

Resource Heterogeneity Structures Microbial Communities

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Introduction

Community diversity is strongly affected by the bottom-up effects of resource availability. However, because resource pools often exist as heterogeneous mixtures of individual resources, resource heterogeneity may also affect the diversity of local communities. To test this hypothesis, we surveyed bacterial communities in lakes that spanned a resource concentration gradient. In addition, we characterized resource heterogeneity in these lakes using high-resolution mass spectrometry of the dissolved organic matter (DOM) pool. Using these data, we will test for relationships between the available resources and the aquatic heterotrophic bacteria community, and we will use co-occurrence analysis to test for bacteria-resource interactions.

Initial Setup

```
rm(list=ls())
setwd("~/GitHub/ResourceHeterogeneity/analyses")

# Import Tools and Standard Functions
source("../bin/MothurTools.R")
source("../bin/CommonFunctions.R")

# Save Standard Plot Settings
opar <- par(no.readonly = TRUE) # Saves plot defaults

# Load Required Packages
require("png"); require("grid"); require("vegan"); require("igraph")
require("picante"); require("bioDist"); require("gplots")
#require("xtable"); require("phyloseq"); require("car"); require("ade4"); require("bioDist")
require("colorspace"); library("car")
source("../bin/box.cox.chord.R")
```

Load Data & Minor Processing

Lake Nutrient Concentrations and Physical Properties

```
nuts <- read.csv(file = "../data/HMWF_Nutrients.txt", header = T)
chl <- read.delim(file = "../data/ChlorophyllA.txt", header = T)
chl <- chl[order(chl$Year, chl$Lake), ]
phys <- read.csv(file = "../data/lake_data2.txt", header = T)
all.equal(nuts$Site, chl$Lake); all.equal(nuts$Year, chl$Year);
```

```
## [1] TRUE
```



Figure 1: Study System Map

```
## [1] TRUE
all.equal(nuts$Site[nuts$Year == 2012], phys$Lake)

## [1] TRUE
```

Figure S1: System Map

Load DOM Profiles

```
# Define Inputs
# Resource = raw site-by-resource matrix
resource.neg <- "../data/SpecAbundAveNeg.csv"
design.in <- "../data/design.txt"

# Import Design
design <- read.delim(design.in, header=T, row.names=1)

# Import Resources
res.neg.in <- read.csv(resource.neg, header=T, row.names=1)
rownames(res.neg.in) <- c("Ann", "blank", "CanyonChemo", "Canyon", "CanyonHypo",
                          "CanyonI", "CanyonII", "CanyonIII", "CanyonIV", "Howe",
                          "Ives", "Jordan", "Lily", "Mountain", "Pony", "Rush",
                          "SecondPine", "UpperPine")

# Remove Blank and Extra Samples
blank.neg <- unlist(res.neg.in["blank", ])
res.hmwf.neg <- res.neg.in[-c(which(rownames(res.neg.in) %in%
                                c("blank", "CanyonChemo",
                                  "CanyonHypo", "CanyonI", "CanyonII",
```

```

                                "CanyonIII", "CanyonIV", "Jordan"))), ]

# Remove Blank Peaks
for (i in 1:dim(res.hmwf.neg)[1]){
  res.hmwf.neg[i, ] <- res.hmwf.neg[i, ] - blank.neg * 1.1
}

# Remove Peaks Under Height of 50
res.hmwf.neg[res.hmwf.neg < 50] <- 0

# Remove Zero Sum Columns
res.hmwf.neg <- res.hmwf.neg[,colSums(res.hmwf.neg) > 0]

# Data Transformations
# Reorder Sites
res.neg <- res.hmwf.neg[order(rownames(res.hmwf.neg)), ]

# Sequencing Coverage
coverage <- data.frame(Neg = rowSums(res.neg))
resources <- data.frame(Neg = dim(res.neg)[2])

# Make Relative Abundance Matrices
resREL.neg <- res.neg
for(i in 1:dim(res.neg)[1]){
  resREL.neg[i,] <- res.neg[i,]/sum(res.neg[i,])
}

# Log Transform Relative Resource Abundance
resREL.neg.log <- suppressWarnings(decostand(resREL.neg, method="log"))

# Box-Cox Chord Transformation
DOM.BCD <- box.cox.chord(res.neg) #Log Chord Transformation

```

Load DOM Metadata

```

# Read in the data
x <- scan("../data/data_20151106/neg/spectra/MarioAquaticNeg.mspLib",
          what="", sep="\n")
ind.n <- grep("Name:", x)
neg.meta <- data.frame(matrix(NA, nrow = length(ind.n), ncol = 3))
colnames(neg.meta) <- c("Name", "Rt", "mz.max")

for (i in 1:length(ind.n)){
  neg.meta[i, 1] <- unlist(strsplit(x[ind.n[i]], ": "))[2]
  temp.comment <- unlist(strsplit(x[ind.n[i] + 12], " "))
  neg.meta[i, 2] <- as.numeric(gsub("Rt=", "",
                                   temp.comment[grepl("Rt=", temp.comment)]))
  temp.peaks <- unlist(strsplit(x[ind.n[i] + 14], " "))
  temp.mz <- as.numeric(temp.peaks[seq(1, length(temp.peaks), by = 2)])
  temp.intensity <- as.numeric(temp.peaks[seq(2, length(temp.peaks), by = 2)])
  neg.meta[i, 3] <- max(temp.mz)
}

```

```
neg.meta <- neg.meta[match(colnames(resREL.neg), neg.meta$Name), ]
```

Load Bacterial Community Data

```
# Define Inputs
# Design = general design file for experiment
# shared = OTU table from mothur with sequence similarity clustering
# Taxonomy = Taxonomic information for each OTU
design.in <- "../data/design.txt"
shared <- "../data/HMWF.final.opti.shared"
taxon <- "../data/HMWF.final.opti.taxonomy"

# Import Design
design <- read.delim(design.in, header=T, row.names=1)
design <- design[design$Molecule == "RNA" & design$Year == "2012", ]

# Import Shared Files
OTUs.in <- read.otu(shared = shared, cutoff = "0.03")

# Import Taxonomy
OTU.tax <- read.tax(taxonomy = taxon, format = "rdp")

# Remove Cyanobacteria
OTUs.in.2 <- OTUs.in[, -c(which(OTU.tax$Phylum == "Cyanobacteria/Chloroplast"))]
dim(OTUs.in.2)

## [1]      40 23946

OTU.tax.2 <- OTU.tax[which(OTU.tax$OTU %in% colnames(OTUs.in.2)), ]
table(OTU.tax.2$Class)

##
##          Acidobacteria_Gp1
##                   105
##          Acidobacteria_Gp10
##                   15
##          Acidobacteria_Gp11
##                   11
##          Acidobacteria_Gp13
##                   16
##          Acidobacteria_Gp15
##                   3
##          Acidobacteria_Gp16
##                   48
##          Acidobacteria_Gp17
##                   23
##          Acidobacteria_Gp18
##                   38
##          Acidobacteria_Gp19
##                   2
##          Acidobacteria_Gp2
##                   11
##          Acidobacteria_Gp22
```

##	12
##	Acidobacteria_Gp23
##	13
##	Acidobacteria_Gp25
##	1
##	Acidobacteria_Gp3
##	210
##	Acidobacteria_Gp4
##	46
##	Acidobacteria_Gp5
##	5
##	Acidobacteria_Gp6
##	61
##	Acidobacteria_Gp7
##	21
##	Acidobacteria_Gp9
##	1
##	Acidobacteria_unclassified
##	20
##	Actinobacteria
##	1193
##	Actinobacteria_unclassified
##	1
##	Alphaproteobacteria
##	3480
##	Aminicenantes_unclassified
##	31
##	Anaerolineae
##	363
##	Ardenticatenia
##	5
##	Armatimonadetes_gp2
##	33
##	Armatimonadetes_gp4
##	6
##	Armatimonadetes_gp5
##	38
##	Armatimonadetes_unclassified
##	1
##	Armatimonadia
##	14
##	Bacilli
##	119
##	Bacteria_unclassified
##	1378
##	Bacteroidetes_unclassified
##	133
##	Bacteroidia
##	408
##	Betaproteobacteria
##	2456
##	BRC1_unclassified
##	12
##	Caldilineae

```

##                                     60
## candidate_division_WPS-1_unclassified
##                                     130
## candidate_division_WPS-2_unclassified
##                                     10
##   candidate_division_ZB3_unclassified
##                                     30
##           Candidatus_Cloacamonas
##                                     15
##           Candidatus_Hydrogenedens
##                                     41
##           Chitinivibrionia
##                                     9
##           Chlamydiia
##                                     339
##           Chlorobia
##                                     11
##           Chloroflexi_unclassified
##                                     101
##           Chloroflexia
##                                     31
##           Chthonomonadetes
##                                     41
##           Clostridia
##                                     1227
##           Cytophagia
##                                     318
##           Deferribacteres
##                                     6
##           Dehalococcoidetes
##                                     29
##           Dehalococcoidia
##                                     6
##           Deinococci
##                                     18
##           Deltaproteobacteria
##                                     2380
##           Dictyoglomia
##                                     2
##           Elusimicrobia
##                                     12
##           Elusimicrobia_unclassified
##                                     7
##           Endomicrobia
##                                     35
##           Epsilonproteobacteria
##                                     96
##           Erysipelotrichia
##                                     28
##           Fibrobacteres_unclassified
##                                     1
##           Fibrobacteria
##                                     6
##           Fimbriimonadia

```

##		11
##	Firmicutes_unclassified	
##		370
##	Flavobacteriia	
##		308
##	Fusobacteriia	
##		27
##	Gammaproteobacteria	
##		2467
##	Gemmatimonadetes	
##		58
##	Holophagae	
##		58
##	Ignavibacteria	
##		62
##	Ktedonobacteria	
##		13
##	Latescibacteria_unclassified	
##		64
##	Lentisphaerae_unclassified	
##		2
##	Lentisphaeria	
##		8
##	Microgenomates_unclassified	
##		6
##	Mollicutes	
##		9
##	Negativicutes	
##		89
##	Nitrospira	
##		13
##	Oligoflexia	
##		21
##	Oligosphaeria	
##		20
##	Omnitrophica_unclassified	
##		32
##	Opitutae	
##		173
##	Parcubacteria_unclassified	
##		386
##	Phycisphaerae	
##		105
##	Planctomycetes_unclassified	
##		70
##	Planctomycetia	
##		1206
##	Proteobacteria_unclassified	
##		679
##	Spartobacteria	
##		323
##	Sphingobacteriia	
##		735
##	Spirochaetia	

```
##                               151
##                               SR1_unclassified
##                               39
##                               Subdivision3
##                               594
##                               Subdivision5
##                               138
##                               Synergistia
##                               3
##                               Thermoflexia
##                               1
##                               Thermoleophilia
##                               8
##                               Thermomicrobia
##                               33
##                               Thermotogae
##                               1
##                               Verrucomicrobia_unclassified
##                               82
##                               Verrucomicrobiae
##                               259
```

```
table(OTU.tax.2$Phylum)
```

```
##
##      Acidobacteria      Actinobacteria      Aminicenantes
##      720                1202                31
##      Armatimonadetes    Bacteria_unclassified    Bacteroidetes
##      144                1378                1902
##      BRC1 candidate_division_WPS-1 candidate_division_WPS-2
##      12                130                10
##      candidate_division_ZB3      Chlamydiae      Chlorobi
##      30                339                11
##      Chloroflexi      Cloacimonetes      Deferribacteres
##      642                15                6
##      Deinococcus-Thermus      Dictyoglomi      Elusimicrobia
##      18                2                54
##      Fibrobacteres      Firmicutes      Fusobacteria
##      16                1833                27
##      Gemmatimonadetes      Hydrogenedentes      Ignavibacteriae
##      58                41                62
##      Latescibacteria      Lentisphaerae      Microgenomates
##      64                30                6
##      Nitrospirae      Omnitrophica      Parcubacteria
##      13                32                386
##      Planctomycetes      Proteobacteria      Spirochaetes
##      1381                11579                151
##      SR1                Synergistetes      Tenericutes
##      39                3                9
##      Thermotogae      Verrucomicrobia
##      1                1569
```

```
# Data Transformations
```

```
# Reorder Site
```

```
OTUs.hmwf <- OTUs.in.2[rownames(design), ]
```



```

# Remove OTUs with less than two occurrences across all sites
# OTUs <- OTUs.hmwf[, which(colSums(OTUs.hmwf) >= 2)]
OTUs <- OTUs.hmwf[, colSums((OTUs.hmwf > 0) * 1) >= 2 | colSums(OTUs.hmwf) >= 3]
S.obs <- rowSums((OTUs > 0) * 1)

# Sequencing Coverage
coverage <- rowSums(OTUs)

bacteria <- dim(OTUs)[2]
dim(OTUs)

## [1] 10 5085

# Good's Coverage
goods.c <- goods(OTUs)

# Make Presence Absence Matrix
OTUsPA <- (OTUs > 0) * 1

# Make Relative Abundance Matrices
OTUsREL <- OTUs
for(i in 1:dim(OTUs)[1]){
  OTUsREL[i,] <- OTUs[i,]/sum(OTUs[i,])
}

# Log Transform Relative Abundances
OTUsREL.log <- suppressWarnings(decostand(OTUs, method="log"))

# Box-Cox Chord Transformation
OTUs.BCD <- box.cox.chord(OTUs) #Log Chord Transformation

```

Resources

Figure S2: DOC, TN

```

# DOC TN correlation
cor.test(nuts$DOC, nuts$TN)
cor.test(nuts$DOC, nuts$TP)

png(filename="../figures/FigureS2.png",
     width = 900, height = 900, res = 96*2, bg = "white")
par(opar)
par(mar = c(5, 5, 1, 1) + 0.1)
plot(x = log10(nuts$DOC), y = log10(nuts$TN),
     ylim = c(-0.6, 0.3), xlim = c(0.5, 1.6),
     xlab = "", ylab = "",
     pch = 21, bg = "gray", cex = 1.5, lwd=2, axes=F)

mod1 <- lm(log10(nuts$TN) ~ log10(nuts$DOC))
cor(log10(nuts$DOC), log10(nuts$TN))
text(log10(4.6), log10(1.8), expression(paste(rho, " = 0.94", sep = ""))),

```

```

    cex = 1.25)
clip(log10(4), log10(35.4), log10(0.24), log10(2))
abline(mod1, lwd = 2, col = "gray20", lty = 2)

axis(2, at = c(-0.6, -0.3, 0, 0.3), labels = c(0.25, 0.5, 1, 2),
     las = 1, lwd = 1.5, cex.axis = 1.25)
axis(1, at = c(0.7, 1, 1.47), labels = c(5, 10, 30), las = 1, lwd = 1.5, cex.axis = 1.25)
axis(4, at = c(-0.6, -0.3, 0, 0.3), tck = -0.02, labels = F, lwd = 1.5)
axis(3, at = c(0.7, 1, 1.47), tck = -0.02, labels = F, las = 1, lwd = 1.5)
axis(2, at = c(-0.6, -0.3, 0, 0.3), tck = 0.01, labels = F, lwd = 1.5)
axis(1, at = c(0.7, 1, 1.47), tck = 0.01, labels = F, las = 1, lwd = 1.5)
axis(4, at = c(-0.6, -0.3, 0, 0.3), tck = 0.01, labels = F, lwd = 1.5)
axis(3, at = c(0.7, 1, 1.47), tck = 0.01, labels = F, las = 1, lwd = 1.5)
mtext(expression(paste("TN (mg N L"-1, ")")), side = 2, line = 3, cex = 1.5)
mtext(expression(paste("DOC (mg C L"-1, ")")), side = 1, line = 3, cex = 1.5)
box(lwd = 2)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices
#```

#```{r fig.width=4, fig.height=4,echo=FALSE,fig.cap="Diversity"}
img <- readPNG("../figures/FigureS2.png")
grid.raster(img)

```

DOM Alpha Diversity

```

# Observed Richness
S.res <- rowSums((res.neg > 0) * 1)

# Simpson's Evenness
res.simpE <- round(apply(res.neg, 1, SimpE), 3)

# Shannon's Diversity
res.shan <- round(vegan::diversity(res.neg, index = "shannon"), 2)

# Combine Alpha Diversity
res.div <- data.frame("Lake" = row.names(res.neg), S.res, res.simpE, res.shan)

# Summary Stats
range(res.div$S.res);range(res.div$res.shan);range(res.div$res.simpE)

## [1] 529 569
## [1] 4.89 5.56
## [1] 0.053 0.152
CV(res.div$S.res);CV(res.div$res.shan);CV(res.div$res.simpE)

## [1] 2.118764
## [1] 3.629068
## [1] 32.91581

```

DOM Beta Diversity

```
# Calculate Bray-Curtis
hmf.bray.res <- vegdist(resREL.neg, method = "bray")
hmf.bray.res.log <- vegdist(resREL.neg.log, method = "bray")

dis.mean <- mean(hmf.bray.res)
dis.mean.l <- mean(hmf.bray.res.log)

hmf.bcd.res <- vegdist(DOM.BCD, method = "euclidean")
dis.mean.b <- mean(hmf.bcd.res)

# Principal Coordinates Analysis
pcoa.res <- cmdscale(hmf.bray.res, eig = TRUE, k = 3)
explainvar1.res <- round(pcoa.res$eig[1] / sum(pcoa.res$eig), 3) * 100
explainvar2.res <- round(pcoa.res$eig[2] / sum(pcoa.res$eig), 3) * 100
explainvar3.res <- round(pcoa.res$eig[3] / sum(pcoa.res$eig), 3) * 100
sum.eig.res <- sum(explainvar1.res, explainvar2.res, explainvar3.res)

# DOM Scores
dom.scores <- t(cor(pcoa.res$points, resREL.neg, method = "spearman"))
dom.scores <- as.matrix(dom.scores)
# dom.scores <- dom.scores[abs(dom.scores[,1]) > 0.7 |
#                               abs(dom.scores[,2]) > 0.7, ]

dom.scores <- dom.scores[abs(dom.scores[,1]) > 0.7 |
                        abs(dom.scores[,2]) > 0.7 |
                        abs(dom.scores[,3]) > 0.7, ]

dim(dom.scores)

## [1] 144 3

dom.scores <- as.data.frame(dom.scores)
dom.scores[, 4:5] <- NA
colnames(dom.scores) <- c("Axis_1", "Axis_2", "Axis_3", "Rt", "mz")

for (i in 1:dim(dom.scores)[1]){
  temp <- which(neg.meta$Name == rownames(dom.scores)[i])
  dom.scores[i, 4] <- as.numeric(neg.meta$Rt[temp[1]])
  dom.scores[i, 5] <- as.numeric(neg.meta$mz.max[temp[1]])
}

write.table(round(dom.scores, 3), file = "../data/HMWF_DOM_NEG.txt",
            sep = "\t", quote = F, col.names = NA)
```

Figure 1: Organic Matter Ordination and Env Vectors

```
# Custom palette
palette(rainbow_hcl(10, c = 80, l = 60))
lake.col <- rep(NA, length(unique(design$Lake)))
names(lake.col) <- unique(design$Lake)
lake.col <- as.numeric(factor(design$Lake))
```

```

# Nutrients
all.equal(nuts$Site, chl$Lake); all.equal(nuts$Site[nuts$Year == 2012], phys$Lake)
lake.env <- cbind(nuts[nuts$Year == 2012, 3:5],
                 chl[chl$Year == 2012, 3], phys[, 4:5])
row.names(lake.env) <- phys$Lake

norm.tests <- apply(lake.env, 2, shapiro.test)
# Normal: TP
# Not Normal: DOC, TN, Chl, area, pH

lake.env.t <- lake.env * NA
for(i in 1:dim(lake.env.t)[2]){
  D.power <- powerTransform(lake.env[, i])
  lake.env.t[, i] <- as.numeric(scale(bcPower(lake.env[, i],
                                              coef(D.power, round = F))))
}

dom.size <- log(lake.env$DOC)

png(filename="../figures/Figure1.png",
     width = 900, height = 900, res = 96*2, bg = "white")
par(opar)

# Define Plot Parameters
layout(matrix(1))
par(mar = c(5, 5, 1, 1) + 0.5)

plot(pcoa.res$points[,1], pcoa.res$points[,2],
     ylim = c(-0.25, 0.3), xlim = c(-0.25, 0.3),
     xlab = paste("PCoA 1 (", explainvar1.res, "%)", sep = ""),
     ylab = paste("PCoA 2 (", explainvar2.res, "%)", sep = ""),
     #xlab = "", ylab = "",
     xaxt = "n", yaxt = "n",
     pch = 17, cex = 2.0, type = "n", cex.lab = 1.5, cex.axis = 1,
     axes = FALSE)

# Add Axes
axis(side = 1, labels = T, lwd.ticks = 2, cex.axis = 1, las = 1)
axis(side = 2, labels = T, lwd.ticks = 2, cex.axis = 1, las = 1)
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 1, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 2, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
abline(h = 0, v = 0, lty = 3)
box(lwd = 2)

# Add DOM Scores
# arrows(0, 0, dom.scores[, 1] * 0.2, dom.scores[, 2] * 0.2,
#       col = "red", length = 0.1, lwd = 0.5)
# text(dom.scores[, 1] * 0.2, dom.scores[, 2] * 0.2, rownames(dom.scores),
#      col = "red", cex = 0.5)

```

```

# Add DOM Scores with mz/Rt info
neg.meta2 <- neg.meta[match(rownames(dom.scores), neg.meta$Name), ]

# Add Environmental Vectors
res.env <- envfit(pcoa.res, lake.env)
res.arrows <- res.env[[1]]$arrows * 0.2
arrows(0, 0, res.arrows[, 1], res.arrows[, 2],
       col = "gray10", length = 0.1, lwd = 2, lty = c(1, 1, 3, 1, 3, 1))
arrows(res.arrows[, 1] * 0.99, res.arrows[, 2] * 0.99,
       res.arrows[, 1], res.arrows[, 2],
       col = "gray10", length = 0.1, lwd = 2)
text(res.arrows[, 1] +
     c(-0.03, 0.04, 0.03, 0.04, -0.03, -0.03),
     res.arrows[, 2] +
     c(0.03, 0.01, 0.02, -0.01, -0.03, -0.03),
     row.names(res.arrows), col = "gray40", cex = 1, font = 3)

# Add Points & Labels
points(pcoa.res$points[, 1], pcoa.res$points[, 2], pch = 22,
       cex = dom.size, bg = "gray", lwd = 2)

#pch = 15, cex = 4, bg = "gray", col = lake.col)
text(pcoa.res$points[, 1] + c(0, 0, 0.04, 0, -0.04, 0, 0, 0, 0.04, 0),
     pcoa.res$points[, 2] + c(-0.035, 0.035, -0.035, 0.035, 0.035,
                             -0.035, 0.035, -0.035, -0.035, -0.04),
     labels = row.names(pcoa.res$points))

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices
#```

#```{r fig.width=4, fig.height=4,echo=FALSE,fig.cap="PCoA Plot Resources"}
img <- readPNG("../figures/Figure1.png")
grid.raster(img)

```

Figure S3: Organic Matter Ordination Figure

```

# Custom palette
palette(rainbow_hcl(10, c = 80, l = 60))
lake.col <- rep(NA, length(unique(design$Lake)))
names(lake.col) <- unique(design$Lake)
lake.col <- as.numeric(factor(design$Lake))

png(filename="../figures/FigureS3.png",
     width = 900, height = 900, res = 96*2, bg = "white")
par(opar)

# Define Plot Parameters
layout(matrix(1))
par(mar = c(5, 5, 1, 1) + 0.5)

plot(pcoa.res$points[, 1], pcoa.res$points[, 2],

```

```

ylim = c(-0.25, 0.3), xlim = c(-0.25, 0.3),
xlab = paste("PCoA 1 (", explainvar1.res, "%)", sep = ""),
ylab = paste("PCoA 2 (", explainvar2.res, "%)", sep = ""),
#xlab = "", ylab = "",
xaxt = "n", yaxt = "n",
pch = 17, cex = 2.0, type = "n", cex.lab = 1.5, cex.axis = 1,
axes = FALSE)

# Add Axes
axis(side = 1, labels = T, lwd.ticks = 2, cex.axis = 1, las = 1)
axis(side = 2, labels = T, lwd.ticks = 2, cex.axis = 1, las = 1)
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 1, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 2, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
abline(h = 0, v = 0, lty = 3)
box(lwd = 2)

# Add DOM Scores
arrows(0, 0, dom.scores[, 1] * 0.2, dom.scores[, 2] * 0.2, col = "red", length = 0.1)
text(dom.scores[, 1] * 0.2, dom.scores[, 2] * 0.2, rownames(dom.scores), col = "red", cex = 0.5)

# Add Points & Labels
points(pcoa.res$points[,1], pcoa.res$points[,2], pch = 22,
       cex = dom.size, bg = "gray", lwd = 2)

       #pch = 15, cex = 4, bg = "gray", col = lake.col)
text(pcoa.res$points[,1] + c(0, 0, 0.04, 0, -0.04, 0, 0, 0, 0.04, 0),
     pcoa.res$points[,2] + c(-0.035, 0.035, -0.035, 0.035, 0.035,
                             -0.035, 0.035, -0.035, -0.035, -0.04),
     labels = row.names(pcoa.res$points))

dev.off() # this writes plot to folder

## pdf
## 2

graphics.off() # shuts down open devices

img <- readPNG("../figures/FigureS3.png")
grid.raster(img)

```

Alpha Diversity

Bacterial Alpha Diversity

```

# Observed Richness
S.obs <- rowSums((OTUs > 0) * 1)

# Simpson's Evenness
simsE <- round(apply(OTUs, 1, SimpE), 3)

```

```

# Shannon's Diversity
shan <- vegan::diversity(OTUs, index = "shannon")

# Rarefied Richness
OTUs.rar <- rrarefy(OTUs, ceiling(min(rowSums(OTUs)) * 0.9))
S.rar <- round(rarefy(OTUs, ceiling(min(rowSums(OTUs)) * 0.9)), 0)

# Simpson's Evenness
simpsE.rar <- round(apply(OTUs.rar, 1, SimpE), 3)

# Shannon's Diversity
shan.rar <- vegan::diversity(OTUs.rar, index = "shannon")

alpha.div <- cbind(design, S.obs, simpsE, shan, S.rar, simpsE.rar, shan.rar)
alpha.div <- alpha.div[order(alpha.div$Lake, alpha.div$Year, alpha.div$Molecule), ]

# Summary Stats
range(alpha.div$S.rar);range(alpha.div$simpsE)

## [1] 706 2344
## [1] 0.010 0.053
CV(alpha.div$S.rar);CV(alpha.div$simpsE)

## [1] 50.77223
## [1] 43.62295

