1.721500e+00	8.472721	
##		Tra2a	Tra2b	Trabd	Tradd	Traf1	Traf2	Traf3
##	1	12.589000	11.569283	11.134793	9.562517	6.476674	10.332263	11.770324
##	2	11.769732	11.008774	11.149744	8.937269	5.169267	10.082790	11.876356
##	3	9.973052	10.970093	7.403117	5.405658	7.864645	10.134058	7.358947
##	4	8.517001	8.979888	7.012407	6.535610	6.314527	8.272276	6.150360
##	5	12.128520	11.367499	11.508483	9.295499	5.519275	10.441376	12.235150
##	6	11.397323	10.377923	9.943651	8.373035	5.305786	9.141748	10.578883
##		Traf3ip1	Traf3ip2	Traf3ip3	Traf4	Traf5	Traf6	Traf7
##	1	9.127042	8.045497	7.593494	12.600117	9.753733	11.117154	12.342695
##	2	9.000351	7.605547	8.884788	12.274878	8.980193	10.672142	12.218052
##	3	9.301757	5.878070	2.031502	7.623690	4.437406	8.569991	10.572573
##	4	7.446722	3.560961	3.758815	6.356215	2.937646	6.455278	7.206421
##	5	9.358608	7.962791	9.242994	12.633692	9.338441	11.030826	12.576864
##	6	7.938441	6.860662	6.411279	11.408438	8.563941	9.926022	11.151076
##		Trafd1	Traip	Trak1	Trak2	Tram1	Tram111	Tram2
##	1	11.756639	7.071520	12.428729	14.889814	12.17115	9.971336	7.791224

```

## 2 11.727972 7.730917 12.343009 14.884941 11.28863 9.509318 7.135106
## 3 9.747627 7.273594 10.306547 8.614708 10.39971 9.936922 3.554742
## 4 7.693750 3.884957 8.027428 7.380633 10.16474 9.961517 3.962397
## 5 12.086757 8.088297 12.701827 15.243809 11.64738 9.867760 7.491720
## 6 10.565202 5.893542 11.237089 13.697893 10.97958 8.781237 6.607762
##      Trank1      Trap1      Trappc1      Trappc10      Trappc2      Trappc2l      Trappc3
## 1 9.998130 11.940450 11.082312 13.026417 9.314986 10.588078 12.080896
## 2 10.451821 11.800340 10.434164 12.471830 8.603211 10.062193 11.480372
## 3 4.679579 11.418532 11.654166 6.581472 9.640787 11.017337 10.093288
## 4 7.142589 9.151578 9.788516 7.469780 8.694519 9.920186 9.103466
## 5 10.810472 12.159130 10.792813 12.830653 8.961271 10.420774 11.839139
## 6 8.807997 10.748948 9.891201 11.834660 8.125972 9.397324 10.889349
##      Trappc4      Trappc5      Trappc6a      Trappc6b      Trappc8      Trappc9      Trdmt1
## 1 11.63568 11.38755 9.587225 10.275315 11.709411 11.999442 8.116480
## 2 10.98607 10.78372 8.932822 9.947576 11.304225 11.741724 8.128768
## 3 12.02281 10.21585 8.246900 8.262832 8.704240 10.322916 7.197793
## 4 10.19813 10.06025 7.820079 7.287510 8.185614 9.538724 5.215995
## 5 11.34479 11.14242 9.291050 10.306133 11.662978 12.100510 8.486509
## 6 10.44429 10.19628 8.397701 9.084858 10.517992 10.807921 6.931302
##      Treh      Trem1      Trem2      Trem1l      Trem12
## 1 3.116833e+00 6.251607e+00 14.109320 3.873520e+00 5.593028e+00
## 2 3.159068e+00 4.429785e+00 13.676880 3.006578e+00 7.254516e+00
## 3 5.877536e-08 1.575593e+00 7.391024 6.521067e-08 7.283621e-08
## 4 2.685719e-08 5.876801e-08 11.454990 3.377661e-08 1.334540e+00
## 5 3.481881e+00 4.773824e+00 14.035735 3.325316e+00 7.611309e+00
## 6 2.127190e+00 5.084249e+00 12.917444 2.804908e+00 4.439714e+00
##      Trem14      Trex1      Trex2      Trf      Trh      Trhde
## 1 5.099923e+00 9.500832 1.4815932 17.02802 6.895196e+00 6.844839e+00
## 2 4.009390e+00 9.430009 1.4284090 16.30703 7.055443e+00 6.996575e+00
## 3 5.590746e-08 8.090086 1.8261067 15.42136 5.119317e-08 5.210778e-08
## 4 2.919967e-08 7.007209 2.3634307 14.73845 2.231650e-08 3.624830e+00
## 5 4.348374e+00 9.788426 1.6640296 16.66591 7.411927e+00 7.352960e+00
## 6 3.962052e+00 8.311459 0.8399085 15.83606 5.719027e+00 5.669229e+00
##      Trhr      Triap1      Trib1      Trib2      Trib3      Tril      Trim10
## 1 3.309150 10.212289 12.862018 12.810977 6.258495 13.344272 4.894471e+00
## 2 3.681444 9.582548 12.642069 12.138263 6.153693 12.903871 2.829408e+00
## 3 2.828323 10.607782 6.204164 9.329754 3.859739 9.835108 4.956384e-08
## 4 7.446678 9.142020 7.151314 9.320390 1.130381 10.512312 2.367622e-08
## 5 4.015306 9.941012 13.000898 12.497071 6.508095 13.262709 3.142819e+00
## 6 2.295843 9.021900 11.670288 11.619256 5.091021 12.152470 3.764693e+00
##      Trim11      Trim12a      Trim12c      Trim13      Trim14      Trim15
## 1 10.254699 1.0182971 8.474054 10.348284 6.389671e+00 3.852053e+00
## 2 9.782541 0.4434247 8.468939 9.862091 5.796635e+00 2.989929e+00
## 3 7.516866 7.1443903 6.842645 9.467628 6.007067e-08 2.499615e+00
## 4 4.526482 6.1865547 3.970724 7.577149 3.028307e-08 1.184776e-07
## 5 10.141059 0.5473494 8.826920 10.220627 6.149777e+00 3.308194e+00
## 6 9.064264 0.5386563 7.287385 9.157752 5.220084e+00 2.785207e+00
##      Trim16      Trim17      Trim2      Trim21      Trim23      Trim24      Trim25
## 1 10.862145 6.045770 12.029303 7.5350170 10.145875 11.275570 11.173330
## 2 9.943014 5.600136 11.755134 7.1923505 10.501830 11.197529 11.002517
## 3 6.185384 4.749194 12.505466 5.5722523 8.617846 8.658302 7.751606
## 4 6.316446 2.763982 9.941113 0.8684752 6.449009 5.430977 5.918399
## 5 10.301569 5.952439 12.113920 7.5490518 10.860489 11.556273 11.361241
## 6 9.671178 4.882149 10.837772 6.3532049 8.955562 10.084350 9.982166

```

```

##      Trim26      Trim27      Trim28      Trim29      Trim3      Trim30a      Trim30b
## 1 12.017240 11.041710 13.701146 3.312711 12.123971 8.090161 3.6099953
## 2 11.048803 10.493764 13.644973 2.777295 11.650465 7.565905 1.9475806
## 3 8.768323 8.651823 10.639248 7.723076 8.253039 6.321382 1.4453254
## 4 8.241500 6.565884 8.709171 6.904745 7.170615 7.727047 0.2699119
## 5 11.407532 10.852422 14.003827 3.089007 12.009245 7.923104 2.2215550
## 6 10.825713 9.850624 12.509305 2.298991 10.932412 6.905108 2.5648088
##      Trim30d      Trim32      Trim33      Trim35      Trim36      Trim37      Trim39
## 1 5.703995 11.433985 11.462204 13.48517 10.823197 11.436082 10.121913
## 2 3.233657 11.267138 11.229615 12.69567 9.967021 11.818063 10.206834
## 3 8.049791 11.224620 9.381208 10.98127 8.772133 9.463391 8.123885
## 4 5.991239 9.957807 7.404476 10.28300 6.740421 7.902114 6.742399
## 5 3.558309 11.625888 11.588361 13.05450 10.325582 12.176853 10.565443
## 6 4.547855 10.242686 10.270892 12.29335 9.632258 10.244782 8.931627
##      Trim41      Trim43a      Trim43b      Trim43c      Trim44      Trim45      Trim46
## 1 12.03540 4.261289e+00 2.709264e+00 3.082096 12.748365 8.430017 10.431704
## 2 12.13490 4.542921e+00 2.088829e+00 2.909367 12.749708 8.017265 10.018897
## 3 6.97041 7.744107e-01 1.688510e+00 1.800196 9.640152 6.376568 8.378722
## 4 6.12114 6.956128e-08 5.029769e-08 1.559090 8.315567 3.857015 8.251781
## 5 12.49371 4.888084e+00 2.370932e+00 3.225266 13.108541 8.374915 10.377469
## 6 10.84387 3.164598e+00 1.779648e+00 2.097026 11.556657 7.243512 9.241090
##      Trim47      Trim56      Trim58      Trim59      Trim6      Trim62
## 1 11.235130 8.360817 2.512893e+00 11.158718 5.651275e+00 10.529779
## 2 10.552391 8.233282 2.372165e+00 10.111488 4.443715e+00 10.495887
## 3 4.442475 5.291686 8.652873e-08 9.824412 2.787127e-01 6.574405
## 4 4.681493 4.036145 4.083254e-08 8.495683 1.042842e-07 6.623766
## 5 10.911058 8.591102 2.668255e+00 10.470079 4.787896e+00 10.854545
## 6 10.043932 7.174581 1.617639e+00 9.967562 4.496451e+00 9.339076
##      Trim63      Trim65      Trim66      Trim67      Trim68      Trim69
## 1 3.462271e+00 8.103284 9.2237286 10.486403 8.388135 4.060911e+00
## 2 2.648628e+00 7.705629 10.2751121 10.188349 8.290340 3.055694e+00
## 3 7.706671e-01 5.448585 1.8053606 9.349461 5.932488 7.181044e-08
## 4 7.021485e-08 5.230940 0.8400819 4.534546 5.594532 3.729493e-08
## 5 2.955862e+00 8.062982 10.6337342 10.546955 8.648202 3.375793e+00
## 6 2.432002e+00 6.918169 8.0349084 9.295738 7.201792 2.977860e+00
##      Trim7      Trim71      Trim72      Trim8      Trim9      Trio      Triobp
## 1 11.244689 1.507602e+00 5.379134 12.577328 13.658595 13.094993 11.315547
## 2 10.567300 1.649731e+00 4.550391 12.123192 13.347656 13.189247 10.802356
## 3 8.210719 1.263579e-07 1.304689 10.253399 9.597709 8.978439 7.891814
## 4 4.272438 2.832162e-01 1.053085 8.910072 9.822183 7.810706 5.302291
## 5 10.925969 1.903525e+00 4.895625 12.482000 13.706505 13.548092 11.161057
## 6 10.053485 8.577873e-01 4.231898 11.385654 12.466757 11.903226 10.124306
##      Trip10      Trip11      Trip12      Trip13      Trip4      Trip6      Trit1
## 1 10.036569 11.049804 13.422155 7.500306 11.123917 9.722007 10.458874
## 2 9.644184 10.622531 13.022812 6.537561 11.160048 9.098333 10.222104
## 3 7.450827 9.573197 10.649664 6.352446 10.390866 8.810453 9.430966
## 4 6.358834 7.568405 9.512288 4.017931 7.926137 4.112888 6.261825
## 5 10.002665 10.981208 13.381653 6.893011 11.518787 9.456631 10.580716
## 6 8.846387 9.858713 12.230343 6.318741 9.932781 8.532263 9.268235
##      Trmt1      Trmt11      Trmt112      Trmt12      Trmt2a      Trmt2b      Trmt5
## 1 11.052490 9.115151 9.805187 7.508213 11.875418 9.754862 7.960622
## 2 11.290529 7.941886 9.335603 6.467337 11.150475 10.018075 7.887257
## 3 8.649029 9.292573 8.544760 8.744918 10.312084 9.287779 7.646132
## 4 6.188687 7.944520 7.592664 9.086396 9.019773 6.508810 5.642251

```



```

## 5 11.649281 8.299470 9.693989 6.822615 11.509214 10.376647 8.244791
## 6 9.861397 7.926578 8.615319 6.326591 10.683938 8.565068 6.776219
##      Trmt6  Trmt61a      Trmu  Trnau1ap      Trnp1      Trnt1      Tro
## 1 10.625724 9.104323 9.971250 10.269893 8.932114 10.016755 11.430250
## 2 10.043673 8.631736 8.803079 9.950033 9.454779 9.239293 11.749941
## 3 10.243279 6.319713 9.316510 7.968238 4.407355 10.329760 10.155614
## 4 8.170960 6.845387 7.820309 6.304147 5.210626 8.556801 9.406227
## 5 10.402251 8.989812 9.161246 10.308590 9.813204 9.597645 12.108727
## 6 9.434938 7.915776 8.781151 9.079442 7.744001 8.826598 10.238953
##      Troap  Trove2      Trp53  Trp53bp1  Trp53bp2  Trp53i11  Trp53i13
## 1 7.126975 11.80153 11.318173 11.93663 12.278461 11.311212 9.065177
## 2 6.646799 11.07136 10.893490 12.26287 11.432436 10.401659 8.937163
## 3 8.002418 11.41250 12.327476 10.15043 9.268008 9.662147 3.586528
## 4 2.183770 10.38172 9.715686 7.45672 9.086388 10.164972 2.046210
## 5 7.002498 11.43009 11.252201 12.62168 11.791200 10.760302 9.295393
## 6 5.948471 10.61007 10.126930 10.74513 11.086858 10.119973 7.876724
##      Trp53inp1  Trp53inp2  Trp53rk      Trp63      Trp73      Trpa1      Trpc1
## 1 11.522903 16.315114 6.876472 3.664833 11.820564 1.976096e+00 10.458809
## 2 10.697596 16.156251 7.509107 3.084527 11.113375 2.963050e+00 9.084329
## 3 9.920130 9.457429 3.052577 5.244205 3.153204 6.654590e-01 5.296190
## 4 9.120070 8.454359 3.430867 5.940532 8.716276 5.612760e-08 5.111029
## 5 11.056283 16.515126 7.866238 3.405403 11.472110 3.280541e+00 9.442622
## 6 10.331562 15.123153 5.700509 2.614448 10.629104 1.196078e+00 9.268170
##      Trpc3      Trpc4      Trpc4ap      Trpc5      Trpc6      Trpc7      Trpm1
## 1 8.670478 6.703704 13.677166 5.893454 4.571740 5.396317 3.280853
## 2 7.837408 7.680574 13.028325 6.509018 5.053512 6.147413 2.852812
## 3 5.340458 5.455026 9.820814 2.060725 4.350083 3.331787 1.690903
## 4 5.048518 4.970854 9.777477 5.190030 8.246997 3.690648 1.826867
## 5 8.194895 8.037900 13.387166 6.864398 5.402776 6.501796 3.166966
## 6 7.483134 5.529766 12.485327 4.732955 3.457117 4.248560 2.270857
##      Trpm2      Trpm3      Trpm4      Trpm5      Trpm6      Trpm7      Trpm8
## 1 10.792873 9.310723 10.342502 1.654077e+00 7.983312 12.06112 1.583321e+00
## 2 11.978466 8.772291 10.223834 2.366612e+00 8.116286 11.72535 1.569673e+00
## 3 1.147531 6.701307 5.622507 2.295585e-01 4.204994 10.22296 2.410553e-01
## 4 4.914084 8.411995 6.868726 9.168187e-08 5.712921 8.26433 4.933805e-08
## 5 12.337266 9.130442 10.582446 2.662454e+00 8.474017 12.08413 1.817238e+00
## 6 9.601956 8.121718 9.151976 9.602996e-01 6.798791 10.86958 9.103963e-01
##      Trps1      Trpt1      Trpv1      Trpv2      Trpv3      Trpv4      Trpv6
## 1 11.131200 8.611135 4.328761e+00 10.834431 4.3711314 8.153470 6.805321
## 2 10.723983 8.624054 4.812796e+00 10.892796 3.6733798 8.082761 7.231215
## 3 10.687507 8.031823 2.099579e-01 7.583128 0.9670649 5.347756 3.724352
## 4 9.192343 6.367915 7.677482e-08 7.165494 3.0111899 6.077678 3.012035
## 5 11.082674 8.982126 5.160308e+00 11.251508 4.0071012 8.440465 7.587974
## 6 9.940060 7.423985 3.227860e+00 9.643484 3.2676784 6.968120 5.630163
##      Trrap      Trub1      Trub2      Tsc1      Tsc2      Tsc22d1      Tsc22d2
## 1 12.689576 10.209767 10.747295 11.581210 12.558426 15.22181 11.587234
## 2 12.530795 9.452231 10.737891 11.171370 12.391124 14.41394 11.155990
## 3 10.360719 9.052815 9.621797 9.091630 10.119567 12.95767 8.775760
## 4 9.748741 5.452638 7.385251 6.773835 8.303257 12.65040 8.008451
## 5 12.889621 9.810656 11.096583 11.530111 12.749944 14.77281 11.514730
## 6 11.497879 9.019381 9.556412 10.389844 11.366756 14.02987 10.395866
##      Tsc22d3  Tsc22d4  Tsen15  Tsen2  Tsen34  Tsen54  Tsfm
## 1 13.19571 13.95934 8.450639 8.879285 11.653780 9.328732 9.018056
## 2 12.55918 13.24353 8.070083 8.849849 10.830852 9.589602 8.328542

```

```

## 3 12.52738 12.08250 8.666386 9.852301 9.019193 6.198467 9.964547
## 4 11.68402 11.11873 6.871415 7.379947 7.949741 2.556032 8.721560
## 5 12.91801 13.60238 8.427777 9.208038 11.189557 9.948068 8.686431
## 6 12.00393 12.76748 7.264057 7.691316 10.462384 8.139690 7.829720
##      Tsg101  Tsga10  Tsga13  Tshb  Tshr  Tshz1  Tshz2
## 1 11.254852 8.213231 3.8775024 5.131879 4.6477798 11.165087 10.285782
## 2 10.530156 8.206719 2.5164777 4.991351 4.0756690 10.992423 10.080274
## 3 11.066547 7.808567 2.2421649 2.176777 7.1096748 10.583555 7.340642
## 4 9.829165 4.717189 0.3058151 1.044769 0.3888182 8.838131 5.662456
## 5 10.888820 8.564521 2.8186608 5.340191 4.4155518 11.351146 10.438859
## 6 10.063643 7.027613 2.8085646 3.992846 3.5292915 9.973928 9.095315
##      Tshz3  Tsks  Tsku  Tslp  Tsn  Tsnax Tsnaxip1
## 1 8.707260 2.973932e+00 8.206492 5.027688 12.12376 12.068409 3.596246
## 2 8.389208 2.194652e+00 7.384130 3.646606 11.68521 11.576679 3.625721
## 3 6.875514 7.765262e-01 7.523920 6.801875 13.64548 8.636420 5.058252
## 4 6.120682 4.951362e-08 4.983561 4.543864 11.00182 8.130494 3.902042
## 5 8.747138 2.482319e+00 7.741102 3.979852 12.04399 11.935453 3.958590
## 6 7.519799 2.003723e+00 7.020904 3.892537 10.93220 10.876867 2.552391
##      Tspan1 Tspan10 Tspan11 Tspan12 Tspan13 Tspan14 Tspan15
## 1 2.322100e+00 3.147701 6.576613 11.44361 13.11148 13.53485 13.158121
## 2 2.739745e+00 3.399689 6.937658 11.06303 12.33477 12.94995 12.619266
## 3 1.036431e+00 4.122660 8.027890 13.12451 10.08725 10.57932 10.861419
## 4 5.327414e-08 3.632840 4.974211 10.98265 11.10085 10.67427 9.341332
## 5 3.050192e+00 3.728101 7.293938 11.42176 12.69358 13.30879 12.978095
## 6 1.464042e+00 2.154073 5.404324 10.25230 11.91971 12.34303 11.966344
##      Tspan17 Tspan18 Tspan2 Tspan3 Tspan31 Tspan32 Tspan33
## 1 10.889374 10.241423 16.04954 14.79885 12.88433 5.796275 10.554304
## 2 10.875440 9.576653 15.06400 14.11830 12.18797 6.476936 10.660533
## 3 3.657812 8.793337 12.97004 11.95488 13.18773 2.314491 6.484607
## 4 5.114784 9.053743 11.49615 11.32366 12.45236 4.998991 7.180908
## 5 11.234150 9.935115 15.42287 14.47716 12.54678 6.832238 11.019215
## 6 9.698388 9.051002 14.85759 13.60693 11.69260 4.637942 9.363579
##      Tspan4 Tspan5 Tspan6 Tspan7 Tspan8 Tspan9 Tspo
## 1 11.940536 12.53191 12.25032 15.04894 3.727387e+00 13.743623 8.809017
## 2 11.256633 11.76703 11.50210 14.54721 3.728622e+00 12.803574 8.249450
## 3 9.100313 10.33153 12.50304 17.00777 2.435637e+00 9.789454 9.569656
## 4 8.773890 10.72707 11.09629 15.82442 5.150731e-08 10.564338 8.939822
## 5 11.615382 12.12582 11.86087 14.90608 4.063296e+00 13.162408 8.607283
## 6 10.749034 11.34024 11.05872 13.85701 2.671286e+00 12.551777 7.621249
##      Tspo2 Tspyl1 Tspyl2 Tspyl4 Tspyl5 Tsr1 Tsr2
## 1 4.210064e+00 12.44829 11.836707 12.91268 8.381270 9.770419 10.763388
## 2 1.885000e+00 11.62013 11.494250 12.50315 7.556244 9.752219 10.545987
## 3 1.341347e-09 12.29241 8.303937 11.23433 8.869733 9.121728 10.179195
## 4 4.744202e+00 12.01173 6.111682 10.06730 9.574389 7.683116 8.238826
## 5 2.155095e+00 11.97891 11.853019 12.86197 7.913431 10.110729 10.904654
## 6 3.116694e+00 11.25664 10.645241 11.72094 7.194954 8.580602 9.572494
##      Tssc1 Tssc4 Tssk1 Tssk2 Tssk3 Tssk4
## 1 10.284095 11.713361 2.6613501 1.846169e+00 2.965183e+00 3.966846e+00
## 2 9.977539 11.510382 1.5827547 2.714193e+00 3.400431e+00 3.714012e+00
## 3 10.066857 9.316622 0.3622841 5.662034e-01 7.146294e-08 2.082806e+00
## 4 9.279520 6.695357 4.2889548 4.956305e-08 2.999098e-08 4.997427e-08
## 5 10.336102 11.869152 1.8313633 3.023760e+00 3.728858e+00 4.048438e+00
## 6 9.093629 10.521941 1.7397693 1.099283e+00 1.996218e+00 2.890828e+00
##      Tssk6 Tst Tsta3 Tstd2 Ttbk1 Ttbk2 Ttc1

```

```

## 1 6.0100661 10.512602 10.566244 9.662271 11.057623 11.592607 10.773874
## 2 5.3589267 9.796967 10.425253 10.149966 10.815529 11.135840 10.491861
## 3 0.8079219 11.441874 10.732585 8.822634 5.833325 9.442015 11.499351
## 4 0.5425056 11.056413 8.799209 5.643006 4.613754 7.080208 9.477660
## 5 5.7100302 10.155488 10.783901 10.508565 11.174231 11.494577 10.850519
## 6 4.8471483 9.321914 9.375509 8.472622 9.866528 10.401236 9.582972
##      Ttc12      Ttc13      Ttc14      Ttc16      Ttc17      Ttc18      Ttc19
## 1 8.415470 11.119946 12.376639 4.3873315 10.954120 4.024410 10.298307
## 2 8.378008 10.729028 12.177382 4.3728810 11.226435 4.290792 10.482865
## 3 8.715746 7.954403 9.093053 2.2655679 8.428017 5.011016 7.743677
## 4 3.391965 7.126893 7.631031 0.3248398 7.312574 1.942495 7.244131
## 5 8.735930 11.087720 12.536192 4.7163190 11.585181 4.633321 10.841521
## 6 7.229021 9.928813 11.185011 3.2829213 9.763091 2.944037 9.107827
##      Ttc21a      Ttc21b      Ttc22      Ttc23      Ttc25      Ttc26      Ttc27
## 1 3.665588e+00 8.422720 3.769369 8.839037 5.003245 7.598063 8.827362
## 2 4.935199e+00 8.404999 4.010302 8.143463 4.576625 7.405677 9.289997
## 3 2.697751e+00 7.444471 1.934397 8.462268 5.593084 8.648733 8.369610
## 4 1.309516e-07 5.705436 3.302214 6.490976 4.264620 5.968979 7.180590
## 5 5.283639e+00 8.762939 4.349299 8.501216 4.922106 7.762678 9.648368
## 6 2.615132e+00 7.236243 2.709555 7.651182 3.869045 6.415818 7.639541
##      Ttc28      Ttc29      Ttc3      Ttc30a1      Ttc30a2      Ttc30b      Ttc32
## 1 11.770293 9.490663e-01 13.58395 6.403502 4.858565 8.444230 7.795656
## 2 11.332841 1.777219e+00 13.76707 6.228405 4.107662 7.532580 7.314432
## 3 11.192785 3.789271e+00 13.36010 7.069901 4.248834 9.435352 8.431844
## 4 8.184239 1.114342e-07 11.96083 6.661382 3.123982 8.397703 7.089615
## 5 11.691596 2.040197e+00 14.12592 6.583033 4.447964 7.889739 7.671310
## 6 10.578851 4.965458e-01 12.39212 5.233704 3.730318 7.257672 6.612168
##      Ttc33      Ttc34      Ttc36      Ttc37      Ttc38      Ttc39a
## 1 9.951613 4.544710e+00 2.809403e+00 10.189411 8.891614 4.329507
## 2 9.222247 5.320381e+00 3.399303e+00 10.004666 9.035030 4.464389
## 3 11.361361 2.963823e+00 1.544391e+00 7.999630 8.097208 3.239299
## 4 10.333558 5.159029e-08 9.437870e-08 5.778427 5.876832 3.620549
## 5 9.580593 5.671274e+00 3.727707e+00 10.363235 9.393302 4.808780
## 6 8.761540 3.431508e+00 1.863691e+00 8.999048 7.703612 3.228560
##      Ttc39b      Ttc39c      Ttc4      Ttc5      Ttc7      Ttc7b      Ttc8
## 1 11.100590 10.409516 11.294466 11.153058 11.755309 11.591123 9.725065
## 2 11.022802 10.644645 11.010078 10.501437 11.570396 11.575913 9.116508
## 3 8.149029 5.916713 10.849812 11.253073 3.980416 7.698869 9.758025
## 4 7.815900 5.618037 9.172303 9.627729 6.533592 6.800129 7.857353
## 5 11.381528 11.003325 11.368802 10.860096 11.929170 11.934688 9.474813
## 6 9.909469 9.218924 10.103236 9.961906 10.563873 10.399753 8.535317
##      Ttc9      Ttc9b      Ttc9c      Ttf1      Ttf2      Tti1      Tti2
## 1 9.919923 10.251345 9.970081 9.191085 9.179174 10.361748 9.569039
## 2 9.292328 9.730031 10.121409 8.577922 9.148417 9.823583 9.386514
## 3 5.005914 7.146668 10.161544 9.064167 7.650874 9.305131 7.543824
## 4 6.124305 5.649754 6.685382 7.087264 4.230604 9.161487 7.202410
## 5 9.650699 10.088535 10.480002 8.935968 9.506735 10.182110 9.744917
## 6 8.729893 9.060914 8.779984 8.002337 7.990453 9.171203 8.379546
##      Ttk      Ttl      Ttl11      Ttl110      Ttl111      Ttl112
## 1 7.641941 10.800077 9.918763 1.895729e+00 7.943991 10.786655
## 2 7.178014 10.559778 9.865419 1.773405e+00 7.915513 10.728689
## 3 8.332141 8.774557 10.152602 4.766327e-08 3.095263 8.638963
## 4 3.315405 5.563752 7.821264 2.281997e-08 5.540297 6.030310
## 5 7.534694 10.918447 10.223957 2.036121e+00 8.273073 11.087381

```

```

## 6 6.459404 9.609155 8.728734 1.135946e+00 6.759675 9.595743
##      Ttll13      Ttll3      Ttll4      Ttll5      Ttll6      Ttll7      Ttll8
## 1 5.106011e+00 8.662165 10.005324 11.142926 2.292761e+00 12.80284 7.652553
## 2 4.822158e+00 8.617979 9.763789 10.550374 2.772728e+00 12.43550 6.852690
## 3 2.524088e+00 5.555988 7.297234 8.583318 1.287936e+00 9.17550 1.839536
## 4 1.092926e-07 5.417882 3.964631 6.296472 6.150487e-08 8.38524 1.863899
## 5 5.169744e+00 8.976048 10.122302 10.909041 3.084288e+00 12.79432 7.208813
## 6 3.967917e+00 7.474847 8.815181 9.951780 1.440775e+00 11.61112 6.469948
##      Ttll9      Ttn      Ttpa      Ttpal      Ttr      Ttyh1      Ttyh2
## 1 4.9574187 6.0350134 8.297181 10.979898 8.958795 15.02479 14.19450
## 2 4.7914238 6.2463995 8.209318 10.629267 8.457261 14.37019 13.21805
## 3 5.5370030 3.0509242 5.461116 8.676763 12.349476 13.21334 12.89340
## 4 0.4343396 0.9238667 6.807024 6.859572 16.186769 12.43348 12.54321
## 5 5.1387653 6.6010805 8.567122 10.987945 8.815234 14.72906 13.57689
## 6 3.8250433 4.8716026 7.111204 9.788851 7.770612 13.83287 13.00262
##      Ttyh3      Tub      Tuba1a      Tuba1b      Tuba1c      Tuba4a      Tuba8
## 1 14.519971 11.999774 16.21761 13.37647 11.129992 11.557590 3.663520
## 2 14.048539 12.347073 15.40291 12.88734 10.251667 11.110663 3.754190
## 3 10.321601 6.832303 16.72762 12.29156 9.312567 8.611115 4.230196
## 4 9.576456 8.008123 14.49097 11.04835 8.560831 10.773358 4.595580
## 5 14.407399 12.705891 15.76178 13.24618 10.610285 11.469398 4.089293
## 6 13.328068 10.808252 15.02565 12.18466 9.938853 10.366235 2.613258
##      Tubb1      Tubb2a      Tubb2b      Tubb3      Tubb4a      Tubb4b      Tubb5
## 1 4.202386e+00 14.11665 14.45517 13.03147 16.58266 13.08135 15.32244
## 2 5.076614e+00 13.62189 13.79957 12.24039 15.85456 12.37906 14.64571
## 3 4.020109e-08 11.67708 13.58713 14.54459 14.81820 11.79589 15.84524
## 4 1.468548e-08 11.47966 10.85433 10.83910 14.44905 11.15909 13.09018
## 5 5.426032e+00 13.98075 14.15842 12.59921 16.21343 12.73788 15.00458
## 6 3.109524e+00 12.92478 13.26327 11.83971 15.39070 11.88959 14.13051
##      Tubb6      Tubd1      Tube1      Tubg2      Tubgcp2      Tubgcp3      Tubgcp4
## 1 12.398672 8.684892 7.624536 8.686417 11.097240 11.281734 9.928194
## 2 12.349740 8.520760 6.875276 8.362816 10.945378 11.146792 10.141044
## 3 9.897825 7.435172 7.166775 7.176505 10.856592 10.152619 8.439637
## 4 6.980339 6.268630 4.812425 6.434440 9.221945 7.950434 5.286873
## 5 12.708557 8.878772 7.231442 8.720728 11.304096 11.505530 10.499641
## 6 11.207038 7.497502 6.442114 7.499022 9.906120 10.090510 8.738152
##      Tubgcp5      Tubgcp6      Tufm      Tuft1      Tulp1      Tulp2      Tulp3
## 1 10.648119 10.498696 8.482559 8.906701 3.2758842 2.824114 10.728633
## 2 10.334006 10.905770 8.455377 8.866900 2.8141183 3.585485 10.309484
## 3 9.646314 7.005092 8.562352 6.630921 2.8462101 2.342992 8.332866
## 4 6.937934 5.373431 6.909470 7.982369 0.2712494 2.255488 6.898564
## 5 10.692638 11.264483 8.813349 9.225097 3.1270372 3.917612 10.668112
## 6 9.457315 9.308021 7.295859 7.718657 2.2664762 1.876115 9.537765
##      Tulp4      Tusc1      Tusc2      Tusc3      Tusc5      Tut1      Twf1
## 1 12.631842 8.201924 10.707689 12.00021 4.079055e+00 9.233442 12.33529
## 2 11.888450 7.074325 9.922154 11.22814 3.275242e+00 9.410352 11.72182
## 3 9.679008 4.286358 8.210554 10.75523 3.153588e-01 8.892711 12.36100
## 4 8.976986 1.883428 7.763177 10.29030 1.081344e-07 6.212987 11.49014
## 5 12.247245 7.430840 10.280705 11.58688 3.600878e+00 9.768763 12.08061
## 6 11.440157 7.016356 9.516837 10.80869 2.994695e+00 8.044601 11.14368
##      Twf2      Twist1      Twist2      Twistnb      Twsg1      Txk      Txlna
## 1 12.160318 4.537669e+00 2.4370897 8.817617 11.889849 2.031067 12.542650
## 2 11.665690 3.848657e+00 1.1258561 8.744714 11.229911 2.514082 12.181258
## 3 9.392757 3.833866e+00 0.3781925 7.769288 9.582831 1.010580 9.832579

```

```

## 4 9.345238 8.775504e-08 0.2903042 5.423601 9.128789 0.000000 7.375068
## 5 12.024471 4.185278e+00 1.3311635 9.102850 11.588657 2.816169 12.540068
## 6 10.968748 3.424842e+00 1.5561465 7.629824 10.698364 1.237681 11.350983
## Txlnb Txlng Txn1 Txn2 Txndc11 Txndc12 Txndc15
## 1 3.664992 8.899065 11.52404 12.40140 11.034161 12.32460 11.93420
## 2 3.142898 9.065901 10.78201 11.76697 10.663866 11.77275 11.13835
## 3 6.920548 7.309054 11.86264 12.79720 6.099845 12.09965 10.39409
## 4 1.368228 4.633735 10.62329 11.61234 6.066107 10.84954 10.82624
## 5 3.465300 9.424186 11.14070 12.12576 11.022548 12.13154 11.49709
## 6 2.614592 7.711042 10.33270 11.20977 9.843080 11.13299 10.74270
## Txndc16 Txndc17 Txndc2 Txndc5 Txndc9 Txnip Txnl1
## 1 12.914697 11.63493 4.097033e+00 12.548213 10.770906 13.64092 12.189082
## 2 12.867274 11.05852 3.290228e+00 11.653007 10.096464 13.09204 11.880623
## 3 11.271187 11.81047 7.995503e-08 8.814327 11.782232 11.85861 11.021790
## 4 8.603416 10.50046 4.098243e-08 9.258797 10.144150 10.78161 8.345756
## 5 13.226111 11.41725 3.616211e+00 12.011788 10.455053 13.45088 12.239418
## 6 11.722959 10.44354 3.011391e+00 11.356545 9.580006 12.44908 10.997504
## Txnl4a Txnl4b Txnrd1 Txnrd2 Tyk2 Tymp Tys
## 1 12.944553 9.760888 12.940983 9.932160 11.179260 6.961145 8.395552
## 2 12.252583 9.029119 12.482794 9.038150 10.931462 5.542143 7.962505
## 3 11.320859 10.445576 10.499583 6.876454 7.813847 3.331687 10.954213
## 4 9.778689 9.218272 7.433582 7.520070 5.954263 0.817121 6.433766
## 5 12.611396 9.387388 12.841617 9.396423 11.290178 5.894176 8.320107
## 6 11.752810 8.571085 11.749240 8.742113 9.988093 5.784274 7.209179
## Tyro3 Tyrobp Tyrp1 Tysnd1 Tyw1 Tyw3 U2af1
## 1 13.803646 13.734165 1.872366 11.032693 10.509301 7.702738 9.285777
## 2 13.193510 13.346453 1.747160 10.045525 10.150003 7.185628 8.581186
## 3 9.302672 9.711769 2.339051 7.410731 10.146125 7.947998 7.897564
## 4 7.994201 12.647947 2.452091 6.998214 7.325695 6.841879 5.961830
## 5 13.552355 13.705301 2.008051 10.404102 10.508602 7.542319 8.939233
## 6 12.611795 12.542320 1.118622 9.841613 9.318616 6.519814 8.096824
## U2af114 U2af2 Uaca Uap1 Uap111 Uba1 Uba2
## 1 10.398293 13.234056 11.370278 11.260606 10.660729 14.65579 12.810172
## 2 10.034639 12.671013 11.216613 10.378862 10.802724 14.34604 12.046697
## 3 11.380845 8.489140 6.448925 9.312843 6.125711 12.22124 10.311158
## 4 8.962332 7.650437 3.665587 7.440815 3.846138 11.14823 9.993356
## 5 10.393214 13.029843 11.575359 10.737502 11.161425 14.70490 12.405501
## 6 9.207711 12.042269 10.179009 10.069394 9.469914 13.46388 11.618452
## Uba3 Uba5 Uba52 Uba6 Uba7 Ubac1 Ubac2
## 1 11.343111 11.162690 9.939524 9.657048 10.031030 11.665570 11.766530
## 2 10.649332 10.907505 9.352913 9.018374 9.997743 10.957891 11.166327
## 3 10.532682 9.328790 10.091318 9.430879 5.796249 8.466127 9.835820
## 4 9.776142 7.194560 9.007934 7.036635 6.127668 6.200172 9.533754
## 5 11.008012 11.266219 9.711305 9.376639 10.356310 11.316610 11.525067
## 6 10.151856 9.971532 8.749467 8.467408 8.840855 10.474169 10.575090
## Ubap1 Ubap2 Ubap2l Ubash3b Ubc Ubd Ube2a
## 1 11.609017 11.844634 12.579707 10.014925 16.68286 3.229451e-01 11.038766
## 2 11.554428 11.186758 12.118452 10.332132 16.09281 4.520211e-02 10.617857
## 3 9.989242 8.942782 11.112473 6.522658 14.11706 2.680069e+00 11.053685
## 4 7.477284 6.811438 9.145083 7.237272 13.36147 1.593705e-14 10.247947
## 5 11.913201 11.545500 12.477259 10.690764 16.45169 5.771147e-02 10.976533
## 6 10.417639 10.653165 11.388033 8.824770 15.49089 1.518599e-01 9.847682
## Ube2b Ube2c Ube2cbp Ube2d1 Ube2d3 Ube2e1 Ube2e2
## 1 12.45183 8.804994 5.854378 10.970579 13.28950 9.855624 11.318950

```

```
## 2 11.75998 7.870140 5.938374 10.587708 12.61582 9.592669 10.383749
## 3 12.48210 11.204490 6.637441 9.410593 10.89220 7.504460 9.213909
## 4 11.05876 7.214806 1.340814 8.054944 10.03290 5.742869 8.858663
## 5 12.11876 8.227658 6.292054 10.946380 12.97465 9.951136 10.742390
## 6 11.26019 7.617238 4.694733 9.779539 12.09770 8.665683 10.127707
##      Ube2e3      Ube2f      Ube2g1      Ube2g2      Ube2h      Ube2i      Ube2j1
## 1 12.141776 10.874722 12.417985 12.22835 12.856979 11.245740 12.390017
## 2 11.685982 9.856782 11.332900 11.52795 12.659897 10.824719 11.825060
## 3 11.143162 9.419989 9.687568 10.44930 11.410619 8.847632 9.395925
## 4 8.803377 8.788150 8.807243 10.23997 9.417892 7.727803 8.432264
## 5 12.044765 10.215318 11.691655 11.88672 13.018727 11.183422 12.183851
## 6 10.950211 9.683746 11.226348 11.03676 11.665250 10.054536 11.198386
##      Ube2j2      Ube2k      Ube2l3      Ube2l6      Ube2m      Ube2n      Ube2o
## 1 7.914714 11.99903 12.63980 9.347213 12.295257 11.272603 11.954951
## 2 7.627961 11.29932 12.18979 8.410256 12.046299 10.755097 11.736959
## 3 4.477306 10.31472 12.46272 8.915932 8.250095 10.904121 8.003602
## 4 3.246540 9.43283 11.28689 10.002698 7.114110 9.505535 6.591843
## 5 7.985230 11.65808 12.54860 8.768199 12.405102 11.113792 12.095745
## 6 6.730555 10.80751 11.44812 8.158133 11.103650 10.081384 10.763444
##      Ube2q1      Ube2q2      Ube2q1l      Ube2r2      Ube2s      Ube2t      Ube2v1
## 1 12.225028 9.744693 10.433395 12.293544 8.356241e+00 6.391167 9.546979
## 2 12.145364 9.355557 9.950473 11.664894 7.685067e+00 5.734082 9.349955
## 3 7.885889 8.152850 8.156072 10.916452 3.004924e+00 9.033365 9.445859
## 4 6.991914 6.104843 6.600457 9.181114 1.182075e-07 5.256878 7.940228
## 5 12.504173 9.713950 10.309030 12.023675 8.042398e+00 6.086969 9.708346
## 6 11.033439 8.554915 9.242780 11.101937 7.170023e+00 5.221557 8.357524
##      Ube2v2      Ube2w      Ube2z      Ube3a      Ube3b      Ube3c      Ube4a
## 1 9.209283 10.755736 12.011028 11.186588 12.536534 11.950164 12.089483
## 2 8.126730 10.177944 11.849631 10.528263 12.529222 11.653259 11.758885
## 3 9.258479 11.167458 7.960401 10.237711 9.304364 9.455968 10.696829
## 4 8.177705 10.722626 7.178796 8.770378 8.261875 8.434717 7.949667
## 5 8.484469 10.536548 12.208424 10.886926 12.888047 12.012039 12.117672
## 6 8.020494 9.564847 10.819503 9.995416 11.344869 10.758658 10.897934
##      Ube4b      Ubfd1      Ubiad1      Ubl3      Ubl4      Ubl5      Ubl7
## 1 12.210379 11.396835 10.188573 14.30402 11.671920 12.20672 11.35448
## 2 11.772427 10.975487 9.923230 13.43208 10.971972 11.63253 10.99273
## 3 9.826079 10.554494 9.468316 12.67182 11.392347 12.61153 11.52108
## 4 7.996261 8.666436 7.873078 12.66094 9.895624 11.19163 10.15685
## 5 12.131215 11.334207 10.281781 13.79093 11.330693 11.99131 11.35145
## 6 11.018795 10.205553 8.998211 13.11213 10.480517 11.01513 10.16322
##      Ublcp1      Ubn1      Ubn2      Ubox5      Ubp1      Ubqln1      Ubqln2
## 1 8.997058 12.428224 11.991156 8.664226 12.315797 13.308031 12.48805
## 2 8.445916 12.438305 11.261961 8.697752 11.868366 13.103084 11.92440
## 3 9.283989 9.173610 10.109780 8.509252 9.006222 10.043113 10.58229
## 4 7.893793 7.387973 8.146158 7.916605 7.648667 8.756984 9.86566
## 5 8.803882 12.797126 11.620711 9.055865 12.227160 13.461927 12.28319
## 6 7.808775 11.236584 10.799637 7.476902 11.124185 12.116234 11.29640
##      Ubqln4      Ubr1      Ubr2      Ubr3      Ubr4      Ubr5      Ubr7
## 1 11.698971 11.501701 12.013887 12.350843 13.485594 13.524518 11.568408
## 2 11.810845 11.070568 12.027850 12.486839 13.312280 13.547548 11.074809
## 3 9.485906 9.655093 8.217028 8.749544 9.893154 10.285370 10.041535
## 4 7.382367 7.917670 7.415105 7.942677 8.945313 8.624378 9.566107
## 5 12.169635 11.429299 12.386653 12.845663 13.671128 13.906400 11.433540
## 6 10.507557 10.310370 10.822361 11.159222 12.293775 12.332695 10.377048
```

