

Group Projects on EM algorithms

Project 3: Single-Cell gene expressions

ScRNA-seq is a recent technological breakthrough in biology that measures gene expression levels of thousands of genes at the individual cell level. This technology has significantly advanced our understanding of cell functions.

Cell heterogeneity, the phenomenon of varied gene expression levels in individual cells of the same type, is a complex issue. However, clustering analysis, a powerful tool, can help us navigate this complexity and identify subtypes in cases of cell heterogeneity.

The file `ss.csv` contains gene expression levels of 558 genes (columns) from 716 cells (rows) of breast cancer tumors.

In this analysis, we will start by applying Principal Component Analysis to our scRNA-seq data. The goal here is to determine the number of principal components needed to capture the variability of gene expressions. To achieve this, we will use the function `prcomp` from the R package `'stats'`.

After identifying the major principal components, you need to fit a Gaussian-Mixture model to their principal component scores. Make sure to use the number of components you selected in Q1. Next, design and implement an EM algorithm to estimate the model and identify the cell clusters. Once you have identified the clusters, explore gene-expression signatures in each of them. Find out which genes are important to differentiate the clusters and report your findings.

```
# Load necessary libraries
library(stats) # For PCA
library(ggplot2) # For plotting
```

```
## Warning: package 'ggplot2' was built under R version 4.3.3
```

```
library(mclust) # For Gaussian Mixture Model
```

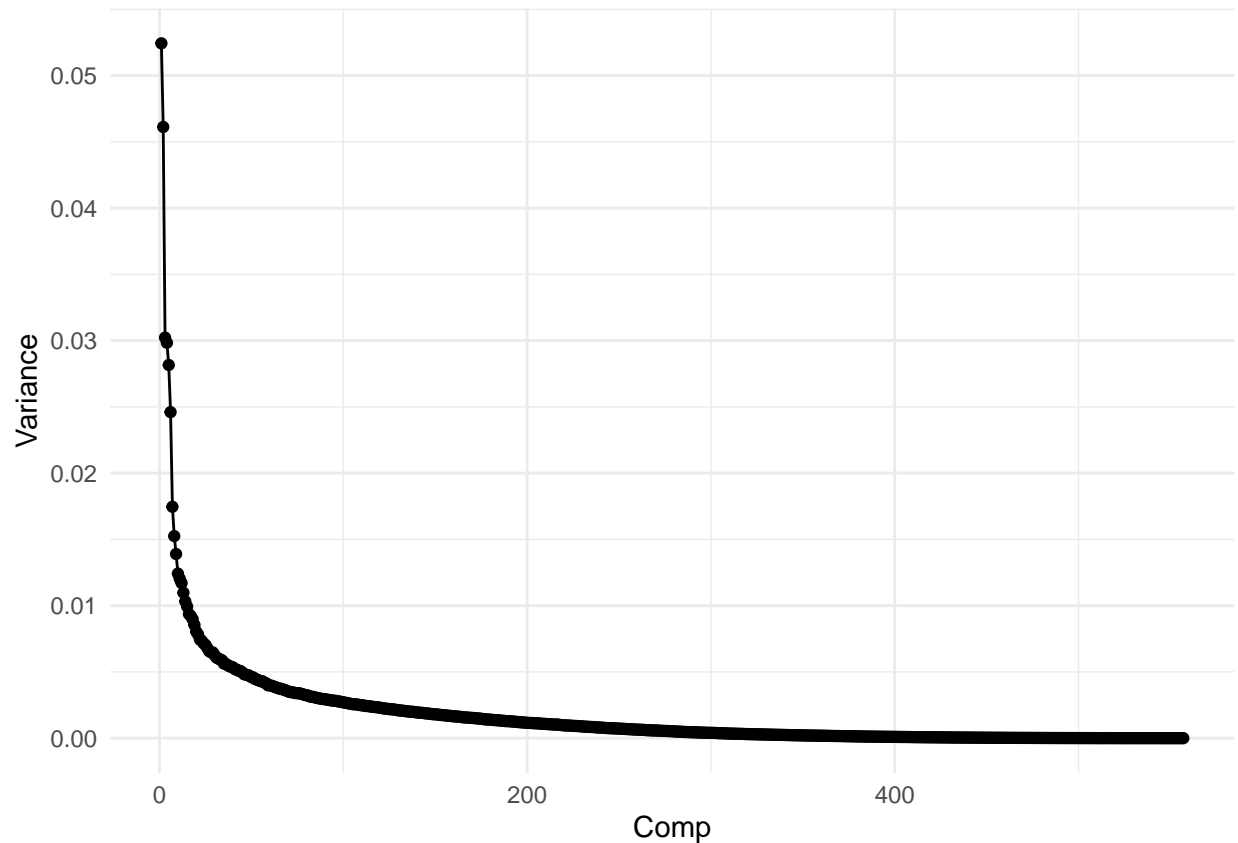
```
## Warning: package 'mclust' was built under R version 4.3.2
```

```
## Package 'mclust' version 6.0.1
## Type 'citation("mclust")' for citing this R package in publications.
```

```
# Load the data
data <- read.csv("ss.csv")

# Apply PCA
pca_results <- prcomp(data, scale. = TRUE)

# Plot the scree plot to determine the number of components to retain
scree_plot <- data.frame(Comp = 1:length(pca_results$sdev), Variance = pca_results$sdev^2 / sum(pca_results$sdev^2))
ggplot(scree_plot, aes(x = Comp, y = Variance)) +
  geom_line() +
  geom_point() +
  theme_minimal()
```



```
# Assuming you choose k principal components based on the plot
```

```
k <- 4 # Adjust based on your scree plot analysis
```

```
pca_scores <- pca_results$x[, 1:k]
```

```
# Fit a Gaussian Mixture Model
```

```
gmm_results <- Mclust(pca_scores, G = 1:10) # Test several numbers of clusters
```

```
summary(gmm_results)
```

```
## -----
```

```
## Gaussian finite mixture model fitted by EM algorithm
```

```
## -----
```

```
##
```

```
## Mclust VEV (ellipsoidal, equal shape) model with 10 components:
```

```
##
```

```
## log-likelihood  n df      BIC      ICL
```

```
##      -3046.456 716 122 -6894.901 -7083.445
```

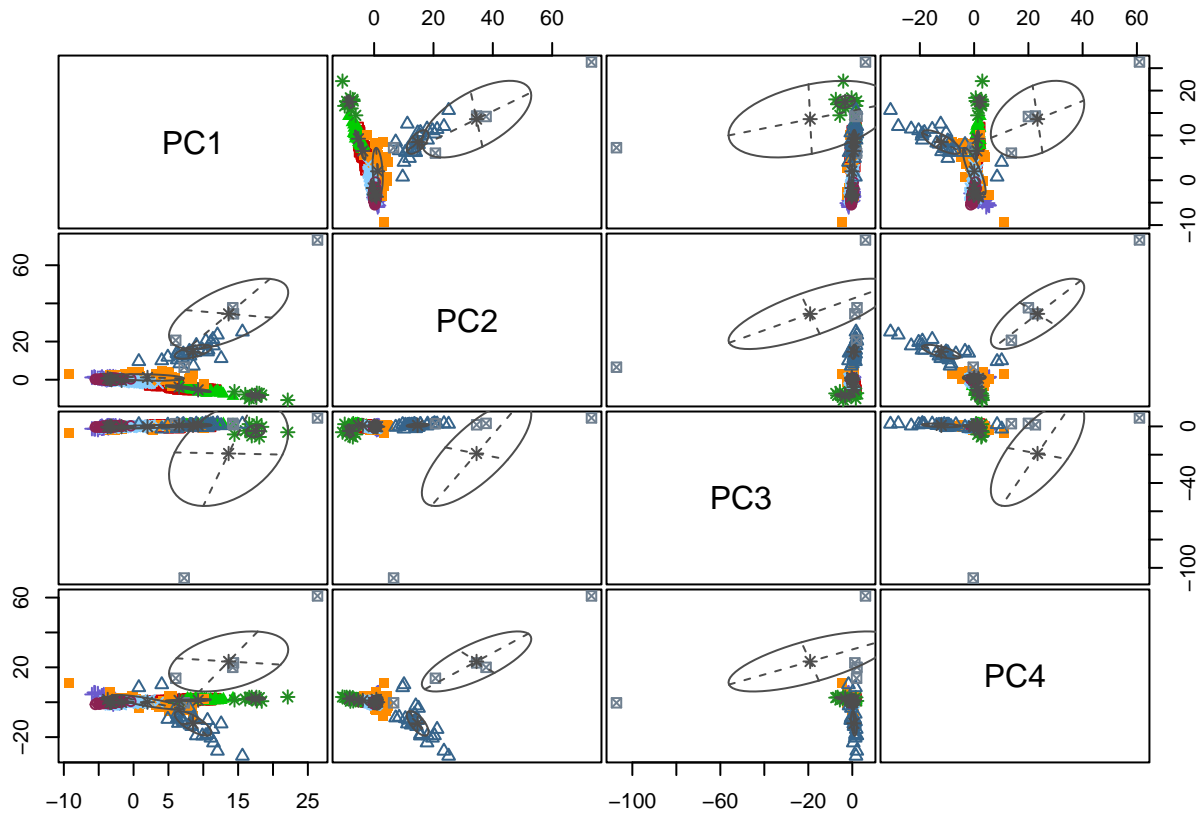
```
##
```

```
## Clustering table:
```

```
##   1  2  3  4  5  6  7  8  9 10
```

```
## 217 73 54 52 34 106 139 10 26  5
```

```
plot(gmm_results, what = "classification")
```

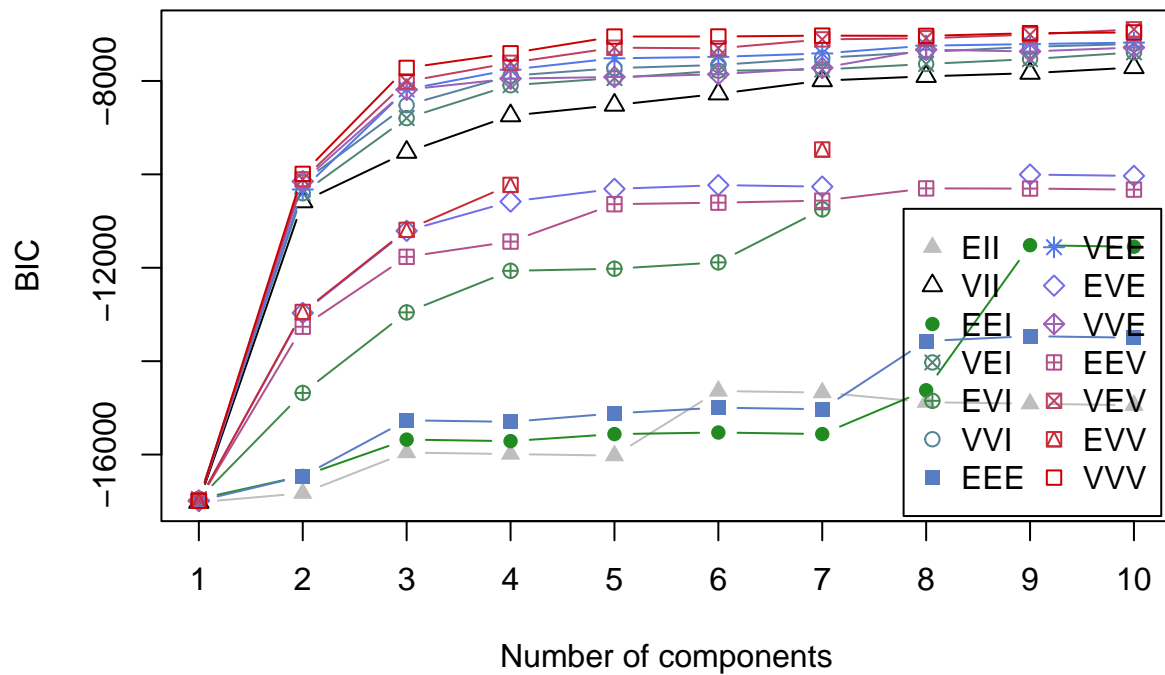


```
# Analyze the clusters
# Identify which genes are important for each cluster by examining means or other statistics within each cluster
# Adjust according to specific needs of your analysis
```

```
# Assuming 'gmm_results' is your fitted GMM model from the previous step
# Select the best model based on BIC
summary(gmm_results)
```

```
## -----
## Gaussian finite mixture model fitted by EM algorithm
## -----
##
## Mclust VEV (ellipsoidal, equal shape) model with 10 components:
##
## log-likelihood   n  df      BIC      ICL
##      -3046.456 716 122 -6894.901 -7083.445
##
## Clustering table:
##   1  2  3  4  5  6  7  8  9 10
## 217 73 54 52 34 106 139 10 26 5
```

```
plot(gmm_results, what = "BIC")
```



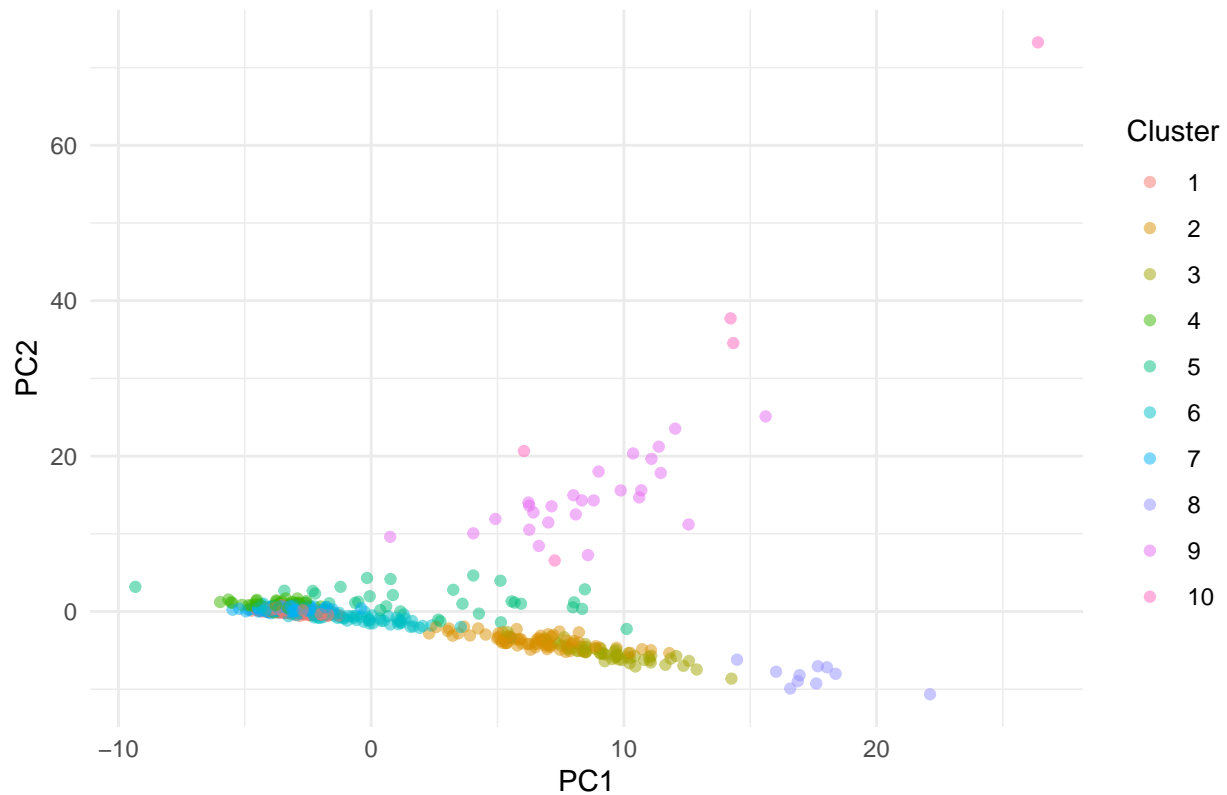
```
# Best model based on BIC
best_model <- gmm_results$parameters$mean
```

```
# Classification of data into clusters
clusters <- gmm_results$classification
cluster_table <- table(clusters)
print(cluster_table)
```

```
## clusters
##   1   2   3   4   5   6   7   8   9  10
## 217  73  54  52  34 106 139  10  26   5
```

```
# Visualize the clusters (using first two principal components for simplicity)
library(ggplot2)
cluster_df <- data.frame(PC1 = pca_scores[,1], PC2 = pca_scores[,2], Cluster = as.factor(clusters))
ggplot(cluster_df, aes(x = PC1, y = PC2, color = Cluster)) +
  geom_point(alpha = 0.5) +
  theme_minimal() +
  labs(title = "Cluster Visualization with PCA Scores", x = "PC1", y = "PC2")
```

Cluster Visualization with PCA Scores



```
# Examine the cluster means to interpret the clusters
cluster_means <- aggregate(pca_scores, by = list(clusters), FUN = mean)
colnames(cluster_means)[1] <- "Cluster"
print(cluster_means)
```

