

MSB7102 MINI PROJECT

AYUB MAGOMBE, MSBT 2020/HD07/20682U

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MAKERERE UNIVERSITY
COLLEGE OF HEALTH SCIENCES
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2020/HD07/20682U
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COURSE CODE: MSB 7102
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MSB7102 Mini-project, Semester I, 2021 Background This is an assessed exercise that will contribute to coursework for this module. It is aimed at providing an experience with all that has been covered throughout the semester. The tasks are based on two Bioconductor packages; phyloseq and DEseq2. Endeavor to look at the documentation and the links indicated below may be useful. The data files are located in the shared google drive folder. Data sources and description The data used in this exercise is derived and was generated by Kolistic et al in their study “The dynamics of the human infant gut microbiome in development and progression toward Type 1 Diabetes”. See full publication at <https://doi.org/10.1016/j.jchom.2015.01.001>. Briefly, this was a prospective analysis of developing gut microbiome in infants en route to type 1 diabetes. Infants from Finland and Estonia were recruited at birth based on predisposition to autoimmunity determined by human leukocyte antigen (HLA) genotyping. The cohort consists of 33 infants, 11 of which seroconverted to serum autoantibody positivity and of those, four developed T1D within the three-year time-frame of this study. Tasks Import the data described above into R, provide descriptive summaries of the subject data (using appropriate graphics and statistical summary measures) given in the diabimmune_16s_t1d_metadata.csv file. In addition, use appropriate test(s) to check for association/independency between disease status and other variables (delivery mode, gender and age). Note that age is given in days. Using phyloseq, create a phyloseq object. This will comprise the OTU abundance, taxonomy (provided in the .txt file) and sample data (provided in the .csv file). Generate Alpha diversity plots and ordination plots. Examine any observed patterns by delivery mode, gender and disease status. Perform differential abundance using DEseq2 Submission Use Rmarkdown to generate a report for your submission. Generate the report as a pdf or html file, upload it to your GitHub repository, send the link to submissions.gronald@gmail.com and copy assekagiri@gmail.com Get a working directory

```
getwd()
```

```
## [1] "/home/ayub/Desktop/MSB7102_PROJECT/MSB7102"
```

Task 1.0: Import data into R load libraries required for the project

```
library(phyloseq)
library(ggplot2)
library(readr)
library(readxl)
```

```
sdata <- read_delim("~/Desktop/MSB7102_PROJECT/MSB7102/diabimmune_16s_t1d_metadata.csv") #import sample
```

```
## Rows: 777 Columns: 6
```

```
## -- Column specification -----
## Delimiter: ","
## chr (5): Sample_ID, Subject_ID, Case_Control, Gender, Delivery_Route
## dbl (1): Age_at_Collection
```

```
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
sdata # print sdata
```

```
## # A tibble: 777 x 6
##   Sample_ID Subject_ID Case_Control Gender Delivery_Route Age_at_Collection
##   <chr>      <chr>      <chr>      <chr> <chr>              <dbl>
## 1 G36449    E001463    control    male   vaginal            62
## 2 G36034    E001463    control    male   vaginal            82
## 3 G36993    E001463    control    male   vaginal           124
## 4 G35523    E001463    control    male   vaginal           153
## 5 G36450    E001463    control    male   vaginal           187
## 6 G36028    E001463    control    male   vaginal           213
## 7 G36029    E001463    control    male   vaginal           243
## 8 G35524    E001463    control    male   vaginal           276
## 9 G36451    E001463    control    male   vaginal           303
## 10 G35424   E001463    control    male   vaginal           366
## # ... with 767 more rows
```

```
# The results of sdata shows a tibble of 777x6.
```

The summary of sample data (sdata)

```
summary(sdata)
```

```
##   Sample_ID      Subject_ID      Case_Control      Gender
## Length:777      Length:777      Length:777      Length:777
## Class :character Class :character Class :character Class :character
## Mode  :character Mode  :character Mode  :character Mode  :character
##
##
## Delivery_Route      Age_at_Collection
```

```
## Length:777      Min.   : 6.0
## Class :character 1st Qu.: 229.0
## Mode :character Median : 452.0
##                Mean  : 482.9
##                3rd Qu.: 702.0
##                Max.   :1233.0
```

Dimensions of the table

```
dim.data.frame(sdata)
```

```
## [1] 777 6
```

```
head(sdata)
```

```
## # A tibble: 6 x 6
##   Sample_ID Subject_ID Case_Control Gender Delivery_Route Age_at_Collection
##   <chr>      <chr>      <chr>      <chr> <chr>                <dbl>
## 1 G36449    E001463    control    male   vaginal              62
## 2 G36034    E001463    control    male   vaginal              82
## 3 G36993    E001463    control    male   vaginal             124
## 4 G35523    E001463    control    male   vaginal             153
## 5 G36450    E001463    control    male   vaginal             187
## 6 G36028    E001463    control    male   vaginal             213
```

```
tail(sdata)
```

```
## # A tibble: 6 x 6
##   Sample_ID Subject_ID Case_Control Gender Delivery_Route Age_at_Collection
##   <chr>      <chr>      <chr>      <chr> <chr>                <dbl>
## 1 G36938    T026177    control    female vaginal          570
## 2 G36936    T026177    control    female vaginal          592
## 3 G36937    T026177    control    female vaginal          646
## 4 G35535    T026177    control    female vaginal          677
## 5 G35536    T026177    control    female vaginal          703
## 6 G35537    T026177    control    female vaginal          729
```

```
class(sdata)
```

```
## [1] "spec_tbl_df" "tbl_df"      "tbl"         "data.frame"
```

```
table(sdata $Sample_ID)
```

```
##
## G35348 G35349 G35350 G35351 G35352 G35354 G35355 G35356 G35359 G35361 G35364
##      1      1      1      1      1      1      1      1      1      1      1
## G35365 G35366 G35368 G35370 G35372 G35373 G35374 G35381 G35386 G35387 G35388
##      1      1      1      1      1      1      1      1      1      1      1
## G35390 G35391 G35392 G35394 G35395 G35397 G35398 G35403 G35404 G35406 G35407
##      1      1      1      1      1      1      1      1      1      1      1
```

##	G35409	G35412	G35414	G35416	G35417	G35418	G35419	G35421	G35422	G35423	G35424
##	1	1	1	1	1	1	1	1	1	1	1
##	G35433	G35437	G35441	G35442	G35443	G35444	G35445	G35447	G35448	G35449	G35453
##	1	1	1	1	1	1	1	1	1	1	1
##	G35455	G35458	G35462	G35463	G35464	G35465	G35467	G35469	G35470	G35473	G35475
##	1	1	1	1	1	1	1	1	1	1	1
##	G35476	G35477	G35480	G35481	G35484	G35486	G35487	G35490	G35495	G35497	G35498
##	1	1	1	1	1	1	1	1	1	1	1
##	G35504	G35505	G35510	G35511	G35512	G35513	G35514	G35515	G35516	G35517	G35518
##	1	1	1	1	1	1	1	1	1	1	1
##	G35519	G35520	G35521	G35522	G35523	G35524	G35525	G35526	G35527	G35528	G35529
##	1	1	1	1	1	1	1	1	1	1	1
##	G35530	G35531	G35532	G35533	G35534	G35535	G35536	G35537	G35867	G35868	G35869
##	1	1	1	1	1	1	1	1	1	1	1
##	G35874	G35876	G35878	G35881	G35891	G35892	G35894	G35898	G35900	G35901	G35902
##	1	1	1	1	1	1	1	1	1	1	1
##	G35906	G35908	G35915	G35923	G35924	G35925	G35926	G35928	G35932	G35933	G35934
##	1	1	1	1	1	1	1	1	1	1	1
##	G35936	G35937	G35938	G35939	G35940	G35941	G35942	G35944	G35945	G35946	G35947
##	1	1	1	1	1	1	1	1	1	1	1
##	G35948	G35950	G35951	G35952	G35953	G35954	G35955	G35956	G35957	G35958	G35959
##	1	1	1	1	1	1	1	1	1	1	1
##	G35960	G35961	G35962	G35963	G35965	G35966	G35967	G35969	G35970	G35971	G35972
##	1	1	1	1	1	1	1	1	1	1	1
##	G35973	G35974	G35975	G35976	G35977	G35978	G35979	G35980	G35981	G35982	G35983
##	1	1	1	1	1	1	1	1	1	1	1
##	G35984	G35985	G35986	G35987	G35988	G35989	G35990	G35991	G35992	G35993	G35994
##	1	1	1	1	1	1	1	1	1	1	1
##	G35995	G35996	G35997	G35998	G35999	G36000	G36001	G36002	G36003	G36004	G36005
##	1	1	1	1	1	1	1	1	1	1	1
##	G36006	G36007	G36008	G36010	G36011	G36012	G36013	G36015	G36016	G36017	G36018
##	1	1	1	1	1	1	1	1	1	1	1
##	G36019	G36020	G36021	G36022	G36023	G36024	G36025	G36026	G36028	G36029	G36030
##	1	1	1	1	1	1	1	1	1	1	1
##	G36031	G36032	G36033	G36034	G36035	G36036	G36037	G36038	G36039	G36040	G36041
##	1	1	1	1	1	1	1	1	1	1	1
##	G36042	G36043	G36044	G36045	G36046	G36047	G36048	G36049	G36050	G36051	G36052
##	1	1	1	1	1	1	1	1	1	1	1
##	G36053	G36054	G36133	G36134	G36135	G36136	G36137	G36138	G36139	G36140	G36141
##	1	1	1	1	1	1	1	1	1	1	1
##	G36142	G36143	G36144	G36145	G36146	G36147	G36148	G36149	G36150	G36151	G36152
##	1	1	1	1	1	1	1	1	1	1	1
##	G36153	G36154	G36155	G36156	G36157	G36158	G36159	G36160	G36161	G36162	G36163
##	1	1	1	1	1	1	1	1	1	1	1
##	G36164	G36165	G36166	G36167	G36168	G36169	G36170	G36171	G36172	G36173	G36174
##	1	1	1	1	1	1	1	1	1	1	1
##	G36175	G36176	G36177	G36179	G36180	G36181	G36182	G36183	G36184	G36185	G36186
##	1	1	1	1	1	1	1	1	1	1	1
##	G36187	G36188	G36189	G36190	G36191	G36192	G36193	G36194	G36195	G36196	G36197
##	1	1	1	1	1	1	1	1	1	1	1
##	G36198	G36199	G36200	G36201	G36202	G36203	G36204	G36205	G36206	G36207	G36208
##	1	1	1	1	1	1	1	1	1	1	1
##	G36209	G36210	G36211	G36212	G36213	G36214	G36215	G36216	G36217	G36219	G36220
##	1	1	1	1	1	1	1	1	1	1	1

##	G36221	G36222	G36223	G36224	G36225	G36226	G36227	G36228	G36229	G36230	G36231
##	1	1	1	1	1	1	1	1	1	1	1
##	G36232	G36233	G36234	G36235	G36236	G36237	G36238	G36239	G36240	G36241	G36242
##	1	1	1	1	1	1	1	1	1	1	1
##	G36243	G36244	G36245	G36246	G36247	G36248	G36249	G36250	G36251	G36252	G36253
##	1	1	1	1	1	1	1	1	1	1	1
##	G36254	G36255	G36256	G36257	G36258	G36259	G36260	G36261	G36262	G36263	G36264
##	1	1	1	1	1	1	1	1	1	1	1
##	G36265	G36266	G36267	G36268	G36269	G36270	G36271	G36272	G36273	G36274	G36275
##	1	1	1	1	1	1	1	1	1	1	1
##	G36276	G36277	G36279	G36280	G36281	G36282	G36283	G36284	G36285	G36286	G36287
##	1	1	1	1	1	1	1	1	1	1	1
##	G36288	G36289	G36290	G36291	G36292	G36293	G36294	G36295	G36296	G36297	G36298
##	1	1	1	1	1	1	1	1	1	1	1
##	G36299	G36300	G36301	G36302	G36303	G36304	G36305	G36306	G36307	G36308	G36309
##	1	1	1	1	1	1	1	1	1	1	1
##	G36310	G36311	G36312	G36313	G36314	G36315	G36316	G36317	G36318	G36319	G36320
##	1	1	1	1	1	1	1	1	1	1	1
##	G36321	G36322	G36406	G36408	G36413	G36417	G36419	G36420	G36421	G36422	G36423
##	1	1	1	1	1	1	1	1	1	1	1
##	G36424	G36429	G36430	G36431	G36432	G36433	G36434	G36435	G36436	G36437	G36438
##	1	1	1	1	1	1	1	1	1	1	1
##	G36439	G36440	G36441	G36442	G36443	G36444	G36445	G36446	G36448	G36449	G36450
##	1	1	1	1	1	1	1	1	1	1	1
##	G36451	G36452	G36453	G36454	G36455	G36456	G36457	G36458	G36459	G36460	G36461
##	1	1	1	1	1	1	1	1	1	1	1
##	G36462	G36463	G36464	G36465	G36466	G36467	G36468	G36470	G36471	G36472	G36473
##	1	1	1	1	1	1	1	1	1	1	1
##	G36474	G36475	G36476	G36477	G36478	G36479	G36480	G36481	G36482	G36484	G36485
##	1	1	1	1	1	1	1	1	1	1	1
##	G36486	G36487	G36488	G36489	G36490	G36491	G36492	G36493	G36494	G36495	G36496
##	1	1	1	1	1	1	1	1	1	1	1
##	G36497	G36498	G36499	G36500	G36501	G36502	G36503	G36505	G36506	G36507	G36508
##	1	1	1	1	1	1	1	1	1	1	1
##	G36509	G36510	G36511	G36512	G36513	G36514	G36515	G36516	G36517	G36518	G36519
##	1	1	1	1	1	1	1	1	1	1	1
##	G36520	G36521	G36522	G36523	G36524	G36525	G36526	G36527	G36528	G36529	G36530
##	1	1	1	1	1	1	1	1	1	1	1
##	G36531	G36532	G36533	G36534	G36535	G36536	G36537	G36538	G36540	G36541	G36542
##	1	1	1	1	1	1	1	1	1	1	1
##	G36543	G36544	G36545	G36546	G36547	G36548	G36549	G36550	G36551	G36552	G36553
##	1	1	1	1	1	1	1	1	1	1	1
##	G36554	G36555	G36556	G36557	G36558	G36748	G36750	G36751	G36752	G36753	G36755
##	1	1	1	1	1	1	1	1	1	1	1
##	G36756	G36757	G36759	G36760	G36761	G36762	G36763	G36764	G36765	G36766	G36769
##	1	1	1	1	1	1	1	1	1	1	1
##	G36771	G36772	G36773	G36776	G36777	G36778	G36779	G36780	G36783	G36784	G36785
##	1	1	1	1	1	1	1	1	1	1	1
##	G36786	G36787	G36788	G36789	G36791	G36795	G36796	G36797	G36798	G36799	G36803
##	1	1	1	1	1	1	1	1	1	1	1
##	G36807	G36808	G36809	G36810	G36811	G36813	G36814	G36815	G36816	G36818	G36819
##	1	1	1	1	1	1	1	1	1	1	1
##	G36820	G36822	G36823	G36824	G36826	G36827	G36829	G36830	G36831	G36834	G36835
##	1	1	1	1	1	1	1	1	1	1	1

```
## G36837 G36838 G36839 G36840 G36843 G36844 G36845 G36846 G36847 G36848 G36849
##      1      1      1      1      1      1      1      1      1      1      1
## G36850 G36851 G36854 G36855 G36856 G36857 G36858 G36859 G36860 G36861 G36862
##      1      1      1      1      1      1      1      1      1      1      1
## G36863 G36864 G36865 G36866 G36867 G36868 G36870 G36871 G36872 G36873 G36874
##      1      1      1      1      1      1      1      1      1      1      1
## G36875 G36877 G36878 G36879 G36880 G36881 G36882 G36883 G36884 G36885 G36886
##      1      1      1      1      1      1      1      1      1      1      1
## G36887 G36888 G36889 G36890 G36891 G36892 G36893 G36894 G36895 G36896 G36897
##      1      1      1      1      1      1      1      1      1      1      1
## G36898 G36899 G36900 G36902 G36904 G36905 G36906 G36910 G36911 G36917 G36918
##      1      1      1      1      1      1      1      1      1      1      1
## G36921 G36923 G36925 G36927 G36928 G36930 G36932 G36933 G36935 G36936 G36937
##      1      1      1      1      1      1      1      1      1      1      1
## G36938 G36940 G36944 G36948 G36951 G36952 G36953 G36957 G36958 G36959 G36960
##      1      1      1      1      1      1      1      1      1      1      1
## G36964 G36966 G36968 G36972 G36973 G36974 G36982 G36984 G36987 G36988 G36991
##      1      1      1      1      1      1      1      1      1      1      1
## G36992 G36993 G36998 G37004 G37005 G37009 G37010 G37011 G37012 G37013 G37014
##      1      1      1      1      1      1      1      1      1      1      1
## G37015 G37016 G37017 G37018 G37019 G37020 G37021 G37022 G37023 G37024 G37025
##      1      1      1      1      1      1      1      1      1      1      1
## G37026 G37027 G37028 G37029 G37030 G37031 G37032 G37033 G37034 G37035 G37036
##      1      1      1      1      1      1      1      1      1      1      1
## G37037 G37038 G37039 G37040 G37041 G37042 G37043 G37044 G37045 G37046 G37047
##      1      1      1      1      1      1      1      1      1      1      1
## G37048 G37049 G37050 G37051 G37052 G37053 G37054
##      1      1      1      1      1      1      1
```

```
table(sdata $Subject_ID)
```

```
##
## E001463 E003061 E003251 E003872 E003989 E004016 E006547 E006574 E006646 E006673
##      32      20       8      24      25      17      23      32      22      18
## E010590 E010629 E010937 E011279 E013487 E016924 E017751 E017824 E017833 E018113
##      28      12      23      32      28      31      32      14      24      34
## E018268 E021406 E022137 E022852 E026079 E026325 E029817 T012808 T013815 T014292
##      22      25      34      28      15      22      18      21      23      24
## T025411 T025418 T026177
##      21      22      23
```

```
table(sdata $Gender)
```

```
##
## female    male
##      412     365
```

```
table(sdata $Delivery_Route) # Summarise the route of delivery
```

```
##
## cesarian  vaginal
##      66      711
```