##	Ubtd1	Ubtd2	Ubt1f	Ubxn1	Ubxn10	Ubxn11	Ubxn2a
## 1	11.149486	10.666041	12.653584	12.943828	4.730434	6.903660	10.104251
## 2	11.117174	10.224565	12.355327	12.428865	5.043275	6.969355	10.337987
## 3	4.909326	8.972094	10.150707	10.683324	5.049474	7.451402	7.931066
## 4	2.792120	5.251791	7.954834	9.868001	2.867189	6.378179	5.345544
## 5	11.475909	10.583178	12.714145	12.787686	5.392471	7.325692	10.696620
## 6	9.958336	9.475222	11.461894	11.752085	3.607957	5.727400	8.913986
##	Ubxn2b	Ubxn4	Ubxn6	Ubxn7	Ubxn8	Uch11	Uch13
## 1	9.337168	11.985150	12.301668	11.850894	10.380326	13.12875	9.486433
## 2	9.086879	11.950415	11.852769	11.425856	9.838345	12.39191	8.600619
## 3	9.876648	10.411538	9.413566	8.888633	9.934601	11.54614	9.754340
## 4	7.973920	8.856082	8.098235	6.688293	8.924237	10.80793	8.612636
## 5	9.445173	12.309214	12.211561	11.784620	10.196876	12.75073	8.958678
## 6	8.148109	10.793633	11.110059	10.659423	9.189763	11.93698	8.297086
##	Uch14	Uch15	Uck1	Uck11	Ucma	Ucn	
## 1	8.817248	9.724040	11.312435	10.851676	1.696822e+00	2.436481e+00	
## 2	7.948653	8.816886	10.377275	10.547933	1.835338e+00	2.206794e+00	
## 3	9.289454	9.503966	7.223140	9.102902	3.409361e+00	7.259135e-08	
## 4	8.371732	8.571998	6.940601	7.713931	8.869994e-08	3.514133e-08	
## 5	8.306244	9.175059	10.735915	10.906599	2.102224e+00	2.495072e+00	
## 6	7.629455	8.534294	10.121196	9.660717	9.907886e-01	1.555655e+00	
##	Ucn2	Ucp1	Ucp2	Ucp3	Uevld	Ufc1	Ufd11
## 1	2.2538412	4.5683667	14.62889	6.2961134	8.742198	11.73056	11.747222
## 2	1.6705241	3.8529777	14.13549	5.4780693	8.155283	11.19553	11.330081
## 3	2.2131060	0.5904265	11.37918	0.5699202	7.502988	11.37773	11.836259
## 4	0.8963463	2.0376773	11.30587	0.3167278	5.237144	10.54385	9.790188
## 5	1.9258761	4.1896660	14.49435	5.8297907	8.513046	11.55427	11.688837
## 6	1.4100613	3.4539199	13.43698	5.1280141	7.554629	10.53914	10.555789
##	Ufm1	Ufsp1	Ufsp2	Ugcg	Ugdh	Uggt1	Uggt2
## 1	11.607643	8.478548	10.422383	11.120466	11.229243	12.474566	10.752518
## 2	11.313673	8.197632	9.762231	10.446590	11.242969	12.025391	10.003552
## 3	9.992573	6.372676	10.001686	10.151840	9.058058	8.902547	8.041422
## 4	8.311689	5.251975	9.836389	9.847072	8.349287	8.983481	5.794717
## 5	11.672427	8.555426	10.120743	10.805241	11.601717	12.384193	10.362121
## 6	10.416266	7.291863	9.231778	9.929333	10.038048	11.282914	9.561632
##	Ugp2	Ugt1a7c	Ugt8a	Uhm1	Uhrf1	Uhrf1bp1	Uhrf1bp11
## 1	11.87010	8.410321	15.94291	10.188530	9.590510	11.997251	11.046624
## 2	11.38534	6.815400	14.90763	10.366374	9.339901	11.780518	10.456548
## 3	10.61545	4.431452	12.22529	4.025073	10.807562	7.097628	8.967448
## 4	10.37749	5.398539	11.18993	4.590880	6.764000	4.929660	7.961492
## 5	11.74410	7.171450	15.26650	10.725012	9.698289	12.139307	10.815201
## 6	10.67862	7.223892	14.75095	8.998168	8.400981	10.805730	9.855536
##	Uhrf2	Uimc1	Ulk1	Ulk2	Ulk3	Ulk4	Umod11
## 1	11.834405	10.310983	12.555221	12.735853	9.842433	6.583776	2.342961e+00
## 2	11.635711	9.926420	11.755153	12.563555	9.478283	6.313292	2.496917e+00
## 3	9.077804	9.207665	9.491558	9.643128	6.533110	7.759803	1.179493e-07
## 4	6.764333	7.924282	8.130171	8.526553	3.384749	2.878947	9.103171e-01
## 5	11.994490	10.284972	12.113940	12.922381	9.836716	6.668164	2.798311e+00
## 6	10.642939	9.120489	11.363551	11.544146	8.652511	5.411390	1.480643e+00
##	Umps	Unc119	Unc119b	Unc13a	Unc13b	Unc13c	Unc13d
## 1	10.375957	10.715473	11.976537	11.184473	11.309113	9.778492	9.200864
## 2	9.706521	10.418839	11.198461	11.251202	10.882646	9.220097	8.434612
## 3	10.959717	7.113246	8.996555	7.100062	6.987936	4.251243	5.108234
## 4	9.758419	4.566110	6.608230	8.374763	6.671261	7.281619	3.065641

```

## 5 10.065019 10.777486 11.557204 11.609950 11.241357 9.578442 8.792571
## 6 9.185397 9.524615 10.785023 9.993302 10.117876 8.588663 8.012094
##      Unc45a      Unc45b      Unc50      Unc5a      Unc5b      Unc5c      Unc5c1
## 1 12.082126 8.458298 11.347902 9.472375 13.669877 10.718753 3.140431
## 2 11.552085 8.087310 10.616301 9.148503 13.167936 10.824430 4.318712
## 3 9.580097 5.056836 10.342917 4.944521 9.484080 5.162374 1.744694
## 4 8.557838 5.036315 10.274545 8.540585 7.676842 7.414963 2.281092
## 5 11.910858 8.445018 10.974977 9.506821 13.526780 11.183133 4.661556
## 6 10.890579 7.271687 10.156645 8.283055 12.478039 9.527893 2.147735
##      Unc5d      Unc79      Unc80      Unc93a      Unc93b1      Uncx
## 1 7.580104 10.681187 10.198711 2.882230e+00 14.092587 2.500745e+00
## 2 7.819360 10.377283 10.139874 1.080422e+00 14.083012 1.300674e+00
## 3 7.739451 7.963864 6.886421 2.133685e-01 8.587821 5.521636e-08
## 4 6.339783 8.232981 9.282079 1.029878e-07 9.927279 2.806959e-08
## 5 8.176829 10.735922 10.498471 1.280540e+00 14.441873 1.524343e+00
## 6 6.397980 9.490356 9.008337 1.925384e+00 12.900712 1.607743e+00
##      Ung      Unk      Unk1      Upb1      Upf1      Upf2      Upf3a
## 1 7.4285730 11.252747 8.848239 2.109559e+00 12.041395 10.296351 10.672390
## 2 7.0574937 10.710251 8.762815 3.132428e+00 11.645216 10.406154 10.400186
## 3 6.5942979 7.978840 7.082729 2.142213e+00 9.656005 8.720513 7.197510
## 4 0.9956396 6.417492 5.533898 9.465586e-08 8.195637 7.186260 4.734808
## 5 7.4139814 11.068940 9.120961 3.454561e+00 12.003996 10.764798 10.758829
## 6 6.2475366 10.061539 7.660358 1.297737e+00 10.849860 9.105872 9.481567
##      Upf3b      Upk1a      Upk1b      Upk3a      Upp1      Upp2      Uppt
## 1 10.229909 4.6425144 2.391140 3.8610012 6.870624 4.176047e+00 7.1272241
## 2 9.905829 4.6059785 1.723499 2.9835222 7.161160 4.925758e+00 5.8647068
## 3 10.241511 2.5129000 5.711145 1.5241100 5.073700 1.791396e+00 4.8599976
## 4 8.147304 0.3599583 6.414963 0.2567173 6.735055 9.021673e-08 0.9495869
## 5 10.264376 4.9517305 1.982713 3.3016040 7.517813 5.274129e+00 6.2181140
## 6 9.039501 3.5242876 1.519168 2.7934157 5.694726 3.084944e+00 5.9487179
##      Uqcr10      Uqcr11      Uqcrb      Uqcrc1      Uqcrc2      Uqcrfs1      Uqcrh
## 1 11.70146 11.136401 10.117686 13.47258 13.19105 12.740760 13.16170
## 2 10.99039 10.422224 9.360216 13.12994 12.73680 11.947753 12.30863
## 3 12.96714 12.440098 12.029078 13.40894 12.87744 9.784536 13.35434
## 4 12.32434 11.663468 11.465528 12.51780 11.69670 9.130821 12.60867
## 5 11.34911 10.780871 9.718610 13.48878 13.09563 12.306552 12.66744
## 6 10.51004 9.945258 8.927406 12.28076 11.99927 11.549053 11.96992
##      Uqcrq      Urb1      Urb2      Urgcp      Urm1      Urod      Uros
## 1 11.94946 9.630803 9.912746 11.060779 12.688940 11.157367 9.906117
## 2 11.23640 9.615439 9.395910 10.851416 11.609205 10.492609 9.276661
## 3 12.85819 6.642086 7.507682 8.780104 9.553026 11.570391 9.879291
## 4 12.36732 6.125211 6.858561 7.518221 7.538735 10.448163 8.587327
## 5 11.59514 9.973912 9.754317 11.210122 11.967982 10.851267 9.635027
## 6 10.75795 8.441206 8.722726 9.869681 11.497243 9.966212 8.716105
##      Use1      Usf1      Usf2      Ush1c      Ush1g      Ush2a
## 1 11.98299 12.020362 12.104143 2.274228e+00 1.131331e+00 2.585172e+00
## 2 11.21670 11.545541 11.618660 3.539945e+00 1.731747e+00 2.283580e+00
## 3 11.82312 10.793682 7.951887 1.268139e+00 1.134924e+00 8.040929e-08
## 4 10.93471 9.540606 6.411234 1.112669e-07 7.803734e-08 3.930959e-08
## 5 11.57544 11.904314 11.977438 3.871206e+00 1.991549e+00 2.575602e+00
## 6 10.79147 10.828834 10.912589 1.426128e+00 6.090681e-01 1.676825e+00
##      Ushbp1      Usmg5      Uso1      Usp1      Usp10      Usp11      Usp12
## 1 10.851524 8.551906 12.047684 10.522572 11.180124 11.80808 11.706057
## 2 10.443693 7.827013 11.660878 10.066063 11.242846 11.55644 11.234131

```



```

## 3 3.588858 9.561318 8.996104 8.716665 11.102768 10.87352 6.573971
## 4 1.100573 9.154845 8.717424 6.298270 8.678338 10.60698 5.273665
## 5 10.802343 8.184490 12.019658 10.424645 11.601594 11.91521 11.592878
## 6 9.660564 7.364959 10.856147 9.331875 9.988956 10.61663 10.514640
##      Usp13      Usp14      Usp15      Usp16      Usp18      Usp19      Usp2
## 1 8.488618 11.25099 11.416606 11.453527 6.502409 13.164188 11.896954
## 2 8.307168 10.79589 10.656816 11.116862 4.976520 12.795428 11.841230
## 3 5.833522 11.59110 10.115382 8.894250 9.049804 8.435973 10.378055
## 4 5.332251 10.55800 9.434436 6.978503 8.330875 7.440612 9.738063
## 5 8.665042 11.15459 11.015497 11.475598 5.325256 13.154262 12.200022
## 6 7.301895 10.05978 10.225315 10.262218 5.331152 11.972410 10.705467
##      Usp20      Usp21      Usp22      Usp24      Usp25      Usp27x      Usp28
## 1 12.069634 10.978781 13.91509 13.169885 11.637102 8.138201 10.255567
## 2 11.753507 10.741812 13.42908 12.844151 11.277314 8.538115 10.101657
## 3 8.735211 9.154818 14.14928 9.182010 8.826261 4.756869 8.726025
## 4 7.406532 7.200548 12.53901 8.294933 7.117446 4.407551 6.068320
## 5 12.112294 11.100505 13.78793 13.202987 11.636065 8.896137 10.460247
## 6 10.878090 9.787735 12.72323 11.978106 10.445713 6.952922 9.065131
##      Usp29      Usp3      Usp30      Usp31      Usp32      Usp33      Usp34
## 1 7.623951 10.837054 12.246206 11.166919 11.912713 11.882544 12.331023
## 2 8.021231 10.833540 11.497171 10.746302 11.692197 11.551484 12.149992
## 3 8.057252 9.773344 8.608531 8.642713 9.169423 9.562610 9.234588
## 4 5.568333 6.063544 8.040033 7.589551 8.769670 8.854112 7.456955
## 5 8.378884 11.192244 11.855940 11.104996 12.050979 11.910257 12.508801
## 6 6.441533 9.646105 11.054612 9.975758 10.721220 10.691061 11.139407
##      Usp35      Usp36      Usp37      Usp38      Usp39      Usp4      Usp40
## 1 10.271848 11.278651 10.574601 11.573965 11.406191 12.79153 10.368467
## 2 9.808212 11.669771 10.136549 10.893068 11.108155 12.07098 9.708479
## 3 8.307675 8.258333 12.063780 9.035526 9.023778 11.10327 9.547692
## 4 2.229521 6.439016 10.142035 8.686239 6.019387 10.56763 8.166847
## 5 10.166736 12.028553 10.495145 11.251779 11.466890 12.42979 10.066977
## 6 9.081395 10.087430 9.383858 10.382602 10.214905 11.59981 9.177914
##      Usp42      Usp43      Usp44      Usp45      Usp46      Usp47      Usp48
## 1 10.576412 8.2577393 4.062961e+00 10.243320 11.302262 12.463789 12.320700
## 2 10.403483 6.5405329 4.014492e+00 10.189215 10.746928 12.118327 12.010031
## 3 9.410153 0.3209587 2.740006e+00 7.804716 8.233483 9.814041 9.701606
## 4 7.393302 0.6910388 6.423211e-08 7.478440 8.847088 8.834330 7.956004
## 5 10.762127 6.8959890 4.353546e+00 10.547822 11.105622 12.477134 12.368833
## 6 9.385668 7.0719283 2.979761e+00 9.052898 10.111028 11.272140 11.129086
##      Usp49      Usp5      Usp50      Usp51      Usp53      Usp54      Usp6n1
## 1 9.921473 12.93622 1.3309204 6.704111 9.977593 13.038101 11.885871
## 2 9.820675 12.93347 1.9847634 6.086385 10.511854 12.534494 11.606568
## 3 4.944040 11.96691 1.4006581 5.327223 7.373661 9.532538 7.225204
## 4 1.915144 10.70663 3.8637554 7.164027 6.275281 7.993071 4.649287
## 5 10.179202 13.29231 2.2609599 6.440573 10.870515 12.893319 11.965345
## 6 8.731441 11.74448 0.7383115 5.530168 8.787486 11.846342 10.694387
##      Usp7      Usp8      Usp9x      Usp11      Ust      Utf1      Utp111
## 1 12.612941 11.923707 12.571057 10.770335 12.737944 2.909909e+00 9.761284
## 2 12.231454 11.520969 11.872285 10.602266 12.038246 2.500842e+00 9.124044
## 3 9.218579 10.182049 9.665654 10.400234 6.947579 3.715934e-08 10.387406
## 4 8.860570 9.022318 9.579329 8.927022 8.770870 1.843286e-08 8.592442
## 5 12.590267 11.879740 12.231079 10.960940 12.397049 2.802395e+00 9.482353
## 6 11.421259 10.732210 11.379385 9.579435 11.546237 1.948954e+00 8.571480
##      Utp14a      Utp14b      Utp15      Utp18      Utp20      Utp23      Utp3

```

```

## 1 10.389648 11.074016 10.884086 10.409104 10.079171 8.215226 10.434092
## 2 10.046552 10.531452 10.601205 9.833536 10.235867 7.875334 9.977312
## 3 9.272876 7.117917 9.487880 8.488451 8.180859 9.153152 9.304486
## 4 6.873166 7.325349 7.761949 7.109090 5.535195 7.110281 8.101256
## 5 10.405130 10.890116 10.959879 10.192066 10.594482 8.232857 10.335875
## 6 9.199075 9.882910 9.693104 9.218512 8.888937 7.029600 9.243476
##      Utp6      Utrn      Uts2      Uts2r      Uty      Uvrage      Uxs1
## 1 10.882616 12.406362 0.9921219 1.991973e+00 9.989842 11.742081 9.339518
## 2 10.331099 11.956016 1.1873093 1.909186e+00 9.239792 11.024882 9.503248
## 3 9.513385 9.779152 1.0481967 5.564363e-08 9.071075 7.444646 6.949500
## 4 9.159313 9.322537 4.0355154 2.602967e-08 6.032785 5.840858 5.447328
## 5 10.689731 12.314815 1.3993530 2.180801e+00 9.598144 11.383608 9.861688
## 6 9.691635 11.214727 0.5226436 1.208055e+00 8.799719 10.550650 8.150454
##      Uxt      Vac14      Vamp1      Vamp2      Vamp3      Vamp4      Vamp5
## 1 5.888509 11.591388 9.119242 13.857520 13.41745 11.100669 8.050160
## 2 5.015163 11.200798 9.298361 13.412596 12.72094 10.286122 7.545588
## 3 6.975304 8.348563 4.604873 9.773665 11.32340 10.171134 7.905686
## 4 6.409237 7.069433 5.540541 9.766993 10.81491 9.544780 7.984038
## 5 5.364168 11.559542 9.656735 13.771445 13.07977 10.644746 7.902763
## 6 4.728116 10.400018 7.930659 12.665664 12.22564 9.909548 6.865302
##      Vamp8      Vangl1      Vangl2      Vapa      Vapb      Vars      Vars2
## 1 11.80112 9.347743 10.434994 12.98997 12.828901 12.353763 10.559823
## 2 11.04416 9.099679 9.566732 12.27973 12.532768 12.035799 9.955804
## 3 10.36872 7.014201 7.060931 12.33742 7.316132 7.437662 7.386449
## 4 11.23673 4.493106 8.052507 11.74254 4.938292 5.163165 5.094950
## 5 11.40289 9.457978 9.925192 12.63854 12.891593 12.394602 10.314362
## 6 10.60967 8.158662 9.244377 11.79822 11.637177 11.162141 9.369093
##      Vash1      Vash2      Vasn      Vasp      Vat1      Vat1l      Vav1
## 1 13.756410 8.510045 10.887672 13.640555 13.713659 10.613100 12.621534
## 2 13.836168 8.440702 10.180545 13.204025 12.864449 11.136812 13.093560
## 3 8.491894 8.249510 6.665263 7.058301 7.656466 4.544046 4.724989
## 4 6.994297 3.654840 6.072557 5.596673 7.100717 6.043316 7.905086
## 5 14.195025 8.798665 10.539150 13.562870 13.223285 11.495550 13.452403
## 6 12.564563 7.323246 9.696688 12.448719 12.521816 9.422325 11.429851
##      Vav2      Vav3      Vax1      Vbp1      Vcam1      Vcan      Vcl
## 1 11.152482 8.610490 5.430307e+00 12.08075 13.03125 14.230270 12.709149
## 2 11.607634 8.224560 4.410072e+00 11.26426 12.51219 13.974721 11.806097
## 3 5.256503 4.939074 7.146104e-08 12.79774 12.03726 8.421449 9.978430
## 4 4.034897 5.774051 3.728031e-08 11.15103 10.49590 8.900919 9.479554
## 5 11.966411 8.582374 4.753905e+00 11.62301 12.87101 14.333581 12.164887
## 6 9.961330 7.423342 4.281536e+00 10.88921 11.83949 13.038385 11.517448
##      Vcp      Vcpip1      Vdac1      Vdac2      Vdac3      Vdr      Vegfa
## 1 12.515827 10.832614 13.41947 13.33307 10.898923 4.565792 14.016151
## 2 12.115046 10.207305 13.11372 12.69832 10.161167 3.956405 13.516468
## 3 7.710691 8.661769 12.17466 12.42139 11.240218 3.944451 6.515062
## 4 6.550423 8.094347 11.27952 11.89214 10.308196 4.455381 7.154066
## 5 12.473853 10.565914 13.47256 13.05715 10.519768 4.294639 13.875320
## 6 11.324167 9.641668 12.22766 12.14127 9.707931 3.451480 12.824281
##      Vegfb      Vegfc      Veph1      Vezf1      Vezt      Vgf      Vgl12
## 1 11.051097 7.972101 6.598743 11.930943 10.405979 10.727052 3.032193e+00
## 2 10.478888 8.033549 6.297295 11.833231 10.186568 10.278150 2.612466e+00
## 3 8.245159 5.469803 7.035354 10.222362 10.313116 1.311915 4.032457e-08
## 4 7.135919 5.746408 1.073952 8.790715 8.587292 3.989978 2.000911e-08
## 5 10.837544 8.391213 6.652122 12.192023 10.545174 10.636773 2.918365e+00

```

```

## 6 9.860005 6.787638 5.426156 10.739444 9.215390 9.536185 2.053861e+00
##      Vgl13      Vgl14      Vhl      Vill      Vill      Vim
## 1 3.518167 11.060189 12.349017 6.650600e+00 2.5336671 14.13250
## 2 3.087638 10.649197 11.772764 6.691306e+00 0.7663869 13.37375
## 3 1.727129 10.841894 10.245910 2.721250e+00 1.6076978 12.49191
## 4 3.935030 9.753982 9.781277 1.277389e-07 0.4398531 10.27948
## 5 3.408597 11.007878 12.131552 7.047102e+00 0.9251461 13.73260
## 6 2.482092 9.869092 11.157396 5.477333e+00 1.6345952 12.94062
##      Vip      Vipr1      Vipr2      Vit      Vkorc1      Vldlr
## 1 7.170189e+00 6.686048 8.0569205 7.997145e+00 11.187096 12.503291
## 2 6.718424e+00 7.302681 7.3211160 8.112127e+00 10.400263 11.916027
## 3 5.498055e+00 1.220384 5.0296849 4.263182e-01 12.116087 8.784881
## 4 6.708810e-08 2.760094 0.3968027 5.678409e-08 11.094532 9.129477
## 5 7.074277e+00 7.659543 7.6780034 8.469855e+00 10.758906 12.274823
## 6 5.991289e+00 5.512330 6.8720289 6.812552e+00 9.995924 11.311634
##      Vma21      Vmac      Vmo1      Vmp1      Vnn1      Vopp1      Vprbp
## 1 11.310526 10.055855 1.110310e+00 13.40040 6.040390 11.656573 10.699878
## 2 10.923351 9.434641 1.616748e+00 12.54347 5.971966 10.985123 9.997724
## 3 10.480107 8.651793 2.112154e+00 13.09168 9.405246 8.746754 8.926225
## 4 9.130184 7.750901 6.517005e-08 12.44424 2.481733 6.679898 8.490822
## 5 11.282066 9.793060 1.868021e+00 12.90229 6.325765 11.343845 10.356292
## 6 10.119287 8.865649 5.958192e-01 12.20859 4.876874 10.465176 9.509032
##      Vpreb1      Vpreb3      Vps11      Vps13a      Vps13b      Vps13c      Vps13d
## 1 2.691139 3.291785e+00 12.124623 10.548898 11.398306 11.541884 12.385275
## 2 1.720623 3.478916e+00 12.083643 10.602873 11.280336 10.238673 11.885242
## 3 3.038302 1.345843e+00 10.897643 7.317978 7.905103 7.995441 8.401718
## 4 6.061499 1.050631e-07 9.545587 6.303019 7.726441 7.501366 7.370229
## 5 1.979631 3.808972e+00 12.442449 10.961547 11.639087 10.597288 12.244037
## 6 1.764537 2.280503e+00 10.933063 9.358177 10.207024 10.350536 11.193645
##      Vps16      Vps18      Vps25      Vps26a      Vps26b      Vps29      Vps33a
## 1 11.563915 12.374250 12.04441 11.340120 12.865178 11.86377 12.237011
## 2 11.532476 12.094805 11.48211 10.837138 11.982136 11.30176 12.028893
## 3 10.568592 9.416554 11.49039 11.412710 10.201938 12.28171 10.279226
## 4 9.063956 8.470930 10.54910 9.966237 9.827658 10.74120 9.499923
## 5 11.891247 12.453612 11.84088 11.195843 12.340936 11.66051 12.387695
## 6 10.372556 11.182623 10.85288 10.148867 11.673448 10.67229 11.045420
##      Vps33b      Vps35      Vps36      Vps37a      Vps37b      Vps37c      Vps37d
## 1 9.823446 13.19660 10.618057 11.310762 13.298953 10.883168 9.607156
## 2 9.142648 12.79041 9.741796 10.816709 13.091282 11.321711 8.894761
## 3 9.329810 12.33085 10.186856 8.270069 9.582333 8.920804 6.019914
## 4 7.679599 10.89875 8.328255 6.411578 6.728692 6.905373 3.346777
## 5 9.500964 13.14925 10.100303 11.175411 13.450124 11.680466 9.252972
## 6 8.633551 12.00482 9.427278 10.119524 12.107158 9.692187 8.417598
##      Vps39      Vps41      Vps45      Vps4a      Vps4b      Vps52      Vps53
## 1 11.632394 11.79087 10.523066 12.470970 11.494115 12.881492 11.167939
## 2 11.688089 11.53702 9.911244 11.720597 10.819010 12.133741 11.023097
## 3 9.945267 11.92275 9.542343 10.043267 9.219488 9.995614 9.765093
## 4 8.501309 10.40100 9.454594 8.532546 9.035183 8.973672 8.294012
## 5 12.046872 11.89579 10.269792 12.079382 11.177712 12.492549 11.381823
## 6 10.441006 10.59942 9.332368 11.279320 10.302788 11.689760 9.976778
##      Vps54      Vps72      Vps8      Vrk1      Vrk2      Vrk3      Vsig10
## 1 10.906897 11.601965 11.704101 9.890608 8.073355 11.217303 9.469116
## 2 10.444429 10.800814 11.574522 9.840604 8.476981 10.727445 8.733238
## 3 7.820526 10.703979 9.930719 10.137901 5.908089 10.775427 6.146647

```

```

## 4 6.533344 8.446982 8.384301 9.023058 4.300391 9.297023 8.374332
## 5 10.803079 11.159514 11.933296 10.199136 8.834967 11.086136 9.091369
## 6 9.715899 10.410590 10.512685 8.700617 6.888383 10.026114 8.279801
##      Vsig2      Vsig4      Vsig8      Vsn11      Vstm2a      Vstm2b      Vstm2l
## 1 6.9169023 1.9400929 2.0715169 10.191021 10.503930 10.131807 9.8662249
## 2 7.1244611 2.4132574 1.2362800 9.864678 10.338748 9.549925 8.6727595
## 3 0.3262392 2.3638601 2.6895892 7.207245 8.917260 4.320475 0.9634471
## 4 2.3232595 0.7297523 0.8071117 9.993575 9.880267 8.377508 1.7382831
## 5 7.4810574 2.7111474 1.4534689 10.223216 10.697382 9.908380 9.0308584
## 6 5.7404992 1.1690367 1.2685358 9.000656 9.313249 8.941510 8.6762686
##      Vsx1      Vsx2      Vta1      Vtila      Vtilb      Vtn
## 1 2.221780e+00 2.516492e+00 11.080980 11.007137 11.790704 12.06880
## 2 1.087741e+00 1.605013e+00 10.556474 10.342814 10.961756 11.38936
## 3 2.416311e+00 1.068267e+00 11.393284 9.250309 9.558193 14.38242
## 4 5.450514e-09 9.673394e-08 9.631420 8.202837 9.326540 13.07994
## 5 1.288708e+00 1.855374e+00 10.915141 10.701448 11.320475 11.74812
## 6 1.384891e+00 1.620573e+00 9.889870 9.816073 10.599255 10.87726
##      Vwa1      Vwa2      Vwa3a      Vwa5a      Vwa5b1      Vwa5b2      Vwc2
## 1 14.908885 2.921882 5.691005 11.289846 4.044310 9.514997 7.908923e+00
## 2 13.757578 2.324450 5.601073 10.939479 3.881724 9.893346 8.382743e+00
## 3 7.868660 2.770624 5.818956 9.683100 1.962502 4.070205 5.020265e-08
## 4 8.796685 3.855140 4.404569 7.738534 2.861983 3.851598 3.373486e+00
## 5 14.116434 2.618381 5.953381 11.298196 4.218853 10.251890 8.740668e+00
## 6 13.716963 1.959170 4.535185 10.098618 2.962470 8.325599 6.724796e+00
##      Vwc2l      Vwce      Vwf      Wac      Wapal      Wars
## 1 5.773923e+00 4.987328e+00 12.276234 12.258071 11.353201 11.877392
## 2 5.027262e+00 4.794399e+00 11.461742 12.021759 11.272284 11.730736
## 3 3.637959e-08 7.424031e-01 5.476774 9.925910 8.139203 11.287137
## 4 1.867388e-08 9.568450e-08 6.016143 8.480907 5.831627 9.644398
## 5 5.376349e+00 5.141764e+00 11.820508 12.380562 11.631035 12.089521
## 6 4.616109e+00 3.853755e+00 11.084632 11.066474 10.161941 10.685911
##      Wars2      Was      Wasf2      Wasf3      Wasl      Wbp1      Wbp11
## 1 8.832384 10.745355 12.960911 11.025836 11.674475 12.018823 11.909522
## 2 8.693375 9.964252 12.567957 10.661146 11.506466 11.137368 11.673569
## 3 8.413062 2.610974 8.224004 6.531766 9.369237 9.780442 10.686271
## 4 6.351024 7.136518 8.433513 6.760239 8.449218 8.105064 9.002152
## 5 9.051485 10.322812 12.926784 11.019828 11.865236 11.496105 12.032350
## 6 7.644548 9.554474 11.769165 9.834760 10.483071 10.827296 10.718031
##      Wbp2      Wbp4      Wbp5      Wbscr16      Wbscr17      Wbscr22      Wbscr27
## 1 13.65676 10.789004 12.23907 9.841264 8.996830 10.549563 8.738361
## 2 13.36833 10.369622 11.49321 9.530121 8.613333 10.037295 8.051654
## 3 13.41293 10.461555 12.64760 5.378153 6.947574 10.309995 9.100770
## 4 12.25483 9.370916 11.46942 5.780785 8.981962 8.738265 2.283363
## 5 13.72718 10.728260 11.85198 9.888569 8.971399 10.395871 8.409333
## 6 12.46492 9.598091 11.04747 8.651343 7.808548 9.358842 7.550804
##      Wdfy1      Wdfy2      Wdfy3      Wdfy4      Wdhd1      Wdpcp      Wdr1
## 1 12.31559 10.054611 13.033256 11.066780 8.770393 8.809845 13.88212
## 2 11.69463 9.515747 12.667523 11.559798 8.348629 8.760915 13.50469
## 3 11.24742 5.292952 10.278829 2.148498 8.449437 7.442767 12.28369
## 4 10.59383 5.188428 9.355884 5.252164 4.872125 4.840022 12.23631
## 5 12.05341 9.874191 13.026353 11.918571 8.706531 9.119060 13.86354
## 6 11.12398 8.864407 11.841498 9.875679 7.582739 7.622074 12.69026
##      Wdr11      Wdr12      Wdr13      Wdr16      Wdr17      Wdr18      Wdr19
## 1 11.468875 9.070665 12.492851 3.135127 8.402645 11.347742 9.449986

```

```
## 2 11.467604 8.615119 12.606009 3.501592 7.958169 10.798359 9.240880
## 3 9.427850 10.403910 9.771678 7.385725 7.219256 11.387009 7.735888
## 4 7.549722 8.387528 7.354955 3.714226 6.833223 9.795297 4.093760
## 5 11.826370 8.973186 12.964837 3.832101 8.315768 11.157059 9.599233
## 6 10.277559 7.882198 11.301195 2.143113 7.216245 10.156485 8.260707
##      Wdr24      Wdr25      Wdr26      Wdr27      Wdr3      Wdr31      Wdr33
## 1 10.345215 7.732290 13.284532 2.773348e+00 9.879426 6.285030 11.71903
## 2 10.088677 8.159748 13.029166 2.802869e+00 9.631613 5.917996 11.40297
## 3 9.859100 5.397266 10.341920 1.428344e+00 9.406419 7.787502 10.94783
## 4 8.453416 4.780746 8.604234 6.655853e-08 7.719478 3.896384 9.95456
## 5 10.447263 8.517513 13.388007 3.115423e+00 9.990091 6.271602 11.76173
## 6 9.154686 6.549182 12.092738 1.833325e+00 8.689451 5.117113 10.52761
##      Wdr34      Wdr35      Wdr36      Wdr37      Wdr38      Wdr4      Wdr41
## 1 9.894753 9.798337 10.429699 11.521391 1.184829e+00 10.818710 11.138192
## 2 9.482853 9.854705 9.881165 11.213423 1.670866e+00 10.582189 10.669666
## 3 8.103302 9.770266 9.999124 9.851662 1.827778e+00 8.253404 8.017615
## 4 6.732057 8.076576 8.330082 8.728137 5.236852e-08 6.517051 7.080051
## 5 9.841288 10.213240 10.239706 11.572168 1.926244e+00 10.940860 11.028350
## 6 8.704757 8.608478 9.239088 10.330051 6.431017e-01 9.627775 9.947048
##      Wdr43      Wdr44      Wdr45      Wdr46      Wdr47      Wdr48      Wdr5
## 1 11.020780 9.458643 10.730332 10.527464 10.947237 11.217871 10.984791
## 2 10.758933 9.429557 10.153777 9.852805 11.199686 11.010637 10.926033
## 3 10.276493 8.015870 9.883997 7.953686 9.913449 9.652310 8.260815
## 4 8.213605 7.070690 8.063399 3.594931 7.521622 7.969242 5.634221
## 5 11.117629 9.787974 10.512376 10.211339 11.558429 11.369362 11.284749
## 6 9.829707 8.269348 9.539462 9.336763 9.756212 10.026682 9.793741
##      Wdr52      Wdr53      Wdr54      Wdr55      Wdr59      Wdr5b      Wdr6
## 1 5.175485 8.100722 8.138949 9.430364 10.462877 7.621327 12.880187
## 2 6.753429 7.576206 7.470390 8.777507 10.982768 7.465744 12.507646
## 3 4.624287 8.093538 8.931518 8.535539 7.954705 8.048810 11.056287
## 4 2.494412 6.938241 8.052837 6.655672 5.807827 7.343151 9.480973
## 5 7.109356 7.933416 7.827473 9.135660 11.341490 7.822821 12.866470
## 6 4.034905 6.915619 6.953666 8.241122 9.272234 6.438926 11.688455
##      Wdr60      Wdr61      Wdr62      Wdr63      Wdr65      Wdr7      Wdr70
## 1 9.410953 10.416078 9.109987 2.3468771 4.742675 11.949538 8.775656
## 2 9.190907 10.046890 8.759174 3.9674860 4.372460 11.486290 9.199840
## 3 7.604029 11.997418 6.213210 3.7177973 5.392633 9.592673 8.306286
## 4 1.854214 10.096753 2.097771 0.3751413 4.352375 10.573463 4.608001
## 5 9.549241 10.405468 9.117318 4.3058793 4.715893 11.845058 9.558178
## 6 8.221748 9.225479 7.921426 1.4837650 3.619626 10.758033 7.587986
##      Wdr72      Wdr73      Wdr74      Wdr75      Wdr76      Wdr77      Wdr78
## 1 6.662049e-01 8.967269 10.475080 10.179813 7.804102 10.861185 7.114005
## 2 1.854564e+00 9.106458 10.120702 10.013679 7.465856 10.807369 6.869466
## 3 2.378129e+00 9.320533 10.033659 9.278069 8.297156 10.291733 6.283929
## 4 1.230469e-07 6.447088 8.936241 6.712615 6.070843 8.158839 1.259311
## 5 2.122706e+00 9.464760 10.479295 10.372250 7.822933 11.166070 7.225621
## 6 3.326774e-01 7.779064 9.284426 8.989460 6.620564 9.670219 5.935623
##      Wdr81      Wdr82      Wdr83      Wdr86      Wdr89      Wdr90      Wdr91
## 1 12.591883 12.519655 10.248013 3.9904835 5.329031 9.804770 11.954650
## 2 12.194904 12.086946 9.590395 5.0324807 5.810036 10.366548 11.424681
## 3 8.289661 10.521224 9.169613 1.0646337 6.846652 6.843306 8.943869
## 4 7.432873 9.240646 8.011588 0.9243752 5.739523 4.385428 7.938471
## 5 12.553715 12.445751 9.948861 5.3816034 6.163231 10.725186 11.783444
## 6 11.400206 11.327994 9.057585 2.9126577 4.183350 8.614902 10.763144
```

```

##      Wdr92      Wdr93      Wdr96      Wdsub1      Wdtc1      Wdyhv1      Wee1
## 1 8.316461 4.203244e+00 7.250905 9.876899 11.686044 8.605163 9.529468
## 2 8.022094 4.038573e+00 6.271743 9.346899 11.539303 8.615073 9.450923
## 3 8.763350 4.391315e+00 6.526673 7.165425 8.355052 8.089835 8.029248
## 4 7.684974 9.934831e-08 5.377955 6.018790 6.855562 7.499303 6.195704
## 5 8.379748 4.377958e+00 6.626497 9.705289 11.898075 8.973140 9.809348
## 6 7.130404 3.110325e+00 6.071296 8.686928 10.494635 7.418034 8.340044
##      Wee2      Wfdc1      Wfdc12      Wfdc2      Wfdc3      Wfdc5
## 1 3.756789e+00 11.552770 2.726887e+00 2.622293 1.0517748 0.14304905
## 2 4.096700e+00 10.417204 2.549052e+00 1.997125 1.1166584 0.08988665
## 3 4.230998e-01 7.850979 1.285173e+00 4.817542 2.7325068 1.91594205
## 4 1.319537e-07 9.305444 5.558079e-08 7.456770 0.5625612 2.98317564
## 5 4.436860e+00 10.775850 2.852525e+00 2.274047 1.3209300 0.11428109
## 6 2.698077e+00 10.361417 1.794371e+00 1.707426 0.5592973 0.06508713
##      Wfikkn1      Wfikkn2      Wfs1      Whamm      Whrn      Whsc1      Wibg
## 1 7.917340 5.274888e+00 9.814838 10.013352 10.238369 12.331802 10.356140
## 2 7.444551 4.343594e+00 9.881207 10.155228 9.945800 12.143379 9.456012
## 3 4.016304 5.488622e+00 7.190182 6.298142 6.094718 10.452933 8.354606
## 4 2.108178 7.974914e-08 6.602786 5.292317 4.005054 7.842812 7.054359
## 5 7.801602 4.686714e+00 10.239748 10.513828 10.304356 12.502187 9.814438
## 6 6.733167 4.130946e+00 8.624955 8.823200 9.047952 11.140186 9.165600
##      Wif1      Wipf1      Wipf2      Wipf3      Wipi1      Wipi2      Wisp1
## 1 4.663122e+00 12.121974 10.914797 7.278948 10.817617 12.590010 2.823536
## 2 4.418809e+00 11.625944 10.936388 7.078294 10.665533 12.123964 3.031816
## 3 8.421065e-08 7.232490 8.895860 7.813851 7.771221 9.330267 3.269124
## 4 5.552568e+00 7.076447 8.709536 9.023984 5.540322 9.493102 5.220166
## 5 4.762733e+00 11.984723 11.295105 7.434816 11.024216 12.482772 3.351259
## 6 3.543877e+00 10.930415 9.723793 6.099102 9.626682 11.398333 1.875627
##      Wisp2      Wisp3      Wiz      Wls      Wnk1      Wnk2      Wnk4
## 1 2.921218e+00 5.550317 11.977383 12.68361 14.50973 11.165345 6.650513
## 2 1.534414e+00 4.810922 11.171475 11.86901 13.99133 11.016387 6.597626
## 3 8.201334e-08 1.901454 7.826016 11.01789 10.27662 9.158325 5.618452
## 4 4.107161e-08 3.834995 7.260668 10.53972 9.73607 6.176629 1.905779
## 5 1.779115e+00 5.158419 11.530216 12.22781 14.35019 11.375112 6.953215
## 6 1.958603e+00 4.398147 10.785869 11.49191 13.31782 9.974185 5.477247
##      Wnt1      Wnt10a      Wnt10b      Wnt11      Wnt16      Wnt2      Wnt2b
## 1 1.580756e+00 6.643383 3.646892 5.5433667 2.274088 3.369344e+00 5.475067
## 2 1.865478e+00 6.246997 2.741770 5.2753595 1.822925 4.489283e+00 5.808350
## 3 5.270021e-08 1.916260 2.680904 0.4154038 1.892773 1.332617e+00 3.223059
## 4 2.286161e-08 1.932883 2.799876 0.8301093 1.477926 6.405584e-08 1.277317
## 5 2.134325e+00 6.601680 3.052286 5.6259981 2.088990 4.833923e+00 6.161539
## 6 9.086011e-01 5.470210 2.598188 4.3913867 1.426018 2.349179e+00 4.324997
##      Wnt3      Wnt4      Wnt5a      Wnt5b      Wnt6      Wnt7a      Wnt7b
## 1 9.343706 9.832420 8.955945 6.184546 3.824565 10.921477 10.851775
## 2 8.848964 8.981346 8.532207 6.081878 2.981406 10.546176 10.917557
## 3 7.882469 6.857096 8.978780 4.424191 3.051962 7.455913 7.663993
## 4 4.391738 6.143273 5.824279 0.706344 1.853249 7.888562 7.365044
## 5 9.207153 9.339595 8.890226 6.436051 3.299427 10.904842 11.276271
## 6 8.154634 8.642512 7.767770 5.018349 2.760016 9.730469 9.660815
##      Wnt8b      Wnt9a      Wnt9b      Wrap53      Wrb      Wrn      Wrnip1
## 1 0.5149564 5.193911 2.066052e+00 10.076556 11.36863 8.646288 11.284122
## 2 0.3155083 6.174052 1.508411e+00 9.416520 10.93240 8.781073 11.118314
## 3 7.7756161 2.575917 4.288393e-08 9.647601 12.46872 7.576128 7.719359
## 4 1.2873127 3.517194 2.187412e-08 7.147286 11.16464 4.153889 6.711033

```

```

## 5 0.3933654 6.528517 1.750951e+00 9.774933 11.29112 9.139228 11.477050
## 6 0.2505448 4.052691 1.264355e+00 8.886325 10.17736 7.459022 10.092897
##      Wsb1      Wsb2      Wscd1      Wscd2      Wtap      Wtip      Wwc1
## 1 13.75873 13.076945 14.35866 7.788742 11.154361 9.837286 11.186959
## 2 13.52505 12.569547 13.91115 8.401708 10.381466 9.264264 10.732378
## 3 10.67018 8.888623 10.66092 6.168713 10.834739 4.652160 6.829403
## 4 7.72458 8.945022 10.00380 5.927578 9.194800 4.810899 5.091330
## 5 13.88390 12.928374 14.27001 8.759646 10.740106 9.622625 11.091070
## 6 12.56688 11.885180 13.16677 6.605295 9.963208 8.647371 9.995788
##      Wwc2      Wwox      Wwp1      Wwp2      Wwtr1      Xab2      Xaf1
## 1 11.392494 9.566906 10.905844 11.762135 13.224351 11.860291 8.091002
## 2 11.271535 9.205563 10.521126 11.828616 12.331582 11.298777 6.936369
## 3 6.676999 9.697019 7.103489 10.086952 7.363376 10.924718 8.697497
## 4 6.500866 7.357086 6.343270 7.846252 9.193083 9.976961 7.439520
## 5 11.630285 9.563903 10.879788 12.187408 12.690399 11.657530 7.292648
## 6 10.201215 8.377417 9.714846 10.570696 12.032565 10.668817 6.905946
##      Xbp1      Xcl1      Xcr1      Xdh      Xiap      Xirp1      Xk
## 1 12.905470 1.190133e+00 6.304746 4.802743 12.371975 5.6179405 7.572659
## 2 12.282849 7.369630e-01 4.879515 4.011555 12.173774 5.5928249 7.586492
## 3 9.656794 2.890182e+00 1.167245 6.824386 9.236923 0.2461905 5.513847
## 4 10.142976 1.255315e-07 6.640272 8.542159 7.812285 5.8002394 6.526689
## 5 12.641664 8.912964e-01 5.227543 4.350569 12.532584 5.9450948 7.943714
## 6 11.713733 6.465002e-01 5.136506 3.676951 11.180349 4.4639735 6.390586
##      Xkr4      Xkr5      Xkr6      Xkr7      Xkr8      Xkr9      Xkrx
## 1 9.000051 5.9633372 6.345045 6.453423e+00 7.990462 2.240137e+00 4.812531
## 2 8.743085 5.7054337 6.453065 5.700075e+00 8.414068 2.158275e+00 4.301817
## 3 1.989946 5.7031349 4.455334 3.246449e+00 7.931211 7.158361e-08 3.983809
## 4 3.805249 0.8458512 2.565802 9.059934e-08 5.248327 3.373689e-08 3.895572
## 5 9.101221 6.0582009 6.808307 6.052820e+00 8.772014 2.444078e+00 4.644471
## 6 7.811760 4.8013657 5.176156 5.282876e+00 6.805904 1.399288e+00 3.686302
##      Xlr      Xpa      Xpc      Xpnpep1      Xpnpep2      Xpnpep3      Xpo1
## 1 6.401274 8.967933 9.706314 12.55414 2.464861e+00 7.865783 12.652603
## 2 6.311872 8.624238 9.835755 12.13913 2.520555e+00 8.169726 11.933022
## 3 3.511958 7.030348 8.431614 11.34761 1.043994e-07 7.072258 10.845798
## 4 5.152097 4.718975 6.883034 10.57791 3.128662e-01 3.532198 9.158021
## 5 6.666739 8.982310 10.194285 12.49793 2.822902e+00 8.527500 12.291820
## 6 5.231510 7.779725 8.516595 11.36247 1.578605e+00 6.681893 11.460913
##      Xpo4      Xpo5      Xpo6      Xpo7      Xpot      Xpr1      Xrcc1
## 1 9.463190 11.76379 12.515327 11.846042 11.745456 12.80495 11.289405
## 2 9.192533 11.08981 12.259768 11.360736 11.580240 12.06398 10.855335
## 3 6.572317 10.11355 9.459407 9.364522 8.527306 10.80745 9.505529
## 4 5.847333 10.23665 7.645526 8.436276 7.897048 10.20134 5.708138
## 5 9.550868 11.44854 12.618582 11.719494 11.939015 12.42278 11.214043
## 6 8.273887 10.57235 11.323667 10.654573 10.554024 11.61323 10.098177
##      Xrcc2      Xrcc3      Xrcc4      Xrcc5      Xrcc6      Xrcc6bp1      Xrn1
## 1 8.796744 10.201877 9.073710 9.229074 10.274364 7.618484 10.104796
## 2 8.562900 9.458703 8.329713 9.306190 9.936541 6.625001 10.038144
## 3 8.844067 9.142259 9.496781 10.872660 11.027756 7.053838 8.630264
## 4 7.742850 3.692466 8.891122 6.729302 7.671345 5.017358 6.157908
## 5 8.920937 9.817130 8.687602 9.664566 10.295095 6.980652 10.396720
## 6 7.609012 9.011500 7.885236 8.040242 9.083909 6.436102 8.914531
##      Xrn2      Xrra1      Xylb      Xylt1      Xylt2      Yaf2
## 1 12.120182 4.191357e+00 7.807936e+00 11.649350 11.346510 11.735335
## 2 11.577902 3.683724e+00 6.970806e+00 11.190228 10.723486 11.191068