```

Resource Heterogeneity and Community Diversity Relationships

```

# Organize Data
nuts2 <- nuts[nuts$Year == 2012, ]
nuts2 <- nuts2[order(nuts2$Site), ]

all.equal(nuts2$Site, alpha.div$Lake)

## [1] TRUE

all.equal(nuts2$Site, res.div$Lake)

## [1] TRUE

all.equal(nuts2$Site, phys$Lake)

## [1] TRUE

dat <- data.frame(alpha.div[, c(1, 4:7)], res.div[, 2:4],
                  nuts2[, 3:5], phys[, c(4,5,7,9)],
                  row.names = alpha.div[, 1])

shapiro.test(dat$DOC) # Not Normal

##
## Shapiro-Wilk normality test
##

```

```

## data: dat$DOC
## W = 0.63753, p-value = 0.0001555
shapiro.test(dat$S.rar) # Not Normal

##
## Shapiro-Wilk normality test
##
## data: dat$S.rar
## W = 0.69123, p-value = 0.0006898
shapiro.test(dat$simpsE) # Normal

##
## Shapiro-Wilk normality test
##
## data: dat$simpsE
## W = 0.92374, p-value = 0.3892
shapiro.test(dat$S.res) # Normal

##
## Shapiro-Wilk normality test
##
## data: dat$S.res
## W = 0.91107, p-value = 0.2884
# Without Pony or Lily
shapiro.test(dat$DOC[dat$DOC < 10]) # Normal

##
## Shapiro-Wilk normality test
##
## data: dat$DOC[dat$DOC < 10]
## W = 0.95516, p-value = 0.7629
shapiro.test(dat$S.rar[dat$DOC < 10]) # Normal

##
## Shapiro-Wilk normality test
##
## data: dat$S.rar[dat$DOC < 10]
## W = 0.87643, p-value = 0.174
# Transform DOC and S.rar with Box-Cox
D.power <- powerTransform(dat$DOC)
S.power <- powerTransform(dat$S.rar)
dat$DOC.t <- as.numeric(scale(bcPower(dat$DOC, coef(D.power, round = F))))
dat$S.rar.t <- as.numeric(scale(bcPower(dat$S.rar, coef(S.power, round = F))))
shapiro.test(dat$DOC.t) # Normal

##
## Shapiro-Wilk normality test
##
## data: dat$DOC.t
## W = 0.95995, p-value = 0.7853
shapiro.test(dat$S.rar.t) # Normal

```



```
##
## Shapiro-Wilk normality test
##
## data: dat$S.rar.t
## W = 0.9153, p-value = 0.3195
# plot(dat$S.rar.t ~ dat$S.rar)

# Resource Concentration and Diversity
mod1 <- lm(S.rar.t ~ DOC.t, data = dat)
mod2 <- lm(simpsE ~ DOC.t, data = dat)
summary(mod1);summary(mod2)

##
## Call:
## lm(formula = S.rar.t ~ DOC.t, data = dat)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.1021 -0.5472  0.2161  0.4918  0.6657
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 9.271e-10  2.095e-01   0.000  1.00000
## DOC.t        7.810e-01  2.208e-01   3.537  0.00765 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6624 on 8 degrees of freedom
## Multiple R-squared:  0.61, Adjusted R-squared:  0.5612
## F-statistic: 12.51 on 1 and 8 DF, p-value: 0.00765

##
## Call:
## lm(formula = simpsE ~ DOC.t, data = dat)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.013786 -0.007414 -0.004530  0.007537  0.018730
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.034500   0.003528   9.780  1e-05 ***
## DOC.t        -0.010765   0.003718  -2.895   0.02 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01116 on 8 degrees of freedom
## Multiple R-squared:  0.5116, Adjusted R-squared:  0.4506
## F-statistic: 8.381 on 1 and 8 DF, p-value: 0.02005

mod1b <- lm(S.rar ~ DOC, data = dat[dat$DOC < 10, ])
mod2b <- lm(simpsE ~ DOC, data = dat[dat$DOC < 10, ])
summary(mod1b);summary(mod2b)

##
```

```
## Call:
## lm(formula = S.rar ~ DOC, data = dat[dat$DOC < 10, ])
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -119.00  -71.03  -46.95   56.33  202.92
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   666.25     249.23   2.673  0.0369 *
## DOC           24.46       38.72   0.632  0.5509
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 120.2 on 6 degrees of freedom
## Multiple R-squared:  0.06235,    Adjusted R-squared:  -0.09392
## F-statistic: 0.399 on 1 and 6 DF,  p-value: 0.5509

## Call:
## lm(formula = simpsE ~ DOC, data = dat[dat$DOC < 10, ])
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.011624 -0.010074  0.001072  0.007685  0.013643
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.048373   0.022324   2.167  0.0734 .
## DOC         -0.001281   0.003468  -0.369  0.7246
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01077 on 6 degrees of freedom
## Multiple R-squared:  0.02222,    Adjusted R-squared:  -0.1407
## F-statistic: 0.1364 on 1 and 6 DF,  p-value: 0.7246
```

```
# Resource Heterogeneity and Divesity
mod3 <- lm(S.rar.t ~ S.res, data = dat)
mod4 <- lm(simpsE ~ S.res, data = dat)
summary(mod3);summary(mod4)
```

```
##
## Call:
## lm(formula = S.rar.t ~ S.res, data = dat)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.05161 -0.34668 -0.09042  0.55685  1.18499
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  33.29246    11.83032   2.814  0.0227 *
## S.res        -0.06001     0.02132  -2.815  0.0227 *
## ---
```

```

## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7518 on 8 degrees of freedom
## Multiple R-squared:  0.4976, Adjusted R-squared:  0.4348
## F-statistic: 7.923 on 1 and 8 DF,  p-value: 0.02268

##
## Call:
## lm(formula = simpsE ~ S.res, data = dat)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.016401 -0.004930  0.002410  0.005664  0.009790
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -0.5548300  0.1402240  -3.957  0.00420 **
## S.res         0.0010622  0.0002527   4.204  0.00298 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.008911 on 8 degrees of freedom
## Multiple R-squared:  0.6884, Adjusted R-squared:  0.6494
## F-statistic: 17.67 on 1 and 8 DF,  p-value: 0.002982

# Stats
mod1.p <- round(summary(mod1)$coefficients[2,4], 3)
mod2.p <- round(summary(mod2)$coefficients[2,4], 3)
mod3.p <- round(summary(mod3)$coefficients[2,4], 3)
mod4.p <- round(summary(mod4)$coefficients[2,4], 3)

# Prediction Frames
pred.frame1 <- data.frame(DOC.t = seq(-2, 2, 0.1))
pred.frame2 <- data.frame(S.res = seq(525, 572, 1))

# Correlation Test
cor.test(~ S.res + DOC.t, data = dat)

##
## Pearson's product-moment correlation
##
## data:  S.res and DOC.t
## t = -2.7697, df = 8, p-value = 0.02431
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  -0.9227763 -0.1251564
## sample estimates:
##      cor
## -0.6996491

# plot(S.res ~ DOC.t, data = dat)

```

Figure 2: Structural Relationship Plots

```
png(filename="../figures/Figure2.png",
      width = 1600, height = 1600, res = 96*2, bg = "white")
par(opar)

layout(matrix(1:4, nrow = 2, byrow = F))
par(mar = c(0.5, 1, 1, 1) + 0.1, oma = c(6, 5.5, 0, 0) + 0.1)

# Resource Concentration vs Species Richness
plot(dat$S.rar.t ~ dat$DOC.t, type = "n",
      xlab = "", ylab = "", axes = F,
      xlim = c(-2, 2), ylim = c(-2, 2), las = 1,
      pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
add.hull(model = mod1, pred.frame = pred.frame1)
matlines(pred.frame1, predict(mod1, interval = "c", newdata=pred.frame1),
          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$S.rar.t ~ dat$DOC.t,
        pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
legend("topleft", legend = bquote(italic(P) == .(mod1.p)),
       bty = "n", cex = 1.5, inset = c(-0.05, 0.01))
# mtext("Nutrients", side = 1, line = 3, cex = 1.5)
mtext("Species Richness\n(Transformed)", side = 2, line = 3, cex = 1.5)
axis(1, lwd = 2, labels = F)
axis(1, lwd = 2, tck = -0.02, labels = F)
axis(2, lwd = 2, labels = T, las = 1, cex.axis = 1.5)
axis(3, lwd = 2, tck = -0.02, labels = F)
axis(4, lwd = 2, tck = -0.02, labels = F)
axis(1, lwd = 2, tck = 0.02, labels = F)
axis(2, lwd = 2, tck = 0.02, labels = F)
axis(3, lwd = 2, tck = 0.02, labels = F)
axis(4, lwd = 2, tck = 0.02, labels = F)
box(lwd = 2)
#text(1.7, 1245, "Pony")
#text(1.73, 1070, "Lily")

# Resource Concentration vs Species Evenness
plot(dat$simpsE ~ dat$DOC.t, type = "n",
      xlab = "", ylab = "", axes = F,
      xlim = c(-2, 2), ylim = c(0, 0.07), las = 1,
      pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
add.hull(model = mod2, pred.frame = pred.frame1)
matlines(pred.frame1, predict(mod2, interval = "c", newdata=pred.frame1),
          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$simpsE ~ dat$DOC.t,
        pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
legend("topright", legend = bquote(italic(P) == .(mod2.p)),
       bty = "n", cex = 1.5, inset = 0.01)
mtext("[DOC] (Transformed)", side = 1, line = 3.5, cex = 1.5)
mtext("Species Evenness", side = 2, line = 4, cex = 1.5)
axis(1, lwd = 2, labels = T, cex.axis = 1.5)
axis(1, lwd = 2, tck = -0.02, labels = F)
axis(2, lwd = 2, labels = T, las = 1, at = c(seq(0, 0.08, 0.02)), cex.axis = 1.5)
```

```

axis(3, lwd = 2, tck = -0.02, labels = F)
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 0.08, 0.02)))
axis(1, lwd = 2, tck = 0.02, labels = F)
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.08, 0.02)))
axis(3, lwd = 2, tck = 0.02, labels = F)
axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.08, 0.02)))
box(lwd = 2)

# Resource Richness vs Species Richness
plot(dat$S.rar.t ~ dat$S.res, type = "n",
      xlab = "", ylab = "", axes = F,
      xlim = c(525, 572), ylim = c(-2, 2), las = 1,
      pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
add.hull(model = mod3, pred.frame = pred.frame2)
matlines(pred.frame2, predict(mod3, interval = "c", newdata=pred.frame2),
          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$S.rar.t ~ dat$S.res,
        pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
legend("topright", legend = bquote(italic(P) == .(mod3.p)),
       bty = "n", cex = 1.5, inset = 0.01)
# mtext("DOM Richness", side = 1, line = 3, cex = 1.5)
# mtext("Species Richness", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, labels = F, las = 1)
axis(3, lwd = 2, tck = -0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = -0.02, labels = F)
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F)
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = 0.02, labels = F)
box(lwd = 2)

# Resource Richness vs Species Evenness
plot(dat$simpsE ~ dat$S.res, type = "n",
      xlab = "", ylab = "", axes = F,
      xlim = c(525, 572), ylim = c(0, 0.07), las = 1,
      pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
add.hull(model = mod4, pred.frame = pred.frame2)
matlines(pred.frame2, predict(mod4, interval = "c", newdata=pred.frame2),
          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$simpsE ~ dat$S.res,
        pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
legend("topleft", legend = bquote(italic(P) == .(mod4.p)),
       bty = "n", cex = 1.5, inset = c(-0.05, 0.01))
mtext("DOM Richness", side = 1, line = 3.5, cex = 1.5)
# mtext("Species Evenness", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = T, las = 1, at = c(seq(520, 570, 10)), cex.axis = 1.5)
axis(2, lwd = 2, labels = F, las = 1, at = c(seq(0, 0.08, 0.02)), cex.axis = 1.5)
axis(3, lwd = 2, tck = -0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 0.08, 0.02)))
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.08, 0.02)))
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))

```

```

axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.08, 0.02)))
box(lwd = 2)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices

img <- readPNG("../figures/Figure2.png")
grid.raster(img)

```

Figure S4: Structural Relationship Plots - linear

```

png(filename="../figures/FigureS4.png",
     width = 1600, height = 1600, res = 96*2, bg = "white")
par(opar)

layout(matrix(1:4, nrow = 2, byrow = F))
par(mar = c(0.5, 1, 1, 1) + 0.1, oma = c(6, 5.5, 0, 0) + 0.1)

# Resource Concentration vs Species Richness
plot(dat$S.rar ~ dat$DOC, type = "n",
     xlab = "", ylab = "", axes = F,
     xlim = c(0, 30), ylim = c(600, 2600), las = 1,
     pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
#add.hull(model = mod1, pred.frame = pred.frame1)
#matlines(pred.frame1, predict(mod1, interval = "c", newdata=pred.frame1),
#         lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$S.rar ~ dat$DOC,
       pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# legend("topleft", legend = bquote(italic(P) == .(mod1.p)),
#       bty = "n", cex = 1.5, inset = c(-0.05, 0.01))
# mtext("Nutrients", side = 1, line = 3, cex = 1.5)
mtext("Species Richness", side = 2, line = 4, cex = 1.5)
axis(1, lwd = 2, labels = F, at = c(seq(0, 30, 10)))
axis(1, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 30, 10)))
axis(2, lwd = 2, labels = T, las = 1, cex.axis = 1.5,
     at = seq(600, 20000, by = 400))
axis(3, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 30, 10)))
axis(4, lwd = 2, tck = -0.02, labels = F,
     at = seq(600, 20000, by = 400))
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 30, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F,
     at = seq(600, 20000, by = 400))
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 30, 10)))
axis(4, lwd = 2, tck = 0.02, labels = F,
     at = seq(600, 20000, by = 400))
box(lwd = 2)
#text(1.7, 1245, "Pony")
#text(1.73, 1070, "Lily")

# Resource Concentration vs Species Evenness
plot(dat$simpsE ~ dat$DOC, type = "n",
     xlab = "", ylab = "", axes = F,

```

```

xlim = c(0, 30), ylim = c(0, 0.07), las = 1,
pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# add.hull(model = mod2, pred.frame = pred.frame1)
# matlines(pred.frame1, predict(mod2, interval = "c", newdata=pred.frame1),
#          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$simpsE ~ dat$DOC,
       pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# legend("topright", legend = bquote(italic(P) == .(mod2.p)),
#       bty = "n", cex = 1.5, inset = 0.01)
mtext(expression(paste("DOC (mg C L"-1, ")")), side = 1, line = 3.5, cex = 1.5)
mtext("Species Evenness", side = 2, line = 4, cex = 1.5)
axis(1, lwd = 2, labels = T, cex.axis = 1.5, at = c(seq(0, 30, 10)))
axis(1, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 30, 10)))
axis(2, lwd = 2, labels = T, las = 1, at = c(seq(0, 0.06, 0.02)), cex.axis = 1.5)
axis(2, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 30, 10)))
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 30, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 30, 10)))
axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
box(lwd = 2)

# Resource Richness vs Species Richness
plot(dat$S.rar ~ dat$S.res, type = "n",
     xlab = "", ylab = "", axes = F,
     xlim = c(525, 572), ylim = c(600, 2600), las = 1,
     pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# add.hull(model = mod3, pred.frame = pred.frame2)
# matlines(pred.frame2, predict(mod3, interval = "c", newdata=pred.frame2),
#          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$S.rar ~ dat$S.res,
       pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# legend("topright", legend = bquote(italic(P) == .(mod3.p)),
#       bty = "n", cex = 1.5, inset = 0.01)
# mtext("DOM Richness", side = 1, line = 3, cex = 1.5)
# mtext("Species Richness", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, labels = F, las = 1,
     at = seq(600, 20000, by = 400))
axis(3, lwd = 2, tck = -0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = -0.02, labels = F,
     at = seq(600, 20000, by = 400))
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F,
     at = seq(600, 20000, by = 400))
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = 0.02, labels = F,
     at = seq(600, 20000, by = 400))
box(lwd = 2)

# Resource Richness vs Species Evenness
plot(dat$simpsE ~ dat$S.res, type = "n",
     xlab = "", ylab = "", axes = F,

```

```

    xlim = c(525, 572), ylim = c(0, 0.07), las = 1,
    pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# add.hull(model = mod4, pred.frame = pred.frame2)
# matlines(pred.frame2, predict(mod4, interval = "c", newdata=pred.frame2),
#          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$simpsE ~ dat$S.res,
       pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
# legend("topleft", legend = bquote(italic(P) == .(mod4.p)),
#       bty = "n", cex = 1.5, inset = c(-0.05, 0.01))
mtext("DOM Richness", side = 1, line = 3.5, cex = 1.5)
# mtext("Species Evenness", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = T, las = 1, at = c(seq(520, 570, 10)), cex.axis = 1.5)
axis(2, lwd = 2, labels = F, las = 1, at = c(seq(0, 0.06, 0.02)), cex.axis = 1.5)
axis(3, lwd = 2, tck = -0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
box(lwd = 2)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices

img <- readPNG("../figures/FigureS4.png")
grid.raster(img)

```

Figure X1: DOM Richness and Species Evenness

```

png(filename="../figures/FigureX1.png",
     width = 900, height = 900, res = 96*2, bg = "white")
par(opar)

par(mar = c(0.5, 1, 1, 1) + 0.1, oma = c(5, 5.5, 0, 0) + 0.1)

# Resource Richness vs Species Evenness
plot(dat$simpsE ~ dat$S.res,
     xlab = "", ylab = "", type = "n", axes = F,
     xlim = c(525, 572), ylim = c(0, 0.06), las = 1,
     pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
add.hull(model = mod4, pred.frame = pred.frame2)
matlines(pred.frame2, predict(mod4, interval = "c", newdata=pred.frame2),
        lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(dat$simpsE ~ dat$S.res,
       pch = 22, col = "black", bg = "gray", cex = 1.5, lwd = 2)
legend("topleft", legend = bquote(italic(p) == .(mod4.p)),
      bty = "n", cex = 1.25, inset = c(-0.05, 0.01))
mtext("DOM Richness", side = 1, line = 3.5, cex = 1.5)
mtext("Species Evenness", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = T, las = 1, at = c(seq(520, 570, 10)), cex.axis = 1.25)
axis(2, lwd = 2, labels = T, las = 1, at = c(seq(0, 0.06, 0.02)), cex.axis = 1.25)
axis(3, lwd = 2, tck = -0.02, labels = F, at = c(seq(520, 570, 10)))

```



```
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
axis(1, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
axis(3, lwd = 2, tck = 0.02, labels = F, at = c(seq(520, 570, 10)))
axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0, 0.06, 0.02)))
box(lwd = 2)
```

```
dev.off() # this writes plot to folder
```

```
## pdf
## 2
```

```
graphics.off() # shuts down open devices
```

```
img <- readPNG("../figures/FigureX1.png")
grid.raster(img)
```

Beta Diversity

Bacterial Compositional Diversity

```
# Calculate Bray-Curtis
hmf.bray.REL <- vegdist(OTUs.REL.log, method = "bray")
dis.mean <- mean(hmf.bray.REL)
```

```
# Log-Chord Distance
hmf.bcd.euc <- vegdist(OTUs.BCD, method = "euclidean")
mean(hmf.bcd.euc)
```

```
## [1] 0.9891855
```

```
# Principal Coordinates Analysis w/ BC
pcoa.rel <- cmdscale(hmf.bray.REL, eig = TRUE, k = 3)
explainvar1.rel <- round(pcoa.rel$eig[1] / sum(pcoa.rel$eig), 3) * 100
explainvar2.rel <- round(pcoa.rel$eig[2] / sum(pcoa.rel$eig), 3) * 100
explainvar3.rel <- round(pcoa.rel$eig[3] / sum(pcoa.rel$eig), 3) * 100
sum.eig.rel <- sum(explainvar1.rel, explainvar2.rel, explainvar3.rel)
```

```
# Principal Coordinates Analysis w/ Log-Chord
pcoa.bcd <- cmdscale(hmf.bcd.euc, eig = TRUE, k = 3)
explainvar1.bcd <- round(pcoa.bcd$eig[1] / sum(pcoa.bcd$eig), 3) * 100
explainvar2.bcd <- round(pcoa.bcd$eig[2] / sum(pcoa.bcd$eig), 3) * 100
explainvar3.bcd <- round(pcoa.bcd$eig[3] / sum(pcoa.bcd$eig), 3) * 100
sum.eig.bcd <- sum(explainvar1.bcd, explainvar2.bcd, explainvar3.bcd)
```

```
# OTU Scores
otu.scores <- t(cor(pcoa.rel$points, OTUs.REL))
otu.scores <- as.matrix(otu.scores)[,1:2]
otu.scores <- otu.scores[abs(otu.scores[,1]) > 0.7 |
                        abs(otu.scores[,2]) > 0.7,]
dim(otu.scores)
```

```
## [1] 1125 2
```

Compositional Relationships (dbRDA)

```
# Resource Concentration dbRDA - OLD
hmf.bray.REL <- vegdist(OTUsREL.log, method = "bray")
pcoa.rel <- cmdscale(hmf.bray.REL, eig = TRUE, k = 3)
dbRDA <- capscale(hmf.bray.REL ~ dat$DOC.t, comm = OTUsREL.log, add = T)
anova(dbRDA, permutations = how(nperm=9999))

## Permutation test for capscale under reduced model
## Permutation: free
## Number of permutations: 9999
##
## Model: capscale(formula = hmf.bray.REL ~ dat$DOC.t, comm = OTUsREL.log, add = T)
##           Df SumOfSqs      F Pr(>F)
## Model      1  0.54264 3.1035 0.0015 **
## Residual    8  1.39880
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
RsquareAdj(dbRDA)
```

```
## $r.squared
## [1] 0.2795044
##
## $adj.r.squared
## [1] 0.1894425
```

```
# Resource Concentration dbRDA - NEW
hmf.bray.REL <- vegdist(OTUsREL.log, method = "bray")
pcoa.rel <- cmdscale(hmf.bray.REL, eig = TRUE, k = 3)
dbRDA <- dbrda(OTUs.BCD ~ dat$DOC.t, add = T)
anova(dbRDA, permutations = how(nperm=9999))

## Permutation test for dbrda under reduced model
## Permutation: free
## Number of permutations: 9999
##
## Model: dbrda(formula = OTUs.BCD ~ dat$DOC.t, add = T)
##           Df SumOfSqs      F Pr(>F)
## Model      1   1.030 2.3713 0.0021 **
## Residual    8   3.475
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
RsquareAdj(dbRDA)
```

```
## $r.squared
## [1] 0.2286419
##
## $adj.r.squared
## [1] 0.1322222
```

```
# DOM Diversity dbRDA; using: hmf.bray.res; pcoa.res
# Calculate Bray-Curtis
hmf.bray.res <- vegdist(resREL.neg, method = "bray")
hmf.bray.res.log <- vegdist(resREL.neg.log, method = "bray")
```

```

hmf.bcd.res <- vegdist(box.cox.chord(res.neg), method = "euclidean")
pcoa.res <- cmdscale(hmf.bcd.res, eig = TRUE, k = 3)

dbrDA.dom <- capscale(hmf.bray.REL ~ pcoa.res$points, add = T)
dbrDA.dom <- dbrda(OTUs.BCD ~ pcoa.res$points[, 1:2], add = T)

anova(dbrDA.dom, permutations = how(nperm=9999))

## Permutation test for dbrda under reduced model
## Permutation: free
## Number of permutations: 9999
##
## Model: dbrda(formula = OTUs.BCD ~ pcoa.res$points[, 1:2], add = T)
##           Df SumOfSqs      F Pr(>F)
## Model      2   1.5033 1.7528 0.0079 **
## Residual    7    3.0017
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

RsquareAdj(dbrDA.dom)

## $r.squared
## [1] 0.3336905
##
## $adj.r.squared
## [1] 0.1433164

cca.dom <- cca(OTUsREL.log ~ pcoa.res$points[, 2])
summary(cca.dom)

##
## Call:
## cca(formula = OTUsREL.log ~ pcoa.res$points[, 2])
##
## Partitioning of mean squared contingency coefficient:
##           Inertia Proportion
## Total           2.5379      1.0000
## Constrained      0.5575      0.2197
## Unconstrained    1.9804      0.7803
##
## Eigenvalues, and their contribution to the mean squared contingency coefficient
##
## Importance of components:
##           CCA1    CA1    CA2    CA3    CA4    CA5    CA6
## Eigenvalue      0.5575 0.4111 0.3045 0.2737 0.24329 0.21862 0.20334
## Proportion Explained 0.2197 0.1620 0.1200 0.1078 0.09586 0.08614 0.08012
## Cumulative Proportion 0.2197 0.3816 0.5016 0.6095 0.70533 0.79148 0.87160
##           CA7    CA8
## Eigenvalue      0.18343 0.14244
## Proportion Explained 0.07228 0.05613
## Cumulative Proportion 0.94387 1.00000
##
## Accumulated constrained eigenvalues
## Importance of components:

```

```

##                               CCA1
## Eigenvalue                    0.5575
## Proportion Explained    1.0000
## Cumulative Proportion 1.0000
##
## Scaling 2 for species and site scores
## * Species are scaled proportional to eigenvalues
## * Sites are unscaled: weighted dispersion equal on all dimensions
##
##
## Species scores
##
##                               CCA1          CA1          CA2          CA3          CA4          CA5
## Otu00002 -0.2956611  0.129795  0.0657561  0.0998700  6.394e-03  0.0861321
## Otu00003 -0.2845088  0.099079  0.0698215  0.1159090  1.597e-02  0.0824910
## Otu00004 -0.3942654  0.262841  0.0626095  0.1147178  6.194e-03  0.1072403
## Otu00005 -0.4062151  0.111660  0.1332069  0.0752802 -2.631e-02  0.0497060
## Otu00006 -0.4202371  0.303041  0.0594505  0.1338279  1.852e-02  0.0880949
## Otu00009 -0.5007556  0.041051  0.1988934  0.1033664 -9.263e-02  0.1401932
## Otu00010 -0.2382582  0.111119  0.0906017  0.1623483 -1.270e-02  0.0012514
## Otu00011 -0.2632755  0.116814  0.0902146  0.1371644  6.493e-02  0.0893263
## Otu00012  0.0291418 -0.247769 -0.0322193  0.0403619  2.121e-01 -0.2814112
## Otu00013 -0.5266536  0.270761  0.1476769  0.0825964 -9.890e-02  0.1317529
## Otu00014 -0.4426528  0.099215  0.1442720  0.0984025 -5.227e-02  0.1080362
## Otu00015 -0.3088109  0.129498  0.0820939  0.0750156 -4.486e-02  0.0655377
## Otu00016 -0.5053732  0.170185  0.1834543  0.0666137 -2.750e-02  0.1093562
## Otu00017 -0.2692387  0.111191  0.1005793  0.0340656  1.920e-02  0.0861781
## Otu00019  0.3155370  0.341781  0.2200766  0.1739994  2.088e-01 -0.1681493
## Otu00022  0.1846694 -0.633161  0.7641981  0.5363484 -3.056e-02  0.0181072
## Otu00023 -0.3711397  0.119010  0.1369816  0.0773863  9.922e-02  0.0871119
## Otu00024 -0.6606448  0.191978 -0.1263271  0.0216348 -1.805e-02  0.2340544
## Otu00025  0.4895449 -0.810071 -0.2103014  0.2383491  1.101e-01  0.0503773
## Otu00026 -0.2634555  0.022359  0.0087656  0.2265625 -5.922e-02  0.0595842
## Otu00027 -0.0163410 -0.070520  0.0336554  0.0869036  2.650e-01  0.0162846
## Otu00028 -0.5226652  0.092882  0.2051503  0.1282005 -1.017e-02  0.1334358
## Otu00030 -0.3111459  0.294448  0.0536666  0.1667908  6.386e-02  0.0601868
## Otu00032 -0.5010774  0.273951  0.1676168  0.1345641  1.829e-01  0.0904344
## Otu00033  0.7272650  0.062690 -0.2137655 -0.3146412  1.660e-01 -0.3719659
## Otu00034 -0.4783671  0.123881  0.1038054  0.1606249 -6.469e-03  0.1801492
## Otu00036 -0.5590564  0.238449  0.1377639 -0.0023927  2.598e-02  0.0979229
## Otu00037 -0.5710562  0.335883  0.2904230 -0.1543340 -5.197e-02  0.1894610
## Otu00038 -0.5470273  0.222237  0.0189349 -0.0350479  6.449e-02  0.1888950
## Otu00039 -0.2770638  0.071159  0.0581170  0.0698968  1.321e-02  0.0290205
## Otu00040 -0.6327629  0.225988 -0.1578870  0.1167273  9.214e-03  0.1557275
## Otu00041 -0.5740508  0.224698 -0.0416154  0.2553348 -9.047e-02  0.0494246
## Otu00042 -0.3784455  0.104891  0.1591130  0.0649029  1.624e-01  0.1198972
## Otu00043 -0.5368068  0.258030  0.1157953  0.1292382  7.424e-03  0.1478301
## Otu00044 -0.1947957 -0.016797  0.1139876  0.0551535  7.178e-02 -0.0344499
## Otu00045 -0.0728107  0.144384  0.0490902  0.3133406  1.839e-02 -0.0565735
## Otu00046 -0.5309375  0.235597  0.1228340  0.2515127 -2.228e-02 -0.0123564
## Otu00048 -0.1002030  0.087175 -0.1242496 -0.2086425 -2.773e-02  0.0913450
## Otu00049 -0.5637267  0.209880  0.1800848 -0.0502200  2.087e-01  0.0827031
## Otu00050 -0.2671888  0.068860  0.0279318  0.0969464 -1.250e-01  0.1397440
## Otu00051 -0.9143139  0.298267 -0.7548553 -0.2088254 -3.112e+00  0.1898256

```

##	Otu00052	-0.2261845	0.052987	0.0574958	0.2350695	-1.143e-01	0.0155887
##	Otu00053	-0.2807611	0.151401	0.0667634	0.1748782	2.916e-02	0.0674954
##	Otu00054	0.0045759	0.406981	-0.5314934	0.8718178	4.115e-01	-0.0782271
##	Otu00055	-0.2392849	0.131329	0.0480383	0.0930216	5.856e-02	0.0894659
##	Otu00056	-0.3288739	0.233449	-0.1537839	0.2982842	1.945e-01	-0.0251483
##	Otu00057	-0.5523704	0.304262	0.1458984	-0.0277726	-2.584e-01	-0.0101089
##	Otu00058	-0.6126444	0.300505	-0.1281222	-0.2087667	2.621e-01	0.3774042
##	Otu00059	-0.4143538	0.300680	-0.4142782	0.3934067	1.011e-02	-0.2392140
##	Otu00060	-0.5868445	0.336167	-0.0332189	0.1797407	9.313e-02	0.2436596
##	Otu00061	0.1298532	0.524233	-0.2514789	0.7011715	-7.867e-02	-0.1872153
##	Otu00062	-0.6048470	0.298313	0.1153838	0.3382245	-5.887e-02	-0.1474345
##	Otu00063	-0.4594416	0.294842	0.1418388	0.2366673	-1.169e-03	0.2982937
##	Otu00064	-0.5756161	0.362283	-0.3776709	0.6999162	1.982e-01	0.4011351
##	Otu00066	-0.1413058	-0.085758	0.0773986	0.0211138	9.755e-04	-0.0919759
##	Otu00067	-0.2314090	0.067300	0.1631774	0.1262458	1.341e-01	0.0675360
##	Otu00068	-0.2436236	0.316193	0.1193511	0.2214982	-5.627e-02	-0.1177823
##	Otu00069	-0.2098863	0.404533	0.1852138	-0.6576170	-1.879e-01	0.6477040
##	Otu00070	-0.4253137	0.123127	0.2899622	-0.0262785	3.297e-01	0.0783244
##	Otu00071	-0.7009932	0.254995	-0.0067041	0.2295708	-5.136e-03	-0.0200397
##	Otu00072	-0.3717638	0.210654	0.0304369	-0.3157364	3.857e-02	0.1900118
##	Otu00073	0.2676871	-0.323822	-0.0873683	0.2973015	1.880e-01	-0.3380397
##	Otu00074	-0.5692649	0.246902	0.1590024	0.2653019	1.110e-02	0.1604003
##	Otu00075	-0.3163888	0.045178	0.2422858	-0.3096800	3.095e-02	0.1207395
##	Otu00076	-0.2345189	0.090703	0.2745904	-0.3005193	-1.250e-02	0.0680384
##	Otu00078	-0.6578610	0.306283	-0.0290830	0.0479863	4.078e-02	0.1266623
##	Otu00079	0.5276309	0.188862	-0.2997209	-0.4291303	2.685e-01	-0.3354785
##	Otu00080	0.5163241	-0.695238	-0.2051972	0.1199116	1.241e-01	0.0965152
##	Otu00081	0.5950401	-0.448387	-0.1863891	0.0822100	-3.543e-01	-0.0903144
##	Otu00082	-0.5335676	0.335754	0.3655058	-0.5995098	-4.105e-02	0.5689997
##	Otu00083	-0.6493522	0.030589	-0.2458538	0.5862472	2.498e-02	-0.2703982
##	Otu00084	-0.4693652	0.344622	-0.1204081	0.1829702	2.901e-01	0.0568576
##	Otu00085	-0.6115380	0.210246	0.1531313	-0.2188085	-6.502e-02	0.1629686
##	Otu00086	-0.3320074	0.069996	0.0615647	0.0236034	-3.225e-03	0.0898108
##	Otu00087	-0.5033468	0.195358	-0.3705236	0.5807510	2.250e-02	-0.0711438
##	Otu00088	-0.5766208	0.351964	-0.0817290	0.3873886	1.292e-02	0.0245753
##	Otu00089	0.8757947	-0.343342	-0.3666197	-0.1748732	1.352e-01	0.0069219
##	Otu00090	-0.5187688	0.016257	-0.0220837	-0.0840019	-5.604e-02	0.1694445
##	Otu00091	-0.5818422	0.343695	0.2815572	0.1183603	1.398e-01	0.0860744
##	Otu00092	-0.2491734	0.014949	0.0459768	0.6611692	3.526e-01	-0.0564464
##	Otu00093	0.4382866	-0.017790	-0.4277316	0.3334148	2.757e-01	-0.0314285
##	Otu00094	-0.6668241	0.230365	-0.1799485	0.0262194	-1.101e-01	0.5167988
##	Otu00097	-0.5217761	0.227164	0.1403927	0.2117247	1.153e-01	0.2662516
##	Otu00099	-0.4016302	-0.041466	0.3798568	0.2513717	1.840e-01	-0.0863551
##	Otu00100	-0.8344155	0.217176	0.0002084	-0.7643975	1.322e-01	0.4623922
##	Otu00101	-0.8304054	0.252713	-0.2678549	0.0710817	-6.871e-02	0.1176206
##	Otu00102	0.1986155	-1.459698	-0.0321601	0.4909960	7.376e-02	0.1289525
##	Otu00103	-0.3269282	0.084127	0.1816164	-0.1107679	-6.672e-03	0.1050601
##	Otu00104	-0.1775966	0.020789	0.0025201	0.1218164	2.936e-02	-0.3170174
##	Otu00107	-0.2761623	0.186396	0.1223943	-0.0885396	2.310e-01	0.1193948
##	Otu00108	-0.5783672	0.344109	0.0633236	0.0694007	-1.115e-01	0.2713785
##	Otu00109	-0.4982870	0.011846	0.3068793	0.0346912	1.182e-01	0.0332347
##	Otu00110	-0.5532760	0.290103	-0.0374340	0.2217906	8.224e-02	-0.0422968
##	Otu00111	-0.4372820	-0.064140	0.3032308	0.1980768	-2.466e-02	-0.1619959
##	Otu00112	0.1342303	0.520736	0.4989372	0.0916120	-1.280e-01	-0.3965196

```

## Otu00113 -0.1410657 0.380251 0.0566692 0.4294058 3.304e-01 -0.2398991
## Otu00114 -0.6551173 0.314656 0.2768817 -0.0534969 1.906e-03 0.1284646
## Otu00115 -0.4473780 0.196769 -0.0539311 0.3827418 -7.168e-02 0.3183850
## Otu00116 0.1861456 -0.186022 0.2501043 -0.0888511 -3.292e-01 -0.1865803
## Otu00117 -0.5062681 0.348098 0.4738461 -0.2038536 4.257e-01 0.2447015
## Otu00118 1.3890442 0.697886 -0.6974588 -0.4455943 1.661e-01 -0.2307078
## Otu00119 0.0541776 0.521428 0.0797145 0.7891050 2.790e-01 -0.1129228
## Otu00120 -0.5446132 0.376440 0.0727096 0.6590119 -4.374e-02 -0.1361733
## Otu00121 -0.7340403 0.203697 0.0997551 -0.5289202 -1.120e-01 0.2619103
## Otu00122 -0.6409328 0.174619 -0.2931284 0.3586270 -1.876e-01 0.4534388
## Otu00123 -0.3581114 -0.009926 0.3017545 -0.3754057 5.247e-03 0.0969563
## Otu00124 -0.5804225 0.342266 0.1910417 0.1459517 -2.904e-02 -0.0344614
## Otu00125 -0.0072922 -0.200392 0.0673187 0.2273439 2.650e-01 -0.3269301
## Otu00127 -0.7075877 0.335354 -0.4653371 0.7184796 -4.283e-01 0.2481735
## Otu00128 -0.0960004 -0.191194 0.5447416 -0.2039120 2.183e-01 0.2408190
## Otu00129 -0.2508226 0.444148 0.4055779 0.0354311 2.965e-01 0.6562274
## Otu00130 0.3572783 -1.794144 0.0215352 0.4425871 1.196e-02 0.0401113
## Otu00131 0.8671753 -0.680248 -0.3161741 0.0427410 5.757e-02 -0.1038736
## Otu00132 -0.3881473 0.205296 0.2840490 -0.1013151 5.104e-02 0.1330526
## Otu00133 -0.7766483 0.277640 -0.2048251 0.1763239 2.339e-01 0.2825769
## Otu00134 -0.4318889 0.350678 0.7385278 -0.3079109 3.211e-01 -0.4467221
## Otu00135 -0.7476432 0.325010 -0.5588624 1.1230585 -1.554e-01 -0.2569682
## Otu00136 -0.6393395 -0.392769 -0.1322386 -0.1274799 4.934e-01 -0.1824900
## Otu00137 0.5845485 -0.385096 -0.1236436 -0.4236950 1.381e-01 -0.5443406
## Otu00138 0.0549793 -0.074872 -0.1000886 0.9201644 1.474e-01 -0.2862094
## Otu00139 -0.4934287 0.266697 0.1876723 -0.2358667 -1.704e-01 0.2001510
## Otu00140 -0.1290067 0.516975 1.8857575 0.0742481 -3.068e-01 -0.8485472
## Otu00141 -0.7166795 0.346040 -0.5154917 1.0171671 -2.965e-01 -0.0592542
## Otu00142 1.0482049 0.686170 0.3387954 -0.2805942 -1.469e-02 -0.4891281
## Otu00143 -0.0654082 0.146815 0.4317351 -0.1705892 2.826e-01 0.1856210
## Otu00144 1.0567269 -0.067564 0.2484070 -0.1001644 -6.299e-02 -0.2289589
## Otu00145 0.2937300 -0.003823 -0.0187814 0.4707415 -1.924e-02 -0.0908157
## Otu00146 -0.2246776 0.434130 -0.5423617 0.8881913 2.432e-01 0.0040500
## Otu00147 -0.6678013 0.300896 0.4281702 -0.3882264 -7.501e-02 0.1453582
## Otu00148 -0.6306727 0.339947 0.1365960 0.3454351 8.962e-02 0.0409741
## Otu00149 -0.6982408 0.317936 -0.4473718 1.0067601 4.241e-01 0.1110296
## Otu00150 -0.6530479 0.334514 0.1250682 -0.5764502 4.616e-01 1.5279310
## Otu00151 0.5268215 -1.934115 0.3704121 0.2026202 -1.169e-01 0.0608957
## Otu00152 -0.3309048 0.370158 0.0966950 -0.0064082 4.401e-01 0.0508915
## Otu00153 -0.4102135 0.462244 0.5110257 0.3363047 4.445e-01 0.7130039
## Otu00155 -0.5128461 0.420128 -0.1424183 1.4168803 2.906e-01 -0.1244637
## Otu00156 -0.3714526 0.094022 0.0363831 0.1081560 -5.610e-02 0.1329762
## Otu00157 -0.6039441 0.214205 0.0144100 0.1823353 1.778e-01 0.1241740
## Otu00158 -0.1994840 0.419322 -0.1622133 0.2890963 1.261e-01 0.0831203
## Otu00159 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00160 -0.4102812 0.324155 0.3805362 0.0455294 1.031e-01 -0.0199506
## Otu00161 -0.4527406 0.011972 0.1354607 -0.1602975 -3.108e-02 0.1841715
## Otu00162 -0.3355337 0.389693 -0.2078900 0.3602642 2.553e-01 0.1172105
## Otu00163 -0.7909898 0.236887 -0.0371548 -0.2673953 6.226e-01 0.1994445
## Otu00164 -0.5415799 0.159171 0.6278118 -0.4147052 3.799e-01 0.2101386
## Otu00165 -0.8225652 0.117879 0.3942592 -0.9495049 4.271e-01 0.1340052
## Otu00166 -0.8158474 -0.094593 -0.0433900 -0.4657904 5.200e-01 -0.5029024
## Otu00167 -0.4420016 0.136852 0.3754219 -0.1938216 3.254e-01 0.1874819
## Otu00168 0.4499561 -0.549584 1.0246241 0.4675664 -1.690e-01 -0.1659767

```

##	Otu00169	0.0626693	0.418039	-0.4783372	1.0852926	3.586e-01	-0.2660904
##	Otu00170	-0.8626016	0.150557	-0.2114634	-0.1509933	-6.496e-04	0.0065426
##	Otu00171	-0.3314363	0.141743	0.0664845	0.0974389	-4.396e-02	0.3834556
##	Otu00172	-0.5917176	0.283245	0.0978361	0.1713005	2.751e-02	-0.0831553
##	Otu00173	-0.1347273	-0.038023	0.0997317	-0.1581506	-8.059e-02	0.0199021
##	Otu00174	-0.7213267	0.327963	-0.4686413	1.0788497	1.161e-01	-0.1461055
##	Otu00175	-0.5560151	0.119047	0.5338334	-0.4000663	-1.119e-02	0.0960963
##	Otu00176	0.3658997	0.277972	-0.0869610	0.4206302	2.569e-01	-0.0914058
##	Otu00177	1.1975468	-0.281156	-0.4304047	-0.2592075	5.420e-02	-0.1726977
##	Otu00178	-0.0072465	0.043089	0.2170914	-0.1020573	2.663e-01	-0.2220582
##	Otu00179	-0.3104082	0.386286	0.2702730	-0.1685817	3.352e-01	0.1261718
##	Otu00181	-0.5490424	-0.001930	-0.0483528	-0.1278165	-9.062e-03	0.1963265
##	Otu00182	-0.4626803	-0.002434	0.1326051	-0.1538374	9.214e-02	-0.2505502
##	Otu00184	-0.2483404	0.058835	0.0814828	-0.2283661	-1.306e-02	0.3380689
##	Otu00185	-0.0851935	0.483531	0.0148264	0.4466552	-3.437e-01	0.0266208
##	Otu00186	0.4067699	-0.026919	0.0991148	-0.2723745	2.119e-01	0.0534413
##	Otu00187	0.8766759	-0.903232	-0.2482568	-0.0042364	2.752e-02	-0.0755402
##	Otu00188	-0.6610220	0.269787	-0.5237520	1.2170534	-1.173e-02	-0.1351829
##	Otu00189	-0.6771909	0.286787	0.3925968	-0.6684685	5.485e-01	0.8227742
##	Otu00190	-0.3093990	0.378854	0.1378126	-0.2110123	3.566e-02	0.1204102
##	Otu00192	0.0953822	0.138424	-0.4555802	0.4590125	2.519e-01	-0.0483660
##	Otu00193	0.0046606	-0.002392	0.2813111	0.0532609	2.525e-01	0.1144762
##	Otu00194	0.1529021	0.542846	-0.6148698	1.1667561	4.415e-01	-0.4540964
##	Otu00195	-0.6866083	-0.036430	-0.1061891	-0.2528205	3.684e-02	0.3361563
##	Otu00196	-0.3011724	0.310613	-0.0697498	0.3577122	-9.168e-02	0.0306386
##	Otu00197	-0.6519772	0.264327	0.1577870	0.2197812	1.408e-01	-0.0821955
##	Otu00198	-0.5415179	0.101447	0.1309447	0.0419500	1.404e-01	0.1957954
##	Otu00199	-0.8575777	0.229354	-0.3388921	0.6032261	6.053e-01	-0.4286481
##	Otu00200	-0.7998486	0.254230	-0.1720005	0.1933742	6.175e-01	0.1710942
##	Otu00201	0.9351774	-0.494869	-0.0323903	-0.0080315	2.914e-03	-0.1631009
##	Otu00202	-0.3637275	0.387726	0.6348634	-0.3241745	3.430e-01	0.4436034
##	Otu00203	-0.6635344	0.292773	0.0691369	-0.4521009	6.121e-01	1.2503993
##	Otu00204	-0.2551540	0.139974	-0.1645195	0.1885227	4.548e-01	0.1615061
##	Otu00205	0.4084077	-1.087639	-0.1334968	0.2566595	9.825e-02	0.1066044
##	Otu00207	-0.5728945	0.198572	-0.0017609	0.0587157	9.889e-02	0.2023375
##	Otu00208	-0.8464568	0.199068	0.0235077	-0.2716736	5.602e-01	0.0323893
##	Otu00209	-0.6102750	0.335968	0.3695081	-0.1589763	8.818e-02	0.3380712
##	Otu00210	-0.1894811	0.044863	0.2263029	0.0360542	3.382e-01	0.1274783
##	Otu00211	-0.7000058	0.160297	-0.4771187	0.7269010	-2.847e-01	-0.0558996
##	Otu00212	-0.6864578	0.308551	0.0910695	0.1648651	4.661e-02	0.0717590
##	Otu00213	-0.6273216	0.369459	-0.1391978	0.4353734	-1.491e-01	0.5154215
##	Otu00214	-0.4155421	-0.064127	0.5695660	-0.4438624	3.346e-01	0.0810560
##	Otu00215	-0.2758695	0.187219	0.2242057	-0.0045914	1.280e-02	0.0150147
##	Otu00216	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu00218	0.7027372	-0.535361	0.0193375	0.1881346	5.140e-02	-0.1300973
##	Otu00219	-0.5970043	0.243668	0.0993746	0.0939467	7.273e-02	0.2102525
##	Otu00220	-0.4600195	0.324071	0.6290969	0.3637559	3.283e-01	-0.2573033
##	Otu00221	0.8021072	-0.738018	0.1696232	0.0852779	-4.455e-02	-0.1156485
##	Otu00222	-0.3497072	-0.368588	-0.3826942	0.8815253	-2.181e-01	0.0287810
##	Otu00223	-0.4520541	0.425639	0.1662711	0.6760081	-3.943e-01	0.0399262
##	Otu00224	-0.7811622	0.311398	-0.4315589	0.7932592	-9.898e-02	-0.2266792
##	Otu00225	-0.5777497	0.315382	-0.2507029	0.3172925	5.597e-01	0.2350022
##	Otu00226	0.7927197	0.060358	-0.5496136	-0.0648245	-3.095e-01	-0.1700584
##	Otu00227	-0.5614715	0.341448	-0.0014789	0.1773809	-4.666e-02	0.0808825

```

## Otu00228 -0.2025680 0.381155 0.7789188 1.0834090 9.332e-02 -0.3328142
## Otu00230 -0.6655559 0.354443 -0.6580891 1.5885186 -6.774e-02 -0.1615006
## Otu00231 -0.6757739 0.343624 -0.4129163 0.8345260 2.080e-01 0.3856036
## Otu00233 -0.5788254 0.369504 -0.0604217 0.5447724 -4.726e-01 0.3018102
## Otu00234 -0.2970075 0.369335 0.2801377 -0.1695709 1.071e-01 -0.3830481
## Otu00235 -0.5800771 0.169054 -0.4455110 1.1129278 4.136e-01 0.1610538
## Otu00236 -0.3832917 0.087779 -0.3061349 0.2417073 2.233e-01 0.1305833
## Otu00237 -0.4920017 0.392791 0.2803035 0.4171019 3.256e-02 0.0724450
## Otu00238 0.2878753 -1.655281 0.0396554 0.3311365 3.510e-02 0.1662625
## Otu00239 0.0084431 0.473380 -0.2827289 0.3952974 4.215e-01 0.3373593
## Otu00240 -0.1562631 0.245328 0.3461813 0.3566196 2.804e-01 -0.6218444
## Otu00241 -0.6429422 0.222238 -0.0276873 -0.3554551 2.914e-01 1.2224391
## Otu00242 0.4425061 -1.642655 0.0372452 0.1663700 1.111e-02 0.1536594
## Otu00243 0.1328142 0.666222 1.9366733 0.6181855 -1.457e-01 -0.1247826
## Otu00244 -0.7570587 0.270026 -0.1851382 -0.1239821 -1.639e-02 0.3389653
## Otu00245 -0.7281447 0.348730 -0.5657404 1.1148846 -3.603e-01 -0.1688331
## Otu00246 -1.2356337 -0.208031 0.0931896 -1.3112620 6.543e-01 -1.2698885
## Otu00247 -0.3250688 0.297610 0.4345607 -0.4809319 1.443e-01 0.0116151
## Otu00248 0.6905910 -0.887104 -0.0842281 0.1977034 2.138e-02 -0.0762539
## Otu00249 -0.2009327 0.465344 1.9746726 -0.1735164 -1.077e-01 -1.0531368
## Otu00251 -0.8977153 0.134953 -0.0809644 -0.6176459 -5.999e-02 0.1796188
## Otu00252 -0.2524473 0.317076 0.2481263 0.0496536 1.504e-01 0.1057468
## Otu00253 0.3193876 -0.023553 0.2948635 0.1643768 -1.042e-01 -0.2419354
## Otu00254 -0.5625703 0.331916 -0.0057268 -0.1698422 5.586e-01 1.0848672
## Otu00255 -0.7017379 0.362933 -0.6085704 1.1941734 -5.208e-01 -0.0684087
## Otu00256 -0.2710551 0.496711 0.6955419 0.9174424 2.199e-01 0.0530517
## Otu00257 -0.1597720 -0.995413 -0.1152372 0.5628371 2.733e-01 -0.4472226
## Otu00258 -0.4970421 0.227306 -0.2652332 0.1203841 5.436e-02 0.2339765
## Otu00259 0.7565377 -0.262763 0.6445757 -0.0128029 -7.997e-02 -0.0442634
## Otu00260 -0.1883740 0.377417 0.2649290 0.0151038 -2.562e-01 0.2556997
## Otu00261 0.4946913 0.341397 2.0578697 0.5069589 -3.551e-01 -0.3463019
## Otu00262 -0.5378483 0.283533 -0.3808315 1.0762990 5.280e-01 0.1273085
## Otu00263 -0.7606064 0.285700 -0.1896527 0.1635761 -1.448e-01 0.2093965
## Otu00264 -0.6559668 0.251783 -0.3956021 0.6634775 1.749e-01 0.0904441
## Otu00265 -0.5547020 -0.117277 0.1273427 -0.4122637 -1.338e-02 0.4738285
## Otu00266 -0.5237515 -0.029737 0.0601332 0.1870834 -2.736e-02 0.0785245
## Otu00267 -0.6753257 0.341653 -0.3906777 0.7851678 2.981e-01 0.4246024
## Otu00268 -0.9049415 0.199962 -0.2589009 0.1972038 4.988e-01 -0.2743713
## Otu00269 0.3135278 -0.033382 0.3976542 -0.1667888 1.357e-01 -0.2336027
## Otu00270 -0.6536783 0.364643 -0.4329356 1.3650920 5.583e-01 -0.0731855
## Otu00271 -0.0285885 -0.409591 0.2870964 0.0798021 9.632e-02 0.0049001
## Otu00272 -0.6605886 0.316428 0.1933095 0.4078816 -1.751e-02 -0.4262515
## Otu00273 -0.3908500 0.398291 0.3080675 0.1156817 -7.034e-02 0.0887628
## Otu00274 -0.7478376 0.303217 -0.2703280 0.3050728 2.002e-02 0.3467986
## Otu00275 1.3031866 0.019773 -0.5195642 -0.3274515 7.527e-02 -0.2171122
## Otu00276 -0.3614187 -0.119342 0.1992824 -0.1966772 1.475e-03 0.3082223
## Otu00277 0.1688981 -0.024730 0.4283391 -0.1173530 -1.090e-01 0.0969275
## Otu00278 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu00279 0.5711646 0.287252 0.4056787 0.5399121 5.308e-02 -0.3540528
## Otu00281 -0.6632053 0.360549 -0.5002568 1.1970923 7.210e-02 0.0959401
## Otu00282 -0.9198554 0.165710 0.0889982 -0.8423851 6.640e-01 0.3663345
## Otu00283 0.3933915 -0.567421 0.3523008 0.0072786 4.779e-02 0.0210064
## Otu00284 -0.7189862 0.197960 0.3010279 -0.4190997 2.156e-01 0.1376374
## Otu00285 -0.6520678 0.322426 0.2115813 0.1054210 1.031e-01 0.0860250