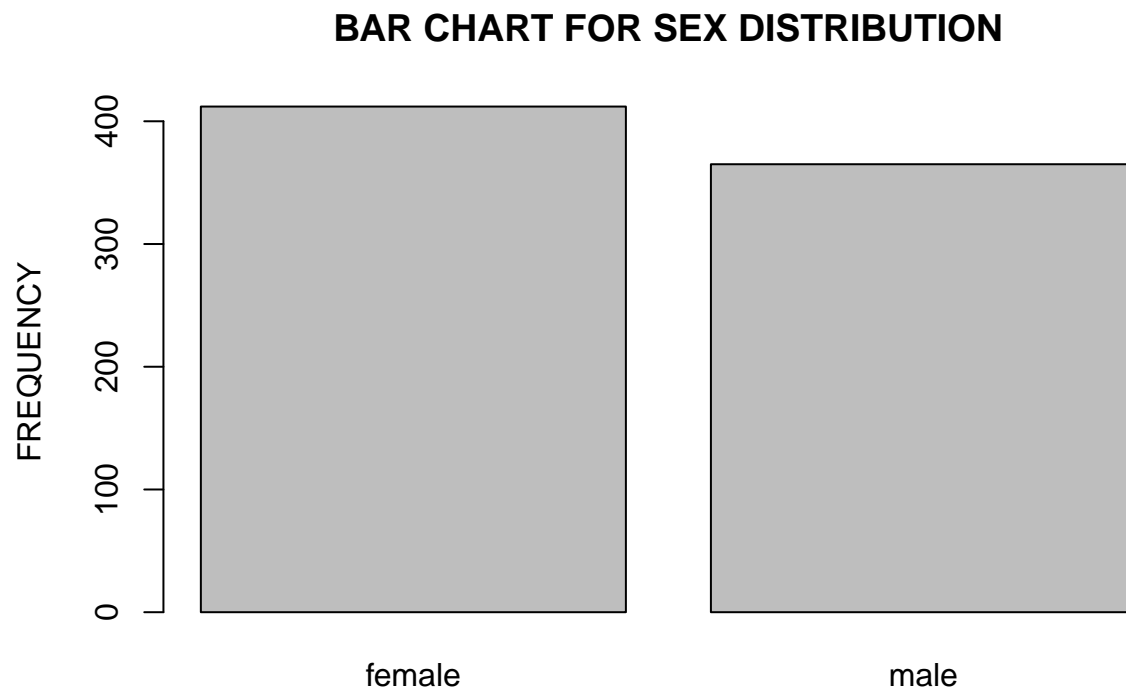
To check for missing values in the sdata table

```
table(is.na(sdata))
```

```
##  
## FALSE  
## 4662
```

A bar Plot of gender distribution

```
freq <- table(sdata $Gender)  
barplot(freq, main = "BAR CHART FOR SEX DISTRIBUTION", ylab = "FREQUENCY")
```

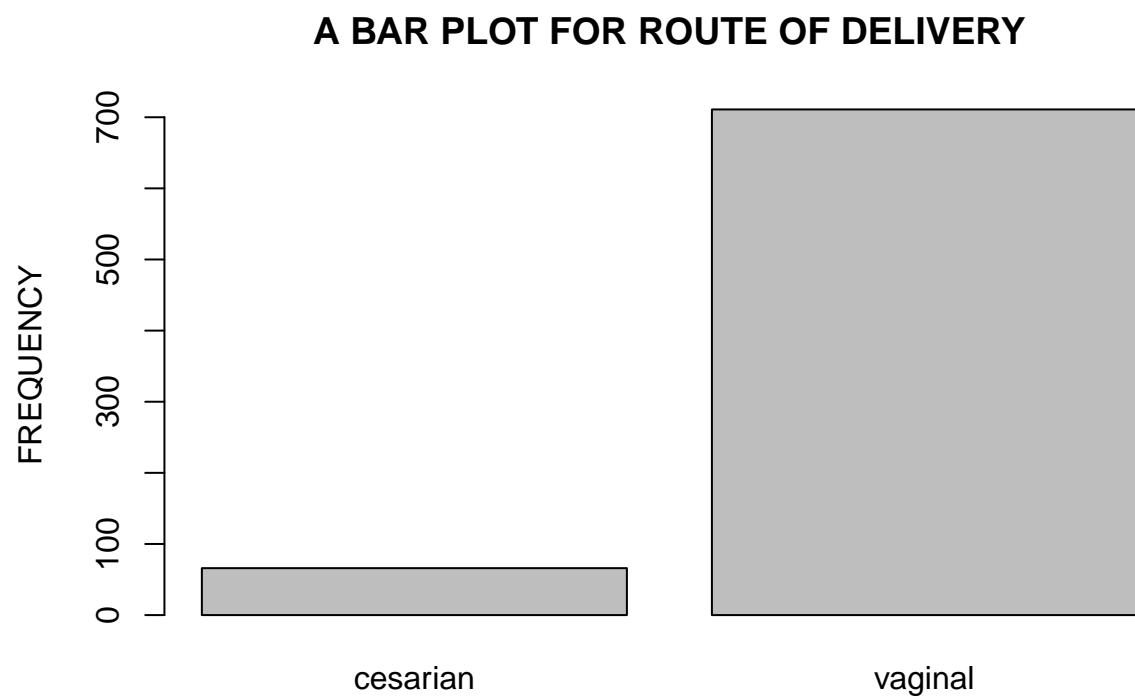


A plot of route of delivery

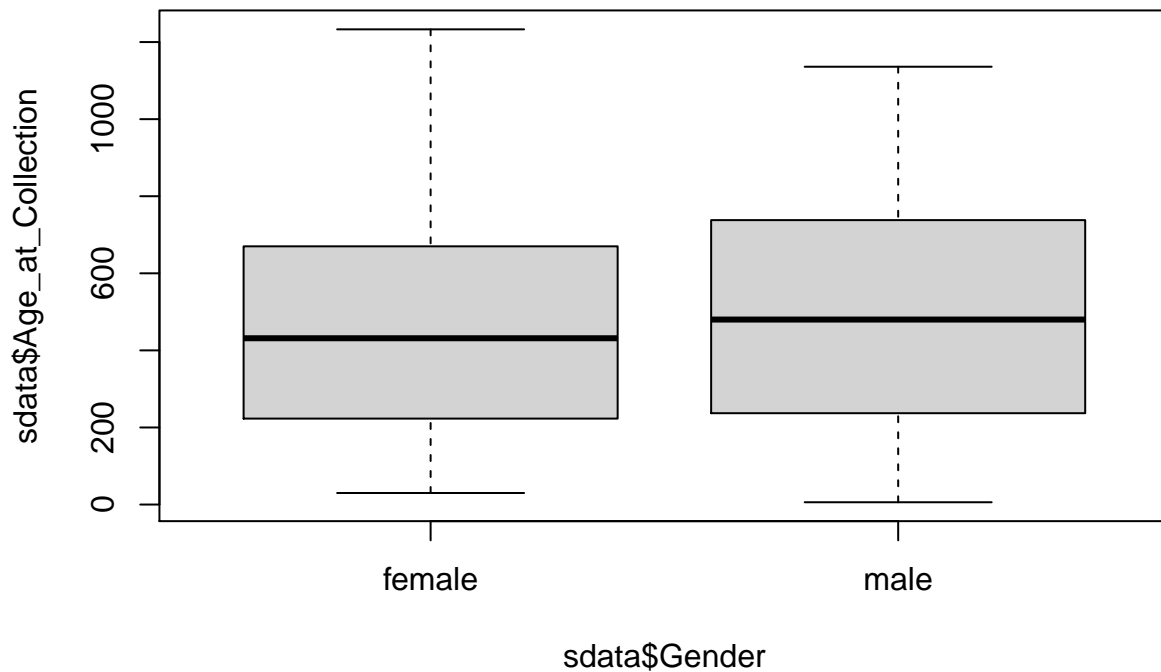
```
route <- table(sdata $Delivery_Route)  
route
```

```
##  
## cesarian  vaginal  
##      66      711
```

```
barplot(route, main = "A BAR PLOT FOR ROUTE OF DELIVERY", ylab = "FREQUENCY")
```



```
boxplot(sdata $Age_at_Collection~sdata $Gender)
```

Task 2:0 Create a phyloseq object. This will comprise the OTU abundance, taxonomy (provided in the .txt file) and sample data (provided in the .csv file). Load libraries

```
library(phyloseq)
library(ggplot2)
library(ape)
library(dplyr)
```

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

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

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

```
library(tibble)
library(readr)
library(biomformat)
```

Read otu data

G36026,E001463,control,male,vaginal,577
G35423,E001463,control,male,vaginal,608
G35867,E001463,control,male,vaginal,638
G36037,E001463,control,male,vaginal,668
G35531,E001463,control,male,vaginal,701
G35532,E001463,control,male,vaginal,738
G35534,E001463,control,male,vaginal,796
G36847,E001463,control,male,vaginal,853
G36839,E001463,control,male,vaginal,883
G36837,E001463,control,male,vaginal,918
G36829,E001463,control,male,vaginal,943
G36834,E001463,control,male,vaginal,972
G36835,E001463,control,male,vaginal,1006
G36811,E001463,control,male,vaginal,1028
G35881,E001463,control,male,vaginal,1062
G35533,E001463,control,male,vaginal,1136
G36408,E003061,control,female,vaginal,103
G35869,E003061,control,female,vaginal,120
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## G36937,T026177,control,female,vaginal,646
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G36937,T026177,control,f
G35535,T026177,control,f
G35536,T026177,control,f
G35537,T026177,control,f
```

Create an otu table (otumat)

```
dim(otudata)
```

```
## [1] 2241    1
```

```
otumat = matrix(sample(2241:1, replace = TRUE), nrow = 2241, ncol = 1)
otumat
```

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## [3,] 1994
## [4,] 785
## [5,] 870
## [6,] 1373
## [7,] 56
## [8,] 1313
## [9,] 1091
## [10,] 603
## [11,] 2016
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## [14,] 1206
## [15,] 210
## [16,] 1580
## [17,] 1029
## [18,] 1462
## [19,] 1151
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## [25,] 1782
## [26,] 500
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## [30,] 152
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## [33,] 1447
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## [35,] 1619
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## [37,] 1507
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##	[43,]	2043
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##	[45,]	1270
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##	[53,]	557
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```

Label the rows and columns with OTU and Sample respectively

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colnames(mydata) <- paste0("Sample", 1:ncol(mydata))
mydata
```

```
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## OTU3	G36993,E001463,control,male,vaginal,124
## OTU4	G35523,E001463,control,male,vaginal,153
## OTU5	G36450,E001463,control,male,vaginal,187
## OTU6	G36028,E001463,control,male,vaginal,213
## OTU7	G36029,E001463,control,male,vaginal,243
## OTU8	G35524,E001463,control,male,vaginal,276
## OTU9	G36451,E001463,control,male,vaginal,303
## OTU10	G35424,E001463,control,male,vaginal,366
## OTU11	G35522,E001463,control,male,vaginal,396
## OTU12	G36452,E001463,control,male,vaginal,427
## OTU13	G36025,E001463,control,male,vaginal,457
## OTU14	G36030,E001463,control,male,vaginal,487
## OTU15	G35521,E001463,control,male,vaginal,518
## OTU16	G36453,E001463,control,male,vaginal,537
## OTU17	G36026,E001463,control,male,vaginal,577
## OTU18	G35423,E001463,control,male,vaginal,608
## OTU19	G35867,E001463,control,male,vaginal,638
## OTU20	G36037,E001463,control,male,vaginal,668
## OTU21	G35531,E001463,control,male,vaginal,701
## OTU22	G35532,E001463,control,male,vaginal,738
## OTU23	G35534,E001463,control,male,vaginal,796
## OTU24	G36847,E001463,control,male,vaginal,853
## OTU25	G36839,E001463,control,male,vaginal,883
## OTU26	G36837,E001463,control,male,vaginal,918
## OTU27	G36829,E001463,control,male,vaginal,943
## OTU28	G36834,E001463,control,male,vaginal,972
## OTU29	G36835,E001463,control,male,vaginal,1006
## OTU30	G36811,E001463,control,male,vaginal,1028
## OTU31	G35881,E001463,control,male,vaginal,1062
## OTU32	G35533,E001463,control,male,vaginal,1136
## OTU33	G36408,E003061,control,female,vaginal,103
## OTU34	G35869,E003061,control,female,vaginal,120
## OTU35	G36838,E003061,control,female,vaginal,150
## OTU36	G35874,E003061,control,female,vaginal,182
## OTU37	G35441,E003061,control,female,vaginal,212
## OTU38	G36799,E003061,control,female,vaginal,273
## OTU39	G36823,E003061,control,female,vaginal,303
## OTU40	G35437,E003061,control,female,vaginal,335
## OTU41	G36816,E003061,control,female,vaginal,366
## OTU42	G36797,E003061,control,female,vaginal,399
## OTU43	G36982,E003061,control,female,vaginal,426
## OTU44	G35406,E003061,control,female,vaginal,458
## OTU45	G35407,E003061,control,female,vaginal,489
## OTU46	G36984,E003061,control,female,vaginal,546
## OTU47	G35409,E003061,control,female,vaginal,577
## OTU48	G35442,E003061,control,female,vaginal,669
## OTU49	G35381,E003061,control,female,vaginal,729
## OTU50	G36935,E003061,control,female,vaginal,793
## OTU51	G36932,E003061,control,female,vaginal,822
## OTU52	G35403,E003061,control,female,vaginal,912
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## OTU54	G36533,E003251,case,female,vaginal,120
## OTU55	G36531,E003251,case,female,vaginal,159

OTU56 G36554,E003251,case,female,vaginal,208
 ## OTU57 G36547,E003251,case,female,vaginal,249
 ## OTU58 G36553,E003251,case,female,vaginal,355
 ## OTU59 G36546,E003251,case,female,vaginal,474
 ## OTU60 G36875,E003251,case,female,vaginal,508
 ## OTU61 G35404,E003872,control,female,cesarian,69
 ## OTU62 G36185,E003872,control,female,cesarian,82
 ## OTU63 G36186,E003872,control,female,cesarian,118
 ## OTU64 G36187,E003872,control,female,cesarian,153
 ## OTU65 G36173,E003872,control,female,cesarian,170
 ## OTU66 G36189,E003872,control,female,cesarian,216
 ## OTU67 G36190,E003872,control,female,cesarian,239
 ## OTU68 G36191,E003872,control,female,cesarian,278
 ## OTU69 G36192,E003872,control,female,cesarian,311
 ## OTU70 G36188,E003872,control,female,cesarian,336
 ## OTU71 G36193,E003872,control,female,cesarian,375
 ## OTU72 G36194,E003872,control,female,cesarian,493
 ## OTU73 G36195,E003872,control,female,cesarian,531
 ## OTU74 G36196,E003872,control,female,cesarian,548
 ## OTU75 G36208,E003872,control,female,cesarian,611
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 ## OTU77 G36206,E003872,control,female,cesarian,673
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 ## OTU81 G36202,E003872,control,female,cesarian,807
 ## OTU82 G36201,E003872,control,female,cesarian,979
 ## OTU83 G36200,E003872,control,female,cesarian,1051
 ## OTU84 G36199,E003872,control,female,cesarian,1085
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## OTU771 G37009,T026177,control,female,vaginal,541
## OTU772 G36938,T026177,control,female,vaginal,570
## OTU773 G36936,T026177,control,female,vaginal,592
## OTU774 G36937,T026177,control,female,vaginal,646
## OTU775 G35535,T026177,control,female,vaginal,677
## OTU776 G35536,T026177,control,female,vaginal,703
## OTU777 G35537,T026177,control,female,vaginal,729
```

Label otu rows and columns

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rownames(otumat) <- paste0("OTU", 1:nrow(otumat))
colnames(otumat) <- paste0("Sample", 1:ncol(otumat))
otumat
```

```
##      Sample1
## OTU1      563
## OTU2     1296
## OTU3     1994
## OTU4      785
## OTU5      870
## OTU6     1373
## OTU7       56
## OTU8     1313
## OTU9     1091
## OTU10      603
## OTU11     2016
## OTU12     2227
## OTU13      471
## OTU14     1206
## OTU15      210
## OTU16     1580
## OTU17     1029
## OTU18     1462
## OTU19     1151
## OTU20     2140
## OTU21      679
## OTU22     1533
## OTU23      698
## OTU24      501
## OTU25     1782
## OTU26      500
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## OTU27	944
## OTU28	531
## OTU29	81
## OTU30	152
## OTU31	809
## OTU32	128
## OTU33	1447
## OTU34	1129
## OTU35	1619
## OTU36	1766
## OTU37	1507
## OTU38	1949
## OTU39	640
## OTU40	1559
## OTU41	1125
## OTU42	954
## OTU43	2043
## OTU44	590
## OTU45	1270
## OTU46	1659
## OTU47	922
## OTU48	1621
## OTU49	145
## OTU50	1276
## OTU51	2216
## OTU52	1856
## OTU53	557
## OTU54	948
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## OTU56	525
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## OTU58	2161
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## OTU60	180
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## OTU62	821
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## OTU66	681
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## OTU68	1306
## OTU69	1494
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## OTU71	1255
## OTU72	957
## OTU73	1844
## OTU74	194
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## OTU77	102
## OTU78	2193
## OTU79	610
## OTU80	996

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## OTU82	284
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## OTU84	2018
## OTU85	1177
## OTU86	410
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## OTU94	1781
## OTU95	2047
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## OTU107	1822
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## OTU847	1792
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## OTU853	799
## OTU854	2065
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## OTU856	766
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## OTU1739	2108
## OTU1740	2177
## OTU1741	474
## OTU1742	1140
## OTU1743	1439
## OTU1744	1441
## OTU1745	691
## OTU1746	1592
## OTU1747	479
## OTU1748	1081
## OTU1749	413
## OTU1750	137
## OTU1751	245
## OTU1752	804
## OTU1753	229
## OTU1754	1230