```

```

## 3 11.472432 3.260182e+00 6.591978e+00 5.013169 7.384791 9.925599
## 4 9.750332 6.506716e-08 1.055338e-07 4.049577 5.636045 8.778735
## 5 11.936677 4.017627e+00 7.327146e+00 11.548971 11.082177 11.549811
## 6 10.928623 3.099228e+00 6.624376e+00 10.457955 10.155253 10.543907
##      Yap1      Yars      Yars2      Ybey      Ybx1      Ybx2      Ydjc
## 1 10.965151 12.287956 9.151520 6.791938 13.546468 6.5173737 8.369290
## 2 10.313030 12.313466 8.754622 5.974415 13.110586 6.1564648 7.582036
## 3 8.739256 11.176031 7.343315 8.172973 10.589024 3.8286419 4.288978
## 4 6.605076 8.854065 5.694511 6.592692 8.295104 0.2835859 2.652107
## 5 10.671659 12.672282 9.112764 6.328224 13.469429 6.5108753 7.939253
## 6 9.774114 11.096351 7.962862 5.616935 12.354643 5.3459043 7.183020
##      Yeats2      Yeats4      Yes1      Yif1a      Yif1b      Yipf1      Yipf2
## 1 11.924885 10.901295 11.528126 11.268796 11.35589 11.58855 9.690004
## 2 11.555830 10.192988 11.167055 10.461271 10.64417 10.99016 9.091318
## 3 8.991087 8.368606 8.119238 12.059112 11.16892 10.82000 8.871058
## 4 6.618227 5.900125 7.072107 11.071765 10.99341 10.82960 7.076192
## 5 11.914603 10.551595 11.525796 10.819925 11.00285 11.34888 9.449613
## 6 10.733388 9.710301 10.336783 10.077580 10.16463 10.39718 8.500310
##      Yipf3      Yipf4      Yipf5      Yipf6      Ykt6      Ylpm1      Yme111
## 1 12.493522 11.019303 11.325047 11.455112 13.240928 11.803430 12.08952
## 2 12.000580 10.320725 10.659818 10.779762 13.188705 11.638501 11.24025
## 3 9.567008 10.314235 11.507749 10.003467 10.014145 9.655910 12.59619
## 4 9.073666 9.542105 10.838384 8.584152 7.928547 7.085004 11.47988
## 5 12.359381 10.679355 11.018501 11.138459 13.547550 11.997280 11.59900
## 6 11.301867 9.828231 10.133801 10.263802 12.049140 10.611976 10.89797
##      Yod1      Ypel1      Ypel2      Ypel3      Ypel4      Ypel5      Yrdc
## 1 9.261508 9.351934 11.433144 12.162063 8.246867 11.78626 10.886817
## 2 9.062220 9.111319 11.496476 11.390532 7.995206 11.27617 10.644802
## 3 9.519706 7.238934 10.524383 8.722174 4.931594 12.15672 7.210348
## 4 6.937627 4.951431 7.466536 7.717565 4.819694 11.18074 4.952904
## 5 9.420503 9.469622 11.855245 11.749293 8.352837 11.63492 11.003482
## 6 8.072606 8.162845 10.241845 10.970493 7.061103 10.59481 9.695833
##      Ythdc1      Ythdc2      Ythdf1      Ythdf2      Ythdf3      Ywhab      Ywhae
## 1 12.253052 10.792800 11.834050 11.047078 12.233117 13.95159 15.45796
## 2 11.716043 9.434280 11.820349 10.329565 11.708460 13.51231 14.84447
## 3 9.714978 7.329770 8.754674 12.515540 9.059151 11.75995 15.80726
## 4 7.995634 6.909005 6.781880 11.156300 8.216706 11.18227 14.44632
## 5 12.074827 9.792699 12.179140 10.688197 12.067244 13.87116 15.20333
## 6 11.061456 9.601883 10.642585 9.855989 11.041527 12.75973 14.26601
##      Ywhag      Ywhah      Ywhaq      Ywhaz      Yy1      Yy2      Zadh2
## 1 13.93094 13.530751 12.82222 13.36401 11.780562 7.353601 11.120916
## 2 13.66525 12.954990 12.04939 12.67622 11.051337 7.623496 10.692772
## 3 11.15846 9.623583 12.58416 14.09865 8.668519 6.763071 7.432270
## 4 10.29705 10.717615 11.07539 13.62993 6.521975 5.928681 6.449375
## 5 14.02411 13.313829 12.40819 13.03505 11.410066 7.980760 11.051458
## 6 12.73908 12.338927 11.63050 12.17220 10.589117 6.173146 9.929782
##      Zap70      Zar1      Zar1l      Zbbx      Zbed3      Zbed4
## 1 8.162558 2.108341e+00 2.545670e+00 2.568030e+00 10.347757 7.977016
## 2 8.878011 2.244067e+00 1.643831e+00 1.642776e+00 9.973705 7.961564
## 3 3.371815 7.351398e-08 5.540617e-01 2.829641e+00 7.543174 6.541659
## 4 4.930630 3.309493e-08 9.302717e-08 7.740050e-08 5.855205 3.710384
## 5 9.236213 2.534189e+00 1.897178e+00 1.896044e+00 10.332267 8.319166
## 6 6.977167 1.296799e+00 1.644413e+00 1.662740e+00 9.157226 6.792527
##      Zbed6      Zbp1      Zbtb1      Zbtb10      Zbtb11      Zbtb12      Zbtb16

```



```

## 1 11.134594 3.012040 9.753837 11.712069 11.111834 8.893805 8.846176
## 2 10.698580 4.417601 9.453080 10.252366 10.770265 8.439067 9.164339
## 3 6.276847 2.896619 7.031977 8.855185 9.367276 3.814606 6.268083
## 4 4.300207 2.669441 7.014104 6.419876 8.844370 1.629932 7.087921
## 5 11.057267 4.761513 9.811505 10.610984 11.128961 8.797028 9.522663
## 6 9.943452 2.036487 8.564045 10.520650 9.920706 7.705797 7.658301
##      Zbtb17      Zbtb2      Zbtb20      Zbtb22      Zbtb24      Zbtb25      Zbtb26
## 1 11.311565 10.856060 9.370006 11.253413 9.536330 8.810530 8.544194
## 2 10.940686 11.353446 8.706303 10.785806 8.910233 8.986136 7.525442
## 3 8.855334 5.835161 11.591113 6.911719 8.291976 8.092054 9.182311
## 4 8.521619 5.089239 9.274055 5.859109 6.083479 5.082616 8.053844
## 5 11.299403 11.712203 9.064419 11.144505 9.268450 9.344388 7.882592
## 6 10.120326 9.665098 8.180882 10.062205 8.346894 7.622758 7.357273
##      Zbtb3      Zbtb32      Zbtb33      Zbtb34      Zbtb37      Zbtb38      Zbtb39
## 1 6.057253 5.965898e+00 10.742343 10.271417 8.640101 9.856752 10.513460
## 2 6.644256 5.220750e+00 10.166713 9.722556 8.785057 9.673640 10.046700
## 3 6.337280 1.437775e+00 9.050860 7.132616 6.901374 7.870152 7.525636
## 4 4.251170 5.971078e-08 7.817290 5.562996 1.706429 7.854468 5.096487
## 5 6.999950 5.571070e+00 10.525315 10.081059 9.143215 10.032130 10.405278
## 6 4.893410 4.803874e+00 9.551464 9.080965 7.452856 8.666809 9.322771
##      Zbtb4      Zbtb40      Zbtb41      Zbtb42      Zbtb43      Zbtb44      Zbtb45
## 1 11.990514 9.480600 10.713210 6.375138 10.781590 10.313588 9.327536
## 2 11.426478 9.396412 10.411699 6.447221 10.704244 9.772937 8.453798
## 3 9.516312 7.180848 9.675923 3.671019 9.431945 9.241476 6.069809
## 4 9.223782 5.912662 7.565723 5.282916 7.276101 7.874475 6.770866
## 5 11.785241 9.754819 10.770344 6.802448 11.062932 10.131452 8.811769
## 6 10.798995 8.291264 9.522354 5.205776 9.590681 9.123091 8.138497
##      Zbtb46      Zbtb48      Zbtb49      Zbtb5      Zbtb6      Zbtb7a      Zbtb7b
## 1 8.966858 9.312449 8.996818 10.072834 9.689750 11.289649 11.871745
## 2 9.126057 9.018021 8.373798 9.753166 8.865926 11.090213 11.441752
## 3 5.422871 8.693079 7.077772 9.046752 9.619919 8.998333 5.071945
## 4 3.548627 6.687433 4.965199 7.913758 9.035332 8.188560 5.689996
## 5 9.484366 9.376286 8.731717 10.111676 9.224123 11.448946 11.800516
## 6 7.778654 8.123441 7.808536 8.882607 8.500057 10.098422 10.680266
##      Zbtb7c      Zbtb8a      Zbtb8b      Zbtb8os      Zbtb9      Zc3h10      Zc3h12a
## 1 6.776698 7.270373 4.804668 7.439648 9.576057 10.310323 11.799437
## 2 6.728632 7.421428 6.046771 7.057072 8.846555 10.551204 12.217813
## 3 3.383531 8.016043 5.828880 7.402089 6.344106 7.432570 3.584565
## 4 3.828193 5.035763 2.199890 7.459587 2.892971 5.882423 2.581311
## 5 7.084507 7.778449 6.400828 7.413559 9.204742 10.909871 12.576625
## 6 5.601875 6.090600 3.678789 6.258529 8.386552 9.119829 10.607984
##      Zc3h12b      Zc3h12c      Zc3h12d      Zc3h13      Zc3h14      Zc3h15      Zc3h18
## 1 7.515764 10.427278 3.748804e+00 10.990250 11.539577 11.074664 11.104574
## 2 6.702759 10.749372 3.211889e+00 11.105202 11.204693 10.854927 11.010760
## 3 5.038748 8.036680 6.766184e-08 9.875805 7.959450 9.749094 7.300832
## 4 5.183449 5.873118 3.398183e-08 7.282391 7.660063 6.965073 6.502964
## 5 7.058579 11.108066 3.536014e+00 11.463937 11.563437 11.213634 11.369485
## 6 6.334088 9.236669 2.690796e+00 9.799197 10.348229 9.883558 9.913450
##      Zc3h3      Zc3h4      Zc3h6      Zc3h7a      Zc3h7b      Zc3h8      Zc3hav1
## 1 8.277145 11.633175 8.599841 11.606937 13.794001 7.662790 10.376848
## 2 8.639766 11.497006 8.647532 11.741088 13.453210 8.184781 9.899875
## 3 6.319794 8.982251 6.820015 9.405982 8.925651 7.207821 5.670587
## 4 3.463990 7.189829 5.856121 6.730076 6.049434 5.297301 5.627502
## 5 8.997847 11.855775 9.005617 12.099874 13.812060 8.542566 10.258421

```

```

## 6 7.091252 10.441787 7.412729 10.415560 12.602151 6.480118 9.186288
##   Zc3hav11   Zc3hc1     Zc4h2   Zcchc10   Zcchc11   Zcchc12   Zcchc14
## 1 8.265172 10.954157 10.288801 8.194105 11.254754 11.205793 12.337247
## 2 7.536442 10.325884 9.402405 8.006112 11.046345 11.149079 12.110150
## 3 8.214023 11.224531 11.158951 9.175392 9.173204 8.835457 10.092560
## 4 5.194767 10.083137 8.933266 7.996269 7.232549 9.169293 8.759007
## 5 7.893606 10.684515 9.760813 8.363752 11.405073 11.507818 12.468957
## 6 7.079329 9.763127 9.098330 7.008572 10.063545 10.014610 11.145630
##   Zcchc16   Zcchc17   Zcchc18   Zcchc2   Zcchc24   Zcchc3   Zcchc4
## 1 5.621049 11.57963 12.20219 10.510717 13.599835 9.377386 7.513271
## 2 5.731151 10.85473 11.73202 10.267187 13.151115 8.870854 7.419509
## 3 2.566279 11.37844 12.40695 6.978602 10.490763 8.405814 6.571964
## 4 4.959475 10.48509 11.30777 5.240273 9.680269 4.924741 4.329215
## 5 6.084026 11.21344 12.09080 10.625807 13.509959 9.229053 7.776527
## 6 4.467002 10.38827 11.01061 9.320030 12.408004 8.188247 6.331612
##   Zcchc5   Zcchc6   Zcchc7   Zcchc8   Zcchc9   Zcrb1   Zcwpw1
## 1 0.9812303 11.792449 10.903324 10.757023 9.546461 10.942669 8.876916
## 2 1.0017607 11.525190 10.216774 10.957615 8.724789 10.245354 9.293126
## 3 1.2744045 8.862035 9.693135 9.824702 9.062704 7.684841 8.349516
## 4 0.3050481 6.639834 7.827297 7.401261 8.564429 7.723040 5.123998
## 5 1.1924520 11.883961 10.575386 11.316334 9.082916 10.603971 9.651498
## 6 0.5160132 10.600999 9.712328 9.566133 8.357007 9.751647 7.688954
##   Zdbf2   Zdhhc1   Zdhhc12   Zdhhc13   Zdhhc14   Zdhhc15   Zdhhc16
## 1 10.281564 11.027293 9.673619 9.868190 11.294951 9.119375 10.320693
## 2 10.845216 9.745731 9.480075 9.362954 11.145948 8.538483 10.360020
## 3 6.525656 7.334948 9.034561 8.826165 7.166608 7.847004 8.914724
## 4 5.704999 6.279914 7.297008 6.207481 7.405576 7.009406 6.344733
## 5 11.203922 10.104240 9.838509 9.721349 11.504686 8.896506 10.718656
## 6 9.091101 9.836216 8.483951 8.678231 10.103721 7.930792 9.130189
##   Zdhhc17   Zdhhc18   Zdhhc2   Zdhhc20   Zdhhc21   Zdhhc22   Zdhhc23
## 1 12.020307 11.002309 11.389936 12.40136 11.624424 7.9836439 6.626682
## 2 11.902655 10.890103 11.105962 11.83768 11.746893 7.5928346 6.810753
## 3 9.063511 7.358056 7.100701 11.44672 8.325318 0.8245924 3.859576
## 4 8.367809 4.626392 7.936201 10.04920 8.226008 6.3747013 3.069251
## 5 12.261451 11.248814 11.464697 12.19647 12.105680 7.9500640 7.166794
## 6 10.828779 9.811248 10.198658 11.20973 10.433040 6.7991208 5.453726
##   Zdhhc24   Zdhhc3   Zdhhc4   Zdhhc5   Zdhhc6   Zdhhc7   Zdhhc8
## 1 10.223025 12.049036 10.446006 11.764359 10.525164 11.641877 11.75550
## 2 10.368944 11.357371 10.224821 11.518401 10.198054 11.067028 11.10941
## 3 7.381818 8.863168 10.399213 7.826195 10.090895 7.392161 6.82912
## 4 6.620900 8.066303 8.199442 7.911724 8.521707 7.938558 7.90436
## 5 10.727582 11.716129 10.583434 11.877172 10.556662 11.425758 11.46815
## 6 9.032625 10.857499 9.255379 10.572919 9.334464 10.450486 10.56406
##   Zdhhc9   Zeb1   Zeb2   Zer1   Zfand1   Zfand2a   Zfand2b
## 1 13.800881 12.405989 13.20260 12.732322 8.661718 12.800857 10.669162
## 2 13.066311 12.318424 12.87556 12.170982 7.681638 12.145532 9.825128
## 3 7.562781 11.077369 11.85615 9.325094 9.134861 8.271395 9.351940
## 4 7.457101 8.213617 10.01794 8.540417 7.792720 6.999897 9.031893
## 5 13.425153 12.677241 13.23439 12.529792 8.038966 12.504341 10.183656
## 6 12.609030 11.214355 12.01081 11.540616 7.474402 11.609139 9.478341
##   Zfand3   Zfand5   Zfand6   Zfat   Zfc3h1   Zfhx2   Zfhx3
## 1 12.734992 13.441335 11.544933 8.696910 11.482460 9.758340 10.931263
## 2 12.043032 12.586350 10.767235 8.904951 10.954027 9.979473 10.530175
## 3 8.913930 9.675133 12.215865 6.541569 7.726011 7.553980 8.289872

```

```

## 4 8.336432 9.253588 10.581737 3.791903 7.139935 5.768911 9.767527
## 5 12.401836 12.945177 11.125932 9.263166 11.312745 10.338037 10.888839
## 6 11.543286 12.249522 10.353583 7.509482 10.291138 8.568541 9.740249
##      Zfhx4      Zfml      Zfp1      Zfp105      Zfp106      Zfp108      Zfp109
## 1 9.356324 12.009343 9.589401 7.879465 12.727161 6.738068 6.326019
## 2 7.973772 11.562393 9.130963 8.344352 12.881395 6.779255 6.516271
## 3 7.756838 11.038663 9.431915 6.295508 9.121434 6.406403 5.171521
## 4 6.941070 9.269019 7.081794 4.784965 7.850491 2.920426 2.309340
## 5 8.331384 11.921166 9.489274 8.702251 13.240232 7.135233 6.871669
## 6 8.167227 10.817819 8.399873 6.695499 11.535456 5.563708 5.157434
##      Zfp110      Zfp113      Zfp114      Zfp12      Zfp128      Zfp13      Zfp14
## 1 9.860942 8.482172 4.897201e+00 10.518290 6.672345 8.846973 10.546265
## 2 9.889626 7.400427 4.423782e+00 10.068803 6.817839 8.860076 10.244104
## 3 10.163736 9.922614 5.255166e+00 8.166644 7.153200 8.677457 8.925248
## 4 7.201875 9.253721 5.929708e-08 7.223337 5.597037 5.714367 5.727920
## 5 10.248170 7.757421 4.767758e+00 10.427385 7.173894 9.218269 10.602721
## 6 8.670993 7.295473 3.767309e+00 9.327596 5.498801 7.659095 9.355547
##      Zfp142      Zfp143      Zfp146      Zfp148      Zfp157      Zfp160      Zfp169
## 1 11.130771 9.282308 10.570361 11.803744 9.885875 9.253599 8.494820
## 2 11.051005 9.109973 10.567393 11.277675 9.365923 9.465699 8.320031
## 3 8.264228 9.025890 7.782893 10.646264 10.073248 8.754896 6.910908
## 4 7.206132 6.464768 5.589029 8.895513 7.610493 5.494479 6.515178
## 5 11.409734 9.468276 10.926062 11.636426 9.724320 9.824128 8.677914
## 6 9.939632 8.093362 9.379622 10.612290 8.695891 8.064714 7.308075
##      Zfp174      Zfp180      Zfp182      Zfp185      Zfp189      Zfp191      Zfp2
## 1 7.694418 10.228847 8.632486 5.214172 8.152931 11.834919 9.483593
## 2 7.439958 10.586108 9.039357 4.916721 7.881048 10.962355 9.609986
## 3 7.267045 8.695653 7.732624 3.557752 7.990085 10.969690 10.389939
## 4 3.838626 6.500098 5.526829 2.737224 6.435107 9.772987 7.346751
## 5 7.797003 10.944780 9.397631 5.265026 8.238577 11.321075 9.968458
## 6 6.511546 9.038440 7.445265 4.072257 6.967584 10.643454 8.294251
##      Zfp202      Zfp207      Zfp212      Zfp213      Zfp217      Zfp219      Zfp229
## 1 8.414829 12.89118 10.314131 8.416639 9.633597 11.688327 8.175366
## 2 8.027264 12.49535 10.238336 8.496553 9.382078 11.653241 8.176794
## 3 6.506942 12.74799 8.791300 6.069069 6.944206 5.381218 7.400292
## 4 2.535876 10.28086 5.034766 5.057064 5.788450 4.360765 6.178917
## 5 8.384922 12.85418 10.596952 8.854550 9.740480 12.012021 8.534573
## 6 7.228383 11.69945 9.123634 7.230186 8.443996 10.496917 6.989917
##      Zfp235      Zfp236      Zfp248      Zfp251      Zfp26      Zfp260      Zfp263
## 1 8.869283 11.635259 8.674719 10.665572 10.642917 10.507181 11.441904
## 2 8.616948 11.110896 8.321935 10.234695 10.010213 10.460747 10.469307
## 3 8.571952 8.159012 8.356729 8.751220 9.988971 11.506266 10.142994
## 4 8.026114 6.939470 6.487570 5.447275 8.686344 9.223102 8.409099
## 5 8.975016 11.469631 8.679819 10.593310 10.368783 10.819400 10.827961
## 6 7.681342 10.443870 7.487361 9.474754 9.452117 9.316498 10.250601
##      Zfp266      Zfp27      Zfp275      Zfp276      Zfp277      Zfp28      Zfp280b
## 1 11.67580 9.056482 11.021632 11.581559 10.576712 9.068460 9.887644
## 2 11.24113 9.048441 10.666019 10.775627 9.514791 9.079682 9.343565
## 3 12.99468 9.540404 9.880484 7.161191 10.364026 7.048485 6.806902
## 4 10.74325 6.899636 7.502298 6.375158 9.119793 2.764252 5.140407
## 5 11.59988 9.406719 11.024702 11.134324 9.873234 9.437972 9.701954
## 6 10.48440 7.868050 9.830559 10.390193 9.385968 7.879999 8.697658
##      Zfp280c      Zfp280d      Zfp281      Zfp282      Zfp286      Zfp287      Zfp292
## 1 11.995531 11.213395 11.098396 10.465528 8.238340 9.365482 11.273297

```

```

## 2 10.572126 10.326576 10.983399 10.549861 8.039154 9.721944 11.190119
## 3 9.720585 10.038669 9.606590 6.993715 9.177514 7.478446 10.550372
## 4 8.203425 7.789641 7.769280 6.292653 6.806029 2.205734 8.503603
## 5 10.930796 10.685207 11.342121 10.908527 8.396822 10.080446 11.548861
## 6 10.804011 10.022209 9.907275 9.274883 7.052613 8.176366 10.082078
##      Zfp296      Zfp3      Zfp30      Zfp300      Zfp316      Zfp317      Zfp318
## 1 5.8722470 7.952726 8.790278 5.822462 10.339524 10.811248 11.553228
## 2 5.3886530 7.527734 8.359903 5.506025 10.310620 10.246198 10.772444
## 3 3.6409757 6.739222 8.602254 7.002623 6.968818 11.289836 9.140815
## 4 0.6438069 4.815990 4.878166 5.038623 3.887320 9.641236 7.065847
## 5 5.7399156 7.884887 8.717813 5.857884 10.669248 10.604815 11.131141
## 6 4.7122085 6.768364 7.602565 4.663531 9.149001 9.620318 10.361874
##      Zfp322a      Zfp324      Zfp326      Zfp329      Zfp330      Zfp334      Zfp335
## 1 9.449061 8.429494 11.213904 9.760407 10.365420 9.933394 11.847131
## 2 9.026466 8.732112 10.458249 9.617537 9.659171 10.040067 11.978625
## 3 10.072609 6.091222 8.394829 10.332144 9.635753 8.302245 7.788232
## 4 7.894217 4.978027 5.731373 8.387951 8.894872 5.294149 6.005026
## 5 9.384734 9.090242 10.816902 9.976011 10.017657 10.398643 12.337425
## 6 8.259783 7.242991 10.022718 8.570604 9.174871 8.743345 10.655662
##      Zfp341      Zfp346      Zfp354a      Zfp354b      Zfp354c      Zfp358      Zfp36
## 1 8.969616 10.502135 8.350768 6.177616 10.614436 10.942404 16.12556
## 2 8.049035 10.171892 8.555674 5.647000 10.716667 10.718437 15.85746
## 3 4.410846 8.450455 6.429614 6.899831 9.997494 6.296537 10.99635
## 4 4.943894 5.559717 2.765943 5.688962 6.020553 4.814124 10.88546
## 5 8.406712 10.530495 8.913706 5.999514 11.075357 11.077127 16.21633
## 6 7.781405 9.311457 7.164573 5.011541 9.423660 9.751382 14.93360
##      Zfp362      Zfp365      Zfp366      Zfp367      Zfp369      Zfp3611      Zfp3612
## 1 11.169198 12.702770 9.098400 9.366061 9.202843 13.49618 13.133721
## 2 11.060484 12.566612 8.062839 8.588289 9.230577 12.80598 12.846269
## 3 7.147816 8.790714 1.837386 10.496270 5.736294 11.49618 8.219444
## 4 4.798335 9.720499 4.415040 7.781419 3.589653 10.18980 7.744129
## 5 11.419214 12.925438 8.420527 8.946341 9.588926 13.16482 13.205105
## 6 9.978037 11.511071 7.909867 8.176944 8.014069 12.30436 11.941948
##      Zfp37      Zfp382      Zfp384      Zfp385a      Zfp385b      Zfp385c      Zfp386
## 1 8.655037 7.640216 11.330945 11.638024 7.397251 2.6227086 9.802416
## 2 8.762111 7.659262 10.912181 11.577565 6.713429 2.4438019 9.578071
## 3 9.910813 7.180487 6.288214 5.507329 9.306171 0.6629765 10.721326
## 4 7.466867 4.036457 5.276088 7.285667 6.304055 0.6678390 7.880854
## 5 9.120256 8.016566 11.270895 11.936340 7.069272 2.7429958 9.936533
## 6 7.467743 6.457691 10.139696 10.446635 6.216454 1.7077692 8.612552
##      Zfp395      Zfp397      Zfp398      Zfp40      Zfp407      Zfp408      Zfp41
## 1 9.741348 10.589377 8.941291 8.980048 9.976100 10.020157 10.323192
## 2 9.211542 9.932564 8.302279 8.992460 9.768125 9.954158 9.338156
## 3 7.078218 9.632664 7.064730 9.020901 7.840189 6.808655 10.917624
## 4 5.511147 7.929630 5.891620 7.098441 6.050174 3.906924 7.963380
## 5 9.569884 10.291118 8.660150 9.350714 10.126639 10.312716 9.696543
## 6 8.551575 9.398622 7.753154 7.791809 8.785995 8.829995 9.132686
##      Zfp410      Zfp414      Zfp420      Zfp422      Zfp423      Zfp426      Zfp428
## 1 11.050295 10.481523 8.617236 10.870753 9.656778 9.941054 10.161212
## 2 11.045541 9.825746 7.607010 10.199004 9.123894 10.288603 9.636046
## 3 10.903885 10.428643 9.258161 11.161569 8.843278 9.713142 6.357560
## 4 7.944064 8.919488 8.925154 8.878020 6.736142 6.317780 3.096591
## 5 11.404269 10.184274 7.964256 10.557612 9.482203 10.647227 9.994525
## 6 9.859204 9.290863 7.430066 9.679780 8.467139 8.750996 8.970881

```

```

##      Zfp438      Zfp444      Zfp445      Zfp446      Zfp449      Zfp451      Zfp454
## 1 8.822192 10.097350 12.675597 9.204383 7.527952 10.313243 7.571798
## 2 8.200321 10.018157 12.529504 9.780903 7.939364 10.104988 7.060383
## 3 9.024470 8.732466 10.539795 7.729119 7.950048 8.153670 8.281935
## 4 6.863274 6.755069 8.227811 3.952813 6.663272 5.654938 5.544940
## 5 8.558118 10.376729 12.888329 10.139420 8.296946 10.463578 7.416875
## 6 7.634385 8.907093 11.483903 8.015606 6.346190 9.122747 6.389730
##      Zfp458      Zfp46      Zfp462      Zfp467      Zfp473      Zfp488      Zfp503
## 1 7.435836 10.989262 11.571644 10.106451 5.809803 10.487605 9.725215
## 2 7.118733 10.481317 10.945176 10.070174 5.013140 10.092054 8.586001
## 3 7.152320 10.151065 8.779457 6.194800 5.328770 6.126214 5.714408
## 4 4.677942 7.612609 7.876256 6.249889 2.767579 7.015528 6.982005
## 5 7.475320 10.839974 11.303894 10.428757 5.362131 10.450641 8.944051
## 6 6.254745 9.798209 10.380283 8.916184 4.651160 9.296939 8.535467
##      Zfp507      Zfp51      Zfp511      Zfp512      Zfp513      Zfp516      Zfp518a
## 1 10.185211 7.623329 9.778548 11.364686 11.502440 11.937787 9.068597
## 2 9.792155 7.879659 9.255245 10.430317 11.451325 11.689152 8.684020
## 3 7.918300 8.260296 8.398171 9.517931 6.904886 8.062816 8.678439
## 4 5.668555 5.690389 6.077990 7.686307 4.188121 6.920034 7.070313
## 5 10.150675 8.237185 9.613603 10.788965 11.810090 12.047935 9.042125
## 6 8.994852 6.440915 8.588718 10.173420 10.311109 10.746286 7.880135
##      Zfp518b      Zfp52      Zfp521      Zfp523      Zfp524      Zfp526      Zfp53
## 1 9.540294 8.485724 11.001542 12.082021 9.169709 8.761118 7.399507
## 2 9.309117 8.860057 10.770467 11.189000 8.179231 8.182486 7.312866
## 3 7.921813 6.068206 8.956301 7.870815 8.060082 5.888367 7.652232
## 4 5.525715 4.564105 7.586165 4.391862 8.155169 4.258144 4.023287
## 5 9.667494 9.218251 11.129163 11.547743 8.537011 8.540269 7.669742
## 6 8.350852 7.299012 9.810482 10.890474 7.981010 7.573491 6.218692
##      Zfp532      Zfp534      Zfp536      Zfp54      Zfp541      Zfp551
## 1 12.361802 3.153143e+00 9.818304 6.283053 2.375241e+00 6.917078
## 2 11.750442 2.754881e+00 9.946567 5.021311 1.908812e+00 6.970521
## 3 9.216865 3.089714e-01 8.671094 7.504233 6.043180e-08 7.377131
## 4 8.296136 6.093563e-08 6.187705 4.610549 3.036995e-08 5.638463
## 5 12.109228 3.065842e+00 10.305123 5.370357 2.180404e+00 7.326860
## 6 11.170178 2.158820e+00 8.628416 5.115169 1.506427e+00 5.740673
##      Zfp553      Zfp558      Zfp560      Zfp566      Zfp57      Zfp574      Zfp575
## 1 9.998949 8.164756 8.640413 7.579412 10.446800 10.572140 7.862397
## 2 9.771919 7.408044 8.265141 8.116450 10.029612 10.241394 6.384749
## 3 7.268587 9.085737 9.608015 7.563204 10.988096 8.165324 4.277469
## 4 2.872108 2.155304 6.579566 5.016640 4.827416 7.132436 5.520842
## 5 10.130434 7.765048 8.622985 8.474181 10.388187 10.600010 6.739814
## 6 8.808815 6.979355 7.453166 6.397293 9.256172 9.381399 6.678526
##      Zfp579      Zfp580      Zfp583      Zfp59      Zfp592      Zfp593      Zfp597
## 1 11.037931 9.961581 6.704789 7.574228 11.654057 9.148195 9.633866
## 2 10.559035 9.348336 6.900988 6.262267 11.521768 8.810008 9.656769
## 3 7.533461 5.425364 7.754441 7.911000 7.915438 5.468843 7.726796
## 4 2.729221 4.927243 5.762508 7.350482 7.056237 3.400449 7.080561
## 5 10.917703 9.706727 7.257202 6.616994 11.880539 9.168178 10.015254
## 6 9.846847 8.771495 5.530837 6.392144 10.462660 7.959544 8.444264
##      Zfp598      Zfp599      Zfp60      Zfp605      Zfp606      Zfp607      Zfp608
## 1 12.444339 5.055571 9.464828 9.150687 9.687360 6.708074 11.961789
## 2 11.298452 4.979242 8.354648 8.858743 9.206278 7.204496 11.927394
## 3 7.423753 6.474933 10.510326 9.511530 9.813435 5.686138 9.585837
## 4 7.575967 6.555655 7.235281 6.934909 6.847679 2.656812 6.559966

```

```

## 5 11.657204 5.327996 8.712554 9.216937 9.564618 7.561215 12.286191
## 6 11.252695 3.919355 8.275521 7.962030 8.497671 5.534082 10.770280
##      Zfp609      Zfp61      Zfp612      Zfp618      Zfp62      Zfp622      Zfp623
## 1 11.708665 9.210672 9.247942 7.633546 10.727402 11.488150 9.741535
## 2 11.661728 9.286543 9.661508 7.054315 10.100948 10.602203 9.214696
## 3 7.702868 8.882998 9.603931 1.214596 10.303342 8.035647 8.980390
## 4 6.257736 5.292064 7.038933 1.663155 8.615276 7.156937 5.870218
## 5 12.020509 9.644912 10.019994 7.410798 10.459537 10.960877 9.573039
## 6 10.517247 8.021881 8.059069 6.451065 9.536535 10.296826 8.551762
##      Zfp628      Zfp629      Zfp639      Zfp64      Zfp641      Zfp644      Zfp646
## 1 9.984432 10.291788 10.655563 9.941425 9.035078 10.856620 10.573699
## 2 9.863080 10.354744 9.775092 9.841850 8.600787 10.624703 10.920867
## 3 6.875200 9.466730 9.633866 9.128125 5.890484 10.119993 7.697496
## 4 5.493475 6.738263 8.734240 7.557869 1.052315 8.397514 5.458263
## 5 10.221617 10.713380 10.133608 10.200382 8.958846 10.983380 11.279582
## 6 8.794316 9.101314 9.464752 8.751366 7.846699 9.665657 9.382957
##      Zfp647      Zfp648      Zfp651      Zfp652      Zfp653      Zfp654      Zfp655
## 1 8.095648 5.284706e+00 12.537307 10.432127 10.058779 9.617429 11.642974
## 2 7.216213 4.564455e+00 12.391206 10.617993 9.770127 9.379015 10.689198
## 3 8.756580 7.912616e-01 7.470431 5.424754 5.515998 6.943259 10.541195
## 4 7.331852 9.864794e-08 6.750115 3.796635 1.819632 6.469206 9.618964
## 5 7.572950 4.909822e+00 12.750025 10.976670 10.128641 9.737416 11.047885
## 6 6.910569 4.140444e+00 11.345641 9.241513 8.868570 8.427854 10.451583
##      Zfp658      Zfp661      Zfp664      Zfp667      Zfp668      Zfp672      Zfp677
## 1 8.695131 8.484811 13.304314 9.168799 8.940310 9.895083 7.025909
## 2 8.384328 8.626227 12.860826 8.777787 9.111163 9.614558 6.442631
## 3 8.669271 8.392210 9.525086 8.638767 8.276251 10.021835 8.207203
## 4 6.667310 6.159546 7.389103 8.992719 5.065240 7.476633 3.859923
## 5 8.742254 8.984300 13.219662 9.135941 9.469466 9.973031 6.797847
## 6 7.507708 7.298103 12.112517 7.980102 7.752176 8.705086 5.848378
##      Zfp68      Zfp687      Zfp688      Zfp689      Zfp69      Zfp691      Zfp692
## 1 10.549753 11.266727 8.358728 7.975115 8.411110 9.962198 10.161601
## 2 10.110124 11.353960 8.004763 8.193954 9.053618 9.685287 10.110340
## 3 11.414810 7.018610 7.665481 8.560782 3.322898 8.345183 6.316298
## 4 8.191031 5.753199 6.348123 5.849719 4.652613 7.700545 4.126583
## 5 10.468715 11.712718 8.362402 8.551746 9.411898 10.043779 10.468931
## 6 9.359032 10.075511 7.172501 6.790636 7.224678 8.772111 8.971269
##      Zfp697      Zfp7      Zfp703      Zfp704      Zfp706      Zfp707      Zfp710
## 1 8.028557 7.547109 11.429234 11.992438 12.95069 8.777802 11.564722
## 2 7.983554 7.335759 10.981573 11.709732 12.31920 8.868512 11.148332
## 3 8.097161 7.596949 8.507826 9.961343 11.97173 8.805287 8.334106
## 4 7.245142 1.574623 6.827326 8.024074 10.90119 6.215553 7.506152
## 5 8.341175 7.692667 11.340294 12.068516 12.67801 9.226710 11.507070
## 6 6.843805 6.365212 10.237936 10.800919 11.75895 7.590125 10.373363
##      Zfp711      Zfp719      Zfp738      Zfp74      Zfp740      Zfp746      Zfp747
## 1 9.414987 8.986045 8.374461 8.779925 12.903007 10.544244 8.811935
## 2 9.287196 8.531016 8.354410 8.858635 12.649720 10.174798 7.920885
## 3 6.469276 10.080511 8.351802 8.005176 9.473383 8.409643 7.112909
## 4 1.901569 8.445622 4.107880 5.957019 8.266715 6.766689 6.201432
## 5 9.645565 8.889034 8.712316 9.216828 13.008550 10.533401 8.278450
## 6 8.225774 7.797790 7.188171 7.592242 11.711270 9.353528 7.624158
##      Zfp748      Zfp750      Zfp759      Zfp760      Zfp764      Zfp768      Zfp770
## 1 8.338592 1.2142050 6.524927 9.304495 7.554384 9.988105 9.783734
## 2 8.396927 0.9892061 6.455019 8.278214 6.442605 9.501885 9.054993

```

```

## 3 8.969852 4.5155529 7.804151 9.854808 7.125792 5.890200 7.968478
## 4 7.895012 4.8556518 6.181784 7.890236 6.041068 2.810855 8.224135
## 5 8.754861 1.1783388 6.810266 8.636068 6.797820 9.860325 9.413274
## 6 7.152446 0.6619806 5.353351 8.115503 6.372436 8.797985 8.593897
##      Zfp771      Zfp775      Zfp777      Zfp78      Zfp780b      Zfp781      Zfp784
## 1 9.920741 8.763543 10.861479 6.175734 7.659900 5.218805 8.127119
## 2 9.961997 7.785014 10.162957 6.238954 7.445762 4.798741 7.798344
## 3 3.703230 5.453484 7.006889 6.527638 10.135403 5.459665 7.081715
## 4 2.150400 6.375689 5.490558 4.123013 8.148409 3.053314 4.904210
## 5 10.320557 8.142449 10.521559 6.593613 7.802814 5.146141 8.155793
## 6 8.730710 7.575909 9.670513 5.009694 6.477247 4.076732 6.941891
##      Zfp786      Zfp787      Zfp788      Zfp790      Zfp791      Zfp800      Zfp804a
## 1 4.982822 10.210675 9.929045 9.126717 5.371680 9.712494 8.007169
## 2 5.620313 10.911100 9.615729 8.878393 6.026286 9.233618 7.355051
## 3 5.465168 5.094206 9.790869 9.817697 5.463306 9.289735 4.198528
## 4 2.449278 2.871588 6.700780 8.040240 4.004748 8.056642 5.108463
## 5 5.972708 11.269813 9.974202 9.236595 6.380274 9.591968 7.711985
## 6 3.849428 9.020288 8.739003 7.938116 4.224672 8.522766 6.822525
##      Zfp804b      Zfp808      Zfp809      Zfp810      Zfp819      Zfp82      Zfp821
## 1 4.759117e+00 6.253313 8.520026 9.059846 4.5738608 7.292647 10.818427
## 2 4.422430e+00 6.275182 8.473769 8.549124 3.6192977 6.694838 10.765577
## 3 5.822044e-08 6.952492 8.411884 8.085020 2.8164373 8.246279 8.124940
## 4 2.826085e-08 4.509564 6.092375 7.067515 0.3561106 1.207272 4.962471
## 5 4.766392e+00 6.629946 8.831752 8.907153 3.9520496 7.050642 11.124273
## 6 3.635306e+00 5.085926 7.333191 7.871406 3.4591276 6.112688 9.627491
##      Zfp827      Zfp830      Zfp831      Zfp839      Zfp865      Zfp866      Zfp867
## 1 10.843748 9.630689 2.785027 8.710422 10.984592 9.477753 7.926158
## 2 10.760388 8.854243 3.694284 8.512195 10.203671 9.265217 8.272934
## 3 7.742918 9.475047 1.688869 5.463237 5.316705 9.685936 8.810963
## 4 6.434741 9.170322 4.643350 5.374455 5.255365 7.360449 6.182582
## 5 11.119083 9.212434 4.028370 8.870202 10.562281 9.623579 8.630784
## 6 9.652794 8.441092 1.843148 7.522952 9.793543 8.288422 6.741937
##      Zfp868      Zfp869      Zfp87      Zfp872      Zfp879      Zfp9      Zfp90
## 1 9.971486 10.436652 7.995798 2.923929e+00 6.465929 9.556647 9.892325
## 2 9.802680 9.947626 7.739948 2.358271e+00 5.547967 9.119925 9.767378
## 3 10.986723 10.428942 10.355848 3.239795e-01 4.895317 9.113631 8.988344
## 4 7.974471 7.215982 8.824224 1.292796e-07 4.115082 6.941206 5.363093
## 5 10.161203 10.306182 8.097337 2.653740e+00 5.900027 9.478231 10.125892
## 6 8.781388 9.246034 6.811213 1.960917e+00 5.295199 8.367176 8.702333
##      Zfp91      Zfp92      Zfp93      Zfp94      Zfp940      Zfp945      Zfp948
## 1 12.394278 4.8931114 7.553248 7.780647 8.020233 10.029667 9.657959
## 2 12.120008 5.5988659 7.016105 7.659269 8.098031 9.563961 9.644781
## 3 9.396191 1.4245259 7.239317 8.159541 8.690794 8.973426 8.125710
## 4 7.774264 0.5022962 8.134938 6.630827 5.685217 6.443371 6.338124
## 5 12.478816 5.9511635 7.372523 8.016573 8.455748 9.922419 10.003262
## 6 11.202646 3.7633912 6.371308 6.597247 6.835524 8.839494 8.468317
##      Zfp957      Zfp963      Zfp964      Zfp11      Zfpm1      Zfpm2      Zfr
## 1 2.368067e+00 6.707583 5.456887 10.677543 11.620796 9.411632 12.92869
## 2 1.784105e+00 6.385437 5.252255 9.708211 10.869381 9.004725 12.67619
## 3 1.142377e+00 8.790912 3.405413 8.838870 1.915022 9.481275 11.68153
## 4 9.514309e-08 7.274684 1.026006 8.867990 3.818555 7.633035 10.44249
## 5 2.047555e+00 6.740504 5.602760 10.066710 11.228090 9.362984 13.03502
## 6 1.500687e+00 5.533596 4.307340 9.486714 10.429413 8.222425 11.73695
##      Zfr2      Zfx      Zfyve1      Zfyve16      Zfyve19      Zfyve20      Zfyve21