##	Cluster	PC1	PC2	PC3	PC4
## 1	1	-3.176071	0.04807551	0.2623683	-0.16897306
## 2	2	6.503468	-3.80775810	0.6934638	1.07093192
## 3	3	9.481980	-5.42353261	0.8883562	1.17558405
## 4	4	-3.801390	0.80034526	-0.3936484	1.83511931
## 5	5	2.136931	1.25417954	-0.1827049	-0.04192889
## 6	6	-1.633841	-0.34955734	-0.2266109	-0.04403937
## 7	7	-3.342179	0.30010222	0.0230784	-0.11627968
## 8	8	17.475844	-8.32152425	-3.1279578	2.07451394
## 9	9	8.545542	14.69069665	0.7387888	-12.14880309
## 10	10	13.650275	34.54813135	-19.1924820	23.39235056

```
# Detailed examination of gene expressions for each cluster
# Assuming 'data' is the original gene expression data
for (i in unique(clusters)) {
  cat("Cluster", i, "mean expression:\n")
  cluster_data <- data[clusters == i, ]
  print(colMeans(cluster_data, na.rm = TRUE))
  cat("\n")
}
```

```

## Cluster 7 mean expression:
## X1110020A21Rik X1110046J04Rik X1190002F15Rik X1500015A07Rik X1500015010Rik
## 6.542998e+00 8.962676e+00 4.840613e+00 9.925436e+00 3.393919e+00
## X1700010K23Rik X1700012D01Rik X1810011H11Rik X2010204K13Rik X2310057J18Rik
## 0.000000e+00 1.848257e-01 2.745558e+02 1.567853e+01 7.950520e+00
## X2810032G03Rik X2810442N19Rik X3010033K07Rik X3100003L05Rik X3110079015Rik
## 8.080515e+00 0.000000e+00 1.984888e+00 1.151795e+00 0.000000e+00
## X3830417A13Rik X4732416N19Rik X4930429F24Rik X4930596I21Rik X5430416N02Rik
## 1.690639e+01 3.557842e+00 4.218483e+00 5.012651e+00 1.076153e+01
## X6330418K02Rik A630066F11Rik A730008H23Rik Ackr1 Ackr3
## 9.729425e+00 1.101216e+00 0.000000e+00 1.135436e+00 2.110770e+01
## Acot1 Acta2 Actg2 Adh1 Adm
## 2.410023e-01 1.860875e+03 2.320694e+02 1.124251e+00 4.608181e+00
## AF357355 AF357359 AF357399 AF357425 AF357426
## 8.081542e+00 7.78875e+00 1.105680e+01 7.771727e+00 3.702418e+00
## Akr1c18 Akr1c1 Aldh1a1 Aldh1a2 Aldh1a3
## 0.000000e+00 0.000000e+00 1.115753e-02 3.470700e-01 1.314821e-01
## Aldoc Amd1 Angptl4 Angptl7 Ank
## 1.062821e-01 2.519123e+00 1.000325e+01 7.331466e-02 1.632419e+01
## Ankle1 Ankrd1 Ankrd37 Anxa1 Anxa8
## 1.549992e-02 5.310055e-01 2.820549e+01 1.150180e+03 0.000000e+00
## Apoa1bp Apod Apoe Aqp1 Aqp2
## 1.100284e+02 1.466716e+01 2.625521e+01 1.001364e+00 0.000000e+00
## Aqp5 Arc Arg1 Arhgdib Arsi
## 2.604593e+00 8.254280e-01 9.096092e+00 1.006901e+03 0.000000e+00
## Atad2 Atf3 Atp6v1c2 AW112010 B2m
## 4.200033e+00 5.602217e+01 1.390479e+00 5.017456e-02 2.177768e+03
## BC028528 BC064078 Bglap Bglap2 Bglap3
## 2.423622e+02 0.000000e+00 4.308511e-02 0.000000e+00 1.860178e+00
## Birc5 Bpifb1 Bpifb5 Btg2 C1qtnf3
## 5.577556e-01 0.000000e+00 0.000000e+00 5.959223e+01 1.860195e+00
## C3 C8g Capn6 Car12 Car6
## 2.768702e-02 2.482764e+00 3.979048e-02 4.196376e-01 6.499158e+00
## Casp1 Cav1 Cbr2 Ccdc17 Cck
## 8.574731e-02 2.234149e+02 0.000000e+00 1.416223e-02 3.661341e-02
## Cc111 Cc119 Cc12 Cc17 Cc18
## 1.421211e+02 7.198574e-01 8.422461e+01 5.960701e+00 0.000000e+00
## Ccna2 Ccnb1 Ccnb2 Ccr12 Cd24a
## 1.480288e+00 3.706825e-01 4.265727e+00 5.524252e+00 2.268533e+00
## Cd34 Cd36 Cd53 Cd55 Cd74
## 4.418986e-02 3.225355e+01 2.467052e+00 0.000000e+00 2.437243e-01
## Cdc20 Cdc25c Cdca3 Cdca8 Cdh1
## 2.255424e+00 3.649777e-02 4.049125e-01 2.091510e+00 0.000000e+00
## Cdkn1a Cdkn3 Ceacam10 Cenpa Cenpk
## 2.147519e+01 4.418549e-01 0.000000e+00 8.725576e+00 3.267590e+00
## Cfb Ch25h Chad Chchd10 Chil1
## 1.440639e+00 1.166162e+01 0.000000e+00 3.035386e+01 2.208408e+00
## Chod1 Chrd11 Cilp Ckap2 Cks1b
## 0.000000e+00 1.111256e+00 4.300505e-01 2.134223e+00 1.907832e+01
## Clca2 Cldn3 Cldn4 Cldn7 Clec3b
## 3.744194e-01 2.098698e+00 0.000000e+00 2.042452e+00 5.180457e-01
## Clu Cnn1 Col10a1 Col12a1 Col1a1
## 2.201823e+00 7.690518e+00 6.546095e+00 3.715042e+01 2.595186e+02
## Col1a2 Col3a1 Col6a1 Col8a1 Col9a1

```

##	3.409799e+02	8.737650e+02	3.154727e+02	4.762811e+01	1.065197e-02
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	5.395105e-01	1.949009e+00	1.148695e+00	0.000000e+00	1.210892e+01
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	4.127518e-01	1.627376e+01	6.281939e-02	1.743819e+00	0.000000e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.741088e+03	3.387594e+01	1.038497e+03	4.378680e+00	1.095250e+03
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	6.049854e-02	8.134844e-02	1.669284e+02	0.000000e+00	2.827120e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	2.948082e+02	6.825423e-02	2.467333e+01	7.267616e-01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	0.000000e+00	1.252457e+00	3.036286e-02	3.819887e+02	5.254478e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	6.775626e+00	0.000000e+00	5.786237e+00	2.089321e+02	5.767894e+00
##	Ddx59	Dennd2d	Depdc7	Derl3	Dmp1
##	6.373229e+00	2.779940e-01	7.605480e+00	2.804057e+00	2.920587e+01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	5.148419e+00	3.912999e+02	0.000000e+00	4.142386e+01	3.394300e-02
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	0.000000e+00	4.954980e-01	7.997844e+00	4.118204e-01	6.292161e+00
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	1.403504e+00	9.745217e+01	2.437902e+00	6.215458e+01	0.000000e+00
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	4.369764e+02	0.000000e+00	3.587274e+00	1.441050e+02	7.209191e+02
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	6.053469e-01	4.363594e-02	1.718511e+00	2.086935e+00	8.253836e+00
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	5.605474e-02	1.372349e-01	4.105455e-02	0.000000e+00	1.680563e+01
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	8.252297e+01	3.388552e+01	1.392560e+00	7.779015e+00	2.519529e-01
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	6.123298e-01	1.685392e+03	6.926091e+02	4.181691e+00	6.936918e+00
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	2.880573e+01	3.516157e+00	0.000000e+00	0.000000e+00	2.898428e+00
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	0.000000e+00	6.116714e-02	7.875131e-02	1.006729e+00	1.553736e+00
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	3.256262e-01	3.013317e+00	5.037929e+00	1.070875e+01	7.266558e-01
##	Gpr37l1	Gpx3	Gstm1	Gzmc	H19
##	9.622807e-03	6.080983e+02	9.491614e+01	0.000000e+00	5.384364e+00
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrr1
##	0.000000e+00	6.949400e+01	1.609050e+02	4.211565e-01	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	1.319404e+03	4.000249e+01	3.300827e+01	2.211257e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	3.113316e+00	3.095675e-01	6.926844e+00	3.144392e+02	6.138298e+00
##	Ibsp	Id2	Id3	Id4	Ier3
##	0.000000e+00	1.226258e+01	4.344509e+02	3.622229e+01	8.430069e+01
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	3.026552e+01	8.013708e-01	8.342465e-01	4.314987e+02	1.937042e+00
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	3.709790e-01	2.046155e+00	1.013814e+02	2.060893e+00	1.929931e+00
##	Iigp1	Il10	Il12a	Il17b	Il33

##	3.335803e+01	3.771728e-01	6.104844e-01	3.577366e+00	7.880055e-02
##	I16	Inhba	Insl6	Isg15	Itgbl1
##	4.105445e+01	7.953657e+00	0.000000e+00	1.906186e+01	5.693605e-01
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	7.724926e+00	7.932471e+02	1.909787e-01	1.073123e-02	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	8.602981e+00	4.148372e-01	1.322671e-02	1.587614e-02
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	4.371838e-01	7.769000e-01	3.960858e+02	4.077563e-01	4.450420e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	3.723839e+01	0.000000e+00	1.692071e+01	0.000000e+00	0.000000e+00
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	9.690175e-03	5.219628e+01	8.303531e+00	1.012372e+01	1.816371e+00
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	2.026131e+00	4.300300e+00	5.691204e+00	8.470411e-01	3.994164e-01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	4.958263e-02	2.778403e+00	6.107477e+00	0.000000e+00	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	1.101002e+02	2.071519e+01	3.916861e+00	7.593710e+00	8.745957e-03
##	Malat1	Map10	Matn4	Mest	Mettl18
##	1.084585e+03	4.127710e+00	6.959115e-03	2.348173e+01	1.544457e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	3.390604e-01	6.520420e-01	8.212657e+03	2.091611e+01	1.482320e+00
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	9.968876e-01	3.770067e+00	6.565630e+00	0.000000e+00	7.226863e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	0.000000e+00	3.530499e+00	8.712774e+01	0.000000e+00	3.052313e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	0.000000e+00	1.721930e+01	0.000000e+00	1.142503e+01	3.179270e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	3.242750e+00	1.411116e+00	0.000000e+00	1.534969e+00	1.738245e+01
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	4.610538e+00	3.103651e+00	1.617592e+00	0.000000e+00	0.000000e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	2.699067e-01	1.241117e+00	5.672596e-01	4.579304e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	6.171321e+00	0.000000e+00	0.000000e+00	9.211568e-01	6.461521e-01
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	9.475022e-01	1.248369e+02	1.009846e+01	6.847474e+01	3.472694e-01
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	2.816941e+00	4.777487e-02	3.093890e+00	2.010385e+02	1.035323e+01
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	1.475354e+01	7.835056e-01	1.527154e+03	7.172905e-01	3.543532e-01
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	4.600894e+00	1.858410e+01	3.630760e+00	8.874181e+00	9.198414e-01
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	7.648715e+01	2.038045e-02	1.287369e+01	5.339885e+01	1.321550e+00
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	2.440086e-02	0.000000e+00	1.416324e-01	0.000000e+00	3.905233e+01
##	Penk	Perp	Pi16	Pip	Plac8
##	0.000000e+00	2.595987e-02	3.192795e-01	8.477903e+00	6.662390e+01
##	Plekha1	Plet1	Plk1	Pln	Plp1
##	1.419076e-02	7.562607e-01	2.455030e-01	1.182556e+00	1.572831e+00
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4

##	1.066420e+03	0.000000e+00	1.822070e+00	1.411705e+01	1.262881e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	2.372466e-02	2.220747e-02	0.000000e+00	2.318080e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	0.000000e+00	0.000000e+00	4.929101e+02	6.281685e+00	3.356543e-02
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	0.000000e+00	8.790804e-02	2.168068e+02	5.025528e+00	7.399751e+02
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	6.367237e+03	0.000000e+00	2.508732e+03	1.754535e+00	2.763440e+01
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	2.735366e+01	4.796248e-01	1.061498e+01	5.469785e+01	2.507592e+00
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	2.125873e-01	1.911983e+01	1.071917e+02	1.063381e-01	2.644447e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	2.792068e-02	1.814500e+00	5.519109e-01	4.465579e-01	2.022224e+01
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	1.368167e+01	1.715753e-02	0.000000e+00	0.000000e+00	8.127413e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	2.605397e+01	2.996734e+00	9.525103e-02	2.043908e-02	2.287351e+01
##	Serpinb6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	1.113338e+00	5.544291e+01	6.136088e-03	3.715880e-01	0.000000e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	2.435698e+00	1.439080e+01	0.000000e+00	0.000000e+00	5.556508e-01
##	Smim22	Smoc1	Smoc2	Smpdl3a	Smr3a
##	3.561877e-01	6.904416e-02	3.796040e+00	1.578016e+01	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	6.800800e+01	3.604535e+00	0.000000e+00	0.000000e+00	2.756904e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	7.237396e+00	2.307389e+01	6.306233e+00	0.000000e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	1.036700e+01	1.671042e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	7.418096e+00	6.742868e+00	3.255053e+00	4.487114e+00	1.309863e+01
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	3.684886e+00	0.000000e+00	2.202256e+00	1.416348e+01	3.436267e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	2.721100e+00	3.479234e+00	7.804452e+00	6.256815e+00	1.515387e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	9.338692e+00	1.681686e+00	1.538288e+00	1.631418e+00	1.171161e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	0.000000e+00	2.446103e+01	8.092006e-01	1.500789e+01	9.013195e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	0.000000e+00	2.482822e+00	9.400683e+01	2.257003e+00	8.298134e+01
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	4.333920e+00	2.836344e+00	3.062838e+02	6.032455e-01	0.000000e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfbi
##	4.404491e+02	2.262024e-01	0.000000e+00	1.928130e-02	8.066202e-02
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	9.703123e+01	3.964936e+01	2.168174e-02	9.127804e-01	2.684223e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	2.909781e+02	2.738229e+02	5.418460e-01	4.876106e+01	1.282104e+01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	9.955449e+00	8.683271e+00	1.308134e+00	2.194866e-02	7.433992e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7

##	1.539750e+02	1.065702e+01	3.124955e+00	0.000000e+00	1.232982e+01
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	0.000000e+00	8.532621e-01	0.000000e+00	4.412899e+01	3.343446e-01
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	6.957789e-01	0.000000e+00	4.096744e+01	5.767834e-02	1.620375e+00
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	4.645765e+00	2.270728e+00	3.987533e+02	2.232650e+00	7.780334e-01
##	Zfp81	Zfp944			
##	1.040348e+01	7.367293e+00			
##					
##	Cluster 2 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	1.079832e+00	1.680469e+01	1.093395e-01	4.428763e-01	4.382334e+02
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	6.151515e+00	4.221452e-02	2.823345e-01	0.000000e+00	7.355456e+00
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	0.000000e+00	9.584848e-01	0.000000e+00	0.000000e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	5.182830e+00
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	2.337287e+00	5.961840e-01	5.407212e+01	0.000000e+00	2.825993e+01
##	Acot1	Acta2	Actg2	Adh1	Adm
##	2.615775e-01	5.068930e+02	3.458198e+01	1.443728e+01	2.927185e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	1.670863e+00	1.026435e+00	4.396544e+00	9.119108e-01	6.481810e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	4.697188e+01	0.000000e+00	4.272566e+01	1.571294e+02	1.318975e+00
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	1.065186e+00	0.000000e+00	1.273025e+02	6.577106e-02	6.306148e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	1.253897e-01	4.308676e+01	5.398807e+00	7.165595e+02	4.101575e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	9.477653e+01	4.459910e+02	1.071698e+01	3.582944e+01	2.582710e+01
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	1.066469e+02	1.743843e+00	1.429228e+01	1.661327e+02	1.692874e+00
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	2.099463e+00	3.247071e+01	2.252959e+00	2.395698e+01	2.236783e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	1.562293e+02	0.000000e+00	1.427532e-01	0.000000e+00	3.840193e+00
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	5.199893e-01	0.000000e+00	5.148572e-02	1.125673e+02	6.193893e+01
##	C3	C8g	Capn6	Car12	Car6
##	3.238281e-01	2.533149e+00	2.887236e+00	3.332524e-01	2.255548e+00
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	2.779570e+01	3.158197e+00	1.263186e+00	2.264914e+00	2.945130e+00
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	1.826272e+02	0.000000e+00	1.750293e+01	3.164126e+01	7.825102e+01
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	1.099118e+00	2.723578e-01	4.592281e-01	1.177891e+00	3.751396e+00
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	1.203189e+01	2.115655e-02	3.376712e+01	1.047967e+01	1.268692e+00
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	8.507169e-01	5.961628e-01	5.929932e-01	4.664194e-01	6.063486e-03
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk

##	1.528300e+02	2.880058e-01	0.000000e+00	2.052839e+00	2.261015e+00
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	4.934336e+00	2.281758e+01	7.027455e-01	1.141745e+02	9.677917e-02
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	0.000000e+00	0.000000e+00	3.204342e+02	2.260541e+00	2.165111e+01
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	3.601245e-02	2.226987e+00	1.816531e-02	2.655675e-01	2.004559e+00
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	1.454007e+00	8.334357e-01	1.265534e+01	6.648609e+02	2.840936e+03
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	2.538965e+03	3.081248e+03	1.728911e+03	1.556054e+02	1.243352e-01
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	4.065380e-01	3.975815e-01	8.623449e-02	9.760716e-02	4.500753e-02
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	3.892315e+02	3.195674e+02	6.640730e+01	2.400711e+03	2.555820e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.067850e+03	4.879415e+01	1.177673e+03	2.189366e+00	5.619370e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	7.069435e+01	4.767079e+01	1.016023e+03	0.000000e+00	0.000000e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	1.031305e+02	7.254787e+01	6.410036e+01	3.821265e+02	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	3.788668e+01	1.392470e+01	5.431531e+00	1.065849e+02	6.738561e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	2.297046e-02	0.000000e+00	1.268617e+00	2.146760e+02	1.787691e+03
##	Ddx59	Dennd2d	Depdc7	Der13	Dmp1
##	4.267640e+00	6.418120e-01	1.857096e-01	1.562539e+00	8.343020e-01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	1.427923e+01	3.538471e+02	2.139200e+00	2.287693e-01	1.411980e+01
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	0.000000e+00	1.678458e-01	6.944501e+00	2.107120e-01	1.396147e+02
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	1.258751e+01	4.592516e-02	4.788513e+00	1.681252e-01	1.702049e+01
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	2.345251e+02	0.000000e+00	9.764272e+00	5.604949e+02	6.443991e-01
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	0.000000e+00	1.195915e+00	9.170456e-02	3.091348e+02	4.786673e+02
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	6.305018e-01	9.359591e-02	8.918560e+01	2.280510e+01	3.888954e+01
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	8.761501e+01	7.557674e+01	3.493336e+01	2.468127e+01	1.734714e+02
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	3.178660e+00	1.216043e+03	8.390274e+02	6.018174e-01	6.533060e+01
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	1.761277e+01	9.694078e+01	1.022762e+00	0.000000e+00	1.163939e+00
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	0.000000e+00	6.081111e+01	5.005749e-01	3.208315e+01	1.320228e-01
##	Gm4532	Gm5886	Gm9958	Gmnn	Gpc3
##	0.000000e+00	5.280235e+00	5.809491e-01	4.186686e+00	1.635778e+01
##	Gpr3711	Gpx3	Gstm1	Gzmc	H19
##	0.000000e+00	7.071404e+02	3.491594e+01	4.078860e+00	1.851070e+01
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	7.425445e-01	1.391594e-01	2.969945e-01	1.132735e+01	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt

##	0.000000e+00	1.493438e+00	2.980084e+01	5.593704e+01	2.392497e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	8.115177e-01	4.311499e+01	1.781146e+02	5.320184e+02	9.511769e+01
##	Ibsp	Id2	Id3	Id4	Ier3
##	2.919681e-02	7.865257e+01	2.212997e+02	1.882477e+00	1.395229e+02
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	3.719983e+01	1.961530e+01	1.106427e+01	8.737954e+01	0.000000e+00
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	6.040730e+02	2.954061e+02	1.097655e+03	4.187509e+01	1.095659e+02
##	Iigp1	Il10	Il12a	Il17b	Il33
##	2.940990e+01	8.737772e-02	9.979198e-02	8.625705e-01	1.336436e+02
##	Il6	Inhba	Ins16	Isg15	Itgbl1
##	3.716601e+01	6.018092e+01	0.000000e+00	8.307860e+01	3.306296e+02
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	2.438061e+02	2.047995e+00	1.720423e+00	0.000000e+00	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	2.750508e+00	0.000000e+00	0.000000e+00	4.853616e-02
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	4.593960e-01	2.007725e+00	3.824558e+02	4.163073e+01	6.209894e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	2.514951e+01	0.000000e+00	7.005508e+01	0.000000e+00	2.866705e-01
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	0.000000e+00	5.587026e+00	1.173642e+00	2.126702e+02	3.890302e-01
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	5.148027e+02	8.736472e+00	1.379271e+01	2.030820e-01	1.181467e+01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	7.328600e+00	1.165586e+03	3.732598e+02	5.378593e+01	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	6.514561e+02	1.134182e+01	0.000000e+00	3.745831e+00	0.000000e+00
##	Malat1	Map10	Matn4	Mest	Mettl18
##	1.582878e+03	1.823460e-01	3.255320e-02	3.165117e+01	5.391160e-01
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	1.573291e+02	1.328010e+03	1.012127e+04	2.555149e+02	6.962406e-01
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	0.000000e+00	1.698377e+00	1.019116e+00	0.000000e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	6.709592e+00	1.049885e+01	6.475204e+01	8.155763e+00	3.840355e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	2.415777e+00	9.836428e+00	0.000000e+00	0.000000e+00	7.472349e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	0.000000e+00	2.243421e+00	1.190060e+01	2.589789e+00	4.252350e+00
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	5.963888e-01	0.000000e+00	2.771505e+00	1.676133e+01	0.000000e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	1.269948e+01	3.206305e+00	8.290262e-01	4.203851e-01	2.133190e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	1.639760e+01	0.000000e+00	0.000000e+00	3.879562e+00	0.000000e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	1.691190e+02	2.628272e+02	4.115330e+02	9.092836e+02	7.001997e+01
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	1.275427e+01	7.330191e+01	0.000000e+00	5.092766e+02	1.350370e+02
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	1.618520e+01	3.384193e-01	2.536743e+02	8.511650e-02	0.000000e+00
##	Ndrgr1	Ndufa4	Npw	Nudt8	Nuf2

##	1.526136e+01	2.853603e+02	8.897214e-01	8.710739e+00	4.457615e-02
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	4.619637e+02	7.559330e+00	1.747674e+03	1.342902e-01	1.158952e+02
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	1.740121e+00	1.582259e+00	2.088578e+00	2.677225e+00	2.745267e+02
##	Penk	Perp	Pi16	Pip	Plac8
##	2.267779e+01	1.408324e-02	7.727393e+01	1.159368e+00	3.097851e+01
##	Plekhhb1	Plet1	Plk1	Pln	Plp1
##	5.940796e-01	2.036090e+00	3.271756e-01	0.000000e+00	4.004986e-01
##	Postn	Ppp1r42	Prc1	Prelp	Prg4
##	3.012341e+03	0.000000e+00	1.666439e+00	1.903523e+01	1.121815e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	4.820417e-02	1.764710e+00	1.964720e+01	8.422405e+00
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	4.375939e+00	0.000000e+00	2.825352e+02	1.471157e+02	9.129527e+01
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	2.108216e+01	4.674692e+01	1.127806e+01	1.903332e+01	1.140160e+01
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	2.008394e+01	8.787817e-01	3.083468e+03	4.816722e-01	9.714083e+02
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	1.911493e+01	2.141017e+00	3.279056e+00	1.216403e+00	5.907449e-01
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	2.124286e-01	3.410283e+01	3.399508e+02	0.000000e+00	3.691825e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	8.337278e-01	2.609159e+00	5.335854e+00	1.919417e+00	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scl	Scgb1b27
##	0.000000e+00	1.618406e+01	6.015590e+00	2.936268e-02	8.320566e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	4.296796e+01	2.717628e-01	0.000000e+00	8.514114e+00	2.809618e+02
##	Serpib6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	7.568038e+00	1.831883e+03	1.261913e+01	2.232389e+02	1.745010e-02
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	5.608884e-01	5.157956e+01	9.342139e-01	2.645630e+00	9.937087e-01
##	Smim22	Smoc1	Smoc2	Smpdl3a	Smr3a
##	8.492291e-01	4.762315e-02	7.080772e+02	3.250263e+01	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	9.729780e-02	7.804616e-01	1.642345e+00	6.273278e-01	2.924323e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	2.115147e+00	1.047583e+01	4.258921e+00	4.613505e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	1.088908e+01	1.422239e+01	2.680166e+00	2.043190e+00	0.000000e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	3.509135e+00	1.513079e+00	6.189870e-01	1.425727e+00	1.302299e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	0.000000e+00	9.078475e-01	8.230321e-01	1.506888e+00	1.972476e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	3.628688e+00	0.000000e+00	1.572706e+00	0.000000e+00	0.000000e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	2.063495e+00	0.000000e+00	0.000000e+00	6.035622e-01	1.046746e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	1.318298e+00	2.225040e+01	9.018827e+00	5.762851e+01	1.231741e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	8.073852e-01	2.732312e+00	7.785012e+02	1.992649e+00	5.576820e+03
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19

##	6.714186e+01	4.046346e-01	3.101542e+01	7.005204e-01	3.130974e-01
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfb1
##	3.017144e+02	3.260651e+00	0.000000e+00	9.045662e-01	2.023920e+01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	1.657808e+02	3.769673e+02	7.963392e+01	2.167085e+00	1.354035e+03
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	1.327531e+02	8.394053e-01	1.016605e+00	1.292298e+01	1.290504e+02
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	6.098631e+01	3.726628e+00	8.481519e+00	1.868266e+01	3.193117e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	1.160756e+02	2.147841e+01	5.160396e-02	0.000000e+00	2.905058e+00
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	9.045344e-01	1.149653e-01	0.000000e+00	5.999407e+01	4.766189e-01
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	6.822343e+00	5.132006e-01	4.098361e+01	1.215956e+00	1.430504e+00
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	2.102715e+00	1.512590e+00	2.800259e+02	1.112209e+00	2.149491e+00
##	Zfp81	Zfp944			
##	2.305988e+00	6.114236e+00			
##					
##	Cluster 3 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	2.708189e-01	1.538060e+01	8.577002e-01	0.000000e+00	5.991421e+02
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	5.243287e+00	2.432108e-01	3.723375e-01	0.000000e+00	1.927421e+00
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	5.709311e-02	6.526192e-02	0.000000e+00	0.000000e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	0.000000e+00	0.000000e+00	3.033296e-01	0.000000e+00	1.922514e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	2.322192e+00	2.309534e-01	0.000000e+00	2.535210e-01	2.803242e+01
##	Acot1	Acta2	Actg2	Adh1	Adm
##	2.394642e+00	2.604882e+02	1.534947e+01	1.577927e+01	5.654231e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	0.000000e+00	1.940539e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	3.121609e+01	0.000000e+00	4.730225e+01	1.544113e+02	7.055520e+00
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	1.585598e+00	7.980348e+00	8.191014e+01	2.846595e+01	6.528309e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	4.374817e-02	1.071990e+01	5.021950e-01	6.823155e+02	8.767558e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	9.686057e+01	2.075028e+03	2.439919e+01	8.799165e+01	1.269684e+01
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	6.790477e+01	6.658836e-02	2.350819e+00	1.465868e+02	2.440993e+00
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	1.412113e+00	1.226099e+01	7.958879e-02	3.002519e+01	2.135053e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	1.122643e+02	3.651608e-01	9.882058e-02	0.000000e+00	0.000000e+00
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	8.268071e+00	0.000000e+00	0.000000e+00	5.733732e+01	1.103249e+02
##	C3	C8g	Capn6	Car12	Car6
##	4.279957e+00	6.072789e-01	3.779827e+00	4.125240e-02	2.284206e+00
##	Casp1	Cav1	Cbr2	Ccdc17	Cck

##	3.159674e+01	3.011720e+00	6.700996e-01	0.000000e+00	0.000000e+00
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	2.403362e+02	0.000000e+00	7.379069e+01	1.762362e+01	8.485357e+01
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	2.931115e+00	3.243775e-01	1.598828e+01	1.444057e+00	7.908195e-01
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	6.053400e+01	6.906038e-02	1.314708e+01	1.260545e+01	1.652797e+01
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	0.000000e+00	3.038223e+00	6.617098e+00	2.746922e+00	1.244370e-01
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	1.339593e+02	3.882312e+00	0.000000e+00	9.934106e+00	0.000000e+00
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	4.905176e+00	1.111861e+01	0.000000e+00	1.492286e+02	8.110214e-01
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	1.326898e+01	3.200628e-01	8.893642e+02	1.363637e+00	2.603777e+01
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	4.944427e-01	3.502670e-01	1.091766e+00	9.156851e-01	2.849317e+00
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	1.416432e+00	2.523991e-01	6.772815e+01	6.558259e+02	3.517910e+03
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	3.302403e+03	3.805175e+03	1.714034e+03	2.091556e+02	0.000000e+00
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	4.331737e-02	7.616961e-01	9.479606e-01	0.000000e+00	0.000000e+00
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	5.558048e+02	5.279906e+02	1.096805e+02	1.903821e+03	1.039324e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.051330e+03	2.599143e+01	1.283595e+03	0.000000e+00	5.476396e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	1.323949e+02	9.535430e+01	1.086128e+03	0.000000e+00	0.000000e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	6.193452e+01	0.000000e+00	1.460023e+02	6.154998e+02	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	2.272758e+01	7.842177e+00	2.319693e+00	8.943484e+01	5.962206e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	0.000000e+00	0.000000e+00	0.000000e+00	1.912898e+02	3.018099e+03
##	Ddx59	Dennd2d	Depdc7	Der13	Dmp1
##	4.227104e+00	3.403161e-01	0.000000e+00	2.901435e+00	1.070528e+00
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	4.329162e+01	3.891238e+02	9.499672e-01	1.897992e+00	1.438738e+01
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	0.000000e+00	1.025450e-01	1.101146e+00	1.523298e-01	2.663672e+02
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	6.064456e+00	7.938383e-02	1.917926e+00	4.489884e-02	9.148800e+01
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	6.311391e+01	0.000000e+00	1.025885e+01	7.240805e+02	9.353450e-01
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	0.000000e+00	2.376925e+01	9.098746e-01	4.893689e+02	5.228614e+02
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	0.000000e+00	1.067860e+00	9.131014e+01	3.176996e+00	3.862869e+01
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	8.070209e+01	7.576111e+01	3.608267e+01	4.343704e+01	1.490344e+02
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	4.281105e+00	1.216699e+03	9.574700e+02	6.188408e+00	1.288415e+02
##	G0s2	Gas6	Gatm	Gdf10	Gdf15

##	2.128061e+01	1.911452e+02	2.016923e-01	0.000000e+00	9.879881e-01
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	0.000000e+00	7.892910e+01	0.000000e+00	2.413653e+01	2.846438e-01
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	0.000000e+00	4.892057e-01	1.109212e+00	7.286406e-01	2.845646e+01
##	Gpr3711	Gpx3	Gstm1	Gzmc	H19
##	0.000000e+00	7.375538e+02	3.637171e+01	9.295667e+00	5.686788e+00
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	1.101608e+01	0.000000e+00	1.447001e-01	2.176452e+00	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	1.675586e+00	2.958156e+01	7.511047e+01	6.981301e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	1.933978e-01	4.420274e+01	5.660993e+02	4.367854e+02	1.198730e+02
##	Ibsp	Id2	Id3	Id4	Ier3
##	0.000000e+00	5.569786e+01	2.881193e+02	5.472206e+00	7.257778e+01
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	1.805034e+01	1.524757e+01	6.843742e+00	6.835550e+01	2.243090e-01
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	8.693081e+02	3.075143e+02	1.363431e+03	2.816318e+02	1.582458e+02
##	Iigp1	Il10	Il12a	Il17b	Il33
##	1.364741e+01	0.000000e+00	0.000000e+00	0.000000e+00	3.035759e+02
##	Il6	Inhba	Ins16	Isg15	Itgbl1
##	2.823204e+00	1.405841e+01	1.067597e+00	6.187965e+01	6.868465e+02
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	2.462804e+02	1.339260e+00	9.587167e-02	6.521183e-01	1.114731e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	4.114066e-02	9.142428e-01	0.000000e+00	0.000000e+00	1.067409e+00
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	1.405386e+00	6.079355e-01	4.017407e+02	4.996991e+01	4.579721e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	1.704874e+01	0.000000e+00	6.124550e+01	0.000000e+00	7.624195e-01
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	2.864948e-02	4.438297e+01	2.193880e+00	3.087432e+02	7.933790e-01
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	5.929240e+02	3.872839e+00	3.502934e+01	8.588977e-02	2.757618e+01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	1.631365e+00	1.797507e+03	5.162002e+02	9.528161e+01	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	6.628435e+02	3.474243e+00	1.780404e+00	8.056328e+00	0.000000e+00
##	Malat1	Map10	Matn4	Mest	Mett118
##	1.015801e+03	7.053422e-01	1.509174e+00	1.216894e+01	0.000000e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	4.478326e+02	1.480259e+03	1.366185e+04	2.482943e+02	0.000000e+00
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	5.070002e-01	1.482493e+00	4.848472e-01	2.005275e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	0.000000e+00	8.079437e+00	3.907154e+01	3.375209e+00	3.880361e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	3.268542e+00	2.543675e+00	0.000000e+00	0.000000e+00	8.216082e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	0.000000e+00	0.000000e+00	4.960264e+00	2.063059e+00	4.062942e+00
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	0.000000e+00	0.000000e+00	3.937454e+00	2.545023e+00	2.439319e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067

##	2.854591e+00	2.179028e+00	4.770853e+00	2.683515e+00	2.308305e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	1.367928e+00	9.444766e-01	8.923657e-01	0.000000e+00	0.000000e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	1.342478e+01	2.440066e+02	2.589906e+02	1.398347e+03	7.266862e+02
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	1.067792e+01	6.861593e+01	3.144001e+00	2.722639e+02	1.769654e+01
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	1.636299e+01	1.367112e-01	1.221623e+02	0.000000e+00	0.000000e+00
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	6.108236e+00	2.838297e+02	4.014926e-01	1.488456e+01	3.217704e+00
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	4.858746e+02	5.072846e+01	1.957928e+03	8.492068e-02	2.435040e+02
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	6.755684e-02	0.000000e+00	0.000000e+00	6.616139e+00	5.699917e+02
##	Penk	Perp	Pi16	Pip	Plac8
##	4.039568e+01	3.475079e-02	2.020602e+02	0.000000e+00	1.311318e+00
##	Plekhh1	Plet1	Plk1	Pln	Plp1
##	2.284751e+00	1.223824e-01	4.473773e-01	0.000000e+00	0.000000e+00
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4
##	4.527717e+03	0.000000e+00	3.826088e-01	5.183821e+01	1.590085e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	7.875840e-02	1.891072e+01	7.059717e+00	1.335598e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	2.641234e-01	0.000000e+00	2.154091e+02	1.897742e+02	3.552870e+01
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	8.412248e+01	7.230764e+01	2.400810e+00	1.559239e+01	9.912884e-01
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	6.658500e+00	0.000000e+00	2.485622e+03	0.000000e+00	1.176931e+03
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	1.430556e+01	0.000000e+00	2.505218e+00	1.378760e+00	1.767651e+00
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	0.000000e+00	3.830426e+01	3.322342e+02	1.800347e+00	1.772268e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	0.000000e+00	1.771829e+00	7.435684e+00	7.370538e-01	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	1.025403e+01	0.000000e+00	0.000000e+00	4.213892e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	1.506364e+01	3.032735e-01	0.000000e+00	2.897066e-01	4.622181e+02
##	Serpinb6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	5.892570e+00	2.397316e+03	1.270225e+01	2.625987e+02	1.398530e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	0.000000e+00	8.198828e+00	0.000000e+00	3.505283e+00	7.255257e-01
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a
##	1.521348e-01	0.000000e+00	9.527637e+02	5.714489e+01	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	0.000000e+00	0.000000e+00	0.000000e+00	3.028485e-01	4.158828e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	1.600824e+00	3.016407e+00	5.293144e+00	2.345794e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	8.905325e+00	1.948982e+00	0.000000e+00	8.326635e-01	5.847878e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	5.114092e-01	0.000000e+00	2.528818e+00	1.048973e+00	4.824491e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47