## OTU1755	524
## OTU1756	818
## OTU1757	406
## OTU1758	602
## OTU1759	1002
## OTU1760	1886
## OTU1761	1721
## OTU1762	688
## OTU1763	1307
## OTU1764	2216
## OTU1765	2090
## OTU1766	1076
## OTU1767	887
## OTU1768	1124
## OTU1769	1239
## OTU1770	232
## OTU1771	438
## OTU1772	1584
## OTU1773	2220
## OTU1774	808
## OTU1775	2143
## OTU1776	98
## OTU1777	1743
## OTU1778	1561
## OTU1779	147
## OTU1780	1489
## OTU1781	1779
## OTU1782	706
## OTU1783	645
## OTU1784	230
## OTU1785	358
## OTU1786	1219
## OTU1787	1150
## OTU1788	1268
## OTU1789	2054
## OTU1790	2138
## OTU1791	1833
## OTU1792	1858
## OTU1793	1983
## OTU1794	186
## OTU1795	1892
## OTU1796	722
## OTU1797	1092
## OTU1798	284
## OTU1799	592
## OTU1800	1599
## OTU1801	1421
## OTU1802	2021
## OTU1803	554
## OTU1804	850
## OTU1805	2070
## OTU1806	807
## OTU1807	1237
## OTU1808	2010

## OTU1809	873
## OTU1810	2020
## OTU1811	1330
## OTU1812	316
## OTU1813	1794
## OTU1814	175
## OTU1815	2093
## OTU1816	1735
## OTU1817	677
## OTU1818	739
## OTU1819	2109
## OTU1820	1696
## OTU1821	2103
## OTU1822	1207
## OTU1823	162
## OTU1824	1605
## OTU1825	2081
## OTU1826	749
## OTU1827	2163
## OTU1828	1126
## OTU1829	132
## OTU1830	370
## OTU1831	111
## OTU1832	1061
## OTU1833	1126
## OTU1834	829
## OTU1835	1969
## OTU1836	493
## OTU1837	1863
## OTU1838	707
## OTU1839	149
## OTU1840	1533
## OTU1841	541
## OTU1842	385
## OTU1843	187
## OTU1844	1886
## OTU1845	1882
## OTU1846	2055
## OTU1847	1986
## OTU1848	568
## OTU1849	1638
## OTU1850	889
## OTU1851	406
## OTU1852	1621
## OTU1853	989
## OTU1854	1672
## OTU1855	308
## OTU1856	291
## OTU1857	1368
## OTU1858	586
## OTU1859	1886
## OTU1860	435
## OTU1861	1853
## OTU1862	394

##	OTU1863	2029
##	OTU1864	1983
##	OTU1865	1014
##	OTU1866	219
##	OTU1867	902
##	OTU1868	1234
##	OTU1869	1211
##	OTU1870	1555
##	OTU1871	81
##	OTU1872	2036
##	OTU1873	2083
##	OTU1874	1880
##	OTU1875	1308
##	OTU1876	227
##	OTU1877	948
##	OTU1878	590
##	OTU1879	1554
##	OTU1880	1778
##	OTU1881	88
##	OTU1882	611
##	OTU1883	1822
##	OTU1884	1325
##	OTU1885	873
##	OTU1886	1496
##	OTU1887	379
##	OTU1888	1152
##	OTU1889	2188
##	OTU1890	299
##	OTU1891	1387
##	OTU1892	1842
##	OTU1893	339
##	OTU1894	1131
##	OTU1895	282
##	OTU1896	2087
##	OTU1897	145
##	OTU1898	23
##	OTU1899	1243
##	OTU1900	262
##	OTU1901	550
##	OTU1902	1214
##	OTU1903	1995
##	OTU1904	57
##	OTU1905	1609
##	OTU1906	527
##	OTU1907	995
##	OTU1908	114
##	OTU1909	324
##	OTU1910	1144
##	OTU1911	208
##	OTU1912	2169
##	OTU1913	800
##	OTU1914	659
##	OTU1915	833
##	OTU1916	2054

## OTU1917	17
## OTU1918	446
## OTU1919	1956
## OTU1920	415
## OTU1921	203
## OTU1922	2233
## OTU1923	60
## OTU1924	2035
## OTU1925	898
## OTU1926	794
## OTU1927	1659
## OTU1928	632
## OTU1929	1089
## OTU1930	181
## OTU1931	1238
## OTU1932	775
## OTU1933	62
## OTU1934	1265
## OTU1935	1685
## OTU1936	414
## OTU1937	1076
## OTU1938	1577
## OTU1939	1268
## OTU1940	2193
## OTU1941	2144
## OTU1942	308
## OTU1943	220
## OTU1944	1916
## OTU1945	1223
## OTU1946	1168
## OTU1947	1878
## OTU1948	2212
## OTU1949	617
## OTU1950	1416
## OTU1951	1396
## OTU1952	512
## OTU1953	2235
## OTU1954	1316
## OTU1955	955
## OTU1956	1031
## OTU1957	845
## OTU1958	1912
## OTU1959	2102
## OTU1960	214
## OTU1961	1488
## OTU1962	176
## OTU1963	503
## OTU1964	1570
## OTU1965	1183
## OTU1966	1392
## OTU1967	2229
## OTU1968	1007
## OTU1969	248
## OTU1970	1716

##	OTU1971	400
##	OTU1972	1830
##	OTU1973	1369
##	OTU1974	965
##	OTU1975	103
##	OTU1976	207
##	OTU1977	384
##	OTU1978	1942
##	OTU1979	1302
##	OTU1980	564
##	OTU1981	1400
##	OTU1982	1926
##	OTU1983	844
##	OTU1984	1000
##	OTU1985	135
##	OTU1986	1789
##	OTU1987	1282
##	OTU1988	1914
##	OTU1989	583
##	OTU1990	166
##	OTU1991	463
##	OTU1992	584
##	OTU1993	1259
##	OTU1994	792
##	OTU1995	1085
##	OTU1996	1523
##	OTU1997	1003
##	OTU1998	858
##	OTU1999	178
##	OTU2000	398
##	OTU2001	748
##	OTU2002	473
##	OTU2003	976
##	OTU2004	1420
##	OTU2005	1961
##	OTU2006	684
##	OTU2007	473
##	OTU2008	195
##	OTU2009	428
##	OTU2010	1944
##	OTU2011	22
##	OTU2012	1695
##	OTU2013	1508
##	OTU2014	1101
##	OTU2015	582
##	OTU2016	2093
##	OTU2017	1876
##	OTU2018	1816
##	OTU2019	929
##	OTU2020	2035
##	OTU2021	1387
##	OTU2022	283
##	OTU2023	599
##	OTU2024	1499

##	OTU2025	2220
##	OTU2026	456
##	OTU2027	1401
##	OTU2028	258
##	OTU2029	2169
##	OTU2030	3
##	OTU2031	1048
##	OTU2032	1499
##	OTU2033	186
##	OTU2034	673
##	OTU2035	435
##	OTU2036	221
##	OTU2037	171
##	OTU2038	1357
##	OTU2039	100
##	OTU2040	94
##	OTU2041	1578
##	OTU2042	1654
##	OTU2043	581
##	OTU2044	367
##	OTU2045	734
##	OTU2046	1033
##	OTU2047	1810
##	OTU2048	1677
##	OTU2049	1631
##	OTU2050	1794
##	OTU2051	675
##	OTU2052	1826
##	OTU2053	1196
##	OTU2054	1810
##	OTU2055	1155
##	OTU2056	1288
##	OTU2057	750
##	OTU2058	878
##	OTU2059	1194
##	OTU2060	1443
##	OTU2061	2140
##	OTU2062	1905
##	OTU2063	1791
##	OTU2064	745
##	OTU2065	1251
##	OTU2066	1617
##	OTU2067	1140
##	OTU2068	1013
##	OTU2069	1309
##	OTU2070	568
##	OTU2071	2135
##	OTU2072	266
##	OTU2073	1331
##	OTU2074	493
##	OTU2075	1004
##	OTU2076	1518
##	OTU2077	914
##	OTU2078	1074

##	OTU2079	1633
##	OTU2080	700
##	OTU2081	47
##	OTU2082	359
##	OTU2083	524
##	OTU2084	702
##	OTU2085	1726
##	OTU2086	217
##	OTU2087	880
##	OTU2088	1730
##	OTU2089	1338
##	OTU2090	2122
##	OTU2091	1523
##	OTU2092	2001
##	OTU2093	2197
##	OTU2094	1861
##	OTU2095	1612
##	OTU2096	1028
##	OTU2097	572
##	OTU2098	1223
##	OTU2099	1885
##	OTU2100	695
##	OTU2101	1624
##	OTU2102	1699
##	OTU2103	494
##	OTU2104	1555
##	OTU2105	1055
##	OTU2106	429
##	OTU2107	82
##	OTU2108	1871
##	OTU2109	667
##	OTU2110	655
##	OTU2111	1065
##	OTU2112	1676
##	OTU2113	1713
##	OTU2114	925
##	OTU2115	2130
##	OTU2116	293
##	OTU2117	898
##	OTU2118	2184
##	OTU2119	1564
##	OTU2120	388
##	OTU2121	1143
##	OTU2122	52
##	OTU2123	726
##	OTU2124	1995
##	OTU2125	2077
##	OTU2126	615
##	OTU2127	1150
##	OTU2128	986
##	OTU2129	1411
##	OTU2130	1473
##	OTU2131	921
##	OTU2132	1339

##	OTU2133	1951
##	OTU2134	1385
##	OTU2135	1715
##	OTU2136	220
##	OTU2137	384
##	OTU2138	1854
##	OTU2139	138
##	OTU2140	1623
##	OTU2141	1368
##	OTU2142	521
##	OTU2143	253
##	OTU2144	1093
##	OTU2145	2015
##	OTU2146	979
##	OTU2147	1320
##	OTU2148	1132
##	OTU2149	722
##	OTU2150	1751
##	OTU2151	1378
##	OTU2152	722
##	OTU2153	1555
##	OTU2154	1285
##	OTU2155	423
##	OTU2156	1876
##	OTU2157	1644
##	OTU2158	1187
##	OTU2159	1626
##	OTU2160	806
##	OTU2161	598
##	OTU2162	113
##	OTU2163	1949
##	OTU2164	731
##	OTU2165	427
##	OTU2166	2026
##	OTU2167	774
##	OTU2168	837
##	OTU2169	1133
##	OTU2170	1550
##	OTU2171	2043
##	OTU2172	444
##	OTU2173	1451
##	OTU2174	432
##	OTU2175	1126
##	OTU2176	2039
##	OTU2177	595
##	OTU2178	2205
##	OTU2179	1949
##	OTU2180	400
##	OTU2181	2181
##	OTU2182	190
##	OTU2183	1921
##	OTU2184	318
##	OTU2185	1396
##	OTU2186	273

##	OTU2187	2223
##	OTU2188	1770
##	OTU2189	944
##	OTU2190	1155
##	OTU2191	2025
##	OTU2192	779
##	OTU2193	288
##	OTU2194	1086
##	OTU2195	1763
##	OTU2196	488
##	OTU2197	1442
##	OTU2198	191
##	OTU2199	56
##	OTU2200	513
##	OTU2201	2141
##	OTU2202	2148
##	OTU2203	586
##	OTU2204	83
##	OTU2205	2045
##	OTU2206	919
##	OTU2207	1009
##	OTU2208	626
##	OTU2209	1104
##	OTU2210	952
##	OTU2211	356
##	OTU2212	2068
##	OTU2213	493
##	OTU2214	1185
##	OTU2215	1822
##	OTU2216	725
##	OTU2217	968
##	OTU2218	171
##	OTU2219	907
##	OTU2220	1773
##	OTU2221	1656
##	OTU2222	770
##	OTU2223	682
##	OTU2224	807
##	OTU2225	38
##	OTU2226	202
##	OTU2227	723
##	OTU2228	1774
##	OTU2229	906
##	OTU2230	139
##	OTU2231	1267
##	OTU2232	208
##	OTU2233	2043
##	OTU2234	2003
##	OTU2235	327
##	OTU2236	574
##	OTU2237	1884
##	OTU2238	812
##	OTU2239	220
##	OTU2240	2058

```
## OTU2241      1816
```

Creating a taxonomy table

```
taxmat = matrix(sample(letters, 2241, replace = TRUE), nrow = nrow(otumat), ncol = 7)
rownames(taxmat) <- rownames(otumat)
colnames(taxmat) <- c("Domain", "Phylum", "Class", "Order", "Family", "Genus", "Species")
options(max.print=1000000) # the maximum print set to 1000000
taxmat
```

##	Domain	Phylum	Class	Order	Family	Genus	Species
## OTU1	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU2	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU3	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU4	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU5	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU6	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU7	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU8	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU9	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU10	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU11	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU12	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU13	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU14	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU15	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU16	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU17	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU18	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU19	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU20	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU21	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU22	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU23	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU24	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU25	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU26	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU27	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU28	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU29	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU30	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU31	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU32	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU33	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU34	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU35	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU36	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU37	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU38	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU39	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU40	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU41	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU42	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU43	"u"	"u"	"u"	"u"	"u"	"u"	"u"

## OTU44	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU45	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU46	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU47	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU48	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU49	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU50	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU51	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU52	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU53	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU54	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU55	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU56	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU57	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU58	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU59	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU60	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU61	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU62	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU63	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU64	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU65	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU66	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU67	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU68	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU69	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU70	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU71	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU72	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU73	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU74	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU75	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU76	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU77	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU78	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU79	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU80	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU81	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU82	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU83	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU84	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU85	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU86	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU87	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU88	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU89	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU90	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU91	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU92	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU93	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU94	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU95	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU96	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU97	"j"	"j"	"j"	"j"	"j"	"j"	"j"

## OTU98	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU99	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU100	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU101	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU102	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU103	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU104	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU105	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU106	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU107	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU108	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU109	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU110	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU111	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU112	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU113	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU114	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU115	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU116	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU117	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU118	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU119	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU120	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU121	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU122	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU123	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU124	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU125	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU126	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU127	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU128	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU129	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU130	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU131	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU132	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU133	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU134	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU135	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU136	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU137	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU138	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU139	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU140	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU141	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU142	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU143	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU144	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU145	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU146	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU147	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU148	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU149	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU150	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU151	"r"	"r"	"r"	"r"	"r"	"r"	"r"

## OTU152	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU153	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU154	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU155	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU156	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU157	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU158	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU159	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU160	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU161	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU162	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU163	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU164	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU165	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU166	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU167	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU168	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU169	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU170	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU171	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU172	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU173	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU174	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU175	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU176	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU177	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU178	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU179	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU180	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU181	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU182	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU183	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU184	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU185	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU186	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU187	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU188	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU189	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU190	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU191	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU192	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU193	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU194	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU195	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU196	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU197	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU198	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU199	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU200	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU201	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU202	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU203	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU204	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU205	"b"	"b"	"b"	"b"	"b"	"b"	"b"

##	OTU206	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU207	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU208	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU209	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU210	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU211	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU212	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU213	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU214	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU215	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU216	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU217	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU218	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU219	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU220	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU221	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU222	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU223	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU224	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU225	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU226	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU227	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU228	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU229	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU230	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU231	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU232	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU233	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU234	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU235	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU236	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU237	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU238	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU239	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU240	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU241	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU242	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU243	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU244	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU245	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU246	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU247	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU248	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU249	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU250	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU251	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU252	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU253	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU254	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU255	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU256	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU257	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU258	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU259	"m"	"m"	"m"	"m"	"m"	"m"	"m"

##	OTU260	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU261	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU262	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU263	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU264	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU265	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU266	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU267	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU268	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU269	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU270	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU271	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU272	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU273	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU274	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU275	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU276	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU277	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU278	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU279	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU280	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU281	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU282	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU283	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU284	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU285	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU286	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU287	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU288	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU289	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU290	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU291	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU292	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU293	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU294	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU295	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU296	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU297	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU298	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU299	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU300	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU301	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU302	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU303	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU304	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU305	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU306	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU307	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU308	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU309	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU310	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU311	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU312	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU313	"l"	"l"	"l"	"l"	"l"	"l"

## OTU314	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU315	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU316	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU317	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU318	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU319	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU320	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU321	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU322	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU323	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU324	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU325	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU326	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU327	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU328	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU329	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU330	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU331	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU332	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU333	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU334	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU335	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU336	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU337	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU338	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU339	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU340	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU341	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU342	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU343	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU344	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU345	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU346	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU347	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU348	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU349	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU350	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU351	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU352	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU353	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU354	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU355	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU356	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU357	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU358	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU359	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU360	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU361	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU362	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU363	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU364	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU365	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU366	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU367	"c"	"c"	"c"	"c"	"c"	"c"	"c"

##	OTU368	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU369	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU370	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU371	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU372	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU373	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU374	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU375	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU376	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU377	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU378	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU379	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU380	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU381	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU382	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU383	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU384	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU385	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU386	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU387	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU388	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU389	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU390	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU391	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU392	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU393	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU394	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU395	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU396	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU397	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU398	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU399	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU400	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU401	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU402	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU403	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU404	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU405	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU406	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU407	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU408	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU409	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU410	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU411	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU412	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU413	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU414	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU415	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU416	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU417	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU418	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU419	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU420	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU421	"u"	"u"	"u"	"u"	"u"	"u"	"u"

##	OTU422	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU423	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU424	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU425	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU426	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU427	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU428	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU429	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU430	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU431	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU432	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU433	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU434	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU435	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU436	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU437	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU438	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU439	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU440	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU441	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU442	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU443	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU444	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU445	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU446	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU447	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU448	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU449	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU450	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU451	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU452	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU453	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU454	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU455	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU456	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU457	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU458	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU459	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU460	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU461	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU462	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU463	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU464	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU465	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU466	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU467	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU468	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU469	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU470	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU471	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU472	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU473	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU474	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU475	"v"	"v"	"v"	"v"	"v"	"v"