```

```

## 1 10.054234 10.847014 11.783740 10.511448 10.248578 11.589267 10.550089
## 2 9.542742 10.507918 11.688457 10.260188 9.837486 10.976804 10.003512
## 3 4.970101 9.532144 8.426326 9.014542 9.747971 10.164039 10.165789
## 4 2.235128 7.348651 5.440329 6.457154 9.158935 9.698953 9.448076
## 5 9.901194 10.866579 12.047239 10.618808 10.196017 11.335525 10.362081
## 6 8.864030 9.656058 10.592293 9.320761 9.058150 10.397898 9.359367
##      Zfyve26 Zfyve27 Zfyve28 Zfyve9      Zglp1      Zgpat      Zhx1
## 1 11.190488 12.58178 9.235040 9.842189 4.197906e+00 11.549664 11.387141
## 2 11.131538 11.69534 8.196334 9.517401 4.959967e+00 11.412445 11.369214
## 3 8.038106 10.43703 5.656364 4.972899 3.288727e+00 7.109827 10.563667
## 4 5.588108 9.77597 5.690920 4.203220 1.296638e-07 4.838742 8.580419
## 5 11.490275 12.05412 8.554127 9.875846 5.308585e+00 11.771207 11.727972
## 6 9.999314 11.39011 8.046195 8.652267 3.105341e+00 10.358312 10.195864
##      Zhx2      Zhx3      Zic1      Zic2      Zic3      Zic4      Zic5
## 1 10.178347 11.302500 10.569326 10.959320 10.145920 7.864799 7.083435
## 2 10.278267 10.903794 10.065631 10.339590 10.257948 7.189154 7.280572
## 3 10.074391 8.989507 7.010356 10.895465 4.401717 7.702776 6.831568
## 4 6.519032 5.808875 4.825305 8.241379 4.984865 4.602851 2.977401
## 5 10.636890 11.262507 10.424212 10.698223 10.616567 7.545851 7.637402
## 6 8.987996 10.111266 9.378588 9.768287 8.955607 6.680915 5.905342
##      Zik1      Zim1      Zkscan1 Zkscan14 Zkscan16 Zkscan17 Zkscan2
## 1 8.608846 7.049938e+00 11.285375 8.806188 7.151724 11.206105 9.7038609
## 2 8.642706 5.709338e+00 11.231244 7.787998 6.925997 11.186757 9.6123639
## 3 9.418969 2.142647e+00 11.175590 8.606578 5.126126 8.929657 5.4899484
## 4 6.199963 1.132948e-07 9.692923 8.295874 6.630854 5.507080 0.9209623
## 5 9.000788 6.062121e+00 11.589991 8.145436 7.282256 11.545500 9.9708362
## 6 7.421704 5.872170e+00 10.094150 7.618428 5.972992 10.014922 8.5141459
##      Zkscan3 Zkscan4 Zkscan5 Zkscan6      Zmat1      Zmat2      Zmat3
## 1 11.103866 6.849679 9.844442 9.294639 8.756169 11.84933 11.086223
## 2 10.506086 6.654410 10.145955 9.410653 8.149551 11.27578 10.509850
## 3 9.169507 6.422378 9.458697 7.602775 7.295391 11.48451 9.239181
## 4 8.116819 4.946287 7.038753 6.432303 5.466507 10.12630 8.220001
## 5 10.864746 7.010126 10.504553 9.769064 8.507308 11.63453 10.868511
## 6 9.912742 5.674015 8.654516 8.105667 7.568558 10.65786 9.895110
##      Zmat4      Zmat5      Zmiz1      Zmiz2      Zmpste24      Zmym1      Zmym2
## 1 6.717696 9.399744 13.375029 12.928643 11.962678 8.686436 11.983491
## 2 7.020605 8.893706 13.199768 12.506368 11.557523 8.957686 11.749609
## 3 5.843562 10.433846 11.233507 10.649940 10.718204 9.388575 10.018217
## 4 5.882137 8.867408 9.631969 8.741351 9.728075 7.574045 9.187798
## 5 7.377031 9.251916 13.558613 12.865193 11.916296 9.315924 12.108396
## 6 5.543585 8.210561 12.183223 11.736902 10.771169 7.499041 10.791974
##      Zmym3      Zmym4      Zmym5      Zmym6      Zmynd10      Zmynd11      Zmynd12
## 1 12.276097 11.775513 10.813180 10.623346 4.8864845 13.028812 2.287401e+00
## 2 11.926518 10.798081 10.656517 9.871930 5.7816833 12.683126 2.657695e+00
## 3 9.672816 9.311853 9.541194 8.468188 5.4465454 10.732880 2.720898e+00
## 4 9.454786 8.503725 7.349001 6.568307 0.2846122 8.823551 9.486724e-08
## 5 12.285315 11.156781 11.015199 10.230469 6.1347657 13.041956 2.965258e+00
## 6 11.084495 10.584070 9.622248 9.432562 3.7570444 11.837055 1.436535e+00
##      Zmynd15 Zmynd19      Zmynd8      Znf512b      Znf1x1      Znhit1      Znhit3
## 1 6.254592 9.138400 11.750672 12.137230 11.591495 10.012360 9.078074
## 2 5.649639 9.048818 11.427601 12.019312 11.800731 9.598617 8.423121
## 3 1.319327 4.769591 10.274828 10.518285 7.717584 10.313406 10.470007
## 4 1.346277 4.905664 9.097192 8.894051 7.809836 8.546516 9.305472
## 5 6.002164 9.407096 11.786364 12.378114 12.159521 9.957085 8.781073

```



```
## 6 5.087184 7.949772 10.559238 10.945667 10.400124 8.822209 7.889589
##      Znhit6      Znrdf1      Znrdf2      Znrdf3      Zp3
## 1 8.906272 9.882926 13.046789 10.473851 10.335885 1.967139e+00
## 2 8.558483 9.351177 12.804536 9.912563 9.950658 1.732493e+00
## 3 9.332874 10.184546 9.012808 9.513064 11.172521 2.096220e+00
## 4 7.752629 8.864582 7.129314 7.191586 9.911679 1.153204e-07
## 5 8.916517 9.709569 13.163371 10.271112 10.309215 1.992347e+00
## 6 7.718230 8.692946 11.855029 9.283198 9.145365 1.189335e+00
##      Zpbp      Zpbp2      Zpld1      Zranb1      Zranb2      Zranb3
## 1 4.981643e+00 1.362723e+00 1.489133 10.937583 12.056049 8.184110
## 2 5.074699e+00 2.010694e+00 1.800627 10.649281 11.663033 7.981566
## 3 2.387596e+00 2.372735e-01 3.473244 8.527751 11.276703 8.573221
## 4 1.129823e-07 7.109139e-08 4.068150 7.917380 9.873163 5.738078
## 5 5.424104e+00 2.288404e+00 2.065199 11.007961 12.021814 8.339185
## 6 3.848297e+00 7.594719e-01 0.845081 9.746565 10.864510 6.998621
##      Zrsr2      Zscan12      Zscan18      Zscan2      Zscan20      Zscan21      Zscan22
## 1 11.019469 9.155069 9.861896 8.638987 8.271348 9.730571 7.814525
## 2 10.040410 7.819588 10.323367 8.143839 8.254483 9.739779 7.252213
## 3 8.868563 8.675539 7.168842 4.861696 4.922770 10.415821 9.043660
## 4 7.400714 8.064433 3.372754 3.813771 1.525286 7.097151 6.625282
## 5 10.398987 8.177058 10.681998 8.501592 8.612319 10.098286 7.609003
## 6 9.828398 7.966403 8.671946 7.451745 7.085479 8.540815 6.630927
##      Zscan29      Zswim1      Zswim3      Zswim4      Zswim5      Zswim6      Zswim7
## 1 9.829267 8.933510 6.933668 12.275010 9.704103 11.616933 8.702290
## 2 9.537272 8.676005 6.436482 12.193649 9.821975 10.912842 7.712907
## 3 9.288630 9.528176 7.637589 8.128852 7.403536 6.582454 8.902619
## 4 7.208711 9.468085 5.605305 7.386102 5.710265 7.387006 5.739392
## 5 9.895723 9.034106 6.791682 12.552460 10.180502 11.271556 8.070268
## 6 8.639363 7.745393 5.757086 11.083409 8.514387 10.425552 7.514845
##      Zufsp      Zw10      Zwilch      Zwint      Zxdb      Zxdc      Zyg11a
## 1 8.991659 10.189572 8.129773 12.19106 8.053964 11.136411 1.932786e+00
## 2 8.687270 10.428642 7.859588 11.62072 7.483709 10.072639 1.450870e+00
## 3 8.295458 9.696882 7.346490 11.68577 6.806538 8.472254 3.855983e-08
## 4 7.854022 5.836590 1.873525 11.09629 6.383086 7.709168 1.948870e-08
## 5 9.045376 10.787290 8.217096 11.97950 7.840809 10.431222 1.688476e+00
## 6 7.803390 8.999208 6.944533 10.99948 6.869087 9.945268 1.163569e+00
##      Zyg11b      Zyx      Zzef1      Zzz3
## 1 12.451712 12.639013 11.981149 11.655210
## 2 12.001075 12.255900 11.916558 11.636655
## 3 10.078662 8.229076 8.698480 8.953047
## 4 8.781701 7.028917 8.544699 7.727835
## 5 12.359876 12.614714 12.275354 11.995434
## 6 11.260066 11.447326 10.789633 10.463813
## [ reached getOption("max.print") -- omitted 2 rows ]
```

```
# append cluster assignment
```

```
mydatafit_t <- data.frame(mydatafit_t, clusterfit_t$cluster)
```

```
# Ward Hierarchical Clustering with sample in rows
```

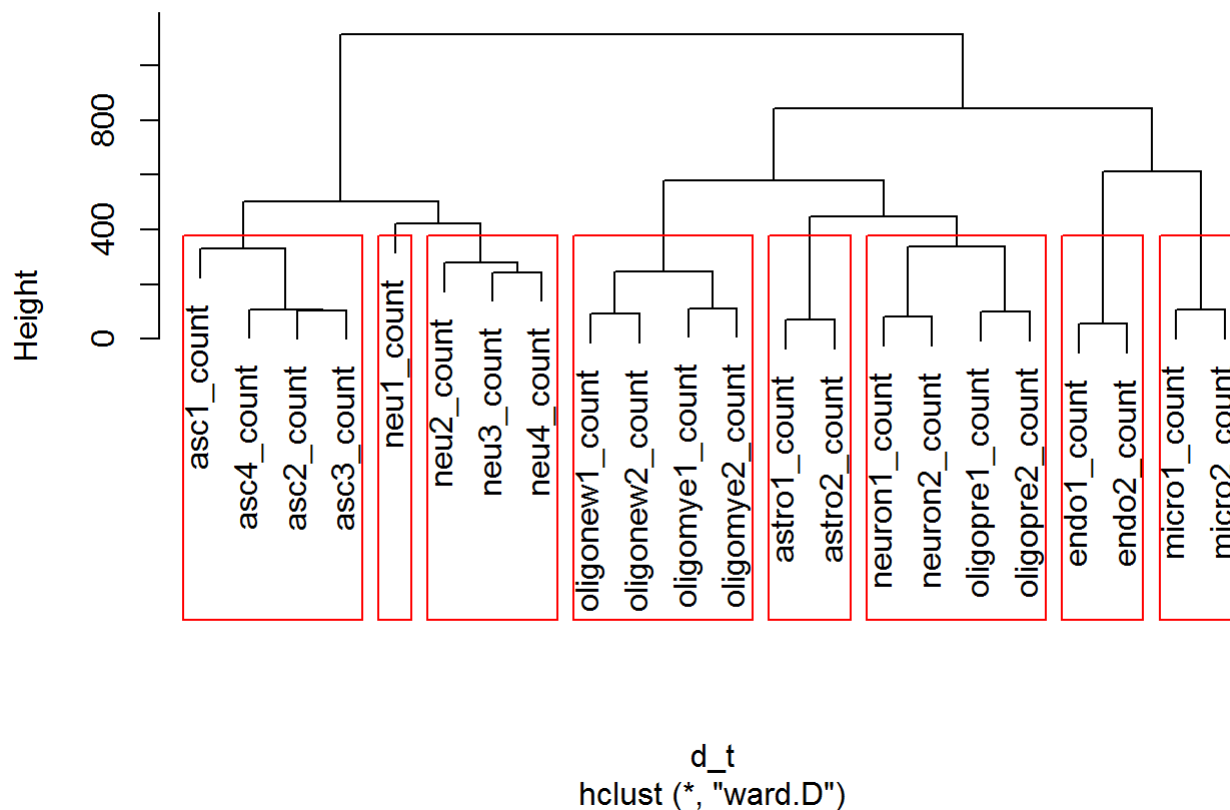
```
dfit_t <- dist(mydatafit_t, method = "euclidean") # distance matrix
```

```
clusterfit_t <- hclust(d_t, method="ward")
```

```
## The "ward" method has been renamed to "ward.D"; note new "ward.D2"
```

```
plot(clusterfit_t) # display dendrogram
groupsfit_t <- cutree(clusterfit_t, k=8) # cut tree into 8 clusters
# draw dendrogram with red borders around the 8 clusters
rect.hclust(clusterfit_t, k=8, border="red")
```

Cluster Dendrogram



```
dev.print(pdf, "logcountdataDGEfit_ClustersDendrogram.pdf")
```

```
## png
## 2
```

```
clusteredfit_samples<-as.data.frame(groupsfit_t)#converting List or 'Values' object to Data object
#include columns from metatable
clusteredfit_samples$individual_id<-metatable$individual_id
clusteredfit_samples$cell_type<-metatable$cell_type
clusteredfit_samples$activated.stemcell_non.stemcell<-metatable$activated.stemcell_non.stemcell
clusteredfit_samples$cell_type_full_name<-metatable$cell_type_full_name
clusteredfit_samples$cell_tissue<-metatable$cell_tissue
clusteredfit_samples$GSE_id<-metatable$GSE_id
#lets view the clustered_samples data
print(clusteredfit_samples)
```

```

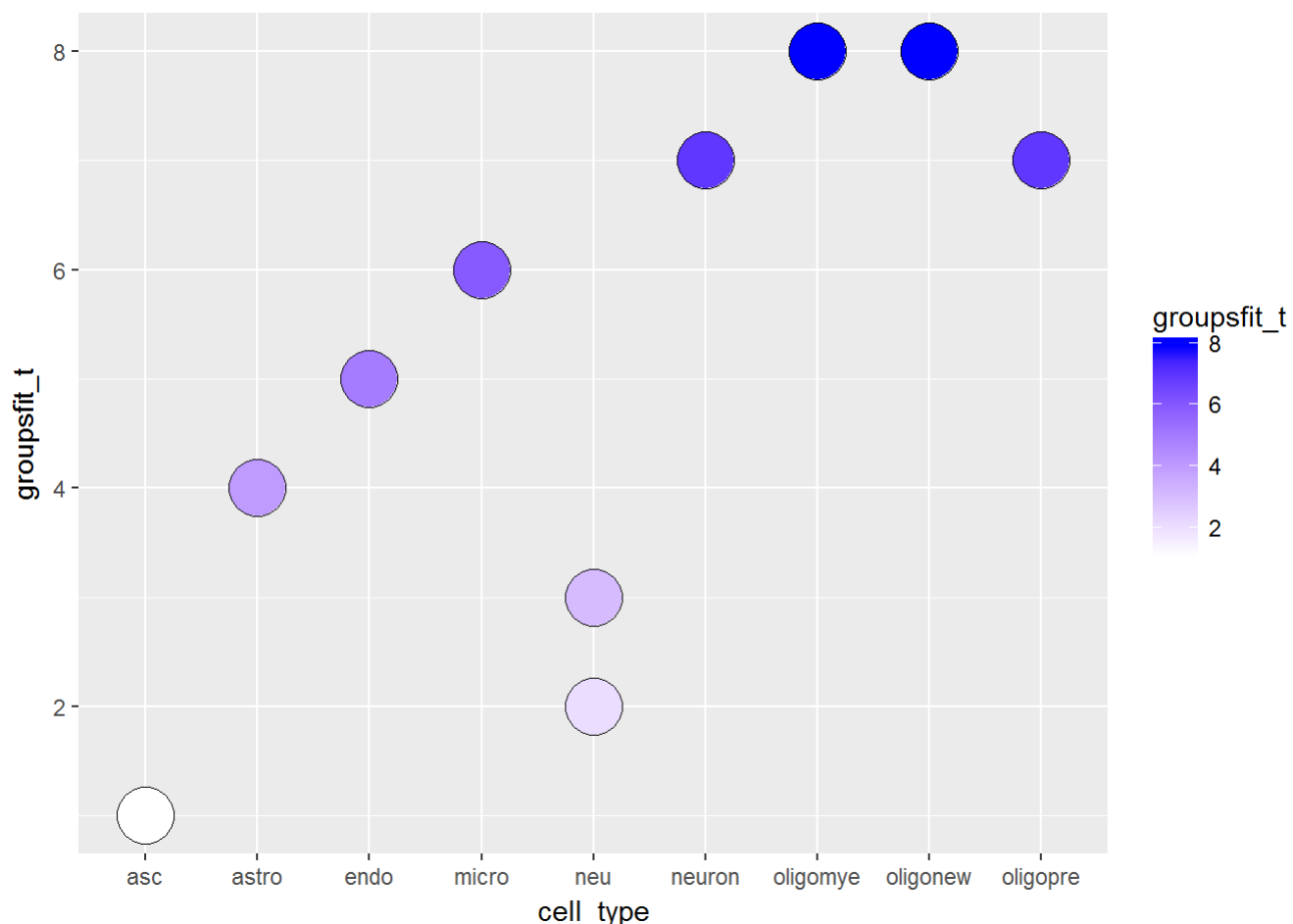
##          groupsfit_t individual_id cell_type
## asc1_count          1           1      asc
## asc2_count          1           2      asc
## asc3_count          1           3      asc
## asc4_count          1           4      asc
## neu1_count          2           1      neu
## neu2_count          3           2      neu
## neu3_count          3           3      neu
## neu4_count          3           4      neu
## astro1_count        4           1    astro
## astro2_count        4           2    astro
## endo1_count          5           1    endo
## endo2_count          5           2    endo
## micro1_count        6           1    micro
## micro2_count        6           2    micro
## neuron1_count       7           1   neuron
## neuron2_count       7           2   neuron
## oligopre1_count     7           1 oligopre
## oligopre2_count     7           2 oligopre
## oligonew1_count     8           1 oligonew
## oligonew2_count     8           2 oligonew
## oligomye1_count     8           1 oligomye
## oligomye2_count     8           2 oligomye
##          activated.stemcell_non.stemcell
## asc1_count                                asc
## asc2_count                                asc
## asc3_count                                asc
## asc4_count                                asc
## neu1_count                                nonsc
## neu2_count                                nonsc
## neu3_count                                nonsc
## neu4_count                                nonsc
## astro1_count                             nonsc
## astro2_count                             nonsc
## endo1_count                             nonsc
## endo2_count                             nonsc
## micro1_count                             nonsc
## micro2_count                             nonsc
## neuron1_count                           nonsc
## neuron2_count                           nonsc
## oligopre1_count                         nonsc
## oligopre2_count                         nonsc
## oligonew1_count                         nonsc
## oligonew2_count                         nonsc
## oligomye1_count                         nonsc
## oligomye2_count                         nonsc
##          cell_type_full_name      cell_tissue  GSE_id
## asc1_count      neural_progenitor_cells  hippocampus GSE68270
## asc2_count      neural_progenitor_cells  hippocampus GSE68270
## asc3_count      neural_progenitor_cells  hippocampus GSE68270
## asc4_count      neural_progenitor_cells  hippocampus GSE68270
## neu1_count      niche_cells_mostly_neurons  hippocampus GSE68270
## neu2_count      niche_cells_mostly_neurons  hippocampus GSE68270

```

```
## neu3_count      niche_cells_mostly_neurons      hippocampus GSE68270
## neu4_count      niche_cells_mostly_neurons      hippocampus GSE68270
## astro1_count    astrocyte cerebral_cortex GSE52564
## astro2_count    astrocyte cerebral_cortex GSE52564
## endo1_count     endothelial_cells cerebral_cortex GSE52564
## endo2_count     endothelial_cells cerebral_cortex GSE52564
## micro1_count    microglia cerebral_cortex GSE52564
## micro2_count    microglia cerebral_cortex GSE52564
## neuron1_count   neuron cerebral_cortex GSE52564
## neuron2_count   neuron cerebral_cortex GSE52564
## oligopre1_count oligodendrocyte_precursor_cells cerebral_cortex GSE52564
## oligopre2_count oligodendrocyte_precursor_cells cerebral_cortex GSE52564
## oligonew1_count newly_formed_oligodendrocytes cerebral_cortex GSE52564
## oligonew2_count newly_formed_oligodendrocytes cerebral_cortex GSE52564
## oligomye1_count myelinating_oligodendrocytes cerebral_cortex GSE52564
## oligomye2_count myelinating_oligodendrocytes cerebral_cortex GSE52564
```

```
View(clusteredfit_samples)
write.table(clusteredfit_samples,file="clusteredfit_samples.txt",sep="\t")
```

```
ggplot(clusteredfit_samples, aes(x=cell_type, y=groupsfit_t, fill=groupsfit_t)) + geom_point(shape=21, size=10) + scale_fill_gradient(low='white', high='blue')
```



```
dev.print(pdf, "logcountdataDGEfit_ClusterPlot.pdf")
```

```
## png
## 2
```

The clustering result shows that each cell type cluster with each other. These results give confidence that we should be able to find differentially expressed genes 'between clusters' of cell types or stem cells i.e. asc vs non-stemcells with the edgeR differential gene expression analysis.

edgeR differential gene expression FDR <0.05, p-value <0.05, 10 FC (fold change) and higher expression (or counts) in stem cells relative to non-stem cells

```
colnames(fit)
```

```
## [1] "(Intercept)"
## [2] "individual_id"
## [3] "activated.stemcell_non.stemcellnonsc"
## [4] "cell_tissuehippocampus"
```

```
colnames(design)
```

```
## [1] "(Intercept)"
## [2] "individual_id"
## [3] "activated.stemcell_non.stemcellnonsc"
## [4] "cell_tissuehippocampus"
```

In DE(differential expression) testing we need to specify for which variable(s) dependent differential gene expression we want. We can get differential gene expression for the coefficients shown above i.e. [2]individual_id (individuals), [3]activated.stemcell_non.stemcellnonsc (activated stem cells vs other non-stem cells) and [4]cell_tissuehippocampus (hippocampus vs cerebral cortex)

Note: The fit was done using all variables [2], [3] and [4]. So this should be a good representation of gene expression changes for the selected coefficient only without any of the other effects. This variable we are calling deGenes_lrt is also called just lrt in the edgeR vineattest.

```
#Alternatives
#deGenes_lrt<- glmQLFTest(fit, coef=3)
#deGenes_lrt<- glmLRT(fit, coef=3)
deGenes_lrt <- glmLRT(fit, coef="activated.stemcell_non.stemcellnonsc")
summary(deGenes_lrt)
```

##	Length	Class	Mode
## coefficients	59236	-none-	numeric
## fitted.values	325798	-none-	numeric
## deviance	14809	-none-	numeric
## iter	14809	-none-	numeric
## failed	14809	-none-	logical
## method	1	-none-	character
## unshrunk.coefficients	59236	-none-	numeric
## df.residual	14809	-none-	numeric
## design	88	-none-	numeric
## offset	22	CompressedMatrix	numeric
## dispersion	14809	-none-	numeric
## prior.count	1	-none-	numeric
## samples	3	data.frame	list
## prior.df	1	-none-	numeric
## AveLogCPM	14809	-none-	numeric
## table	4	data.frame	list
## comparison	1	-none-	character
## df.test	14809	-none-	numeric

```
print(deGenes_lrt)
```

```
## An object of class "DGELRT"
## $coefficients
##           (Intercept) individual_id
## 0610007P14Rik      -9.800632      -0.1138324
## 0610009B22Rik     -10.847609      -0.2382586
## 0610009O20Rik      -9.156801       0.1797940
## 0610010F05Rik      -9.120570      -0.4297015
## 0610010K14Rik      -9.920908      -0.1404812
##           activated.stemcell_non.stemcellnonsc cell_tissuehippocampus
## 0610007P14Rik                0.39844016                1.9581262
## 0610009B22Rik               -0.04623036                2.7086765
## 0610009O20Rik               -0.59965622               -0.1809347
## 0610010F05Rik               -0.53921803               -0.3724109
## 0610010K14Rik                0.08966541                1.0867778
## 14804 more rows ...
##
## $fitted.values
##           asc1_count asc2_count asc3_count asc4_count neu1_count
## 0610007P14Rik  4662.8494  5832.3597  6712.4524  6747.9807  2685.2108
## 0610009B22Rik  3061.1054  3380.8725  3435.7639  3049.8152  1130.0170
## 0610009O20Rik  1402.1257  2352.3681  3631.3461  4896.4993   297.5991
## 0610010F05Rik   652.6781   595.1966   499.4198   366.0386   147.1299
## 0610010K14Rik  1684.2672  2051.3003  2298.7487  2250.1395   712.2589
##           neu2_count neu3_count neu4_count astro1_count astro2_count
## 0610007P14Rik  7350.1138  5564.2128  2544.57302   2996.8193   2877.7532
## 0610009B22Rik  2731.2299  1825.6837   737.21527    595.2438    504.7141
## 0610009O20Rik  1092.6292  1109.4504   680.52569   2820.4910   3632.8139
## 0610010F05Rik   293.6197   162.0553    54.03099   1688.9141   1182.4124
## 0610010K14Rik  1898.3614  1399.3099   623.08950   1899.9299   1776.4619
##           endo1_count endo2_count micro1_count micro2_count
## 0610007P14Rik   2931.3894   2556.3237   1930.9926   1438.6775
## 0610009B22Rik    582.2478    448.3403    383.5438    252.3221
## 0610009O20Rik   2758.9110   3227.0482   1817.3759   1816.1557
## 0610010F05Rik   1652.0399   1050.3434   1088.2473    591.1244
## 0610010K14Rik   1858.4485   1578.0407   1224.2148    888.1081
##           neuron1_count neuron2_count oligopre1_count oligopre2_count
## 0610007P14Rik    3662.8909    3181.2303    3879.1114    3261.5062
## 0610009B22Rik     727.5424     557.9394     770.4892     572.0185
## 0610009O20Rik    3447.3720    4015.9169    3650.8704    4117.2554
## 0610010F05Rik    2064.2913    1307.1052    2186.1464    1340.0890
## 0610010K14Rik    2322.2074    1963.8009    2459.2873    2013.3559
##           oligonew1_count oligonew2_count oligomye1_count
## 0610007P14Rik    2834.7218    2289.2615    1409.7104
## 0610009B22Rik     563.0471     401.5016     280.0040
## 0610009O20Rik    2667.9311    2889.9146    1326.7652
## 0610010F05Rik    1597.5610     940.6127     794.4689
## 0610010K14Rik    1797.1630    1413.1809     893.7312
##           oligomye2_count
## 0610007P14Rik    1398.7604
## 0610009B22Rik     245.3213
## 0610009O20Rik    1765.7651
## 0610010F05Rik     574.7233
## 0610010K14Rik     863.4669
```

```

## 14804 more rows ...
##
## $deviance
## [1] 16.61718 14.50197 14.62722 18.44802 15.77225
## 14804 more elements ...
##
## $iter
## [1] 6 7 5 9 5
## 14804 more elements ...
##
## $failed
## [1] FALSE FALSE FALSE FALSE FALSE
## 14804 more elements ...
##
## $method
## [1] "levenberg"
##
## $unshrunk.coefficients
##              (Intercept) individual_id
## 0610007P14Rik   -9.800696   -0.1138334
## 0610009B22Rik  -10.847919   -0.2382706
## 0610009O20Rik   -9.156845    0.1798048
## 0610010F05Rik   -9.120274   -0.4298207
## 0610010K14Rik   -9.921002   -0.1404850
##              activated.stemcell_non.stemcellnonsc cell_tissuehippocampus
## 0610007P14Rik                0.39844486                1.9581783
## 0610009B22Rik               -0.04623105                2.7089875
## 0610009O20Rik               -0.59968492               -0.1809483
## 0610010F05Rik               -0.53945568               -0.3725544
## 0610010K14Rik                0.08966799                1.0868398
## 14804 more rows ...
##
## $df.residual
## [1] 18 18 18 18 18
## 14804 more elements ...
##
## $design
##              (Intercept) individual_id activated.stemcell_non.stemcellnonsc
## asc1_count            1            1                                0
## asc2_count            1            2                                0
## asc3_count            1            3                                0
## asc4_count            1            4                                0
## neu1_count            1            1                                1
##              cell_tissuehippocampus
## asc1_count                1
## asc2_count                1
## asc3_count                1
## asc4_count                1
## neu1_count                1
## 17 more rows ...
##
## $offset
##              [,1]      [,2]      [,3]      [,4]      [,5]      [,6]      [,7]
## [1,] 16.40373 16.74136 16.99574 17.11485 15.45342 16.57421 16.40968

```



```

##          [,8]      [,9]      [,10]      [,11]      [,12]      [,13]      [,14]
## [1,] 15.74112 17.52139 17.59468 17.49932 17.47624 17.08187 16.9014
##          [,15]      [,16]      [,17]      [,18]      [,19]      [,20]      [,21]
## [1,] 17.72209 17.69494 17.77945 17.71986 17.46578 17.3659 16.76722
##          [,22]
## [1,] 16.87326
## attr("class")
## [1] "CompressedMatrix"
## attr("Dims")
## [1] 5 22
## attr("repeat.row")
## [1] TRUE
## attr("repeat.col")
## [1] FALSE
## 14804 more rows ...
##
## $dispersion
## [1] 0.5069459 0.3713588 0.3725753 0.6542342 0.4283765
## 14804 more elements ...
##
## $prior.count
## [1] 0.125
##
## $samples
##          group lib.size norm.factors
## asc1_count      1 13521650      0.9840589
## asc2_count      1 15578146      1.1971956
## asc3_count      1 19833606      1.2126998
## asc4_count      1 22775468      1.1896453
## neu1_count      1 6742110      0.7630263
## 17 more rows ...
##
## $prior.df
## [1] 3.766678
##
## $AveLogCPM
## [1] 7.493147 6.105186 6.456741 4.888942 6.082848
## 14804 more elements ...
##
## $table
##          logFC logCPM          LR PValue
## 0610007P14Rik 0.5748276 7.493147 0.62182220 0.4303710
## 0610009B22Rik -0.0666963 6.105186 0.01148737 0.9146468
## 0610009020Rik -0.8651211 6.456741 1.87449241 0.1709614
## 0610010F05Rik -0.7779272 4.888942 0.77801353 0.3777494
## 0610010K14Rik 0.1293598 6.082848 0.03709474 0.8472723
## 14804 more rows ...
##
## $comparison
## [1] "activated.stemcell_non.stemcellnonsc"
##
## $df.test
## [1] 1 1 1 1 1
## 14804 more elements ...

```

Both from `deGenes_lrt` we can get any feature as tables by using the options `$fitted.values` and `$table` etc.

```
#topTags is a special edgeR function to add FDR column
deGenes_lrt_fdr<-topTags(deGenes_lrt, n = nrow(deGenes_lrt$table))$table
deGenes_lrt_fdr<-deGenes_lrt_fdr[deGenes_lrt_fdr$FDR<0.05,]
deGenes_lrt_fdr<-deGenes_lrt_fdr[deGenes_lrt_fdr$PValue<0.05,]
deGenes_lrt_fdr$gene<-rownames(deGenes_lrt_fdr)
```

```
#get counts original from DGEList object countdataDGE
countdataDGE_counts<-as.data.frame(countdataDGE$counts)
countdataDGE_counts$gene<-rownames(countdataDGE_counts)
fit_fittedcounts<-as.data.frame(deGenes_lrt$fitted.values)
fit_fittedcounts$gene<-rownames(fit_fittedcounts)
```

```
#Now merge the datasets to have the counts and fitted.values i.e. fitted counts in the same file
as LogFC, FDR and p-value
deGenes_lrt_fdr<-merge(deGenes_lrt_fdr, countdataDGE_counts, by='gene')
deGenes_lrt_fdr<-merge(deGenes_lrt_fdr, fit_fittedcounts, by='gene')
dim(deGenes_lrt_fdr)
```

```
## [1] 787 50
```

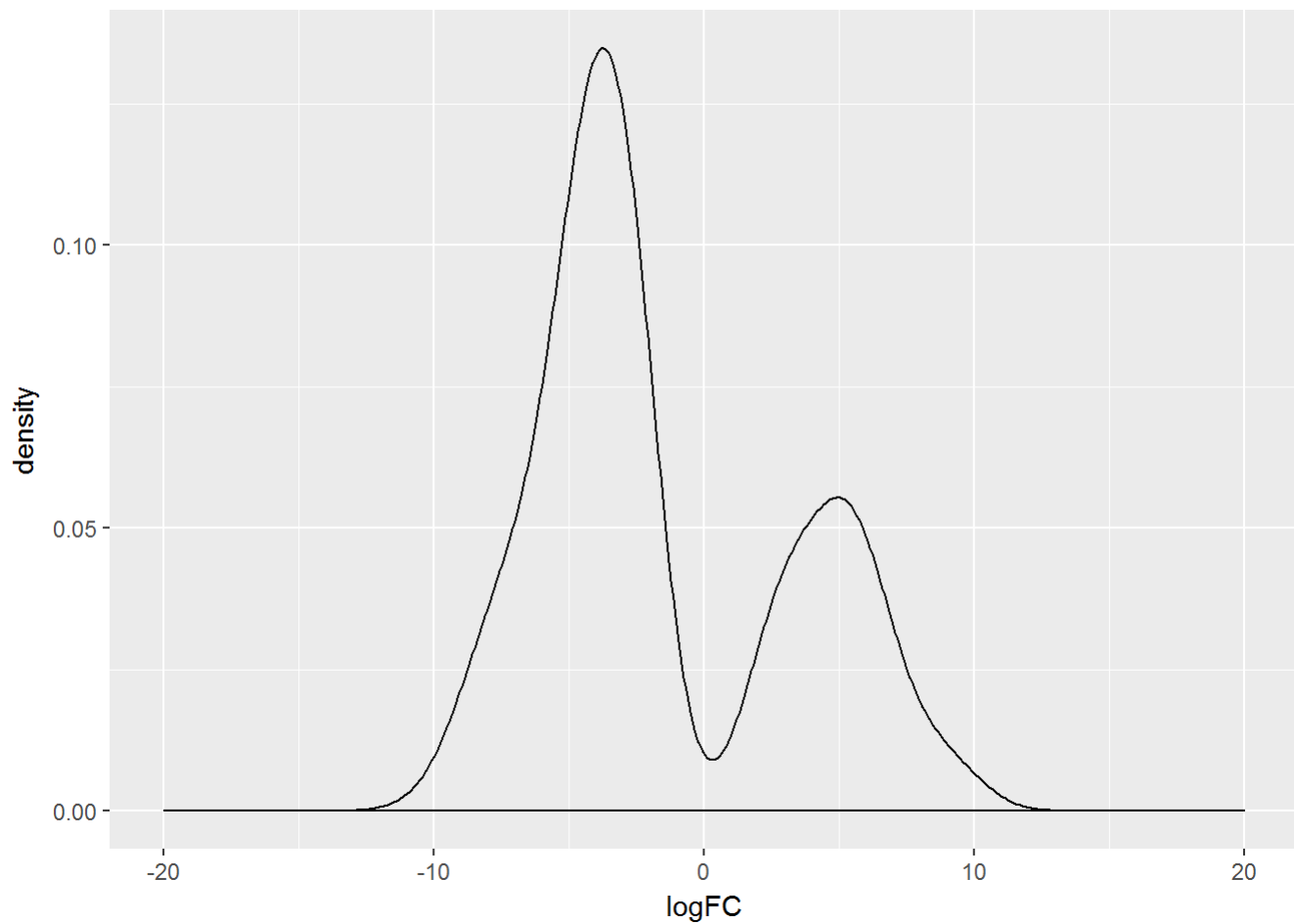
```
glimpse(deGenes_lrt_fdr)
```

```

## Observations: 787
## Variables: 50
## $ gene                <chr> "1700001P01Rik", "1700007G11Rik", "1700013F0...
## $ logFC               <dbl> -8.338962, -6.909403, -9.135014, -4.897728, ...
## $ logCPM              <dbl> 0.38673742, -0.47711779, -0.83273155, 3.1983...
## $ LR                  <dbl> 10.414788, 11.320225, 10.774209, 12.045127, ...
## $ PValue              <dbl> 1.250102e-03, 7.666743e-04, 1.029242e-03, 5....
## $ FDR                 <dbl> 0.0328240458, 0.0243119478, 0.0284898050, 0....
## $ asc1_count.x        <int> 76, 102, 78, 1023, 0, 12, 90, 1, 385, 7, 5, ...
## $ asc2_count.x        <int> 16, 33, 25, 496, 11, 8, 198, 81, 545, 30, 36...
## $ asc3_count.x        <int> 14, 41, 20, 877, 29, 26, 336, 31, 670, 49, 6...
## $ asc4_count.x        <int> 12, 52, 52, 936, 70, 11, 249, 43, 761, 22, 5...
## $ neu1_count.x        <int> 0, 0, 0, 3, 0, 0, 1, 0, 5, 2, 8, 15, 35, 1, ...
## $ neu2_count.x        <int> 0, 0, 0, 6, 0, 0, 13, 0, 2, 0, 1034, 82, 28,...
## $ neu3_count.x        <int> 0, 0, 0, 51, 1, 0, 1, 3, 18, 1, 818, 124, 39...
## $ neu4_count.x        <int> 0, 1, 0, 4, 0, 0, 0, 0, 48, 1, 293, 25, 40, ...
## $ astro1_count.x      <int> 7, 2, 1, 40, 89, 0, 299, 21, 538, 29, 21, 58...
## $ astro2_count.x      <int> 5, 31, 2, 22, 147, 1, 261, 71, 542, 41, 15, ...
## $ endo1_count.x       <int> 28, 0, 1, 0, 15, 5, 22, 38, 371, 88, 692, 69...
## $ endo2_count.x       <int> 30, 1, 2, 12, 15, 0, 39, 35, 296, 89, 526, 4...
## $ micro1_count.x      <int> 2, 5, 0, 6, 11, 0, 27, 34, 160, 98, 203, 88,...
## $ micro2_count.x      <int> 0, 0, 0, 0, 6, 0, 4, 12, 157, 130, 346, 49, ...
## $ neuron1_count.x     <int> 4, 3, 16, 63, 97, 1, 337, 216, 352, 146, 561...
## $ neuron2_count.x     <int> 10, 1, 24, 63, 54, 0, 334, 123, 247, 65, 427...
## $ oligopre1_count.x   <int> 2, 4, 0, 306, 41, 0, 231, 55, 657, 107, 560,...
## $ oligopre2_count.x   <int> 4, 4, 0, 193, 99, 0, 83, 53, 441, 157, 1097,...
## $ oligonew1_count.x   <int> 120, 1, 0, 93, 38, 0, 160, 98, 488, 74, 67, ...
## $ oligonew2_count.x   <int> 108, 0, 0, 27, 23, 0, 92, 63, 346, 119, 201,...
## $ oligomye1_count.x   <int> 99, 0, 0, 30, 8, 0, 63, 25, 249, 98, 87, 85,...
## $ oligomye2_count.x   <int> 128, 1, 2, 35, 40, 0, 61, 51, 151, 137, 433,...
## $ asc1_count.y        <dbl> 35.727097, 37.689125, 35.457764, 679.133503,...
## $ asc2_count.y        <dbl> 30.294269, 63.987180, 46.138498, 839.836301,...
## $ asc3_count.y        <dbl> 23.635633, 99.957156, 55.240752, 955.604404,...
## $ asc4_count.y        <dbl> 16.107558, 136.392504, 57.771202, 949.767561...
## $ neu1_count.y        <dbl> 7.512848e-08, 1.003573e-01, 1.976536e-08, 8....
## $ neu2_count.y        <dbl> 1.394088e-07, 3.728624e-01, 5.628332e-08, 2....
## $ neu3_count.y        <dbl> 7.154341e-08, 3.831265e-01, 4.432498e-08, 1....
## $ neu4_count.y        <dbl> 2.217944e-08, 2.378140e-01, 2.108720e-08, 8....
## $ astro1_count.y      <dbl> 76.3419616, 3.3536676, 3.3069133, 63.5341745...
## $ astro2_count.y      <dbl> 49.6965390, 4.3711630, 3.3035053, 60.3180039...
## $ endo1_count.y       <dbl> 74.6751800, 3.2804466, 3.2347131, 62.1470266...
## $ endo2_count.y       <dbl> 44.1457045, 3.8829278, 2.9345216, 53.5808092...
## $ micro1_count.y      <dbl> 49.1907411, 2.1609268, 2.1308008, 40.9380773...
## $ micro2_count.y      <dbl> 24.8448320, 2.1852792, 1.6515241, 30.1548297...
## $ neuron1_count.y     <dbl> 93.309689, 4.099052, 4.041906, 77.655249, 41...
## $ neuron2_count.y     <dbl> 54.9373503, 4.8321295, 3.6518806, 66.6789152...
## $ oligopre1_count.y   <dbl> 98.8177610, 4.3410192, 4.2805000, 82.2392396...
## $ oligopre2_count.y   <dbl> 56.3236515, 4.9540646, 3.7440330, 68.3615056...
## $ oligonew1_count.y   <dbl> 72.2126367, 3.1722682, 3.1280428, 60.0976208...
## $ oligonew2_count.y   <dbl> 39.5337496, 3.4772736, 2.6279486, 47.9831576...
## $ oligomye1_count.y   <dbl> 35.9114260, 1.5775726, 1.5555792, 29.8866149...
## $ oligomye2_count.y   <dbl> 24.1554939, 2.1246470, 1.6057014, 29.3181618...