##	0.000000e+00	2.053409e+00	0.000000e+00	2.561403e+00	1.665104e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	1.320049e+00	0.000000e+00	1.088189e+01	0.000000e+00	0.000000e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	1.197052e+00	2.515671e+00	6.606950e-01	1.944525e+00	0.000000e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	2.114939e+00	5.594256e+00	0.000000e+00	4.376295e+01	1.001358e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	0.000000e+00	9.953190e-01	1.010013e+03	1.783761e+00	9.829081e+02
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	1.838869e+02	1.250729e-01	3.468232e+01	3.990726e-02	0.000000e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfb1
##	2.156278e+02	5.842045e+00	2.382520e-02	3.171915e-01	5.528900e+01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	6.360575e+01	3.026395e+02	1.493354e+02	3.545068e+00	1.056828e+03
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	2.195503e+02	3.231585e+00	1.797354e+01	1.108175e+01	1.220314e+02
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	4.678108e+01	0.000000e+00	1.186936e+01	1.537949e+01	2.251645e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	2.236298e+02	7.418075e+00	0.000000e+00	1.742889e+00	2.684359e+00
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	0.000000e+00	5.814715e-01	0.000000e+00	5.475275e+01	0.000000e+00
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	1.935743e+00	0.000000e+00	3.000032e+01	0.000000e+00	3.906333e+01
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	1.592552e+00	9.755313e-02	2.454390e+02	4.136606e+00	6.663202e-01
##	Zfp81	Zfp944			
##	3.375814e+00	5.227439e+00			
##					
##	Cluster 5 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	0.000000e+00	7.390861e+00	3.724211e+01	3.615460e+00	1.101945e+03
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	0.000000e+00	7.731654e-01	7.789864e+01	0.000000e+00	4.851455e+01
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	4.955793e-01	1.424507e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	6.988391e+00	0.000000e+00	0.000000e+00	7.328437e+00	1.440999e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	0.000000e+00	4.179218e+00	0.000000e+00	0.000000e+00	6.614965e+01
##	Acot1	Acta2	Actg2	Adh1	Adm
##	4.195774e+00	5.845984e+02	7.432833e+01	2.878868e+01	1.639910e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	0.000000e+00	4.381747e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	0.000000e+00	0.000000e+00	1.749039e+00	2.778834e+01	0.000000e+00
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	9.540559e+00	0.000000e+00	3.479969e+01	7.002810e-01	2.223525e+02
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	0.000000e+00	9.367119e-01	3.815782e+01	5.684989e+02	4.992516e+01
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	7.616662e+01	3.076478e+01	1.481672e+02	8.504334e+01	1.005598e+00
##	Aqp5	Arc	Arg1	Arhgdib	Arsi

##	1.584788e+01	3.627145e-01	3.054738e+01	2.788461e+02	3.936758e-01
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	1.069623e+01	2.681604e+01	6.804371e+00	5.425134e+00	3.361029e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	4.271225e+01	9.474132e-01	1.994913e-01	0.000000e+00	6.255734e-01
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	1.052385e+02	0.000000e+00	0.000000e+00	5.814093e+01	7.956297e+01
##	C3	C8g	Capn6	Car12	Car6
##	2.611039e+00	2.568984e+01	1.288959e+01	1.754770e+00	1.817226e+01
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	5.243638e+01	4.534614e+01	1.974692e+01	9.135064e-02	1.349303e+01
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	9.532084e+00	0.000000e+00	7.055620e+00	1.671125e+02	8.476763e+00
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	1.039998e+02	4.095038e+01	8.964643e+01	7.340436e+00	1.041082e+01
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	1.431041e+01	6.100085e-02	1.836679e+01	6.456940e+00	1.250322e+00
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	5.441383e+01	4.515452e+00	3.772019e+01	3.195619e+01	1.468258e+00
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	8.132226e+01	5.233576e+01	2.452382e+01	7.589596e+01	1.124182e+01
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	7.487080e+00	5.051710e+01	1.064493e+02	3.221620e+01	6.279778e+01
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	0.000000e+00	0.000000e+00	4.358693e+01	3.324836e+01	1.053819e+02
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	3.622335e+00	5.583558e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	6.741999e+01	0.000000e+00	6.037703e+01	1.340839e+02	9.890323e+02
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	7.972403e+02	1.249511e+03	5.515948e+02	1.820421e+02	1.466839e+01
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	2.938738e+01	9.110198e-01	4.180767e+00	1.825666e+00	0.000000e+00
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	3.992732e+01	6.369548e+01	1.310451e+01	2.331425e+02	4.541710e+01
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.320547e+03	7.849587e+01	4.047946e+03	6.426970e-01	1.020081e+03
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	2.090086e+02	1.323153e+02	1.404903e+02	0.000000e+00	5.351970e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	9.797257e+01	1.510355e-01	5.120973e+01	4.433526e+01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	0.000000e+00	9.374718e+00	1.791267e+01	3.032664e+01	4.398976e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	0.000000e+00	0.000000e+00	1.197181e-01	3.396597e+02	6.466303e+02
##	Ddx59	Dennd2d	Depdc7	Der13	Dmp1
##	4.319747e-02	1.328557e+00	9.317609e-01	2.331427e+01	1.101313e+01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	2.462134e+01	5.500586e+02	2.22236e+00	6.015744e+00	1.332915e+00
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	1.065181e-01	1.397705e+01	4.350913e+01	1.359601e+01	3.679447e+02
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	2.573624e+01	3.777094e+01	1.671145e+01	1.375323e-01	0.000000e+00
##	Errfi1	Evi2b	F11r	F2r	Fabp4

##	1.787613e+02	0.000000e+00	5.024625e+00	1.300826e+02	8.701739e+01
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	0.000000e+00	1.171903e+02	1.952918e+01	6.105183e+01	1.966036e+02
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	0.000000e+00	0.000000e+00	2.635800e+00	0.000000e+00	1.426571e+02
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	9.227505e+01	1.392311e+02	4.695299e+00	1.343928e+01	5.956478e+01
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	5.173710e-01	1.347450e+03	9.071015e+02	4.333147e+01	5.299276e+01
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	7.336184e+01	1.216179e+02	1.128518e+01	5.082865e+01	2.069836e+00
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	1.375955e+01	5.345513e+01	7.648800e-01	1.454053e+01	1.659983e+00
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	4.850109e+00	1.375919e+01	1.212636e-01	4.153900e+01	7.318936e+00
##	Gpr3711	Gpx3	Gstm1	Gzmc	H19
##	1.164543e+01	3.958696e+02	4.191032e+01	9.537672e-01	2.015690e+01
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	0.000000e+00	0.000000e+00	1.455713e+01	2.882352e-01	2.116008e+01
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	4.075686e+02	9.556292e+01	1.086306e+02	1.877735e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	3.966491e-01	4.420736e-01	3.814138e+01	9.565115e+02	1.877304e+01
##	Ibsp	Id2	Id3	Id4	Ier3
##	2.213198e+01	1.277408e+02	5.040531e+02	1.491612e+01	2.414440e+02
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	8.532746e-01	7.798819e+00	3.789789e+00	5.982388e+01	2.646970e+00
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	2.626233e+02	1.044726e+02	3.366278e+02	6.228291e+02	3.180845e+01
##	Iigp1	Il10	Il12a	Il17b	Il33
##	5.046212e+01	2.544243e+00	0.000000e+00	3.972625e+00	5.690267e+01
##	Il6	Inhba	Ins16	Isg15	Itgb11
##	2.637249e+00	5.123539e+01	1.933090e+01	2.381925e+01	9.664104e+01
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	5.375360e+01	1.888668e+02	3.970661e+00	1.545827e+01	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	2.028206e-01	2.520064e+01	9.940409e+00	0.000000e+00	2.020763e+01
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	5.654731e+00	1.961267e+01	6.432385e+02	5.188793e+01	1.578140e+02
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	2.967075e+01	0.000000e+00	1.639107e+02	0.000000e+00	1.942557e+01
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	0.000000e+00	4.714251e+01	1.694152e+00	7.786077e+01	2.455862e-01
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	2.552483e+01	1.693061e-01	9.596896e+00	6.736505e-01	2.352205e+01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	0.000000e+00	4.381167e+02	2.444035e+02	2.604974e+01	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad211	Mal2
##	4.006821e+02	1.558475e+01	0.000000e+00	8.527424e+01	0.000000e+00
##	Malat1	Map10	Matn4	Mest	Mett118
##	1.337186e+03	0.000000e+00	6.906402e+00	1.592958e+01	6.745831e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	7.267776e+01	1.397867e+02	1.314777e+04	1.380742e+02	2.806767e+01
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207

##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	1.783421e+00	3.716332e+00	8.823547e+01	8.546342e-01	0.000000e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	0.000000e+00	1.876971e+01	0.000000e+00	0.000000e+00	5.407231e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	0.000000e+00	1.251356e+00	0.000000e+00	5.643159e+00	0.000000e+00
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	0.000000e+00	9.145270e+00	0.000000e+00	0.000000e+00	8.724948e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	0.000000e+00	0.000000e+00	2.067759e+00	1.009339e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	7.223438e+00	6.975701e+00	4.804579e+00	4.192701e+00	0.000000e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	3.667147e-02	6.034533e+01	3.359547e+02	4.235069e+02	7.490419e+02
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	0.000000e+00	2.655601e+01	2.196162e+00	2.812352e+02	4.130658e+01
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	1.502142e+01	1.370214e+01	2.678073e+02	0.000000e+00	2.638199e+01
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	3.926418e+01	3.024388e+02	2.169953e-01	4.931776e+00	3.778533e+01
##	Nupr1	Ogn	Olfm13	Olftr78	Omd
##	1.107883e+03	1.195879e+02	3.270458e+02	2.628085e-01	5.001506e+01
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	0.000000e+00	0.000000e+00	4.804240e+01	8.144548e+00	1.686950e+02
##	Penk	Perp	Pi16	Pip	Plac8
##	9.958801e+00	3.600495e+01	2.362114e+01	3.829064e+01	3.729901e+01
##	Plekhhb1	Plet1	Plk1	Pln	Plp1
##	5.286895e+00	1.805384e+00	2.550948e+01	1.046849e-01	1.761308e+01
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4
##	1.458736e+03	0.000000e+00	2.866397e+01	1.690949e+02	1.862240e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	5.267714e-02	1.111961e+01	4.945296e+00	1.314682e+02
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	0.000000e+00	5.028702e+01	1.255884e+02	1.904384e+02	0.000000e+00
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	5.243118e+00	9.806866e-01	5.782317e+01	8.849472e+00	2.141688e+02
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	9.172802e+02	0.000000e+00	4.032380e+03	0.000000e+00	3.130891e+02
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	8.454730e+00	0.000000e+00	5.495657e+00	3.978140e+00	1.834033e+01
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	4.460144e-01	2.611878e+01	4.720209e+02	5.009702e+00	1.285730e+03
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	0.000000e+00	2.258264e+01	3.051108e+00	5.701190e+00	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	4.122388e+00	4.428689e+01	0.000000e+00	3.890021e+02
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	1.095661e+02	0.000000e+00	2.224333e+00	1.769676e+01	9.203066e+01
##	Serpinb6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	4.133797e-01	7.455441e+02	3.910968e+00	2.179576e+01	0.000000e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	3.729325e+01	7.799120e+01	0.000000e+00	1.419102e+01	7.121632e+00
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a

##	2.006314e+00	6.627550e+01	8.219394e+01	3.511759e+01	0.000000e+00
##	Snrg	Snora15	Snora20	Snora23	Snora28
##	1.838873e+01	1.320957e+01	0.000000e+00	0.000000e+00	8.726113e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	0.000000e+00	2.862685e+01	4.019960e+00	0.000000e+00	8.257872e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	3.383927e+00	1.636034e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	1.800416e+00	2.435170e+00	1.171844e+01	4.300788e+00	0.000000e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	0.000000e+00	0.000000e+00	2.820407e+01	0.000000e+00	7.811087e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	0.000000e+00	0.000000e+00	1.341473e+01	0.000000e+00	0.000000e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	5.537969e+00	0.000000e+00	0.000000e+00	1.227224e+01	0.000000e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	4.170854e+00	1.974182e+01	0.000000e+00	1.740283e+02	7.551814e+01
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	2.356830e-01	1.838781e+01	7.987320e+01	0.000000e+00	2.447060e+03
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	3.399463e+01	1.931087e+01	5.155722e+01	8.903635e+00	7.538580e-02
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfbi
##	3.917711e+02	1.123663e+00	0.000000e+00	4.786666e+00	3.391145e+01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	1.139727e+02	1.140896e+02	9.571076e+00	4.088730e+00	3.534897e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	1.528599e+02	4.357070e+01	5.583511e+00	8.256980e+01	8.542999e+01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	1.623468e+01	1.160370e+01	0.000000e+00	6.247961e+00	3.462179e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	8.350575e+01	1.669854e+02	7.337803e-01	3.856658e+00	3.051633e+01
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	0.000000e+00	6.582915e+01	2.196515e+00	8.610816e+01	5.761135e+00
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	2.662972e+01	1.182484e+00	2.215261e+02	9.493723e+00	2.096095e+02
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	2.805652e+00	0.000000e+00	2.751894e+02	3.793530e+00	1.125512e+01
##	Zfp81	Zfp944			
##	3.183484e+01	7.927641e+00			
##					
##	Cluster 1 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	3.215937e+00	1.819971e+01	3.406551e+00	9.367075e-01	2.309077e+00
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	0.000000e+00	2.199505e+00	3.552220e+02	6.005786e+00	1.665077e+00
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	3.358156e+00	0.000000e+00	7.773788e+00	1.896128e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	6.741853e+00	1.974758e+00	7.898191e-01	0.000000e+00	1.052603e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	3.153402e+00	2.100344e+00	0.000000e+00	3.432382e-01	4.580841e+00
##	Acot1	Acta2	Actg2	Adh1	Adm
##	2.409332e-01	1.113555e+03	1.098766e+02	1.614477e+00	7.836813e+00
##	AF357355	AF357359	AF357399	AF357425	AF357426

##	8.553554e+00	1.497858e+01	7.386311e+00	1.110197e+01	2.804847e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	0.000000e+00	0.000000e+00	1.648056e-02	1.280551e-01	4.103658e-01
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	1.722915e+00	7.742682e+00	5.412751e+00	3.816867e-02	2.158480e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	0.000000e+00	4.243876e-01	2.790241e+01	8.819637e+02	0.000000e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	6.964590e+01	1.355883e+01	1.172426e+01	6.424144e-01	8.452951e-03
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	1.437524e+00	1.261143e+00	2.396678e-01	8.945041e+02	1.595816e-01
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	3.309175e+00	2.295952e+01	1.593579e-01	1.361642e+00	2.233213e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	2.213578e+02	3.135104e-01	2.045666e-01	0.000000e+00	4.815697e-01
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	8.163271e-01	0.000000e+00	0.000000e+00	7.527777e+01	4.286558e-01
##	C3	C8g	Capn6	Car12	Car6
##	7.205903e-02	1.432124e-01	4.028685e-03	1.351369e-01	1.188840e+00
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	5.639305e-01	1.243874e+02	1.024498e+00	8.271663e-01	0.000000e+00
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	1.199685e+02	0.000000e+00	4.827062e+01	4.476163e+00	1.125346e-01
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	1.461040e+00	1.519228e-01	7.409593e-02	8.742519e+00	6.832920e-01
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	6.437407e-01	2.743750e+01	2.876858e+00	1.156132e-01	3.440384e-01
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	2.595067e+00	3.818506e-01	1.014880e+00	2.805324e-01	7.963024e-02
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	1.717248e+01	3.784965e-01	2.635211e-01	6.401103e+00	1.185369e-01
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	4.149446e-01	1.195979e+01	3.708070e-02	3.167467e+01	3.218018e-01
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	1.055057e-02	6.036663e-03	5.008443e-01	6.388761e-01	1.339661e+01
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	2.555186e-02	2.086427e-01	1.573961e-01	1.175914e-01	2.484708e-01
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	2.104831e-01	1.666657e+00	1.512472e+00	4.361155e+01	3.343694e+02
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	3.930775e+02	9.550318e+02	4.626773e+02	3.965831e+01	6.113316e-02
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	1.503858e-01	1.004479e+00	8.063088e-02	0.000000e+00	1.404534e+01
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	2.968005e+00	2.268401e+01	1.912148e-01	2.063031e+00	0.000000e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.278955e+03	2.773679e+01	1.117428e+03	3.309654e+00	6.555751e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	2.350376e-02	1.754501e-01	2.722541e+02	0.000000e+00	4.517994e-01
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	1.874972e+02	1.873411e+00	2.027912e+01	5.133054e-01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	0.000000e+00	5.344730e-03	1.654411e-02	5.053080e+02	4.975484e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn

##	8.776754e+00	2.285911e-02	1.130222e+00	1.834172e+02	5.958837e+00
##	Ddx59	Dennd2d	Depdc7	Derl3	Dmp1
##	1.507940e+00	0.000000e+00	1.750238e+00	1.909300e+00	5.595597e+01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	1.118287e+01	3.115591e+02	0.000000e+00	5.436942e+01	7.333790e-02
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	0.000000e+00	1.577408e+00	4.808551e+00	8.974139e-03	3.438968e+00
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	1.187981e+00	9.797284e+01	7.608135e-01	6.065620e+01	1.269590e-02
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	4.675181e+02	7.395709e+00	1.717400e+00	2.374520e+02	3.625376e+02
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	2.147578e+00	2.830847e-02	6.445010e-02	3.077424e+00	2.710073e+00
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	0.000000e+00	0.000000e+00	3.010948e-02	0.000000e+00	1.485294e+00
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	4.182972e+01	5.015656e+01	4.915490e+00	2.009753e-01	2.523777e-01
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	0.000000e+00	1.639646e+03	6.815734e+02	1.205485e+00	4.696071e+00
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	4.851279e+01	1.295559e+00	1.015090e-01	0.000000e+00	7.747564e-01
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	0.000000e+00	8.480019e-02	1.761706e-01	1.031350e+00	1.700064e-01
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	2.004848e+00	8.798422e-01	6.189328e+00	5.220755e+00	1.257492e+00
##	Gpr37l1	Gpx3	Gstm1	Gzmc	H19
##	1.591228e-02	6.636728e+02	4.516258e+01	3.155540e-01	1.092646e+00
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	5.215765e-01	2.349287e+01	1.539126e+02	1.362840e-01	1.572790e-02
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	4.709282e-02	1.293187e+03	3.858036e+01	1.051704e+01	3.947757e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	3.124661e+00	7.075275e-01	7.505175e+00	3.727735e+02	9.807754e+00
##	Ibsp	Id2	Id3	Id4	Ier3
##	0.000000e+00	1.395722e+00	5.644191e+02	2.403570e+01	7.485461e+01
##	Ifi27l2a	Ifit1	Ifit3	Ifitm1	Igf2
##	1.257611e+01	6.645500e-01	2.152242e+00	4.419429e+02	1.458080e+00
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	1.026498e+00	1.622420e+01	1.156960e+02	4.046050e+00	1.456045e+00
##	Iigp1	Il10	Il12a	Il17b	Il33
##	3.639847e+01	2.027145e+00	1.118786e+01	3.631504e+00	1.285301e-01
##	Il6	Inhba	Ins16	Isg15	Itgb11
##	3.396974e+01	1.312474e+01	3.902797e-01	9.511582e+00	2.912359e+00
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	5.189279e+00	9.801799e+02	8.556747e-03	1.036468e-01	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	1.580117e+00	7.802247e-02	0.000000e+00	0.000000e+00
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	6.322074e-02	3.385796e-01	3.225737e+02	8.068643e-02	3.029064e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	4.035875e+01	0.000000e+00	5.642454e+00	5.014149e+00	3.464258e-01
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	8.712273e-03	1.574410e+01	2.574566e+00	6.034994e+00	2.122958e-01
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2

##	3.744866e-01	3.963078e+00	1.265136e+00	1.799763e-02	2.375449e-01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	1.485857e-01	9.447636e+00	1.889763e+00	9.975944e-02	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	6.045554e+01	3.405856e+00	1.057033e-01	6.522205e+00	9.676723e-03
##	Malat1	Map10	Matn4	Mest	Mettl18
##	1.165324e+03	1.095841e+00	1.418678e-02	9.060093e+00	2.241144e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	1.781859e-01	6.976241e+00	1.017541e+04	2.329941e+01	9.731889e-02
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	0.000000e+00	5.431100e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	2.145714e+00	4.427149e+00	6.514915e+01	1.992660e-01	1.852750e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	4.851557e-01	9.909184e+00	1.192957e+00	0.000000e+00	5.392194e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	1.836394e+00	2.097970e+00	5.898814e-01	5.191798e+00	1.452049e+01
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	1.348739e+00	0.000000e+00	2.017774e+00	1.127012e+00	2.066750e-01
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	1.825795e+00	3.242766e-01	5.580633e-01	4.532810e-01
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	2.692950e+00	1.054677e+00	2.503453e+00	3.388228e-01	6.532456e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	7.745287e-03	1.166895e+02	1.994413e-01	8.961645e+01	4.639052e-01
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	2.267614e+00	4.133132e-02	6.290700e-01	2.582242e+02	1.747610e+01
##	Mterfd2	Muc15	Myl9	Nap1l5	Ndp
##	1.021350e+01	2.884888e-02	1.000659e+03	2.494130e+00	0.000000e+00
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	5.365335e+00	1.676404e+01	4.629092e+00	5.535903e+00	2.155263e-02
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	8.664361e+01	8.991406e-02	2.323268e+01	3.805196e+01	1.172605e-01
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	0.000000e+00	0.000000e+00	2.162340e-01	2.687340e-02	4.029983e+01
##	Penk	Perp	Pi16	Pip	Plac8
##	5.380617e-02	3.846877e-01	2.287487e-01	9.839547e-02	6.122426e+01
##	Plekhhb1	Plet1	Plk1	Pln	Plp1
##	1.495552e-01	3.610995e-01	7.639730e-03	2.721237e-01	5.848474e-01
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4
##	1.154470e+03	0.000000e+00	1.171731e+00	3.404117e+00	1.368780e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	7.826468e-02	3.848003e-03	0.000000e+00	1.863659e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	5.289431e-02	0.000000e+00	4.161001e+02	5.856727e+00	3.902069e-02
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	1.685331e-02	1.267833e+00	2.275451e+02	4.821176e+00	8.040745e+02
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	5.927405e+03	0.000000e+00	2.287976e+03	0.000000e+00	3.154148e+01
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	1.562426e+01	0.000000e+00	6.588739e+00	2.725317e+01	9.178501e-01
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	2.829227e-01	1.043185e+01	7.113381e+01	0.000000e+00	2.282460e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3

##	5.307950e+00	6.194431e-02	8.256796e-01	5.730365e-01	3.836709e-02
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	2.572762e+00	4.396908e-02	0.000000e+00	0.000000e+00	4.044381e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	1.243723e+01	2.789940e+00	0.000000e+00	3.942548e-01	1.988581e+01
##	Serpinb6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	4.093150e-01	8.116665e+01	3.495306e-02	4.509637e-01	4.263153e-02
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	1.744529e-02	1.802568e+01	1.121158e-01	0.000000e+00	5.807101e-01
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a
##	4.761857e-02	7.708037e-03	6.532024e+00	1.584039e+01	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	5.678356e+01	2.986149e-01	4.649358e+00	6.071114e-01	1.274169e+01
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	2.942655e+00	5.866554e+00	4.919998e+00	0.000000e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	1.702049e+01	1.879519e+01	1.757407e+00	1.128771e+00	0.000000e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	8.249298e+00	2.992015e+00	7.407665e+00	2.445013e+00	4.244591e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	3.235033e+00	4.127094e+00	2.007798e+00	3.575663e+00	2.011661e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	2.231486e+00	0.000000e+00	7.831045e+00	5.897509e-01	1.504760e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	8.050889e+00	2.395622e-01	1.229065e+00	8.556460e-01	2.194751e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	0.000000e+00	2.832242e+01	3.262281e+00	1.189655e+01	2.430710e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	3.176873e-01	7.573247e-01	1.074681e+02	1.643756e+00	5.996871e+01
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	5.583400e-01	3.608458e+00	3.389002e+02	3.092500e+00	1.229770e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfbi
##	2.895147e+02	8.015038e-02	1.125156e+00	3.318165e-02	8.344718e-01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	6.337750e+01	5.507613e+01	8.842551e-02	5.163773e-01	3.332021e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	2.908040e+02	1.994215e+02	0.000000e+00	4.405791e+01	1.341819e+01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	5.029977e+00	2.971372e+01	1.090274e-02	1.744687e-02	4.735544e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	1.215971e+02	5.073224e+00	2.029288e-01	6.357114e-03	1.751908e+01
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	1.175904e-02	9.490810e-01	0.000000e+00	4.324713e+01	0.000000e+00
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	2.760198e-01	3.089466e-02	1.827129e+01	1.367917e-02	1.125901e+00
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	4.544210e+00	2.319108e+00	3.560459e+02	4.574715e+00	1.069462e-01
##	Zfp81	Zfp944			
##	6.102220e+00	8.177057e+00			
##					
##	Cluster 6 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	9.834087e-01	1.913066e+01	8.469862e+00	2.781549e+00	3.671054e+00
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik

##	0.000000e+00	6.067376e-01	2.171484e+02	1.644029e+01	1.309434e+01
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	1.163517e+00	5.419534e-02	2.149835e+00	0.000000e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	2.238735e+00	6.953643e+00	1.410300e+00	3.936149e+00	1.449680e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	1.362696e+00	4.246245e+00	0.000000e+00	5.542806e+00	3.903379e+01
##	Acot1	Acta2	Actg2	Adh1	Adm
##	8.450642e-01	1.538378e+03	1.857526e+02	1.178161e+00	3.663461e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	1.111387e+01	1.180817e+00	1.627545e+01	1.091065e+01	5.212373e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	0.000000e+00	0.000000e+00	2.758755e+00	7.801594e+00	5.497590e-01
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	6.645652e-01	0.000000e+00	2.205266e+01	0.000000e+00	4.591444e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	9.269513e-01	3.312099e+00	5.931158e+01	1.041395e+03	0.000000e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	9.684191e+01	4.822866e+01	3.340678e+01	2.730262e+00	6.959039e-01
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	3.410570e+00	8.412054e+00	1.243954e+00	6.925316e+02	1.163562e-02
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	6.141238e+00	6.448283e+01	7.601736e-02	3.632249e+00	2.437432e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	1.923920e+02	0.000000e+00	2.233414e-01	1.038979e-01	4.882199e-01
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	2.732916e+00	0.000000e+00	0.000000e+00	1.100681e+02	2.375328e+00
##	C3	C8g	Capn6	Car12	Car6
##	5.292697e-02	1.173454e+00	7.480177e-01	1.141264e-02	3.856185e+00
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	3.125322e+00	1.785744e+02	0.000000e+00	4.948207e+00	5.864704e-02
##	Cc111	Cc119	Cc12	Cc17	Cc18
##	1.981824e+02	1.025662e+01	6.235728e+02	4.078288e+01	4.693521e-01
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	8.357753e+00	3.826504e-02	2.744070e+01	1.572851e+01	1.031132e+00
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	6.651207e+00	2.206630e+01	3.878485e+00	6.265823e-01	2.413930e+00
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	2.867018e+00	0.000000e+00	4.851556e-01	4.049443e+00	0.000000e+00
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	4.050324e+01	4.105512e+00	7.340263e-01	1.332516e+01	3.997208e+00
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	1.733460e+00	5.862404e+01	5.970733e-01	1.331459e+02	5.964629e-01
##	Chodl	Chrdl1	Cilp	Ckap2	Cks1b
##	0.000000e+00	1.111728e+01	1.219353e+01	1.030463e+00	2.660990e+01
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	1.836411e-01	6.401880e-01	3.844428e-02	1.798468e+00	1.309508e+00
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	5.801192e-01	7.103239e+00	1.497199e+01	9.810084e+01	7.678633e+02
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	8.813748e+02	1.112741e+03	6.391265e+02	1.475360e+02	7.330033e-01
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	5.178095e-01	2.471455e+01	5.697610e-02	0.000000e+00	4.165605e+00
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2

##	1.770680e+01	6.066564e+01	2.571587e-01	2.065401e+01	0.000000e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.552139e+03	4.032575e+01	1.348842e+03	3.086789e+00	1.025415e+03
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	1.262483e+01	2.166096e+00	3.613312e+02	0.000000e+00	3.054268e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	2.723876e+02	8.337987e+01	2.807878e+01	1.925959e+01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	2.032881e-01	1.223159e+00	1.614807e-02	2.706228e+02	5.077144e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	1.817025e+00	1.471401e+00	2.057131e+00	2.173250e+02	2.029496e+02
##	Ddx59	Dennd2d	Depdc7	Derl3	Dmp1
##	1.742041e+01	5.160522e+00	3.368839e-02	1.982682e+00	2.408770e+01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	3.248409e+01	3.851643e+02	2.694054e-01	1.995138e+01	9.905948e-03
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	8.998660e-01	4.180583e-01	1.733522e+01	1.484103e+00	1.175506e+01
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	3.616879e+00	3.398757e+01	1.030941e+00	2.788972e+01	9.028409e-01
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	5.596791e+02	0.000000e+00	3.076788e+00	4.746357e+02	4.873906e+02
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	1.860216e-01	8.690004e+00	5.149319e-01	3.187237e+01	6.211978e+01
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	2.429224e-02	2.218604e-01	9.595317e-01	0.000000e+00	2.976267e+01
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	1.188425e+02	5.844259e+01	2.378981e+01	5.039112e+01	3.024196e+00
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	8.943112e-01	1.585095e+03	7.428510e+02	1.651868e+00	1.955148e+01
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	2.588210e+01	1.912473e+01	2.039301e+00	4.626249e-02	2.461661e+00
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	4.635451e-01	8.552829e-01	3.308922e-01	3.961245e+00	1.231185e+00
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	3.922590e+00	2.776524e-01	7.276829e-01	9.975256e+00	2.778713e+00
##	Gpr37l1	Gpx3	Gstm1	Gzmc	H19
##	1.520759e-02	1.037065e+03	1.109188e+02	0.000000e+00	1.033112e-01
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrt1
##	0.000000e+00	3.765872e+01	7.500331e+01	5.946882e+00	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	6.605942e+02	6.202584e+01	9.757811e+01	2.355143e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	5.088347e+00	4.331720e-01	4.246491e+01	4.211858e+02	3.924211e+01
##	Ibsp	Id2	Id3	Id4	Ier3
##	5.534388e-01	1.494042e+01	4.878451e+02	6.036669e+01	1.399516e+02
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	1.835566e+00	1.092643e+01	8.973562e+00	3.611025e+02	7.470756e+00
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	2.180615e+01	3.274094e+01	1.768783e+02	2.340929e+00	3.493118e+00
##	Iigp1	Il10	Il12a	Il17b	Il33
##	3.612902e+01	6.742772e-01	4.455462e+00	1.626657e+00	3.216074e+00
##	Il6	Inhba	Ins16	Isg15	Itgb11
##	1.547445e+02	5.868812e+01	0.000000e+00	4.627131e+01	3.588553e+01
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15

##	2.229795e+01	4.070343e+02	2.938324e-01	2.614070e-01	2.425813e-02
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	6.479034e+00	0.000000e+00	1.873515e-01	4.015077e-01
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	1.301624e+00	7.365172e-02	4.592803e+02	2.594230e+00	4.723465e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	6.224671e+01	0.000000e+00	4.278090e+01	0.000000e+00	0.000000e+00
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	2.010954e-02	2.495375e+01	1.195749e+01	5.647474e+01	0.000000e+00
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	2.353665e+01	4.470752e+00	1.353113e+00	7.567858e-03	8.744537e+00
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	5.209008e+00	9.880858e+01	7.844930e+00	2.468601e+00	2.615526e-01
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	1.178553e+02	4.590972e+01	5.384167e+00	1.274713e+01	7.455481e-01
##	Malat1	Map10	Matn4	Mest	Mettl18
##	1.604388e+03	8.695393e-01	2.401370e-02	1.347269e+01	1.891229e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	1.661060e+00	1.330062e+02	1.231253e+04	7.481229e+01	2.235473e-01
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	0.000000e+00	1.477231e+01	0.000000e+00	5.067209e+00	4.033702e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	8.709308e-01	7.105482e+00	6.400765e+01	2.431593e+00	8.651839e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	0.000000e+00	1.166919e+01	0.000000e+00	0.000000e+00	3.576595e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	7.596891e+00	0.000000e+00	0.000000e+00	1.814839e+00	5.949226e+00
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	0.000000e+00	0.000000e+00	6.436979e+00	5.489462e-01	4.156361e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	0.000000e+00	1.540334e+00	5.489875e+00	4.133440e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	5.235003e+00	0.000000e+00	0.000000e+00	5.526779e+00	9.057916e-01
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	7.988654e-02	3.295749e+02	2.205059e+01	1.640323e+02	6.367863e-01
##	Mmp9	Moxd1	Mpzl2	Mt1	Mt2
##	4.125246e+00	1.249503e+00	3.372949e-02	3.611646e+02	6.873240e+01
##	Mterfd2	Muc15	Myl9	Nap1l5	Ndp
##	3.799431e+01	8.102696e-02	1.105080e+03	8.871128e-01	1.264663e-01
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	4.504129e+01	6.443038e+01	9.257376e+00	5.410528e+00	2.646154e+00
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	2.499467e+02	2.701754e-01	1.696224e+02	4.095541e+01	6.851842e+00
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	3.979231e-02	9.213055e-01	1.652777e+00	0.000000e+00	6.202270e+01
##	Penk	Perp	Pi16	Pip	Plac8
##	7.052696e-01	0.000000e+00	2.190962e+00	1.933782e+00	9.614409e+01
##	Plekha1	Plet1	Plk1	Pln	Plp1
##	1.049387e-01	2.602770e+00	7.794445e-01	1.839711e-01	1.391026e+00
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4
##	1.427586e+03	0.000000e+00	3.195887e+00	4.815796e+01	9.842133e-01
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	0.000000e+00	1.491070e+00	4.299947e+00	2.896625e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1

##	5.193977e-01	0.000000e+00	3.746959e+02	1.977136e+01	5.271699e+01
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	8.961469e-02	7.864500e+00	2.698710e+02	1.827035e+01	5.986203e+02
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	3.182476e+03	7.065657e+00	3.316524e+03	1.915883e+00	1.380407e+02
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	8.289724e+00	2.397979e+00	1.850848e+01	3.000767e+01	5.834259e+00
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	5.410130e+00	3.018128e+01	1.780309e+02	2.523314e+00	6.581836e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	1.453604e+00	2.678062e-01	1.018890e+00	1.123527e+00	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	4.082517e+00	0.000000e+00	0.000000e+00	5.249440e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	2.078702e+01	1.220496e+00	2.185603e-01	1.223816e+00	5.042963e+01
##	Serpinb6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	1.840371e+01	5.103628e+02	5.255626e-01	5.506186e+00	0.000000e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	5.264564e+00	5.974525e+01	0.000000e+00	3.774398e-02	7.658687e-02
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a
##	1.884752e-01	2.030768e-02	9.719735e+01	2.146095e+01	1.295637e-01
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	7.366187e+01	3.454575e-01	2.251494e+00	0.000000e+00	4.502893e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	3.244199e-01	9.462772e+00	6.005860e+00	1.481920e+00	1.618486e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	8.077781e+00	1.708068e+01	1.785039e+00	4.090946e+00	6.653376e-01
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	1.263739e+01	3.659687e+00	1.162619e+00	7.816634e+00	5.028082e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	0.000000e+00	0.000000e+00	6.706539e+00	0.000000e+00	4.715687e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	1.668445e+00	1.538314e+00	7.393359e+00	2.433149e+00	0.000000e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	4.100972e+00	0.000000e+00	3.012318e+00	3.226854e-01	2.395653e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	0.000000e+00	2.228519e+01	0.000000e+00	8.367859e+01	8.772519e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	5.692561e-01	3.859811e+00	1.467992e+02	6.243203e-01	1.715730e+03
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	2.198818e-01	2.667867e+00	1.346775e+02	1.790618e+00	6.422045e-01
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfbi
##	5.049311e+02	1.585942e+00	0.000000e+00	3.862296e-01	3.849134e+00
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	2.023322e+02	9.074769e+01	1.006196e-01	1.420001e+00	5.619878e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	1.434268e+02	1.435444e+02	0.000000e+00	6.453775e+01	4.844552e+01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	9.704157e+00	4.643277e+01	5.843700e-01	9.860565e-03	5.853219e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	1.475046e+02	7.282779e+00	1.529336e-01	0.000000e+00	9.311179e+00
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	5.844808e-02	1.369986e+00	0.000000e+00	8.004680e+01	0.000000e+00
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2