```



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## Otu00286 -0.2427122 -0.107691 0.8011425 0.0394905 1.447e-01 -0.1325055
## Otu00287 -0.4679851 0.032595 -0.1337432 -0.1462986 -2.946e-02 0.2718125
## Otu00289 -0.8546751 0.141881 -0.0819761 -0.5771812 1.148e-01 0.4171328
## Otu00290 -0.6354744 0.327234 0.1686609 0.0566398 3.927e-01 0.5102234
## Otu00291 -0.6678363 0.381215 -0.3899899 1.3401563 6.237e-01 -0.2023049
## Otu00292 -0.2874904 0.453112 1.1517139 -0.5077812 2.104e-01 0.9003204
## Otu00293 -0.0823876 0.482256 0.2566329 0.6733276 2.560e-02 -0.4490478
## Otu00294 0.6207192 -0.247268 -0.1876553 -0.1519470 6.355e-03 0.1321492
## Otu00295 -0.1932140 0.094876 -0.0312067 0.2847121 6.069e-02 0.0919164
## Otu00296 -0.3438133 -0.099875 0.2127356 0.7959582 2.699e-01 -0.3566910
## Otu00297 -0.2197462 0.096721 0.4260935 -0.2851059 3.139e-01 -0.0563924
## Otu00298 -0.5476113 0.363922 0.6157588 0.1067089 1.640e-02 -0.2320564
## Otu00299 -0.6389640 0.287682 0.7465157 -0.6308698 3.987e-01 0.0870755
## Otu00300 -0.6599009 0.326799 -0.4845366 1.1499319 5.650e-01 0.2605534
## Otu00301 -1.2724189 0.033630 -0.3153303 -0.9607299 -9.774e-01 -1.1520896
## Otu00302 -0.5549260 0.271077 -0.1551100 0.2482052 5.720e-01 0.8397455
## Otu00303 -0.6385409 0.365847 -0.6724562 1.0858393 -7.923e-01 -0.1230002
## Otu00304 -0.5910606 0.190111 0.1163542 -0.1255452 -3.229e-01 0.1914249
## Otu00305 0.4140356 -0.472022 0.6543293 0.1487321 -4.667e-02 -0.3483056
## Otu00306 -0.4585394 0.052403 0.8985196 -0.4103398 2.629e-01 -0.2490935
## Otu00307 -0.8499506 0.222226 0.0367480 -0.4918109 -1.483e-01 0.1147924
## Otu00308 0.0213807 0.478047 0.0711821 -0.4097525 -2.585e-01 0.5697147
## Otu00309 -0.7509503 0.263016 0.2703997 -0.3897849 4.356e-01 0.2237016
## Otu00310 -0.4451998 0.053794 -0.2268332 0.0093836 7.912e-02 0.1916582
## Otu00311 -0.6754264 0.267904 -0.3836097 0.6749218 3.717e-02 0.3322030
## Otu00312 -0.2271418 0.174145 -0.1538785 0.6427028 2.259e-01 0.1390017
## Otu00313 -0.7098553 0.325972 -0.3710519 0.6200301 4.396e-02 0.3360286
## Otu00314 0.9272064 -0.788352 0.0372388 -0.0554534 -3.781e-02 -0.1084190
## Otu00315 0.7471274 0.309121 -0.5782754 0.2714954 2.442e-01 -0.2240224
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## Otu00319 -0.6582639 0.279683 0.2422267 -0.4724339 -8.699e-02 0.0361447
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## Otu00322 -0.8535004 0.212440 0.0726354 -0.7531878 6.993e-01 0.7649319
## Otu00324 -0.6479065 0.326288 0.2600210 -0.1210835 -1.638e-01 0.2468876
## Otu00325 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
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## Otu00331 -0.7617427 0.170389 -0.2315902 -0.1932715 -1.709e-01 0.5886171
## Otu00332 0.3481909 -1.785748 0.0086039 0.4389126 1.725e-03 0.0661145
## Otu00333 -0.7946140 0.086959 0.0689821 -0.9588062 1.213e-01 0.1795824
## Otu00334 -0.1587113 0.006109 -0.0033269 0.5924387 -1.663e-01 0.0852489
## Otu00336 0.2411726 -0.441952 -0.2359789 -0.3383576 2.486e-01 -0.5077974
## Otu00337 -0.4212733 0.080673 -0.1389536 -0.0426133 -1.671e-02 0.1307354
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## Otu00345 -0.4198509 -0.132737 0.2904807 0.1507841 3.460e-01 0.0074518
## Otu00346 -0.6128776 0.046947 -0.5148927 0.8482951 -6.407e-01 -0.1273315
## Otu00347 -0.4828498 -0.144670 0.0421126 0.2100115 -3.321e-01 -0.1078317
## Otu00349 -0.3717051 0.065990 0.1540515 0.0119954 1.321e-01 0.1112587
## Otu00350 -0.1950165 0.268773 -0.1448249 0.6433967 3.816e-01 -0.0679432
## Otu00351 -0.4166589 0.083003 -0.0420951 -0.0237227 7.274e-02 0.1498973
## Otu00352 -0.6463666 0.392663 -0.0464089 -0.0670527 -2.622e+00 0.0670701
## Otu00353 -0.6778102 0.336417 -0.1009821 0.0644002 -2.147e-01 0.6626785
## Otu00354 0.3135873 0.708978 2.7106316 0.3520413 -4.223e-01 -0.6105541
## Otu00356 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00357 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00358 0.8914217 -0.544680 -0.3568326 0.0379388 7.089e-02 -0.1226650
## Otu00359 -0.7983403 0.260427 -0.0595697 -0.1793023 -7.539e-02 0.2347102
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## Otu00364 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu00366 -0.5547671 0.141197 0.0841935 0.5561032 -9.894e-02 -0.3322128
## Otu00367 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
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## Otu00369 -0.3176708 0.424814 0.0128785 0.3236818 -1.082e-01 0.2363781
## Otu00370 -0.0041452 -0.308920 -0.0652856 -0.3184077 3.208e-01 -0.2382395
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## Otu00387 -0.8112256 0.255383 -0.3112097 -0.2171455 -4.108e-01 0.5973468
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## Otu00406 -0.3508861 -0.057429 0.2216300 0.0857065 -1.751e-01 -0.2220688
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## Otu00415 -0.7322205 0.327630 -0.0921559 -0.6322010 -6.552e-01 1.2989258
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## Otu00417 0.0291209 -0.263944 1.0130829 -0.2484323 2.229e-02 -0.6306267
## Otu00418 -0.6231850 0.377921 -0.4541695 1.4084343 5.587e-01 0.1028354
## Otu00419 0.7406915 0.779679 2.1069396 0.2975067 -3.793e-01 -0.4243240
## Otu00420 -0.5908148 0.333235 0.2653607 0.0391732 2.673e-01 0.1592256
## Otu00421 -0.8170931 0.234832 -0.2128255 -0.3211254 4.105e-02 0.2292638
## Otu00422 -0.4750972 0.351242 0.0109377 0.0483946 4.954e-02 0.1596147
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## Otu00428 -0.7867052 0.343223 -0.4174610 -0.1413068 -2.879e+00 0.1313639
## Otu00429 -0.8798534 0.242884 -0.4099366 0.9798240 6.017e-01 -0.9240527
## Otu00430 -0.6163974 0.337690 0.2725943 -0.0643349 5.245e-01 0.5902853
## Otu00431 -0.2818339 0.111898 0.0889525 -0.3698989 6.972e-02 0.2553628
## Otu00432 -0.8828526 0.188058 0.1378597 -0.8907224 6.609e-01 0.5696686
## Otu00433 0.7441674 -0.823478 0.6346775 0.1166395 -1.448e-01 -0.1228027
## Otu00434 -0.4866096 0.342389 0.0006812 -0.0710975 -7.317e-02 0.0799618
## Otu00435 -0.7172119 0.277683 0.3901728 -0.6260467 -1.353e-02 0.3417991
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## Otu00445 -0.7304729 0.335701 -0.5688909 0.8378451 -5.545e-01 0.1337393
## Otu00446 -0.1406134 -0.058436 0.2502490 -0.1645920 2.222e-01 -0.0197113
## Otu00447 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
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## Otu00466 -0.7048854 0.318823 -0.2963817 0.8958277 5.436e-01 -0.0673948
## Otu00467 -0.7638010 0.346493 -0.6805980 0.8775088 -1.295e+00 -0.0760790

```

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## Otu00468 -0.1523067 0.410201 -0.3412687 -0.4526487 -6.208e-01 0.5482186
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## Otu00491 0.1719414 0.178397 1.6640450 0.2300298 -9.968e-02 0.2074377
## Otu00492 -0.4264893 0.437152 0.5989347 -0.1181666 -5.321e-01 0.6879037
## Otu00493 -0.1668732 -0.102789 0.1919640 -0.2115724 -1.803e-01 -0.1204950
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## Otu00496 0.3169194 -1.717306 -0.0128404 0.4848422 1.561e-02 0.0588964
## Otu00497 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu00498 0.9506659 -0.046480 -0.4501369 -0.2353243 1.644e-01 -0.0202183
## Otu00499 -0.7848877 0.301766 -0.4986393 0.9709148 2.609e-02 -0.3453090
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## Otu00519 1.1049380 -0.544964 -0.3522433 -0.1993816 3.574e-02 -0.1337618
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## Otu00521 -0.6326458 0.343992 0.2697362 -0.8632751 6.913e-01 1.9096114
## Otu00522 -0.3809208 0.355323 0.2774425 -0.5128981 -4.626e-02 0.2469308
## Otu00523 -0.5988005 0.314527 0.7945417 0.2032859 2.501e-01 -1.0655514
## Otu00524 -0.3142870 0.445091 0.1400152 0.1598418 -4.332e-01 0.3818351
## Otu00525 0.4767103 -0.120672 0.6524325 0.1701655 -1.449e-02 -0.4324765
## Otu00526 -0.7290882 0.290117 -0.5834983 1.4933076 4.661e-01 -0.3857017
## Otu00528 -0.6998602 0.348575 -0.5852543 1.1411455 -2.782e-01 0.0130243
## Otu00529 1.1491777 -0.418941 -0.3895814 -0.2279608 4.456e-02 -0.1523617
## Otu00530 -0.7632456 0.265408 0.1851240 -0.5817861 -2.325e-01 0.3898307

```

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## Otu00531 -0.6441836 0.324804 0.0322098 -0.2003155 6.155e-01 1.1891434
## Otu00532 -0.7256926 0.315081 -0.1391453 -0.4359146 -2.561e-01 1.2453010
## Otu00533 0.5169909 -1.116949 1.1485711 0.3025606 -2.414e-01 -0.0937206
## Otu00534 0.6310009 0.595035 -0.2712199 -0.0590916 2.884e-01 0.1459269
## Otu00535 -0.1562822 -0.086124 0.6386117 -0.5142196 2.344e-01 -0.2665966
## Otu00536 -1.3302857 -0.046661 0.0258663 -1.3277041 3.407e-01 -1.3369404
## Otu00537 1.0081722 0.620476 -0.6210304 -0.3452152 2.613e-01 -0.0182814
## Otu00538 -0.6716741 0.362228 -0.4337374 0.9093921 -7.329e-01 0.0169695
## Otu00539 1.1681052 -0.365024 -0.4055561 -0.2401880 4.834e-02 -0.1603194
## Otu00540 0.4235795 -1.950746 0.0603013 0.3281866 -3.175e-02 0.0835155
## Otu00541 -0.2515590 0.333946 1.1786451 -0.2075207 2.010e-01 0.4100809
## Otu00542 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu00543 0.0857227 -0.124790 -0.4157256 0.9651336 3.295e-01 -0.1777715
## Otu00544 -0.3979167 0.034485 -0.2069170 -0.3020738 -7.152e-03 0.2157282
## Otu00545 -0.8750287 0.305042 -0.7418872 0.0751918 -2.628e+00 0.1421978
## Otu00546 -0.6396731 0.397142 -0.4459907 1.2625209 -5.915e-01 -0.2271889
## Otu00547 -0.8343235 0.274039 -0.4696000 0.6714889 -1.359e-01 -0.3280956
## Otu00548 -0.2076379 0.065236 0.3905229 -0.3451154 3.362e-01 0.1063579
## Otu00549 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00550 -0.0192465 -0.848637 -0.0116044 -0.5547417 2.497e-01 -0.4719068
## Otu00552 0.3184434 -1.720641 -0.0117953 0.4826039 1.493e-02 0.0592482
## Otu00553 -0.3090465 -0.328134 -0.0361101 0.3179700 4.155e-01 0.6540252
## Otu00554 0.5839996 -0.390290 0.5298298 -0.1382448 -3.234e-02 -0.4200135
## Otu00556 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00558 0.1419734 0.640668 2.1502248 0.0660018 -1.979e-01 0.1553064
## Otu00559 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00560 -0.6838458 0.321981 -0.4571534 0.8914317 3.620e-01 0.3492129
## Otu00562 0.6319581 -1.892309 0.0469495 0.1061663 -5.855e-02 0.0650948
## Otu00563 -0.2439761 0.150690 0.1124740 -0.0259295 -1.713e-01 -0.0030078
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## Otu00565 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu00566 -0.7440531 0.307450 -0.4516726 0.8400891 -7.709e-03 -0.0335854
## Otu00567 -0.4696089 0.071264 0.1062122 -0.1116556 -1.141e-01 0.0592606
## Otu00568 -0.6001283 0.358614 -0.1905075 0.1601393 -1.986e-02 0.7480330
## Otu00569 -0.5376683 0.171256 -0.1353329 0.6565179 -3.396e-01 0.0690657
## Otu00570 0.6839875 -0.265193 -0.3519791 -0.2629773 1.946e-01 -0.1082250
## Otu00571 -0.5126810 0.372088 0.4388657 0.2393989 3.925e-01 0.3152749
## Otu00572 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00575 -0.7293307 0.325826 -0.5038458 1.3312630 3.605e-01 -0.3837474
## Otu00576 -1.0705992 0.093889 0.1667397 -1.2004064 6.927e-01 -0.0848670
## Otu00577 -0.5714807 0.246371 0.4651846 0.0204144 3.870e-01 -0.0175344
## Otu00578 -0.3168355 0.381101 0.2419067 -0.2821571 2.109e-01 0.2063078
## Otu00579 -0.6928629 -0.354187 0.0290154 -0.6288410 3.691e-01 -0.0282621
## Otu00580 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu00581 -0.4337088 0.367612 0.6379674 -0.3469977 -6.432e-01 -0.4259139
## Otu00582 -0.4893029 0.404172 0.2981566 0.2741057 -6.694e-02 0.5417817
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## Otu00585 1.3297957 0.691952 -0.7231336 -0.2472350 1.567e-01 -0.3054035
## Otu00586 0.3735151 0.501605 -0.1264792 -0.7394531 3.425e-01 0.6538583
## Otu00587 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00590 -0.6939532 0.167018 -0.0512721 -0.0167585 1.646e-02 0.2862080
## Otu00591 -0.6668081 0.316266 0.0372687 -0.4569234 7.032e-01 1.5415125
## Otu00592 0.2253449 0.533527 -0.2989044 0.6089873 3.717e-01 -0.1264897
## Otu00593 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375

```

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## Otu00594 1.0984770 -0.563369 -0.3467902 -0.1952078 3.445e-02 -0.1310454
## Otu00595 -0.3920069 -0.566022 -0.3965264 -0.0434256 -1.662e+00 0.2400125
## Otu00596 -0.5084420 -0.385797 -0.2669790 0.3914999 -7.423e-03 -0.2453654
## Otu00597 -0.5970920 0.317123 -0.1325948 0.1814385 1.777e-01 0.1291632
## Otu00598 0.5080959 -0.377556 1.8526685 0.3929891 -3.540e-01 -0.2336211
## Otu00599 -0.7060043 0.336901 -0.4217231 0.6188528 -2.154e-01 0.3799245
## Otu00601 -0.2516412 0.484873 0.4730463 0.1261429 -8.982e-01 0.2822712
## Otu00602 -0.5391136 -0.346460 -0.5241413 -0.1098445 -2.324e+00 0.1685762
## Otu00603 0.7332188 0.424949 -0.5927724 0.3046829 2.849e-01 -0.2654599
## Otu00604 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00605 0.6505457 -0.831971 0.4757366 0.2262001 -9.466e-02 -0.1091326
## Otu00606 0.9354598 -0.303341 -0.3786743 -0.3704376 1.128e-01 -0.3545204
## Otu00607 0.0502687 0.499415 1.0389586 -0.0736608 7.488e-02 -0.5880215
## Otu00608 1.2839899 0.676534 -0.6763779 -0.4179071 1.923e-01 -0.1721151
## Otu00609 -0.0959149 0.155832 -0.5603997 1.1677255 1.650e-01 -0.2369302
## Otu00610 -0.3631161 0.455474 0.9082924 -0.5189816 4.122e-01 1.3806083
## Otu00611 -0.7317200 0.276979 0.4044788 -0.6920953 -3.408e-01 0.2040297
## Otu00612 -0.3126371 -0.191376 0.5244175 -0.3678608 2.870e-01 0.1418436
## Otu00613 -0.6723640 0.307082 -0.4570069 0.9403099 5.704e-01 0.4222317
## Otu00614 -0.5687314 -0.137830 -0.0052125 -0.0008034 -3.777e-01 -0.0797218
## Otu00615 -0.6509782 0.334676 -0.3107426 0.7024610 5.947e-01 0.6510361
## Otu00616 0.1573554 -0.338278 0.8738390 -0.1541138 8.152e-02 0.5567030
## Otu00617 0.1128660 -0.151116 -0.3819486 0.4730460 2.976e-01 -0.0398635
## Otu00618 -0.7306368 0.328227 -0.4962073 0.8632141 -1.376e-01 0.0718354
## Otu00619 -1.2771907 0.030104 -0.3094736 -0.9707492 -9.489e-01 -1.1699709
## Otu00621 0.5650160 -0.466589 0.1149121 -0.1317364 8.548e-02 -0.0544912
## Otu00622 -0.2258430 -0.400977 -0.0447518 -0.4631267 3.865e-01 0.0618930
## Otu00624 -0.6972268 0.291090 0.2945431 -0.9490124 6.304e-01 1.4320208
## Otu00625 1.0963042 -0.569559 -0.3449564 -0.1938041 3.402e-02 -0.1301319
## Otu00626 0.6475547 -1.387007 -0.1061740 0.1713646 3.419e-03 -0.0010473
## Otu00627 -0.5252150 -0.023254 -0.3423249 0.6655224 5.119e-01 0.4909928
## Otu00628 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00630 -0.3594381 0.454788 0.4569696 0.8627448 -4.042e-02 0.0576546
## Otu00631 -0.8930883 0.202614 0.1693652 -0.8219863 -3.744e-01 -0.0267724
## Otu00632 -1.0555650 0.104117 0.0224409 -0.9996270 1.699e-01 -0.2489497
## Otu00633 -0.5552192 0.353284 0.7378312 0.3214348 2.912e-01 -0.8220883
## Otu00634 1.1190963 -0.504632 -0.3641928 -0.2085280 3.857e-02 -0.1397144
## Otu00635 0.4047649 -1.909568 0.0473993 0.3558202 -2.339e-02 0.0791728
## Otu00636 -0.6737885 0.286404 -0.0013566 -0.3334007 6.224e-01 1.1642957
## Otu00637 -0.1813766 0.170187 0.3190263 0.2920832 2.963e-01 -0.2843276
## Otu00638 -0.0188666 0.156360 0.4295167 0.2121678 1.747e-01 -0.7159975
## Otu00639 -0.6097801 0.076973 -0.4692678 -0.6170993 -1.301e+00 -0.5884005
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## Otu00642 -0.1856785 0.480414 0.4540898 0.1704663 -8.131e-01 0.1396967
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## Otu00644 -0.2728323 -0.100016 -0.0789707 -0.4277361 -1.254e-01 0.2037683
## Otu00645 0.7285275 -0.518028 -0.3297291 -0.0107328 1.218e-01 -0.2593580
## Otu00646 0.9964053 -0.359541 -0.3994136 -0.0315017 9.163e-02 -0.1819264
## Otu00647 -0.7429624 0.302794 -0.2258176 -0.3118223 -3.929e-01 1.0490511
## Otu00648 -0.0714695 0.482829 -0.5869094 1.2232650 4.452e-01 -0.2469323
## Otu00649 0.5027638 -0.031707 -0.3581366 -0.3431026 -2.604e-01 0.2605601
## Otu00650 0.8119404 -0.221161 -0.3267571 -0.1685705 1.728e-01 0.0964283
## Otu00651 -0.6162499 0.390282 -0.4109885 1.3588365 5.751e-01 0.1396977
## Otu00653 -0.3452895 0.357101 0.2009039 -0.4064080 2.046e-01 0.1666427

```

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## Otu00655 -0.4623910 0.377566 -0.7503657 -0.2601056 -2.519e+00 0.0960544
## Otu00657 0.5700131 -0.274595 0.3827029 0.0378022 -2.001e-01 -0.3022325
## Otu00658 -0.4019323 0.368574 -0.1012452 -0.6353047 -3.672e-01 0.9764997
## Otu00659 -0.5452001 0.318882 1.2758595 -0.5696416 2.068e-01 -0.7128014
## Otu00660 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00661 -0.4460235 0.410824 -0.6279006 1.7505797 4.723e-01 -0.3000350
## Otu00662 0.0958662 -0.150894 0.1813260 -0.0847555 -1.381e-01 0.4141899
## Otu00663 -0.5075297 -0.331071 -0.5152131 0.1551266 -1.881e+00 0.1242076
## Otu00664 -0.7290936 0.314516 -0.0587172 -0.6591959 -7.405e-01 1.1307830
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## Otu00667 -0.6303674 0.330181 -0.2649995 -0.5452500 -1.343e+00 0.7094565
## Otu00668 -0.5349030 -0.319628 -0.2910187 0.0055780 -3.845e-01 -0.1691213
## Otu00669 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00670 -0.0918057 0.230461 0.0431955 -0.1401627 -1.799e-01 -0.0600379
## Otu00671 -1.0945404 0.084776 -0.1672315 -0.2785973 6.221e-01 -0.8578520
## Otu00672 1.3110428 0.042152 -0.5261948 -0.3325266 7.683e-02 -0.2204152
## Otu00673 0.6667157 -0.389054 -0.3763845 0.3612924 1.685e-01 -0.2158216
## Otu00674 1.1420151 -0.439345 -0.3835362 -0.2233337 4.313e-02 -0.1493503
## Otu00675 -0.6147211 0.389704 -0.6120757 1.9538734 5.136e-01 -0.3223814
## Otu00676 0.4147435 -1.931407 0.0542421 0.3411643 -2.782e-02 0.0814760
## Otu00677 -0.9696750 0.175864 -0.3292221 -0.2145790 -3.393e-01 -0.2175271
## Otu00678 -0.0656962 -0.009371 -0.3361970 0.8515681 4.153e-01 0.0320711
## Otu00679 -0.0658069 -0.813714 0.3407988 -0.2131615 1.753e-01 -0.3655285
## Otu00680 0.3600821 0.307218 -0.6478142 0.2829490 -4.601e-01 -0.1387632
## Otu00681 0.3288243 0.516401 -0.7425055 -0.3498856 -1.481e+00 -0.0681179
## Otu00682 -0.1127264 0.075811 0.3288611 -0.2063801 2.653e-01 -0.2749564
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## Otu00691 -0.6862002 0.294731 -0.3955688 0.6585753 6.116e-01 0.5982013
## Otu00692 0.9909312 -0.447546 -0.3586918 -0.1867692 8.475e-02 -0.0639171
## Otu00693 0.9458382 -0.998180 -0.2179638 -0.0966022 4.024e-03 -0.0668709
## Otu00694 0.4914101 -0.190269 0.3037264 -0.3168342 9.683e-02 -0.2459830
## Otu00695 0.2280641 0.547800 0.2984924 -0.0266180 2.912e-01 0.4102981
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## Otu00700 -0.6393843 0.336521 -0.6034503 1.6118510 4.724e-01 0.0027916
## Otu00701 0.1037804 -0.755211 0.6680787 -0.1345343 1.275e-01 0.6790369
## Otu00703 -0.2101584 0.546336 1.1069155 0.1637480 -1.822e+00 -0.1327713
## Otu00705 0.9869814 -0.880979 -0.2526885 -0.1231810 1.223e-02 -0.0841689
## Otu00706 0.9753943 0.629624 -0.7116800 0.1364205 2.071e-01 -0.2788656
## Otu00707 -0.6136530 0.393443 -0.6078008 1.9613048 5.207e-01 -0.3369931
## Otu00708 -0.1225763 0.572424 0.9781342 1.3327299 5.667e-02 -0.3947293
## Otu00709 0.0362923 0.646773 1.4952549 1.1725775 -5.379e-02 -0.4845306
## Otu00710 1.1014796 -0.554816 -0.3493244 -0.1971475 3.505e-02 -0.1323078
## Otu00711 0.7800217 0.681333 0.2837718 0.3654272 6.374e-02 -0.4037721
## Otu00713 -0.3076944 0.183428 0.1328493 -0.0074899 -1.401e-01 0.0149455
## Otu00714 0.1373815 0.178985 0.2513901 0.6908660 1.617e-01 -0.4407495
## Otu00715 -0.3714332 0.356590 0.2549383 -0.8977809 4.798e-01 1.2703067