```

```
ggplot(deGenes_lrt_fdr, aes(logFC, colour = logFC)) + geom_density() + xlim(-20, 20)
```



```
dev.print(pdf, "deGenes_lrt_fdr_initial_DensityPlot.pdf")
```

```
## png
## 2
```

The plot shows both upregulated (FC up) and downregulated (FC down) genes

```
colnames(design)
```

```
## [1] "(Intercept)"
## [2] "individual_id"
## [3] "activated.stemcell_non.stemcellnonsc"
## [4] "cell_tissuehippocampus"
```

```
head(design, n=10)
```

```
##          (Intercept) individual_id
## asc1_count          1          1
## asc2_count          1          2
## asc3_count          1          3
## asc4_count          1          4
## neu1_count          1          1
## neu2_count          1          2
## neu3_count          1          3
## neu4_count          1          4
## astro1_count        1          1
## astro2_count        1          2
##          activated.stemcell_non.stemcellnonsc cell_tissuehippocampus
## asc1_count                                0          1
## asc2_count                                0          1
## asc3_count                                0          1
## asc4_count                                0          1
## neu1_count                                1          1
## neu2_count                                1          1
## neu3_count                                1          1
## neu4_count                                1          1
## astro1_count                             1          0
## astro2_count                             1          0
```

Note that in the design matrix non-stemcells are assigned 1 while stem cells are assigned 0. Thus, logFC is represented as $\log(\text{non-stemcells}/\text{stemcells})$.

```
deGenes_lrt_fdr<-deGenes_lrt_fdr[abs(deGenes_lrt_fdr$logFC)>=3.3,]#10 fold change in other cell types relative to stem cells
dim(deGenes_lrt_fdr)
```

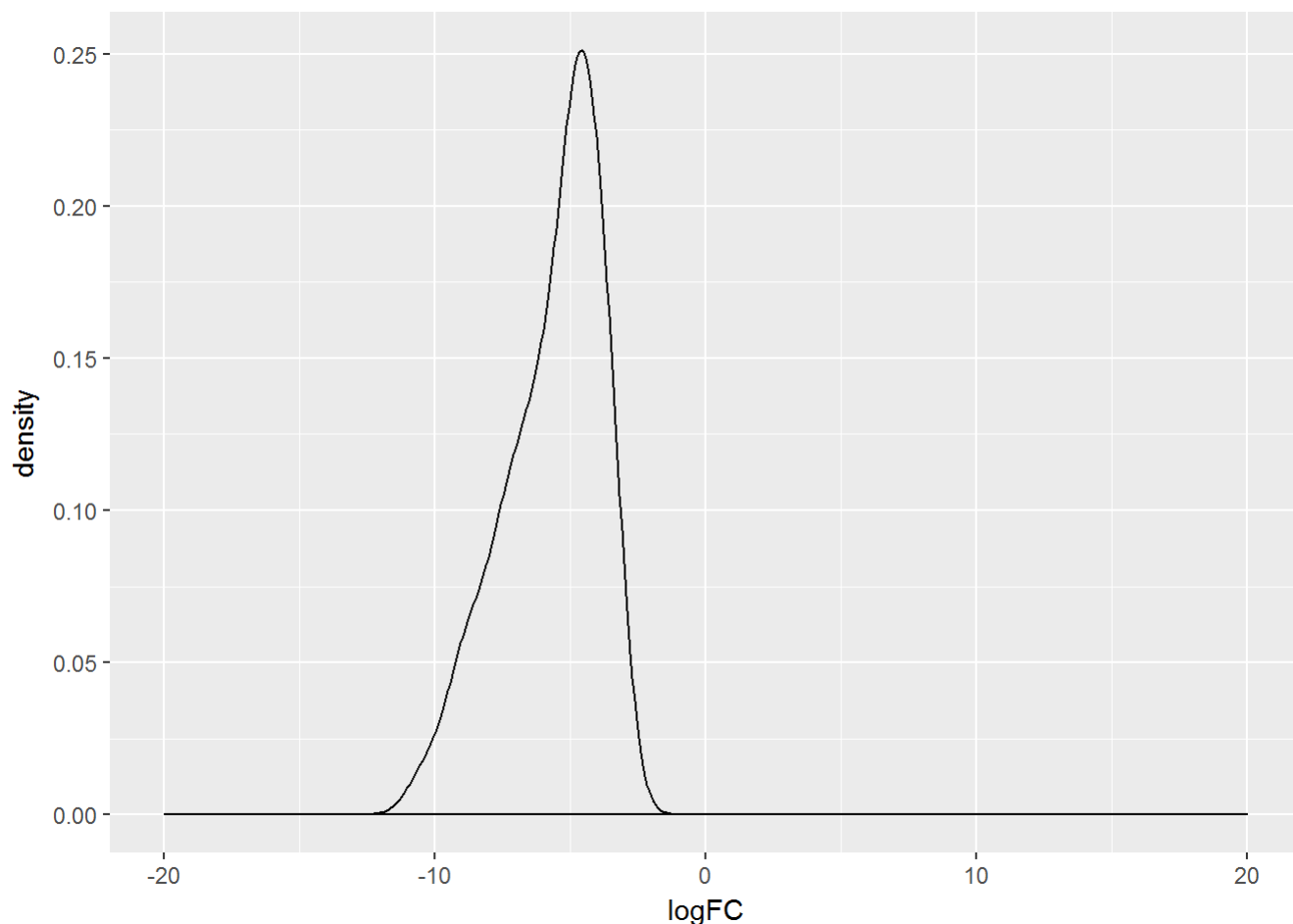
```
## [1] 562  50
```

```
#Selecting higher expression (or counts) in stem cells relative to non-stem cells
#Keep values where fitted.values or counts of stem cells in columns 29 to 32 is higher than fitted.values or counts of non-stem cells in columns 33 to 50
KeepValuesSum<-rowSums(deGenes_lrt_fdr[,29:32])>rowSums(deGenes_lrt_fdr[,33:50])
deGenes_lrt_fdr<-deGenes_lrt_fdr[KeepValuesSum,]
dim(deGenes_lrt_fdr)
```

```
## [1] 78 50
```

```
write.table(deGenes_lrt_fdr,file="deGenes_lrt_fdr.txt",sep="\t")
```

```
ggplot(deGenes_lrt_fdr, aes(logFC, colour = logFC)) + geom_density() + xlim(-20, 20)
```



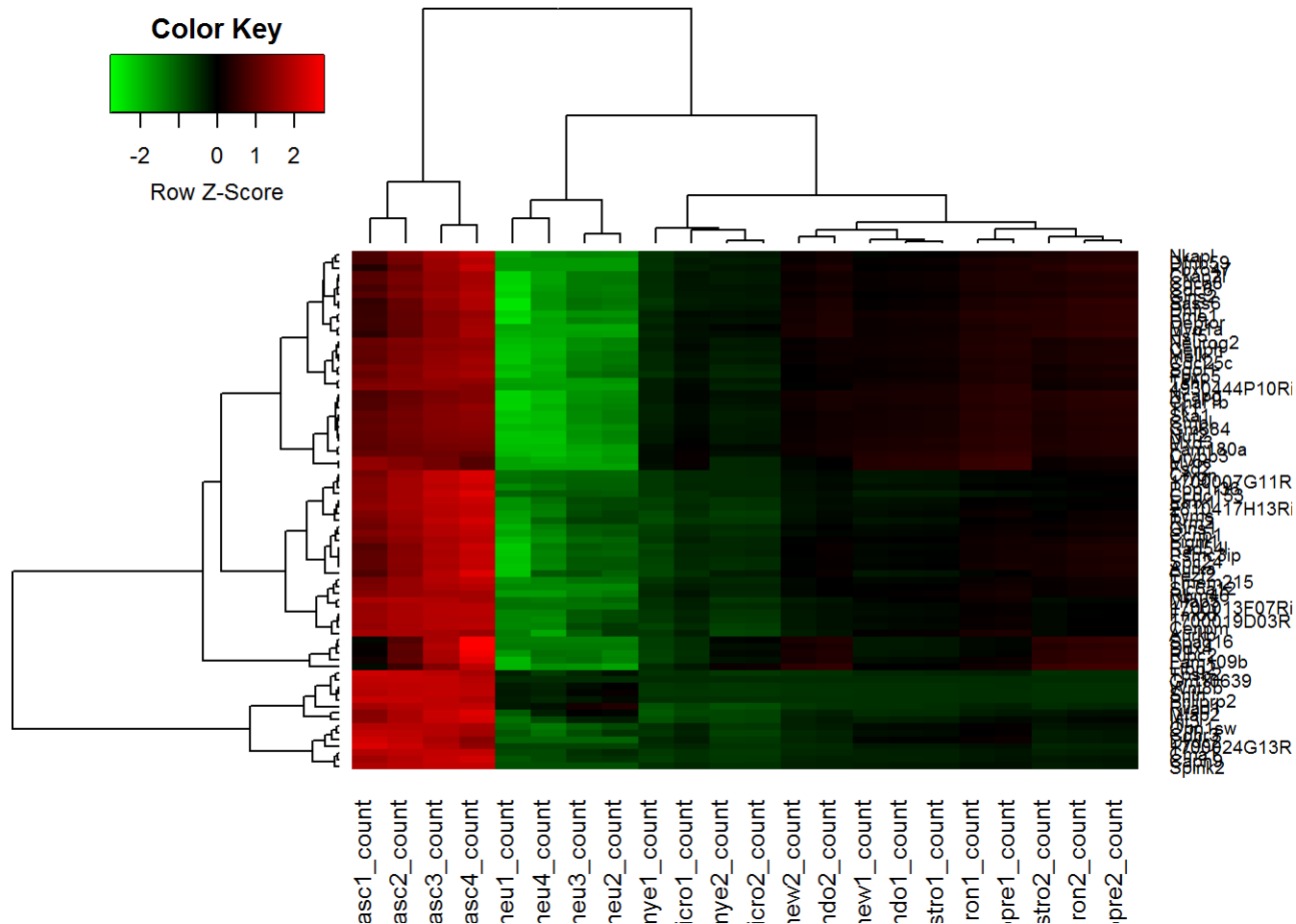
```
dev.print(pdf, "deGenes_lrt_fdr_final_DensityPlot.pdf")
```

```
## png
## 2
```

Here in the density plot we see downregulated for FC=non-stem cell/stem-cell, which is same as genes upregulated for FC=stem cells/non-stem cells

Heatmap and correlation plots of differentially expressed genes

```
#Heatmap
myheatmap<-logcountdataDGEfit[deGenes_lrt_fdr$gene,]#transformed counts for differentially expressed genes
mapdata_matrix<-data.matrix(myheatmap)
colfunc<-colorRampPalette(c("green","black","red"))
hr<-hclust(as.dist(1-cor(t(mapdata_matrix),method="pearson")),method="complete")
plotheatmap<-heatmap.2(mapdata_matrix,Rowv=as.dendrogram(hr),scale="row",density.info="none",trace="none",col=colfunc(256))
```



```
dev.print(pdf, "logcpmcountdataDGE_Heatmap_clustering.pdf")
```

```
## png
## 2
```

```
#Correlation
corrdata<-logcountdataDGEfit[deGenes_lrt_fdr$gene,]#transformed counts for differentially expressed genes
rel<-rcorr(as.matrix(corrdata))
#Extract the correlation coefficients r
rel$r
```

```

##          asc1_count asc2_count asc3_count asc4_count neu1_count
## asc1_count      1.0000000  0.9848628  0.9354899  0.8547570  0.8576773
## asc2_count      0.9848628  1.0000000  0.9825570  0.9317112  0.8917147
## asc3_count      0.9354899  0.9825570  1.0000000  0.9829982  0.8993149
## asc4_count      0.8547570  0.9317112  0.9829982  1.0000000  0.8766047
## neu1_count      0.8576773  0.8917147  0.8993149  0.8766047  1.0000000
## neu2_count      0.8674847  0.9084392  0.9223781  0.9049404  0.9902024
## neu3_count      0.8379770  0.8890735  0.9142789  0.9081894  0.9834941
## neu4_count      0.7946644  0.8548614  0.8908381  0.8961919  0.9714681
## astro1_count    0.7282772  0.7819361  0.8125966  0.8149625  0.8108669
## astro2_count    0.6702590  0.7457139  0.8010067  0.8280965  0.7940634
## endo1_count     0.7286416  0.7822380  0.8128227  0.8151071  0.8113098
## endo2_count     0.6728371  0.7478577  0.8026153  0.8291255  0.7967586
## micro1_count    0.7354029  0.7878042  0.8169566  0.8177058  0.8196882
## micro2_count    0.6855997  0.7582853  0.8102103  0.8336875  0.8098330
## neuron1_count   0.7249526  0.7791735  0.8105173  0.8136217  0.8068532
## neuron2_count   0.6681041  0.7439126  0.7996432  0.8272088  0.7917919
## oligopre1_count 0.7240016  0.7783803  0.8099171  0.8132306  0.8057124
## oligopre2_count 0.6675730  0.7434672  0.7993044  0.8269861  0.7912292
## oligonew1_count 0.7291944  0.7826955  0.8131650  0.8153254  0.8119829
## oligonew2_count 0.6752646  0.7498648  0.8041072  0.8300617  0.7992762
## oligomye1_count 0.7402060  0.7917186  0.8198236  0.8194602  0.8259297
## oligomye2_count 0.6862241  0.7587874  0.8105658  0.8338874  0.8104652
##          neu2_count neu3_count neu4_count astro1_count astro2_count
## asc1_count      0.8674847  0.8379770  0.7946644  0.7282772  0.6702590
## asc2_count      0.9084392  0.8890735  0.8548614  0.7819361  0.7457139
## asc3_count      0.9223781  0.9142789  0.8908381  0.8125966  0.8010067
## asc4_count      0.9049404  0.9081894  0.8961919  0.8149625  0.8280965
## neu1_count      0.9902024  0.9834941  0.9714681  0.8108669  0.7940634
## neu2_count      1.0000000  0.9962730  0.9816009  0.8432910  0.8304977
## neu3_count      0.9962730  1.0000000  0.9937911  0.8495440  0.8453398
## neu4_count      0.9816009  0.9937911  1.0000000  0.8381267  0.8429112
## astro1_count    0.8432910  0.8495440  0.8381267  1.0000000  0.9904596
## astro2_count    0.8304977  0.8453398  0.8429112  0.9904596  1.0000000
## endo1_count     0.8437122  0.8499459  0.8385197  0.9999986  0.9904309
## endo2_count     0.8331136  0.8478538  0.8453836  0.9906331  0.9999559
## micro1_count    0.8515698  0.8574382  0.8458904  0.9994322  0.9893724
## micro2_count    0.8455825  0.8597932  0.8571986  0.9902438  0.9983933
## neuron1_count   0.8394519  0.8458783  0.8345499  0.9998892  0.9905998
## neuron2_count   0.8282831  0.8432088  0.8408175  0.9902523  0.9999693
## oligopre1_count 0.8383538  0.8448289  0.8335282  0.9998181  0.9906010
## oligopre2_count 0.8277331  0.8426791  0.8402974  0.9901925  0.9999523
## oligonew1_count 0.8443513  0.8505556  0.8391164  0.9999912  0.9903823
## oligonew2_count 0.8355445  0.8501868  0.8476816  0.9907214  0.9998332
## oligomye1_count 0.8572609  0.8628652  0.8513045  0.9982829  0.9879013
## oligomye2_count 0.8461744  0.8603586  0.8577625  0.9901678  0.9982558
##          endo1_count endo2_count micro1_count micro2_count
## asc1_count      0.7286416  0.6728371  0.7354029  0.6855997
## asc2_count      0.7822380  0.7478577  0.7878042  0.7582853
## asc3_count      0.8128227  0.8026153  0.8169566  0.8102103
## asc4_count      0.8151071  0.8291255  0.8177058  0.8336875
## neu1_count      0.8113098  0.7967586  0.8196882  0.8098330
## neu2_count      0.8437122  0.8331136  0.8515698  0.8455825

```


## neu3_count	0.8499459	0.8478538	0.8574382	0.8597932
## neu4_count	0.8385197	0.8453836	0.8458904	0.8571986
## astro1_count	0.9999986	0.9906331	0.9994322	0.9902438
## astro2_count	0.9904309	0.9999559	0.9893724	0.9983933
## endo1_count	1.0000000	0.9906197	0.9994865	0.9903066
## endo2_count	0.9906197	1.0000000	0.9898562	0.9988798
## micro1_count	0.9994865	0.9898562	1.0000000	0.9910236
## micro2_count	0.9903066	0.9988798	0.9910236	1.0000000
## neuron1_count	0.9998632	0.9906363	0.9988221	0.9895658
## neuron2_count	0.9902108	0.9998516	0.9889061	0.9979210
## oligopre1_count	0.9997851	0.9905990	0.9986110	0.9893380
## oligopre2_count	0.9901479	0.9998164	0.9887825	0.9977953
## oligonew1_count	0.9999968	0.9905943	0.9995642	0.9903975
## oligonew2_count	0.9907224	0.9999606	0.9902374	0.9992595
## oligomye1_count	0.9983780	0.9886121	0.9996873	0.9909313
## oligomye2_count	0.9902344	0.9987644	0.9910252	0.9999972
##	neuron1_count	neuron2_count	oligopre1_count	
## asc1_count	0.7249526	0.6681041	0.7240016	
## asc2_count	0.7791735	0.7439126	0.7783803	
## asc3_count	0.8105173	0.7996432	0.8099171	
## asc4_count	0.8136217	0.8272088	0.8132306	
## neu1_count	0.8068532	0.7917919	0.8057124	
## neu2_count	0.8394519	0.8282831	0.8383538	
## neu3_count	0.8458783	0.8432088	0.8448289	
## neu4_count	0.8345499	0.8408175	0.8335282	
## astro1_count	0.9998892	0.9902523	0.9998181	
## astro2_count	0.9905998	0.9999693	0.9906010	
## endo1_count	0.9998632	0.9902108	0.9997851	
## endo2_count	0.9906363	0.9998516	0.9905990	
## micro1_count	0.9988221	0.9889061	0.9986110	
## micro2_count	0.9895658	0.9979210	0.9893380	
## neuron1_count	1.0000000	0.9905071	0.9999912	
## neuron2_count	0.9905071	1.0000000	0.9905405	
## oligopre1_count	0.9999912	0.9905405	1.0000000	
## oligopre2_count	0.9904756	0.9999981	0.9905170	
## oligonew1_count	0.9998182	0.9901427	0.9997296	
## oligonew2_count	0.9905956	0.9996595	0.9905222	
## oligomye1_count	0.9973093	0.9872462	0.9969968	
## oligomye2_count	0.9894560	0.9977652	0.9892188	
##	oligopre2_count	oligonew1_count	oligonew2_count	
## asc1_count	0.6675730	0.7291944	0.6752646	
## asc2_count	0.7434672	0.7826955	0.7498648	
## asc3_count	0.7993044	0.8131650	0.8041072	
## asc4_count	0.8269861	0.8153254	0.8300617	
## neu1_count	0.7912292	0.8119829	0.7992762	
## neu2_count	0.8277331	0.8443513	0.8355445	
## neu3_count	0.8426791	0.8505556	0.8501868	
## neu4_count	0.8402974	0.8391164	0.8476816	
## astro1_count	0.9901925	0.9999912	0.9907214	
## astro2_count	0.9999523	0.9903823	0.9998332	
## endo1_count	0.9901479	0.9999968	0.9907224	
## endo2_count	0.9998164	0.9905943	0.9999606	
## micro1_count	0.9887825	0.9995642	0.9902374	
## micro2_count	0.9977953	0.9903975	0.9992595	

```
## neuron1_count      0.9904756      0.9998182      0.9905956
## neuron2_count      0.9999981      0.9901427      0.9996595
## oligopre1_count    0.9905170      0.9997296      0.9905222
## oligopre2_count    1.0000000      0.9900750      0.9996073
## oligonew1_count    0.9900750      1.0000000      0.9907190
## oligonew2_count    0.9996073      0.9907190      1.0000000
## oligomye1_count    0.9870762      0.9985178      0.9892084
## oligomye2_count    0.9976351      0.9903310      0.9991650
##                    oligomye1_count oligomye2_count
## asc1_count         0.7402060      0.6862241
## asc2_count         0.7917186      0.7587874
## asc3_count         0.8198236      0.8105658
## asc4_count         0.8194602      0.8338874
## neu1_count         0.8259297      0.8104652
## neu2_count         0.8572609      0.8461744
## neu3_count         0.8628652      0.8603586
## neu4_count         0.8513045      0.8577625
## astro1_count       0.9982829      0.9901678
## astro2_count       0.9879013      0.9982558
## endo1_count        0.9983780      0.9902344
## endo2_count        0.9886121      0.9987644
## micro1_count       0.9996873      0.9910252
## micro2_count       0.9909313      0.9999972
## neuron1_count      0.9973093      0.9894560
## neuron2_count      0.9872462      0.9977652
## oligopre1_count    0.9969968      0.9892188
## oligopre2_count    0.9870762      0.9976351
## oligonew1_count    0.9985178      0.9903310
## oligonew2_count    0.9892084      0.9991650
## oligomye1_count    1.0000000      0.9909910
## oligomye2_count    0.9909910      1.0000000
```

```
rel_r<-rel$r
write.table(rel_r,file="logcpmcountdataDGE_corr_r-value.txt",sep="\t")
#Extract p-values
rel$P
```

```

##          asc1_count  asc2_count asc3_count asc4_count neu1_count
## asc1_count          NA 0.000000e+00          0          0          0
## asc2_count 0.000000e+00          NA          0          0          0
## asc3_count 0.000000e+00 0.000000e+00          NA          0          0
## asc4_count 0.000000e+00 0.000000e+00          0          NA          0
## neu1_count 0.000000e+00 0.000000e+00          0          0          NA
## neu2_count 0.000000e+00 0.000000e+00          0          0          0
## neu3_count 0.000000e+00 0.000000e+00          0          0          0
## neu4_count 0.000000e+00 0.000000e+00          0          0          0
## astro1_count 4.174439e-14 0.000000e+00          0          0          0
## astro2_count 1.921485e-11 4.884981e-15          0          0          0
## endo1_count 3.996803e-14 0.000000e+00          0          0          0
## endo2_count 1.506506e-11 3.552714e-15          0          0          0
## micro1_count 1.754152e-14 0.000000e+00          0          0          0
## micro2_count 4.354961e-12 8.881784e-16          0          0          0
## neuron1_count 6.172840e-14 0.000000e+00          0          0          0
## neuron2_count 2.350453e-11 5.995204e-15          0          0          0
## oligopre1_count 6.883383e-14 0.000000e+00          0          0          0
## oligopre2_count 2.469536e-11 6.439294e-15          0          0          0
## oligonew1_count 3.730349e-14 0.000000e+00          0          0          0
## oligonew2_count 1.195399e-11 2.664535e-15          0          0          0
## oligomye1_count 9.769963e-15 0.000000e+00          0          0          0
## oligomye2_count 4.091838e-12 8.881784e-16          0          0          0
##          neu2_count neu3_count neu4_count astro1_count astro2_count
## asc1_count          0          0          0 4.174439e-14 1.921485e-11
## asc2_count          0          0          0 0.000000e+00 4.884981e-15
## asc3_count          0          0          0 0.000000e+00 0.000000e+00
## asc4_count          0          0          0 0.000000e+00 0.000000e+00
## neu1_count          0          0          0 0.000000e+00 0.000000e+00
## neu2_count          NA          0          0 0.000000e+00 0.000000e+00
## neu3_count          0          NA          0 0.000000e+00 0.000000e+00
## neu4_count          0          0          NA 0.000000e+00 0.000000e+00
## astro1_count          0          0          0          NA 0.000000e+00
## astro2_count          0          0          0 0.000000e+00          NA
## endo1_count          0          0          0 0.000000e+00 0.000000e+00
## endo2_count          0          0          0 0.000000e+00 0.000000e+00
## micro1_count          0          0          0 0.000000e+00 0.000000e+00
## micro2_count          0          0          0 0.000000e+00 0.000000e+00
## neuron1_count          0          0          0 0.000000e+00 0.000000e+00
## neuron2_count          0          0          0 0.000000e+00 0.000000e+00
## oligopre1_count          0          0          0 0.000000e+00 0.000000e+00
## oligopre2_count          0          0          0 0.000000e+00 0.000000e+00
## oligonew1_count          0          0          0 0.000000e+00 0.000000e+00
## oligonew2_count          0          0          0 0.000000e+00 0.000000e+00
## oligomye1_count          0          0          0 0.000000e+00 0.000000e+00
## oligomye2_count          0          0          0 0.000000e+00 0.000000e+00
##          endo1_count endo2_count micro1_count micro2_count
## asc1_count 3.996803e-14 1.506506e-11 1.754152e-14 4.354961e-12
## asc2_count 0.000000e+00 3.552714e-15 0.000000e+00 8.881784e-16
## asc3_count 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## asc4_count 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## neu1_count 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## neu2_count 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00

```

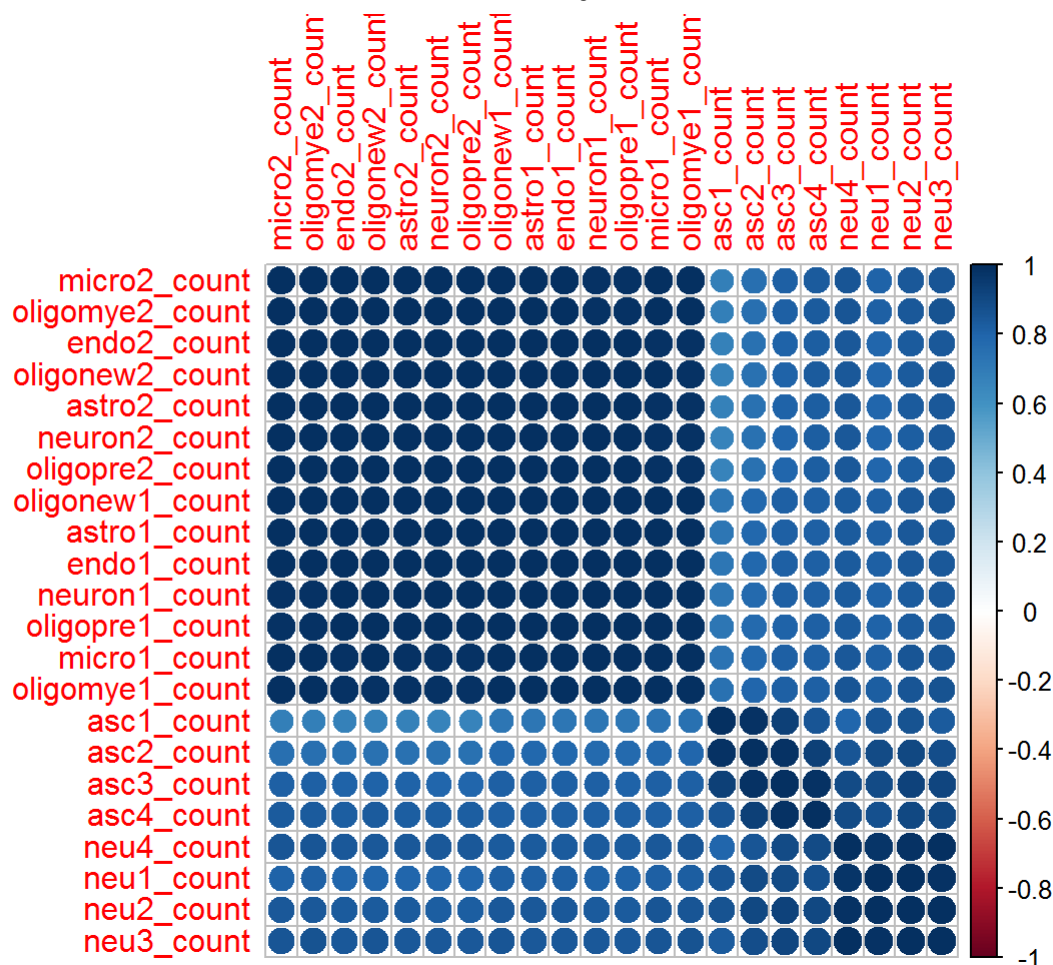
```

## neu3_count      0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## neu4_count      0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## astro1_count    0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## astro2_count    0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## endo1_count      NA 0.000000e+00 0.000000e+00 0.000000e+00
## endo2_count      0.000000e+00 NA 0.000000e+00 0.000000e+00
## micro1_count     0.000000e+00 0.000000e+00 NA 0.000000e+00
## micro2_count     0.000000e+00 0.000000e+00 0.000000e+00 NA
## neuron1_count    0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## neuron2_count    0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## oligopre1_count  0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## oligopre2_count  0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## oligonew1_count  0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## oligonew2_count  0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## oligomye1_count  0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
## oligomye2_count  0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
##
## neuron1_count    6.17284e-14 2.350453e-11 6.883383e-14
## asc1_count       0.00000e+00 5.995204e-15 0.000000e+00
## asc2_count       0.00000e+00 0.000000e+00 0.000000e+00
## asc3_count       0.00000e+00 0.000000e+00 0.000000e+00
## asc4_count       0.00000e+00 0.000000e+00 0.000000e+00
## neu1_count       0.00000e+00 0.000000e+00 0.000000e+00
## neu2_count       0.00000e+00 0.000000e+00 0.000000e+00
## neu3_count       0.00000e+00 0.000000e+00 0.000000e+00
## neu4_count       0.00000e+00 0.000000e+00 0.000000e+00
## astro1_count     0.00000e+00 0.000000e+00 0.000000e+00
## astro2_count     0.00000e+00 0.000000e+00 0.000000e+00
## endo1_count      0.00000e+00 0.000000e+00 0.000000e+00
## endo2_count      0.00000e+00 0.000000e+00 0.000000e+00
## micro1_count     0.00000e+00 0.000000e+00 0.000000e+00
## micro2_count     0.00000e+00 0.000000e+00 0.000000e+00
## neuron1_count     NA 0.000000e+00 0.000000e+00
## neuron2_count    0.00000e+00 NA 0.000000e+00
## oligopre1_count  0.00000e+00 0.000000e+00 NA
## oligopre2_count  0.00000e+00 0.000000e+00 0.000000e+00
## oligonew1_count  0.00000e+00 0.000000e+00 0.000000e+00
## oligonew2_count  0.00000e+00 0.000000e+00 0.000000e+00
## oligomye1_count  0.00000e+00 0.000000e+00 0.000000e+00
## oligomye2_count  0.00000e+00 0.000000e+00 0.000000e+00
##
## oligopre2_count  2.469536e-11 3.730349e-14 1.195399e-11
## asc1_count       6.439294e-15 0.000000e+00 2.664535e-15
## asc2_count       0.000000e+00 0.000000e+00 0.000000e+00
## asc3_count       0.000000e+00 0.000000e+00 0.000000e+00
## asc4_count       0.000000e+00 0.000000e+00 0.000000e+00
## neu1_count       0.000000e+00 0.000000e+00 0.000000e+00
## neu2_count       0.000000e+00 0.000000e+00 0.000000e+00
## neu3_count       0.000000e+00 0.000000e+00 0.000000e+00
## neu4_count       0.000000e+00 0.000000e+00 0.000000e+00
## astro1_count     0.000000e+00 0.000000e+00 0.000000e+00
## astro2_count     0.000000e+00 0.000000e+00 0.000000e+00
## endo1_count      0.000000e+00 0.000000e+00 0.000000e+00
## endo2_count      0.000000e+00 0.000000e+00 0.000000e+00
## micro1_count     0.000000e+00 0.000000e+00 0.000000e+00
## micro2_count     0.000000e+00 0.000000e+00 0.000000e+00

```

```
## neuron1_count      0.000000e+00    0.000000e+00    0.000000e+00
## neuron2_count      0.000000e+00    0.000000e+00    0.000000e+00
## oligopre1_count     0.000000e+00    0.000000e+00    0.000000e+00
## oligopre2_count     0.000000e+00    0.000000e+00    0.000000e+00
## oligonew1_count     0.000000e+00    0.000000e+00    0.000000e+00
## oligonew2_count     0.000000e+00    0.000000e+00    0.000000e+00
## oligomye1_count     0.000000e+00    0.000000e+00    0.000000e+00
## oligomye2_count     0.000000e+00    0.000000e+00    0.000000e+00
##
##      oligomye1_count oligomye2_count
## asc1_count      9.769963e-15    4.091838e-12
## asc2_count      0.000000e+00    8.881784e-16
## asc3_count      0.000000e+00    0.000000e+00
## asc4_count      0.000000e+00    0.000000e+00
## neu1_count      0.000000e+00    0.000000e+00
## neu2_count      0.000000e+00    0.000000e+00
## neu3_count      0.000000e+00    0.000000e+00
## neu4_count      0.000000e+00    0.000000e+00
## astro1_count     0.000000e+00    0.000000e+00
## astro2_count     0.000000e+00    0.000000e+00
## endo1_count      0.000000e+00    0.000000e+00
## endo2_count      0.000000e+00    0.000000e+00
## micro1_count     0.000000e+00    0.000000e+00
## micro2_count     0.000000e+00    0.000000e+00
## neuron1_count     0.000000e+00    0.000000e+00
## neuron2_count     0.000000e+00    0.000000e+00
## oligopre1_count   0.000000e+00    0.000000e+00
## oligopre2_count   0.000000e+00    0.000000e+00
## oligonew1_count   0.000000e+00    0.000000e+00
## oligonew2_count   0.000000e+00    0.000000e+00
## oligomye1_count   0.000000e+00    0.000000e+00
## oligomye2_count   0.000000e+00    0.000000e+00
```

```
rel_P<-rel$P
write.table(rel_P,file="logcpmcountdataDGE_corr_P-value.txt",sep="\t")
#plot correlations and p-value
plot_corndata<-corrplot(rel$r, type="full", order="hclust", p.mat = rel$P, sig.level = 0.01, ins
ig = "blank")
```



```
dev.print(pdf, "logcpmcountdataDGE_corrplot.pdf")
```

```
## png
## 2
```

The heatmap and correlation plots show sample grouping based on genes differentially expressed between stem cells and non-stem-cells by 10 fold, and with higher expression or counts in stem cells relative to non-stem cells.

In summary 78 stem cell specific genes have been identified from the above edgeR analysis.

Gene Ontology and pathway analysis using Enrichr. Webversion is also available and is highly interactive,
<http://amp.pharm.mssm.edu/Enrichr/enrich>
 (http://amp.pharm.mssm.edu/Enrichr/enrich)

```
dbs <- listEnrichrDbs()
dbs
```

##	libraryName	numTerms
## 1	Genome_Browser_PWMs	615
## 2	TRANSFAC_and_JASPAR_PWMs	326
## 3	Transcription_Factor_PPIs	290
## 4	ChEA_2013	353
## 5	Drug_Perturbations_from_GEO_2014	701
## 6	ENCODE_TF_ChIP-seq_2014	498
## 7	BioCarta_2013	249
## 8	Reactome_2013	78
## 9	WikiPathways_2013	199
## 10	Disease_Signatures_from_GEO_up_2014	142
## 11	KEGG_2013	200
## 12	TF-LOF_Expression_from_GEO	269
## 13	TargetScan_microRNA	222
## 14	PPI_Hub_Proteins	385
## 15	GO_Molecular_Function_2015	1136
## 16	GeneSigDB	2139
## 17	Chromosome_Location	386
## 18	Human_Gene_Atlas	84
## 19	Mouse_Gene_Atlas	96
## 20	GO_Cellular_Component_2015	641
## 21	GO_Biological_Process_2015	5192
## 22	Human_Phenotype_Ontology	1779
## 23	Epigenomics_Roadmap_HM_ChIP-seq	383
## 24	KEA_2013	474
## 25	NURSA_Human_Endogenous_Complexome	1796
## 26	CORUM	1658
## 27	SILAC_Phosphoproteomics	84
## 28	MGI_Mammalian_Phenotype_Level_3	71
## 29	MGI_Mammalian_Phenotype_Level_4	476
## 30	Old_CMAP_up	6100
## 31	Old_CMAP_down	6100
## 32	OMIM_Disease	90
## 33	OMIM_Expanded	187
## 34	VirusMINT	85
## 35	MSigDB_Computational	858
## 36	MSigDB_Oncogenic_Signatures	189
## 37	Disease_Signatures_from_GEO_down_2014	142
## 38	Virus_Perturbations_from_GEO_up	323
## 39	Virus_Perturbations_from_GEO_down	323
## 40	Cancer_Cell_Line_Encyclopedia	967
## 41	NCI-60_Cancer_Cell_Lines	93
## 42	Tissue_Protein_Expression_from_ProteomicsDB	207
## 43	Tissue_Protein_Expression_from_Human_Proteome_Map	30
## 44	HMDB_Metabolites	3906
## 45	Pfam_InterPro_Domains	311
## 46	GO_Biological_Process_2013	941
## 47	GO_Cellular_Component_2013	205
## 48	GO_Molecular_Function_2013	402
## 49	Allen_Brain_Atlas_up	2192
## 50	ENCODE_TF_ChIP-seq_2015	816
## 51	ENCODE_Histone_Modifications_2015	412
## 52	Phosphatase_Substrates_from_DEPOD	59

## 53	Allen_Brain_Atlas_down	2192
## 54	ENCODE_Histone_Modifications_2013	109
## 55	Achilles_fitness_increase	216
## 56	Achilles_fitness_decrease	216
## 57	MGI_Mammalian_Phenotype_2013	476
## 58	BioCarta_2015	239
## 59	HumanCyc_2015	125
## 60	KEGG_2015	179
## 61	NCI-Nature_2015	209
## 62	Panther_2015	104
## 63	WikiPathways_2015	404
## 64	Reactome_2015	1389
## 65	ESCAPE	315
## 66	HomoloGene	12
## 67	Disease_Perturbations_from_GEO_down	839
## 68	Disease_Perturbations_from_GEO_up	839
## 69	Drug_Perturbations_from_GEO_down	906
## 70	Genes_Associated_with_NIH_Grants	32876
## 71	Drug_Perturbations_from_GEO_up	906
## 72	KEA_2015	428
## 73	Single_Gene_Perturbations_from_GEO_up	2460
## 74	Single_Gene_Perturbations_from_GEO_down	2460
## 75	ChEA_2015	395
## 76	dbGaP	345
## 77	LINCS_L1000_Chem_Pert_up	33132
## 78	LINCS_L1000_Chem_Pert_down	33132
## 79	GTEx_Tissue_Sample_Gene_Expression_Profiles_down	2918
## 80	GTEx_Tissue_Sample_Gene_Expression_Profiles_up	2918
## 81	Ligand_Perturbations_from_GEO_down	261
## 82	Aging_Perturbations_from_GEO_down	286
## 83	Aging_Perturbations_from_GEO_up	286
## 84	Ligand_Perturbations_from_GEO_up	261
## 85	MCF7_Perturbations_from_GEO_down	401
## 86	MCF7_Perturbations_from_GEO_up	401
## 87	Microbe_Perturbations_from_GEO_down	312
## 88	Microbe_Perturbations_from_GEO_up	312
## 89	LINCS_L1000_Ligand_Perturbations_down	96
## 90	LINCS_L1000_Ligand_Perturbations_up	96
## 91	LINCS_L1000_Kinase_Perturbations_down	3644
## 92	LINCS_L1000_Kinase_Perturbations_up	3644
## 93	Reactome_2016	1530
## 94	KEGG_2016	293
## 95	WikiPathways_2016	437
## 96	ENCODE_and_ChEA_Consensus_TFs_from_ChIP-X	104
## 97	Kinase_Perturbations_from_GEO_down	285
## 98	Kinase_Perturbations_from_GEO_up	285
## 99	BioCarta_2016	237
## 100	Humancyc_2016	152
## 101	NCI-Nature_2016	209
## 102	Panther_2016	112
## 103	DrugMatrix	7876
## 104	ChEA_2016	645
## 105	huMAP	995
## 106	Jensen_TISSUES	1842

## 107	RNA-Seq_Disease_Gene_and_Drug_Signatures_from_GEO	1302
## 108	MGI_Mammalian_Phenotype_2017	5231
## 109	Jensen_COMPARTMENTS	2283
## 110	Jensen_DISEASES	1811
## 111	BioPlex_2017	3915
## 112	GO_Cellular_Component_2017	636
## 113	GO_Molecular_Function_2017	972
## 114	GO_Biological_Process_2017	3166
## 115	GO_Cellular_Component_2017b	816
## 116	GO_Molecular_Function_2017b	3271
## 117	GO_Biological_Process_2017b	10125
## 118	ARCHS4_Tissues	108
## 119	ARCHS4_Cell-lines	125
## 120	ARCHS4_IDG_Coexp	352
## 121	ARCHS4_Kinases_Coexp	498
## 122	ARCHS4_TFs_Coexp	1724
## 123	SysMyo_Muscle_Gene_Sets	1135
## 124	miRTarBase_2017	3240
## 125	TargetScan_microRNA_2017	683
## 126	Enrichr_Libraries_Most_Popular_Genes	121
## 127	Enrichr_Submissions_TF-Gene_Cooccurrence	1722
## 128	Data_Acquisition_Method_Most_Popular_Genes	12
##	geneCoverage genesPerTerm	
## 1	13362	275
## 2	27884	1284
## 3	6002	77
## 4	47172	1370
## 5	47107	509
## 6	21493	3713
## 7	1295	18
## 8	3185	73
## 9	2854	34
## 10	15057	300
## 11	4128	48
## 12	34061	641
## 13	7504	155
## 14	16399	247
## 15	12753	57
## 16	23726	127
## 17	32740	85
## 18	13373	258
## 19	19270	388
## 20	13236	82
## 21	14264	58
## 22	3096	31
## 23	22288	4368
## 24	4533	37
## 25	10231	158
## 26	2741	5
## 27	5655	342
## 28	10406	715
## 29	10493	200
## 30	11251	100
## 31	8695	100

## 32	1759	25
## 33	2178	89
## 34	851	15
## 35	10061	106
## 36	11250	166
## 37	15406	300
## 38	17711	300
## 39	17576	300
## 40	15797	176
## 41	12232	343
## 42	13572	301
## 43	6454	301
## 44	3723	47
## 45	7588	35
## 46	7682	78
## 47	7324	172
## 48	8469	122
## 49	13121	305
## 50	26382	1811
## 51	29065	2123
## 52	280	9
## 53	13877	304
## 54	15852	912
## 55	4320	129
## 56	4271	128
## 57	10496	201
## 58	1678	21
## 59	756	12
## 60	3800	48
## 61	2541	39
## 62	1918	39
## 63	5863	51
## 64	6768	47
## 65	25651	807
## 66	19129	1594
## 67	23939	293
## 68	23561	307
## 69	23877	302
## 70	15886	9
## 71	24350	299
## 72	3102	25
## 73	31132	298
## 74	30832	302
## 75	48230	1429
## 76	5613	36
## 77	9559	73
## 78	9448	63
## 79	16725	1443
## 80	19249	1443
## 81	15090	282
## 82	16129	292
## 83	15309	308
## 84	15103	318
## 85	15022	290

## 86	15676	310
## 87	15854	279
## 88	15015	321
## 89	3788	159
## 90	3357	153
## 91	12668	300
## 92	12638	300
## 93	8973	64
## 94	7010	87
## 95	5966	51
## 96	15562	887
## 97	17850	300
## 98	17660	300
## 99	1348	19
## 100	934	13
## 101	2541	39
## 102	2041	42
## 103	5209	300
## 104	49238	1550
## 105	2243	19
## 106	19586	545
## 107	22440	505
## 108	8184	24
## 109	18329	161
## 110	15755	28
## 111	10271	22
## 112	10427	38
## 113	10601	25
## 114	13822	21
## 115	8002	143
## 116	10089	45
## 117	13247	49
## 118	21809	2316
## 119	23601	2395
## 120	20883	299
## 121	19612	299
## 122	25983	299
## 123	19500	137
## 124	14893	128
## 125	17598	1208
## 126	5902	109
## 127	12486	299
## 128	1073	100

link

## 1	http://hgdownload.cse.ucsc.edu/goldenPath/hg18/database/
## 2	http://jaspar.genereg.net/html/DOWNLOAD/
## 3	
## 4	http://amp.pharm.mssm.edu/lib/cheadownload.jsp
## 5	http://www.ncbi.nlm.nih.gov/geo/
## 6	http://genome.ucsc.edu/ENCODE/downloads.html
## 7	https://cgap.nci.nih.gov/Pathways/BioCarta_Pathways
## 8	http://www.reactome.org/download/index.html
## 9	http://www.wikipathways.org/index.php/Download_Pathways
## 10	http://www.ncbi.nlm.nih.gov/geo/

```

## 11      http://www.kegg.jp/kegg/download/
## 12      http://www.ncbi.nlm.nih.gov/geo/
## 13      http://www.targetscan.org/cgi-bin/targetscan/data_download.cgi?db=vert_61
## 14      http://amp.pharm.mssm.edu/X2K
## 15      http://www.geneontology.org/GO.downloads.annotations.shtml
## 16      http://genesigdb.org/genesigdb/downloadall.jsp
## 17      http://hgdownload.cse.ucsc.edu/downloads.html
## 18      http://biogps.org/downloads/
## 19      http://biogps.org/downloads/
## 20      http://www.geneontology.org/GO.downloads.annotations.shtml
## 21      http://www.geneontology.org/GO.downloads.annotations.shtml
## 22      http://www.human-phenotype-ontology.org/
## 23      http://www.roadmapepigenomics.org/
## 24      http://amp.pharm.mssm.edu/lib/keacommandline.jsp
## 25      https://www.nursa.org/nursa/index.jsf
## 26      http://mips.helmholtz-muenchen.de/genre/proj/corum/
## 27      http://amp.pharm.mssm.edu/lib/keacommandline.jsp
## 28      http://www.informatics.jax.org/
## 29      http://www.informatics.jax.org/
## 30      http://www.broadinstitute.org/cmap/
## 31      http://www.broadinstitute.org/cmap/
## 32      http://www.omim.org/downloads
## 33      http://www.omim.org/downloads
## 34      http://mint.bio.uniroma2.it/download.html
## 35      http://www.broadinstitute.org/gsea/msigdb/collections.jsp
## 36      http://www.broadinstitute.org/gsea/msigdb/collections.jsp
## 37      http://www.ncbi.nlm.nih.gov/geo/
## 38      http://www.ncbi.nlm.nih.gov/geo/
## 39      http://www.ncbi.nlm.nih.gov/geo/
## 40      https://portals.broadinstitute.org/ccle/home\n
## 41      http://biogps.org/downloads/
## 42      https://www.proteomicsdb.org/
## 43      http://www.humanproteomemap.org/index.php
## 44      http://www.hmdb.ca/downloads
## 45      ftp://ftp.ebi.ac.uk/pub/databases/interpro/
## 46      http://www.geneontology.org/GO.downloads.annotations.shtml
## 47      http://www.geneontology.org/GO.downloads.annotations.shtml
## 48      http://www.geneontology.org/GO.downloads.annotations.shtml
## 49      http://www.brain-map.org/
## 50      http://genome.ucsc.edu/ENCODE/downloads.html
## 51      http://genome.ucsc.edu/ENCODE/downloads.html
## 52      http://www.koehn.embl.de/depod/
## 53      http://www.brain-map.org/
## 54      http://genome.ucsc.edu/ENCODE/downloads.html
## 55      http://www.broadinstitute.org/achilles
## 56      http://www.broadinstitute.org/achilles
## 57      http://www.informatics.jax.org/
## 58      https://cgap.nci.nih.gov/Pathways/BioCarta_Pathways
## 59      http://humancyc.org/
## 60      http://www.kegg.jp/kegg/download/
## 61      http://pid.nci.nih.gov/
## 62      http://www.pantherdb.org/
## 63      http://www.wikipathways.org/index.php/Download_Pathways
## 64      http://www.reactome.org/download/index.html

```

```

## 65      http://www.maayanlab.net/ESCAPE/
## 66      http://www.ncbi.nlm.nih.gov/homologene
## 67      http://www.ncbi.nlm.nih.gov/geo/
## 68      http://www.ncbi.nlm.nih.gov/geo/
## 69      http://www.ncbi.nlm.nih.gov/geo/
## 70      https://grants.nih.gov/grants/oer.htm\n
## 71      http://www.ncbi.nlm.nih.gov/geo/
## 72      http://amp.pharm.mssm.edu/Enrichr
## 73      http://www.ncbi.nlm.nih.gov/geo/
## 74      http://www.ncbi.nlm.nih.gov/geo/
## 75      http://amp.pharm.mssm.edu/Enrichr
## 76      http://www.ncbi.nlm.nih.gov/gap
## 77      https://clue.io/
## 78      https://clue.io/
## 79      http://www.gtexportal.org/
## 80      http://www.gtexportal.org/
## 81      http://www.ncbi.nlm.nih.gov/geo/
## 82      http://www.ncbi.nlm.nih.gov/geo/
## 83      http://www.ncbi.nlm.nih.gov/geo/
## 84      http://www.ncbi.nlm.nih.gov/geo/
## 85      http://www.ncbi.nlm.nih.gov/geo/
## 86      http://www.ncbi.nlm.nih.gov/geo/
## 87      http://www.ncbi.nlm.nih.gov/geo/
## 88      http://www.ncbi.nlm.nih.gov/geo/
## 89      https://clue.io/
## 90      https://clue.io/
## 91      https://clue.io/
## 92      https://clue.io/
## 93      http://www.reactome.org/download/index.html
## 94      http://www.kegg.jp/kegg/download/
## 95      http://www.wikipathways.org/index.php/Download_Pathways
## 96
## 97      http://www.ncbi.nlm.nih.gov/geo/
## 98      http://www.ncbi.nlm.nih.gov/geo/
## 99      http://cgap.nci.nih.gov/Pathways/BioCarta_Pathways
## 100     http://humancyc.org/
## 101     http://pid.nci.nih.gov/
## 102     http://www.pantherdb.org/pathway/
## 103     https://ntp.niehs.nih.gov/drugmatrix/
## 104     http://amp.pharm.mssm.edu/Enrichr
## 105     http://proteincomplexes.org/
## 106     http://tissues.jensenlab.org/
## 107     http://www.ncbi.nlm.nih.gov/geo/
## 108     http://www.informatics.jax.org/
## 109     http://compartments.jensenlab.org/
## 110     http://diseases.jensenlab.org/
## 111     http://bioplex.hms.harvard.edu/
## 112     http://www.geneontology.org/
## 113     http://www.geneontology.org/
## 114     http://www.geneontology.org/
## 115     http://www.geneontology.org/
## 116     http://www.geneontology.org/
## 117     http://www.geneontology.org/
## 118     http://amp.pharm.mssm.edu/archs4