##	OTU476	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU477	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU478	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU479	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU480	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU481	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU482	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU483	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU484	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU485	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU486	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU487	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU488	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU489	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU490	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU491	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU492	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU493	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU494	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU495	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU496	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU497	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU498	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU499	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU500	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU501	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU502	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU503	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU504	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU505	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU506	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU507	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU508	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU509	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU510	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU511	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU512	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU513	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU514	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU515	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU516	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU517	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU518	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU519	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU520	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU521	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU522	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU523	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU524	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU525	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU526	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU527	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU528	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU529	"m"	"m"	"m"	"m"	"m"	"m"

##	OTU530	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU531	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU532	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU533	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU534	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU535	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU536	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU537	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU538	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU539	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU540	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU541	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU542	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU543	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU544	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU545	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU546	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU547	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU548	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU549	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU550	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU551	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU552	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU553	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU554	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU555	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU556	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU557	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU558	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU559	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU560	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU561	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU562	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU563	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU564	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU565	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU566	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU567	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU568	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU569	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU570	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU571	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU572	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU573	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU574	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU575	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU576	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU577	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU578	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU579	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU580	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU581	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU582	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU583	"y"	"y"	"y"	"y"	"y"	"y"	"y"

##	OTU584	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU585	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU586	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU587	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU588	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU589	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU590	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU591	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU592	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU593	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU594	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU595	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU596	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU597	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU598	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU599	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU600	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU601	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU602	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU603	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU604	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU605	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU606	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU607	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU608	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU609	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU610	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU611	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU612	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU613	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU614	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU615	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU616	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU617	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU618	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU619	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU620	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU621	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU622	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU623	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU624	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU625	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU626	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU627	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU628	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU629	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU630	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU631	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU632	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU633	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU634	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU635	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU636	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU637	"z"	"z"	"z"	"z"	"z"	"z"

## OTU638	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU639	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU640	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU641	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU642	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU643	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU644	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU645	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU646	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU647	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU648	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU649	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU650	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU651	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU652	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU653	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU654	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU655	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU656	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU657	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU658	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU659	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU660	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU661	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU662	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU663	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU664	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU665	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU666	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU667	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU668	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU669	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU670	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU671	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU672	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU673	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU674	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU675	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU676	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU677	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU678	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU679	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU680	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU681	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU682	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU683	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU684	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU685	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU686	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU687	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU688	"i"	"i"	"i"	"i"	"i"	"i"	"i"
## OTU689	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU690	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU691	"x"	"x"	"x"	"x"	"x"	"x"	"x"

##	OTU692	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU693	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU694	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU695	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU696	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU697	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU698	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU699	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU700	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU701	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU702	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU703	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU704	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU705	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU706	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU707	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU708	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU709	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU710	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU711	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU712	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU713	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU714	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU715	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU716	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU717	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU718	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU719	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU720	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU721	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU722	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU723	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU724	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU725	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU726	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU727	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU728	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU729	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU730	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU731	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU732	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU733	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU734	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU735	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU736	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU737	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU738	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU739	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU740	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU741	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU742	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU743	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU744	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU745	"q"	"q"	"q"	"q"	"q"	"q"

## OTU746	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU747	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU748	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU749	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU750	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU751	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU752	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU753	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU754	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU755	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU756	"c"	"c"	"c"	"c"	"c"	"c"	"c"
## OTU757	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU758	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU759	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU760	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU761	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU762	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU763	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU764	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU765	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU766	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU767	"m"	"m"	"m"	"m"	"m"	"m"	"m"
## OTU768	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU769	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU770	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU771	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU772	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU773	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU774	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU775	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU776	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU777	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU778	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU779	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU780	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU781	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU782	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU783	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU784	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU785	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU786	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU787	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU788	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU789	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU790	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU791	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU792	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU793	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU794	"f"	"f"	"f"	"f"	"f"	"f"	"f"
## OTU795	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU796	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU797	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU798	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU799	"d"	"d"	"d"	"d"	"d"	"d"	"d"

##	OTU800	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU801	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU802	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU803	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU804	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU805	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU806	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU807	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU808	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU809	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU810	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU811	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU812	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU813	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU814	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU815	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU816	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU817	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU818	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU819	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU820	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU821	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU822	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU823	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU824	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU825	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU826	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU827	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU828	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU829	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU830	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU831	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU832	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU833	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU834	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU835	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU836	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU837	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU838	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU839	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU840	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU841	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU842	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU843	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU844	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU845	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU846	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU847	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU848	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU849	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU850	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU851	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU852	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU853	"y"	"y"	"y"	"y"	"y"	"y"	"y"

##	OTU854	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU855	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU856	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU857	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU858	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU859	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU860	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU861	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU862	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU863	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU864	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU865	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU866	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU867	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU868	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU869	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU870	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU871	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU872	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU873	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU874	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU875	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU876	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU877	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU878	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU879	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU880	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU881	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU882	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU883	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU884	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU885	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU886	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU887	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU888	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU889	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU890	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU891	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU892	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU893	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU894	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU895	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU896	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU897	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU898	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU899	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU900	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU901	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU902	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU903	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU904	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU905	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU906	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU907	"q"	"q"	"q"	"q"	"q"	"q"	"q"

##	OTU908	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU909	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU910	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU911	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU912	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU913	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU914	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU915	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU916	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU917	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU918	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU919	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU920	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU921	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU922	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU923	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU924	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU925	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU926	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU927	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU928	"v"	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU929	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU930	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU931	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU932	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU933	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU934	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU935	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU936	"q"	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU937	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU938	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU939	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU940	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU941	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU942	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU943	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU944	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU945	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU946	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU947	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU948	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU949	"w"	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU950	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU951	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU952	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU953	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU954	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU955	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU956	"e"	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU957	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU958	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU959	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU960	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU961	"c"	"c"	"c"	"c"	"c"	"c"	"c"

##	OTU962	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU963	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU964	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU965	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU966	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU967	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU968	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU969	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU970	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU971	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU972	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU973	"s"	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU974	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU975	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU976	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU977	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU978	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU979	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU980	"x"	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU981	"g"	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU982	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU983	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU984	"u"	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU985	"j"	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU986	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU987	"t"	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU988	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU989	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU990	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU991	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU992	"o"	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU993	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU994	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU995	"n"	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU996	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU997	"c"	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU998	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU999	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1000	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1001	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1002	"m"	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1003	"r"	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1004	"b"	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1005	"l"	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1006	"k"	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1007	"h"	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1008	"f"	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1009	"d"	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1010	"p"	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1011	"z"	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1012	"a"	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1013	"i"	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1014	"y"	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1015	"r"	"r"	"r"	"r"	"r"	"r"	"r"

## OTU1016	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1017	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1018	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1019	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1020	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1021	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1022	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1023	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1024	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1025	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1026	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1027	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1028	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1029	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1030	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1031	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1032	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1033	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1034	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1035	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1036	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1037	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1038	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1039	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1040	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1041	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1042	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1043	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1044	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1045	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1046	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1047	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1048	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1049	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1050	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1051	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1052	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1053	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1054	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1055	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1056	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1057	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1058	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1059	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1060	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1061	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1062	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1063	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1064	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1065	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1066	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1067	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1068	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1069	"g"	"g"	"g"	"g"	"g"	"g"

##	OTU1070	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1071	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1072	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1073	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1074	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1075	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1076	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1077	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1078	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1079	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1080	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1081	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1082	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1083	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1084	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1085	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1086	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1087	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1088	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1089	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1090	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1091	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1092	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1093	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1094	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1095	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1096	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1097	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1098	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1099	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1100	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1101	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1102	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1103	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1104	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1105	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1106	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1107	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1108	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1109	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1110	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1111	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1112	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1113	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1114	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1115	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1116	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1117	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1118	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1119	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1120	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1121	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1122	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1123	"v"	"v"	"v"	"v"	"v"	"v"

##	OTU1124	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1125	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1126	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1127	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1128	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1129	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1130	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1131	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1132	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1133	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1134	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1135	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1136	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1137	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1138	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1139	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1140	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1141	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1142	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1143	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1144	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1145	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1146	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1147	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1148	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1149	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1150	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1151	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1152	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1153	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1154	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1155	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1156	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1157	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1158	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1159	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1160	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1161	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1162	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1163	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1164	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1165	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1166	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1167	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1168	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1169	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1170	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1171	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1172	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1173	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1174	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1175	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1176	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1177	"l"	"l"	"l"	"l"	"l"	"l"

##	OTU1178	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1179	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1180	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1181	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1182	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1183	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1184	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1185	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1186	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1187	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1188	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1189	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1190	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1191	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1192	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1193	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1194	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1195	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1196	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1197	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1198	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1199	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1200	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1201	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1202	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1203	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1204	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1205	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1206	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1207	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1208	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1209	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1210	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1211	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1212	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1213	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1214	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1215	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1216	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1217	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1218	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1219	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1220	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1221	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1222	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1223	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1224	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1225	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1226	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1227	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1228	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1229	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1230	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1231	"r"	"r"	"r"	"r"	"r"	"r"

## OTU1232	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1233	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1234	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1235	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1236	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1237	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1238	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1239	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1240	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1241	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1242	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1243	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1244	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1245	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1246	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1247	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1248	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1249	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1250	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1251	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1252	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1253	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1254	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1255	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1256	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1257	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1258	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1259	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1260	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1261	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1262	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1263	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1264	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1265	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1266	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1267	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1268	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1269	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1270	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1271	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1272	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1273	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1274	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1275	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1276	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1277	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1278	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1279	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1280	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1281	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1282	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1283	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1284	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1285	"n"	"n"	"n"	"n"	"n"	"n"

##	OTU1286	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1287	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1288	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1289	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1290	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1291	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1292	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1293	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1294	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1295	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1296	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1297	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1298	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1299	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1300	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1301	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1302	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1303	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1304	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1305	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1306	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1307	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1308	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1309	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1310	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1311	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1312	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1313	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1314	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1315	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1316	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1317	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1318	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1319	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1320	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1321	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1322	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1323	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1324	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1325	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1326	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1327	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1328	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1329	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1330	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1331	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1332	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1333	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1334	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1335	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1336	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1337	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1338	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1339	"w"	"w"	"w"	"w"	"w"	"w"

##	OTU1340	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1341	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1342	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1343	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1344	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1345	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1346	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1347	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1348	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1349	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1350	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1351	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1352	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1353	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1354	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1355	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1356	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1357	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1358	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1359	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1360	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1361	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1362	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1363	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1364	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1365	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1366	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1367	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1368	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1369	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1370	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1371	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1372	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1373	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1374	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1375	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1376	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1377	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1378	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1379	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1380	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1381	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1382	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1383	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1384	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1385	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1386	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1387	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1388	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1389	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1390	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1391	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1392	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1393	"m"	"m"	"m"	"m"	"m"	"m"

## OTU1394	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1395	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1396	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1397	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1398	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1399	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1400	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1401	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1402	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1403	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1404	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1405	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1406	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1407	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1408	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1409	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1410	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1411	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1412	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1413	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1414	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1415	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1416	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1417	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1418	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1419	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1420	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1421	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1422	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1423	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1424	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1425	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1426	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1427	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1428	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1429	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1430	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1431	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1432	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1433	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1434	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1435	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1436	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1437	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1438	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1439	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1440	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1441	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1442	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1443	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1444	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1445	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1446	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1447	"e"	"e"	"e"	"e"	"e"	"e"

## OTU1448	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1449	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1450	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1451	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1452	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1453	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1454	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1455	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1456	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1457	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1458	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1459	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1460	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1461	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1462	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1463	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1464	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1465	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1466	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1467	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1468	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1469	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1470	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1471	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1472	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1473	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1474	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1475	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1476	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1477	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1478	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1479	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1480	"c"	"c"	"c"	"c"	"c"	"c"
## OTU1481	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1482	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1483	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1484	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1485	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1486	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1487	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1488	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1489	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1490	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1491	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1492	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1493	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1494	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1495	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1496	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1497	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1498	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1499	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1500	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1501	"j"	"j"	"j"	"j"	"j"	"j"

##	OTU1502	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1503	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1504	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1505	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1506	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1507	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1508	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1509	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1510	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1511	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1512	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1513	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1514	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1515	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1516	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1517	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1518	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1519	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1520	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1521	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1522	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1523	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1524	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1525	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1526	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1527	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1528	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1529	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1530	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1531	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1532	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1533	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1534	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1535	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1536	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1537	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1538	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1539	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1540	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1541	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1542	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1543	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1544	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1545	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1546	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1547	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1548	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1549	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1550	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1551	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1552	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1553	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1554	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1555	"h"	"h"	"h"	"h"	"h"	"h"

##	OTU1556	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1557	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1558	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1559	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1560	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1561	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1562	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1563	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1564	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1565	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1566	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1567	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1568	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1569	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1570	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1571	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1572	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1573	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1574	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1575	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1576	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1577	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1578	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1579	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1580	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1581	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1582	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1583	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1584	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1585	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1586	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1587	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1588	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1589	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1590	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1591	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1592	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1593	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1594	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1595	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1596	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1597	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1598	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1599	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1600	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1601	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1602	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1603	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1604	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1605	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1606	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1607	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1608	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1609	"x"	"x"	"x"	"x"	"x"	"x"

##	OTU1610	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1611	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1612	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1613	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1614	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1615	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1616	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1617	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1618	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1619	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1620	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1621	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1622	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1623	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1624	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1625	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1626	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1627	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1628	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1629	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1630	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1631	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1632	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1633	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1634	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1635	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1636	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1637	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1638	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1639	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1640	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1641	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1642	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1643	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1644	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1645	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1646	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1647	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1648	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1649	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1650	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1651	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1652	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1653	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1654	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1655	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1656	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1657	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1658	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1659	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1660	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1661	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1662	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1663	"g"	"g"	"g"	"g"	"g"	"g"

## OTU1664	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1665	"v"	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1666	"z"	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1667	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1668	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1669	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1670	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1671	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1672	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1673	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1674	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1675	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1676	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1677	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1678	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1679	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1680	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1681	"y"	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1682	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1683	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1684	"w"	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1685	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1686	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1687	"q"	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1688	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1689	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1690	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1691	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1692	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1693	"p"	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1694	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1695	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1696	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1697	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1698	"s"	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1699	"x"	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1700	"e"	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1701	"b"	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1702	"h"	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1703	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1704	"l"	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1705	"r"	"r"	"r"	"r"	"r"	"r"	"r"
## OTU1706	"d"	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1707	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1708	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1709	"t"	"t"	"t"	"t"	"t"	"t"	"t"
## OTU1710	"a"	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1711	"g"	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1712	"o"	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1713	"u"	"u"	"u"	"u"	"u"	"u"	"u"
## OTU1714	"j"	"j"	"j"	"j"	"j"	"j"	"j"
## OTU1715	"n"	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1716	"k"	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1717	"r"	"r"	"r"	"r"	"r"	"r"	"r"

##	OTU1718	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1719	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1720	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1721	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1722	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1723	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1724	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1725	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1726	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1727	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1728	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1729	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1730	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1731	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1732	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1733	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1734	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1735	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1736	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1737	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1738	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1739	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1740	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1741	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1742	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1743	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1744	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1745	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1746	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1747	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1748	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1749	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1750	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1751	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1752	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1753	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1754	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1755	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1756	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1757	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1758	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1759	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1760	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1761	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1762	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1763	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1764	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1765	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1766	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1767	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1768	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1769	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1770	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1771	"e"	"e"	"e"	"e"	"e"	"e"

##	OTU1772	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1773	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1774	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1775	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1776	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1777	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1778	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1779	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1780	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1781	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1782	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1783	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1784	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1785	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1786	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1787	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1788	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1789	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1790	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1791	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1792	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1793	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1794	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1795	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1796	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1797	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1798	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1799	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1800	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1801	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1802	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1803	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1804	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1805	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1806	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1807	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1808	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1809	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1810	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1811	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1812	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1813	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1814	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1815	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1816	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1817	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1818	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1819	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1820	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1821	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1822	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1823	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1824	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1825	"d"	"d"	"d"	"d"	"d"	"d"

##	OTU1826	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1827	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1828	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1829	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1830	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1831	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1832	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1833	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1834	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1835	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1836	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1837	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1838	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1839	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1840	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1841	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1842	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1843	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1844	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1845	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1846	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1847	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1848	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1849	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1850	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1851	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1852	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1853	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1854	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1855	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1856	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1857	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1858	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1859	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1860	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1861	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1862	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU1863	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1864	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1865	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1866	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1867	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1868	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1869	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1870	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1871	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1872	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1873	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1874	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1875	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1876	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1877	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1878	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1879	"k"	"k"	"k"	"k"	"k"	"k"

##	OTU1880	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1881	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1882	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU1883	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1884	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1885	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU1886	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1887	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1888	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1889	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1890	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1891	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1892	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1893	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1894	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1895	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU1896	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1897	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU1898	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1899	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1900	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1901	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1902	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1903	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1904	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1905	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1906	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1907	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1908	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1909	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1910	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU1911	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU1912	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU1913	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU1914	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU1915	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1916	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1917	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1918	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1919	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1920	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1921	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1922	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU1923	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1924	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU1925	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU1926	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU1927	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU1928	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1929	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1930	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1931	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU1932	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1933	"t"	"t"	"t"	"t"	"t"	"t"