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## Otu00716 -0.7049365 0.327994 -0.1205476 0.0370527 9.582e-02 0.7111999
## Otu00717 -0.1315655 -0.018460 0.2730829 -0.3371343 1.827e-01 -0.1303023
## Otu00718 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00719 0.8327419 0.143001 -0.3269866 -0.4777115 2.227e-01 0.2834339
## Otu00720 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00721 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00722 1.3314682 0.701401 -0.7120787 -0.2269079 1.751e-01 -0.3429896
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## Otu00729 0.5158064 -1.160746 -0.0644016 -0.1927111 9.065e-02 -0.0278462
## Otu00730 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu00731 -0.6615240 0.339241 -0.3016123 0.9262636 5.458e-01 0.1482570
## Otu00732 -0.5034364 -0.216401 -0.1216838 -0.3870529 -1.709e-01 0.3345901
## Otu00733 -0.5942563 0.298484 -0.2155929 0.0163397 -1.383e-01 -0.1821310
## Otu00734 -0.7860646 0.310997 -0.5075280 0.1532251 -1.188e+00 0.4850056
## Otu00736 0.2086771 -0.180259 0.5122719 -0.2088278 -4.780e-02 -0.3086447
## Otu00737 0.9548299 -0.972566 -0.2255528 -0.1024109 5.817e-03 -0.0706514
## Otu00738 -0.9068941 0.195812 -0.4412160 0.8447131 5.350e-01 -0.8117013
## Otu00739 0.8411714 0.072958 -0.4499638 -0.5592740 1.926e-01 -0.5748393
## Otu00740 -0.6654524 0.313252 -0.4876973 1.0810460 5.499e-01 0.3343288
## Otu00741 -0.0276788 0.467113 0.0280139 0.0746729 2.230e-01 0.4149802
## Otu00742 0.6887216 -0.805305 -0.2605783 0.2524038 9.780e-02 -0.1342470
## Otu00743 0.8367217 0.344205 -0.4227222 -0.4392560 2.685e-01 0.2630330
## Otu00744 0.4043872 -0.208939 0.0174892 -0.3708186 1.766e-01 -0.4626201
## Otu00745 -0.5452903 0.139794 0.5547243 -0.4231710 3.653e-02 0.2239236
## Otu00746 0.0576414 0.561941 0.4562582 1.1358069 1.272e-01 -0.3473751
## Otu00749 -0.0858261 0.035030 -0.4057876 0.5060677 2.658e-01 -0.0467159
## Otu00750 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00751 -0.6805122 0.303371 0.2647788 -0.5112493 -5.091e-02 0.6653267
## Otu00752 -1.1850030 0.020477 -0.1023345 -0.8234832 7.085e-01 -0.8252200
## Otu00753 -0.0972847 0.530050 1.7429689 -0.2012549 -2.694e-02 0.1381109
## Otu00754 -0.6401919 0.299857 0.2323286 -0.7099064 5.632e-01 1.3538825
## Otu00755 -0.6787218 0.301407 -0.4287758 0.8108515 5.894e-01 0.5030906
## Otu00756 -0.7532723 0.256350 0.2881860 -0.9983015 6.201e-01 1.1454806
## Otu00758 0.3604314 -0.323805 -0.2785350 -0.4479631 2.580e-01 -0.4321448
## Otu00759 -1.0270402 0.162392 -0.4719773 0.0305098 -7.429e-01 -0.6928089
## Otu00761 0.9865760 -0.486362 -0.3485934 -0.1801375 7.940e-02 -0.0634568
## Otu00762 -0.6232100 0.330674 -0.2056087 0.6401534 4.742e-01 0.5537994
## Otu00763 -0.2106773 0.387883 0.1726304 -0.8636146 4.501e-01 1.1372804
## Otu00765 0.6048094 -0.134948 0.0684411 -0.2155678 1.303e-01 -0.0599419
## Otu00766 -0.6786107 -0.150530 -0.3046572 0.1351972 -3.789e-01 -0.1394215
## Otu00767 -0.7162168 -0.230602 -0.1405816 -0.4864953 -3.172e-01 0.0288862
## Otu00768 0.0935156 -0.162923 0.3689480 -0.1364831 1.989e-01 0.1261603
## Otu00769 -0.2482849 -0.162991 -0.2916850 0.0490721 2.952e-01 -0.3389714
## Otu00770 0.1061652 0.483760 -0.6950675 -0.0441910 -1.197e+00 -0.0506017
## Otu00771 -0.7244791 0.292716 -0.5869368 1.5102927 4.647e-01 -0.3754949
## Otu00772 0.2229473 -0.091041 0.7770862 0.2953415 7.369e-02 0.1557346
## Otu00774 -0.8279379 0.246978 -0.2655100 0.0949559 1.081e-01 0.1622987
## Otu00775 -0.3084674 0.432126 0.6569919 -0.3094875 1.636e-01 0.8617995
## Otu00776 0.9547193 0.074625 0.1919063 -0.1215768 -2.644e-01 -0.2201630
## Otu00777 -0.6849504 0.349992 -0.3067573 0.4464617 -2.399e-01 0.5366365
## Otu00778 0.5198266 -1.352665 0.9241061 0.2737322 -2.055e-01 -0.0491205

```



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## Otu00779 1.0800411 -0.161262 -0.3980353 -0.3214548 1.102e-01 -0.0172480
## Otu00780 -0.0520871 0.094192 0.1626177 -0.2271649 6.697e-02 0.0092561
## Otu00781 -0.7255336 0.312883 -0.4579219 0.4928032 -3.527e-01 0.5137579
## Otu00782 -1.0781326 0.130331 -0.1491344 -0.9207328 -4.952e-01 -0.2082891
## Otu00783 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu00785 -0.6178390 0.373385 -0.5433674 1.7009062 4.961e-01 -0.1396250
## Otu00786 -0.5035163 0.441064 0.0198742 1.0749949 5.202e-01 0.1631064
## Otu00787 0.6050454 -0.941893 -0.2422449 0.2913039 6.726e-02 -0.0563781
## Otu00788 0.8391493 -0.229356 -0.1717972 0.1503437 7.101e-02 -0.1994721
## Otu00790 -0.7079429 0.225267 1.2494553 -0.6914032 2.022e-01 -1.4892598
## Otu00791 -0.4059216 0.418154 0.6550080 -0.1066466 4.127e-01 0.9500393
## Otu00792 -0.5130614 0.381266 0.4809952 0.3640285 -2.185e-01 -0.2358240
## Otu00793 -0.6810193 0.311379 -0.0928965 0.2072376 5.590e-01 0.6864398
## Otu00794 0.9343751 -0.587128 -0.3430359 -0.0167269 5.841e-02 -0.1194168
## Otu00795 0.2332163 0.038846 -0.0173843 0.0833670 -2.689e-01 -0.4116461
## Otu00796 0.3985093 -1.895877 0.0431096 0.3650080 -2.061e-02 0.0777289
## Otu00797 0.4710753 -0.072607 0.2505290 -0.1650503 1.611e-01 0.3384236
## Otu00798 0.7363620 -0.675954 -0.2222709 -0.2846919 1.113e-01 -0.1014275
## Otu00799 0.2743947 0.082309 -0.1727658 0.3147783 -6.381e-02 -0.0123688
## Otu00800 -0.6283365 0.344487 -0.2272180 0.7140092 5.329e-01 0.4667953
## Otu00801 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu00802 -0.6922912 0.290202 -0.2569259 0.2097537 6.618e-01 0.9315576
## Otu00803 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu00804 -0.6332622 0.396870 -0.6067614 1.8189819 2.672e-01 -0.3387256
## Otu00805 -0.7417212 -0.125129 -0.0422879 -0.5426079 1.919e-01 0.1897248
## Otu00806 -0.4115533 -0.192551 0.5855264 -0.3517526 2.944e-01 -0.0311366
## Otu00807 0.8522320 0.640601 0.1896352 -0.1274813 7.104e-02 -0.5362716
## Otu00808 0.8142527 -0.383694 0.2311145 -0.0266261 -1.198e-02 -0.0803926
## Otu00809 0.5067481 0.547744 -0.5925956 -0.4600189 -7.400e-01 0.1637593
## Otu00810 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00811 -1.0073757 0.083481 0.8211526 -0.9972596 3.853e-01 -1.7468277
## Otu00812 0.6152011 -0.214842 -0.4229602 0.4580158 2.085e-01 -0.2550303
## Otu00813 0.9768349 0.637750 -0.7021730 0.1538992 2.229e-01 -0.3111893
## Otu00814 0.0600587 -0.575277 0.3830376 0.9244152 3.574e-02 -0.1114192
## Otu00815 0.9161044 -0.276577 0.5415903 0.0118919 -1.188e-01 -0.2058189
## Otu00816 0.4896232 -0.031216 -0.0105626 -0.0863225 -3.667e-01 0.0751515
## Otu00817 0.5618597 -0.197554 0.3338362 -0.1665038 -1.161e-01 0.2034850
## Otu00818 -0.7711221 0.276790 -0.1923204 0.1420669 3.288e-01 0.3677114
## Otu00819 -0.9943648 0.127802 -0.0162611 -0.7490607 6.954e-01 0.0433695
## Otu00820 0.6077172 -0.144188 -0.5130799 -0.2401834 -8.198e-01 -0.0694668
## Otu00821 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu00822 -0.3013518 -0.018008 -0.0188617 0.4726580 2.936e-02 -0.2788233
## Otu00824 -1.4555526 -0.119534 -0.0415417 -1.1837996 6.901e-01 -1.9944315
## Otu00826 -0.4431792 0.385904 0.6895244 -0.4443533 3.760e-01 1.0107403
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## Otu00828 -0.2368071 0.443588 0.9188819 -0.2222553 2.351e-01 0.4454314
## Otu00829 -0.3843297 0.375686 0.1731666 -0.0910135 -9.264e-02 0.0970150
## Otu00830 -0.7103789 0.105081 -0.0057602 -0.8361345 -1.939e-01 0.3421034
## Otu00831 -0.9946066 0.121424 -0.1722602 -0.4473844 7.018e-01 -0.1121124
## Otu00832 0.1489544 -0.257768 0.3799136 -0.0703561 1.117e-01 -0.6277129
## Otu00833 0.7124530 0.140455 0.1591655 -0.1145927 -6.265e-01 -0.1789003
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## Otu00836 -0.7142853 0.327119 -0.5451347 0.8391686 -6.468e-01 0.1746407

```

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## Otu00837 0.0918678 0.422595 -0.5249900 0.2541983 4.056e-01 -0.7240873
## Otu00838 -0.6995073 0.320406 -0.2692993 0.1976876 -1.048e-01 0.7304104
## Otu00839 -0.8683173 0.194080 0.0989918 -0.7963012 6.606e-01 0.5865799
## Otu00840 -0.6908987 0.385216 -0.6276791 1.4024315 -4.406e-01 -0.2624265
## Otu00841 1.2137596 -0.234971 -0.4440883 -0.2696811 5.744e-02 -0.1795141
## Otu00843 0.4113886 -1.908101 0.0612476 0.3697353 -6.518e-03 0.0416687
## Otu00844 -0.3955261 0.162283 -0.2512533 -1.1592642 4.987e-01 -1.5110043
## Otu00845 -0.0831597 0.385034 -0.0247871 -0.3810067 3.698e-01 -0.0060850
## Otu00846 0.9500578 -0.040603 -0.5086766 0.0551088 1.256e-01 -0.1908931
## Otu00847 0.2514735 -0.001250 0.0021872 -0.0970612 -2.958e-01 -0.0296789
## Otu00848 0.4520489 -0.112791 -0.3465183 -0.4261387 2.729e-01 -0.3349229
## Otu00849 0.3613118 -0.338689 -0.3666968 -0.1100699 -3.075e-01 0.1671141
## Otu00850 -0.4431674 0.368284 0.2814620 0.1558872 -2.864e-02 -0.3049830
## Otu00852 1.1048509 0.403387 0.5119051 -0.0942825 -1.018e-01 -0.3119017
## Otu00853 0.2466788 0.045439 0.1377214 -0.2719655 1.152e-01 0.4945182
## Otu00854 -0.0177214 0.448921 -0.5800386 0.2110510 -3.149e-01 0.1274219
## Otu00855 0.5156641 -0.744181 0.0196925 -0.2956370 8.716e-02 -0.4408730
## Otu00856 0.4146951 -0.077421 -0.0904907 0.2144990 -5.051e-01 -0.1230278
## Otu00858 1.1780141 -0.336797 -0.4139192 -0.2465892 5.031e-02 -0.1644855
## Otu00859 -0.6740379 0.309154 -0.0114723 -0.3688453 7.015e-01 1.4480863
## Otu00860 0.8381640 -1.304904 -0.1270873 -0.0270440 -1.744e-02 -0.0216011
## Otu00861 -0.8285982 0.246122 0.1553830 -0.6219958 -1.007e+00 -0.1579868
## Otu00862 -0.6303883 0.338223 0.2878863 -0.8774071 6.644e-01 1.8390612
## Otu00864 -0.7291074 0.312225 -0.0550598 -0.6624791 -7.621e-01 1.0992386
## Otu00865 0.5385855 -0.411000 0.4760478 0.0646499 4.444e-03 0.0337336
## Otu00866 -0.5696374 0.374971 0.0671406 0.5422648 -1.147e-01 0.2045476
## Otu00867 0.7218689 -0.689535 -0.2591498 -0.0887783 1.202e-01 0.0764273
## Otu00868 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00869 1.1632651 -0.136586 -0.1808290 -0.2102385 1.225e-02 -0.2037820
## Otu00870 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu00871 -0.7177456 0.129174 0.3103485 -0.5338624 -5.238e-01 -0.1869506
## Otu00872 0.8544382 -0.345085 -0.0625751 -0.2643169 4.957e-02 -0.3417688
## Otu00874 1.0676794 -0.396426 -0.0888156 -0.1471111 -8.607e-03 -0.1659329
## Otu00875 1.0448150 -0.716232 -0.3014998 -0.1605418 2.376e-02 -0.1084841
## Otu00876 -1.0350687 0.117576 -0.3552309 0.3657334 5.605e-01 -1.0632846
## Otu00878 -0.6305279 0.338580 0.2867637 -0.8765329 6.660e-01 1.8434252
## Otu00879 1.1381913 -0.450238 -0.3803089 -0.2208635 4.237e-02 -0.1477426
## Otu00880 1.1065232 -0.540448 -0.3535812 -0.2004057 3.606e-02 -0.1344283
## Otu00881 1.0905624 -0.585915 -0.3401104 -0.1900949 3.288e-02 -0.1277179
## Otu00882 -0.6792756 0.321823 -0.3586288 0.6921109 6.679e-01 0.5024162
## Otu00883 -0.2428604 -0.333301 0.7020296 -0.0845722 1.876e-01 -0.2286577
## Otu00884 0.4973674 -0.234191 0.3354207 -0.3136782 5.712e-02 -0.5785778
## Otu00885 1.1281382 -0.478875 -0.3718241 -0.2143691 4.037e-02 -0.1435160
## Otu00886 -0.8521985 0.125255 0.3158305 -1.1161203 5.131e-01 -0.7613680
## Otu00887 -0.4127293 0.394424 -0.4438110 0.8683080 5.948e-01 0.1788978
## Otu00888 0.7052601 -0.260735 0.0299503 -0.3080387 9.947e-02 0.1791070
## Otu00889 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu00891 -0.6547203 0.358748 -0.5388642 1.3989018 3.473e-01 -0.0049849
## Otu00892 -0.8461731 0.149884 0.1515714 -1.1473929 6.012e-01 -0.0468051
## Otu00893 0.8460297 -1.282498 -0.1337259 -0.0321253 -1.587e-02 -0.0249081
## Otu00895 -0.7273869 -0.067215 -0.1938835 -0.0576734 -1.078e-01 -0.0625023
## Otu00896 1.0412303 -0.107181 -0.3894721 -0.3464153 1.313e-01 0.0374733
## Otu00897 -0.4535447 0.396763 0.4294213 0.1716292 -4.170e-02 0.5257408
## Otu00898 -0.4263971 -0.134586 0.4597385 -0.4126815 -3.498e-01 0.1970103

```

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## 0tu00899 0.7194531 -0.370390 -0.3599481 -0.0002293 1.564e-01 -0.3230523
## 0tu00900 -0.2874665 0.338996 -0.4618019 0.3931362 4.827e-01 -0.8603451
## 0tu00901 -0.5164501 -0.583283 -0.0734223 -0.4516330 4.463e-01 -0.4094748
## 0tu00902 -0.7724272 0.300075 -0.4964316 0.8391899 -5.702e-02 -0.1198530
## 0tu00903 -0.2198916 -0.335797 0.6130134 0.0722619 1.967e-01 -0.1194945
## 0tu00904 0.4689254 -0.318824 -0.2338822 -0.5218359 2.353e-01 -0.2612273
## 0tu00905 -0.2501869 0.247603 0.3996749 0.0090620 3.014e-01 -0.0823069
## 0tu00906 -0.4863791 0.369036 0.3340037 0.1888544 4.619e-01 0.6792703
## 0tu00907 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## 0tu00908 -0.3685536 0.107713 0.3845618 -0.3756214 3.838e-01 0.0804356
## 0tu00909 1.1259638 -0.485069 -0.3699890 -0.2129644 3.993e-02 -0.1426018
## 0tu00910 -0.5959518 -0.248981 -0.0332790 -0.2202675 4.840e-01 0.2333445
## 0tu00911 -0.5469896 0.327893 0.9210217 -0.7114730 3.268e-01 0.2857324
## 0tu00912 -0.6128664 0.390176 -0.5141754 1.7090451 5.293e-01 -0.1916255
## 0tu00913 -0.3948516 0.456093 0.7189113 0.9474077 2.486e-01 -0.7843121
## 0tu00914 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## 0tu00915 0.4678107 -0.413256 -0.2699171 -0.5416721 2.065e-01 -0.6506013
## 0tu00916 1.1742566 -0.347501 -0.4107479 -0.2441619 4.956e-02 -0.1629057
## 0tu00917 -0.0722906 0.056763 -0.3834656 0.0590078 -3.112e-01 0.2224073
## 0tu00918 1.0495573 -0.702723 -0.3055022 -0.1636054 2.470e-02 -0.1104779
## 0tu00919 0.7307185 -0.879416 0.6299718 0.1233756 -1.449e-01 -0.1138374
## 0tu00920 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## 0tu00921 1.0084770 -0.364681 -0.3377003 -0.2753579 9.605e-02 0.0129427
## 0tu00922 0.6686530 0.131362 0.3009406 -0.0287103 6.977e-02 -0.0068668
## 0tu00924 1.0394880 -0.731407 -0.2970038 -0.1571005 2.269e-02 -0.1062445
## 0tu00925 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## 0tu00926 -0.6326714 0.348158 0.0601738 -0.2696562 6.519e-01 1.5074538
## 0tu00927 -0.7896611 0.251093 -0.0946081 -0.2640426 3.338e-01 0.6272554
## 0tu00928 1.3036766 0.021169 -0.5199778 -0.3277680 7.536e-02 -0.2173182
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## 0tu00931 1.2494367 -0.133341 -0.4741995 -0.2927287 6.455e-02 -0.1945139
## 0tu00935 -0.5485109 -0.043680 -0.5402882 0.8451282 -9.796e-01 -0.0881044
## 0tu00936 -0.7891595 0.297700 -0.5668270 0.2921075 -1.098e+00 0.3919474
## 0tu00937 0.1054179 0.640748 2.0345901 0.0578913 -1.042e-01 0.3769865
## 0tu00938 -0.3522771 0.494065 0.6822212 0.2670870 -1.201e+00 0.1138633
## 0tu00939 0.5760125 -0.245688 -0.3565550 0.1459595 1.903e-01 0.0811791
## 0tu00941 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## 0tu00942 1.0599632 -0.673081 -0.3142848 -0.1703276 2.678e-02 -0.1148529
## 0tu00943 0.3441623 -0.394416 0.5105926 -0.1922384 1.195e-01 0.5032835
## 0tu00944 -0.7069067 0.334034 -0.6863899 1.2906515 -5.548e-01 -0.0616266
## 0tu00945 1.2267653 -0.197923 -0.4550650 -0.2780828 6.003e-02 -0.1849821
## 0tu00946 -0.6088190 0.353289 0.2232816 0.5447204 1.820e-01 -0.2595818
## 0tu00948 0.5857821 -0.249744 0.0003798 -0.4077291 1.179e-01 -0.5686870
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## 0tu00952 0.6057990 -0.138861 -0.3321126 0.0098033 2.260e-01 0.1439126
## 0tu00954 -0.4452758 0.387660 -0.5516895 1.1694335 3.417e-01 0.0127000
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## 0tu00958 -0.7610819 0.306378 -0.4752806 0.3097897 -5.614e-01 0.4670580
## 0tu00959 -0.6598847 0.080221 -0.1105205 -0.0523530 1.796e-01 0.4835161
## 0tu00960 -0.4315979 0.232972 0.5076022 -0.8686223 3.179e-01 -1.4211543
## 0tu00961 -0.8579760 0.239627 -0.3469954 -0.0930088 -3.813e-01 0.3075759

```

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## Otu00962 -0.3434478 0.398437 -0.7491841 -0.2736022 -2.363e+00 0.0713744
## Otu00963 -0.6571794 0.139893 -0.1927976 0.0934160 3.477e-01 -0.0241321
## Otu00964 -0.2818354 0.402998 0.5198334 -0.2160047 -1.443e-01 -0.1971522
## Otu00965 -0.4209167 0.323202 -0.0647698 -0.3667851 -3.446e-01 -0.2685083
## Otu00966 0.7092441 -0.047939 -0.2967626 -0.3714413 2.387e-01 0.3364448
## Otu00967 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00968 -0.6659179 0.341326 -0.5507352 1.2323125 -1.401e-04 0.1692860
## Otu00969 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu00970 0.9229775 -0.295258 0.5009385 0.0032151 -1.119e-01 -0.2015222
## Otu00971 0.7041237 0.558680 -0.5600179 -0.2650830 3.374e-01 0.1512977
## Otu00972 -0.5578790 -0.171173 -0.4186131 0.1006014 -1.019e+00 0.4112124
## Otu00973 0.4139459 0.285564 0.3177026 -0.2786584 1.924e-01 0.1854921
## Otu00974 0.2829741 -0.374347 -0.2755638 -0.4741163 -1.873e-01 -0.3622590
## Otu00975 1.2432139 -0.151067 -0.4689475 -0.2887087 6.331e-02 -0.1918977
## Otu00976 1.1563222 -0.398589 -0.3956113 -0.2325761 4.599e-02 -0.1553655
## Otu00977 -0.2328883 0.360574 -0.0979578 -0.2512351 4.774e-01 -0.0538930
## Otu00978 -0.2254249 0.452897 0.1665037 -0.0908852 -6.698e-01 0.4628112
## Otu00979 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu00980 -0.7809250 0.339600 -0.6905979 0.7540302 -1.499e+00 -0.0405591
## Otu00983 -0.6135003 -0.454748 -0.0959065 -0.2925011 5.066e-01 -0.0570749
## Otu00984 1.0823503 0.667886 -0.6915313 0.0676761 2.314e-01 -0.3664746
## Otu00985 0.7607969 -0.996865 -0.1278922 -0.1480082 4.353e-02 0.0919784
## Otu00986 1.0980345 -0.564629 -0.3464168 -0.1949219 3.437e-02 -0.1308594
## Otu00987 -0.3278086 0.354654 -0.6353198 -0.1871294 -1.338e+00 -0.2946364
## Otu00988 0.3742387 0.712837 1.8291087 0.7502094 -2.200e-01 -0.4560194
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## Otu00991 -0.0909385 0.391419 0.5405735 -0.5485972 3.572e-02 -0.6152249
## Otu00992 0.9407418 -0.684801 0.0850177 -0.0570003 -4.453e-02 -0.1263175
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## Otu01001 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01002 0.0002309 0.599153 1.7817337 -0.0716180 1.170e-02 0.6023019
## Otu01003 0.2122434 -0.077679 -0.0503986 -0.6004150 3.340e-01 0.5564095
## Otu01005 0.6939191 -0.669602 -0.2988861 0.2729443 1.178e-01 -0.1593595
## Otu01006 0.7161780 -0.542049 -0.3613278 0.2331118 1.000e-01 -0.1138675
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## Otu01010 -0.1207525 -0.299129 -0.1916788 0.0846679 3.874e-01 0.3966941
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## Otu01018 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
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## Otu01020 -0.6699960 0.209736 0.0038744 0.1176985 -1.897e-01 0.0806526
## Otu01021 1.4014661 0.299735 -0.6025116 -0.3909406 9.486e-02 -0.2584322
## Otu01022 -0.3050067 -0.372168 0.3137070 -0.6437311 3.603e-01 1.1015765
## Otu01023 0.5601336 -1.032155 -0.2157808 0.3264705 6.312e-02 -0.0423665
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## Otu01025 0.4942096 -0.054024 0.4546796 0.5691604 3.132e-02 -0.2986271
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## Otu01027 -0.6530675 0.323754 0.2228615 -0.8403362 2.571e-01 1.5523179
## Otu01028 -0.3461160 0.424566 0.7431049 -0.1954536 -1.272e+00 -0.5067263
## Otu01029 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu01030 0.1830224 0.353617 -0.3541615 -0.9261258 4.024e-01 -0.8408644
## Otu01032 -0.6611749 0.349132 -0.4029056 1.0033726 6.551e-01 0.2680926
## Otu01033 0.2498771 -1.143739 -0.1884380 0.6530245 9.989e-02 -0.0117624
## Otu01034 -0.7629474 0.349482 -0.6771812 0.8834487 -1.289e+00 -0.0877581
## Otu01035 0.9695644 -0.461631 -0.3695688 -0.0192287 8.226e-02 -0.1657811
## Otu01036 -0.6154032 -0.232057 -0.1049311 -0.2448240 -7.694e-02 0.1685427
## Otu01037 0.3692192 0.519433 -0.4350917 -0.4980038 -2.464e-01 0.4756390
## Otu01038 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu01039 -0.6745062 0.304110 -0.0129486 -0.3554695 6.856e-01 1.3848281
## Otu01040 -0.3479530 0.419623 0.3552007 -0.4744536 5.163e-01 1.2703996
## Otu01041 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01042 0.7292889 -0.588478 0.8999022 0.1569671 -1.880e-01 -0.1686485
## Otu01043 -0.4345694 0.354714 1.6404832 -0.4121652 3.512e-02 -1.2541078
## Otu01044 -0.6799624 0.316689 -0.1951921 0.4941410 5.752e-01 0.4078059
## Otu01045 1.0300286 0.649973 -0.7004117 0.1032502 2.211e-01 -0.3269087
## Otu01046 0.8376631 0.599029 -0.6095329 -0.1236327 2.993e-01 -0.0485134
## Otu01047 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu01048 -0.4611715 -0.458759 -0.3071370 -0.0647818 -8.510e-01 0.2822778
## Otu01049 -0.2545645 0.500195 0.8387795 0.6332519 1.905e-01 0.2431509
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## Otu01051 -0.7006287 -0.274770 -0.0051608 -0.5091753 5.342e-01 0.0509240
## Otu01052 0.9109123 -0.421368 -0.0880663 -0.1132166 3.971e-02 -0.0721094
## Otu01053 -0.2914267 0.441276 1.2495227 0.0501529 1.386e-01 -0.1748717
## Otu01054 1.1325731 -0.466242 -0.3755672 -0.2172341 4.125e-02 -0.1453806
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## Otu01057 1.3767534 0.229337 -0.5816542 -0.3749761 8.993e-02 -0.2480421
## Otu01059 1.4110159 0.326939 -0.6105717 -0.3971099 9.676e-02 -0.2624473
## Otu01060 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01061 -0.1394857 0.427841 -0.6214824 0.9644809 1.883e-01 -0.3728383
## Otu01062 0.6825678 -0.774306 -0.2690006 0.2659720 1.042e-01 -0.1408628
## Otu01063 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
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## Otu01065 -0.7348734 0.304390 -0.3906154 0.2277987 -3.108e-01 0.6920535
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## Otu01067 -1.4565905 -0.123517 -0.0025904 -1.3599626 7.180e-01 -1.8424196
## Otu01068 -0.4521415 0.297062 -0.4754591 -0.0032130 -2.327e-01 -0.7871500
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## Otu01075 0.1123778 -1.782004 0.1134093 -0.1740948 8.118e-02 -0.3575578
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## Otu01077 1.0009512 -0.841184 -0.2644789 -0.1322056 1.501e-02 -0.0900423
## Otu01078 1.0613686 -0.669077 -0.3154709 -0.1712356 2.706e-02 -0.1154438
## Otu01079 0.2492384 -0.885759 -0.1205647 -0.4586132 1.859e-01 -0.6192241
## Otu01082 0.0460778 -1.505667 -0.0491179 -0.0702497 -5.909e-01 -0.1023967
## Otu01083 -0.6228219 0.361344 -0.6444993 1.8975078 4.600e-01 -0.2115553