```

```
## 119 http://amp.pharm.mssm.edu/archs4
## 120 http://amp.pharm.mssm.edu/archs4
## 121 http://amp.pharm.mssm.edu/archs4
## 122 http://amp.pharm.mssm.edu/archs4
## 123 http://sys-myo.rhcloud.com/
## 124 http://mirtarbase.mbc.nctu.edu.tw/
## 125 http://www.targetscan.org/
## 126 http://amp.pharm.mssm.edu/Enrichr
## 127 http://amp.pharm.mssm.edu/Enrichr
## 128 http://amp.pharm.mssm.edu/Enrichr
```

```
#select pathway databases of choice from above
dbs_select<-c("GO_Biological_Process_2017","KEGG_2016", "Reactome_2016")
```

```
#compare for enrichment with the 78 stem cell specific genes list
enriched<-enrichr(deGenes_lrt_fdr$gene, dbs_select)
```

```
## Uploading data to Enrichr... Done.
## Querying GO_Biological_Process_2017... Done.
## Querying KEGG_2016... Done.
## Querying Reactome_2016... Done.
## Parsing results... Done.
```

GO biological process

```
deGenes_lrt_fdr_GO_Biological_Process_2017<-enriched[["GO_Biological_Process_2017"]]
print(deGenes_lrt_fdr_GO_Biological_Process_2017)
```

```

##
## 1 regulation of transcription involved in G1/S transiti
n of mitotic cell cycle (G0:0000083)
## 2 si
ster chromatid cohesion (G0:0007062)
## 3 DNA strand elongation invo
lved in DNA replication (G0:0006271)
## 4 G2/M transiti
n of mitotic cell cycle (G0:0000086)
## 5 DNA damage response, signal transduction by p53 class mediator resulti
ng in cell cycle arrest (G0:0006977)
## 6 regulation of m
itotic nuclear division (G0:0007088)
## 7 r
egulation of cell cycle (G0:0051726)
## 8
mitotic cell cycle (G0:0000278)
## 9 anaphase-promoting complex-depe
ndent catabolic process (G0:0031145)
## 10
spindle organization (G0:0007051)
## 11 regulation of ubiquitin-protein ligase activity involve
d in mitotic cell cycle (G0:0051439)
## 12 CENP-A contain
ing nucleosome assembly (G0:0034080)
## 13 mitot
ic spindle organization (G0:0007052)
## 14 protein ubiquitination involved in ubiquitin-dependent pr
otein catabolic process (G0:0042787)
## 15 prot
ein autophosphorylation (G0:0046777)
## 16 nucleobase-containing small m
olecule interconversion (G0:0015949)
## 17 positive re
gulation of cytokinesis (G0:0032467)
## 18 mitotic meta
phase plate congression (G0:0007080)
## 19 negative regula
tion of protein binding (G0:0032091)
## 20 regulation of cyclin-dependent protein serine/th
reonine kinase activity (G0:0000079)
## 21 negative re
gulation of translation (G0:0017148)
## 22
chromosome segregation (G0:0007059)
## 23
protein sumoylation (G0:0016925)
## 24 negative regulation of ubiquitin-protein ligase activity involve
d in mitotic cell cycle (G0:0051436)
## 25 ost
eoblast differentiation (G0:0001649)
## 26 positive regulation of ubiquitin-protein ligase activity involved in regulation of mitoti

```

c cell cycle transition (GO:0051437)	
## 27	
DNA replication (GO:0006260)	
## 28	regulation of signal transductio
n by p53 class mediator (GO:1901796)	
## 29	extracellu
lar matrix organization (GO:0030198)	
## 30	ner
vous system development (GO:0007399)	
## 31	negative regulatio
n of cell proliferation (GO:0008285)	
## 32	negative regulati
on of apoptotic process (GO:0043066)	
## 33	
protein phosphorylation (GO:0006468)	
## 34	
signal transduction (GO:0007165)	
## 35	negative regulation of transcription from RNA
polymerase II promoter (GO:0000122)	
## 36	positive regulatio
n of cell proliferation (GO:0008284)	
## 37	
cell-cell signaling (GO:0007267)	
## 38	G-protein coupled rec
eptor signaling pathway (GO:0007186)	
## 39	intracellu
lar signal transduction (GO:0035556)	
## 40	positive regulati
on of apoptotic process (GO:0043065)	
## 41	
apoptotic process (GO:0006915)	
## 42	
proteolysis (GO:0006508)	
## 43	cell surface rec
eptor signaling pathway (GO:0007166)	
## 44	
cilium assembly (GO:0060271)	
## 45	
spermatogenesis (GO:0007283)	
## 46	positive regul
ation of cell migration (GO:0030335)	
## 47	oxid
ation-reduction process (GO:0055114)	
## 48	p
rotein complex assembly (GO:0006461)	
## 49	
response to virus (GO:0009615)	
## 50	xenob
iotic metabolic process (GO:0006805)	
## 51	G1/S transitio
n of mitotic cell cycle (GO:0000082)	
## 52	positive regulation of sequence-specific DNA binding transc
ription factor activity (GO:0051091)	
## 53	negative regulation of

protein kinase activity (GO:0006469)	
## 54	transforming growth factor beta rec
eptor signaling pathway (GO:0007179)	
## 55	de
fense response to virus (GO:0051607)	
## 56	retrograde trans
port, endosome to Golgi (GO:0042147)	
## 57	neuron
projection development (GO:0031175)	
## 58	extracell
ular matrix disassembly (GO:0022617)	
## 59	sens
ory perception of sound (GO:0007605)	
## 60	
Wnt signaling pathway (GO:0016055)	
## 61	
axonogenesis (GO:0007409)	
## 62	positive regulation of pro
tein kinase B signaling (GO:0051897)	
## 63	
neuron differentiation (GO:0030182)	
## 64	negative regulation of G2/M transitio
n of mitotic cell cycle (GO:0010972)	
## 65	regulati
on of protein stability (GO:0031647)	
## 66	ret
inoid metabolic process (GO:0001523)	
## 67	dou
ble-strand break repair (GO:0006302)	
## 68	positive regulation of phosphatidylinos
itol 3-kinase signaling (GO:0014068)	
## 69	prot
ein homotetramerization (GO:0051289)	
## 70	negative regulation
of phosphatase activity (GO:0010923)	
## 71	mitotic nucle
ar envelope disassembly (GO:0007077)	
## 72	inters
trand cross-link repair (GO:0036297)	
## 73	RNA second
ary structure unwinding (GO:0010501)	
## 74	cellular re
sponse to retinoic acid (GO:0071300)	
## 75	
hemopoiesis (GO:0030097)	
## 76	positive regulation of
focal adhesion assembly (GO:0051894)	
## 77	negative regula
tion of DNA replication (GO:0008156)	
## 78	fla
gellated sperm motility (GO:0030317)	
## 79	reg
ulation of MAPK cascade (GO:0043408)	
## 80	

protein secretion (GO:0009306)	
## 81	cytoplasmic m
icrotubule organization (GO:0031122)	
## 82	
piRNA metabolic process (GO:0034587)	
## 83	folic
acid metabolic process (GO:0046655)	
## 84	
DNA repair (GO:0006281)	
## 85	regulatio
n of mitotic cell cycle (GO:0007346)	
## 86	
endosome organization (GO:0007032)	
## 87	
protein processing (GO:0016485)	
## 88	positive regulatio
n of mitotic cell cycle (GO:0045931)	
## 89	
axoneme assembly (GO:0035082)	
## 90	
cellular response to UV (GO:0034644)	
## 91	positive regulation of substrate adhesion-d
ependent cell spreading (GO:1900026)	
## 92	nucleobase-containing com
pound metabolic process (GO:0006139)	
## 93	type I inter
feron signaling pathway (GO:0060337)	
## 94	DNA methylation involv
ed in gamete generation (GO:0043046)	
## 95	
cell growth (GO:0016049)	
## 96	regulation o
f inflammatory response (GO:0050727)	
## 97	positive regulation
of telomerase activity (GO:0051973)	
## 98	triglyc
eride metabolic process (GO:0006641)	
## 99	positive regulation o
f stress fiber assembly (GO:0051496)	
## 100	positive regulation of cA
MP biosynthetic process (GO:0030819)	
## 101	male m
eiotic nuclear division (GO:0007140)	
## 102	cellular respons
e to ionizing radiation (GO:0071479)	
## 103	mitotic
chromosome condensation (GO:0007076)	
## 104	adenylate cyclase-activating G-protein coupled rec
eptor signaling pathway (GO:0007189)	
## 105	activation of ade
nylate cyclase activity (GO:0007190)	
## 106	
DNA recombination (GO:0006310)	
## 107	repl

ication fork processing (GO:0031297)	
## 108	
angiotensin maturation (GO:0002003)	
## 109	positive regulation of telomere mai
ntenance via telomerase (GO:0032212)	
## 110	negative regulation of Rho prot
ein signal transduction (GO:0035024)	
## 111	keratan sulfa
te biosynthetic process (GO:0018146)	
## 112	
cell fate commitment (GO:0045165)	
## 113	regulati
on of acrosome reaction (GO:0060046)	
## 114	
amino acid transport (GO:0006865)	
## 115	negative regu
lation of TOR signaling (GO:0032007)	
## 116	positive regulation of m
itotic nuclear division (GO:0045840)	
## 117	beta-catenin destruct
ion complex disassembly (GO:1904886)	
## 118	negative regulation of serine-type
endopeptidase activity (GO:1900004)	
## 119	
cell division (GO:0051301)	
## 120	G-protein coupled receptor signaling pathway, coupled to cyclic nucl
eotide second messenger (GO:0007187)	
## 121	
meiotic cell cycle (GO:0051321)	
## 122	
DNA metabolic process (GO:0006259)	
## 123	DNA
replication checkpoint (GO:0000076)	
## 124	
abscission (GO:0009838)	
## 125	tetrahydrof
olate metabolic process (GO:0046653)	
## 126	re
sponse to retinoic acid (GO:0032526)	
## 127	
centrosome duplication (GO:0051298)	
## 128	hormone-med
iated signaling pathway (GO:0009755)	
## 129	cl
evage furrow formation (GO:0036089)	
## 130	re
gulation of cytokinesis (GO:0032465)	
## 131	
chromosome organization (GO:0051276)	
## 132	
protein targeting (GO:0006605)	
## 133	positive regulat
ion of telomere capping (GO:1904355)	
## 134	positive regulation of nitric-

oxide synthase activity (GO:0051000)	
## 135	negative regulation o
f stress fiber assembly (GO:0051497)	
## 136	
chromatin assembly (GO:0031497)	
## 137	
ATP metabolic process (GO:0046034)	
## 138	keratan su
lfate catabolic process (GO:0042340)	
## 139	
gastrulation (GO:0007369)	
## 140	tetrahydr
ofolate interconversion (GO:0035999)	
## 141	regulation of double-strand break repair via h
omologous recombination (GO:0010569)	
## 142	
bone development (GO:0060348)	
## 143	
definitive hemopoiesis (GO:0060216)	
## 144	
receptor recycling (GO:0001881)	
## 145	
centriole replication (GO:0007099)	
## 146	DNA replication-depend
ent nucleosome assembly (GO:0006335)	
## 147	negative
regulation of cell size (GO:0045792)	
## 148	supramolec
ular fiber organization (GO:0097435)	
## 149	intra-
S DNA damage checkpoint (GO:0031573)	
## 150	regulation of mitotic cell cycle spin
dle assembly checkpoint (GO:0090266)	
## 151	pyrimi
dine nucleoside salvage (GO:0043097)	
## 152	
response to estradiol (GO:0032355)	
## 153	positive regulation of
chromosome segregation (GO:0051984)	
## 154	negative regulation of B
cell apoptotic process (GO:0002903)	
## 155	chromati
n silencing at telomere (GO:0006348)	
## 156	resolution of meiotic reco
mbination intermediates (GO:0000712)	
## 157	positive regulation of ubiquitin
protein ligase activity (GO:1904668)	
## 158	attachment of spindle micr
otubules to kinetochore (GO:0008608)	
## 159	positive regulation of mitoc
hondrial depolarization (GO:0051901)	
## 160	negative regulation
of cell-matrix adhesion (GO:0001953)	
## 161	

histone modification (GO:0016570)	
## 162	protein loca
lization to kinetochore (GO:0034501)	
## 163	positive regulation of ade
nylate cyclase activity (GO:0045762)	
## 164	mitotic s
pindle midzone assembly (GO:0051256)	
## 165	regulation of mitotic metaph
ase/anaphase transition (GO:0030071)	
## 166	negative re
gulation of cytokinesis (GO:0032466)	
## 167	
axon regeneration (GO:0031103)	
## 168	regulation of
chromosome segregation (GO:0051983)	
## 169	embr
ynonic eye morphogenesis (GO:0048048)	
## 170	phospho
lipid catabolic process (GO:0009395)	
## 171	myelination in pe
ripheral nervous system (GO:0022011)	
## 172	regulation of microtubule polymerizat
ion or depolymerization (GO:0031110)	
## 173	double-strand break repair via br
eak-induced replication (GO:0000727)	
##	Overlap P.value Adjusted.P.value Old.P.value
## 1	5/22 1.980558e-08 3.426365e-06 3.054965e-08
## 2	7/97 1.011016e-07 8.745292e-06 6.216581e-08
## 3	2/8 4.140944e-04 2.387945e-02 5.184950e-04
## 4	4/126 1.494827e-03 5.273863e-02 1.041998e-03
## 5	3/62 1.829085e-03 5.273863e-02 1.461658e-03
## 6	2/21 3.005292e-03 6.498945e-02 2.832652e-03
## 7	3/61 1.745448e-03 5.273863e-02 1.397576e-03
## 8	3/86 4.629300e-03 7.280627e-02 3.585997e-03
## 9	3/80 3.779031e-03 6.537724e-02 2.943655e-03
## 10	2/19 2.459553e-03 6.078609e-02 2.361601e-03
## 11	2/23 3.602439e-03 6.537724e-02 3.344109e-03
## 12	2/29 5.694240e-03 7.483957e-02 5.115367e-03
## 13	2/31 6.488980e-03 7.483957e-02 5.782927e-03
## 14	3/122 1.208634e-02 1.009358e-01 9.200204e-03
## 15	3/145 1.911950e-02 1.009358e-01 1.450508e-02
## 16	2/31 6.488980e-03 7.483957e-02 5.782927e-03
## 17	2/33 7.331155e-03 7.926811e-02 6.488160e-03
## 18	2/38 9.639107e-03 9.809209e-02 8.412599e-03
## 19	2/43 1.222701e-02 1.009358e-01 1.056105e-02
## 20	2/30 6.085633e-03 7.483957e-02 5.444404e-03
## 21	2/48 1.508344e-02 1.009358e-01 1.292558e-02
## 22	2/48 1.508344e-02 1.009358e-01 1.292558e-02
## 23	2/68 2.897749e-02 1.044199e-01 2.439245e-02
## 24	2/72 3.219189e-02 1.070999e-01 2.704447e-02
## 25	2/66 2.742186e-02 1.009358e-01 2.310923e-02
## 26	2/77 3.639700e-02 1.087095e-01 3.051549e-02
## 27	2/106 6.443630e-02 1.311468e-01 5.374185e-02
## 28	2/124 8.448567e-02 1.506806e-01 7.046009e-02

## 29	2/142	1.061435e-01	1.732343e-01	8.863299e-02
## 30	2/247	2.506181e-01	2.949451e-01	2.129736e-01
## 31	2/276	2.925555e-01	3.286500e-01	2.501006e-01
## 32	2/323	3.597583e-01	3.939125e-01	3.106074e-01
## 33	2/309	3.399226e-01	3.745644e-01	2.926155e-01
## 34	2/861	8.548358e-01	8.598058e-01	8.088608e-01
## 35	1/473	8.459550e-01	8.558492e-01	8.121186e-01
## 36	1/326	7.231752e-01	7.359371e-01	6.824667e-01
## 37	1/280	6.677454e-01	6.835500e-01	6.262358e-01
## 38	1/556	8.895747e-01	8.895747e-01	8.606543e-01
## 39	1/238	6.076418e-01	6.257264e-01	5.664496e-01
## 40	1/231	5.966305e-01	6.180663e-01	5.556138e-01
## 41	1/195	5.349982e-01	5.575583e-01	4.955594e-01
## 42	1/175	4.968326e-01	5.229971e-01	4.588341e-01
## 43	1/176	4.988123e-01	5.229971e-01	4.607310e-01
## 44	1/155	4.555779e-01	4.835275e-01	4.194948e-01
## 45	1/136	4.133004e-01	4.441053e-01	3.795356e-01
## 46	1/144	4.314825e-01	4.607807e-01	3.966785e-01
## 47	1/119	3.727357e-01	4.055552e-01	3.415081e-01
## 48	1/103	3.320335e-01	3.682166e-01	3.036379e-01
## 49	1/100	3.241166e-01	3.617560e-01	2.963035e-01
## 50	1/85	2.831215e-01	3.243710e-01	2.584820e-01
## 51	1/87	2.887262e-01	3.286160e-01	2.636376e-01
## 52	1/88	2.915123e-01	3.286500e-01	2.662022e-01
## 53	1/78	2.631597e-01	3.035109e-01	2.401577e-01
## 54	1/75	2.544376e-01	2.974169e-01	2.321693e-01
## 55	1/71	2.426494e-01	2.895058e-01	2.213902e-01
## 56	1/70	2.396737e-01	2.879413e-01	2.186723e-01
## 57	1/73	2.485663e-01	2.945341e-01	2.267981e-01
## 58	1/76	2.573562e-01	2.988096e-01	2.348412e-01
## 59	1/69	2.366865e-01	2.863410e-01	2.159451e-01
## 60	1/67	2.306772e-01	2.830295e-01	2.104629e-01
## 61	1/69	2.366865e-01	2.863410e-01	2.159451e-01
## 62	1/61	2.123678e-01	2.662292e-01	1.937898e-01
## 63	1/63	2.185183e-01	2.700261e-01	1.993855e-01
## 64	1/56	1.967819e-01	2.503182e-01	1.796327e-01
## 65	1/56	1.967819e-01	2.503182e-01	1.796327e-01
## 66	1/59	2.061696e-01	2.603456e-01	1.881559e-01
## 67	1/54	1.904627e-01	2.458958e-01	1.739019e-01
## 68	1/51	1.808916e-01	2.352951e-01	1.652322e-01
## 69	1/51	1.808916e-01	2.352951e-01	1.652322e-01
## 70	1/51	1.808916e-01	2.352951e-01	1.652322e-01
## 71	1/44	1.581227e-01	2.153954e-01	1.446549e-01
## 72	1/46	1.646911e-01	2.208648e-01	1.505843e-01
## 73	1/45	1.614132e-01	2.181601e-01	1.476247e-01
## 74	1/40	1.448325e-01	2.020647e-01	1.326743e-01
## 75	1/35	1.279282e-01	1.829056e-01	1.174674e-01
## 76	1/14	5.325413e-02	1.244995e-01	5.069671e-02
## 77	1/16	6.062968e-02	1.294930e-01	5.726318e-02
## 78	1/32	1.176277e-01	1.769530e-01	1.082182e-01
## 79	1/34	1.245079e-01	1.810073e-01	1.143948e-01
## 80	1/32	1.176277e-01	1.769530e-01	1.082182e-01
## 81	1/35	1.279282e-01	1.829056e-01	1.174674e-01
## 82	1/15	5.694902e-02	1.263100e-01	5.398552e-02

## 83	1/17	6.429616e-02	1.311468e-01	6.052972e-02
## 84	1/121	3.776481e-01	4.083320e-01	3.460977e-01
## 85	1/34	1.245079e-01	1.810073e-01	1.143948e-01
## 86	1/31	1.141676e-01	1.769530e-01	1.051141e-01
## 87	1/49	1.744490e-01	2.321513e-01	1.594030e-01
## 88	1/18	6.794851e-02	1.351160e-01	6.378518e-02
## 89	1/12	4.582141e-02	1.148856e-01	4.408545e-02
## 90	1/40	1.448325e-01	2.020647e-01	1.326743e-01
## 91	1/24	8.956891e-02	1.549542e-01	8.308721e-02
## 92	1/30	1.106941e-01	1.756888e-01	1.019994e-01
## 93	1/62	2.154490e-01	2.681487e-01	1.965924e-01
## 94	1/17	6.429616e-02	1.311468e-01	6.052972e-02
## 95	1/38	1.381099e-01	1.958444e-01	1.266226e-01
## 96	1/44	1.581227e-01	2.153954e-01	1.446549e-01
## 97	1/33	1.210745e-01	1.790246e-01	1.113118e-01
## 98	1/21	7.882132e-02	1.450648e-01	7.348541e-02
## 99	1/32	1.176277e-01	1.769530e-01	1.082182e-01
## 100	1/30	1.106941e-01	1.756888e-01	1.019994e-01
## 101	1/16	6.062968e-02	1.294930e-01	5.726318e-02
## 102	1/28	1.037067e-01	1.708691e-01	9.573819e-02
## 103	1/13	4.954494e-02	1.190455e-01	4.739669e-02
## 104	1/28	1.037067e-01	1.708691e-01	9.573819e-02
## 105	1/33	1.210745e-01	1.790246e-01	1.113118e-01
## 106	1/27	1.001927e-01	1.682848e-01	9.259156e-02
## 107	1/27	1.001927e-01	1.682848e-01	9.259156e-02
## 108	1/12	4.582141e-02	1.148856e-01	4.408545e-02
## 109	1/32	1.176277e-01	1.769530e-01	1.082182e-01
## 110	1/12	4.582141e-02	1.148856e-01	4.408545e-02
## 111	1/29	1.072071e-01	1.733349e-01	9.887413e-02
## 112	1/25	9.312386e-02	1.595092e-01	8.626611e-02
## 113	1/10	3.833109e-02	1.087095e-01	3.742912e-02
## 114	1/32	1.176277e-01	1.769530e-01	1.082182e-01
## 115	1/24	8.956891e-02	1.549542e-01	8.308721e-02
## 116	1/23	8.600021e-02	1.518167e-01	7.989749e-02
## 117	1/22	8.241770e-02	1.485236e-01	7.669690e-02
## 118	1/9	3.456420e-02	1.087095e-01	3.408396e-02
## 119	1/22	8.241770e-02	1.485236e-01	7.669690e-02
## 120	1/41	1.481743e-01	2.050732e-01	1.356848e-01
## 121	1/16	6.062968e-02	1.294930e-01	5.726318e-02
## 122	1/20	7.521104e-02	1.414295e-01	7.026299e-02
## 123	1/8	3.078274e-02	1.044199e-01	3.072741e-02
## 124	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 125	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 126	1/19	7.158678e-02	1.360936e-01	6.702959e-02
## 127	1/19	7.158678e-02	1.360936e-01	6.702959e-02
## 128	1/21	7.882132e-02	1.450648e-01	7.348541e-02
## 129	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 130	1/18	6.794851e-02	1.351160e-01	6.378518e-02
## 131	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 132	1/19	7.158678e-02	1.360936e-01	6.702959e-02
## 133	1/17	6.429616e-02	1.311468e-01	6.052972e-02
## 134	1/13	4.954494e-02	1.190455e-01	4.739669e-02
## 135	1/15	5.694902e-02	1.263100e-01	5.398552e-02
## 136	1/7	2.698666e-02	1.009358e-01	2.735944e-02

## 137	1/19	7.158678e-02	1.360936e-01	6.702959e-02
## 138	1/12	4.582141e-02	1.148856e-01	4.408545e-02
## 139	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 140	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 141	1/14	5.325413e-02	1.244995e-01	5.069671e-02
## 142	1/15	5.694902e-02	1.263100e-01	5.398552e-02
## 143	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 144	1/8	3.078274e-02	1.044199e-01	3.072741e-02
## 145	1/15	5.694902e-02	1.263100e-01	5.398552e-02
## 146	1/10	3.833109e-02	1.087095e-01	3.742912e-02
## 147	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 148	1/11	4.208348e-02	1.148856e-01	4.076294e-02
## 149	1/13	4.954494e-02	1.190455e-01	4.739669e-02
## 150	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 151	1/12	4.582141e-02	1.148856e-01	4.408545e-02
## 152	1/10	3.833109e-02	1.087095e-01	3.742912e-02
## 153	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 154	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 155	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 156	1/12	4.582141e-02	1.148856e-01	4.408545e-02
## 157	1/11	4.208348e-02	1.148856e-01	4.076294e-02
## 158	1/9	3.456420e-02	1.087095e-01	3.408396e-02
## 159	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 160	1/10	3.833109e-02	1.087095e-01	3.742912e-02
## 161	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 162	1/8	3.078274e-02	1.044199e-01	3.072741e-02
## 163	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 164	1/10	3.833109e-02	1.087095e-01	3.742912e-02
## 165	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 166	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 167	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 168	1/9	3.456420e-02	1.087095e-01	3.408396e-02
## 169	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 170	1/5	1.935041e-02	1.009358e-01	2.058910e-02
## 171	1/7	2.698666e-02	1.009358e-01	2.735944e-02
## 172	1/6	2.317590e-02	1.009358e-01	2.398002e-02
## 173	1/5	1.935041e-02	1.009358e-01	2.058910e-02

##	Old.Adjusted.P.value	Z.score	Combined.Score
## 1	5.285089e-06	-2.99110599	53.05415125
## 2	5.377343e-06	-2.73601879	44.06943624
## 3	2.989988e-02	-2.45301012	19.10751741
## 4	4.214447e-02	-2.81305804	18.30103844
## 5	4.214447e-02	-2.63956269	16.63964283
## 6	5.639795e-02	-2.78217075	16.15712384
## 7	4.214447e-02	-2.49914684	15.87144239
## 8	5.639795e-02	-2.62553531	14.11316994
## 9	5.639795e-02	-2.45080901	13.67131746
## 10	5.639795e-02	-2.25411673	13.54222801
## 11	5.639795e-02	-2.40186180	13.51322059
## 12	6.669642e-02	-2.50680073	12.95589838
## 13	6.669642e-02	-2.44463310	12.31520573
## 14	8.842419e-02	-2.71803494	12.00197047
## 15	9.659558e-02	-2.80808660	11.11172867
## 16	6.669642e-02	-2.19953125	11.08046839

## 17	7.015323e-02	-2.24001959	11.01109006
## 18	8.561056e-02	-2.25690624	10.47639359
## 19	9.616117e-02	-2.33102944	10.26610565
## 20	6.669642e-02	-1.87225107	9.55189658
## 21	9.659558e-02	-2.25811439	9.47088821
## 22	9.659558e-02	-1.97194423	8.27064536
## 23	9.659558e-02	-1.67363219	5.92672670
## 24	9.659558e-02	-1.50238083	5.16224172
## 25	9.659558e-02	-1.34484517	4.83662101
## 26	1.002989e-01	-1.45032098	4.80530356
## 27	1.182215e-01	-1.12593422	3.08739968
## 28	1.310709e-01	-1.04258574	2.57641011
## 29	1.503285e-01	-0.86807036	1.94704964
## 30	2.594341e-01	-0.62015414	0.85818488
## 31	2.865391e-01	-0.56659408	0.69640124
## 32	3.400955e-01	-0.56391211	0.57650029
## 33	3.265966e-01	-0.48103804	0.51905798
## 34	8.168402e-01	-0.81341503	0.12758078
## 35	8.168402e-01	-0.45269706	0.07573130
## 36	6.945102e-01	-0.22536954	0.07304312
## 37	6.410579e-01	-0.16634763	0.06717922
## 38	8.606543e-01	-0.47038285	0.05504034
## 39	5.833082e-01	-0.10599651	0.05280426
## 40	5.755760e-01	-0.07363785	0.03803081
## 41	5.164564e-01	0.01013153	-0.00633719
## 42	4.830695e-01	0.08787371	-0.06146785
## 43	4.830695e-01	0.09281908	-0.06455804
## 44	4.452306e-01	0.15267434	-0.12003082
## 45	4.078240e-01	0.18680202	-0.16505467
## 46	4.236134e-01	0.20092957	-0.16888697
## 47	3.715780e-01	0.29490830	-0.29104079
## 48	3.345818e-01	0.33964039	-0.37446013
## 49	3.285930e-01	0.38829195	-0.43746985
## 50	2.941933e-01	0.44853198	-0.56599308
## 51	2.981000e-01	0.48324495	-0.60032381
## 52	2.990453e-01	0.49809188	-0.61398447
## 53	2.769818e-01	0.55949179	-0.74691824
## 54	2.713871e-01	0.57395203	-0.78556792
## 55	2.623322e-01	0.55747085	-0.78945548
## 56	2.608987e-01	0.56121468	-0.80168217
## 57	2.669121e-01	0.58110045	-0.80891831
## 58	2.726680e-01	0.60142318	-0.81630806
## 59	2.594341e-01	0.61467639	-0.88576028
## 60	2.582275e-01	0.60848548	-0.89248747
## 61	2.594341e-01	0.63948255	-0.92150643
## 62	2.429394e-01	0.66962480	-1.03754040
## 63	2.463835e-01	0.69149765	-1.05168890
## 64	2.285033e-01	0.78352106	-1.27373818
## 65	2.285033e-01	0.82178933	-1.33594934
## 66	2.375983e-01	0.85608079	-1.35179953
## 67	2.245152e-01	0.89393594	-1.48241318
## 68	2.149261e-01	0.87907940	-1.50310019
## 69	2.149261e-01	0.95728356	-1.63681813
## 70	2.149261e-01	1.00806433	-1.72364599

## 71	1.970496e-01	1.08954527	-2.00954008
## 72	2.019464e-01	1.13451255	-2.04630187
## 73	1.995240e-01	1.25871664	-2.29563180
## 74	1.851021e-01	1.22595822	-2.36876897
## 75	1.679492e-01	1.36970898	-2.81651389
## 76	1.182215e-01	0.96747544	-2.83729588
## 77	1.208113e-01	1.05289666	-2.95123851
## 78	1.627978e-01	1.42758836	-3.05536856
## 79	1.663050e-01	1.54875137	-3.22664665
## 80	1.627978e-01	1.50861445	-3.22878309
## 81	1.679492e-01	1.59733476	-3.28457767
## 82	1.182215e-01	1.16092961	-3.32675847
## 83	1.231958e-01	1.21342229	-3.32994067
## 84	3.742182e-01	3.46376170	-3.37298504
## 85	1.663050e-01	1.63661189	-3.40969402
## 86	1.627978e-01	1.57232344	-3.41208004
## 87	2.121286e-01	1.96435673	-3.43000842
## 88	1.268372e-01	1.30816213	-3.51765464
## 89	1.105331e-01	1.18223606	-3.64483831
## 90	1.851021e-01	1.92603785	-3.72144714
## 91	1.437409e-01	1.54513073	-3.72800951
## 92	1.618890e-01	1.69683034	-3.73469799
## 93	2.446798e-01	2.44283011	-3.74982017
## 94	1.231958e-01	1.36697957	-3.75134106
## 95	1.795550e-01	1.93511922	-3.83096590
## 96	1.970496e-01	2.09244934	-3.85928052
## 97	1.645892e-01	1.83248700	-3.86902061
## 98	1.338208e-01	1.53033276	-3.88792010
## 99	1.627978e-01	1.83545376	-3.92829463
## 100	1.618890e-01	1.78819854	-3.93579802
## 101	1.208113e-01	1.43321486	-4.01725931
## 102	1.562519e-01	1.77804272	-4.02938028
## 103	1.138837e-01	1.38642180	-4.16602440
## 104	1.562519e-01	1.85038364	-4.19331844
## 105	1.645892e-01	1.99951003	-4.22166460
## 106	1.540225e-01	1.84357023	-4.24142827
## 107	1.540225e-01	1.85407873	-4.26560475
## 108	1.105331e-01	1.39660159	-4.30572806
## 109	1.627978e-01	2.04589598	-4.37868955
## 110	1.105331e-01	1.42526766	-4.39410566
## 111	1.598619e-01	1.99198690	-4.44809181
## 112	1.477627e-01	1.88628753	-4.47771621
## 113	1.061514e-01	1.44824744	-4.72345010
## 114	1.627978e-01	2.37278901	-5.07831608
## 115	1.437409e-01	2.14486165	-5.17500845
## 116	1.410435e-01	2.25020656	-5.52066925
## 117	1.367893e-01	2.33462728	-5.82712485
## 118	1.052951e-01	1.79119785	-6.02726759
## 119	1.367893e-01	2.44409635	-6.10035473
## 120	1.877878e-01	3.19918663	-6.10841797
## 121	1.208113e-01	2.37599159	-6.65983488
## 122	1.310709e-01	2.59565461	-6.71614543
## 123	1.002989e-01	1.94551160	-6.77193899
## 124	9.659558e-02	1.89083288	-7.11830934

## 125	9.659558e-02	1.99737385	-7.21533854
## 126	1.274299e-01	2.74236015	-7.23117817
## 127	1.274299e-01	2.77846603	-7.32638375
## 128	1.338208e-01	2.89165584	-7.34645901
## 129	9.659558e-02	2.07435556	-7.49342825
## 130	1.268372e-01	2.81403397	-7.56695172
## 131	9.659558e-02	2.20916076	-7.98040028
## 132	1.274299e-01	3.20727774	-8.45709369
## 133	1.231958e-01	3.10648111	-8.52497757
## 134	1.138837e-01	2.86262420	-8.60182829
## 135	1.182215e-01	3.02728474	-8.67498344
## 136	9.659558e-02	2.50874573	-9.06262479
## 137	1.274299e-01	3.43938211	-9.06911691
## 138	1.105331e-01	2.94213312	-9.07060770
## 139	9.659558e-02	2.51803544	-9.09618305
## 140	9.659558e-02	2.42488316	-9.12881760
## 141	1.182215e-01	3.13791752	-9.20250793
## 142	1.182215e-01	3.22761031	-9.24903614
## 143	9.659558e-02	2.63905031	-9.93508031
## 144	1.002989e-01	2.86933587	-9.98758757
## 145	1.182215e-01	3.71024831	-10.63208300
## 146	1.061514e-01	3.27302893	-10.67496374
## 147	9.659558e-02	2.88005271	-10.84236813
## 148	1.105331e-01	3.54621008	-11.23474827
## 149	1.138837e-01	3.86498263	-11.61379022
## 150	9.659558e-02	3.03365623	-11.96789993
## 151	1.105331e-01	3.88890468	-11.98950805
## 152	1.061514e-01	3.94902670	-12.87972630
## 153	9.659558e-02	3.42281236	-13.50313704
## 154	9.659558e-02	3.61385901	-13.60488632
## 155	9.659558e-02	3.68995327	-13.89135401
## 156	1.105331e-01	5.20138904	-16.03590238
## 157	1.105331e-01	5.09721726	-16.14849415
## 158	1.052951e-01	4.81711187	-16.20927712
## 159	9.659558e-02	4.27317308	-16.85784541
## 160	1.061514e-01	5.23858705	-17.08561945
## 161	9.659558e-02	4.38338170	-17.29262298
## 162	1.002989e-01	5.02224759	-17.48144517
## 163	9.659558e-02	4.62696466	-18.25356788
## 164	1.061514e-01	5.74975362	-18.75278606
## 165	9.659558e-02	5.69576486	-20.57545298
## 166	9.659558e-02	5.50727390	-20.73291604
## 167	9.659558e-02	5.32654747	-21.01345115
## 168	1.052951e-01	6.51078137	-21.90836800
## 169	9.659558e-02	6.09196127	-22.00667791
## 170	9.659558e-02	5.67811634	-22.40040495
## 171	9.659558e-02	6.39470544	-23.10031480
## 172	9.659558e-02	7.07748074	-26.64418304
## 173	9.659558e-02	7.71399547	-30.43203275

Genes

## 1	DHFR; RRM2; CDC6; FBX05; TYMS
## 2	CENPH; NUF2; CDCA8; CENPM; AURKB; SKA1; SPC24
## 3	GINS1; GINS2
## 4	CCNB1; MELK; CDC25C; AURKA

## 5	CCNB1;CDC25C;AURKA
## 6	FBX05;CDC25C
## 7	CCNB1;FIGNL1;CDC25C
## 8	CDC6;SKA1;AURKA
## 9	CCNB1;AURKB;AURKA
## 10	AURKB;AURKA
## 11	CCNB1;FBX05
## 12	CENPH;CENPM
## 13	CCNB1;AURKA
## 14	CCNB1;AURKB;AURKA
## 15	MELK;AURKB;AURKA
## 16	RRM2;TYMS
## 17	CDC6;AURKB
## 18	CCNB1;CDCA8
## 19	AURKB;AURKA
## 20	CDC6;CDC25C
## 21	DHFR;TYMS
## 22	NUF2;SKA1
## 23	CDCA8;AURKB
## 24	CCNB1;FBX05
## 25	MYOC;FIGNL1
## 26	CCNB1;FBX05
## 27	CDC6;CDC25C
## 28	AURKB;AURKA
## 29	MFAP5;MFAP2
## 30	WNT8B;TSHR
## 31	CDC6;IFIT3
## 32	FIGNL1;IFIT3
## 33	AURKB;AURKA
## 34	OPN1SW;WNT8B
## 35	AURKB
## 36	TSHR
## 37	TSHR
## 38	TSHR
## 39	MELK
## 40	MELK
## 41	MELK
## 42	CAPN9
## 43	TSHR
## 44	SPAG16
## 45	DDX4
## 46	MYOC
## 47	DHFR
## 48	CHAF1B
## 49	IFIT3
## 50	CMBL
## 51	CDC6
## 52	NEUROG2
## 53	DEPTOR
## 54	LTBP2
## 55	IFIT3
## 56	FAM109B
## 57	MYOC
## 58	CMA1

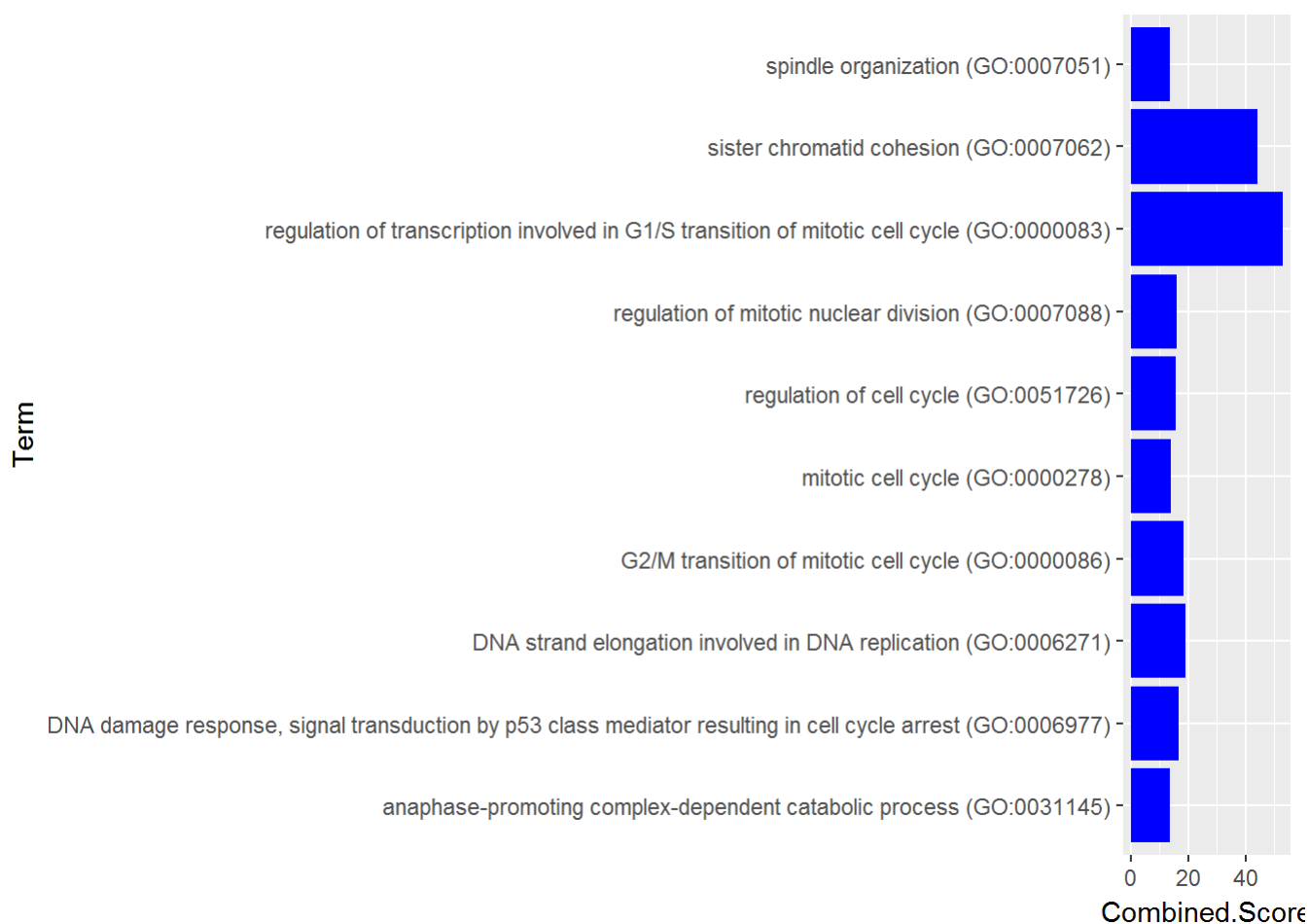
## 59	MYO1A
## 60	WNT8B
## 61	FMOD
## 62	MYOC
## 63	WNT8B
## 64	AURKA
## 65	AURKA
## 66	OPN1SW
## 67	EME1
## 68	MYOC
## 69	TK1
## 70	PPP1R36
## 71	CCNB1
## 72	EME1
## 73	DDX4
## 74	WNT8B
## 75	MELK
## 76	MYOC
## 77	CDC6
## 78	DDX4
## 79	MYOC
## 80	LTBP2
## 81	FIGNL1
## 82	DDX4
## 83	DHFR
## 84	RAD54L
## 85	FBXO5
## 86	FAM109B
## 87	CMA1
## 88	CCNB1
## 89	SPAG16
## 90	AURKB
## 91	MYOC
## 92	TK1
## 93	IFIT3
## 94	DDX4
## 95	TYMS
## 96	CMA1
## 97	AURKB
## 98	PNLIPRP2
## 99	MYOC
## 100	TSHR
## 101	DDX4
## 102	FIGNL1
## 103	NCAPG
## 104	TSHR
## 105	TSHR
## 106	RAD54L
## 107	EME1
## 108	CMA1
## 109	AURKB
## 110	MYOC
## 111	FMOD
## 112	WNT8B

## 113	SPINK2
## 114	SLC6A12
## 115	DEPTOR
## 116	AURKA
## 117	WNT8B
## 118	SPINK2
## 119	SKA1
## 120	TSHR
## 121	RAD54L
## 122	TK1
## 123	CDC6
## 124	AURKB
## 125	DHFR
## 126	WNT8B
## 127	SASS6
## 128	TSHR
## 129	AURKB
## 130	AURKA
## 131	CDCA8
## 132	LTBP2
## 133	AURKB
## 134	DHFR
## 135	MYOC
## 136	CHAF1B
## 137	FIGNL1
## 138	FMOD
## 139	WNT8B
## 140	TYMS
## 141	FIGNL1
## 142	MYOC
## 143	MFAP5
## 144	FAM109B
## 145	SASS6
## 146	CHAF1B
## 147	DEPTOR
## 148	LTBP2
## 149	EME1
## 150	CCNB1
## 151	TK1
## 152	WNT8B
## 153	CDC6
## 154	AURKB
## 155	DYDC2
## 156	EME1
## 157	FBXO5
## 158	AURKB
## 159	MYOC
## 160	MYOC
## 161	AURKB
## 162	AURKB
## 163	TSHR
## 164	AURKB
## 165	CDC6
## 166	AURKB

```
## 167          DHFR
## 168          AURKB
## 169          MFAP2
## 170          PNLIPRP2
## 171          MYOC
## 172          SKA1
## 173          GINS2
```

```
write.table(deGenes_lrt_fdr_GO_Biological_Process_2017,file="deGenes_lrt_fdr_GO_Biological_Proce
ss_2017.txt",sep="\t")
View(deGenes_lrt_fdr_GO_Biological_Process_2017)
```

```
#plotting the top 10 terms
deGenes_lrt_fdr_GO_Biological_Process_2017Data<-deGenes_lrt_fdr_GO_Biological_Process_2017[order
(-deGenes_lrt_fdr_GO_Biological_Process_2017$Combined.Score),]
deGenes_lrt_fdr_GO_Biological_Process_2017Data<-deGenes_lrt_fdr_GO_Biological_Process_2017Data[1
:10,]
ggplot(deGenes_lrt_fdr_GO_Biological_Process_2017Data,aes(x=Term, y = Combined.Score)) + geom_ba
r(stat = 'identity', fill="blue", position='dodge') +coord_flip()
```



```
dev.print(pdf,"deGenes_lrt_fdr_GO_Biological_Process_2017plot.pdf")
```

```
## png  
## 2
```

KEGG pathway

```
deGenes_lrt_fdr_KEGG_2016<-enriched[["KEGG_2016"]]  
print(deGenes_lrt_fdr_KEGG_2016)
```