##	2.234063e+00	5.044660e-02	2.611176e+01	7.560952e-02	1.874709e+01
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	3.289906e+00	6.320060e+00	5.530072e+02	3.823616e-01	1.427397e-01
##	Zfp81	Zfp944			
##	5.089627e-01	1.946482e+01			
##					
##	Cluster 4 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	2.873312e-01	3.084355e+00	6.798901e+01	1.219712e+00	2.151996e+00
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	0.000000e+00	9.490714e+00	2.573957e+02	2.460972e+00	7.349944e+00
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	1.163723e+01	3.672044e+00	8.578771e-01	6.821427e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	1.709282e+01	4.120498e+00	4.372086e-01	2.096030e+00	3.731069e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	2.627402e+00	5.970123e-01	0.000000e+00	6.761759e-01	1.309825e+00
##	Acot1	Acta2	Actg2	Adh1	Adm
##	3.072541e+00	1.116396e+03	1.652570e+02	0.000000e+00	1.416210e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	7.077162e+01	2.415461e+01	0.000000e+00	9.637455e+00	8.894283e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	0.000000e+00	0.000000e+00	2.235628e+00	2.097736e-01	0.000000e+00
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	4.599427e-01	0.000000e+00	9.446787e+00	0.000000e+00	1.669052e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	1.623516e+01	0.000000e+00	3.034423e+01	1.181429e+03	0.000000e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	7.997293e+01	1.081001e+01	5.860876e+00	3.254081e+00	0.000000e+00
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	1.129605e+00	8.364176e-01	2.612763e+00	1.106602e+03	0.000000e+00
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	5.760164e+01	2.135211e+01	6.694395e-02	0.000000e+00	2.358980e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	3.485323e+02	1.426137e+00	0.000000e+00	0.000000e+00	2.813685e-01
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	1.364726e+02	0.000000e+00	0.000000e+00	2.767413e+01	2.671329e-02
##	C3	C8g	Capn6	Car12	Car6
##	2.981816e-03	1.304677e+00	6.063999e-02	0.000000e+00	2.404005e+01
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	0.000000e+00	7.469274e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	4.318564e+01	4.109096e-01	4.944620e+01	2.601886e+00	0.000000e+00
##	Ccna2	Ccnb1	Ccnb2	Ccrl2	Cd24a
##	3.244263e+02	5.710560e+01	1.775980e+02	1.545622e+00	7.689328e-01
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	2.903784e+00	3.669385e-01	1.508319e+00	0.000000e+00	0.000000e+00
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	8.040643e+01	3.012498e+01	9.157107e+01	1.120054e+02	6.769458e-01
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	4.700032e+01	5.233436e+01	0.000000e+00	1.352047e+02	4.762551e+01
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	8.956443e-01	3.482145e+00	0.000000e+00	1.196351e+01	1.452416e-01
##	Chodl	Chrdl1	Cilp	Ckap2	Cks1b

##	0.000000e+00	0.000000e+00	9.647385e-01	5.059367e+01	2.683426e+02
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	8.703132e-01	6.334723e-01	0.000000e+00	1.935123e+00	4.863846e-01
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	8.698176e-01	4.264906e+00	7.822954e+00	3.328947e+01	3.031216e+02
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	3.749821e+02	7.995456e+02	3.707155e+02	5.135776e+01	0.000000e+00
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	6.060688e-01	0.000000e+00	0.000000e+00	0.000000e+00	3.741552e+01
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	4.292595e-01	8.271904e+00	1.410055e-01	1.456433e+00	0.000000e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.745440e+03	5.309002e+01	7.686193e+02	4.680628e+00	5.421982e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	0.000000e+00	4.668300e-01	1.892032e+02	0.000000e+00	1.051548e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	3.179610e+01	1.723084e+01	2.494133e+00	3.325207e-01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	0.000000e+00	7.242038e-01	0.000000e+00	2.117143e+02	2.852071e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	6.749665e-02	7.851736e-02	1.330846e+00	2.419863e+02	2.254208e+00
##	Ddx59	Dennd2d	Depdc7	Derl3	Dmp1
##	7.869032e+00	0.000000e+00	1.667938e+00	6.246111e-02	6.477415e+01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	9.665095e+00	1.798779e+02	0.000000e+00	9.634383e+00	0.000000e+00
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	1.091034e-01	0.000000e+00	3.795106e+00	0.000000e+00	7.807392e+00
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	0.000000e+00	1.055186e+02	6.560715e+00	5.601037e+00	4.422019e-02
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	2.579835e+02	0.000000e+00	5.550038e+00	2.558836e+02	4.973149e+02
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	2.496165e+00	5.019255e-02	9.192670e+01	1.016143e+01	3.458510e+00
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	0.000000e+00	1.782271e+01	5.694888e-02	0.000000e+00	1.918450e+00
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	5.319334e+01	4.558899e+01	2.331038e+00	7.586304e+00	1.897433e-01
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	3.310963e-01	9.273882e+02	4.792249e+02	0.000000e+00	2.861209e+00
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	3.075715e+01	7.600670e-01	0.000000e+00	0.000000e+00	3.181754e-01
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	0.000000e+00	0.000000e+00	0.000000e+00	2.866561e+00	1.310027e+01
##	Gm4532	Gm5886	Gm9958	Gmnn	Gpc3
##	5.281718e-01	1.145572e+01	0.000000e+00	8.287228e+01	1.958235e+00
##	Gpr37l1	Gpx3	Gstm1	Gzmc	H19
##	0.000000e+00	2.931919e+02	2.149961e+01	0.000000e+00	4.637569e+00
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	0.000000e+00	1.137049e+01	7.606423e+01	0.000000e+00	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	1.477886e+03	1.845857e+01	3.413413e+01	0.000000e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	1.867843e+01	2.266465e-01	6.262574e-02	3.470400e+02	4.673031e+00
##	Ibsp	Id2	Id3	Id4	Ier3

##	0.000000e+00	3.212325e+00	3.371277e+02	6.241458e+00	4.682343e+01
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	4.204002e+00	1.916750e+00	3.065326e-01	1.823515e+02	4.948738e-01
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	1.038372e+00	7.562383e+00	8.913297e+01	8.812547e+00	9.274159e-01
##	Iigp1	Il10	Il12a	Il17b	Il33
##	1.879127e+01	1.269815e+02	0.000000e+00	6.016479e+00	1.438956e-01
##	Il6	Inhba	Insl6	Isg15	Itgbl1
##	4.761449e+00	4.773005e+00	0.000000e+00	2.234293e+01	3.089102e-01
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	6.188717e+00	5.609054e+02	1.913410e-01	0.000000e+00	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	1.295033e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	3.100656e+00	2.614956e+00	7.071851e+02	1.659837e+00	8.728671e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	4.668512e+01	0.000000e+00	3.540671e+00	0.000000e+00	0.000000e+00
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	0.000000e+00	1.437955e+01	7.131699e-01	3.121342e+00	4.248610e-02
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	2.634153e-01	2.477124e-01	1.172846e+00	3.659060e-02	1.960002e-01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	0.000000e+00	7.112218e-01	1.965398e+00	2.415408e-01	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	7.499465e+01	7.992914e+00	3.726237e-01	1.102686e+02	0.000000e+00
##	Malat1	Map10	Matn4	Mest	Mettl18
##	1.058544e+03	2.162539e-01	0.000000e+00	4.758696e+01	2.155958e+01
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	1.545943e-01	1.194107e+00	9.572909e+03	1.165067e+01	5.522594e-01
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	1.076228e+01	1.152868e+01	2.211688e+00	1.930003e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	0.000000e+00	2.069304e+00	6.517228e+01	0.000000e+00	6.798875e-01
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	7.932719e+00	6.733467e+00	1.162516e+01	0.000000e+00	3.582556e+01
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	0.000000e+00	6.972202e-01	0.000000e+00	5.346107e+00	4.925586e+01
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	5.451173e+00	5.898443e+00	3.208362e+00	0.000000e+00	1.947363e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	2.691254e+00	0.000000e+00	0.000000e+00	2.547021e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	0.000000e+00	9.143116e+00	0.000000e+00	0.000000e+00	8.040677e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	1.280883e-01	3.253902e+01	4.283352e-01	6.073788e+01	1.773522e-01
##	Mmp9	Moxd1	Mpzl2	Mt1	Mt2
##	1.161688e+00	1.183013e+00	1.699507e-02	2.149339e+02	6.193053e+00
##	Mterfd2	Muc15	Myl9	Nap1l5	Ndp
##	3.401432e+00	4.925717e+00	7.375342e+02	7.957387e-01	0.000000e+00
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	3.009346e+00	4.929073e+01	1.132762e+01	4.196790e+01	8.566926e+01
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	4.987722e+01	1.941305e-02	2.809732e+01	2.541173e+01	3.897546e-01
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1

##	0.000000e+00	0.000000e+00	1.809779e+02	0.000000e+00	1.689528e+01
##	Penk	Perp	Pi16	Pip	Plac8
##	0.000000e+00	4.625798e+00	3.230641e-02	0.000000e+00	4.845909e+01
##	Plekhhb1	Plet1	Plk1	Pln	Plp1
##	0.000000e+00	2.837351e+00	7.040258e+01	1.268369e+01	0.000000e+00
##	Postn	Ppp1r42	Prc1	Prelp	Prg4
##	1.010826e+03	0.000000e+00	1.083857e+02	7.085149e-01	1.946027e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	6.215405e-01	0.000000e+00	0.000000e+00	2.289402e+02
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	0.000000e+00	0.000000e+00	2.839245e+02	9.252660e+00	0.000000e+00
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	0.000000e+00	0.000000e+00	1.056265e+02	2.168719e+00	5.232401e+02
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	4.837410e+03	0.000000e+00	3.996277e+03	1.163443e+00	1.278922e+01
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	5.685911e+01	9.122249e+00	1.961168e+01	1.854485e+01	1.124752e+02
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	9.417011e-01	6.722878e+00	1.107758e+02	7.174363e-01	4.282771e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	0.000000e+00	0.000000e+00	8.398861e-01	1.287163e+01	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	5.782288e-01	0.000000e+00	0.000000e+00	5.244754e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	4.162369e+01	0.000000e+00	0.000000e+00	4.377664e-02	6.517210e+00
##	Serpina6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	1.375912e+00	5.322952e+01	2.031367e-02	1.484351e+00	0.000000e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	5.465959e+01	1.137180e+01	0.000000e+00	3.731339e-01	0.000000e+00
##	Smim22	Smoc1	Smoc2	Smpdl3a	Smr3a
##	2.487611e+00	3.972623e-02	6.826473e+00	2.751341e+01	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	1.536179e+01	1.712035e+01	0.000000e+00	9.212198e+00	1.420756e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	8.977245e+00	1.432875e+01	1.055790e+01	1.128870e+00	1.697909e+01
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	9.517223e+00	3.543457e+01	0.000000e+00	2.077112e+00	5.060755e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	6.521478e+00	3.486913e+00	4.357877e+00	1.331135e+01	5.491573e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	0.000000e+00	3.123975e+00	1.146368e+00	0.000000e+00	1.283622e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	4.016539e+00	2.631420e+00	1.059111e+01	1.277672e+00	3.651761e+01
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	1.761812e+00	1.920962e+00	2.798103e+00	0.000000e+00	1.821872e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	0.000000e+00	2.564582e+01	0.000000e+00	6.401149e+00	2.049073e+02
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	7.290001e-01	4.514784e+00	6.559184e+01	0.000000e+00	1.249837e+01
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	0.000000e+00	3.395659e-02	1.568272e+02	0.000000e+00	7.878586e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfbi
##	2.494021e+02	0.000000e+00	1.163348e+01	6.976139e+01	1.073729e-01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1

##	6.463313e+01	3.642374e+01	4.676340e-02	6.074205e-02	3.889730e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	1.167904e+02	7.935063e+01	0.000000e+00	4.551442e+01	1.588519e+01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	6.714883e+00	8.420143e-01	0.000000e+00	1.867633e-01	3.602792e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	9.246170e+01	9.583555e+00	2.614294e-01	0.000000e+00	2.413121e+01
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	0.000000e+00	2.441314e+02	0.000000e+00	5.702793e+01	0.000000e+00
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	1.457321e-01	2.865975e+00	8.146183e+01	0.000000e+00	4.507785e-02
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	2.512338e+01	3.098264e+00	2.438258e+02	2.106969e+01	0.000000e+00
##	Zfp81	Zfp944			
##	1.259895e+01	9.818134e+00			
##					
##	Cluster 8 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	1.459465e+01	3.971534e+00	1.629748e+01	5.148438e+00	1.883158e+03
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	4.398230e+01	0.000000e+00	0.000000e+00	0.000000e+00	1.348342e+00
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	1.500794e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	0.000000e+00	0.000000e+00	0.000000e+00	1.232386e+02	5.732376e+02
##	Acot1	Acta2	Actg2	Adh1	Adm
##	1.339048e-01	6.740765e+00	8.034980e-01	5.245028e+01	5.378499e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	3.379532e+00	0.000000e+00	0.000000e+00	8.591030e+00	0.000000e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	1.025200e+02	4.575326e+00	0.000000e+00	0.000000e+00	9.717933e+01
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	0.000000e+00	0.000000e+00	1.522104e+02	1.414313e+00	1.142402e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	0.000000e+00	0.000000e+00	0.000000e+00	8.531994e+02	6.995085e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	1.035991e+02	1.984115e+02	4.444299e+01	1.614789e+01	0.000000e+00
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	5.618817e-01	0.000000e+00	0.000000e+00	4.842408e+00	2.720838e+01
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	3.360668e+00	3.653527e+01	0.000000e+00	3.547921e+01	3.309823e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	3.645759e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	9.758368e+00	0.000000e+00	0.000000e+00	1.823226e+01	8.226898e+01
##	C3	C8g	Capn6	Car12	Car6
##	4.932465e+02	0.000000e+00	0.000000e+00	0.000000e+00	3.206836e+00
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	4.200335e+01	6.234499e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	5.953338e+02	3.332594e-01	6.353382e+01	3.555639e+02	1.671922e+02
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a

##	1.408577e+01	7.423059e+00	5.578133e+01	0.000000e+00	4.496988e-01
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	7.267233e+02	0.000000e+00	0.000000e+00	2.587643e+02	0.000000e+00
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	1.369101e+01	0.000000e+00	1.912325e+01	0.000000e+00	0.000000e+00
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	2.038772e+01	2.454110e+01	0.000000e+00	4.250110e+01	0.000000e+00
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	3.145419e+02	0.000000e+00	0.000000e+00	3.068388e+00	4.403997e+00
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	0.000000e+00	7.279634e+00	8.184627e+02	2.270437e+00	3.526834e+01
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	0.000000e+00	6.322983e+00	0.000000e+00	0.000000e+00	1.808975e+02
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	5.281765e+00	1.207583e-01	0.000000e+00	3.413963e+02	3.243075e+03
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	3.730882e+03	6.497478e+03	1.173136e+03	3.386836e+02	0.000000e+00
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	7.971863e-02	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	7.192262e+02	7.372624e+01	5.258145e+01	2.378530e+01	0.000000e+00
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	1.490690e+03	3.240930e+01	9.525134e+02	0.000000e+00	2.990655e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	7.158900e+02	9.372357e+02	4.957985e+02	0.000000e+00	0.000000e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	1.093381e+01	1.077856e+00	6.275191e+02	9.820418e+01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	0.000000e+00	0.000000e+00	0.000000e+00	1.173570e+01	2.066518e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	0.000000e+00	0.000000e+00	7.999344e+00	1.831606e+02	6.242995e+03
##	Ddx59	Dennd2d	Depdc7	Der13	Dmp1
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	5.649818e-01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	1.640328e+03	3.460652e+02	0.000000e+00	1.605489e-01	9.769133e+02
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	7.123123e+01	8.024821e-01	8.966622e-02	0.000000e+00	3.411480e+02
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	1.508415e+02	1.451106e+00	3.962412e-01	3.661235e-01	4.231939e+01
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	8.001063e+01	0.000000e+00	5.762807e+00	8.171447e+01	3.743320e-01
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	0.000000e+00	0.000000e+00	8.896357e+00	3.246513e+02	8.031832e+02
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	1.514777e+02
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	3.595388e+01	2.788008e+01	0.000000e+00	5.596804e+01	5.580655e+02
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	1.064765e+01	6.493204e+02	1.592510e+03	0.000000e+00	6.791648e+01
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	8.238784e+00	2.758254e+02	0.000000e+00	3.824581e+01	0.000000e+00
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	0.000000e+00	1.093210e+02	1.759185e-01	0.000000e+00	0.000000e+00
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3