## OTU1934	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1935	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1936	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1937	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1938	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1939	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1940	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1941	"m"	"m"	"m"	"m"	"m"	"m"
## OTU1942	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1943	"v"	"v"	"v"	"v"	"v"	"v"
## OTU1944	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1945	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1946	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1947	"h"	"h"	"h"	"h"	"h"	"h"
## OTU1948	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1949	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1950	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1951	"x"	"x"	"x"	"x"	"x"	"x"
## OTU1952	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1953	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1954	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1955	"w"	"w"	"w"	"w"	"w"	"w"
## OTU1956	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1957	"y"	"y"	"y"	"y"	"y"	"y"
## OTU1958	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1959	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1960	"d"	"d"	"d"	"d"	"d"	"d"
## OTU1961	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1962	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1963	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1964	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1965	"l"	"l"	"l"	"l"	"l"	"l"
## OTU1966	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1967	"z"	"z"	"z"	"z"	"z"	"z"
## OTU1968	"s"	"s"	"s"	"s"	"s"	"s"
## OTU1969	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1970	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1971	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1972	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1973	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1974	"o"	"o"	"o"	"o"	"o"	"o"
## OTU1975	"p"	"p"	"p"	"p"	"p"	"p"
## OTU1976	"q"	"q"	"q"	"q"	"q"	"q"
## OTU1977	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1978	"a"	"a"	"a"	"a"	"a"	"a"
## OTU1979	"f"	"f"	"f"	"f"	"f"	"f"
## OTU1980	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1981	"e"	"e"	"e"	"e"	"e"	"e"
## OTU1982	"n"	"n"	"n"	"n"	"n"	"n"
## OTU1983	"k"	"k"	"k"	"k"	"k"	"k"
## OTU1984	"i"	"i"	"i"	"i"	"i"	"i"
## OTU1985	"b"	"b"	"b"	"b"	"b"	"b"
## OTU1986	"g"	"g"	"g"	"g"	"g"	"g"
## OTU1987	"q"	"q"	"q"	"q"	"q"	"q"

##	OTU1988	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU1989	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU1990	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU1991	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU1992	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU1993	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU1994	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU1995	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU1996	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU1997	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1998	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU1999	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2000	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU2001	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU2002	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU2003	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU2004	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2005	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU2006	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2007	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2008	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2009	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2010	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2011	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2012	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU2013	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2014	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2015	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2016	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2017	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2018	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2019	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2020	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2021	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2022	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2023	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU2024	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2025	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2026	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU2027	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2028	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2029	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2030	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2031	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2032	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2033	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2034	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2035	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2036	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2037	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2038	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2039	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2040	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2041	"u"	"u"	"u"	"u"	"u"	"u"

##	OTU2042	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2043	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2044	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2045	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2046	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2047	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2048	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2049	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU2050	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2051	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2052	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2053	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2054	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU2055	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2056	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2057	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU2058	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU2059	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2060	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2061	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2062	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2063	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU2064	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU2065	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU2066	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2067	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU2068	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2069	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2070	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2071	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2072	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2073	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2074	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2075	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2076	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2077	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2078	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2079	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2080	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2081	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2082	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2083	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2084	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2085	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2086	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2087	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2088	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2089	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU2090	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU2091	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2092	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2093	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2094	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2095	"m"	"m"	"m"	"m"	"m"	"m"

##	OTU2096	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2097	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2098	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2099	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2100	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2101	"v"	"v"	"v"	"v"	"v"	"v"
##	OTU2102	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2103	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2104	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2105	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2106	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2107	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2108	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2109	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2110	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU2111	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU2112	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2113	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU2114	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2115	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2116	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU2117	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU2118	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2119	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2120	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2121	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2122	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU2123	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2124	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU2125	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2126	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU2127	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2128	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2129	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2130	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU2131	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2132	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2133	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2134	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2135	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2136	"s"	"s"	"s"	"s"	"s"	"s"
##	OTU2137	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU2138	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2139	"u"	"u"	"u"	"u"	"u"	"u"
##	OTU2140	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2141	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU2142	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2143	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2144	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2145	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2146	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2147	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2148	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU2149	"o"	"o"	"o"	"o"	"o"	"o"

##	OTU2150	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2151	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2152	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2153	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2154	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU2155	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2156	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2157	"k"	"k"	"k"	"k"	"k"	"k"
##	OTU2158	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2159	"y"	"y"	"y"	"y"	"y"	"y"
##	OTU2160	"j"	"j"	"j"	"j"	"j"	"j"
##	OTU2161	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2162	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2163	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2164	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2165	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2166	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2167	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU2168	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2169	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU2170	"q"	"q"	"q"	"q"	"q"	"q"
##	OTU2171	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2172	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2173	"b"	"b"	"b"	"b"	"b"	"b"
##	OTU2174	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU2175	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2176	"i"	"i"	"i"	"i"	"i"	"i"
##	OTU2177	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2178	"c"	"c"	"c"	"c"	"c"	"c"
##	OTU2179	"t"	"t"	"t"	"t"	"t"	"t"
##	OTU2180	"m"	"m"	"m"	"m"	"m"	"m"
##	OTU2181	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2182	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2183	"g"	"g"	"g"	"g"	"g"	"g"
##	OTU2184	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2185	"p"	"p"	"p"	"p"	"p"	"p"
##	OTU2186	"z"	"z"	"z"	"z"	"z"	"z"
##	OTU2187	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2188	"a"	"a"	"a"	"a"	"a"	"a"
##	OTU2189	"e"	"e"	"e"	"e"	"e"	"e"
##	OTU2190	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2191	"o"	"o"	"o"	"o"	"o"	"o"
##	OTU2192	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU2193	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2194	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2195	"f"	"f"	"f"	"f"	"f"	"f"
##	OTU2196	"d"	"d"	"d"	"d"	"d"	"d"
##	OTU2197	"r"	"r"	"r"	"r"	"r"	"r"
##	OTU2198	"l"	"l"	"l"	"l"	"l"	"l"
##	OTU2199	"h"	"h"	"h"	"h"	"h"	"h"
##	OTU2200	"n"	"n"	"n"	"n"	"n"	"n"
##	OTU2201	"w"	"w"	"w"	"w"	"w"	"w"
##	OTU2202	"x"	"x"	"x"	"x"	"x"	"x"
##	OTU2203	"m"	"m"	"m"	"m"	"m"	"m"

```

## OTU2204 "l"      "l"      "l"      "l"      "l"      "l"      "l"
## OTU2205 "n"      "n"      "n"      "n"      "n"      "n"      "n"
## OTU2206 "z"      "z"      "z"      "z"      "z"      "z"      "z"
## OTU2207 "r"      "r"      "r"      "r"      "r"      "r"      "r"
## OTU2208 "k"      "k"      "k"      "k"      "k"      "k"      "k"
## OTU2209 "h"      "h"      "h"      "h"      "h"      "h"      "h"
## OTU2210 "e"      "e"      "e"      "e"      "e"      "e"      "e"
## OTU2211 "l"      "l"      "l"      "l"      "l"      "l"      "l"
## OTU2212 "z"      "z"      "z"      "z"      "z"      "z"      "z"
## OTU2213 "z"      "z"      "z"      "z"      "z"      "z"      "z"
## OTU2214 "z"      "z"      "z"      "z"      "z"      "z"      "z"
## OTU2215 "c"      "c"      "c"      "c"      "c"      "c"      "c"
## OTU2216 "o"      "o"      "o"      "o"      "o"      "o"      "o"
## OTU2217 "h"      "h"      "h"      "h"      "h"      "h"      "h"
## OTU2218 "j"      "j"      "j"      "j"      "j"      "j"      "j"
## OTU2219 "g"      "g"      "g"      "g"      "g"      "g"      "g"
## OTU2220 "k"      "k"      "k"      "k"      "k"      "k"      "k"
## OTU2221 "l"      "l"      "l"      "l"      "l"      "l"      "l"
## OTU2222 "n"      "n"      "n"      "n"      "n"      "n"      "n"
## OTU2223 "y"      "y"      "y"      "y"      "y"      "y"      "y"
## OTU2224 "o"      "o"      "o"      "o"      "o"      "o"      "o"
## OTU2225 "f"      "f"      "f"      "f"      "f"      "f"      "f"
## OTU2226 "f"      "f"      "f"      "f"      "f"      "f"      "f"
## OTU2227 "c"      "c"      "c"      "c"      "c"      "c"      "c"
## OTU2228 "v"      "v"      "v"      "v"      "v"      "v"      "v"
## OTU2229 "d"      "d"      "d"      "d"      "d"      "d"      "d"
## OTU2230 "p"      "p"      "p"      "p"      "p"      "p"      "p"
## OTU2231 "m"      "m"      "m"      "m"      "m"      "m"      "m"
## OTU2232 "h"      "h"      "h"      "h"      "h"      "h"      "h"
## OTU2233 "g"      "g"      "g"      "g"      "g"      "g"      "g"
## OTU2234 "g"      "g"      "g"      "g"      "g"      "g"      "g"
## OTU2235 "q"      "q"      "q"      "q"      "q"      "q"      "q"
## OTU2236 "t"      "t"      "t"      "t"      "t"      "t"      "t"
## OTU2237 "g"      "g"      "g"      "g"      "g"      "g"      "g"
## OTU2238 "m"      "m"      "m"      "m"      "m"      "m"      "m"
## OTU2239 "g"      "g"      "g"      "g"      "g"      "g"      "g"
## OTU2240 "g"      "g"      "g"      "g"      "g"      "g"      "g"
## OTU2241 "x"      "x"      "x"      "x"      "x"      "x"      "x"

```

Obtain a class of two tables

```
class(otumat)
```

```
## [1] "matrix" "array"
```

```
class(taxmat)
```

```
## [1] "matrix" "array"
```

```
class(mydata)
```

```

## [1] "sample_data"
## attr(,"package")
## [1] "phyloseq"

```

Combine the objects into a phyloseq object

```
OTU = otu_table(otumat, taxa_are_rows = TRUE)
TAX = tax_table(taxmat)
OTU
```

```
## OTU Table:          [2241 taxa and 1 samples]
##                    taxa are rows
##      Sample1
## OTU1      563
## OTU2     1296
## OTU3     1994
## OTU4      785
## OTU5      870
## OTU6     1373
## OTU7       56
## OTU8     1313
## OTU9     1091
## OTU10      603
## OTU11     2016
## OTU12     2227
## OTU13      471
## OTU14     1206
## OTU15      210
## OTU16     1580
## OTU17     1029
## OTU18     1462
## OTU19     1151
## OTU20     2140
## OTU21      679
## OTU22     1533
## OTU23      698
## OTU24      501
## OTU25     1782
## OTU26      500
## OTU27      944
## OTU28      531
## OTU29       81
## OTU30      152
## OTU31      809
## OTU32      128
## OTU33     1447
## OTU34     1129
## OTU35     1619
## OTU36     1766
## OTU37     1507
## OTU38     1949
## OTU39      640
## OTU40     1559
## OTU41     1125
## OTU42      954
## OTU43     2043
## OTU44      590
## OTU45     1270
```

## OTU46	1659
## OTU47	922
## OTU48	1621
## OTU49	145
## OTU50	1276
## OTU51	2216
## OTU52	1856
## OTU53	557
## OTU54	948
## OTU55	1304
## OTU56	525
## OTU57	204
## OTU58	2161
## OTU59	895
## OTU60	180
## OTU61	1399
## OTU62	821
## OTU63	5
## OTU64	2152
## OTU65	1520
## OTU66	681
## OTU67	1370
## OTU68	1306
## OTU69	1494
## OTU70	1561
## OTU71	1255
## OTU72	957
## OTU73	1844
## OTU74	194
## OTU75	1620
## OTU76	1310
## OTU77	102
## OTU78	2193
## OTU79	610
## OTU80	996
## OTU81	128
## OTU82	284
## OTU83	1665
## OTU84	2018
## OTU85	1177
## OTU86	410
## OTU87	128
## OTU88	59
## OTU89	274
## OTU90	1387
## OTU91	1254
## OTU92	1348
## OTU93	2125
## OTU94	1781
## OTU95	2047
## OTU96	395
## OTU97	567
## OTU98	2162
## OTU99	2027

## OTU100	1731
## OTU101	1623
## OTU102	1236
## OTU103	799
## OTU104	59
## OTU105	1690
## OTU106	1807
## OTU107	1822
## OTU108	534
## OTU109	28
## OTU110	2196
## OTU111	616
## OTU112	1415
## OTU113	1291
## OTU114	312
## OTU115	2130
## OTU116	1801
## OTU117	1047
## OTU118	323
## OTU119	910
## OTU120	1420
## OTU121	1899
## OTU122	1834
## OTU123	1411
## OTU124	1144
## OTU125	55
## OTU126	908
## OTU127	433
## OTU128	1517
## OTU129	1689
## OTU130	816
## OTU131	1129
## OTU132	1883
## OTU133	54
## OTU134	977
## OTU135	909
## OTU136	1341
## OTU137	740
## OTU138	1870
## OTU139	283
## OTU140	913
## OTU141	520
## OTU142	245
## OTU143	776
## OTU144	1335
## OTU145	2152
## OTU146	503
## OTU147	1067
## OTU148	2102
## OTU149	620
## OTU150	1718
## OTU151	364
## OTU152	2033
## OTU153	1942

## OTU154	1169
## OTU155	737
## OTU156	1756
## OTU157	1126
## OTU158	259
## OTU159	1814
## OTU160	2119
## OTU161	747
## OTU162	1325
## OTU163	1959
## OTU164	1487
## OTU165	1640
## OTU166	2223
## OTU167	830
## OTU168	1091
## OTU169	620
## OTU170	453
## OTU171	1039
## OTU172	2229
## OTU173	1822
## OTU174	2070
## OTU175	1745
## OTU176	1411
## OTU177	2072
## OTU178	1367
## OTU179	850
## OTU180	657
## OTU181	907
## OTU182	464
## OTU183	2040
## OTU184	1884
## OTU185	409
## OTU186	262
## OTU187	791
## OTU188	495
## OTU189	1564
## OTU190	1704
## OTU191	1143
## OTU192	1360
## OTU193	389
## OTU194	627
## OTU195	996
## OTU196	197
## OTU197	901
## OTU198	1951
## OTU199	1201
## OTU200	1464
## OTU201	914
## OTU202	365
## OTU203	1247
## OTU204	1820
## OTU205	477
## OTU206	2154
## OTU207	2170

## OTU208	1512
## OTU209	366
## OTU210	1467
## OTU211	1688
## OTU212	1178
## OTU213	156
## OTU214	1373
## OTU215	543
## OTU216	984
## OTU217	704
## OTU218	1487
## OTU219	1387
## OTU220	1795
## OTU221	2118
## OTU222	1825
## OTU223	1020
## OTU224	341
## OTU225	78
## OTU226	98
## OTU227	397
## OTU228	230
## OTU229	2093
## OTU230	1151
## OTU231	751
## OTU232	1405
## OTU233	1321
## OTU234	1867
## OTU235	1012
## OTU236	78
## OTU237	298
## OTU238	1553
## OTU239	742
## OTU240	425
## OTU241	883
## OTU242	378
## OTU243	2119
## OTU244	1536
## OTU245	93
## OTU246	699
## OTU247	1391
## OTU248	1759
## OTU249	1048
## OTU250	990
## OTU251	306
## OTU252	1162
## OTU253	1398
## OTU254	94
## OTU255	332
## OTU256	625
## OTU257	483
## OTU258	2093
## OTU259	1826
## OTU260	1186
## OTU261	1780

##	OTU262	1310
##	OTU263	2221
##	OTU264	1565
##	OTU265	764
##	OTU266	2137
##	OTU267	2090
##	OTU268	1293
##	OTU269	892
##	OTU270	178
##	OTU271	1388
##	OTU272	1938
##	OTU273	756
##	OTU274	481
##	OTU275	634
##	OTU276	1155
##	OTU277	1964
##	OTU278	736
##	OTU279	14
##	OTU280	2186
##	OTU281	1040
##	OTU282	1273
##	OTU283	465
##	OTU284	1355
##	OTU285	1671
##	OTU286	2237
##	OTU287	966
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##	OTU2036	221
##	OTU2037	171
##	OTU2038	1357
##	OTU2039	100
##	OTU2040	94
##	OTU2041	1578
##	OTU2042	1654
##	OTU2043	581

##	OTU2044	367
##	OTU2045	734
##	OTU2046	1033
##	OTU2047	1810
##	OTU2048	1677
##	OTU2049	1631
##	OTU2050	1794
##	OTU2051	675
##	OTU2052	1826
##	OTU2053	1196
##	OTU2054	1810
##	OTU2055	1155
##	OTU2056	1288
##	OTU2057	750
##	OTU2058	878
##	OTU2059	1194
##	OTU2060	1443
##	OTU2061	2140
##	OTU2062	1905
##	OTU2063	1791
##	OTU2064	745
##	OTU2065	1251
##	OTU2066	1617
##	OTU2067	1140
##	OTU2068	1013
##	OTU2069	1309
##	OTU2070	568
##	OTU2071	2135
##	OTU2072	266
##	OTU2073	1331
##	OTU2074	493
##	OTU2075	1004
##	OTU2076	1518
##	OTU2077	914
##	OTU2078	1074
##	OTU2079	1633
##	OTU2080	700
##	OTU2081	47
##	OTU2082	359
##	OTU2083	524
##	OTU2084	702
##	OTU2085	1726
##	OTU2086	217
##	OTU2087	880
##	OTU2088	1730
##	OTU2089	1338
##	OTU2090	2122
##	OTU2091	1523
##	OTU2092	2001
##	OTU2093	2197
##	OTU2094	1861
##	OTU2095	1612
##	OTU2096	1028
##	OTU2097	572

##	OTU2098	1223
##	OTU2099	1885
##	OTU2100	695
##	OTU2101	1624
##	OTU2102	1699
##	OTU2103	494
##	OTU2104	1555
##	OTU2105	1055
##	OTU2106	429
##	OTU2107	82
##	OTU2108	1871
##	OTU2109	667
##	OTU2110	655
##	OTU2111	1065
##	OTU2112	1676
##	OTU2113	1713
##	OTU2114	925
##	OTU2115	2130
##	OTU2116	293
##	OTU2117	898
##	OTU2118	2184
##	OTU2119	1564
##	OTU2120	388
##	OTU2121	1143
##	OTU2122	52
##	OTU2123	726
##	OTU2124	1995
##	OTU2125	2077
##	OTU2126	615
##	OTU2127	1150
##	OTU2128	986
##	OTU2129	1411
##	OTU2130	1473
##	OTU2131	921
##	OTU2132	1339
##	OTU2133	1951
##	OTU2134	1385
##	OTU2135	1715
##	OTU2136	220
##	OTU2137	384
##	OTU2138	1854
##	OTU2139	138
##	OTU2140	1623
##	OTU2141	1368
##	OTU2142	521
##	OTU2143	253
##	OTU2144	1093
##	OTU2145	2015
##	OTU2146	979
##	OTU2147	1320
##	OTU2148	1132
##	OTU2149	722
##	OTU2150	1751
##	OTU2151	1378