##	Term					
## 1	Oocyte meiosis_Homo sapiens_hsa04114					
## 2	One carbon pool by folate_Homo sapiens_hsa00670					
## 3	Pyrimidine metabolism_Homo sapiens_hsa00240					
## 4	Homologous recombination_Homo sapiens_hsa03440					
## 5	Cell cycle_Homo sapiens_hsa04110					
## 6	p53 signaling pathway_Homo sapiens_hsa04115					
## 7	Progesterone-mediated oocyte maturation_Homo sapiens_hsa04914					
## 8	Renin-angiotensin system_Homo sapiens_hsa04614					
## 9	Fat digestion and absorption_Homo sapiens_hsa04975					
## 10	Drug metabolism - other enzymes_Homo sapiens_hsa00983					
## 11	Hedgehog signaling pathway_Homo sapiens_hsa04340					
## 12	Glutathione metabolism_Homo sapiens_hsa00480					
## 13	Regulation of lipolysis in adipocytes_Homo sapiens_hsa04923					
## 14	Autoimmune thyroid disease_Homo sapiens_hsa05320					
## 15	Basal cell carcinoma_Homo sapiens_hsa05217					
## 16	Fanconi anemia pathway_Homo sapiens_hsa03460					
## 17	Glycerolipid metabolism_Homo sapiens_hsa00561					
## 18	Folate biosynthesis_Homo sapiens_hsa00790					
## 19	Thyroid hormone synthesis_Homo sapiens_hsa04918					
## 20	Metabolic pathways_Homo sapiens_hsa01100					
## 21	Melanogenesis_Homo sapiens_hsa04916					
## 22	Pancreatic secretion_Homo sapiens_hsa04972					
## 23	FoxO signaling pathway_Homo sapiens_hsa04068					
## 24	Wnt signaling pathway_Homo sapiens_hsa04310					
## 25	Signaling pathways regulating pluripotency of stem cells_Homo sapiens_hsa04550					
## 26	Hippo signaling pathway_Homo sapiens_hsa04390					
## 27	Purine metabolism_Homo sapiens_hsa00230					
## 28	Proteoglycans in cancer_Homo sapiens_hsa05205					
## 29	cAMP signaling pathway_Homo sapiens_hsa04024					
## 30	HTLV-I infection_Homo sapiens_hsa05166					
## 31	Neuroactive ligand-receptor interaction_Homo sapiens_hsa04080					
## 32	MicroRNAs in cancer_Homo sapiens_hsa05206					
## 33	Pathways in cancer_Homo sapiens_hsa05200					
##	Overlap	P.value	Adjusted.P.value	Old.P.value	Old.Adjusted.P.value	
## 1	5/123	0.0001195735	0.003945925	9.627897e-06	0.0003177206	
## 2	2/20	0.0027259455	0.044978101	1.236910e-03	0.0202803292	
## 3	3/105	0.0080439043	0.066362210	2.052283e-03	0.0202803292	
## 4	2/29	0.0056942404	0.062636644	2.458222e-03	0.0202803292	
## 5	3/124	0.0126256679	0.083329408	3.257236e-03	0.0214977550	
## 6	2/69	0.0297683092	0.163725701	1.241189e-02	0.0682653769	
## 7	2/98	0.0561295994	0.231534597	2.372955e-02	0.1118678894	
## 8	1/23	0.0860002093	0.315334101	5.656478e-02	0.2074041809	
## 9	1/41	0.1481743094	0.377977643	9.699709e-02	0.2358534590	
## 10	1/46	0.1646910861	0.377977643	1.079354e-01	0.2358534590	
## 11	1/50	0.1776765329	0.377977643	1.165962e-01	0.2358534590	
## 12	1/52	0.1840943216	0.377977643	1.208968e-01	0.2358534590	
## 13	1/56	0.1967819248	0.377977643	1.294391e-01	0.2358534590	
## 14	1/53	0.1872846486	0.377977643	1.230398e-01	0.2358534590	
## 15	1/55	0.1936284034	0.377977643	1.273109e-01	0.2358534590	
## 16	1/53	0.1872846486	0.377977643	1.230398e-01	0.2358534590	
## 17	1/59	0.2061696235	0.377977643	1.357944e-01	0.2358534590	
## 18	1/14	0.0532541259	0.231534597	3.571545e-02	0.1473262420	

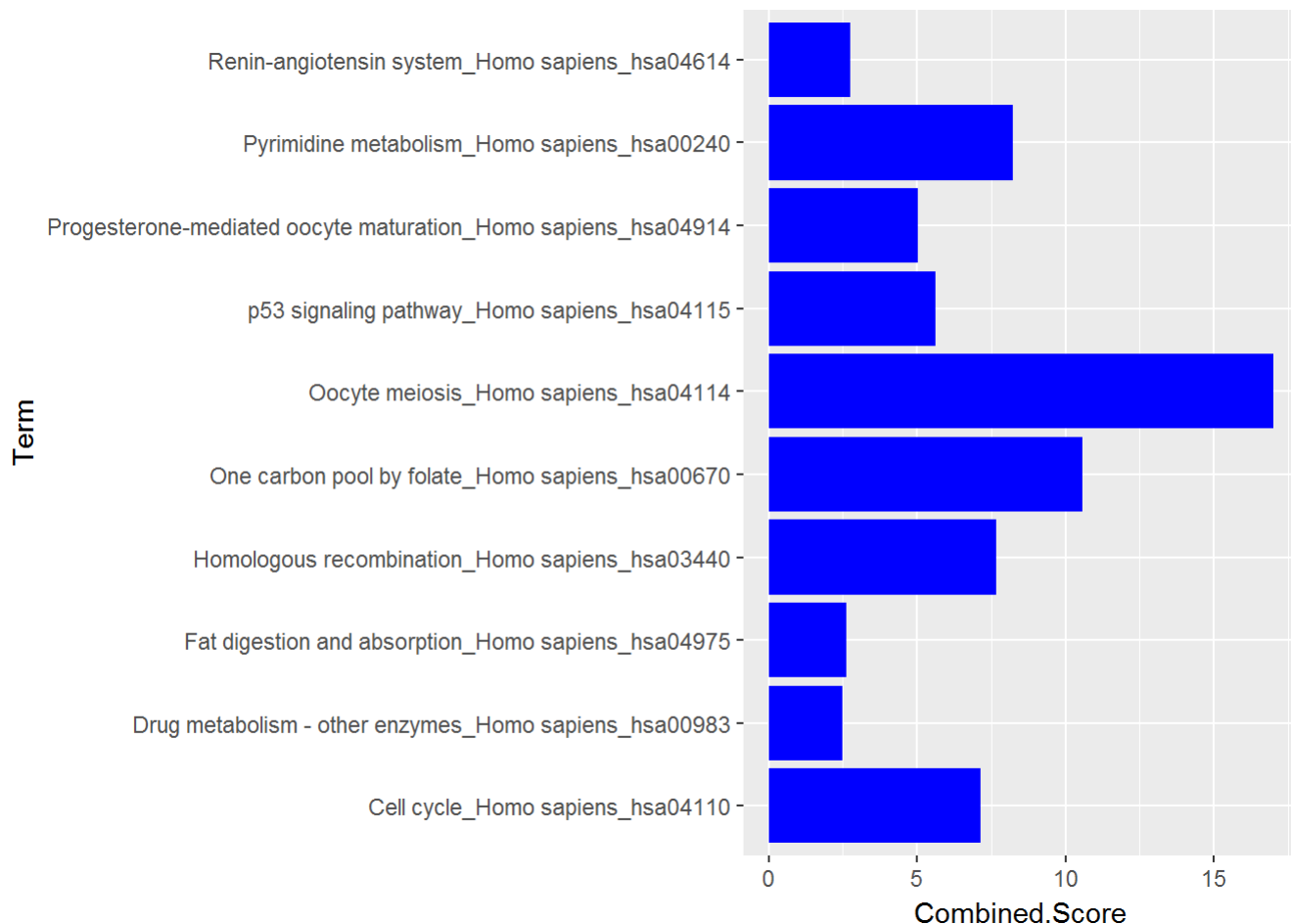
```
## 19 1/71 0.2426493962 0.421443688 1.607817e-01 0.2652898787
## 20 6/1239 0.3535088396 0.530263259 6.487105e-02 0.2140744789
## 21 1/100 0.3241166281 0.509326130 2.183896e-01 0.3275844615
## 22 1/96 0.3134165639 0.509326130 2.106712e-01 0.3275844615
## 23 1/133 0.4063350387 0.563626585 2.794106e-01 0.3897396923
## 24 1/142 0.4269898368 0.563626585 2.952573e-01 0.3897396923
## 25 1/142 0.4269898368 0.563626585 2.952573e-01 0.3897396923
## 26 1/153 0.4512732024 0.572769834 3.141802e-01 0.3987672073
## 27 1/176 0.4988122593 0.609659428 3.522119e-01 0.4304811992
## 28 1/203 0.5494512224 0.625237598 3.943240e-01 0.4487134734
## 29 1/199 0.5422810084 0.625237598 3.882521e-01 0.4487134734
## 30 1/258 0.6374938049 0.701243185 4.722666e-01 0.5194932757
## 31 1/277 0.6637717938 0.706595780 4.969232e-01 0.5289827623
## 32 1/297 0.6894019750 0.710945787 5.217038e-01 0.5380070354
## 33 1/397 0.7913134900 0.791313490 6.293008e-01 0.6293007987
```

##	Z.score	Combined.Score	Genes
## 1	-1.8837506	17.0132427	CCNB1;SGOL1;FBX05;CDC25C;AURKA
## 2	-1.7886927	10.5621228	DHFR;TYMS
## 3	-1.7074980	8.2349907	RRM2;TK1;TYMS
## 4	-1.4864404	7.6823698	EME1;RAD54L
## 5	-1.6320791	7.1354878	CCNB1;CDC6;CDC25C
## 6	-1.5988150	5.6187328	CCNB1;RRM2
## 7	-1.7444680	5.0242282	CCNB1;CDC25C
## 8	-1.1201709	2.7482336	CMA1
## 9	-1.3764836	2.6282110	PNLIPRP2
## 10	-1.3780880	2.4856349	TK1
## 11	-1.3143756	2.2709657	WNT8B
## 12	-1.3372790	2.2630866	RRM2
## 13	-1.3213925	2.1481337	TSHR
## 14	-1.2800138	2.1441839	TSHR
## 15	-1.2627193	2.0731507	WNT8B
## 16	-1.2176794	2.0397660	EME1
## 17	-1.2647977	1.9971864	PNLIPRP2
## 18	-0.6636062	1.9461445	DHFR
## 19	-1.2547832	1.7769457	TSHR
## 20	-1.4900973	1.5494729	DHFR;PNLIPRP2;RRM2;TK1;CMBL;TYMS
## 21	-1.3726639	1.5465144	WNT8B
## 22	-1.2041796	1.3971157	PNLIPRP2
## 23	-1.2671435	1.1411606	CCNB1
## 24	-1.2700430	1.0808003	WNT8B
## 25	-1.2550889	1.0680745	WNT8B
## 26	-1.1351080	0.9031854	WNT8B
## 27	-1.1598873	0.8067312	RRM2
## 28	-1.2886087	0.7716643	WNT8B
## 29	-1.2466662	0.7629235	TSHR
## 30	-1.2185801	0.5486178	WNT8B
## 31	-1.1686261	0.4789227	TSHR
## 32	-1.1597604	0.4313506	CDC25C
## 33	-1.2555902	0.2938848	WNT8B

```
write.table(deGenes_lrt_fdr_KEGG_2016,file="deGenes_lrt_fdr_KEGG_2016.txt",sep="\t")
View(deGenes_lrt_fdr_KEGG_2016)
```

```
#plotting the top 10 terms
```

```
deGenes_lrt_fdr_KEGG_2016Data<-deGenes_lrt_fdr_KEGG_2016[order(-deGenes_lrt_fdr_KEGG_2016$Combined.Score),]
deGenes_lrt_fdr_KEGG_2016Data<-deGenes_lrt_fdr_KEGG_2016Data[1:10,]
ggplot(deGenes_lrt_fdr_KEGG_2016Data,aes(x=Term, y = Combined.Score)) + geom_bar(stat = 'identity', fill="blue", position='dodge') +coord_flip()
```



```
dev.print(pdf,"deGenes_lrt_fdr_KEGG_2016plot.pdf")
```

```
## png
```

```
## 2
```

Reactome pathway

```
deGenes_lrt_fdr_Reactome_2016<-enriched[["Reactome_2016"]]
print(deGenes_lrt_fdr_Reactome_2016)
```

##	Term	
## 1	Cell Cycle, Mitotic_Homo sapiens_R-HSA-69278	
## 2	Cell Cycle_Homo sapiens_R-HSA-1640170	
## 3	Mitotic Prometaphase_Homo sapiens_R-HSA-68877	
## 4	Sister Chromatid Cohesion_Homo sapiens_R-HSA-2500257	Resolution of Si
## 5	M Phase_Homo sapiens_R-HSA-68886	
## 6	Regulation of DNA replication_Homo sapiens_R-HSA-113510	E2F mediated regul
## 7	Metaphase and Anaphase_Homo sapiens_R-HSA-2555396	Mitotic
## 8	G1/S-Specific Transcription_Homo sapiens_R-HSA-69205	G
## 9	TPases Activate Formins_Homo sapiens_R-HSA-5663220	RHO G
## 10	Separation of Sister Chromatids_Homo sapiens_R-HSA-2467813	Separati
## 11	Mitotic Anaphase_Homo sapiens_R-HSA-68882	
## 12	RHO GTPase Effectors_Homo sapiens_R-HSA-195258	
## 13	G1/S Transition_Homo sapiens_R-HSA-69206	
## 14	Signaling by Rho GTPases_Homo sapiens_R-HSA-194315	
## 15	Mitotic G1-G1/S phases_Homo sapiens_R-HSA-453279	
## 16	TP53 Regulates Transcription of Genes Involved in G2 Cell Cycle Arrest_Homo sapiens_R-HSA-6804114	
## 17	APC/C-mediated degradation of cell cycle proteins_Homo sapiens_R-HSA-174143	APC/C-mediated degradatio
## 18	Regulation of mitotic cell cycle_Homo sapiens_R-HSA-453276	Regulati
## 19	SUMOylation of DNA replication proteins_Homo sapiens_R-HSA-4615885	SUMOylation of D
## 20	Molecules associated with elastic fibres_Homo sapiens_R-HSA-2129379	Molecules associa
## 21	Extracellular matrix organization_Homo sapiens_R-HSA-1474244	Extracellu
## 22	Elastic fibre formation_Homo sapiens_R-HSA-1566948	
## 23	TP53 Regulates Transcription of Cell Cycle Genes_Homo sapiens_R-HSA-6791312	TP53 Regulates Transcript
## 24	Synthesis of DNA_Homo sapiens_R-HSA-69239	
## 25	DNA Replication_Homo sapiens_R-HSA-69306	
## 26		

Metabolism of nucleotides_Homo sapiens_R-HSA-15869	
## 27	SUMO E3 ligases SU
MOylate target proteins_Homo sapiens_R-HSA-3108232	
## 28	Cyclin A/B1 associated even
ts during G2/M transition_Homo sapiens_R-HSA-69273	
## 29	
S Phase_Homo sapiens_R-HSA-69242	
## 30	
SUMOylation_Homo sapiens_R-HSA-2990846	
## 31	Polo-lik
e kinase mediated events_Homo sapiens_R-HSA-156711	
## 32	
DNA strand elongation_Homo sapiens_R-HSA-69190	
## 33	
Pyrimidine metabolism_Homo sapiens_R-HSA-73848	
## 34	
Unwinding of DNA_Homo sapiens_R-HSA-176974	
## 35	Chk1/Chk2(Cds1) mediated inactivation
of Cyclin B:Cdk1 complex_Homo sapiens_R-HSA-75035	
## 36	
G2/M Checkpoints_Homo sapiens_R-HSA-69481	
## 37	Activation of ATR in respon
se to replication stress_Homo sapiens_R-HSA-176187	
## 38	Deposition of new CENPA-containing nucle
osomes at the centromere_Homo sapiens_R-HSA-606279	
## 39	
Nucleosome assembly_Homo sapiens_R-HSA-774815	
## 40	Condensation of P
rometaphase Chromosomes_Homo sapiens_R-HSA-2514853	
## 41	
Cell Cycle Checkpoints_Homo sapiens_R-HSA-69620	
## 42	
G2/M Transition_Homo sapiens_R-HSA-69275	
## 43	
Mitotic G2-G2/M phases_Homo sapiens_R-HSA-453274	
## 44	APC/C:Cdh1 mediated degradation of Cdc20 and other APC/C:Cdh1 targeted proteins
in late mitosis/early G1_Homo sapiens_R-HSA-174178	
## 45	Regulation of APC/C activators between
G1/S and early anaphase_Homo sapiens_R-HSA-176408	
## 46	G
2/M DNA damage checkpoint_Homo sapiens_R-HSA-69473	
## 47	Transcripti
onal Regulation by TP53_Homo sapiens_R-HSA-3700989	
## 48	
Chromosome Maintenance_Homo sapiens_R-HSA-73886	
## 49	
Phosphorylation of Emi1_Homo sapiens_R-HSA-176417	
## 50	Regulation of TP53 Activity
through Phosphorylation_Homo sapiens_R-HSA-6804756	
## 51	Regulation of PLK1 Acti
vity at G2/M Transition_Homo sapiens_R-HSA-2565942	
## 52	Degradation of t
he extracellular matrix_Homo sapiens_R-HSA-1474228	
## 53	Regu

lation of TP53 Activity_Homo sapiens_R-HSA-5633007	
## 54	
Signal Transduction_Homo sapiens_R-HSA-162582	
## 55	Disassembly of the destruction complex and recruitment
of AXIN to the membrane_Homo sapiens_R-HSA-4641262	
## 56	
GPCR ligand binding_Homo sapiens_R-HSA-500792	
## 57	The role of GTSE1 in G2/M progress
ion after G2 checkpoint_Homo sapiens_R-HSA-8852276	
## 58	Nuc
lear Envelope Breakdown_Homo sapiens_R-HSA-2980766	
## 59	Assembly of th
e pre-replicative complex_Homo sapiens_R-HSA-68867	
## 60	CDK-mediated phosphoryl
ation and removal of Cdc6_Homo sapiens_R-HSA-69017	
## 61	CDT1 association with th
e CDC6:ORC:origin complex_Homo sapiens_R-HSA-68827	
## 62	SCF-beta-TrCP medi
ated degradation of Emi1_Homo sapiens_R-HSA-174113	
## 63	
Meiotic recombination_Homo sapiens_R-HSA-912446	
## 64	Nuclear Pore Co
mplex (NPC) Disassembly_Homo sapiens_R-HSA-3301854	
## 65	Removal of licen
sing factors from origins_Homo sapiens_R-HSA-69300	
## 66	APC/C:Cdc20 mediated degrada
tion of mitotic proteins_Homo sapiens_R-HSA-176409	
## 67	Switching of origins to
a post-replicative state_Homo sapiens_R-HSA-69052	
## 68	Regu
lation of DNA replication_Homo sapiens_R-HSA-69304	
## 69	Or
c1 removal from chromatin_Homo sapiens_R-HSA-68949	
## 70	Activation of APC/C and APC/C:Cdc20 mediated degrada
tion of mitotic proteins_Homo sapiens_R-HSA-176814	
## 71	Amino acid and oligo
peptide SLC transporters_Homo sapiens_R-HSA-425374	
## 72	Condensation
of Prophase Chromosomes_Homo sapiens_R-HSA-2299718	
## 73	
Fanconi Anemia Pathway_Homo sapiens_R-HSA-6783310	
## 74	
M/G1 Transition_Homo sapiens_R-HSA-68874	
## 75	DNA R
eplication Pre-Initiation_Homo sapiens_R-HSA-69002	
## 76	HDR through Homolog
ous Recombination (HRR)_Homo sapiens_R-HSA-5685942	
## 77	Amino acid transport ac
ross the plasma membrane_Homo sapiens_R-HSA-352230	
## 78	APC/C:Cdc20 mediated
degradation of Cyclin B_Homo sapiens_R-HSA-174048	
## 79	RH
O GTPases activate PKNs_Homo sapiens_R-HSA-5625740	
## 80	Neurot

ransmitter Release Cycle_Homo sapiens_R-HSA-112310	
## 81	
Metabolism of polyamines_Homo sapiens_R-HSA-351202	
## 82	Resoluti
on of D-Loop Structures_Homo sapiens_R-HSA-5693537	
## 83	Amine c
ompound SLC transporters_Homo sapiens_R-HSA-425428	
## 84	PIWI-interacting
RNA (piRNA) biogenesis_Homo sapiens_R-HSA-5601884	
## 85	Resolution of D-loop Structures through Holliday
Junction Intermediates_Homo sapiens_R-HSA-5693568	
## 86	Post-translatio
nal protein modification_Homo sapiens_R-HSA-597592	
## 87	Class B/2 (Se
cretin family receptors)_Homo sapiens_R-HSA-373080	
## 88	
ECM proteoglycans_Homo sapiens_R-HSA-3000178	
## 89	WNT ligand bio
genesis and trafficking_Homo sapiens_R-HSA-3238698	
## 90	Pep
tide hormone metabolism_Homo sapiens_R-HSA-2980736	
## 91	Interfe
ron alpha/beta signaling_Homo sapiens_R-HSA-909733	
## 92	Keratan sul
fate/keratin metabolism_Homo sapiens_R-HSA-1638074	
## 93	
Gene Silencing by RNA_Homo sapiens_R-HSA-211000	
## 94	Class A/1 (R
hodopsin-like receptors)_Homo sapiens_R-HSA-373076	
## 95	Activation of th
e pre-replicative complex_Homo sapiens_R-HSA-68962	
## 96	
Meiosis_Homo sapiens_R-HSA-1500620	
## 97	Recruitment of mitotic centrosom
e proteins and complexes_Homo sapiens_R-HSA-380270	
## 98	A
URKA Activation by TPX2_Homo sapiens_R-HSA-8854518	
## 99	
Centrosome maturation_Homo sapiens_R-HSA-380287	
## 100	Lipid digestion, mo
bilization, and transport_Homo sapiens_R-HSA-73923	
## 101	Gener
ic Transcription Pathway_Homo sapiens_R-HSA-212436	
## 102	Synthesis and interconversion of nucleoti
de di- and triphosphates_Homo sapiens_R-HSA-499943	
## 103	Diseases associated with glyco
saminoglycan metabolism_Homo sapiens_R-HSA-3560782	
## 104	Phase 1 - Functi
onalization of compounds_Homo sapiens_R-HSA-211945	
## 105	
Mitotic Prophase_Homo sapiens_R-HSA-68875	
## 106	
G0 and Early G1_Homo sapiens_R-HSA-1538133	
## 107	Activation of Ma

trix Metalloproteinases_Homo sapiens_R-HSA-1592389	
## 108	Kerat
an sulfate biosynthesis_Homo sapiens_R-HSA-2022854	
## 109	Di
seases of glycosylation_Homo sapiens_R-HSA-3781865	
## 110	Metabolism of water-solubl
e vitamins and cofactors_Homo sapiens_R-HSA-196849	
## 111	HDR through Homologous Recombination (HR) or Single
Strand Annealing (SSA)_Homo sapiens_R-HSA-5693567	
## 112	Transport of inorganic cations/anions and a
mino acids/oligopeptides_Homo sapiens_R-HSA-425393	
## 113	Transport of glucose and other sugars, bile salts and organic acids, metal
ions and amine compounds_Homo sapiens_R-HSA-425366	
## 114	H
omology Directed Repair_Homo sapiens_R-HSA-5693538	
## 115	V
isual phototransduction_Homo sapiens_R-HSA-2187338	
## 116	Glyco
saminoglycan metabolism_Homo sapiens_R-HSA-1630316	
## 117	
Metabolism_Homo sapiens_R-HSA-1430728	
## 118	G alp
ha (s) signalling events_Homo sapiens_R-HSA-418555	
## 119	DNA Dou
ble-Strand Break Repair_Homo sapiens_R-HSA-5693532	
## 120	Phos
phorylation of the APC/C_Homo sapiens_R-HSA-176412	
## 121	Metabolism o
f vitamins and cofactors_Homo sapiens_R-HSA-196854	
## 122	TCF dependent sign
aling in response to WNT_Homo sapiens_R-HSA-201681	
## 123	
Biological oxidations_Homo sapiens_R-HSA-211859	
## 124	
Interferon Signaling_Homo sapiens_R-HSA-913531	
## 125	Transmission
across Chemical Synapses_Homo sapiens_R-HSA-112315	
## 126	
Metabolism of proteins_Homo sapiens_R-HSA-392499	
## 127	G alp
ha (i) signalling events_Homo sapiens_R-HSA-418594	
## 128	Me
tabolism of nitric oxide_Homo sapiens_R-HSA-202131	
## 129	Diseases
of signal transduction_Homo sapiens_R-HSA-5663202	
## 130	Me
tabolism of carbohydrates_Homo sapiens_R-HSA-71387	
## 131	
DNA Repair_Homo sapiens_R-HSA-73894	
## 132	
Signaling by Wnt_Homo sapiens_R-HSA-195721	
## 133	eNOS a
ctivation and regulation_Homo sapiens_R-HSA-203765	
## 134	Association of licensing factors with th

e pre-replicative complex_Homo sapiens_R-HSA-69298	
## 135	SLC-mediated
transmembrane transport_Homo sapiens_R-HSA-425407	
## 136	
Signaling by SCF-KIT_Homo sapiens_R-HSA-1433557	
## 137	
Neuronal System_Homo sapiens_R-HSA-112316	
## 138	Depolymerisatio
n of the Nuclear Lamina_Homo sapiens_R-HSA-4419969	
## 139	GABA synthesis, release,
reuptake and degradation_Homo sapiens_R-HSA-888590	
## 140	Metabolism of am
ino acids and derivatives_Homo sapiens_R-HSA-71291	
## 141	
Disease_Homo sapiens_R-HSA-1643685	
## 142	
Gene Expression_Homo sapiens_R-HSA-74160	
## 143 TP53 regulates transcription of additional cell cycle genes whose exact role in the p53 p	
athway remain uncertain_Homo sapiens_R-HSA-6804115	
## 144	
Signaling by GPCR_Homo sapiens_R-HSA-372790	
## 145	G
PCR downstream signaling_Homo sapiens_R-HSA-388396	
## 146	Cytokine Sig
naling in Immune system_Homo sapiens_R-HSA-1280215	
## 147	Transmembrane tran
sport of small molecules_Homo sapiens_R-HSA-382551	
## 148	Metabolism of
lipids and lipoproteins_Homo sapiens_R-HSA-556833	
## 149	Na+/Cl- dependent neuro
transmitter transporters_Homo sapiens_R-HSA-442660	
## 150	
Immune System_Homo sapiens_R-HSA-168256	
## 151	Di
gestion of dietary lipid_Homo sapiens_R-HSA-192456	
## 152	Metabolis
m of folate and pterines_Homo sapiens_R-HSA-196757	
## 153	Golgi Cisternae Pericentrio
lar Stack Reorganization_Homo sapiens_R-HSA-162658	
## 154	Metabolism of Angioten
sinogen to Angiotensins_Homo sapiens_R-HSA-2022377	
## 155	Recruitment of NuM
A to mitotic centrosomes_Homo sapiens_R-HSA-380320	
## 156	Tetrahydrobiopterin (BH4) synthesis, recycling,
salvage and regulation_Homo sapiens_R-HSA-1474151	
## 157	Kera
tan sulfate degradation_Homo sapiens_R-HSA-2022857	
## 158	MASTL Facilita
tes Mitotic Progression_Homo sapiens_R-HSA-2465910	
## 159	Hormone
ligand-binding receptors_Homo sapiens_R-HSA-375281	
## 160	CDC6 association wi
th the ORC:origin complex_Homo sapiens_R-HSA-68689	
## 161	E2F-enabled inhibition of pre-repli

cation complex formation_Homo sapiens_R-HSA-113507	
## 162	G2/M D
NA replication checkpoint_Homo sapiens_R-HSA-69478	
## 163	Retino
id cycle disease events_Homo sapiens_R-HSA-2453864	
## 164	Pyr
imidine salvage reactions_Homo sapiens_R-HSA-73614	
## 165	
Opsins_Homo sapiens_R-HSA-419771	
## 166	Diseases associated w
ith visual transduction_Homo sapiens_R-HSA-2474795	
## 167	Activation of NIMA K
inases NEK9, NEK6, NEK7_Homo sapiens_R-HSA-2980767	
## 168	
Creatine metabolism_Homo sapiens_R-HSA-71288	
## 169	
Pyrimidine biosynthesis_Homo sapiens_R-HSA-500753	
## 170	The retinoid cycle in
cones (daylight vision)_Homo sapiens_R-HSA-2187335	
## 171	Defective ST3GAL3
causes MCT12 and EIEE15_Homo sapiens_R-HSA-3656243	
## 172	Defective B4GALT1 caus
es B4GALT1-CDG (CDG-2d)_Homo sapiens_R-HSA-3656244	
## 173	Defec
tive CHST6 causes MCDC1_Homo sapiens_R-HSA-3656225	
## 174	C
yclin B2 mediated events_Homo sapiens_R-HSA-157881	
## Overlap P.value Adjusted.P.value Old.P.value	
## 1 19/462 1.073935e-14 1.868646e-12 1.732393e-15	
## 2 20/566 3.350654e-14 2.915069e-12 3.676260e-15	
## 3 10/107 1.162520e-11 6.742614e-10 1.769835e-11	
## 4 9/99 1.693715e-10 7.367660e-09 2.623421e-10	
## 5 11/268 7.168532e-09 1.781892e-07 6.232970e-09	
## 6 6/33 2.946396e-09 1.025346e-07 7.799894e-09	
## 7 9/174 2.528471e-08 4.888378e-07 2.838588e-08	
## 8 5/17 4.725344e-09 1.370350e-07 1.913878e-08	
## 9 8/114 1.462394e-08 3.180707e-07 1.978410e-08	
## 10 8/162 2.258221e-07 3.929304e-06 2.630095e-07	
## 11 8/173 3.732798e-07 5.904608e-06 4.255145e-07	
## 12 9/255 6.552539e-07 9.501181e-06 6.543424e-07	
## 13 6/112 4.987122e-06 6.675071e-05 6.280722e-06	
## 14 9/367 1.278733e-05 1.589282e-04 1.206591e-05	
## 15 6/136 1.521333e-05 1.764746e-04 1.820169e-05	
## 16 3/18 4.464091e-05 4.854699e-04 7.418579e-05	
## 17 4/85 3.411159e-04 2.967708e-03 4.117767e-04	
## 18 4/85 3.411159e-04 2.967708e-03 4.117767e-04	
## 19 3/44 6.735756e-04 5.327370e-03 8.421796e-04	
## 20 3/30 2.147502e-04 2.155311e-03 2.944654e-04	
## 21 6/283 8.332747e-04 6.041242e-03 8.947983e-04	
## 22 3/41 5.467299e-04 4.530047e-03 6.935496e-04	
## 23 3/48 8.698631e-04 6.054247e-03 1.069827e-03	
## 24 3/97 6.468624e-03 3.410729e-02 7.266162e-03	
## 25 3/105 8.043904e-03 3.887887e-02 8.976272e-03	
## 26 3/87 4.781319e-03 2.683708e-02 5.424973e-03	

## 27	3/96	6.285990e-03	3.410729e-02	7.067406e-03
## 28	2/22	3.297491e-03	1.978495e-02	4.054704e-03
## 29	3/124	1.262567e-02	5.781227e-02	1.391976e-02
## 30	3/101	7.230713e-03	3.594697e-02	8.094366e-03
## 31	2/16	1.739132e-03	1.080746e-02	2.281806e-03
## 32	2/32	6.904186e-03	3.533319e-02	8.037820e-03
## 33	2/24	3.920036e-03	2.273621e-02	4.750687e-03
## 34	2/12	9.662460e-04	6.226919e-03	1.370857e-03
## 35	2/12	9.662460e-04	6.226919e-03	1.370857e-03
## 36	3/150	2.089166e-02	8.453833e-02	2.277411e-02
## 37	2/37	9.154750e-03	4.305207e-02	1.048495e-02
## 38	2/52	1.755447e-02	7.636194e-02	1.950496e-02
## 39	2/52	1.755447e-02	7.636194e-02	1.950496e-02
## 40	2/11	8.072451e-04	6.041242e-03	1.177977e-03
## 41	3/182	3.430297e-02	1.055118e-01	3.705297e-02
## 42	3/173	3.017035e-02	1.049875e-01	3.266080e-02
## 43	3/175	3.106445e-02	1.049875e-01	3.361155e-02
## 44	2/71	3.137559e-02	1.049875e-01	3.416994e-02
## 45	2/79	3.813533e-02	1.058668e-01	4.130167e-02
## 46	2/78	3.726221e-02	1.058668e-01	4.038157e-02
## 47	4/348	4.712747e-02	1.158808e-01	5.049176e-02
## 48	2/86	4.446203e-02	1.154685e-01	4.796089e-02
## 49	2/6	2.229633e-04	2.155311e-03	4.282147e-04
## 50	2/89	4.728471e-02	1.158808e-01	5.092793e-02
## 51	2/87	4.539569e-02	1.155496e-01	4.894255e-02
## 52	2/106	6.443630e-02	1.437425e-01	6.891588e-02
## 53	2/151	1.174791e-01	2.067396e-01	1.242730e-01
## 54	13/2465	1.588592e-01	2.657837e-01	1.650091e-01
## 55	1/31	1.141676e-01	2.067396e-01	1.204543e-01
## 56	3/447	2.533129e-01	3.513662e-01	2.672913e-01
## 57	1/59	2.061696e-01	3.174647e-01	2.141838e-01
## 58	1/51	1.808916e-01	2.914365e-01	1.884435e-01
## 59	1/67	2.306772e-01	3.460158e-01	2.391296e-01
## 60	1/50	1.776765e-01	2.914365e-01	1.851689e-01
## 61	1/58	2.030525e-01	3.154565e-01	2.110102e-01
## 62	1/54	1.904627e-01	3.012773e-01	1.981907e-01
## 63	1/54	1.904627e-01	3.012773e-01	1.981907e-01
## 64	1/34	1.245079e-01	2.144988e-01	1.309946e-01
## 65	1/72	2.456136e-01	3.503013e-01	2.543279e-01
## 66	1/74	2.515077e-01	3.513662e-01	2.603243e-01
## 67	1/70	2.396737e-01	3.503013e-01	2.482843e-01
## 68	1/75	2.544376e-01	3.513662e-01	2.633048e-01
## 69	1/70	2.396737e-01	3.503013e-01	2.482843e-01
## 70	1/75	2.544376e-01	3.513662e-01	2.633048e-01
## 71	1/49	1.744490e-01	2.890869e-01	1.818814e-01
## 72	1/41	1.481743e-01	2.503139e-01	1.551135e-01
## 73	1/35	1.279282e-01	2.182304e-01	1.344807e-01
## 74	1/82	2.746327e-01	3.647793e-01	2.838442e-01
## 75	1/82	2.746327e-01	3.647793e-01	2.838442e-01
## 76	1/64	2.215757e-01	3.352536e-01	2.298665e-01
## 77	1/31	1.141676e-01	2.067396e-01	1.204543e-01
## 78	1/23	8.600021e-02	1.760475e-01	9.173524e-02
## 79	1/60	2.092747e-01	3.194193e-01	2.173449e-01
## 80	1/51	1.808916e-01	2.914365e-01	1.884435e-01

## 81	1/84	2.803029e-01	3.667120e-01	2.896097e-01
## 82	1/33	1.210745e-01	2.106696e-01	1.274949e-01
## 83	1/30	1.106941e-01	2.067396e-01	1.169133e-01
## 84	1/29	1.072071e-01	2.049895e-01	1.133584e-01
## 85	1/32	1.176277e-01	2.067396e-01	1.239815e-01
## 86	3/521	3.320593e-01	4.068895e-01	3.494367e-01
## 87	1/84	2.803029e-01	3.667120e-01	2.896097e-01
## 88	1/55	1.936284e-01	3.035256e-01	2.014144e-01
## 89	1/26	9.666510e-02	1.889857e-01	1.026101e-01
## 90	1/81	2.717811e-01	3.647793e-01	2.809445e-01
## 91	1/68	2.336877e-01	3.475355e-01	2.421932e-01
## 92	1/32	1.176277e-01	2.067396e-01	1.239815e-01
## 93	1/101	3.267658e-01	4.032429e-01	3.368276e-01
## 94	2/323	3.597583e-01	4.317099e-01	3.748364e-01
## 95	1/30	1.106941e-01	2.067396e-01	1.169133e-01
## 96	1/85	2.831215e-01	3.676354e-01	2.924754e-01
## 97	1/79	2.660447e-01	3.616545e-01	2.751107e-01
## 98	1/72	2.456136e-01	3.503013e-01	2.543279e-01
## 99	1/79	2.660447e-01	3.616545e-01	2.751107e-01
## 100	1/71	2.426494e-01	3.503013e-01	2.513121e-01
## 101	4/812	3.908868e-01	4.595560e-01	4.137070e-01
## 102	1/25	9.312386e-02	1.862477e-01	9.899931e-02
## 103	1/26	9.666510e-02	1.889857e-01	1.026101e-01
## 104	1/92	3.025493e-01	3.870851e-01	3.122234e-01
## 105	1/107	3.424471e-01	4.166838e-01	3.527527e-01
## 106	1/25	9.312386e-02	1.862477e-01	9.899931e-02
## 107	1/32	1.176277e-01	2.067396e-01	1.239815e-01
## 108	1/27	1.001927e-01	1.937059e-01	1.062069e-01
## 109	1/88	2.915123e-01	3.757270e-01	3.010054e-01
## 110	1/98	3.187873e-01	4.019492e-01	3.287228e-01
## 111	1/112	3.552389e-01	4.292470e-01	3.657391e-01
## 112	1/99	3.214571e-01	4.023996e-01	3.314351e-01
## 113	1/101	3.267658e-01	4.032429e-01	3.368276e-01
## 114	1/118	3.702651e-01	4.412749e-01	3.809886e-01
## 115	1/97	3.161072e-01	4.014792e-01	3.259999e-01
## 116	1/121	3.776481e-01	4.470120e-01	3.884791e-01
## 117	8/1908	4.700519e-01	5.380857e-01	5.096553e-01
## 118	1/142	4.269898e-01	4.986324e-01	4.384998e-01
## 119	1/145	4.337158e-01	5.031104e-01	4.453127e-01
## 120	1/19	7.158678e-02	1.537790e-01	7.703588e-02
## 121	1/148	4.403639e-01	5.074392e-01	4.520452e-01
## 122	1/199	5.422810e-01	6.087542e-01	5.550518e-01
## 123	1/199	5.422810e-01	6.087542e-01	5.550518e-01
## 124	1/196	5.368295e-01	6.087542e-01	5.495530e-01
## 125	1/211	5.634606e-01	6.284753e-01	5.764016e-01
## 126	4/1074	6.090130e-01	6.725794e-01	6.396971e-01
## 127	1/240	6.107330e-01	6.725794e-01	6.239675e-01
## 128	1/20	7.521104e-02	1.576713e-01	8.073226e-02
## 129	1/288	6.781163e-01	7.283471e-01	6.915199e-01
## 130	1/282	6.703686e-01	7.283471e-01	6.837702e-01
## 131	1/285	6.742652e-01	7.283471e-01	6.876684e-01
## 132	1/295	6.869283e-01	7.332854e-01	7.003281e-01
## 133	1/20	7.521104e-02	1.576713e-01	8.073226e-02
## 134	1/15	5.694902e-02	1.339072e-01	6.210535e-02

##	135	1/268	6.515675e-01	7.130361e-01	6.649441e-01
##	136	1/325	7.220734e-01	7.614592e-01	7.353863e-01
##	137	1/301	6.942916e-01	7.366264e-01	7.076829e-01
##	138	1/15	5.694902e-02	1.339072e-01	6.210535e-02
##	139	1/19	7.158678e-02	1.537790e-01	7.703588e-02
##	140	1/335	7.328995e-01	7.682199e-01	7.461603e-01
##	141	2/725	7.797690e-01	8.076179e-01	7.993958e-01
##	142	5/1631	7.726773e-01	8.050650e-01	8.086055e-01
##	143	1/21	7.882132e-02	1.632727e-01	8.441424e-02
##	144	3/1293	8.875599e-01	9.138191e-01	9.078111e-01
##	145	2/983	9.017124e-01	9.211116e-01	9.165426e-01
##	146	1/620	9.146580e-01	9.252935e-01	9.239514e-01
##	147	1/594	9.052304e-01	9.211116e-01	9.149685e-01
##	148	1/659	9.270897e-01	9.324486e-01	9.357200e-01
##	149	1/19	7.158678e-02	1.537790e-01	7.703588e-02
##	150	1/1547	9.981490e-01	9.981490e-01	9.988882e-01
##	151	1/17	6.429616e-02	1.437425e-01	6.959974e-02
##	152	1/16	6.062968e-02	1.388101e-01	6.585985e-02
##	153	1/14	5.325413e-02	1.286975e-01	5.833618e-02
##	154	1/16	6.062968e-02	1.388101e-01	6.585985e-02
##	155	1/11	4.208348e-02	1.109474e-01	4.694011e-02
##	156	1/10	3.833109e-02	1.058668e-01	4.311170e-02
##	157	1/12	4.582141e-02	1.155496e-01	5.075362e-02
##	158	1/10	3.833109e-02	1.058668e-01	4.311170e-02
##	159	1/11	4.208348e-02	1.109474e-01	4.694011e-02
##	160	1/11	4.208348e-02	1.109474e-01	4.694011e-02
##	161	1/10	3.833109e-02	1.058668e-01	4.311170e-02
##	162	1/5	1.935041e-02	8.016599e-02	2.374430e-02
##	163	1/9	3.456420e-02	1.055118e-01	3.926835e-02
##	164	1/9	3.456420e-02	1.055118e-01	3.926835e-02
##	165	1/9	3.456420e-02	1.055118e-01	3.926835e-02
##	166	1/9	3.456420e-02	1.055118e-01	3.926835e-02
##	167	1/7	2.698666e-02	9.583018e-02	3.153657e-02
##	168	1/10	3.833109e-02	1.058668e-01	4.311170e-02
##	169	1/6	2.317590e-02	8.961349e-02	2.764802e-02
##	170	1/6	2.317590e-02	8.961349e-02	2.764802e-02
##	171	1/7	2.698666e-02	9.583018e-02	3.153657e-02
##	172	1/7	2.698666e-02	9.583018e-02	3.153657e-02
##	173	1/7	2.698666e-02	9.583018e-02	3.153657e-02
##	174	1/5	1.935041e-02	8.016599e-02	2.374430e-02
##	Old.Adjusted.P.value		Z.score	Combined.Score	
##	1	3.014365e-13	-2.4770714140	79.674660387	
##	2	3.198346e-13	-2.4520882301	76.081028868	
##	3	1.026504e-09	-2.0323835989	51.171041651	
##	4	1.141188e-08	-2.0644231391	46.447304797	
##	5	2.169073e-07	-2.3961605717	44.936552903	
##	6	2.261969e-07	-2.0615722766	40.494810716	
##	7	5.487937e-07	-2.2818957718	39.917352924	
##	8	4.303042e-07	-2.0614525009	39.518715481	
##	9	4.303042e-07	-1.9693599790	35.528447437	
##	10	4.576366e-06	-2.2428341707	34.323254052	
##	11	6.730866e-06	-2.2619304935	33.478691752	
##	12	9.487965e-06	-2.1759544952	30.981769021	
##	13	8.406504e-05	-2.0404745217	24.911442540	

## 14	1.499620e-04	-2.1004976990	23.666424880
## 15	2.111396e-04	-2.0154832972	22.358438341
## 16	8.067704e-04	-1.9664466146	19.697620308
## 17	3.725468e-03	-2.1261764193	16.973879425
## 18	3.725468e-03	-2.1159232538	16.892025448
## 19	6.660875e-03	-2.0120475865	14.693803146
## 20	3.013940e-03	-1.7095361297	14.438801715
## 21	6.769344e-03	-1.9329053182	13.704583227
## 22	5.746554e-03	-1.7137189806	12.872695623
## 23	7.756248e-03	-1.6930863620	11.931475406
## 24	3.831249e-02	-2.0036155399	10.099809050
## 25	4.338531e-02	-1.9885745451	9.590578265
## 26	3.044985e-02	-1.7669132494	9.440686272
## 27	3.831249e-02	-1.7364735029	8.802934246
## 28	2.432822e-02	-1.4936521740	8.535614865
## 29	6.373785e-02	-1.9050261188	8.328818767
## 30	4.024056e-02	-1.6733956112	8.248865771
## 31	1.417980e-02	-1.2869056373	8.177473812
## 32	4.024056e-02	-1.6342960469	8.131648104
## 33	2.755398e-02	-1.4087695996	7.806914353
## 34	8.834412e-03	-1.1126826842	7.724345622
## 35	8.834412e-03	-1.1023353209	7.652513273
## 36	9.608158e-02	-1.9776769383	7.650456077
## 37	4.930758e-02	-1.5537208348	7.292361473
## 38	8.484660e-02	-1.7192596305	6.950015548
## 39	8.484660e-02	-1.7124026892	6.922296727
## 40	8.198721e-03	-0.9677097637	6.891915939
## 41	1.190704e-01	-1.9075385692	6.433218431
## 42	1.136596e-01	-1.7844790009	6.247274615
## 43	1.143379e-01	-1.7860121049	6.200482253
## 44	1.143379e-01	-1.7695324458	6.125634966
## 45	1.190704e-01	-1.6865962106	5.509459232
## 46	1.190704e-01	-1.6313015082	5.366615706
## 47	1.248093e-01	-1.7295547005	5.283615136
## 48	1.245551e-01	-1.4791595906	4.604800951
## 49	3.725468e-03	-0.4982556588	4.189584496
## 50	1.248093e-01	-1.3161627780	4.016360738
## 51	1.248093e-01	-1.2622689797	3.903362430
## 52	1.552609e-01	-1.3420149362	3.679909912
## 53	2.184192e-01	-1.2624681318	2.703569202
## 54	2.760729e-01	-1.3387359211	2.462921733
## 55	2.184192e-01	-0.8609748933	1.868391179
## 56	3.691166e-01	-1.2779057104	1.754730314
## 57	3.298051e-01	-1.0788710512	1.703597843
## 58	3.036034e-01	-0.9836676025	1.681931078
## 59	3.586944e-01	-1.1062171733	1.622528388
## 60	3.036034e-01	-0.9322099740	1.610663642
## 61	3.278194e-01	-1.0021920150	1.597785479
## 62	3.135017e-01	-0.9606660089	1.593071591
## 63	3.135017e-01	-0.9437285322	1.564984188
## 64	2.256739e-01	-0.7239620160	1.508292206
## 65	3.627300e-01	-1.0600314832	1.488279713
## 66	3.665203e-01	-1.0735228416	1.481764116
## 67	3.627300e-01	-1.0265543858	1.466409152