##	0.000000e+00	1.854303e+00	0.000000e+00	0.000000e+00	1.567443e+02
##	Gpr37l1	Gpx3	Gstm1	Gzmc	H19
##	0.000000e+00	1.062849e+03	2.116712e+02	5.800505e+01	5.267373e+00
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	0.000000e+00	0.000000e+00	2.331845e-01	1.135501e+02	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	1.766392e+00	1.243553e+01	9.154695e+01	2.581856e-01
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	1.553710e+00	3.179769e+01	8.463047e+01	3.760896e+02	4.495312e+02
##	Ibsp	Id2	Id3	Id4	Ier3
##	0.000000e+00	2.378393e+01	3.519779e+02	0.000000e+00	1.373152e+02
##	Ifi27l2a	Ifit1	Ifit3	Ifitm1	Igf2
##	4.236884e+02	0.000000e+00	4.448731e+00	3.175594e+00	1.158648e+01
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	2.617894e+02	2.060922e+02	3.845820e+02	1.066923e+02	5.407717e+02
##	Iigp1	Il10	Il12a	Il17b	Il33
##	2.978429e+01	0.000000e+00	0.000000e+00	0.000000e+00	2.488910e+02
##	Il6	Inhba	Ins16	Isg15	Itgbl1
##	1.016728e+01	1.364445e-01	6.994642e-01	1.534722e+01	2.486143e+02
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	3.296874e+02	9.738892e+01	1.499621e+01	0.000000e+00	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	2.512652e+00	8.242678e+00	7.807965e+02	3.465068e+02	7.916352e+01
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	1.995888e+01	0.000000e+00	7.805424e+01	0.000000e+00	0.000000e+00
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	0.000000e+00	5.554151e-01	0.000000e+00	3.165959e+02	0.000000e+00
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	2.328787e+02	2.417273e+01	2.502546e+02	0.000000e+00	6.744730e+01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	5.034620e+00	2.042049e+03	3.444174e+03	1.690435e+03	0.000000e+00
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	5.409133e+02	2.795679e+01	0.000000e+00	6.691100e+00	1.729346e-01
##	Malat1	Map10	Matn4	Mest	Mettl18
##	9.104333e+02	0.000000e+00	0.000000e+00	2.530330e+01	0.000000e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	7.930361e+02	3.949815e+03	1.199577e+04	6.435677e+02	0.000000e+00
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	0.000000e+00	0.000000e+00	2.660467e+01	0.000000e+00	0.000000e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	0.000000e+00	2.181335e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	1.090068e+01	3.160965e+00	3.439121e+01	6.514135e+00	0.000000e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	0.000000e+00	0.000000e+00	1.077856e+01	0.000000e+00	0.000000e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3

##	0.000000e+00	2.098656e+01	1.987490e+00	9.557380e+02	1.026340e+03
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	0.000000e+00	3.417069e+01	0.000000e+00	6.148132e+02	4.893467e+02
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	9.601946e+01	0.000000e+00	2.596549e+01	0.000000e+00	0.000000e+00
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	4.522941e+01	2.813031e+02	0.000000e+00	7.592517e+00	0.000000e+00
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	2.625402e+02	4.047040e+02	6.085540e+02	0.000000e+00	3.464160e+01
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	0.000000e+00	0.000000e+00	0.000000e+00	1.619171e+02	2.243842e+02
##	Penk	Perp	Pi16	Pip	Plac8
##	3.346746e+01	0.000000e+00	6.527416e+02	0.000000e+00	2.503248e+02
##	Plekhl1	Plet1	Plk1	Pln	Plp1
##	1.178665e-01	7.885482e-01	0.000000e+00	0.000000e+00	0.000000e+00
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4
##	2.644270e+03	0.000000e+00	0.000000e+00	2.524636e+02	1.001163e+02
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	0.000000e+00	1.537208e+02	0.000000e+00	3.243453e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	2.059657e+02	0.000000e+00	1.598600e+03	1.149241e+02	2.645967e+02
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	3.143489e+02	0.000000e+00	1.795875e+01	0.000000e+00	5.539937e+00
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	6.767061e+00	0.000000e+00	4.343712e+03	0.000000e+00	2.221679e+03
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	2.687327e+01	0.000000e+00	0.000000e+00	1.310141e+00	0.000000e+00
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	0.000000e+00	6.119811e+01	9.601753e+02	0.000000e+00	9.652061e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	0.000000e+00	0.000000e+00	7.638315e-01	0.000000e+00	6.085734e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	2.353835e+02	0.000000e+00	0.000000e+00	3.318902e+01
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	7.733973e-01	0.000000e+00	0.000000e+00	7.905158e-01	1.157291e+03
##	Serpina6b	Serpina1	Sfrp1	Sfrp2	Sfrp4
##	1.217430e+00	2.384337e+03	2.055056e+02	8.959968e+02	4.310920e+02
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	8.341757e-01	3.260183e+01	0.000000e+00	0.000000e+00	8.226748e+00
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a
##	0.000000e+00	0.000000e+00	2.739236e+02	1.171070e+02	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	0.000000e+00	3.557711e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	0.000000e+00	0.000000e+00	0.000000e+00	7.860434e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	0.000000e+00	8.559901e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	9.810876e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	0.000000e+00	0.000000e+00	1.136800e+01	0.000000e+00	9.508635e+00
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	8.843452e+01	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a

##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	0.000000e+00	0.000000e+00	0.000000e+00	6.377361e+02	5.953014e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	0.000000e+00	0.000000e+00	2.227956e+02	2.654852e+02	3.756731e+01
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	7.521979e+01	0.000000e+00	1.270305e+02	0.000000e+00	0.000000e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfbi
##	8.177386e+01	2.026738e+01	0.000000e+00	0.000000e+00	1.334419e+01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	6.210699e+01	3.118511e+02	3.058821e+02	0.000000e+00	7.818175e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	1.354793e+02	0.000000e+00	0.000000e+00	0.000000e+00	3.407657e+01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	3.446048e+02	0.000000e+00	0.000000e+00	5.203135e+01	8.295282e+01
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	7.238702e+02	3.768833e+00	0.000000e+00	0.000000e+00	4.950748e-01
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	0.000000e+00	0.000000e+00	0.000000e+00	1.743701e+01	0.000000e+00
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	0.000000e+00	0.000000e+00	3.742732e+01	0.000000e+00	1.439137e+02
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	3.308383e+00	0.000000e+00	4.039056e+02	0.000000e+00	0.000000e+00
##	Zfp81	Zfp944			
##	2.130020e-01	2.734319e+00			
##					
##	Cluster 9 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	0.000000e+00	1.046890e+01	2.867359e+00	9.317848e+00	2.324882e+03
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	0.000000e+00	3.018240e-01	9.237573e+00	2.347389e+00	1.379052e+01
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	3.554907e+00	1.608857e-01	0.000000e+00	0.000000e+00	3.061150e+01
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	2.373375e+01
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	4.075949e+00	0.000000e+00	0.000000e+00	0.000000e+00	8.277072e+01
##	Acot1	Acta2	Actg2	Adh1	Adm
##	1.142878e+02	3.240215e+02	1.991886e+01	1.345018e+00	4.002931e+01
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	0.000000e+00	0.000000e+00	6.567400e+00	0.000000e+00	0.000000e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	0.000000e+00	0.000000e+00	0.000000e+00	4.494758e-01	3.806563e-01
##	Aldoc	Amd1	Angptl4	Angptl7	Ank
##	1.094650e+03	0.000000e+00	2.631009e+01	0.000000e+00	1.065184e+02
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	0.000000e+00	1.795791e+00	4.107495e+00	2.392185e+02	1.404655e+01
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	1.789642e+02	6.550594e+02	1.223693e+03	5.704801e+00	3.056017e+00
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	3.659872e+02	5.417590e+01	5.832928e+00	5.143327e+01	9.928080e+01
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	4.900266e+00	1.658203e+01	3.186070e+01	2.641086e+01	2.121379e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3

##	1.639639e+00	5.894356e+01	1.051055e+03	1.965437e+02	6.113732e+00
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	8.705150e+00	2.776043e+01	5.178752e+01	1.255400e+02	1.557619e+01
##	C3	C8g	Capn6	Car12	Car6
##	4.539936e-01	2.722193e+00	1.103976e+02	7.292949e+01	3.705368e+01
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	2.964516e+02	5.353791e+01	1.855514e+02	4.591977e-01	2.671255e+01
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	4.136488e-01	0.000000e+00	2.628742e+00	2.699690e-01	0.000000e+00
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	7.783908e+00	7.750002e-01	9.406519e+00	1.032234e+00	2.040389e+02
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	9.140846e-01	4.756066e-02	0.000000e+00	3.822563e+01	2.773492e+00
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	1.567422e+00	2.161439e-01	7.871880e+00	2.128639e+00	9.414104e+00
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	1.331998e+02	4.611429e+00	0.000000e+00	3.456116e+00	1.745794e+00
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	3.307006e+00	0.000000e+00	2.627033e+02	1.117370e+02	2.822421e+02
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	0.000000e+00	0.000000e+00	4.160170e-01	4.887580e-01	7.833581e+01
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	9.734151e+01	8.448261e+01	2.568630e+01	6.742488e+00	0.000000e+00
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	7.859100e+01	2.654250e+01	0.000000e+00	1.230294e+01	1.436641e+01
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	3.633777e+01	1.674136e+01	2.800441e+01	3.769927e+01	1.994652e+02
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	3.565490e+02	2.814686e-01	9.202084e+01	9.884731e+01	9.836273e-02
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	2.472956e+01	1.010090e+01	2.229993e+00	9.154087e-01	2.330752e-01
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	3.549811e+02	1.518884e+03	7.194243e+03	0.000000e+00	3.198355e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	3.997266e+01	4.522641e+00	1.808631e+00	0.000000e+00	0.000000e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	3.969675e+00	5.063286e-01	8.370303e+01	8.579378e+01	0.000000e+00
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	1.214596e+01	0.000000e+00	4.684654e+01	2.238472e+00	3.521663e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	0.000000e+00	0.000000e+00	0.000000e+00	1.860243e+03	1.618331e+02
##	Ddx59	Dennd2d	Depdc7	Der13	Dmp1
##	8.438324e+00	3.500796e-02	9.109708e+00	5.390404e-01	4.589698e+01
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1
##	1.984093e-01	3.841081e+02	0.000000e+00	3.267947e+00	1.341123e+01
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	4.459839e+01	0.000000e+00	4.884076e+01	1.154903e+01	2.413263e+02
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	1.385436e+02	6.231070e+00	1.633389e+01	1.037913e-01	0.000000e+00
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	5.556296e+01	0.000000e+00	5.619972e+01	5.010532e+00	4.159609e-01
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	3.930733e+00	2.307518e+01	0.000000e+00	6.793278e+00	2.206271e+02
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1

##	2.069498e+00	7.514446e+00	0.000000e+00	0.000000e+00	2.537290e+01
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	1.406176e+01	1.339121e+01	6.439438e-01	1.384436e+02	2.937439e-01
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	5.398134e+00	1.019025e+03	1.026714e+04	1.970793e+02	1.907123e+01
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	4.297238e+02	1.092514e+02	1.555762e-01	7.463790e+00	2.262992e+00
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	1.037599e+01	1.936744e+02	1.098322e+02	8.174456e+01	2.714906e-01
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	5.485049e+00	7.327296e+00	1.572947e+01	4.577352e+00	6.519408e+00
##	Gpr3711	Gpx3	Gstm1	Gzmc	H19
##	1.151673e+02	1.495648e+01	2.888522e+01	0.000000e+00	5.277683e+01
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	7.829006e+00	9.013388e-02	2.504965e-01	1.281181e-01	2.998866e+01
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	7.224278e+01	6.108133e+01	7.995090e+01	3.515309e+02	0.000000e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	1.664652e+00	2.482804e-01	2.384358e+02	3.497247e+02	1.515495e+01
##	Ibsp	Id2	Id3	Id4	Ier3
##	0.000000e+00	2.619218e+02	5.908870e+01	1.046788e+02	1.821690e+02
##	Ifi2712a	Ifit1	Ifit3	Ifitm1	Igf2
##	2.696422e+01	5.299294e+00	8.373669e-01	8.513834e-01	7.341240e-01
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	3.785327e+02	1.543326e+02	5.345637e+02	1.059090e+03	1.893446e+00
##	Iigp1	Il10	Il12a	Il17b	Il33
##	1.280047e+01	0.000000e+00	8.740456e-02	3.405374e+02	1.722222e+02
##	Il6	Inhba	Ins16	Isg15	Itgb11
##	1.323464e-01	7.243016e+00	1.283910e+02	2.307898e+01	1.680996e+01
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	6.032888e+00	3.970562e+01	5.821085e+01	1.746264e+02	7.795912e+01
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	3.712527e+01	7.137409e+01	2.083960e+01	7.654999e+01	2.058626e+02
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	2.742761e+01	2.036050e+01	6.959715e+02	3.157341e+02	1.803283e+03
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	6.954296e+01	8.253173e+01	4.227726e+01	1.970497e+01	1.351768e+01
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	2.877967e+01	3.652282e+01	9.347002e+00	1.888187e+00	1.092001e+01
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	1.578158e+00	6.378422e+00	4.539787e+00	2.717653e+01	4.111865e+01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	0.000000e+00	6.291571e-01	4.769329e+01	6.743488e+00	1.432810e+01
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2
##	1.260522e+03	3.291970e+00	0.000000e+00	4.045729e+00	1.540893e+01
##	Malat1	Map10	Matn4	Mest	Mett118
##	8.291226e+02	0.000000e+00	1.682196e+01	8.894764e+02	8.496541e+00
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	6.932177e-02	6.433846e+00	3.629726e+03	5.651651e+02	7.295374e+02
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	0.000000e+00	0.000000e+00	7.423911e+01	0.000000e+00	1.499698e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568

##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	1.076731e+02
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	3.620988e+00	1.539571e+00	0.000000e+00	3.581839e+00	1.135662e+01
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	0.000000e+00	0.000000e+00	5.837505e+00	0.000000e+00	0.000000e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	0.000000e+00	8.222072e+00	0.000000e+00	1.790317e+01
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	3.180206e+01	0.000000e+00	3.333575e+00	0.000000e+00	0.000000e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	0.000000e+00	1.241567e+01	9.541390e-02	3.012281e+02	1.663198e-01
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	0.000000e+00	2.429931e+01	3.961449e+01	2.033367e+02	1.085960e+01
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	1.595817e+01	9.562676e+00	5.102709e+02	3.161305e-01	6.335732e+01
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	6.407140e+00	7.485176e+02	1.640485e+00	1.693465e+01	3.924967e-01
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	2.960206e+02	3.163084e+00	9.840892e+01	1.231503e-01	5.696327e+00
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	4.056150e+02	1.881771e+02	8.160059e-01	1.124157e+00	1.719647e+02
##	Penk	Perp	Pi16	Pip	Plac8
##	2.770118e+01	1.722165e+02	6.667609e-02	0.000000e+00	0.000000e+00
##	Plekhhb1	Plet1	Plk1	Pln	Plp1
##	2.697755e+02	6.386828e+00	0.000000e+00	5.249583e-02	3.673078e+00
##	Postn	Ppp1r42	Prc1	Prelp	Prg4
##	7.369743e+02	5.830620e+00	3.221277e+00	2.768959e+01	9.414011e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	0.000000e+00	1.305164e+00	3.899989e+00	5.207952e+00	3.508122e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	2.922861e+01	2.262070e+01	8.603147e+00	5.343289e+02	0.000000e+00
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	0.000000e+00	2.464781e+01	1.529343e+01	8.097532e+01	6.645254e+00
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	1.101604e+02	0.000000e+00	4.562050e+03	3.270655e+01	4.118038e+02
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	4.347514e+01	2.439159e+00	9.519906e+00	6.680968e-01	7.932314e+00
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	0.000000e+00	1.522941e+01	4.827418e+02	3.424343e-01	2.145985e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	0.000000e+00	6.898964e+00	3.448726e+02	0.000000e+00	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	5.402339e+00	0.000000e+00	0.000000e+00	1.268631e+02
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n
##	6.440331e+01	0.000000e+00	3.858065e+02	3.402898e+01	2.155468e+00
##	Serpina6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	1.777118e+01	9.104649e+02	5.125115e+01	9.076879e+01	0.000000e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	1.475851e-01	2.702640e+01	9.038887e+01	5.185222e-01	7.970814e+02
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a
##	3.940155e+00	1.068899e+02	8.603294e+00	4.290664e+01	1.153309e+02
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	5.268750e+00	1.698704e+00	0.000000e+00	0.000000e+00	2.439213e+01
##	Snora3	Snora31	Snora34	Snora47	Snora62

##	0.000000e+00	1.189606e+01	2.345079e+00	0.000000e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	7.419045e+00	1.854439e+01	0.000000e+00	2.580843e+01	4.106280e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	5.313626e+00	7.487300e+00	3.516758e+00	8.663005e+00	9.058207e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	4.413209e+00	0.000000e+00	8.599322e+00	8.650468e+00	4.631472e+01
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	0.000000e+00	1.402236e+01	1.671413e+01	3.819721e+00	4.413209e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	4.212296e+00	5.972874e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	2.003601e+01	3.819350e+01	0.000000e+00	1.229550e+02	1.805065e+00
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	3.100236e+01	1.736874e+02	2.755342e+01	0.000000e+00	4.839033e+03
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	1.795361e+02	1.144165e+00	6.119546e+01	0.000000e+00	1.518793e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfb1
##	8.577797e+01	0.000000e+00	0.000000e+00	5.561359e+00	2.369587e-01
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	3.777564e+01	1.339933e+01	1.273110e-01	5.136202e+02	8.821322e+01
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	2.816027e+02	3.938196e+02	1.290412e-01	4.722805e+02	6.731218e+00
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	3.914527e-01	3.488599e-01	0.000000e+00	3.392144e-02	5.488392e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	2.537690e+00	4.747565e+03	2.407293e+01	2.693295e+01	2.835415e+02
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	7.201665e+01	6.891400e+00	4.407064e+01	4.351034e+01	1.783085e+01
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	3.006912e+01	4.955538e+00	2.559564e+02	1.632202e+02	7.903597e+00
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	1.890462e+00	1.439739e+00	1.573052e+02	3.569362e+00	0.000000e+00
##	Zfp81	Zfp944			
##	3.315655e+00	4.324145e+00			
##					
##	Cluster 10 mean expression:				
##	X1110020A21Rik	X1110046J04Rik	X1190002F15Rik	X1500015A07Rik	X1500015010Rik
##	5.156852e+00	0.000000e+00	6.717017e+00	0.000000e+00	1.324659e+01
##	X1700010K23Rik	X1700012D01Rik	X1810011H11Rik	X2010204K13Rik	X2310057J18Rik
##	0.000000e+00	0.000000e+00	1.662900e+01	0.000000e+00	4.179248e+03
##	X2810032G03Rik	X2810442N19Rik	X3010033K07Rik	X3100003L05Rik	X3110079015Rik
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	X3830417A13Rik	X4732416N19Rik	X4930429F24Rik	X4930596I21Rik	X5430416N02Rik
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	4.697674e+00
##	X6330418K02Rik	A630066F11Rik	A730008H23Rik	Ackr1	Ackr3
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	1.512542e+01
##	Acot1	Acta2	Actg2	Adh1	Adm
##	1.947428e+01	2.760630e+01	8.182016e+00	0.000000e+00	0.000000e+00
##	AF357355	AF357359	AF357399	AF357425	AF357426
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Akr1c18	Akr1c1	Aldh1a1	Aldh1a2	Aldh1a3
##	0.000000e+00	2.370193e+02	0.000000e+00	0.000000e+00	0.000000e+00
##	Aldoc	Amd1	Angptl4	Angptl7	Ank