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## Otu01084 -0.4849304 -0.064915 -0.2586065 -0.5284098 -5.095e-02 -0.2913037
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## Otu01087 0.3062781 0.543288 -0.3346509 0.6317097 3.355e-01 -0.5560789
## Otu01089 0.3904420 -1.539306 0.3719122 0.4132770 -7.192e-02 0.0109733
## Otu01090 -0.6162005 0.384524 -0.6179972 1.9435794 5.038e-01 -0.3021413
## Otu01091 1.0986961 -0.562745 -0.3469751 -0.1953493 3.450e-02 -0.1311375
## Otu01092 -0.9928348 0.240241 -0.6584816 -0.3736939 -2.644e+00 -0.1044132
## Otu01093 0.3576242 -0.286373 0.6587058 0.0437208 3.386e-02 0.1705562
## Otu01094 0.8568772 -0.758483 -0.2926325 0.0414070 4.927e-02 -0.0932219
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## Otu01096 0.5257209 -1.842628 0.4575317 0.2138092 -1.308e-01 0.0435855
## Otu01097 1.3128620 0.047335 -0.5277302 -0.3337018 7.719e-02 -0.2211801
## Otu01099 -0.1845369 0.200305 0.3246808 -0.4960484 3.493e-01 -0.1893678
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## Otu01105 -0.3651243 -0.414274 0.1314921 -0.3775178 3.840e-01 0.1564479
## Otu01106 -0.6176532 0.379439 -0.6238113 1.9334720 4.942e-01 -0.2822681
## Otu01107 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu01108 0.6091831 -0.843647 0.0107651 0.2905081 1.564e-02 -0.0829250
## Otu01109 -0.5082988 0.384923 -0.4494364 0.7132244 -1.764e-02 0.1652142
## Otu01110 -0.1040397 -0.105125 0.5880095 0.5461622 -5.133e-01 -0.0092162
## Otu01112 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01113 -0.7871633 0.302647 -0.2659947 -0.5278095 -1.547e+00 0.7426587
## Otu01114 -0.6841308 0.226831 -0.0167807 -0.4358536 8.961e-02 -0.6993255
## Otu01115 1.2314327 0.668610 -0.5657375 -0.5571152 1.843e-01 -0.0560728
## Otu01116 1.2337283 -0.178088 -0.4609417 -0.2825810 6.142e-02 -0.1879096
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## Otu01125 -0.9744375 0.160255 -0.1295085 -0.1891583 6.610e-01 -0.4002295
## Otu01126 1.1597361 -0.388864 -0.3984926 -0.2347816 4.667e-02 -0.1568008
## Otu01127 0.7272627 -0.660000 0.2844146 0.1916597 -3.772e-02 -0.1562935
## Otu01129 0.6282669 -0.279388 -0.3297279 -0.5201573 1.891e-01 -0.5877730
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## Otu01150 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658

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## Otu01151 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
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## Otu01166 0.2977349 -1.110025 -0.0767110 -0.3495900 1.402e-01 -0.4935216
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## Otu01169 -0.1643625 -0.170913 -0.0084652 0.2810031 -5.383e-01 -0.3835360
## Otu01171 0.7766407 -0.710233 0.6261626 0.0979582 -1.413e-01 -0.1403512
## Otu01172 -0.5610690 -0.029740 -0.2255722 0.1162539 5.976e-01 0.8397481
## Otu01174 1.1230884 -0.493260 -0.3675622 -0.2111069 3.936e-02 -0.1413929
## Otu01175 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01176 1.0104291 -0.814185 -0.2724782 -0.1383283 1.690e-02 -0.0940271
## Otu01177 -0.6579088 0.345770 -0.0785919 0.0494655 6.247e-02 0.7935413
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## Otu01179 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01181 0.8041522 -0.150909 -0.4025820 -0.1859178 1.883e-01 0.0576231
## Otu01183 -0.6490737 0.350307 0.1344553 -0.5829729 -6.421e-01 1.1171603
## Otu01184 0.4934183 0.472972 -0.3800444 -0.7756613 3.616e-01 -0.2449528
## Otu01186 -0.8853341 0.070739 -0.2438290 -1.1256686 -7.173e-02 -1.4486551
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## Otu01198 0.9127262 -1.092504 -0.1900174 -0.0752117 -2.577e-03 -0.0529496
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## Otu01200 0.0404133 0.443060 0.2311328 -0.0213737 2.789e-01 -0.6233176
## Otu01201 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01202 -0.4450758 0.443082 0.1097227 1.1582478 -5.149e-01 -0.1869690
## Otu01203 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01204 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01205 1.0890532 -0.590214 -0.3388366 -0.1891200 3.258e-02 -0.1270833
## Otu01206 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01207 0.0919520 -0.095885 -0.2779683 0.3231679 -4.698e-01 -0.2780939
## Otu01208 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu01209 1.0173462 0.574814 -0.5986544 -0.6730839 2.278e-01 -0.6489091
## Otu01210 -0.7912276 0.228367 0.4502625 -0.3270859 4.570e-01 -0.5848510
## Otu01212 -0.6260356 0.300460 0.6423565 -0.4935611 4.148e-01 0.2254862
## Otu01213 -0.1150747 0.171798 0.6068552 1.2715970 1.065e-01 -0.3049489

```

##	Otu01214	0.3489912	-0.967935	-0.0158014	-0.1586157	1.851e-01	0.4985909
##	Otu01215	1.3975576	0.288601	-0.5992129	-0.3884157	9.408e-02	-0.2567889
##	Otu01217	0.1632707	0.487425	-0.6546431	-0.3854440	-1.392e+00	0.1286387
##	Otu01218	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01219	-0.6523961	0.370551	-0.6384756	1.6825294	7.078e-02	-0.2292977
##	Otu01221	0.9339259	0.605386	-0.6061316	-0.3256475	2.799e-01	0.0231285
##	Otu01222	1.2706104	-0.073025	-0.4920700	-0.3064070	6.877e-02	-0.2034161
##	Otu01223	1.4131959	0.333149	-0.6124116	-0.3985181	9.720e-02	-0.2633638
##	Otu01224	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01225	0.4970056	0.516585	-0.5184561	-0.2104969	3.892e-01	0.2668151
##	Otu01227	0.2554122	0.717450	2.2006398	0.8679786	-2.830e-01	-0.4705695
##	Otu01228	-0.7660771	0.313722	-0.3224221	-0.1709249	-1.163e+00	0.6013158
##	Otu01229	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu01230	-0.6266706	0.347870	-0.6599038	1.8707284	4.345e-01	-0.1589016
##	Otu01232	0.2953722	-0.367864	-0.2696134	-0.3910077	2.558e-01	-0.7042443
##	Otu01234	0.4019502	-1.392509	-0.1096831	0.4433988	4.311e-02	0.0124706
##	Otu01235	-0.2314320	-0.235100	-0.1957513	0.0114758	-6.590e-01	0.1161190
##	Otu01236	0.9438657	-1.003799	-0.2162990	-0.0953279	3.631e-03	-0.0660416
##	Otu01237	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu01238	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu01239	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01240	-0.8422954	0.179946	0.4769366	-0.5206868	4.704e-01	-0.6733826
##	Otu01241	1.4037429	0.306221	-0.6044333	-0.3924115	9.531e-02	-0.2593894
##	Otu01243	1.1334013	-0.463883	-0.3762662	-0.2177691	4.142e-02	-0.1457288
##	Otu01244	0.1219296	-0.440003	0.1551220	-0.2935234	-3.841e-01	-0.2730977
##	Otu01245	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01246	0.9997035	-0.533872	0.0197405	-0.0969759	-3.031e-02	-0.1479080
##	Otu01247	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01248	-0.6435341	0.334103	-0.4270307	1.0675219	5.301e-01	0.4178462
##	Otu01250	-0.7035184	0.248575	0.2205232	-0.4390962	-1.884e-01	-0.3953699
##	Otu01251	0.0342875	0.289765	1.5483203	-0.0737447	2.737e-02	0.5984299
##	Otu01252	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01253	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu01254	1.1411336	-0.441856	-0.3827923	-0.2227643	4.296e-02	-0.1489797
##	Otu01255	0.9697259	0.191846	-0.5006050	-0.5465427	1.804e-01	-0.5291927
##	Otu01256	0.8437100	-0.120280	-0.5051444	-0.2634750	-5.029e-01	-0.1170396
##	Otu01257	0.7315210	-0.675788	-0.3095948	0.2102614	9.400e-02	-0.1255715
##	Otu01258	0.6610449	-1.400109	0.3952688	0.1327044	-1.121e-01	-0.0240216
##	Otu01259	0.1695484	-1.056775	0.4214423	0.2059761	7.653e-02	0.2657691
##	Otu01260	0.1177055	0.538111	-0.6119668	1.2083764	4.495e-01	-0.4574145
##	Otu01261	0.2276271	-1.892786	0.1188607	-0.0785021	3.698e-02	-0.2290138
##	Otu01262	-0.3666269	-0.194433	-0.2108052	-0.6306024	-4.114e-01	-0.1696542
##	Otu01264	-0.6162544	0.325999	0.2583764	-0.5538600	5.367e-01	1.2112701
##	Otu01265	0.1985536	-0.695575	0.0663652	-0.4586848	1.691e-01	-0.6909567
##	Otu01266	-1.0135635	0.132455	0.1651913	-1.1430247	7.154e-01	0.2435190
##	Otu01267	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01268	-0.6278222	0.331666	0.3085175	-0.8934707	6.337e-01	1.7588674
##	Otu01269	0.8372528	0.773915	1.7696340	0.2040297	-3.194e-01	-0.4121727
##	Otu01270	-0.5381262	-0.149595	-0.1705255	-0.5761861	-3.718e-01	0.1232673
##	Otu01271	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01273	-0.3635999	0.406285	1.5180017	-0.3879414	1.047e-01	-0.5022671
##	Otu01274	-0.4891735	-0.118645	0.8935386	-0.4065150	2.146e-01	-0.8503248
##	Otu01277	1.1774950	-0.338276	-0.4134811	-0.2462539	5.021e-02	-0.1642672
##	Otu01278	1.1554982	-0.400937	-0.3949159	-0.2320439	4.582e-02	-0.1550191


```

## Otu01279 -0.4967531 0.391490 0.3081182 0.6174610 1.059e-01 -0.0049216
## Otu01280 -0.5118248 0.396678 0.5999660 -0.2987335 -1.206e+00 0.1327741
## Otu01282 0.1725176 -0.032604 -0.2425068 0.7001666 2.568e-01 -0.3734977
## Otu01283 -0.7037707 0.326495 -0.3636037 0.4398916 -1.011e-01 0.5773147
## Otu01284 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01285 0.9020683 -0.563365 -0.3597521 -0.1797877 -2.376e-01 -0.0930375
## Otu01287 0.8411455 0.703993 0.5322600 0.2772070 -1.304e-02 -0.4003563
## Otu01289 -0.8603107 0.159115 0.0255226 -1.0681372 3.679e-01 -0.0640096
## Otu01290 1.3550318 0.167461 -0.5633213 -0.3609438 8.560e-02 -0.2389097
## Otu01291 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu01292 0.7527633 -0.144837 -0.3982360 0.0312275 1.526e-01 -0.0358440
## Otu01293 1.0829253 -0.607670 -0.3336647 -0.1851613 3.135e-02 -0.1245070
## Otu01294 -0.7050873 0.352623 -0.5896355 1.1221925 -3.717e-01 -0.0120288
## Otu01295 0.0841898 -0.930776 -0.0807248 -0.5166372 2.181e-01 -0.7212119
## Otu01296 -0.6291685 0.335106 0.2976937 -0.8850432 6.498e-01 1.8009396
## Otu01297 0.4154514 -0.704719 -0.1924334 -0.4527349 1.743e-01 -0.5712211
## Otu01298 0.2427712 -0.372137 0.4262908 -0.1866419 1.294e-01 -0.0341767
## Otu01300 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01301 -0.6132003 0.395028 -0.6059889 1.9644547 5.237e-01 -0.3431865
## Otu01302 0.9207770 -0.810921 0.0387907 -0.0517710 -3.847e-02 -0.1049169
## Otu01303 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01304 1.2879694 0.368347 -0.1497211 -0.2742217 1.541e-02 -0.2843295
## Otu01305 0.9019521 -1.123196 -0.1809241 -0.0682515 -4.725e-03 -0.0484198
## Otu01307 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu01308 1.3797221 0.237794 -0.5841598 -0.3768938 9.052e-02 -0.2492903
## Otu01311 0.3189137 0.552309 -0.6441817 0.9393205 3.778e-01 -0.3857764
## Otu01312 1.1625071 -0.380971 -0.4008313 -0.2365716 4.722e-02 -0.1579658
## Otu01314 0.1423955 0.419071 0.4342232 -0.6398093 2.005e-01 -0.8329221
## Otu01315 0.9888914 0.621396 -0.4415551 -0.6086638 2.290e-01 0.1446313
## Otu01316 0.8389309 -0.465297 0.6350708 0.0651925 -1.387e-01 -0.1792177
## Otu01317 -0.6804058 0.320118 -0.3558643 0.6726771 6.687e-01 0.5170463
## Otu01318 -0.2260941 0.419029 -0.7480183 -0.2869185 -2.209e+00 0.0470243
## Otu01320 -0.6828738 0.358064 -0.0521061 0.1756079 -1.552e+00 -0.1475301
## Otu01321 -0.7457135 0.242785 0.3346009 -1.0326878 5.519e-01 0.9751235
## Otu01322 -0.2511628 0.342614 -0.4057200 0.2240697 4.577e-01 -0.5989950
## Otu01323 -0.0444592 -0.937408 0.2573569 -0.3890965 2.232e-01 0.7914948
## Otu01324 -0.0790468 0.445402 -0.1225897 -0.0956920 4.480e-01 0.5394344
## Otu01325 -0.3741248 0.447532 0.4684373 0.6861930 -3.424e-01 0.1045571
## Otu01326 0.9688307 -0.932683 -0.2373694 -0.1114555 8.608e-03 -0.0765378
## Otu01327 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01328 1.1769311 -0.339882 -0.4130052 -0.2458897 5.010e-02 -0.1640302
## Otu01329 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01330 1.2292581 -0.190822 -0.4571689 -0.2796932 6.053e-02 -0.1860302
## Otu01331 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01333 1.2042515 -0.262057 -0.4360634 -0.2635388 5.554e-02 -0.1755166
## Otu01335 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu01336 1.0691560 -0.646894 -0.3220435 -0.1762663 2.861e-02 -0.1187179
## Otu01337 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01338 -0.7624880 0.324449 -0.7047373 0.8888191 -1.240e+00 0.0057580
## Otu01340 0.1809389 -1.009004 0.1090168 -0.2613390 2.305e-01 0.7604511
## Otu01341 0.9809335 0.469100 0.9978903 0.0321345 -1.872e-01 -0.3384491
## Otu01343 -0.9814777 0.160400 -0.0113539 -0.8807137 2.285e-01 0.2414559
## Otu01344 -0.5976710 -0.017718 0.9018593 -0.3453539 2.340e-01 -1.2479412
## Otu01345 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```