## 68	3.665203e-01	-1.0690832243	1.463253797
## 69	3.627300e-01	-1.0177535406	1.453837349
## 70	3.665203e-01	-1.0218897038	1.398660044
## 71	3.014035e-01	-0.7973916003	1.392343797
## 72	2.620364e-01	-0.7180140272	1.370951522
## 73	2.294083e-01	-0.6639483574	1.365267949
## 74	3.770145e-01	-1.0562193868	1.364974161
## 75	3.770145e-01	-1.0471741775	1.353284849
## 76	3.477980e-01	-0.8777857401	1.322815333
## 77	2.184192e-01	-0.6083339354	1.320138099
## 78	1.877874e-01	-0.5356436322	1.314151060
## 79	3.317370e-01	-0.8205139431	1.283371955
## 80	3.036034e-01	-0.7464308450	1.276290113
## 81	3.788878e-01	-0.9901072922	1.259302153
## 82	2.218411e-01	-0.5894048301	1.244439623
## 83	2.184192e-01	-0.5471521293	1.204273583
## 84	2.167512e-01	-0.5377180362	1.200720343
## 85	2.184192e-01	-0.5557527706	1.189439188
## 86	4.281830e-01	-1.0719393076	1.181750685
## 87	3.788878e-01	-0.9020880498	1.147351840
## 88	3.157308e-01	-0.6745379346	1.107466097
## 89	2.006086e-01	-0.4720469937	1.102939131
## 90	3.770145e-01	-0.8350623172	1.087884364
## 91	3.601847e-01	-0.7388505101	1.074118570
## 92	2.184192e-01	-0.4943101754	1.057937854
## 93	4.156596e-01	-0.9427919485	1.054523650
## 94	4.498036e-01	-1.0207710688	1.043557685
## 95	2.184192e-01	-0.4675596573	1.029091753
## 96	3.797815e-01	-0.8086914839	1.020470803
## 97	3.739786e-01	-0.7706165493	1.020366511
## 98	3.627300e-01	-0.7262698411	1.019679781
## 99	3.739786e-01	-0.7611647189	1.007851426
## 100	3.627300e-01	-0.7091501841	1.004254305
## 101	4.863852e-01	-1.0660794609	1.001408299
## 102	1.979986e-01	-0.4177599468	0.991688942
## 103	2.006086e-01	-0.4119118700	0.962433245
## 104	3.994623e-01	-0.8041912613	0.961419504
## 105	4.292236e-01	-0.8842825966	0.947631021
## 106	1.979986e-01	-0.3951545883	0.938027780
## 107	2.184192e-01	-0.4339659540	0.928787294
## 108	2.053333e-01	-0.3906952949	0.898857035
## 109	3.879625e-01	-0.7270586904	0.896225702
## 110	4.144766e-01	-0.7812019339	0.893094315
## 111	4.419347e-01	-0.8565964003	0.886547119
## 112	4.148899e-01	-0.7638134777	0.866845069
## 113	4.156596e-01	-0.7745465731	0.866339260
## 114	4.540549e-01	-0.8567343305	0.851196335
## 115	4.140437e-01	-0.7086083068	0.816085783
## 116	4.598324e-01	-0.7836762009	0.763137979
## 117	5.834212e-01	-0.9953149141	0.751375323
## 118	5.120736e-01	-0.8826392495	0.751121648
## 119	5.165627e-01	-0.8946437226	0.747354672
## 120	1.654845e-01	-0.2750368051	0.725229375
## 121	5.208997e-01	-0.8278381974	0.678954672

## 122	6.230904e-01	-0.9467555011	0.579386860
## 123	6.230904e-01	-0.8608093909	0.526790337
## 124	6.230904e-01	-0.8438666694	0.524948086
## 125	6.429095e-01	-0.9118262795	0.523076270
## 126	7.044765e-01	-0.8995054752	0.446078848
## 127	6.915309e-01	-0.8946381579	0.441141976
## 128	1.692459e-01	-0.1626822404	0.420933348
## 129	7.427436e-01	-1.0116799420	0.392973378
## 130	7.427436e-01	-0.9497787422	0.379842688
## 131	7.427436e-01	-0.9504681230	0.374609691
## 132	7.475895e-01	-0.9940063666	0.373274597
## 133	1.692459e-01	-0.1392202032	0.360226329
## 134	1.460315e-01	-0.1247067782	0.357359591
## 135	7.276747e-01	-0.8228090716	0.352470272
## 136	7.754982e-01	-1.0473807875	0.341057068
## 137	7.508343e-01	-0.8966847320	0.327167313
## 138	1.460315e-01	-0.1103422941	0.316196743
## 139	1.654845e-01	-0.1153621131	0.304191991
## 140	7.821198e-01	-0.9257598874	0.287676848
## 141	8.329034e-01	-0.8947358651	0.222572314
## 142	8.374842e-01	-0.8098391752	0.208852504
## 143	1.748581e-01	-0.0424583219	0.107868411
## 144	9.326223e-01	-0.8416259561	0.100388504
## 145	9.326223e-01	-0.7746286202	0.080142803
## 146	9.346950e-01	-0.8836335307	0.078824604
## 147	9.326223e-01	-0.7820192511	0.077862387
## 148	9.411288e-01	-0.8562904935	0.064825415
## 149	1.654845e-01	-0.0006651477	0.001753891
## 150	9.988882e-01	-0.7664458669	0.001419996
## 151	1.552609e-01	0.0577438809	-0.158463957
## 152	1.507844e-01	0.1222850541	-0.342761427
## 153	1.409791e-01	0.2254814211	-0.661264853
## 154	1.507844e-01	0.3801357942	-1.065509504
## 155	1.237512e-01	0.4078582595	-1.292135765
## 156	1.190704e-01	0.5882346300	-1.918523628
## 157	1.248093e-01	0.6624706275	-2.042399488
## 158	1.190704e-01	0.6852184482	-2.234835755
## 159	1.237512e-01	0.8108782572	-2.568943433
## 160	1.237512e-01	0.8539769101	-2.705484276
## 161	1.190704e-01	0.9206210036	-3.002599741
## 162	9.608158e-02	0.8164024223	-3.220741489
## 163	1.190704e-01	0.9605591162	-3.232220744
## 164	1.190704e-01	1.0154731555	-3.417003017
## 165	1.190704e-01	1.0315699123	-3.471167586
## 166	1.190704e-01	1.0509428146	-3.536356179
## 167	1.119870e-01	1.0153132501	-3.667730423
## 168	1.190704e-01	1.1371839813	-3.708918561
## 169	1.069057e-01	1.0567287045	-3.978205532
## 170	1.069057e-01	1.2837315463	-4.832790022
## 171	1.119870e-01	1.3681833653	-4.942442889
## 172	1.119870e-01	1.5119457400	-5.461771909
## 173	1.119870e-01	1.5661248666	-5.657489271
## 174	9.608158e-02	1.7523759494	-6.913195956
##			

Genes	
## 1	GINS1; GINS2; RRM2; NCAPG; CDCA8; CDC6; CDC25C; TYMS; SKA1; AURKB; AURKA; DHFR; CCNB1; SGOL1; CENPH; NUF2; CENPM; FBX05; SPC24
## 2	GINS1; GINS2; RRM2; NCAPG; CDCA8; CDC6; CDC25C; TYMS; SKA1; AURKB; AURKA; DHFR; PSMC3IP; CCNB1; SGOL1; CENPH; NUF2; CENPM; FBX05; SPC24
## 3	CCNB1; SGOL1; CENPH; NUF2; NCAPG; CDCA8; CENPM; AURKB; SKA1; SPC24
## 4	CCNB1; SGOL1; CENPH; NUF2; CDCA8; CENPM; AURKB; SKA1; SPC24
## 5	CCNB1; SGOL1; CENPH; NUF2; NCAPG; CDCA8; CENPM; FBX05; SKA1; SPC24; AURKB
## 6	DHF R; CCNB1; RRM2; CDC6; FBX05; TYMS
## 7	SGOL1; CENPH; NUF2; CDCA8; CENPM; FBX05; AURKB; SKA1; SPC24
## 8	DHFR; RRM2; CDC6; FBX05; TYMS
## 9	SGOL1; CENPH; NUF2; CDCA8; CENPM; AURKB; SKA1; SPC24
## 10	SGOL1; CENPH; NUF2; CDCA8; CENPM; AURKB; SKA1; SPC24
## 11	SGOL1; CENPH; NUF2; CDCA8; CENPM; AURKB; SKA1; SPC24
## 12	SGOL1; CENPH; NUF2; CDCA8; CENPM; CDC25C; SKA1; SPC24; AURKB
## 13	DHF R; CCNB1; RRM2; CDC6; FBX05; TYMS
## 14	SGOL1; CENPH; NUF2; CDCA8; CENPM; CDC25C; SKA1; SPC24; AURKB
## 15	DHF R; CCNB1; RRM2; CDC6; FBX05; TYMS
## 16	CCNB1; CDC25C; AURKA
## 17	CCNB1; FBX05; AURKB; AURKA
## 18	CCNB1; FBX05; AURKB; AURKA
## 19	CDCA8; AURKB; AURKA
## 20	MFAP5; MFAP2; LTBP2
## 21	MFAP5; CAPN9; CMA1; MFAP2; LTBP2; FMOD
## 22	MFAP5; MFAP2; LTBP2
## 23	CCNB1; CDC25C; AURKA
## 24	GINS1; GINS2; CDC6
## 25	GINS1; GINS2; CDC6
## 26	RRM2; TK1; TYMS
## 27	

	CDCA8;AURKB;AURKA	
## 28		
	CCNB1;CDC25C	
## 29		
	GINS1;GINS2;CDC6	
## 30		
	CDCA8;AURKB;AURKA	
## 31		
	CCNB1;CDC25C	
## 32		
	GINS1;GINS2	
## 33		
	TK1;TYMS	
## 34		
	GINS1;GINS2	
## 35		
	CCNB1;CDC25C	
## 36		
	CCNB1;CDC6;CDC25C	
## 37		
	CDC6;CDC25C	
## 38		
	CENPH;CENPM	
## 39		
	CENPH;CENPM	
## 40		
	CCNB1;NCAPG	
## 41		
	CCNB1;CDC6;CDC25C	
## 42		
	CCNB1;CDC25C;AURKA	
## 43		
	CCNB1;CDC25C;AURKA	
## 44		
	AURKB;AURKA	
## 45		
	CCNB1;FBX05	
## 46		
	CCNB1;CDC25C	
## 47		
	CCNB1;CDC25C;AURKB;AURKA	
## 48		
	CENPH;CENPM	
## 49		
	CCNB1;FBX05	
## 50		
	AURKB;AURKA	
## 51		
	CCNB1;AURKA	
## 52		
	CAPN9;CMA1	
## 53		
	AURKB;AURKA	
## 54		CMA1;CDCA8;WNT8B;CDC25C;AURKB;SKA1;TSHR;OPN1SW;S

GOL1;CENPH;NUF2;CENPM;SPC24

55

WNT8B

56

OPN1SW;WNT8B;TSHR

57

CCNB1

58

CCNB1

59

CDC6

60

CDC6

61

CDC6

62

FBX05

63

PSMC3IP

64

CCNB1

65

CDC6

66

CCNB1

67

CDC6

68

CDC6

69

CDC6

70

CCNB1

71

SLC6A12

72

CCNB1

73

EME1

74

CDC6

75

CDC6

76

EME1

77

SLC6A12

78

CCNB1

79

CDC25C

80

SLC6A12

81

	SLC6A12
## 82	
	EME1
## 83	
	SLC6A12
## 84	
	DDX4
## 85	
	EME1
## 86	
	CDCA8;AURKB;AURKA
## 87	
	WNT8B
## 88	
	FMOD
## 89	
	WNT8B
## 90	
	CMA1
## 91	
	IFIT3
## 92	
	FMOD
## 93	
	DDX4
## 94	
	OPN1SW;TSHR
## 95	
	CDC6
## 96	
	PSMC3IP
## 97	
	CCNB1
## 98	
	AURKA
## 99	
	CCNB1
## 100	
	PNLIPRP2
## 101	
	CCNB1;CDC25C;AURKB;AURKA
## 102	
	RRM2
## 103	
	FMOD
## 104	
	CMBL
## 105	
	CCNB1
## 106	
	CDC6
## 107	
	CMA1
## 108	

	FMOD	
## 109		
	FMOD	
## 110		
	DHFR	
## 111		
	EME1	
## 112		
	SLC6A12	
## 113		
	SLC6A12	
## 114		
	EME1	
## 115		
	OPN1SW	
## 116		
	FMOD	
## 117		DHFR;PNLIPRP2;RRM
2;SLC6A12;TK1;CMBL;TYMS;FMOD		
## 118		
	TSHR	
## 119		
	EME1	
## 120		
	CCNB1	
## 121		
	DHFR	
## 122		
	WNT8B	
## 123		
	CMBL	
## 124		
	IFIT3	
## 125		
	SLC6A12	
## 126		
CMA1;CDCA8;AURKB;AURKA		
## 127		
	OPN1SW	
## 128		
	DHFR	
## 129		
	OPN1SW	
## 130		
	FMOD	
## 131		
	EME1	
## 132		
	WNT8B	
## 133		
	DHFR	
## 134		
	CDC6	
## 135		

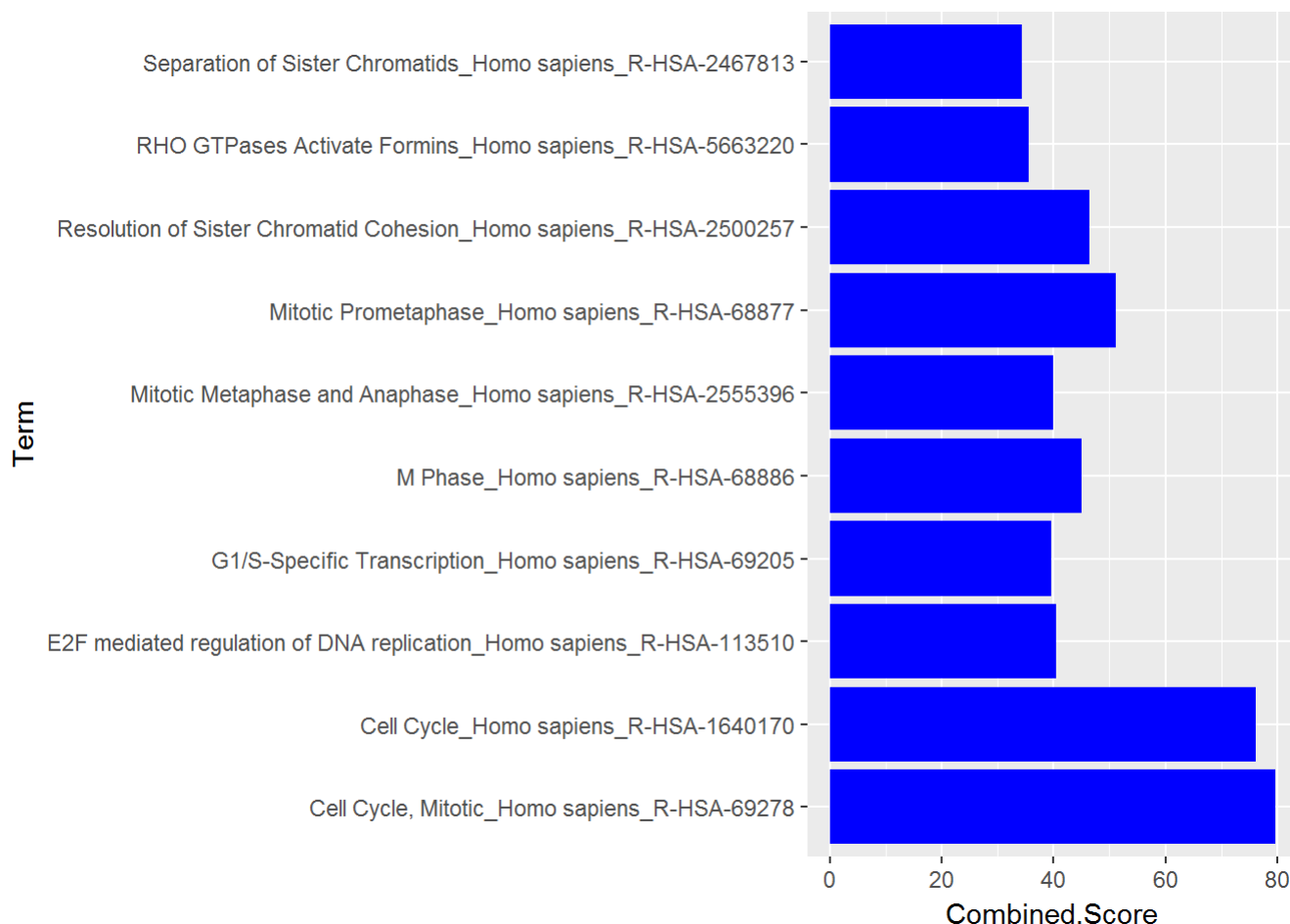
	SLC6A12
## 136	
	CMA1
## 137	
	SLC6A12
## 138	
	CCNB1
## 139	
	SLC6A12
## 140	
	SLC6A12
## 141	
	OPN1SW;FMOD
## 142	
NB1;DDX4;CDC25C;AURKB;AURKA	
## 143	
	CDC25C
## 144	
	OPN1SW;WNT8B;TSHR
## 145	
	OPN1SW;TSHR
## 146	
	IFIT3
## 147	
	SLC6A12
## 148	
	PNLIPRP2
## 149	
	SLC6A12
## 150	
	IFIT3
## 151	
	PNLIPRP2
## 152	
	DHFR
## 153	
	CCNB1
## 154	
	CMA1
## 155	
	CCNB1
## 156	
	DHFR
## 157	
	FMOD
## 158	
	CCNB1
## 159	
	TSHR
## 160	
	CDC6
## 161	
	CCNB1
## 162	

CC

	CCNB1
## 163	
	OPN1SW
## 164	
	TK1
## 165	
	OPN1SW
## 166	
	OPN1SW
## 167	
	CCNB1
## 168	
	SLC6A12
## 169	
	TYMS
## 170	
	OPN1SW
## 171	
	FMOD
## 172	
	FMOD
## 173	
	FMOD
## 174	
	CDC25C

```
write.table(deGenes_lrt_fdr_Reactome_2016,file="deGenes_lrt_fdr_Reactome_2016.txt",sep="\t")
View(deGenes_lrt_fdr_Reactome_2016)
```

```
#plotting the top 10 terms
deGenes_lrt_fdr_Reactome_2016Data<-deGenes_lrt_fdr_Reactome_2016[order(-deGenes_lrt_fdr_Reactome_2016$Combined.Score),]
deGenes_lrt_fdr_Reactome_2016Data<-deGenes_lrt_fdr_Reactome_2016Data[1:10,]
ggplot(deGenes_lrt_fdr_Reactome_2016Data,aes(x=Term, y = Combined.Score)) + geom_bar(stat = 'identity', fill="blue", position='dodge') +coord_flip()
```



```
dev.print(pdf,"deGenes_lrt_fdr_Reactome_2016plot.pdf")
```

```
## png
## 2
```

Conversion of Mouse gene symbols to human gene symbols.

Our gene list is mouse gene symbols, so first create a function to convert the mouse gene symbols to human gene symbol Reference: <https://www.r-bloggers.com/converting-mouse-to-human-gene-names-with-biomaRt-package/> (<https://www.r-bloggers.com/converting-mouse-to-human-gene-names-with-biomaRt-package/>)

```
library(biomaRt)
listMarts()
```

```
##          biomaRt          version
## 1 ENSEMBL_MART_ENSEMBL      Ensembl Genes 91
## 2  ENSEMBL_MART_MOUSE       Mouse strains 91
## 3  ENSEMBL_MART_SNP         Ensembl Variation 91
## 4  ENSEMBL_MART_FUNCGEN     Ensembl Regulation 91
```



```
# Basic function to convert mouse to human gene symbol
convertMouseGeneList <- function(x){
  human = useMart("ensembl", dataset = "hsapiens_gene_ensembl")
  mouse = useMart("ensembl", dataset = "mmusculus_gene_ensembl")

  genesV2 = getLDS(attributes = c("mgi_symbol"), filters = "mgi_symbol", values = x , mart = mouse, attributesL = c("hgnc_symbol"), martL = human, uniqueRows=T)

  return(genesV2)
}
```

```
deGenes_lrt_fdrHuMs<-convertMouseGeneList(deGenes_lrt_fdr$gene)
deGenes_lrt_fdr1<-deGenes_lrt_fdr
colnames(deGenes_lrt_fdr1)[1]<-"MGI.symbol"
deGenes_lrt_fdrHuMs<-merge(deGenes_lrt_fdrHuMs, deGenes_lrt_fdr1, by='MGI.symbol')
write.table(deGenes_lrt_fdrHuMs, file = 'deGenes_lrt_fdrHuMs.txt', quote = F, row.names = F)
dim(deGenes_lrt_fdrHuMs)
```

```
## [1] 80 51
```

```
View(deGenes_lrt_fdrHuMs)
```

Comparison with Human disease associated genes using Human gene Symbols

Import the consolidated data repository containing genetic variants, biomarkers and associations with diseases.

```
disgenet_DisgenetConsolidated=read.delim('DisGeNet_consolidated_disease_genes.txt', header = T,
  sep = '\t')
dim(disgenet_DisgenetConsolidated)
```

```
## [1] 82833 10
```

```
glimpse(disgenet_DisgenetConsolidated)
```

```
## Observations: 82,833
## Variables: 10
## $ geneSymbol      <chr> "SFTPA2", "TERT", "MUC5B", "TERC", "SFTPC", "P...
## $ doid_code       <chr> "DOID:0050156", "DOID:0050156", "DOID:0050156"...
## $ doid_name       <chr> "idiopathic pulmonary fibrosis", "idiopathic p...
## $ geneId         <int> 729238, 7015, 727897, 7012, 6440, 5328, 255520...
## $ count          <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
## $ pubmeds_max     <int> 1, 10, 11, 5, 12, 1, 1, 3, 1, 1, 1, 1, 1, 0, 2...
## $ score_max       <dbl> 0.620283505, 0.422152835, 0.412835046, 0.41085...
## $ score_mean      <dbl> 0.620283505, 0.422152835, 0.412835046, 0.41085...
## $ associationType <chr> "Biomarker|GeneticVariation", "Biomarker|Genet...
## $ source          <chr> "BeFree|CLINVAR|CTD_human|UNIPROT", "BeFree|CL..."
```

```
colnames(disgenet_DisgenetConsolidated)[1]<-"HGNC.symbol"
View(disgenet_DisgenetConsolidated)
```

#Comparison with stem cell genes

```
deGenes_lrt_fdrHuMsDisgenetConsolidated<-merge(deGenes_lrt_fdrHuMs,disgenet_DisgenetConsolidate
d,by="HGNC.symbol")
glimpse(deGenes_lrt_fdrHuMsDisgenetConsolidated, n=5)
```

```

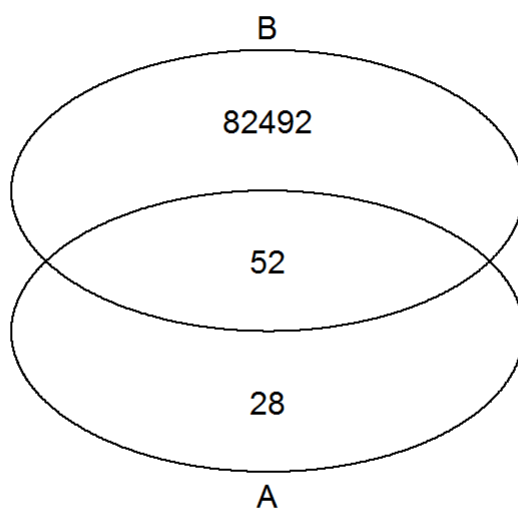
## Observations: 341
## Variables: 60
## $ HGNC.symbol      <chr> "AURKA", "AURKA", "AURKA", "AURKA", "AURKA",...
## $ MGI.symbol       <chr> "Aurka", "Aurka", "Aurka", "Aurka", "Aurka",...
## $ logFC            <dbl> -3.32682, -3.32682, -3.32682, -3.32682, -3.3...
## $ logCPM           <dbl> 3.697921, 3.697921, 3.697921, 3.697921, 3.69...
## $ LR               <dbl> 14.77323, 14.77323, 14.77323, 14.77323, 14.7...
## $ PValue           <dbl> 0.0001212444, 0.0001212444, 0.0001212444, 0....
## $ FDR              <dbl> 0.007608087, 0.007608087, 0.007608087, 0.007...
## $ asc1_count.x     <int> 753, 753, 753, 753, 753, 753, 753, 753, 753,...
## $ asc2_count.x     <int> 612, 612, 612, 612, 612, 612, 612, 612, 612,...
## $ asc3_count.x     <int> 1046, 1046, 1046, 1046, 1046, 1046, 1046, 10...
## $ asc4_count.x     <int> 1683, 1683, 1683, 1683, 1683, 1683, 1683, 16...
## $ neu1_count.x     <int> 26, 26, 26, 26, 26, 26, 26, 26, 26, 26, ...
## $ neu2_count.x     <int> 13, 13, 13, 13, 13, 13, 13, 13, 13, 13, ...
## $ neu3_count.x     <int> 26, 26, 26, 26, 26, 26, 26, 26, 26, 26, ...
## $ neu4_count.x     <int> 91, 91, 91, 91, 91, 91, 91, 91, 91, 91, ...
## $ astro1_count.x   <int> 232, 232, 232, 232, 232, 232, 232, 232, 232,...
## $ astro2_count.x   <int> 251, 251, 251, 251, 251, 251, 251, 251,...
## $ endo1_count.x    <int> 312, 312, 312, 312, 312, 312, 312, 312, 312,...
## $ endo2_count.x    <int> 297, 297, 297, 297, 297, 297, 297, 297,...
## $ micro1_count.x   <int> 162, 162, 162, 162, 162, 162, 162, 162, 162,...
## $ micro2_count.x   <int> 19, 19, 19, 19, 19, 19, 19, 19, 19, 19, ...
## $ neuron1_count.x  <int> 204, 204, 204, 204, 204, 204, 204, 204, 204,...
## $ neuron2_count.x  <int> 163, 163, 163, 163, 163, 163, 163, 163,...
## $ oligopre1_count.x <int> 420, 420, 420, 420, 420, 420, 420, 420, 420,...
## $ oligopre2_count.x <int> 437, 437, 437, 437, 437, 437, 437, 437, 437,...
## $ oligonew1_count.x <int> 71, 71, 71, 71, 71, 71, 71, 71, 71, 71, ...
## $ oligonew2_count.x <int> 123, 123, 123, 123, 123, 123, 123, 123, 123,...
## $ oligomye1_count.x <int> 46, 46, 46, 46, 46, 46, 46, 46, 46, 46, ...
## $ oligomye2_count.x <int> 42, 42, 42, 42, 42, 42, 42, 42, 42, 42, ...
## $ asc1_count.y     <dbl> 527.9784, 527.9784, 527.9784, 527.9784, 527....
## $ asc2_count.y     <dbl> 851.4672, 851.4672, 851.4672, 851.4672, 851....
## $ asc3_count.y     <dbl> 1263.467, 1263.467, 1263.467, 1263.467, 1263...
## $ asc4_count.y     <dbl> 1637.628, 1637.628, 1637.628, 1637.628, 1637...
## $ neu1_count.y     <dbl> 20.32645, 20.32645, 20.32645, 20.32645, 20.3...
## $ neu2_count.y     <dbl> 71.73582, 71.73582, 71.73582, 71.73582, 71.7...
## $ neu3_count.y     <dbl> 70.01718, 70.01718, 70.01718, 70.01718, 70.0...
## $ neu4_count.y     <dbl> 41.28333, 41.28333, 41.28333, 41.28333, 41.2...
## $ astro1_count.y   <dbl> 185.5729, 185.5729, 185.5729, 185.5729, 185....
## $ astro2_count.y   <dbl> 229.7558, 229.7558, 229.7558, 229.7558, 229....
## $ endo1_count.y    <dbl> 181.5213, 181.5213, 181.5213, 181.5213, 181....
## $ endo2_count.y    <dbl> 204.0933, 204.0933, 204.0933, 204.0933, 204....
## $ micro1_count.y   <dbl> 119.5734, 119.5734, 119.5734, 119.5734, 119....
## $ micro2_count.y   <dbl> 114.862, 114.862, 114.862, 114.862, 114.862,...
## $ neuron1_count.y  <dbl> 226.8183, 226.8183, 226.8183, 226.8183, 226....
## $ neuron2_count.y  <dbl> 253.985, 253.985, 253.985, 253.985, 253.985,...
## $ oligopre1_count.y <dbl> 240.2074, 240.2074, 240.2074, 240.2074, 240....
## $ oligopre2_count.y <dbl> 260.3941, 260.3941, 260.3941, 260.3941, 260....
## $ oligonew1_count.y <dbl> 175.5353, 175.5353, 175.5353, 175.5353, 175....
## $ oligonew2_count.y <dbl> 182.7715, 182.7715, 182.7715, 182.7715, 182....
## $ oligomye1_count.y <dbl> 87.29392, 87.29392, 87.29392, 87.29392, 87.2...
## $ oligomye2_count.y <dbl> 111.6751, 111.6751, 111.6751, 111.6751, 111....

```

```
## $ doid_code      <chr> "D0ID:1781", "D0ID:1324", "D0ID:2994", "D0ID...
## $ doid_name      <chr> "thyroid cancer", "lung cancer", "germ cell ...
## $ geneId        <int> 6790, 6790, 6790, 6790, 6790, 6790, 6790, 67...
## $ count         <int> 3, 4, 2, 4, 3, 1, 1, 4, 2, 2, 3, 2, 7, 2, 5,...
## $ pubmeds_max    <int> 1, 5, 1, 6, 7, 1, 1, 5, 3, 2, 2, 2, 6, 4, 1,...
## $ score_max      <dbl> 0.002317068, 0.001417523, 0.000283505, 0.211...
## $ score_mean     <dbl> 0.000961359, 0.000637885, 0.000283505, 0.053...
## $ associationType <chr> "Biomarker|GeneticVariation", "Biomarker|Gen...
## $ source         <chr> "BeFree|GAD", "BeFree", "BeFree", "BeFree|CT..."
```

```
write.table(deGenes_lrt_fdrHuMsDisgenetConsolidated,file="deGenes_lrt_fdrHuMsDisgenetConsolidate
d.txt",sep="\t")
```

```
venn( list(A=deGenes_lrt_fdrHuMs$HGNC.symbol,B=disgenet_DisgenetConsolidated$HGNC.symbol))
```



```
dev.print(pdf,"deGenes_lrt_fdrHuMsDisgenetConsolidated_Venn.pdf")
```

```
## png
## 2
```

Statistical significance of DisGeNet overlap

```
A=deGenes_lrt_fdrHuMs$HGNC.symbol
B=unique(disgenet_DisgenetConsolidated$HGNC.symbol)
go.obj <- newGeneOverlap(A,B)
go.obj <- testGeneOverlap(go.obj)
go.obj # show
```

```
## GeneOverlap object:
## listA size=80
## listB size=13160
## Intersection size=52
## Overlapping p-value=0.097
## Jaccard Index=0.0
```

Given two gene lists, tests the significance of their overlap in comparison with a genomic background. The null hypothesis is that the odds ratio is no larger than 1. The alternative is that the odds ratio is larger than 1.0. It returns the p-value, estimated odds ratio and intersection.

```
print(go.obj) # more details.
```

```
## Detailed information about this GeneOverlap object:
## listA size=80, e.g. C4orf22 C1orf194 C2orf88
## listB size=13160, e.g. SFTPA2 TERT MUC5B
## Intersection size=52, e.g. AURKA AURKB CAPN9
## Union size=13188, e.g. C4orf22 C1orf194 C2orf88
## Genome size=23000
## # Contingency Table:
##      notA inA
## notB  9812  28
## inB  13108  52
## Overlapping p-value=0.097
## Odds ratio=1.4
## Overlap tested using Fisher's exact test (alternative=greater)
## Jaccard Index=0.0
```

```
getContbl(go.obj) # contingency table.
```

```
##      notA inA
## notB  9812  28
## inB  13108  52
```

These results show that the overlap is NOT significant p-value=0.097 and 'Overlap tested using Fisher's exact test (alternative=greater)'. Therefore, accept null hypothesis that the odds ratio is not larger than 1 and overlap is not significant.

Comparison with Human neurological disease associated genes using Human gene Symbols

Import the consolidated data repository containing genetic variants associated with neurological diseases.

```
disgenet_neuroDiseaseVariants=read.delim('DisGeNet_neuro_genetic-disease.txt', header = T, sep =
'\t')
dim(disgenet_neuroDiseaseVariants)
```

```
## [1] 6003 10
```

```
glimpse(disgenet_neuroDiseaseVariants)
```

```
## Observations: 6,003
## Variables: 10
## $ geneSymbol      <chr> "CFH", "ARMS2", "APOE", "CFB", "C3", "VEGFA", ...
## $ doid_code       <chr> "DOID:10871", "DOID:10871", "DOID:10871", "DOI...
## $ doid_name       <chr> "age related macular degeneration", "age relat...
## $ geneId          <int> 3075, 387715, 348, 629, 718, 7422, 717, 24, 70...
## $ count           <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
## $ pubmeds_max     <int> 373, 173, 49, 52, 41, 76, 24, 75, 7, 11, 3, 6,...
## $ score_max       <dbl> 0.39000000, 0.34897578, 0.28414626, 0.28272874...
## $ score_mean      <dbl> 0.39000000, 0.34897578, 0.28414626, 0.28272874...
## $ associationType <chr> "Biomarker|GeneticVariation", "Biomarker|Genet...
## $ source          <chr> "BeFree|CTD_human|GAD|LHGDN", "BeFree|CTD_huma..."
```

```
colnames(disgenet_neuroDiseaseVariants)[1]<-"HGNC.symbol"
View(disgenet_neuroDiseaseVariants)
```

```
#Comparison with stem cell genes
```

```
deGenes_lrt_fdrHuMsneuroDiseaseVariants<-merge(deGenes_lrt_fdrHuMs,disgenet_neuroDiseaseVariants,by="HGNC.symbol")
glimpse(deGenes_lrt_fdrHuMsneuroDiseaseVariants, n=5)
```

```

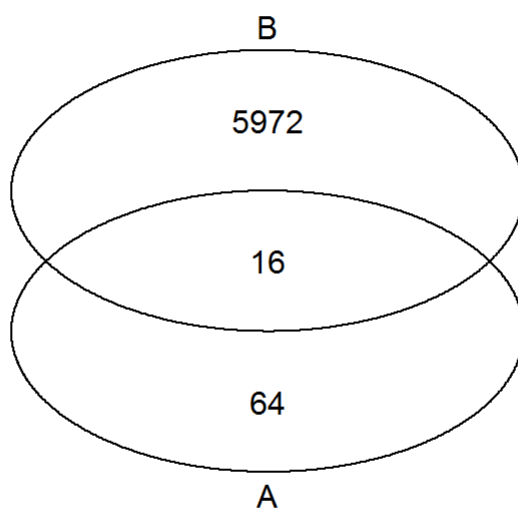
## Observations: 31
## Variables: 60
## $ HGNC.symbol      <chr> "AURKA", "AURKA", "AURKA", "AURKB", "AURKB",...
## $ MGI.symbol       <chr> "Aurka", "Aurka", "Aurka", "Aurkb", "Aurkb",...
## $ logFC            <dbl> -3.326820, -3.326820, -3.326820, -3.658898, ...
## $ logCPM           <dbl> 3.69792071, 3.69792071, 3.69792071, 4.052957...
## $ LR               <dbl> 14.773232, 14.773232, 14.773232, 9.863132, 9...
## $ PValue           <dbl> 1.212444e-04, 1.212444e-04, 1.212444e-04, 1....
## $ FDR              <dbl> 7.608087e-03, 7.608087e-03, 7.608087e-03, 3....
## $ asc1_count.x     <int> 753, 753, 753, 1295, 1295, 100, 0, 1292, 129...
## $ asc2_count.x     <int> 612, 612, 612, 782, 782, 1030, 18, 1088, 108...
## $ asc3_count.x     <int> 1046, 1046, 1046, 1613, 1613, 717, 47, 1320,...
## $ asc4_count.x     <int> 1683, 1683, 1683, 1810, 1810, 1296, 22, 1824...
## $ neu1_count.x     <int> 26, 26, 26, 102, 102, 2, 0, 14, 14, 14, 3, 3...
## $ neu2_count.x     <int> 13, 13, 13, 19, 19, 3, 0, 4, 4, 4, 2, 2, 2, ...
## $ neu3_count.x     <int> 26, 26, 26, 20, 20, 1, 0, 18, 18, 18, 0, 0, ...
## $ neu4_count.x     <int> 91, 91, 91, 29, 29, 2, 0, 155, 155, 155, 3, ...
## $ astro1_count.x   <int> 232, 232, 232, 275, 275, 0, 3, 267, 267, 267...
## $ astro2_count.x   <int> 251, 251, 251, 449, 449, 1, 11, 374, 374, 37...
## $ endo1_count.x    <int> 312, 312, 312, 321, 321, 5, 0, 585, 585, 585...
## $ endo2_count.x    <int> 297, 297, 297, 290, 290, 3, 10, 577, 577, 57...
## $ micro1_count.x   <int> 162, 162, 162, 130, 130, 24, 0, 74, 74, 74, ...
## $ micro2_count.x   <int> 19, 19, 19, 36, 36, 10, 0, 43, 43, 43, 13, 1...
## $ neuron1_count.x  <int> 204, 204, 204, 157, 157, 1, 9, 210, 210, 210...
## $ neuron2_count.x  <int> 163, 163, 163, 54, 54, 0, 6, 194, 194, 194, ...
## $ oligopre1_count.x <int> 420, 420, 420, 508, 508, 0, 1, 860, 860, 860...
## $ oligopre2_count.x <int> 437, 437, 437, 389, 389, 0, 3, 739, 739, 739...
## $ oligonew1_count.x <int> 71, 71, 71, 50, 50, 0, 3, 631, 631, 631, 40,...
## $ oligonew2_count.x <int> 123, 123, 123, 49, 49, 0, 0, 363, 363, 363, ...
## $ oligomye1_count.x <int> 46, 46, 46, 1, 1, 0, 0, 336, 336, 336, 7, 7,...
## $ oligomye2_count.x <int> 42, 42, 42, 6, 6, 0, 0, 307, 307, 307, 11, 1...
## $ asc1_count.y     <dbl> 527.97838, 527.97838, 527.97838, 1420.42720,...
## $ asc2_count.y     <dbl> 851.467240, 851.467240, 851.467240, 1500.582...
## $ asc3_count.y     <dbl> 1263.46659, 1263.46659, 1263.46659, 1458.628...
## $ asc4_count.y     <dbl> 1637.62806, 1637.62806, 1637.62806, 1238.469...
## $ neu1_count.y     <dbl> 2.032645e+01, 2.032645e+01, 2.032645e+01, 4....
## $ neu2_count.y     <dbl> 7.173582e+01, 7.173582e+01, 7.173582e+01, 1....
## $ neu3_count.y     <dbl> 7.001718e+01, 7.001718e+01, 7.001718e+01, 6....
## $ neu4_count.y     <dbl> 4.128333e+01, 4.128333e+01, 4.128333e+01, 2....
## $ astro1_count.y   <dbl> 1.855729e+02, 1.855729e+02, 1.855729e+02, 2....
## $ astro2_count.y   <dbl> 2.297558e+02, 2.297558e+02, 2.297558e+02, 1....
## $ endo1_count.y    <dbl> 1.815213e+02, 1.815213e+02, 1.815213e+02, 2....
## $ endo2_count.y    <dbl> 2.040933e+02, 2.040933e+02, 2.040933e+02, 1....
## $ micro1_count.y   <dbl> 1.195734e+02, 1.195734e+02, 1.195734e+02, 1....
## $ micro2_count.y   <dbl> 1.148620e+02, 1.148620e+02, 1.148620e+02, 8....
## $ neuron1_count.y  <dbl> 2.268183e+02, 2.268183e+02, 2.268183e+02, 2....
## $ neuron2_count.y  <dbl> 2.539850e+02, 2.539850e+02, 2.539850e+02, 1....
## $ oligopre1_count.y <dbl> 2.402074e+02, 2.402074e+02, 2.402074e+02, 2....
## $ oligopre2_count.y <dbl> 2.603941e+02, 2.603941e+02, 2.603941e+02, 1....
## $ oligonew1_count.y <dbl> 1.755353e+02, 1.755353e+02, 1.755353e+02, 2....
## $ oligonew2_count.y <dbl> 1.827715e+02, 1.827715e+02, 1.827715e+02, 1....
## $ oligomye1_count.y <dbl> 8.729392e+01, 8.729392e+01, 8.729392e+01, 1....
## $ oligomye2_count.y <dbl> 1.116751e+02, 1.116751e+02, 1.116751e+02, 8....

```

```
## $ doid_code      <chr> "DOID:3070", "DOID:1319", "DOID:11934", "DOI...
## $ doid_name      <chr> "malignant glioma", "brain cancer", "head an...
## $ geneId         <int> 6790, 6790, 6790, 9212, 9212, 1215, 54514, 1...
## $ count          <int> 2, 3, 2, 3, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1,...
## $ pubmeds_max    <int> 4, 2, 2, 5, 1, 1, 1, 3, 1, 1, 1, 1, 2, 1, 2,...
## $ score_max      <dbl> 0.003656595, 0.002600572, 0.002317068, 0.004...
## $ score_mean     <dbl> 0.003412088, 0.001055860, 0.001442038, 0.003...
## $ associationType <chr> "Biomarker|GeneticVariation", "Biomarker|Gen...
## $ source         <chr> "BeFree|GAD|LHGDN", "BeFree|GAD", "BeFree|GA..."
```

```
write.table(deGenes_lrt_fdrHuMsneuroDiseaseVariants,file="deGenes_lrt_fdrHuMsneuroDiseaseVariants.txt",sep="\t")
```

```
venn( list(A=deGenes_lrt_fdrHuMs$HGNC.symbol,B=disgenet_neuroDiseaseVariants$HGNC.symbol))
```



```
dev.print(pdf,"deGenes_lrt_fdrHuMsneuroDiseaseVariants_Venn.pdf")
```

```
## png
## 2
```

Statistical significance of DisGeNet overlap


```
A=deGenes_lrt_fdrHuMs$HGNC.symbol
B=unique(disgenet_neuroDiseaseVariants$HGNC.symbol)
go.obj <- newGeneOverlap(A,B)
go.obj <- testGeneOverlap(go.obj)
go.obj # show
```

```
## GeneOverlap object:
## listA size=80
## listB size=3586
## Intersection size=16
## Overlapping p-value=0.17
## Jaccard Index=0.0
```

Given two gene lists, tests the significance of their overlap in comparison with a genomic background. The null hypothesis is that the odds ratio is no larger than 1. The alternative is that the odds ratio is larger than 1.0. It returns the p-value, estimated odds ratio and intersection.

```
print(go.obj) # more details.
```

```
## Detailed information about this GeneOverlap object:
## listA size=80, e.g. C4orf22 C1orf194 C2orf88
## listB size=3586, e.g. CFH ARMS2 APOE
## Intersection size=16, e.g. AURKA AURKB CMA1
## Union size=3650, e.g. C4orf22 C1orf194 C2orf88
## Genome size=23000
## # Contingency Table:
##      notA inA
## notB 19350  64
## inB   3570  16
## Overlapping p-value=0.17
## Odds ratio=1.4
## Overlap tested using Fisher's exact test (alternative=greater)
## Jaccard Index=0.0
```

```
getContbl(go.obj) # contingency table.
```

```
##      notA inA
## notB 19350  64
## inB   3570  16
```

These results show that the overlap is NOT significant p-value=0.17 and 'Overlap tested using Fisher's exact test (alternative=greater)'. Therefore, accept null hypothesis that the odds ratio is not larger than 1 and overlap is not significant.