##	4.380960e+02	0.000000e+00	3.430572e+01	0.000000e+00	1.481691e+01
##	Ankle1	Ankrd1	Ankrd37	Anxa1	Anxa8
##	0.000000e+00	0.000000e+00	1.202372e+01	4.675535e+02	0.000000e+00
##	Apoa1bp	Apod	Apoe	Aqp1	Aqp2
##	1.208982e+02	6.041268e+00	1.417217e+02	0.000000e+00	0.000000e+00
##	Aqp5	Arc	Arg1	Arhgdib	Arsi
##	8.898518e+02	2.878792e+00	6.073937e+02	1.629753e+02	0.000000e+00
##	Atad2	Atf3	Atp6v1c2	AW112010	B2m
##	2.322080e+00	1.553826e+02	1.802239e+02	5.675864e+00	2.267845e+03
##	BC028528	BC064078	Bglap	Bglap2	Bglap3
##	0.000000e+00	4.131055e+01	0.000000e+00	0.000000e+00	2.304594e+02
##	Birc5	Bpifb1	Bpifb5	Btg2	C1qtnf3
##	3.168247e+01	0.000000e+00	9.552361e+00	9.782792e+01	0.000000e+00
##	C3	C8g	Capn6	Car12	Car6
##	3.933129e+01	6.477969e+00	0.000000e+00	3.551438e+01	6.420242e+02
##	Casp1	Cav1	Cbr2	Ccdc17	Cck
##	3.424095e+01	3.520202e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Ccl11	Ccl19	Ccl2	Ccl7	Ccl8
##	1.314802e+02	0.000000e+00	2.117263e+03	0.000000e+00	0.000000e+00
##	Ccna2	Ccnb1	Ccnb2	Ccr12	Cd24a
##	5.001148e+01	3.375910e+00	1.522117e+01	6.022224e+00	5.331997e+02
##	Cd34	Cd36	Cd53	Cd55	Cd74
##	0.000000e+00	2.395740e+00	0.000000e+00	1.594071e+02	2.428360e+01
##	Cdc20	Cdc25c	Cdca3	Cdca8	Cdh1
##	2.031394e+01	2.014067e+00	5.254441e+00	2.163821e+01	8.471755e+01
##	Cdkn1a	Cdkn3	Ceacam10	Cenpa	Cenpk
##	6.552070e+01	3.034388e+01	3.447351e+01	1.754362e+01	0.000000e+00
##	Cfb	Ch25h	Chad	Chchd10	Chil1
##	3.207287e+00	2.891497e+00	5.232558e+01	2.359154e+02	1.680022e+02
##	Chod1	Chrd11	Cilp	Ckap2	Cks1b
##	0.000000e+00	0.000000e+00	2.731800e+00	4.509001e+00	1.581818e+02
##	Clca2	Cldn3	Cldn4	Cldn7	Clec3b
##	1.738131e+02	4.244788e+02	3.259190e+01	2.397408e+02	0.000000e+00
##	Clu	Cnn1	Col10a1	Col12a1	Col1a1
##	3.883687e+02	0.000000e+00	3.476184e+01	3.697456e+01	1.619940e+02
##	Col1a2	Col3a1	Col6a1	Col8a1	Col9a1
##	2.170058e+02	3.522182e+02	3.052837e+02	2.256473e+00	9.270810e+01
##	Col9a3	Colec11	Comp	Cox8b	Cpa1
##	3.940411e+01	0.000000e+00	1.212178e+00	0.000000e+00	3.727178e+00
##	Cpxm1	Cpxm2	Cpz	Crabp1	Crabp2
##	1.182684e+00	1.697995e+00	0.000000e+00	0.000000e+00	9.451509e+01
##	Crip1	Csn3	Cst3	Cstad	Ctgf
##	7.012205e+01	7.478986e+03	4.005820e+02	0.000000e+00	4.675541e+02
##	Cthrc1	Ctla2a	Ctsk	Ctsq	Ctxn3
##	0.000000e+00	0.000000e+00	6.397638e+01	1.506989e+02	0.000000e+00
##	Cxcl1	Cxcl10	Cxcl12	Cxcl14	Cxcl3
##	4.835608e+01	0.000000e+00	8.056375e-01	0.000000e+00	1.687590e+02
##	Cxcl5	Cxcl9	Cyp26a1	Cyp4b1	Cyr61
##	2.360691e+00	0.000000e+00	0.000000e+00	3.640320e+01	1.376016e+02
##	D030045P18Rik	D630023F18Rik	D7Ert715e	Dbi	Dcn
##	0.000000e+00	4.210703e+02	4.011668e+00	1.640928e+03	3.009948e+01
##	Ddx59	Dennd2d	Depdc7	Derl3	Dmp1
##	2.292821e+02	1.782380e+01	2.904860e+01	6.804357e+01	4.935735e+00
##	Dpt	Dusp1	Dusp13	Ednrb	Efemp1

##	1.438016e+01	2.343349e+02	9.024659e+01	2.232793e+01	0.000000e+00
##	Efhd1	Egfl8	Egln3	Elf5	Eln
##	0.000000e+00	0.000000e+00	7.510434e+01	6.867444e+01	1.033934e+00
##	Emb	Emcn	Epcam	Ephx3	Epyc
##	0.000000e+00	1.302861e+02	1.109400e+03	0.000000e+00	0.000000e+00
##	Errfi1	Evi2b	F11r	F2r	Fabp4
##	1.910314e+02	0.000000e+00	1.367300e+02	7.816312e+00	7.288286e+02
##	Fabp7	Fam180a	Fam64a	Fbln1	Fbln2
##	0.000000e+00	0.000000e+00	4.672611e+00	4.627496e-01	1.978719e+01
##	Fbp1	Fcer1g	Fcgr2b	Fgf21	Fhl1
##	1.983605e+02	1.698302e+02	2.511667e+01	0.000000e+00	0.000000e+00
##	Fhl2	Fibin	Fmo2	Fmod	Fndc1
##	9.566200e+02	0.000000e+00	0.000000e+00	0.000000e+00	2.515176e+00
##	Folr1	Fos	Fth1	Fxyd3	Fxyd6
##	3.136207e+02	7.927561e+02	1.472820e+03	6.768088e+02	0.000000e+00
##	G0s2	Gas6	Gatm	Gdf10	Gdf15
##	2.898686e+02	3.663406e+01	1.244085e+01	0.000000e+00	6.471431e+02
##	Ggt1	Gja1	Gjb2	Glipr1	Gm16023
##	3.866769e+00	6.022680e+01	1.213624e+02	5.390620e+02	0.000000e+00
##	Gm4532	Gm5886	Gm9958	Gmn	Gpc3
##	4.124465e+00	3.174022e+02	0.000000e+00	2.150971e+01	0.000000e+00
##	Gpr37l1	Gpx3	Gstm1	Gzmc	H19
##	0.000000e+00	3.529061e+02	5.948797e+01	3.463403e+01	0.000000e+00
##	H2.Aa	H2.M11	H2.M9	Has1	Hcrtr1
##	2.750930e+00	0.000000e+00	2.857866e+00	0.000000e+00	0.000000e+00
##	Hhat1	Higd1b	Hilpda	Hist1h2bc	Hnmt
##	0.000000e+00	2.790851e+02	9.619139e+00	5.210574e+02	0.000000e+00
##	Hoxa5	Hpgd	Hsd11b1	Hspa5	Htra3
##	0.000000e+00	0.000000e+00	4.706241e+01	1.857815e+02	2.719599e+01
##	Ibsp	Id2	Id3	Id4	Ier3
##	0.000000e+00	5.093530e+02	0.000000e+00	0.000000e+00	2.224170e+02
##	Ifi27l2a	Ifit1	Ifit3	Ifitm1	Igf2
##	5.704029e+01	1.667473e+00	0.000000e+00	2.136438e+02	0.000000e+00
##	Igfbp2	Igfbp3	Igfbp4	Igfbp5	Igfbp6
##	0.000000e+00	2.408472e+00	4.067969e+00	5.655245e+02	3.487292e+00
##	Iigp1	Il10	Il12a	Il17b	Il33
##	2.000506e+01	0.000000e+00	0.000000e+00	0.000000e+00	1.572133e+00
##	Il6	Inhba	Ins16	Isg15	Itgb11
##	0.000000e+00	0.000000e+00	1.230128e+02	0.000000e+00	1.866268e+00
##	Itm2a	Kcnj8	Kcnn4	Krt14	Krt15
##	0.000000e+00	2.002336e+02	1.967089e+02	0.000000e+00	0.000000e+00
##	Krt17	Krt18	Krt19	Krt23	Krt5
##	0.000000e+00	8.409236e+02	5.690398e+00	4.032878e+01	0.000000e+00
##	Krt8	Lalba	Lars2	Lbp	Lcn2
##	1.837182e+02	1.762081e+02	7.982239e+02	9.694053e+01	1.372550e+04
##	Ldb1	Lect1	Lgals3	Lgals6	Lgals7
##	3.250443e+01	0.000000e+00	5.180789e+02	0.000000e+00	5.076360e+01
##	Lipm	Lmcd1	LOC106740	Lox	Lrg1
##	0.000000e+00	0.000000e+00	3.593110e+00	4.636043e+00	3.391726e+02
##	Lrrc15	Lrrc51	Lrrn4c1	Lsr	Ltbp2
##	2.928364e-01	1.612195e+01	0.000000e+00	8.309181e+01	6.326134e+01
##	Ltc4s	Lum	Ly6a	Ly6c1	Ly6d
##	0.000000e+00	1.379893e+00	4.291742e+02	2.192145e+02	6.726203e+01
##	Ly6e	Ly6k	Lyz2	Mad2l1	Mal2

##	3.004265e+03	3.390606e+02	0.000000e+00	9.065052e+00	8.983021e+01
##	Malat1	Map10	Matn4	Mest	Mettl18
##	1.254940e+03	0.000000e+00	0.000000e+00	0.000000e+00	1.374212e+01
##	Mfap4	Mfap5	Mgp	Mgst1	Mia
##	0.000000e+00	1.871576e+01	1.102894e+03	1.792073e+03	3.792677e+01
##	Mir1192	Mir1291	Mir1898	Mir1940	Mir207
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir215	Mir24.2	Mir3064	Mir3097	Mir3101
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir467c	Mir544	Mir5620	Mir5625	Mir568
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir6358	Mir6516	Mir674	Mir6905	Mir6935
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir6966	Mir697	Mir6970	Mir6973b	Mir7024
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir7025	Mir7046	Mir7050	Mir7063	Mir7067
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mir7079	Mir7650	Mir7666	Mir7674	Mir8116
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Mmp10	Mmp11	Mmp13	Mmp2	Mmp3
##	0.000000e+00	3.533604e+01	7.695404e+00	1.158131e+01	0.000000e+00
##	Mmp9	Moxd1	Mpz12	Mt1	Mt2
##	1.853021e+00	1.326475e+02	1.308435e+01	4.701246e+02	4.044472e+01
##	Mterfd2	Muc15	Myl9	Nap115	Ndp
##	4.280418e+00	1.197990e+02	5.928439e+01	0.000000e+00	0.000000e+00
##	Ndrg1	Ndufa4	Npw	Nudt8	Nuf2
##	2.950634e+01	5.235914e+02	1.615642e+01	2.302658e+01	4.071015e+00
##	Nupr1	Ogn	Olfml3	Olftr78	Omd
##	8.161571e+02	0.000000e+00	4.035929e+01	5.916923e-01	0.000000e+00
##	Otor	Otos	Pbk	Pcolce2	Pdgfr1
##	0.000000e+00	0.000000e+00	1.425020e+01	0.000000e+00	5.603284e+00
##	Penk	Perp	Pi16	Pip	Plac8
##	0.000000e+00	3.898881e+02	0.000000e+00	6.744814e+02	1.267562e+01
##	Plekhhb1	Plet1	Plk1	Pln	Plp1
##	1.023956e+02	7.080874e+02	1.242176e+01	4.160982e+00	1.160720e+00
##	Postn	Ppp1r42	Prc1	Pre1p	Prg4
##	8.972910e+02	3.952809e+02	1.115677e+01	2.225758e+01	0.000000e+00
##	Prl8a1	Prss8	Ptgis	Ptgs2	Pttg1
##	2.187226e+02	1.439350e+02	1.679465e+00	0.000000e+00	3.711384e+01
##	Ptx3	R3hdml	Rarres2	Rbp1	Reg1
##	5.822844e+01	0.000000e+00	3.587910e+02	6.905277e+01	0.000000e+00
##	Reg3g	Rgcc	Rgs16	Rgs2	Rgs4
##	0.000000e+00	1.208051e+03	4.842409e+01	1.578387e+01	2.198030e+02
##	Rgs5	Rhox5	Rn45s	Rnase10	Rnase4
##	1.168806e+03	0.000000e+00	6.805813e+03	0.000000e+00	6.470025e+01
##	Rpl26	Rpl30	Rpp38	Rrad	Rrm2
##	0.000000e+00	1.022975e+02	3.806528e+00	0.000000e+00	1.457061e+01
##	Rsad2	Rtp4	S100a10	S100a3	S100a4
##	0.000000e+00	4.380943e+01	1.594253e+02	6.434333e+01	2.696875e+02
##	S100a7a	S100a8	S100b	Saa2	Saa3
##	0.000000e+00	2.605393e+02	1.000373e+01	6.976776e+01	0.000000e+00
##	Sap25	Scara5	Scarna3a	Scel	Scgb1b27
##	0.000000e+00	3.919311e+01	0.000000e+00	1.603736e+02	2.068461e+04
##	Scgb2b27	Scgb3a1	Scrg1	Serinc2	Serpina3n

##	9.383674e+03	0.000000e+00	4.472785e+01	2.405451e+02	4.017949e+01
##	Serpib6b	Serpinf1	Sfrp1	Sfrp2	Sfrp4
##	2.366215e+00	1.285063e+01	8.159475e+00	1.430924e+00	0.000000e+00
##	Shcbp1	Slc2a1	Slc38a3	Slfn2	Slpi
##	2.820302e+01	2.794215e+01	1.042011e+01	7.048024e+00	3.572759e+02
##	Smim22	Smoc1	Smoc2	Smpd13a	Smr3a
##	6.410218e+01	5.788747e+00	7.057848e+00	5.243712e+01	0.000000e+00
##	Sncg	Snora15	Snora20	Snora23	Snora28
##	6.649690e+01	0.000000e+00	0.000000e+00	1.598230e+01	0.000000e+00
##	Snora3	Snora31	Snora34	Snora47	Snora62
##	0.000000e+00	3.927495e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Snora64	Snora65	Snord118	Snord15b	Snord19
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord22	Snord33	Snord34	Snord35a	Snord37
##	0.000000e+00	0.000000e+00	0.000000e+00	3.304207e+01	0.000000e+00
##	Snord38a	Snord42a	Snord42b	Snord45b	Snord47
##	0.000000e+00	0.000000e+00	5.346807e+01	0.000000e+00	1.648032e+02
##	Snord4a	Snord57	Snord65	Snord68	Snord69
##	0.000000e+00	0.000000e+00	2.579600e+02	0.000000e+00	0.000000e+00
##	Snord72	Snord8	Snord83b	Snord89	Snord91a
##	0.000000e+00	8.909821e+01	0.000000e+00	0.000000e+00	0.000000e+00
##	Snord95	Snord96a	Snord98	Sod3	Spc25
##	0.000000e+00	0.000000e+00	0.000000e+00	6.452999e+00	2.289969e+01
##	Spdya	Spint2	Spon1	Spon2	Spp1
##	0.000000e+00	8.066508e+02	2.216711e+01	0.000000e+00	3.589694e+02
##	Srgn	St3gal6	Steap4	Stmnd1	Stx19
##	2.194585e+01	0.000000e+00	1.603652e+02	3.227289e+00	4.950747e+00
##	Tagln	Tcf24	Tex13	Tfap2a	Tgfb1
##	2.071077e+01	1.161821e+02	0.000000e+00	5.140271e+00	0.000000e+00
##	Thbs1	Thbs2	Thbs4	Thrsp	Timp1
##	1.744139e+01	9.178719e+00	0.000000e+00	5.241917e+02	3.183631e+02
##	Timp3	Tinagl1	Tmem255b	Tmem37	Tnc
##	7.211154e+01	1.212434e+02	0.000000e+00	1.847158e+02	8.174679e-01
##	Tnfaip6	Tnfrsf9	Tnmd	Tnn	Tpm1
##	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	2.180461e+02
##	Tppp3	Trf	Trmt61b	Trp63	Tspan7
##	7.167518e+00	3.195842e+03	5.556372e+00	0.000000e+00	3.030535e+01
##	Tspan8	Ube2c	Ucma	Ufsp2	Urah
##	1.877049e+01	1.270980e+02	0.000000e+00	3.169460e+01	9.598675e+01
##	Vwa1	Wap	Wfdc18	Wif1	Wisp2
##	0.000000e+00	2.330456e+02	1.441141e+04	1.046201e+01	2.478194e+00
##	Yy2	Zfp2	Zfp36	Zfp454	Zfp652os
##	1.363552e+00	2.922960e+01	4.674654e+02	2.139491e+00	0.000000e+00
##	Zfp81	Zfp944			
##	1.735155e+00	8.961543e+00			

Optional: Save the cluster assignments

write.csv(cluster_df, "cluster_assignments.csv", row.names = FALSE)