##	OTU2152	722
##	OTU2153	1555
##	OTU2154	1285
##	OTU2155	423
##	OTU2156	1876
##	OTU2157	1644
##	OTU2158	1187
##	OTU2159	1626
##	OTU2160	806
##	OTU2161	598
##	OTU2162	113
##	OTU2163	1949
##	OTU2164	731
##	OTU2165	427
##	OTU2166	2026
##	OTU2167	774
##	OTU2168	837
##	OTU2169	1133
##	OTU2170	1550
##	OTU2171	2043
##	OTU2172	444
##	OTU2173	1451
##	OTU2174	432
##	OTU2175	1126
##	OTU2176	2039
##	OTU2177	595
##	OTU2178	2205
##	OTU2179	1949
##	OTU2180	400
##	OTU2181	2181
##	OTU2182	190
##	OTU2183	1921
##	OTU2184	318
##	OTU2185	1396
##	OTU2186	273
##	OTU2187	2223
##	OTU2188	1770
##	OTU2189	944
##	OTU2190	1155
##	OTU2191	2025
##	OTU2192	779
##	OTU2193	288
##	OTU2194	1086
##	OTU2195	1763
##	OTU2196	488
##	OTU2197	1442
##	OTU2198	191
##	OTU2199	56
##	OTU2200	513
##	OTU2201	2141
##	OTU2202	2148
##	OTU2203	586
##	OTU2204	83
##	OTU2205	2045

```

## OTU2206      919
## OTU2207     1009
## OTU2208      626
## OTU2209     1104
## OTU2210      952
## OTU2211      356
## OTU2212     2068
## OTU2213      493
## OTU2214     1185
## OTU2215     1822
## OTU2216      725
## OTU2217      968
## OTU2218      171
## OTU2219      907
## OTU2220     1773
## OTU2221     1656
## OTU2222      770
## OTU2223      682
## OTU2224      807
## OTU2225       38
## OTU2226      202
## OTU2227      723
## OTU2228     1774
## OTU2229      906
## OTU2230      139
## OTU2231     1267
## OTU2232      208
## OTU2233     2043
## OTU2234     2003
## OTU2235      327
## OTU2236      574
## OTU2237     1884
## OTU2238      812
## OTU2239      220
## OTU2240     2058
## OTU2241     1816

```

```

physeq = phyloseq(OTU, TAX)
physeq

```

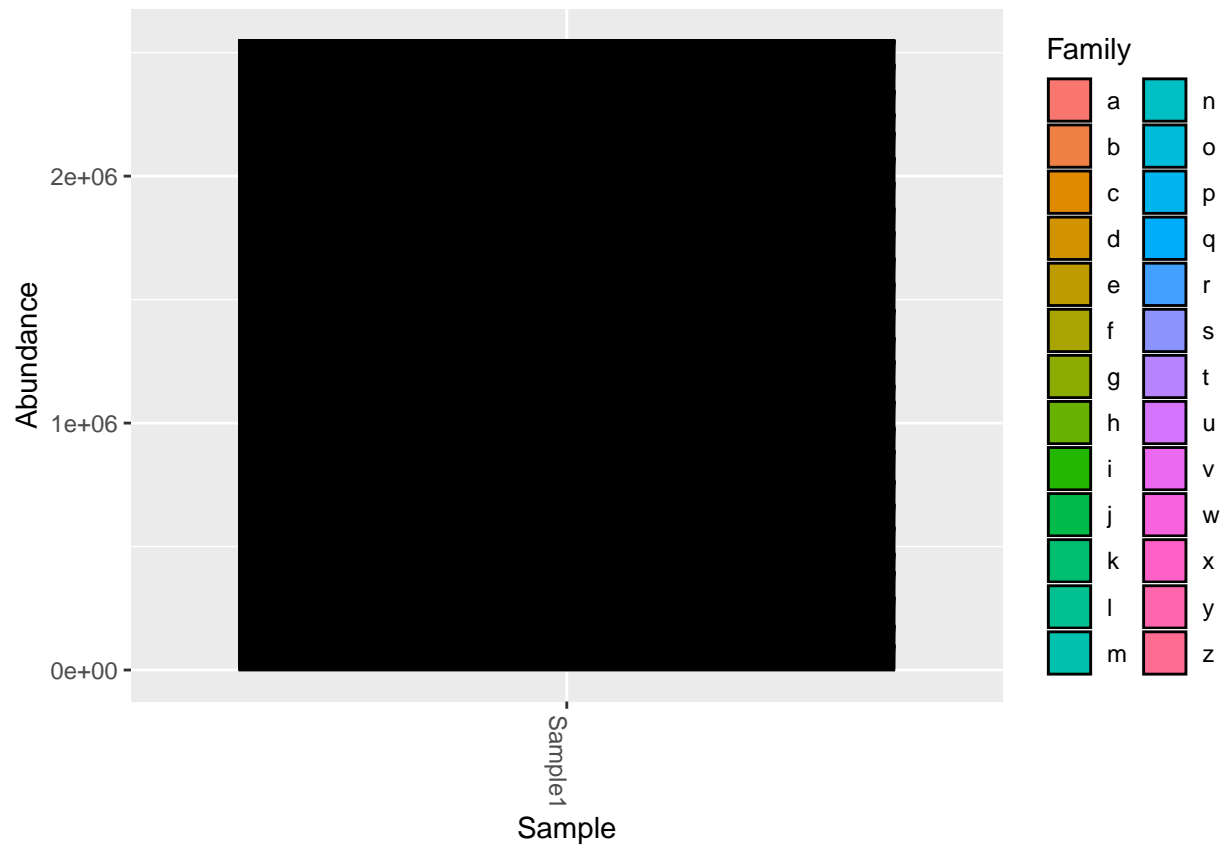
```

## phyloseq-class experiment-level object
## otu_table()   OTU Table:             [ 2241 taxa and 1 samples ]
## tax_table()   Taxonomy Table:        [ 2241 taxa by 7 taxonomic ranks ]

```

OTU Abundance

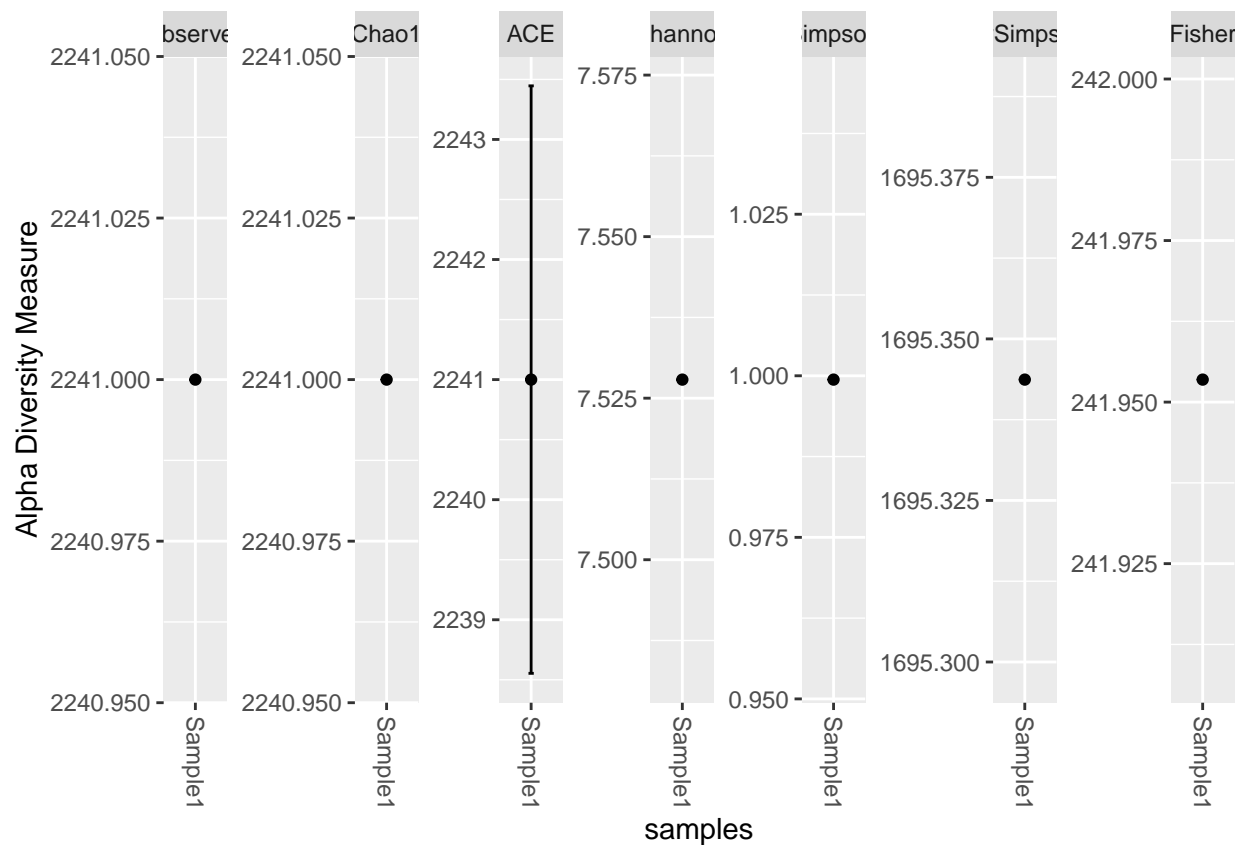
```
plot_bar(physeq, fill = "Family")
```



A plot of alpha diversity

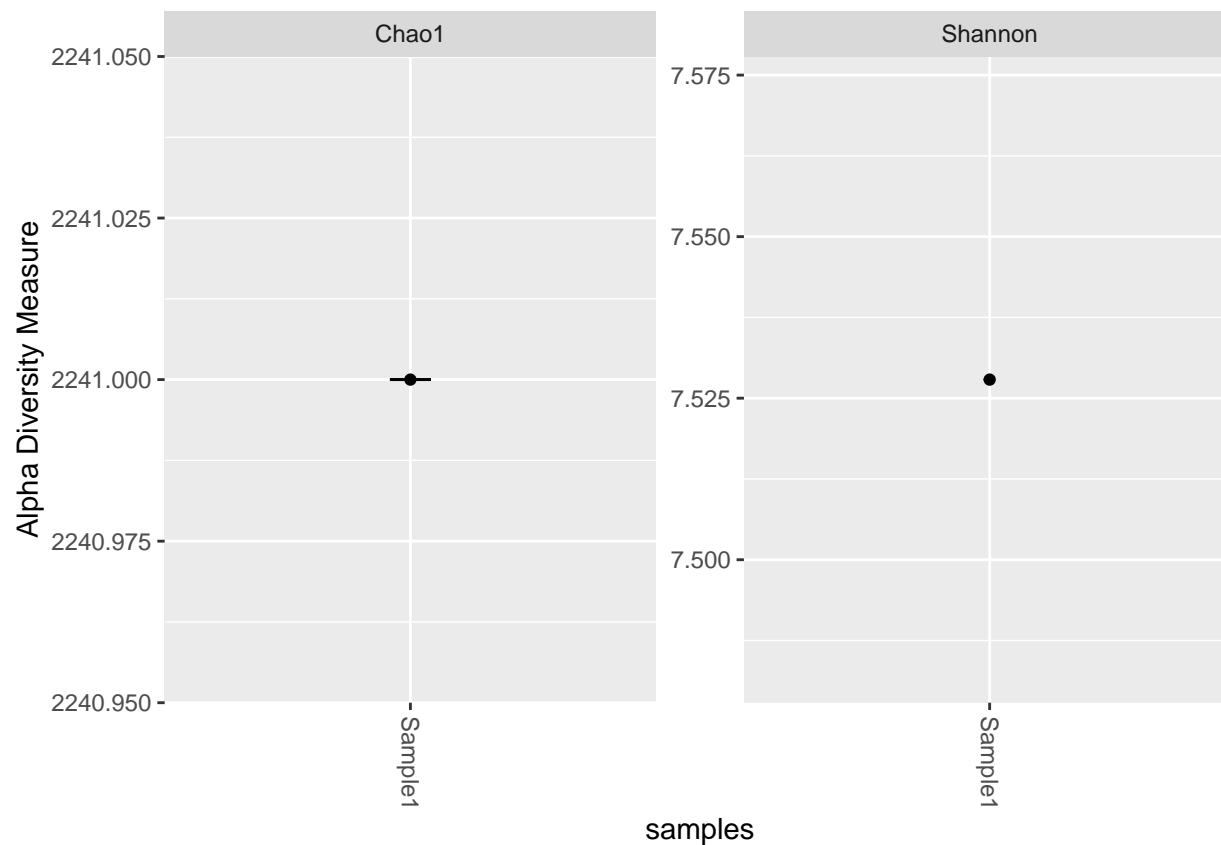
```
plot_richness(OTU)
```

```
## Warning in estimate_richness(physeq, split = TRUE, measures = measures): The data you have provided contains
## any singletons. This is highly suspicious. Results of richness
## estimates (for example) are probably unreliable, or wrong, if you have already
## trimmed low-abundance taxa from the data.
##
## We recommended that you find the un-trimmed data and retry.
```



```
plot_richness(OTU, measures=c("Chao1", "Shannon"))
```

```
## Warning in estimate_richness(physeq, split = TRUE, measures = measures): The data you have provided contains
## any singletons. This is highly suspicious. Results of richness
## estimates (for example) are probably unreliable, or wrong, if you have already
## trimmed low-abundance taxa from the data.
##
## We recommended that you find the un-trimmed data and retry.
```

Ordination Remove the OTU that do not appear more than five times by filtering and pruning.

```
GF = genefilter_sample(OTU, filterfun_sample(function(x) x > 5), A=0.5*nsamples(OTU))
GO = prune_taxa(GF, OTU)
GO
```

```
## OTU Table:          [2238 taxa and 1 samples]
##                    taxa are rows
##      Sample1
## OTU1      563
## OTU2     1296
## OTU3     1994
## OTU4      785
## OTU5      870
## OTU6     1373
## OTU7       56
## OTU8     1313
## OTU9     1091
## OTU10      603
## OTU11     2016
## OTU12     2227
## OTU13      471
## OTU14     1206
## OTU15      210
## OTU16     1580
## OTU17     1029
## OTU18     1462
```

## OTU19	1151
## OTU20	2140
## OTU21	679
## OTU22	1533
## OTU23	698
## OTU24	501
## OTU25	1782
## OTU26	500
## OTU27	944
## OTU28	531
## OTU29	81
## OTU30	152
## OTU31	809
## OTU32	128
## OTU33	1447
## OTU34	1129
## OTU35	1619
## OTU36	1766
## OTU37	1507
## OTU38	1949
## OTU39	640
## OTU40	1559
## OTU41	1125
## OTU42	954
## OTU43	2043
## OTU44	590
## OTU45	1270
## OTU46	1659
## OTU47	922
## OTU48	1621
## OTU49	145
## OTU50	1276
## OTU51	2216
## OTU52	1856
## OTU53	557
## OTU54	948
## OTU55	1304
## OTU56	525
## OTU57	204
## OTU58	2161
## OTU59	895
## OTU60	180
## OTU61	1399
## OTU62	821
## OTU64	2152
## OTU65	1520
## OTU66	681
## OTU67	1370
## OTU68	1306
## OTU69	1494
## OTU70	1561
## OTU71	1255
## OTU72	957
## OTU73	1844

## OTU74	194
## OTU75	1620
## OTU76	1310
## OTU77	102
## OTU78	2193
## OTU79	610
## OTU80	996
## OTU81	128
## OTU82	284
## OTU83	1665
## OTU84	2018
## OTU85	1177
## OTU86	410
## OTU87	128
## OTU88	59
## OTU89	274
## OTU90	1387
## OTU91	1254
## OTU92	1348
## OTU93	2125
## OTU94	1781
## OTU95	2047
## OTU96	395
## OTU97	567
## OTU98	2162
## OTU99	2027
## OTU100	1731
## OTU101	1623
## OTU102	1236
## OTU103	799
## OTU104	59
## OTU105	1690
## OTU106	1807
## OTU107	1822
## OTU108	534
## OTU109	28
## OTU110	2196
## OTU111	616
## OTU112	1415
## OTU113	1291
## OTU114	312
## OTU115	2130
## OTU116	1801
## OTU117	1047
## OTU118	323
## OTU119	910
## OTU120	1420
## OTU121	1899
## OTU122	1834
## OTU123	1411
## OTU124	1144
## OTU125	55
## OTU126	908
## OTU127	433

## OTU128	1517
## OTU129	1689
## OTU130	816
## OTU131	1129
## OTU132	1883
## OTU133	54
## OTU134	977
## OTU135	909
## OTU136	1341
## OTU137	740
## OTU138	1870
## OTU139	283
## OTU140	913
## OTU141	520
## OTU142	245
## OTU143	776
## OTU144	1335
## OTU145	2152
## OTU146	503
## OTU147	1067
## OTU148	2102
## OTU149	620
## OTU150	1718
## OTU151	364
## OTU152	2033
## OTU153	1942
## OTU154	1169
## OTU155	737
## OTU156	1756
## OTU157	1126
## OTU158	259
## OTU159	1814
## OTU160	2119
## OTU161	747
## OTU162	1325
## OTU163	1959
## OTU164	1487
## OTU165	1640
## OTU166	2223
## OTU167	830
## OTU168	1091
## OTU169	620
## OTU170	453
## OTU171	1039
## OTU172	2229
## OTU173	1822
## OTU174	2070
## OTU175	1745
## OTU176	1411
## OTU177	2072
## OTU178	1367
## OTU179	850
## OTU180	657
## OTU181	907