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## Otu01346 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01347 -0.6304886 0.348053 -0.2017598 0.5089246 5.728e-01 0.9013046
## Otu01348 0.0207336 -1.078225 0.2301158 -0.3138635 2.071e-01 0.7617570
## Otu01349 0.7840272 0.205322 -0.5868618 0.2797802 1.843e-01 -0.2140305
## Otu01350 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01351 1.2213992 -0.213209 -0.4505360 -0.2746163 5.896e-02 -0.1827260
## Otu01352 1.1883367 -0.307392 -0.4226314 -0.2532577 5.237e-02 -0.1688254
## Otu01353 0.6652477 -1.797479 0.0188533 0.0846610 -5.191e-02 0.0510987
## Otu01354 0.9513112 0.555533 -0.5824176 -0.6958071 2.404e-01 -0.6892018
## Otu01355 1.2044321 -0.261542 -0.4362159 -0.2636555 5.558e-02 -0.1755925
## Otu01356 -0.4644499 0.424138 0.4173875 0.1407765 -1.466e-01 0.6033758
## Otu01357 -0.6597769 0.313316 0.0882896 -0.5260709 6.710e-01 1.5092287
## Otu01358 -0.0673361 0.089449 -0.1103548 -0.2191377 -4.168e-01 0.5066294
## Otu01359 0.2785447 0.359099 -0.4169958 -0.9273112 3.694e-01 -1.0997051
## Otu01360 0.3319382 -0.396671 -0.0420640 -0.4157765 -8.629e-02 -0.5601878
## Otu01363 1.2151740 -0.230942 -0.4452820 -0.2705948 5.772e-02 -0.1801088
## Otu01364 0.0075781 -0.449032 -0.0237033 0.3725730 3.778e-02 -0.0954048
## Otu01365 0.2665425 -0.301258 -0.2109666 0.0776553 2.747e-01 0.4173181
## Otu01367 -0.6219754 0.364307 -0.6411112 1.9033977 4.656e-01 -0.2231359
## Otu01368 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01369 1.0077977 -0.281016 0.2222322 -0.0767580 -6.201e-02 -0.1944745
## Otu01370 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu01371 0.6725134 -1.776781 0.0127211 0.0799673 -5.047e-02 0.0480440
## Otu01372 -0.3117630 0.156666 0.0030756 0.0138350 4.576e-01 0.6418582
## Otu01373 -0.9085392 0.167056 -0.2038696 -0.2773714 6.988e-01 0.2102431
## Otu01374 0.7006271 -0.453190 1.1216978 0.1995050 -2.251e-01 -0.1973453
## Otu01375 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01376 -0.6122789 0.320728 0.6177940 -0.5148641 -4.797e-02 0.2426881
## Otu01377 -0.6840572 0.348030 -0.0334529 0.0819359 -4.309e-01 0.3668902
## Otu01378 0.0779502 0.472380 -0.7449978 -0.3214187 -1.810e+00 -0.0160631
## Otu01379 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01380 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01381 -0.7594610 0.284537 -0.5421697 1.3942484 5.027e-01 -0.5154573
## Otu01382 0.4158392 0.283102 0.2681308 0.0009991 1.769e-01 0.1517721
## Otu01383 0.7877698 0.278780 0.3744798 -0.2879438 1.212e-02 -0.5343770
## Otu01384 0.7328733 -0.602350 0.3584712 -0.0504484 -2.765e-02 0.0399580
## Otu01385 0.5235348 -1.660907 0.6305779 0.2360338 -1.585e-01 0.0092021
## Otu01386 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01387 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01390 1.0259837 -0.769875 -0.2856063 -0.1483767 2.000e-02 -0.1005668
## Otu01391 -0.1544659 0.513047 1.2259938 0.3064917 1.252e-01 0.2951305
## Otu01392 -0.6502304 0.295838 0.1625047 -0.5974085 5.809e-01 1.2972350
## Otu01393 0.9320028 -0.488199 -0.2870176 -0.2546209 9.729e-02 0.0670983
## Otu01394 0.9412882 -1.011141 -0.2141237 -0.0936629 3.117e-03 -0.0649580
## Otu01395 0.3018517 -0.231404 0.3554820 0.0103208 -1.088e-01 -0.2878184
## Otu01396 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01397 1.0073010 0.571881 -0.5961845 -0.6765405 2.297e-01 -0.6550384
## Otu01398 1.3960952 0.284435 -0.5979786 -0.3874710 9.379e-02 -0.2561741
## Otu01399 -0.7776798 0.311432 -0.3973652 0.3718565 -7.054e-01 0.0888648
## Otu01400 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu01401 -0.7394191 0.252090 0.3218258 -1.0150025 5.737e-01 1.0691879
## Otu01402 0.7551146 -0.206151 -0.3424004 -0.0444465 1.874e-01 0.0425517
## Otu01404 0.8030815 -0.572621 -0.3502107 0.1315453 8.185e-02 -0.1144464
## Otu01405 -0.7776447 0.226272 0.3227921 -1.0533956 5.586e-01 0.8494298

```

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## Otu01407 -0.6131731 0.073632 -0.4303899 0.5371794 -1.400e-01 0.4290899
## Otu01408 0.8293393 -0.566119 -0.2983546 -0.3171881 9.767e-02 -0.3258347
## Otu01409 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu01410 1.1329380 0.299813 -0.4882906 -0.4499520 1.750e-01 0.0329147
## Otu01413 -0.7967559 0.226274 0.3880672 -0.3158371 -1.623e-01 -0.6821054
## Otu01414 -0.0860426 -0.138766 0.5128869 -0.1093741 -5.035e-01 0.4276741
## Otu01415 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01416 -0.7220259 0.304891 -0.0155588 -0.6912202 -7.458e-01 1.0258669
## Otu01417 1.2475424 -0.138737 -0.4726008 -0.2915050 6.417e-02 -0.1937175
## Otu01418 -0.3661686 0.057703 0.3851859 -0.2779549 -5.172e-01 -0.0722599
## Otu01419 0.7312312 -0.723727 -0.2440616 -0.3010047 9.676e-02 -0.3337119
## Otu01420 -0.1736239 0.138313 -0.4867600 1.4815940 4.588e-01 -0.4164931
## Otu01421 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu01422 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01424 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu01427 0.9633937 -0.260992 0.3931680 -0.0318485 -9.210e-02 -0.2033256
## Otu01428 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01430 -0.4707251 -0.446394 0.0696032 0.0244224 4.025e-01 -0.2479456
## Otu01431 0.9493194 -0.988264 -0.2209019 -0.0988511 4.718e-03 -0.0683346
## Otu01432 1.0471259 -0.709649 -0.3034502 -0.1620347 2.422e-02 -0.1094557
## Otu01433 0.9478057 -0.379123 0.3391669 -0.0299427 -8.452e-02 -0.1829237
## Otu01434 0.6296188 -0.542065 -0.2184925 -0.3698704 1.611e-01 -0.1149921
## Otu01436 0.9068700 -0.382521 -0.0266746 -0.1883176 4.311e-02 0.0134559
## Otu01437 0.9435497 -1.004699 -0.2160323 -0.0951238 3.568e-03 -0.0659088
## Otu01438 1.3910931 0.270186 -0.5937569 -0.3842396 9.279e-02 -0.2540710
## Otu01439 -0.5175336 0.412073 0.0937587 0.7555918 4.675e-01 0.2816829
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## Otu01443 0.3868498 0.545687 -0.6157042 0.6221577 3.737e-01 -0.2169868
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## Otu01454 0.1610407 0.677106 2.0883572 0.3601519 -1.142e+00 -0.3028298
## Otu01455 0.9721015 -0.923366 -0.2401299 -0.1135685 9.260e-03 -0.0779129
## Otu01456 -0.4670853 0.152217 0.3627091 -0.3796614 -7.404e-01 -0.3629478
## Otu01457 1.1951649 -0.287941 -0.4283944 -0.2576688 5.373e-02 -0.1716963
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## Otu01459 1.0313251 -0.754660 -0.2901143 -0.1518272 2.107e-02 -0.1028125
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## Otu01463 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
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## Otu01467 -0.9851675 0.093997 0.8529188 -0.9745749 3.717e-01 -1.7277244
## Otu01468 1.0799608 -0.616115 -0.3311627 -0.1832462 3.076e-02 -0.1232606
## Otu01470 0.1710177 0.488159 -0.6856838 1.0071946 3.213e-01 -0.2186332
## Otu01471 0.6717310 -1.779010 0.0133814 0.0804727 -5.062e-02 0.0483729
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## Otu01473 0.9358551 0.580802 -0.5263251 -0.6558661 2.628e-01 -0.2771734
## Otu01474 0.4936875 0.185423 0.8688286 -0.1368599 2.294e-02 0.2744764

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## Otu01475 1.1840680 -0.319552 -0.4190287 -0.2505001 5.152e-02 -0.1670308
## Otu01476 -0.4008340 0.370688 1.6887377 -0.3777061 1.450e-02 -1.2250891
## Otu01478 1.1082971 -0.535395 -0.3550784 -0.2015517 3.641e-02 -0.1351741
## Otu01480 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu01481 0.7116286 -0.219941 -0.0952432 -0.0930909 1.275e-01 0.0491716
## Otu01482 1.0656244 -0.656954 -0.3190628 -0.1739849 2.790e-02 -0.1172331
## Otu01484 0.0847049 0.145523 0.0969261 0.2825039 3.359e-02 0.2084279
## Otu01485 -0.4561470 -0.004765 1.1307435 -0.5108050 1.720e-01 -0.8016212
## Otu01486 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01488 -0.6320194 0.342392 0.2747724 -0.8671964 6.838e-01 1.8900354
## Otu01489 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01490 0.5147760 -1.401703 -0.0854613 0.3448304 4.730e-02 -0.0419813
## Otu01492 0.5839201 0.674274 0.6392674 0.5759840 2.380e-02 -0.4253997
## Otu01494 -0.4309414 0.371209 1.2863479 -0.5348132 1.692e-01 -0.2087482
## Otu01496 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu01498 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01499 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01501 -0.5975744 0.344844 0.6125014 -0.4727269 -6.894e-01 0.0721411
## Otu01502 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01503 1.3550318 0.167461 -0.5633213 -0.3609438 8.560e-02 -0.2389097
## Otu01504 -0.8756442 0.238200 -0.3283748 0.1580105 -7.049e-02 -0.0828655
## Otu01505 -0.7168687 0.348333 -0.5096310 1.5955333 5.834e-01 -0.6364217
## Otu01506 -0.1044539 0.201008 0.4974005 -0.1448765 2.264e-01 -0.7307780
## Otu01507 1.1614043 -0.384112 -0.3999006 -0.2358593 4.700e-02 -0.1575022
## Otu01508 1.0033581 -0.834327 -0.2665104 -0.1337604 1.549e-02 -0.0910543
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## Otu01511 -0.3396896 0.348618 0.3050682 -0.3549272 3.931e-01 0.1409176
## Otu01512 -0.5032557 0.386965 0.5595164 -0.0532134 -3.099e-01 0.2083452
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## Otu01514 0.9287053 -0.553193 -0.2760642 -0.2355940 8.692e-02 0.0555152
## Otu01517 -0.8979479 0.237541 -0.2507005 -0.6507756 -1.322e+00 0.3132293
## Otu01519 -0.7905822 0.063654 -0.1673456 -0.6385398 -7.890e-01 0.5349478
## Otu01520 -0.5697822 0.387548 0.3347077 -0.5488937 -2.983e-01 1.2847754
## Otu01521 -0.9045316 0.178127 -0.0650991 -0.5487581 7.041e-01 0.4062934
## Otu01522 -0.7730176 0.303187 -0.3234635 -0.2847390 -8.449e-01 0.9176189
## Otu01523 1.0693650 -0.646298 -0.3222198 -0.1764013 2.865e-02 -0.1188057
## Otu01524 0.9097911 -0.346347 -0.3640551 -0.3655178 1.123e-01 -0.3558677
## Otu01528 -0.6213177 0.366610 -0.6384786 1.9079742 4.700e-01 -0.2321344
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## Otu01531 0.8677672 -0.532594 -0.3130214 -0.3126027 9.371e-02 -0.3113782
## Otu01533 0.6849574 -0.191591 0.0475134 0.3432370 7.334e-02 -0.2503542
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## Otu01539 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01540 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
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## Otu01549 1.2118393 0.661870 -0.6618996 -0.3988918 2.104e-01 -0.1318741
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## Otu01553 -1.0606041 0.100472 0.1669068 -1.1907455 6.960e-01 -0.0293310
## Otu01554 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01555 -0.6273591 0.077853 0.2471083 -0.4404824 4.975e-01 0.4935968
## Otu01556 0.7547492 -0.631422 0.7732325 0.1277330 -1.662e-01 -0.1576639
## Otu01557 -1.3001574 0.013132 -0.2812851 -1.0189718 -8.120e-01 -1.2560332
## Otu01560 0.7481476 -0.528389 -0.3023129 -0.1182294 1.401e-01 0.0698574
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## Otu01562 -0.4841557 -0.565859 0.2660796 -0.7737028 3.221e-01 -1.2197068
## Otu01563 1.2566706 -0.112734 -0.4803049 -0.2974018 6.599e-02 -0.1975553
## Otu01565 0.5829305 -0.355472 -0.3131966 -0.2667886 2.052e-01 -0.1314633
## Otu01566 0.6520361 0.784971 2.4166282 0.3833303 -4.344e-01 -0.4354805
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## Otu01568 0.9185889 -0.419467 -0.2770680 -0.2913198 9.348e-02 0.0452560
## Otu01569 0.4085432 0.667116 0.9423610 0.7652209 -8.243e-03 -0.4446044
## Otu01570 -0.2029756 0.374318 -0.3779930 -0.0260163 5.643e-01 0.6572205
## Otu01571 -0.3240401 -0.365795 0.8663950 -0.4419972 1.801e-01 -0.4832815
## Otu01572 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01573 -0.9672007 0.161406 0.1751986 -0.1812746 5.606e-01 -1.1065079
## Otu01574 0.6343005 0.061529 -0.3260545 -0.2339980 2.568e-01 0.3219291
## Otu01575 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu01576 -0.9092942 0.202362 0.0239870 -0.9118042 -1.300e-01 0.4711143
## Otu01577 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu01578 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
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## Otu01580 -0.7516189 0.327301 -0.1672864 -0.5830453 -8.908e-01 1.2192425
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## Otu01583 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01584 0.6369214 -1.010989 -0.1601111 -0.2328733 7.511e-02 -0.2865595
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## Otu01593 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
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## Otu01596 0.0781975 0.360958 0.1895919 -0.7710480 2.684e-01 -1.1388266
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## Otu01609 1.2761247 -0.057316 -0.4967241 -0.3099693 6.987e-02 -0.2057345
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## Otu01611 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01612 1.1149945 -0.516317 -0.3607309 -0.2058782 3.775e-02 -0.1379899

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## Otu01613 0.5096229 -0.504481 1.7318030 0.3774662 -3.347e-01 -0.2096057
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## Otu01619 -0.5630702 0.331005 0.6867596 -0.3823386 4.106e-01 0.3305800
## Otu01620 0.8534889 -1.261249 -0.1400214 -0.0369440 -1.439e-02 -0.0280442
## Otu01621 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu01623 1.1920434 0.752736 0.5302885 -0.1394284 -9.906e-02 -0.3675258
## Otu01624 1.2213992 -0.213209 -0.4505360 -0.2746163 5.896e-02 -0.1827260
## Otu01625 1.0303807 -0.757350 -0.2893173 -0.1512172 2.088e-02 -0.1024155
## Otu01626 -0.5150392 -0.489585 -0.2269625 -0.6327904 -5.677e-01 -0.7699264
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## Otu01632 0.8899180 -1.157476 -0.1707675 -0.0604775 -7.124e-03 -0.0433602
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## Otu01634 -0.4685978 0.276221 -0.2216459 -0.3557127 2.734e-01 -0.2493566
## Otu01635 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01636 0.1107613 0.061698 -0.5065781 1.0801033 3.406e-01 -0.2932164
## Otu01637 1.3697381 0.209354 -0.5757334 -0.3704442 8.853e-02 -0.2450927
## Otu01638 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu01639 0.5145262 -0.912073 1.3436670 0.3276171 -2.726e-01 -0.1324851
## Otu01640 -0.3655802 0.465132 0.6481686 0.3505974 -3.889e-03 0.3153583
## Otu01641 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu01642 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01643 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu01644 0.1516763 0.367865 0.0371954 -0.8000431 2.879e-01 -1.1140269
## Otu01645 0.4261733 -0.448314 -0.2855876 -0.3002899 1.997e-01 -0.5440180
## Otu01646 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01647 -0.7886217 0.249531 0.3769565 -0.6362510 -7.369e-01 -0.3299730
## Otu01648 1.1158846 -0.513781 -0.3614821 -0.2064532 3.792e-02 -0.1383641
## Otu01649 -0.5119566 -0.269179 -0.3116333 -0.2702195 -1.512e+00 0.5841917
## Otu01650 -0.6849587 0.298412 -0.0850969 -0.2358011 6.988e-01 1.3069635
## Otu01651 1.0908726 -0.585031 -0.3403722 -0.1902953 3.294e-02 -0.1278483
## Otu01652 0.3478396 -0.674231 -0.1875597 -0.4954530 1.950e-01 -0.6327238
## Otu01653 -1.2496931 -0.001893 0.1084136 -1.3236727 7.181e-01 -0.8261224
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## Otu01656 1.0674231 -0.651830 -0.3205809 -0.1751468 2.826e-02 -0.1179893
## Otu01657 1.3697381 0.209354 -0.5757334 -0.3704442 8.853e-02 -0.2450927
## Otu01658 1.1059198 -0.542167 -0.3530720 -0.2000159 3.594e-02 -0.1341746
## Otu01659 -0.2238774 0.485890 1.2900703 -0.4101048 1.683e-01 0.8392653
## Otu01660 0.8589147 -0.219222 0.7904986 0.0732281 -1.621e-01 -0.2231475
## Otu01662 1.1899147 -0.302897 -0.4239632 -0.2542771 5.268e-02 -0.1694889
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## Otu01664 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01666 0.3133805 -0.025919 0.4555157 -0.0819547 -6.782e-01 0.1087896
## Otu01668 -0.4605679 -0.029575 0.2379930 -0.6999000 5.932e-01 1.6848912
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## Otu01672 0.4457097 -0.432995 -0.0882592 -0.3782213 2.521e-01 0.6075594
## Otu01673 -1.1367390 0.055911 0.0729787 -0.9139537 6.448e-01 -0.8219434
## Otu01674 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu01675 1.1020441 -0.553208 -0.3498008 -0.1975122 3.517e-02 -0.1325451
## Otu01676 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01677 0.9584625 -0.962218 -0.2286187 -0.1047576 6.541e-03 -0.0721786
## Otu01678 0.0323872 -0.239085 0.4370949 0.7341441 9.756e-02 -0.3551382
## Otu01679 -0.7821663 0.317521 -0.2705958 -0.5190521 -1.348e+00 0.9664591
## Otu01680 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01681 1.2606112 -0.101509 -0.4836308 -0.2999475 6.678e-02 -0.1992121
## Otu01682 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01683 -0.2110629 0.483387 1.4067068 -0.0747715 6.215e-02 0.1043411
## Otu01684 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu01685 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01686 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01687 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01688 0.5244152 -1.150271 -0.1075487 -0.2303697 8.040e-02 -0.3123041
## Otu01690 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu01691 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01692 -0.4659260 -0.442499 0.0542152 -0.3855864 4.427e-01 0.4335448
## Otu01694 -0.8008615 0.226898 0.4478344 -0.2182735 -3.065e-01 -1.0110720
## Otu01695 0.7614126 -0.505016 -0.3005871 -0.3719063 1.231e-01 -0.3999076
## Otu01696 -0.6320803 0.294980 -0.0527288 -0.3169107 -2.799e-01 0.3659426
## Otu01697 1.2042515 -0.262057 -0.4360634 -0.2635388 5.554e-02 -0.1755166
## Otu01699 0.9493457 -0.988189 -0.2209241 -0.0988681 4.724e-03 -0.0683456
## Otu01700 -0.9038040 0.211212 -0.2076259 0.1582841 3.190e-01 -0.4508225
## Otu01701 -0.2961560 0.074970 -0.2051937 0.0313517 5.190e-01 0.8130277
## Otu01704 0.3199028 -0.284366 0.3802488 0.1670357 1.220e-01 0.1653882
## Otu01705 0.5934969 -1.093580 -0.1330784 -0.2207414 7.274e-02 -0.2848741
## Otu01706 1.0169349 -0.795652 -0.2779691 -0.1425311 1.820e-02 -0.0967624
## Otu01707 1.1149945 -0.516317 -0.3607309 -0.2058782 3.775e-02 -0.1379899
## Otu01708 0.1004313 -0.535681 0.5140334 0.9568833 7.679e-02 -0.2545958
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## Otu01718 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653
## Otu01720 -0.0692375 -0.317597 0.2888015 0.2092541 -8.204e-01 -0.1930776
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## Otu01734 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu01735 0.5234049 -1.650107 0.6408629 0.2373547 -1.601e-01 0.0071585
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## Otu01738 1.1841040 -0.319449 -0.4190590 -0.2505234 5.152e-02 -0.1670459
## Otu01739 0.7130088 -1.661425 -0.0214569 0.0538070 -4.239e-02 0.0310183
## Otu01740 -0.7490647 0.293979 -0.4831474 0.3880544 -3.780e-01 0.5132390
## Otu01741 -0.6868623 0.281168 -0.0922932 -0.1868867 6.455e-01 1.0905196

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## Otu01743 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
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## Otu01745 1.3797221 0.237794 -0.5841598 -0.3768938 9.052e-02 -0.2492903
## Otu01746 1.0287510 -0.761993 -0.2879418 -0.1501644 2.055e-02 -0.1017303
## Otu01748 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu01749 1.0776963 -0.622565 -0.3292515 -0.1817834 3.031e-02 -0.1223085
## Otu01751 -0.2201440 0.385635 -0.3248967 -0.5217500 -3.424e-01 0.5199218
## Otu01752 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01753 -0.5453369 0.335293 1.0906903 0.0022923 1.979e-01 -1.1751360
## Otu01754 0.5864379 0.676198 0.7898776 0.5447589 -3.179e-02 -0.3958605
## Otu01756 1.1629121 -0.379817 -0.4011732 -0.2368333 4.730e-02 -0.1581361
## Otu01757 0.1672070 -0.214508 0.1831811 -0.4885091 2.678e-01 0.4741931
## Otu01758 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
## Otu01762 -1.0708157 -0.034889 -0.0852111 -1.3916366 6.282e-01 -1.9230471
## Otu01763 1.4026334 0.303060 -0.6034969 -0.3916947 9.509e-02 -0.2589230
## Otu01764 -0.6501636 0.303985 -0.0250397 -0.0773409 5.608e-01 0.9946940
## Otu01765 1.1647442 -0.374598 -0.4027195 -0.2380168 4.767e-02 -0.1589064
## Otu01766 -0.6101194 0.405814 -0.5936573 1.9858921 5.441e-01 -0.3853366
## Otu01767 -0.5310911 -0.414319 -0.3045539 -0.1073542 -1.145e+00 0.0140519
## Otu01768 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu01769 0.1494670 0.643941 2.1676476 0.0760136 -2.050e-01 0.1423068
## Otu01770 0.8875820 -1.164131 -0.1687959 -0.0589684 -7.590e-03 -0.0423781
## Otu01771 1.1900990 -0.302372 -0.4241188 -0.2543962 5.272e-02 -0.1695664
## Otu01772 0.3069649 0.643141 1.2356372 0.7963222 -1.226e-01 -0.3404998
## Otu01774 -0.3266626 0.442694 -0.6185586 1.6476700 4.775e-01 -0.3534833
## Otu01775 0.9584625 -0.962218 -0.2286187 -0.1047576 6.541e-03 -0.0721786
## Otu01776 -0.8109878 0.251114 -0.0009004 -0.4536439 -5.375e-03 0.3708529
## Otu01777 0.0230470 -0.518038 0.2138943 -0.2465444 -4.119e-01 0.4907501
## Otu01778 -0.6824178 0.332037 -0.3730245 0.7012885 3.034e-01 0.4065866
## Otu01779 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01780 0.4635018 0.172052 0.7137711 0.0195037 2.547e-02 0.0641374
## Otu01782 0.1845814 -0.711894 -0.2642351 0.8804253 2.370e-01 -0.2123505
## Otu01783 0.1921228 0.582818 1.5027035 0.2811655 -1.213e-01 -0.6460607
## Otu01784 -0.6031015 0.406374 -0.3507158 1.2739203 -5.308e-01 -0.2285007
## Otu01785 0.5215305 -1.494297 0.7892348 0.2564104 -1.839e-01 -0.0223223
## Otu01787 0.9721015 -0.923366 -0.2401299 -0.1135685 9.260e-03 -0.0779129
## Otu01788 1.3734491 0.219925 -0.5788654 -0.3728415 8.927e-02 -0.2466529
## Otu01789 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01790 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu01791 0.9807029 -0.898864 -0.2473895 -0.1191250 1.098e-02 -0.0815292
## Otu01792 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01793 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01795 -0.6697555 0.373449 -0.3587016 0.7652185 4.107e-02 0.3862893
## Otu01796 -0.7868447 0.216249 0.5794413 -0.9490027 4.792e-01 0.0844034
## Otu01797 0.6675173 -1.361481 0.4081968 0.1307590 -1.137e-01 -0.0305351
## Otu01798 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01799 0.9412882 -1.011141 -0.2141237 -0.0936629 3.117e-03 -0.0649580
## Otu01800 0.6838121 -1.744596 0.0031850 0.0726682 -4.821e-02 0.0432936
## Otu01801 1.0693650 -0.646298 -0.3222198 -0.1764013 2.865e-02 -0.1188057
## Otu01803 -0.7934040 0.281176 0.0156148 -0.7904546 -1.081e-01 1.1328389
## Otu01805 -1.4365519 -0.087662 -0.1138795 -1.3053561 1.139e-03 -1.7671398
## Otu01806 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01808 0.1766126 0.108247 -0.6221665 -0.2566242 -1.522e+00 -0.0061496
## Otu01809 0.6761564 0.725394 1.5790891 0.0790458 -1.993e-01 -0.1427478

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## Otu01810 -0.3808650 -0.348832 0.1948857 -0.3911744 -6.573e-01 0.3332829
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## Otu01813 -0.3824404 -0.403788 -0.0031959 -0.6918745 4.284e-02 -0.0668695
## Otu01814 1.3606840 0.183562 -0.5680918 -0.3645952 8.673e-02 -0.2412860
## Otu01815 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01817 0.3805950 -1.260445 -0.1502393 0.4887002 6.349e-02 -0.0034900
## Otu01818 1.1513011 -0.412893 -0.3913735 -0.2293325 4.499e-02 -0.1532544
## Otu01819 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu01820 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01821 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01823 -0.4463572 -0.334745 0.0506473 -0.1887352 -1.514e+00 -0.2224183
## Otu01824 1.2361482 -0.171195 -0.4629841 -0.2841442 6.190e-02 -0.1889270
## Otu01825 0.1407582 0.627140 2.4634204 0.1755046 -3.166e-01 -0.7592192
## Otu01826 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01828 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01829 0.1293628 0.676793 1.7948649 1.0432001 -1.511e-01 -0.4786007
## Otu01830 -0.8057199 0.233402 -0.0209111 -0.5873993 1.446e-01 0.6708188
## Otu01832 -0.0378785 -0.065787 1.4994867 -0.1139922 -5.225e-02 -0.4538684
## Otu01833 -0.6302049 0.348040 -0.2358060 0.6101249 5.625e-01 0.8225171
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## Otu01835 0.9863919 0.616049 -0.6166598 -0.3394750 2.668e-01 -0.0061337
## Otu01837 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01838 1.1700208 -0.359567 -0.4071729 -0.2414255 4.872e-02 -0.1611248
## Otu01839 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01840 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01841 0.1984604 0.593301 0.9417113 -0.0955696 -6.683e-01 0.1836976
## Otu01842 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu01843 0.3306766 -1.747415 -0.0034064 0.4646365 9.501e-03 0.0620718
## Otu01844 1.2809534 -0.043561 -0.5007995 -0.3130887 7.083e-02 -0.2077646
## Otu01845 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu01847 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu01848 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01849 -0.7161989 0.187438 -0.2064419 -0.7200000 1.038e-01 -0.3312069
## Otu01850 0.3689480 -1.069607 0.9135761 0.1201847 -1.189e-01 0.1396927
## Otu01851 -0.2717201 0.057034 -0.0818491 -0.9020762 4.951e-01 -0.1586115
## Otu01853 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu01854 0.8238499 0.603541 -0.4014352 -0.6101504 3.204e-01 0.4390957
## Otu01855 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
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## Otu01857 0.6838121 -1.744596 0.0031850 0.0726682 -4.821e-02 0.0432936
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## Otu01861 1.0992760 -0.561093 -0.3474646 -0.1957239 3.461e-02 -0.1313813
## Otu01862 1.0876802 -0.594125 -0.3376778 -0.1882330 3.230e-02 -0.1265061
## Otu01863 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu01864 1.1700208 -0.359567 -0.4071729 -0.2414255 4.872e-02 -0.1611248
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## Otu01874 -0.8293679 0.325485 -0.7129462 0.4042765 -2.086e+00 0.0397552
## Otu01875 0.6825117 -1.748300 0.0042825 0.0735083 -4.847e-02 0.0438403

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## Otu01876 -0.3948656 -0.245670 0.1421295 -0.4070506 4.405e-01 1.0265291
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## Otu01881 -1.2328994 -0.023308 0.4985680 -1.2276213 5.232e-01 -1.9408199
## Otu01882 1.2082263 -0.250734 -0.4394181 -0.2661065 5.633e-02 -0.1771877
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## Otu01886 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
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## Otu01890 -0.0764601 0.571954 1.4489721 0.2804828 -8.281e-01 -0.0099201
## Otu01891 0.0763715 -0.030508 0.9668535 0.9628344 -6.551e-02 -0.2187999
## Otu01893 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu01895 -0.8152780 -0.148405 -0.1222126 -0.5769933 -1.341e-01 -0.0956231
## Otu01897 1.0102490 -0.477353 0.0349595 -0.1008562 -3.204e-02 -0.1573152
## Otu01898 -0.7754963 0.297800 -0.2623870 0.0178420 -1.479e-01 0.5533680
## Otu01899 1.0171225 -0.795118 -0.2781275 -0.1426523 1.824e-02 -0.0968413
## Otu01900 1.0616009 -0.668415 -0.3156670 -0.1713856 2.710e-02 -0.1155415
## Otu01901 1.2606112 -0.101509 -0.4836308 -0.2999475 6.678e-02 -0.1992121
## Otu01902 0.0725829 0.471438 -0.7450511 -0.3208097 -1.817e+00 -0.0149494
## Otu01903 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu01904 -0.9687076 0.140776 0.1779405 -1.0719207 6.565e-01 0.2299279
## Otu01907 1.2005786 -0.272519 -0.4329636 -0.2611661 5.481e-02 -0.1739724
## Otu01908 -0.3747150 -0.175866 -0.0869499 0.5077784 4.147e-01 0.4571901
## Otu01909 0.5013959 -0.026044 0.6450290 -0.1695173 5.973e-02 0.3169381
## Otu01910 -0.4687818 0.455225 0.4231213 0.0269086 -2.296e+00 -0.0142874
## Otu01911 0.2937455 0.552543 0.2863895 -0.0474961 2.300e-01 0.2208744
## Otu01912 1.1144527 -0.517860 -0.3602737 -0.2055282 3.764e-02 -0.1377621
## Otu01915 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01917 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01918 0.9318440 -0.279867 -0.3905331 -0.1971751 1.301e-01 -0.0216356
## Otu01921 1.0719683 -0.638882 -0.3244170 -0.1780830 2.917e-02 -0.1199003
## Otu01922 -0.2375480 -0.687361 -0.1185406 -0.2813092 3.344e-01 -0.8795578
## Otu01923 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01926 0.7970127 -0.734058 -0.2854131 0.1355527 8.220e-02 -0.1347868
## Otu01927 0.3319574 0.374694 -0.4301291 -0.9089315 3.592e-01 -1.0671142
## Otu01930 -0.6086941 0.301795 -0.3450228 -0.0492626 -1.750e-01 -0.0143611
## Otu01931 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu01932 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01933 -0.6792828 0.194026 -0.0731202 -0.8049119 6.079e-01 -0.0976282
## Otu01936 -1.2445033 -0.015156 0.1501386 -1.3561602 6.561e-01 -0.9883087
## Otu01938 0.8732050 0.771769 1.6440467 0.1692258 -2.971e-01 -0.4076485
## Otu01940 -0.6962600 -0.217344 -0.1691134 -0.4261662 -3.871e-01 0.1007810
## Otu01941 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01942 1.1271154 0.644650 -0.6448983 -0.3765628 2.316e-01 -0.0846204
## Otu01946 0.4631287 0.539532 -0.6951244 0.6909712 2.798e-01 -0.2405067
## Otu01947 1.0060452 0.179465 -0.5510780 0.0633894 1.737e-01 -0.2829899
## Otu01949 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01950 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01951 0.7423869 0.657829 0.6015386 -0.2804207 4.355e-02 0.1046468
## Otu01952 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01953 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu01955 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256