## OTU182	464
## OTU183	2040
## OTU184	1884
## OTU185	409
## OTU186	262
## OTU187	791
## OTU188	495
## OTU189	1564
## OTU190	1704
## OTU191	1143
## OTU192	1360
## OTU193	389
## OTU194	627
## OTU195	996
## OTU196	197
## OTU197	901
## OTU198	1951
## OTU199	1201
## OTU200	1464
## OTU201	914
## OTU202	365
## OTU203	1247
## OTU204	1820
## OTU205	477
## OTU206	2154
## OTU207	2170
## OTU208	1512
## OTU209	366
## OTU210	1467
## OTU211	1688
## OTU212	1178
## OTU213	156
## OTU214	1373
## OTU215	543
## OTU216	984
## OTU217	704
## OTU218	1487
## OTU219	1387
## OTU220	1795
## OTU221	2118
## OTU222	1825
## OTU223	1020
## OTU224	341
## OTU225	78
## OTU226	98
## OTU227	397
## OTU228	230
## OTU229	2093
## OTU230	1151
## OTU231	751
## OTU232	1405
## OTU233	1321
## OTU234	1867
## OTU235	1012

## OTU236	78
## OTU237	298
## OTU238	1553
## OTU239	742
## OTU240	425
## OTU241	883
## OTU242	378
## OTU243	2119
## OTU244	1536
## OTU245	93
## OTU246	699
## OTU247	1391
## OTU248	1759
## OTU249	1048
## OTU250	990
## OTU251	306
## OTU252	1162
## OTU253	1398
## OTU254	94
## OTU255	332
## OTU256	625
## OTU257	483
## OTU258	2093
## OTU259	1826
## OTU260	1186
## OTU261	1780
## OTU262	1310
## OTU263	2221
## OTU264	1565
## OTU265	764
## OTU266	2137
## OTU267	2090
## OTU268	1293
## OTU269	892
## OTU270	178
## OTU271	1388
## OTU272	1938
## OTU273	756
## OTU274	481
## OTU275	634
## OTU276	1155
## OTU277	1964
## OTU278	736
## OTU279	14
## OTU280	2186
## OTU281	1040
## OTU282	1273
## OTU283	465
## OTU284	1355
## OTU285	1671
## OTU286	2237
## OTU287	966
## OTU288	1651
## OTU289	936

## OTU290	540
## OTU291	1434
## OTU292	588
## OTU293	720
## OTU294	1098
## OTU295	1599
## OTU296	659
## OTU297	1998
## OTU298	2134
## OTU299	1656
## OTU300	481
## OTU301	1981
## OTU302	1309
## OTU303	1756
## OTU304	151
## OTU305	1052
## OTU306	1255
## OTU307	1894
## OTU308	87
## OTU309	485
## OTU310	1038
## OTU311	60
## OTU312	195
## OTU313	138
## OTU314	405
## OTU315	1771
## OTU316	873
## OTU317	1961
## OTU318	882
## OTU319	1893
## OTU320	2131
## OTU321	1734
## OTU322	780
## OTU323	1909
## OTU324	360
## OTU325	645
## OTU326	1717
## OTU327	1055
## OTU328	776
## OTU329	1113
## OTU330	2021
## OTU331	1174
## OTU332	966
## OTU333	1664
## OTU334	1383
## OTU335	1833
## OTU336	663
## OTU337	1654
## OTU338	320
## OTU339	1948
## OTU340	2167
## OTU341	1645
## OTU342	62
## OTU343	1621

## OTU344	1856
## OTU345	1377
## OTU346	752
## OTU347	1401
## OTU348	249
## OTU349	1069
## OTU350	418
## OTU351	677
## OTU352	1931
## OTU353	2119
## OTU354	1645
## OTU355	1291
## OTU356	1505
## OTU357	1477
## OTU358	1463
## OTU359	767
## OTU360	1731
## OTU361	200
## OTU362	2037
## OTU363	549
## OTU364	1227
## OTU365	2172
## OTU366	290
## OTU367	1199
## OTU368	608
## OTU369	1304
## OTU370	856
## OTU371	1242
## OTU372	2214
## OTU373	1834
## OTU374	394
## OTU375	151
## OTU376	357
## OTU377	1450
## OTU378	1675
## OTU379	197
## OTU380	2238
## OTU381	654
## OTU382	1507
## OTU383	1501
## OTU384	1916
## OTU385	1620
## OTU386	582
## OTU387	1806
## OTU388	506
## OTU389	502
## OTU390	1447
## OTU391	1594
## OTU392	580
## OTU393	1425
## OTU394	554
## OTU395	10
## OTU396	1783
## OTU397	669

## OTU398	903
## OTU399	954
## OTU400	603
## OTU401	734
## OTU402	1085
## OTU403	1047
## OTU404	1355
## OTU405	1482
## OTU406	405
## OTU407	589
## OTU408	949
## OTU409	665
## OTU410	758
## OTU411	519
## OTU412	192
## OTU413	977
## OTU414	1677
## OTU415	345
## OTU416	914
## OTU417	1266
## OTU418	974
## OTU419	1288
## OTU420	1490
## OTU421	1886
## OTU422	737
## OTU423	864
## OTU424	157
## OTU425	1889
## OTU426	788
## OTU427	1466
## OTU428	2219
## OTU429	2197
## OTU430	1196
## OTU431	547
## OTU432	1092
## OTU433	2097
## OTU434	113
## OTU435	1775
## OTU436	2093
## OTU437	1637
## OTU438	1146
## OTU439	384
## OTU440	1635
## OTU441	1908
## OTU442	836
## OTU443	1181
## OTU444	1087
## OTU445	1761
## OTU446	1899
## OTU447	248
## OTU448	1167
## OTU449	1684
## OTU450	1424
## OTU451	1305

## OTU452	1273
## OTU453	1792
## OTU454	1651
## OTU455	1776
## OTU456	295
## OTU457	1091
## OTU458	1646
## OTU459	1768
## OTU460	1494
## OTU461	538
## OTU462	1878
## OTU463	1216
## OTU464	317
## OTU465	1748
## OTU466	2151
## OTU467	1801
## OTU468	867
## OTU469	1920
## OTU470	1385
## OTU471	2238
## OTU472	1788
## OTU473	2046
## OTU474	2013
## OTU475	673
## OTU476	602
## OTU477	619
## OTU478	2057
## OTU479	1012
## OTU480	51
## OTU481	1373
## OTU482	576
## OTU483	301
## OTU484	1722
## OTU485	2182
## OTU486	2140
## OTU487	1947
## OTU488	310
## OTU489	1345
## OTU490	1270
## OTU491	1257
## OTU492	1108
## OTU493	581
## OTU494	1516
## OTU495	1991
## OTU496	1914
## OTU497	1018
## OTU498	1496
## OTU499	993
## OTU500	305
## OTU501	491
## OTU502	2178
## OTU503	644
## OTU504	1721
## OTU505	1512

## OTU506	134
## OTU507	2138
## OTU508	1109
## OTU509	1686
## OTU510	1092
## OTU511	32
## OTU512	1392
## OTU513	309
## OTU514	2124
## OTU515	199
## OTU516	1845
## OTU517	871
## OTU518	1186
## OTU519	1124
## OTU520	861
## OTU521	1794
## OTU522	331
## OTU523	1685
## OTU524	1048
## OTU525	92
## OTU526	758
## OTU527	1860
## OTU528	964
## OTU529	2143
## OTU530	978
## OTU531	1926
## OTU532	1711
## OTU533	1341
## OTU534	700
## OTU535	69
## OTU536	1283
## OTU537	1161
## OTU538	260
## OTU539	960
## OTU540	1504
## OTU541	1518
## OTU542	469
## OTU543	1926
## OTU544	1100
## OTU545	334
## OTU546	1718
## OTU547	682
## OTU548	1151
## OTU549	1038
## OTU550	1537
## OTU551	1293
## OTU552	550
## OTU553	565
## OTU554	1828
## OTU555	2003
## OTU556	111
## OTU557	403
## OTU558	1274
## OTU559	210

## OTU560	250
## OTU561	477
## OTU562	165
## OTU563	1787
## OTU564	2193
## OTU565	1685
## OTU566	1779
## OTU567	604
## OTU568	1074
## OTU569	1861
## OTU570	2050
## OTU571	1253
## OTU572	536
## OTU573	226
## OTU574	615
## OTU575	406
## OTU576	611
## OTU577	1501
## OTU578	355
## OTU579	1015
## OTU580	287
## OTU581	1347
## OTU582	40
## OTU583	1328
## OTU584	1845
## OTU585	1066
## OTU586	2081
## OTU587	1692
## OTU588	12
## OTU589	653
## OTU590	1594
## OTU591	1489
## OTU592	116
## OTU593	396
## OTU594	2060
## OTU595	1310
## OTU596	1881
## OTU597	1563
## OTU598	703
## OTU599	1304
## OTU600	50
## OTU601	763
## OTU602	1216
## OTU603	1449
## OTU604	1493
## OTU605	692
## OTU606	1309
## OTU607	54
## OTU608	1375
## OTU609	1634
## OTU610	502
## OTU611	1761
## OTU612	1814
## OTU613	661

## OTU614	2144
## OTU615	932
## OTU616	143
## OTU617	1548
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## OTU1493	1613
## OTU1494	1869
## OTU1495	1463
## OTU1496	1045
## OTU1497	1819
## OTU1498	566
## OTU1499	317
## OTU1500	661
## OTU1501	980
## OTU1502	2184
## OTU1503	1205
## OTU1504	2175
## OTU1505	425
## OTU1506	311
## OTU1507	1673
## OTU1508	1344
## OTU1509	105
## OTU1510	2172
## OTU1511	981
## OTU1512	1702
## OTU1513	144
## OTU1514	1489
## OTU1515	2162
## OTU1516	1110
## OTU1517	1008
## OTU1518	763
## OTU1519	2110
## OTU1520	629
## OTU1521	1053
## OTU1522	2231
## OTU1523	1286
## OTU1524	479
## OTU1525	81
## OTU1526	2015
## OTU1527	184
## OTU1528	2062
## OTU1529	2103
## OTU1530	421
## OTU1531	1206
## OTU1532	2093

##	OTU1533	509
##	OTU1534	1679
##	OTU1535	1809
##	OTU1536	1509
##	OTU1537	1695
##	OTU1538	883
##	OTU1539	619
##	OTU1540	2061
##	OTU1541	1105
##	OTU1542	1450
##	OTU1543	1914
##	OTU1544	1906
##	OTU1545	299
##	OTU1546	1445
##	OTU1547	1803
##	OTU1548	2126
##	OTU1549	1251
##	OTU1550	1152
##	OTU1551	1055
##	OTU1552	730
##	OTU1553	1221
##	OTU1554	1844
##	OTU1555	156
##	OTU1556	1034
##	OTU1557	107
##	OTU1558	1945
##	OTU1559	1491
##	OTU1560	1614
##	OTU1561	851
##	OTU1562	2013
##	OTU1563	1305
##	OTU1564	127
##	OTU1565	324
##	OTU1566	617
##	OTU1567	681
##	OTU1568	1203
##	OTU1569	89
##	OTU1570	1473
##	OTU1571	936
##	OTU1572	2104
##	OTU1573	838
##	OTU1574	1696
##	OTU1575	211
##	OTU1576	333
##	OTU1577	1582
##	OTU1578	832
##	OTU1579	761
##	OTU1580	1108
##	OTU1581	1951
##	OTU1582	182
##	OTU1583	2111
##	OTU1584	998
##	OTU1585	2045
##	OTU1586	1876

## OTU1587	766
## OTU1588	1025
## OTU1589	615
## OTU1590	2002
## OTU1591	81
## OTU1592	292
## OTU1593	1590
## OTU1594	1555
## OTU1595	1047
## OTU1596	67
## OTU1597	471
## OTU1598	1389
## OTU1599	1428
## OTU1600	567
## OTU1601	507
## OTU1602	1308
## OTU1603	2087
## OTU1604	41
## OTU1605	2122
## OTU1606	1510
## OTU1607	656
## OTU1608	1363
## OTU1609	723
## OTU1610	493
## OTU1611	1035
## OTU1612	1547
## OTU1613	373
## OTU1614	655
## OTU1615	1653
## OTU1616	1696
## OTU1617	1001
## OTU1618	358
## OTU1619	1513
## OTU1620	1629
## OTU1621	1240
## OTU1622	687
## OTU1623	1694
## OTU1624	1398
## OTU1625	818
## OTU1626	2085
## OTU1627	745
## OTU1628	899
## OTU1629	776
## OTU1630	971
## OTU1631	849
## OTU1632	1291
## OTU1633	1549
## OTU1634	2185
## OTU1635	1778
## OTU1636	1644
## OTU1637	1113
## OTU1638	489
## OTU1639	777
## OTU1640	1448

## OTU1641	1119
## OTU1642	2059
## OTU1643	1671
## OTU1644	149
## OTU1645	1350
## OTU1646	1488
## OTU1647	450
## OTU1648	1405
## OTU1649	89
## OTU1650	84
## OTU1651	1762
## OTU1652	2016
## OTU1653	2063
## OTU1654	1180
## OTU1655	219
## OTU1656	1683
## OTU1657	1470
## OTU1658	2045
## OTU1659	1427
## OTU1660	1427
## OTU1661	651
## OTU1662	538
## OTU1663	758
## OTU1664	1455
## OTU1665	919
## OTU1666	1016
## OTU1667	1756
## OTU1668	1267
## OTU1669	1013
## OTU1670	738
## OTU1671	863
## OTU1672	1635
## OTU1673	1619
## OTU1674	2147
## OTU1675	1409
## OTU1676	136
## OTU1677	1647
## OTU1678	1546
## OTU1679	1882
## OTU1680	1102
## OTU1681	757
## OTU1682	498
## OTU1683	80
## OTU1684	1183
## OTU1685	704
## OTU1686	657
## OTU1687	1431
## OTU1688	1214
## OTU1689	935
## OTU1690	743
## OTU1691	343
## OTU1692	475
## OTU1693	807
## OTU1694	1758

## OTU1695	249
## OTU1696	1822
## OTU1697	563
## OTU1698	124
## OTU1699	1748
## OTU1700	2081
## OTU1701	1939
## OTU1702	1093
## OTU1703	348
## OTU1704	1784
## OTU1705	1049
## OTU1706	1043
## OTU1707	504
## OTU1708	555
## OTU1709	1407
## OTU1710	169
## OTU1711	1812
## OTU1712	1017
## OTU1713	1183
## OTU1714	1810
## OTU1715	136
## OTU1716	1421
## OTU1717	2039
## OTU1718	635
## OTU1719	852
## OTU1720	57
## OTU1721	1363
## OTU1722	1772
## OTU1723	2220
## OTU1724	1102
## OTU1725	1617
## OTU1726	1694
## OTU1727	1852
## OTU1728	1175
## OTU1729	1631
## OTU1730	1018
## OTU1731	1884
## OTU1732	626
## OTU1733	965
## OTU1734	304
## OTU1735	1769
## OTU1736	122
## OTU1737	78
## OTU1738	1919
## OTU1739	2108
## OTU1740	2177
## OTU1741	474
## OTU1742	1140
## OTU1743	1439
## OTU1744	1441
## OTU1745	691
## OTU1746	1592
## OTU1747	479
## OTU1748	1081

## OTU1749	413
## OTU1750	137
## OTU1751	245
## OTU1752	804
## OTU1753	229
## OTU1754	1230
## OTU1755	524
## OTU1756	818
## OTU1757	406
## OTU1758	602
## OTU1759	1002
## OTU1760	1886
## OTU1761	1721
## OTU1762	688
## OTU1763	1307
## OTU1764	2216
## OTU1765	2090
## OTU1766	1076
## OTU1767	887
## OTU1768	1124
## OTU1769	1239
## OTU1770	232
## OTU1771	438
## OTU1772	1584
## OTU1773	2220
## OTU1774	808
## OTU1775	2143
## OTU1776	98
## OTU1777	1743
## OTU1778	1561
## OTU1779	147
## OTU1780	1489
## OTU1781	1779
## OTU1782	706
## OTU1783	645
## OTU1784	230
## OTU1785	358
## OTU1786	1219
## OTU1787	1150
## OTU1788	1268
## OTU1789	2054
## OTU1790	2138
## OTU1791	1833
## OTU1792	1858
## OTU1793	1983
## OTU1794	186
## OTU1795	1892
## OTU1796	722
## OTU1797	1092
## OTU1798	284
## OTU1799	592
## OTU1800	1599
## OTU1801	1421
## OTU1802	2021

##	OTU1803	554
##	OTU1804	850
##	OTU1805	2070
##	OTU1806	807
##	OTU1807	1237
##	OTU1808	2010
##	OTU1809	873
##	OTU1810	2020
##	OTU1811	1330
##	OTU1812	316
##	OTU1813	1794
##	OTU1814	175
##	OTU1815	2093
##	OTU1816	1735
##	OTU1817	677
##	OTU1818	739
##	OTU1819	2109
##	OTU1820	1696
##	OTU1821	2103
##	OTU1822	1207
##	OTU1823	162
##	OTU1824	1605
##	OTU1825	2081
##	OTU1826	749
##	OTU1827	2163
##	OTU1828	1126
##	OTU1829	132
##	OTU1830	370
##	OTU1831	111
##	OTU1832	1061
##	OTU1833	1126
##	OTU1834	829
##	OTU1835	1969
##	OTU1836	493
##	OTU1837	1863
##	OTU1838	707
##	OTU1839	149
##	OTU1840	1533
##	OTU1841	541
##	OTU1842	385
##	OTU1843	187
##	OTU1844	1886
##	OTU1845	1882
##	OTU1846	2055
##	OTU1847	1986
##	OTU1848	568
##	OTU1849	1638
##	OTU1850	889
##	OTU1851	406
##	OTU1852	1621
##	OTU1853	989
##	OTU1854	1672
##	OTU1855	308
##	OTU1856	291

## OTU1857	1368
## OTU1858	586
## OTU1859	1886
## OTU1860	435
## OTU1861	1853
## OTU1862	394
## OTU1863	2029
## OTU1864	1983
## OTU1865	1014
## OTU1866	219
## OTU1867	902
## OTU1868	1234
## OTU1869	1211
## OTU1870	1555
## OTU1871	81
## OTU1872	2036
## OTU1873	2083
## OTU1874	1880
## OTU1875	1308
## OTU1876	227
## OTU1877	948
## OTU1878	590
## OTU1879	1554
## OTU1880	1778
## OTU1881	88
## OTU1882	611
## OTU1883	1822
## OTU1884	1325
## OTU1885	873
## OTU1886	1496
## OTU1887	379
## OTU1888	1152
## OTU1889	2188
## OTU1890	299
## OTU1891	1387
## OTU1892	1842
## OTU1893	339
## OTU1894	1131
## OTU1895	282
## OTU1896	2087
## OTU1897	145
## OTU1898	23
## OTU1899	1243
## OTU1900	262
## OTU1901	550
## OTU1902	1214
## OTU1903	1995
## OTU1904	57
## OTU1905	1609
## OTU1906	527
## OTU1907	995
## OTU1908	114
## OTU1909	324
## OTU1910	1144

##	OTU1911	208
##	OTU1912	2169
##	OTU1913	800
##	OTU1914	659
##	OTU1915	833
##	OTU1916	2054
##	OTU1917	17
##	OTU1918	446
##	OTU1919	1956
##	OTU1920	415
##	OTU1921	203
##	OTU1922	2233
##	OTU1923	60
##	OTU1924	2035
##	OTU1925	898
##	OTU1926	794
##	OTU1927	1659
##	OTU1928	632
##	OTU1929	1089
##	OTU1930	181
##	OTU1931	1238
##	OTU1932	775
##	OTU1933	62
##	OTU1934	1265
##	OTU1935	1685
##	OTU1936	414
##	OTU1937	1076
##	OTU1938	1577
##	OTU1939	1268
##	OTU1940	2193
##	OTU1941	2144
##	OTU1942	308
##	OTU1943	220
##	OTU1944	1916
##	OTU1945	1223
##	OTU1946	1168
##	OTU1947	1878
##	OTU1948	2212
##	OTU1949	617
##	OTU1950	1416
##	OTU1951	1396
##	OTU1952	512
##	OTU1953	2235
##	OTU1954	1316
##	OTU1955	955
##	OTU1956	1031
##	OTU1957	845
##	OTU1958	1912
##	OTU1959	2102
##	OTU1960	214
##	OTU1961	1488
##	OTU1962	176
##	OTU1963	503
##	OTU1964	1570

##	OTU1965	1183
##	OTU1966	1392
##	OTU1967	2229
##	OTU1968	1007
##	OTU1969	248
##	OTU1970	1716
##	OTU1971	400
##	OTU1972	1830
##	OTU1973	1369
##	OTU1974	965
##	OTU1975	103
##	OTU1976	207
##	OTU1977	384
##	OTU1978	1942
##	OTU1979	1302
##	OTU1980	564
##	OTU1981	1400
##	OTU1982	1926
##	OTU1983	844
##	OTU1984	1000
##	OTU1985	135
##	OTU1986	1789
##	OTU1987	1282
##	OTU1988	1914
##	OTU1989	583
##	OTU1990	166
##	OTU1991	463
##	OTU1992	584
##	OTU1993	1259
##	OTU1994	792
##	OTU1995	1085
##	OTU1996	1523
##	OTU1997	1003
##	OTU1998	858
##	OTU1999	178
##	OTU2000	398
##	OTU2001	748
##	OTU2002	473
##	OTU2003	976
##	OTU2004	1420
##	OTU2005	1961
##	OTU2006	684
##	OTU2007	473
##	OTU2008	195
##	OTU2009	428
##	OTU2010	1944
##	OTU2011	22
##	OTU2012	1695
##	OTU2013	1508
##	OTU2014	1101
##	OTU2015	582
##	OTU2016	2093
##	OTU2017	1876
##	OTU2018	1816

##	OTU2019	929
##	OTU2020	2035
##	OTU2021	1387
##	OTU2022	283
##	OTU2023	599
##	OTU2024	1499
##	OTU2025	2220
##	OTU2026	456
##	OTU2027	1401
##	OTU2028	258
##	OTU2029	2169
##	OTU2031	1048
##	OTU2032	1499
##	OTU2033	186
##	OTU2034	673
##	OTU2035	435
##	OTU2036	221
##	OTU2037	171
##	OTU2038	1357
##	OTU2039	100
##	OTU2040	94
##	OTU2041	1578
##	OTU2042	1654
##	OTU2043	581
##	OTU2044	367
##	OTU2045	734
##	OTU2046	1033
##	OTU2047	1810
##	OTU2048	1677
##	OTU2049	1631
##	OTU2050	1794
##	OTU2051	675
##	OTU2052	1826
##	OTU2053	1196
##	OTU2054	1810
##	OTU2055	1155
##	OTU2056	1288
##	OTU2057	750
##	OTU2058	878
##	OTU2059	1194
##	OTU2060	1443
##	OTU2061	2140
##	OTU2062	1905
##	OTU2063	1791
##	OTU2064	745
##	OTU2065	1251
##	OTU2066	1617
##	OTU2067	1140
##	OTU2068	1013
##	OTU2069	1309
##	OTU2070	568
##	OTU2071	2135
##	OTU2072	266
##	OTU2073	1331

## OTU2074	493
## OTU2075	1004
## OTU2076	1518
## OTU2077	914
## OTU2078	1074
## OTU2079	1633
## OTU2080	700
## OTU2081	47
## OTU2082	359
## OTU2083	524
## OTU2084	702
## OTU2085	1726
## OTU2086	217
## OTU2087	880
## OTU2088	1730
## OTU2089	1338
## OTU2090	2122
## OTU2091	1523
## OTU2092	2001
## OTU2093	2197
## OTU2094	1861
## OTU2095	1612
## OTU2096	1028
## OTU2097	572
## OTU2098	1223
## OTU2099	1885
## OTU2100	695
## OTU2101	1624
## OTU2102	1699
## OTU2103	494
## OTU2104	1555
## OTU2105	1055
## OTU2106	429
## OTU2107	82
## OTU2108	1871
## OTU2109	667
## OTU2110	655
## OTU2111	1065
## OTU2112	1676
## OTU2113	1713
## OTU2114	925
## OTU2115	2130
## OTU2116	293
## OTU2117	898
## OTU2118	2184
## OTU2119	1564
## OTU2120	388
## OTU2121	1143
## OTU2122	52
## OTU2123	726
## OTU2124	1995
## OTU2125	2077
## OTU2126	615
## OTU2127	1150

##	OTU2128	986
##	OTU2129	1411
##	OTU2130	1473
##	OTU2131	921
##	OTU2132	1339
##	OTU2133	1951
##	OTU2134	1385
##	OTU2135	1715
##	OTU2136	220
##	OTU2137	384
##	OTU2138	1854
##	OTU2139	138
##	OTU2140	1623
##	OTU2141	1368
##	OTU2142	521
##	OTU2143	253
##	OTU2144	1093
##	OTU2145	2015
##	OTU2146	979
##	OTU2147	1320
##	OTU2148	1132
##	OTU2149	722
##	OTU2150	1751
##	OTU2151	1378
##	OTU2152	722
##	OTU2153	1555
##	OTU2154	1285
##	OTU2155	423
##	OTU2156	1876
##	OTU2157	1644
##	OTU2158	1187
##	OTU2159	1626
##	OTU2160	806
##	OTU2161	598
##	OTU2162	113
##	OTU2163	1949
##	OTU2164	731
##	OTU2165	427
##	OTU2166	2026
##	OTU2167	774
##	OTU2168	837
##	OTU2169	1133
##	OTU2170	1550
##	OTU2171	2043
##	OTU2172	444
##	OTU2173	1451
##	OTU2174	432
##	OTU2175	1126
##	OTU2176	2039
##	OTU2177	595
##	OTU2178	2205
##	OTU2179	1949
##	OTU2180	400
##	OTU2181	2181

##	OTU2182	190
##	OTU2183	1921
##	OTU2184	318
##	OTU2185	1396
##	OTU2186	273
##	OTU2187	2223
##	OTU2188	1770
##	OTU2189	944
##	OTU2190	1155
##	OTU2191	2025
##	OTU2192	779
##	OTU2193	288
##	OTU2194	1086
##	OTU2195	1763
##	OTU2196	488
##	OTU2197	1442
##	OTU2198	191
##	OTU2199	56
##	OTU2200	513
##	OTU2201	2141
##	OTU2202	2148
##	OTU2203	586
##	OTU2204	83
##	OTU2205	2045
##	OTU2206	919
##	OTU2207	1009
##	OTU2208	626
##	OTU2209	1104
##	OTU2210	952
##	OTU2211	356
##	OTU2212	2068
##	OTU2213	493
##	OTU2214	1185
##	OTU2215	1822
##	OTU2216	725
##	OTU2217	968
##	OTU2218	171
##	OTU2219	907
##	OTU2220	1773
##	OTU2221	1656
##	OTU2222	770
##	OTU2223	682
##	OTU2224	807
##	OTU2225	38
##	OTU2226	202
##	OTU2227	723
##	OTU2228	1774
##	OTU2229	906
##	OTU2230	139
##	OTU2231	1267
##	OTU2232	208
##	OTU2233	2043
##	OTU2234	2003
##	OTU2235	327

```
## OTU2236      574
## OTU2237     1884
## OTU2238      812
## OTU2239      220
## OTU2240     2058
## OTU2241     1816
```

Transform to even sampling depth

```
G0 = transform_sample_counts(G0, function(x) 1E6 * x/sum(x))
G0
```

```
## OTU Table:          [2238 taxa and 1 samples]
##                   taxa are rows
##           Sample1
## OTU1      220.971576
## OTU2      508.666364
## OTU3      782.624020
## OTU4      308.104240
## OTU5      341.465846
## OTU6      538.888054
## OTU7       21.979411
## OTU8      515.338685
## OTU9      428.206021
## OTU10     236.671155
## OTU11     791.258788
## OTU12     874.074068
## OTU13     184.862544
## OTU14     473.342311
## OTU15      82.422790
## OTU16     620.133376
## OTU17     403.871673
## OTU18     573.819617
## OTU19     451.755390
## OTU20     839.927484
## OTU21     266.500356
## OTU22     601.686370
## OTU23     273.957656
## OTU24     196.637229
## OTU25     699.416250
## OTU26     196.244739
## OTU27     370.510068
## OTU28     208.411913
## OTU29      31.791648
## OTU30      59.658401
## OTU31     317.523988
## OTU32      50.238653
## OTU33     567.932275
## OTU34     443.120621
## OTU35     635.440465
## OTU36     693.136419
## OTU37     591.481644
## OTU38     764.961993
## OTU39     251.193266
```

## OTU40	611.891097
## OTU41	441.550663
## OTU42	374.434962
## OTU43	801.856004
## OTU44	231.568792
## OTU45	498.461637
## OTU46	651.140045
## OTU47	361.875299
## OTU48	636.225444
## OTU49	56.910974
## OTU50	500.816574
## OTU51	869.756684
## OTU52	728.460472
## OTU53	218.616639
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OTU2018 712.760893
OTU2019 364.622725
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OTU2025 871.326642
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OTU2027 549.877759
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OTU2189 370.510068
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OTU2191 794.791194
OTU2192 305.749304
OTU2193 113.036970
OTU2194 426.243573
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OTU2196 191.534865
OTU2197 565.969828
OTU2198 74.965490
OTU2199 21.979411
OTU2200 201.347102
OTU2201 840.319973
OTU2202 843.067399

```
## OTU2203 229.998834
## OTU2204 32.576627
## OTU2205 802.640983
## OTU2206 360.697831
## OTU2207 396.021884
## OTU2208 245.698413
## OTU2209 433.308384
## OTU2210 373.649983
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## OTU2212 811.668241
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## OTU2214 465.100032
## OTU2215 715.115830
## OTU2216 284.554872
## OTU2217 379.929815
## OTU2218 67.115701
## OTU2219 355.987957
## OTU2220 695.883845
## OTU2221 649.962576
## OTU2222 302.216898
## OTU2223 267.677824
## OTU2224 316.739009
## OTU2225 14.914600
## OTU2226 79.282875
## OTU2227 283.769893
## OTU2228 696.276335
## OTU2229 355.595467
## OTU2230 54.556037
## OTU2231 497.284169
## OTU2232 81.637811
## OTU2233 801.856004
## OTU2234 786.156425
## OTU2235 128.344059
## OTU2236 225.288961
## OTU2237 739.450177
## OTU2238 318.701456
## OTU2239 86.347685
## OTU2240 807.743346
## OTU2241 712.760893
```

Task 4.0: Perform differential abundance using DESeq2 Steps to be followed: 1.0 Load the required libraries

```
library(phyloseq); packageVersion("phyloseq")
```

```
## [1] '1.34.0'
```

```
library(MASS); packageVersion("MASS")
```

```
##
```

```
## Attaching package: 'MASS'
```

```
## The following object is masked from 'package:dplyr':
```

```
##
```

```
## select
```

```
## [1] '7.3.54'
```

2.0: Read data and convert it to a phyloseq object

```
library(readr)
pdata1 <- read_delim("~/Desktop/MSB7102_PROJECT/MSB7102/diabimmune_16s_t1d_metadata.csv") #import sample
```

```
## Rows: 777 Columns: 6
```

```
## -- Column specification -----
```

```
## Delimiter: ","
```

```
## chr (5): Sample_ID, Subject_ID, Case_Control, Gender, Delivery_Route
```

```
## dbl (1): Age_at_Collection
```

```
##
```

```
## i Use 'spec()' to retrieve the full column specification for this data.
```

```
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
pdata1
```

```
## # A tibble: 777 x 6
```

```
##   Sample_ID Subject_ID Case_Control Gender Delivery_Route Age_at_Collection
```

```
##   <chr>      <chr>      <chr>      <chr> <chr>              <dbl>
```

```
## 1 G36449    E001463    control    male   vaginal           62
```

```
## 2 G36034    E001463    control    male   vaginal           82
```

```
## 3 G36993    E001463    control    male   vaginal          124
```

```
## 4 G35523    E001463    control    male   vaginal          153
```

```
## 5 G36450    E001463    control    male   vaginal          187
```

```
## 6 G36028    E001463    control    male   vaginal          213
```

```
## 7 G36029    E001463    control    male   vaginal          243
```

```
## 8 G35524    E001463    control    male   vaginal          276
```

```
## 9 G36451    E001463    control    male   vaginal          303
```

```
## 10 G35424   E001463    control    male   vaginal          366
```

```
## # ... with 767 more rows
```

```
pdata2<-read_csv("~/Desktop/MSB7102_PROJECT/MSB7102/diabimmune_t1d_16s_otu_table.txt") # reads data an
```

```
## Rows: 2241 Columns: 1
```

```
## -- Column specification -----
```

```
## Delimiter: ","
```

```
## chr (1): # Constructed from biom file
```

```
##
```

```
## i Use 'spec()' to retrieve the full column specification for this data.
```

```
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

```
pdata2 # prints
```

```
## # A tibble: 2,241 x 1
##   '# Constructed from biom file'
##   <chr>
## 1 "#OTU ID\tG37016\tG36918\tG37044\tG37009\tG37029\tG37035\tG36982\tG36984\tG3~
## 2 "4333897\t12\t1\t12\t0\t0\t22\t0\t0\t0\t35\t1\t27\t36\t4\t1\t0\t3\t24\t0\t0\t~
## 3 "190162\t2\t1\t0\t1\t4\t0\t15\t20\t3\t0\t48\t0\t4\t5\t1\t14\t0\t0\t4\t3\t1\t~
## 4 "134726\t13\t127\t0\t0\t0\t0\t0\t0\t0\t0\t1\t0\t0\t42\t0\t0\t502\t0\t0\t26\t~
## 5 "679245\t10\t4\t0\t0\t0\t15\t0\t9\t0\t0\t0\t7\t3\t0\t0\t0\t28\t0\t0\t0\t13\t~
## 6 "289734\t313\t923\t101\t701\t545\t0\t2786\t3756\t440\t10\t2954\t0\t1037\t155~
## 7 "302049\t11\t40\t4\t22\t20\t0\t101\t190\t25\t0\t100\t0\t39\t127\t62\t46\t0\t~
## 8 "197991\t2\t0\t0\t0\t0\t0\t1\t0\t1\t0\t0\t0\t0\t0\t0\t3\t0\t0\t3\t0\t0\t0\t0~
## 9 "3903651\t260\t109\t6\t27\t242\t0\t1086\t686\t207\t0\t271\t0\t260\t65\t12\t2~
## 10 "184922\t24\t0\t0\t0\t8\t0\t0\t0\t0\t0\t0\t0\t0\t2\t0\t0\t0\t0\t1\t16\t12\t0~
## # ... with 2,231 more rows
```

Retrieve the object created

```
physeq
```

```
## phyloseq-class experiment-level object
## otu_table() OTU Table: [ 2241 taxa and 1 samples ]
## tax_table() Taxonomy Table: [ 2241 taxa by 7 taxonomic ranks ]
```

Establish sample variables

```
sample_variables(pdata1)
```

```
## [1] "Sample_ID"      "Subject_ID"      "Case_Control"
## [4] "Gender"         "Delivery_Route"  "Age_at_Collection"
```

References 1.0 McMurdie and Holmes (2014) Waste Not, Want Not: Why Rarefying Microbiome Data is Inadmissible. PLoS Computational Biology in press. 2.0 McMurdie and Holmes (2013) phyloseq: An R Package for Reproducible Interactive Analysis and Graphics of Microbiome Census Data. PLoS ONE. 8(4):e61217 3.0 Love MI, Huber W, Anders S (2014) Moderated estimation of fold change and dispersion for RNA-seq data with DESeq2. Genome Biology 15(12): 550