```

##	Otu01956	0.5636614	0.217017	-0.4556857	-0.1827956	3.193e-01	0.2133871
##	Otu01957	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01958	0.9959305	-0.855486	-0.2602415	-0.1289622	1.401e-02	-0.0879314
##	Otu01959	0.9636174	-0.293485	-0.4315942	-0.0012625	9.110e-02	-0.1589058
##	Otu01960	-0.1474578	0.336435	0.6270276	-0.6943589	2.161e-01	-1.2195473
##	Otu01961	0.2780040	-0.064931	0.3484856	-0.4735536	1.313e-01	-0.8038987
##	Otu01962	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu01963	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01965	-0.6237580	0.362571	-0.1607293	0.5132109	5.917e-01	0.7991670
##	Otu01967	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu01969	-0.6026634	0.354446	0.5142377	-0.3424729	-1.273e+00	-0.1538439
##	Otu01970	-1.2358501	0.060654	-0.3602135	-0.8839474	-1.195e+00	-1.0150567
##	Otu01971	0.0484413	-1.356088	-0.1628487	0.0451574	-1.090e+00	0.1353002
##	Otu01972	0.4631287	0.539532	-0.6951244	0.6909712	2.798e-01	-0.2405067
##	Otu01973	1.0799608	-0.616115	-0.3311627	-0.1832462	3.076e-02	-0.1232606
##	Otu01974	-0.4665159	0.289818	-0.4410264	-0.6632099	-1.094e+00	-0.3277279
##	Otu01975	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01976	1.3401065	0.124944	-0.5507244	-0.3513019	8.263e-02	-0.2326345
##	Otu01977	0.3786192	0.525587	-0.2005779	-0.6842647	4.397e-01	0.9039470
##	Otu01978	-0.1750836	0.519075	1.3808369	-0.3147684	1.655e-01	0.8717595
##	Otu01979	-0.1883637	-0.716795	-0.2017686	0.3198033	2.816e-01	-0.5229179
##	Otu01980	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01982	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01983	-1.0052707	0.142583	-0.0082207	-0.6218163	6.996e-01	-0.1546020
##	Otu01984	0.8762382	-0.471225	0.5013782	0.0286669	-1.150e-01	-0.1738278
##	Otu01985	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01986	0.0580746	0.604671	1.8729522	0.1765783	-1.037e-01	0.1698731
##	Otu01987	-0.6117377	0.403243	-0.4919837	1.6696046	5.707e-01	-0.1329308
##	Otu01988	-0.6498751	0.327157	-0.5568666	1.3982339	5.036e-01	0.1362154
##	Otu01989	1.3655260	0.197355	-0.5721783	-0.3677231	8.769e-02	-0.2433218
##	Otu01992	0.7522413	-0.571476	-0.2834105	-0.3503612	1.151e-01	-0.3797925
##	Otu01993	-0.0504404	0.437145	0.5579763	0.0309198	1.712e-01	-0.5812467
##	Otu01994	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu01995	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu01996	0.3798244	-0.295144	-0.3109354	-0.2637437	2.477e-01	-0.6294576
##	Otu01998	-0.9894649	0.197695	-0.3383948	-0.6611993	-1.497e+00	-0.0533939
##	Otu01999	1.1248445	-0.488258	-0.3690443	-0.2122413	3.971e-02	-0.1421312
##	Otu02001	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu02002	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02003	1.0033581	-0.834327	-0.2665104	-0.1337604	1.549e-02	-0.0910543
##	Otu02004	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu02005	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02007	0.6825117	-1.748300	0.0042825	0.0735083	-4.847e-02	0.0438403
##	Otu02008	-0.0236753	0.429608	-0.5568927	-0.1751194	-5.408e-01	0.3195332
##	Otu02009	-1.4120719	-0.101811	0.0881685	-1.4648308	6.912e-01	-1.6479241
##	Otu02010	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02011	-0.7276423	0.331580	-0.0806956	-0.6381946	-5.634e-01	1.3709491
##	Otu02012	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02013	1.1684399	-0.364070	-0.4058386	-0.2404043	4.840e-02	-0.1604602
##	Otu02016	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu02017	-0.6642825	0.314296	-0.4928919	1.1048669	5.464e-01	0.3194505
##	Otu02019	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu02023	1.2361482	-0.171195	-0.4629841	-0.2841442	6.190e-02	-0.1889270
##	Otu02024	-0.7351633	0.320267	-0.4647104	0.5162621	-2.792e-01	0.3870904

##	Otu02025	0.4940304	0.013580	-0.5709802	-0.2626871	-1.043e+00	-0.0600341
##	Otu02026	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu02027	1.0259837	-0.769875	-0.2856063	-0.1483767	2.000e-02	-0.1005668
##	Otu02028	1.0799608	-0.616115	-0.3311627	-0.1832462	3.076e-02	-0.1232606
##	Otu02029	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02030	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu02031	0.7707764	-0.541321	-0.2937566	-0.3535656	1.153e-01	-0.3784572
##	Otu02032	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02033	0.6856189	-0.158735	-0.3827519	-0.1570299	2.208e-01	0.1245778
##	Otu02034	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu02035	1.2421870	-0.153992	-0.4680808	-0.2880454	6.310e-02	-0.1914659
##	Otu02036	0.8351200	-0.845887	0.3014976	0.0267118	-8.585e-02	-0.1081679
##	Otu02037	1.0567632	-0.682196	-0.3115840	-0.1682605	2.614e-02	-0.1135076
##	Otu02038	1.3734491	0.219925	-0.5788654	-0.3728415	8.927e-02	-0.2466529
##	Otu02039	1.3162029	0.056852	-0.5305499	-0.3358601	7.786e-02	-0.2225847
##	Otu02040	-1.2115962	0.078578	-0.3899819	-0.8330220	-1.340e+00	-0.9241707
##	Otu02042	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02043	1.1066391	-0.540118	-0.3536790	-0.2004806	3.608e-02	-0.1344770
##	Otu02044	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu02045	1.0153239	-0.800241	-0.2766094	-0.1414904	1.788e-02	-0.0960851
##	Otu02046	1.0920758	-0.581604	-0.3413876	-0.1910726	3.318e-02	-0.1283541
##	Otu02047	-0.6479289	0.051236	-0.2975337	-0.1325070	-3.535e-01	-0.3228753
##	Otu02048	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02049	-0.6119257	0.399490	-0.6008870	1.9733238	5.321e-01	-0.3606249
##	Otu02050	1.3606840	0.183562	-0.5680918	-0.3645952	8.673e-02	-0.2412860
##	Otu02051	0.2630441	-0.046855	-0.0672942	-0.5356923	3.741e-01	0.8958066
##	Otu02052	-0.7132589	0.389905	-0.6256324	1.2400782	-7.309e-01	-0.2673270
##	Otu02053	-1.0841447	-0.179405	-0.2823907	-0.8285177	-9.444e-01	-0.9917222
##	Otu02054	-0.3799783	0.486509	0.6579156	0.0738951	-2.134e+00	-0.0549712
##	Otu02056	0.5161566	0.428477	-0.4754205	-0.8455471	3.239e-01	-0.9547209
##	Otu02057	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02058	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02059	0.5999056	-0.542884	-0.2763679	-0.0814205	1.799e-01	0.1533489
##	Otu02060	1.3871061	0.258829	-0.5903919	-0.3816640	9.200e-02	-0.2523948
##	Otu02062	0.7855962	-1.454651	-0.0827203	0.0069151	-2.792e-02	0.0005002
##	Otu02063	0.8017876	-0.133853	0.0701690	0.2101741	4.235e-02	-0.2472421
##	Otu02064	0.2408918	0.712766	2.1538962	0.8881634	-2.678e-01	-0.4714946
##	Otu02065	1.0171225	-0.795118	-0.2781275	-0.1426523	1.824e-02	-0.0968413
##	Otu02067	-0.1004414	-0.797851	-0.0790358	-0.6525254	2.821e-01	-0.9091830
##	Otu02068	-0.1327846	0.470971	0.5514709	0.4638801	2.424e-01	-0.5087311
##	Otu02070	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu02071	-1.1393567	0.081863	-0.2400901	0.0071559	6.471e-01	-1.4192192
##	Otu02073	0.2738545	0.559118	-0.6248460	1.0237289	4.142e-01	-0.4426939
##	Otu02074	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu02077	1.3483063	0.148302	-0.5576450	-0.3565990	8.426e-02	-0.2360820
##	Otu02078	-0.6480143	0.331559	-0.2283323	0.4558942	5.949e-01	0.8848242
##	Otu02079	0.6516800	-0.045012	1.6618254	0.2917648	-3.143e-01	-0.2796247
##	Otu02080	1.0033581	-0.834327	-0.2665104	-0.1337604	1.549e-02	-0.0910543
##	Otu02082	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu02085	-0.6192048	0.374007	-0.6300217	1.9226757	4.840e-01	-0.2610405
##	Otu02086	-0.5401151	-0.608115	-0.3273047	-0.3068747	-1.462e+00	-0.2390645
##	Otu02087	-0.7088544	0.333698	-0.6870328	1.2765702	-5.789e-01	-0.0592652
##	Otu02088	1.1445257	-0.432193	-0.3856552	-0.2249556	4.363e-02	-0.1504058
##	Otu02091	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119

```

## Otu02092 0.9787591 -0.904401 -0.2457489 -0.1178693 1.059e-02 -0.0807120
## Otu02093 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02094 0.6866518 -1.736506 0.0007883 0.0708338 -4.765e-02 0.0420997
## Otu02095 0.7562217 0.642673 0.2895254 -0.3750945 1.455e-01 0.2557078
## Otu02096 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02097 -0.7947868 0.302384 -0.2953054 -0.5086841 -1.641e+00 0.7095125
## Otu02098 1.0585357 -0.677147 -0.3130799 -0.1694055 2.649e-02 -0.1142527
## Otu02100 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02101 -0.8941865 0.171161 -0.0113123 -0.6051333 6.516e-01 0.3152647
## Otu02102 0.2944294 -0.373256 1.3497364 0.3898786 -1.755e-01 -0.0393082
## Otu02103 0.1133767 -0.562500 0.7370321 -0.2253043 5.545e-02 -0.3349505
## Otu02105 0.8367154 0.609604 -0.6278627 0.0206185 2.958e-01 -0.1501554
## Otu02106 1.1172064 -0.510016 -0.3625977 -0.2073071 3.819e-02 -0.1389199
## Otu02107 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu02108 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02109 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02110 -0.7860046 0.314023 -0.5470510 0.3104887 -1.083e+00 0.3311084
## Otu02111 0.6161608 0.540802 -0.5423666 -0.2419003 3.594e-01 0.2003578
## Otu02112 1.0218920 -0.781531 -0.2821529 -0.1457334 1.919e-02 -0.0988465
## Otu02113 1.1737202 0.753830 0.5942946 -0.1216905 -1.104e-01 -0.3698316
## Otu02114 -0.6336126 0.344459 0.3359748 0.0354144 -9.332e-01 -0.3510327
## Otu02115 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu02116 1.1248445 -0.488258 -0.3690443 -0.2122413 3.971e-02 -0.1421312
## Otu02117 1.1388231 0.363620 0.3588578 -0.1313486 -7.523e-02 -0.3005380
## Otu02118 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu02119 -0.8992307 -0.342909 0.1457305 -1.0513801 5.537e-01 -0.5192194
## Otu02120 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02121 -0.2543382 0.456128 1.5074958 -0.3654847 7.318e-02 0.0344197
## Otu02122 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02123 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu02125 -0.6440547 0.358502 0.0318769 -0.2651553 -9.039e-01 0.8193340
## Otu02126 1.0887477 -0.591084 -0.3385788 -0.1889226 3.251e-02 -0.1269549
## Otu02127 0.2348324 -0.393042 -0.2575937 -0.0175957 3.093e-01 0.3685921
## Otu02128 -0.6086438 0.414851 -0.4524869 1.6146625 6.006e-01 -0.1175314
## Otu02129 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02130 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02133 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02134 1.1801342 0.220672 0.0865864 -0.1868964 -2.921e-02 -0.2689525
## Otu02135 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu02136 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02137 0.9059373 0.542285 -0.5712609 -0.7114206 2.491e-01 -0.7168877
## Otu02138 -1.1625951 0.114789 -0.4501240 -0.7301355 -1.632e+00 -0.7405504
## Otu02139 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02141 -0.7219454 0.324924 -0.0589252 0.1180011 6.764e-01 0.6133774
## Otu02143 -0.6316701 0.348203 0.0411983 -0.1690412 -4.611e-01 0.8382402
## Otu02144 0.5087466 -0.824470 0.6203778 0.4029231 -8.041e-02 -0.1508527
## Otu02148 -0.9750500 0.176706 -0.3211484 -0.1620332 -4.865e-01 -0.3887202
## Otu02149 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02150 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02151 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02152 1.2212841 -0.213537 -0.4504389 -0.2745420 5.894e-02 -0.1826777
## Otu02153 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02154 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu02156 -0.4160629 0.434537 0.7810151 -0.5841711 4.705e-01 1.4940226

```

```

## Otu02157 0.7621378 -0.371483 -0.2319074 -0.3274043 1.684e-01 0.2786118
## Otu02158 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02159 0.8738313 -0.589560 -0.3435744 0.0501565 6.805e-02 -0.1159455
## Otu02160 -0.6115923 0.358957 0.0270570 0.1906754 5.581e-01 0.7161135
## Otu02162 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu02163 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02164 -0.8009370 0.282677 -0.4846577 -0.0299437 -9.675e-01 0.6137828
## Otu02166 -0.5436442 0.369799 -0.3843119 0.2928026 -2.300e-01 0.5066334
## Otu02167 1.1899147 -0.302897 -0.4239632 -0.2542771 5.268e-02 -0.1694889
## Otu02169 -1.2429288 -0.028057 0.4842221 -1.2378659 5.293e-01 -1.9494471
## Otu02171 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02174 -0.2968587 0.288247 0.1460800 -0.4866764 3.723e-01 -1.2290664
## Otu02175 0.5208634 -1.438848 0.8420375 0.2631920 -1.923e-01 -0.0328139
## Otu02176 0.7130088 -1.661425 -0.0214569 0.0538070 -4.239e-02 0.0310183
## Otu02177 -0.8083045 0.283690 -0.5022158 -0.0415678 -1.107e+00 0.5862331
## Otu02178 1.2421870 -0.153992 -0.4680808 -0.2880454 6.310e-02 -0.1914659
## Otu02180 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02181 0.9534713 -0.976437 -0.2244061 -0.1015332 5.546e-03 -0.0700801
## Otu02183 -0.6154337 0.331802 0.2176531 -0.4227861 5.405e-01 1.1240988
## Otu02184 0.8534889 -1.261249 -0.1400214 -0.0369440 -1.439e-02 -0.0280442
## Otu02185 -0.3364157 0.179542 -0.2657875 -1.1389239 4.874e-01 -1.4749368
## Otu02186 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02187 -0.1265944 -0.658136 -0.2653983 1.2672948 3.223e-01 -0.2598197
## Otu02189 0.9959305 -0.855486 -0.2602415 -0.1289622 1.401e-02 -0.0879314
## Otu02190 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02192 0.9344784 -1.030540 -0.2083762 -0.0892637 1.760e-03 -0.0620949
## Otu02195 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu02198 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02201 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02202 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02203 0.9711349 -0.022511 0.5837788 -0.0128832 -1.219e-01 -0.2472324
## Otu02205 1.1106455 -0.528705 -0.3570604 -0.2030687 3.688e-02 -0.1361615
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## Otu02210 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu02211 -0.6559361 0.335708 -0.4847588 1.2030661 5.729e-01 0.2081466
## Otu02212 0.3057814 -1.148151 0.5169390 0.5597437 -6.767e-02 -0.0479858
## Otu02213 -0.1894385 0.425461 -0.7476541 -0.2910778 -2.161e+00 0.0394184
## Otu02214 -0.4353124 -0.560347 -0.2599455 0.4483863 -2.209e-01 -0.4773616
## Otu02215 -0.6221329 0.317127 0.3542580 -0.9290848 5.659e-01 1.5810726
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## Otu02217 -0.7679234 0.241497 0.0438459 -0.5506801 6.407e-01 0.8801959
## Otu02218 0.0029237 0.458204 0.6266957 0.1750826 1.233e-01 -0.7418783
## Otu02220 -0.6244504 0.323049 0.3356259 -0.9145776 5.935e-01 1.6534963
## Otu02221 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02222 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02224 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02225 -0.8963883 0.237076 -0.2550782 -0.5613055 -7.911e-01 0.4761721
## Otu02226 -0.2528611 0.414834 -0.1432095 -0.6512498 -1.708e-01 1.1504492
## Otu02227 1.3734491 0.219925 -0.5788654 -0.3728415 8.927e-02 -0.2466529
## Otu02228 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu02229 0.4708729 0.624612 0.8315752 -0.2684479 1.012e-01 0.3946769
## Otu02231 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02232 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu02233 1.0153239 -0.800241 -0.2766094 -0.1414904 1.788e-02 -0.0960851

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## Otu02234 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu02238 -0.5627130 -0.646536 0.1876203 -0.7935892 3.975e-01 -0.1821016
## Otu02239 1.1774950 -0.338276 -0.4134811 -0.2462539 5.021e-02 -0.1642672
## Otu02240 0.2922887 0.191469 1.9217686 0.3999364 -2.436e-01 -0.1177661
## Otu02241 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu02242 -0.6438532 0.290491 0.3244109 -0.3457593 5.063e-01 0.5784914
## Otu02243 -0.4483425 -0.352558 -0.2759498 -0.0783505 -7.829e-01 0.5750314
## Otu02244 1.3797221 0.237794 -0.5841598 -0.3768938 9.052e-02 -0.2492903
## Otu02245 -0.0573096 -0.010408 0.3868674 0.0516067 -1.075e-01 -0.6741228
## Otu02246 0.5434724 -0.017626 -0.1575081 -0.5129101 2.494e-01 0.4763867
## Otu02249 -0.7345784 0.330342 -0.1057451 -0.6222406 -6.581e-01 1.3270624
## Otu02250 1.2292581 -0.190822 -0.4571689 -0.2796932 6.053e-02 -0.1860302
## Otu02253 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02254 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02255 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02256 -0.1431394 -0.723328 0.2786990 -0.4855372 2.751e-01 0.9089356
## Otu02257 -0.5014412 0.362501 0.2935255 0.1835160 4.771e-01 0.6967024
## Otu02259 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu02260 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02263 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu02265 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02266 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu02267 -0.0762806 -0.866599 0.2262858 -0.3869263 2.924e-01 0.9675560
## Otu02268 1.2212841 -0.213537 -0.4504389 -0.2745420 5.894e-02 -0.1826777
## Otu02269 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu02270 -0.1738104 0.279002 1.1358996 0.1976003 1.500e-01 0.1063350
## Otu02271 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu02272 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu02273 0.3733697 0.269489 -0.3768015 0.0972854 2.826e-01 0.1761120
## Otu02275 0.2267360 0.008937 -0.3258777 -0.8153903 3.281e-01 -0.9962624
## Otu02276 -1.0160348 0.223096 -0.6300067 -0.4224065 -2.506e+00 -0.1913500
## Otu02277 0.3854755 0.082108 1.0007523 -0.1475308 -2.275e-02 0.2233574
## Otu02278 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02279 1.2377948 -0.166504 -0.4643738 -0.2852079 6.223e-02 -0.1896193
## Otu02280 0.2859919 -0.879562 -0.1470150 0.0407628 2.120e-01 0.3142671
## Otu02281 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02282 0.2241865 -0.193071 -0.4453741 0.5899909 -1.897e-01 -0.2103634
## Otu02283 -0.8343452 0.301022 -0.4473970 -0.4094435 -2.128e+00 0.5375180
## Otu02284 1.3401065 0.124944 -0.5507244 -0.3513019 8.263e-02 -0.2326345
## Otu02285 -0.6170860 0.381424 -0.6215415 1.9374179 4.980e-01 -0.2900266
## Otu02286 0.7055866 -0.038833 0.4216502 -0.2206659 -6.181e-03 -0.4740101
## Otu02287 1.1617090 0.195439 0.1269629 -0.1719756 -3.684e-02 -0.2663251
## Otu02288 0.9775500 -0.907845 -0.2447284 -0.1170883 1.035e-02 -0.0802037
## Otu02290 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02293 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02294 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02295 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02296 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu02298 -0.6057434 0.421133 -0.5761424 2.0163402 5.730e-01 -0.4452038
## Otu02299 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu02300 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02301 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02302 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02303 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```

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## Otu02304 -0.5175557 0.355509 0.2502190 0.1778047 4.935e-01 0.7153526
## Otu02305 1.1629121 -0.379817 -0.4011732 -0.2368333 4.730e-02 -0.1581361
## Otu02306 0.2955006 0.505176 -0.5749602 0.2355366 -1.243e-01 0.0121499
## Otu02307 -0.7041226 0.329662 0.0804187 -0.3408108 -6.730e-01 0.5566631
## Otu02308 -0.2041833 0.321789 -0.5258535 -0.6864002 -8.757e-01 -0.6669293
## Otu02309 1.1614043 -0.384112 -0.3999006 -0.2358593 4.700e-02 -0.1575022
## Otu02310 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02312 1.1774950 -0.338276 -0.4134811 -0.2462539 5.021e-02 -0.1642672
## Otu02313 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02314 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02315 0.9775500 -0.907845 -0.2447284 -0.1170883 1.035e-02 -0.0802037
## Otu02316 -0.3321340 0.420862 0.4208714 0.2230562 6.642e-02 0.0931447
## Otu02317 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02318 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02320 -0.6264060 0.309191 0.4941124 -0.4185984 4.992e-01 0.5218860
## Otu02321 0.8986789 -1.132520 -0.1781616 -0.0661370 -5.377e-03 -0.0470436
## Otu02322 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02323 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02324 0.6474608 0.139849 -0.4312142 -0.6737400 2.487e-01 -0.7428000
## Otu02325 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu02326 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02328 -0.6231555 0.378491 -0.0059081 0.0903533 6.789e-01 1.1554794
## Otu02329 -0.5195770 0.448381 0.0751285 0.7130364 -1.320e+00 -0.1848877
## Otu02330 0.9570552 -0.966227 -0.2274309 -0.1038485 6.261e-03 -0.0715870
## Otu02331 1.0793888 -0.617744 -0.3306799 -0.1828767 3.065e-02 -0.1230201
## Otu02332 -0.1270299 0.298234 -0.1598818 -0.9890581 4.428e-01 -0.4969042
## Otu02333 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu02335 0.1917980 0.333770 -0.3956663 -0.9571614 3.861e-01 -1.1526355
## Otu02336 1.1684399 -0.364070 -0.4058386 -0.2404043 4.840e-02 -0.1604602
## Otu02338 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02339 -0.8314109 0.336053 -0.7015715 0.3886154 -2.130e+00 0.0013233
## Otu02340 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02342 -0.6091257 0.376394 -0.0953258 0.5845821 5.694e-01 0.4541441
## Otu02343 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02344 0.6956408 -1.710900 -0.0067984 0.0650268 -4.585e-02 0.0383204
## Otu02345 -0.4426441 -0.721501 0.5951681 -0.5639280 2.103e-01 -1.0703299
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## Otu02348 0.1569550 0.486528 -0.4005296 -0.5390494 -5.289e-01 0.5911364
## Otu02349 0.2808640 0.508471 -0.1564775 -0.7005373 4.659e-01 1.0060101
## Otu02350 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu02351 0.5390276 -0.563015 -0.2475284 -0.4511158 1.668e-01 -0.5383956
## Otu02352 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02353 1.3824099 0.245451 -0.5864283 -0.3786302 9.106e-02 -0.2504203
## Otu02354 0.9936938 -0.861857 -0.2583537 -0.1275172 1.356e-02 -0.0869910
## Otu02355 0.2350907 0.450104 -0.5970335 0.3317984 3.333e-01 -0.5144378
## Otu02357 0.1443223 -1.339554 -0.1311982 0.7383420 9.224e-02 0.0190578
## Otu02358 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02359 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu02360 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02361 0.8304082 -1.326998 -0.1205414 -0.0220337 -1.899e-02 -0.0183403
## Otu02362 0.8067836 -0.074418 1.1016683 0.1393842 -2.151e-01 -0.2563219
## Otu02363 1.2096724 0.751684 0.4687073 -0.1564943 -8.811e-02 -0.3653073
## Otu02364 -0.8209781 0.314923 -0.4177754 -0.4235100 -1.838e+00 0.7803873
## Otu02365 0.8614628 -1.238534 -0.1467514 -0.0420952 -1.280e-02 -0.0313967

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## Otu02367 -1.0752613 0.154805 -0.3807693 -0.7071673 -1.517e+00 -0.3923824
## Otu02368 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02370 0.9997035 -0.533872 0.0197405 -0.0969759 -3.031e-02 -0.1479080
## Otu02371 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02372 -0.1961106 0.476557 1.7644485 -0.2449400 -2.829e-02 -0.4192175
## Otu02373 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02375 -0.6166150 0.341384 0.0980638 0.7398302 4.615e-01 -0.2858198
## Otu02376 0.4670955 0.519821 -0.1743928 -0.7195639 3.252e-01 0.5764201
## Otu02377 0.5142585 -0.374010 0.7742777 -0.0738296 -7.475e-02 -0.4329850
## Otu02378 1.0010225 -0.840981 -0.2645391 -0.1322516 1.503e-02 -0.0900723
## Otu02379 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02380 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02381 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02382 -0.3037863 0.437208 -0.3443769 0.8213706 5.187e-01 0.1971789
## Otu02383 -0.4112348 0.372614 -0.5124562 0.9694688 5.157e-01 0.1921839
## Otu02386 -0.5884614 0.413062 0.1066911 -0.0364147 -2.515e+00 0.0405418
## Otu02387 0.9471574 0.613272 -0.4201871 -0.6175337 2.367e-01 0.1791664
## Otu02389 -0.8216960 0.245262 0.2229977 -0.7450701 -3.646e-01 0.2180563
## Otu02390 -0.1962357 0.259299 -0.2320811 -1.0316810 4.858e-01 -0.8399370
## Otu02391 1.3697381 0.209354 -0.5757334 -0.3704442 8.853e-02 -0.2450927
## Otu02392 1.0790420 0.759482 0.9250223 -0.0300364 -1.692e-01 -0.3817459
## Otu02393 0.6825678 -0.774306 -0.2690006 0.2659720 1.042e-01 -0.1408628
## Otu02395 -0.0152155 -1.000850 0.2510322 -0.3605165 2.078e-01 0.7566915
## Otu02396 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02397 0.5660313 0.558023 -0.7401491 -0.3768018 -1.170e+00 -0.1173369
## Otu02398 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02399 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu02402 -0.5193521 -0.423989 -0.0436453 0.0832181 4.216e-01 -0.2636554
## Otu02403 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02404 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02406 1.2005786 -0.272519 -0.4329636 -0.2611661 5.481e-02 -0.1739724
## Otu02407 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02408 0.6323145 -0.174748 0.4474429 0.3463693 -4.627e-02 -0.2014274
## Otu02409 -0.9864329 0.131639 0.1379459 -1.0218990 6.662e-01 0.1443637
## Otu02411 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu02413 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu02414 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02415 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02416 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu02418 0.7130088 -1.661425 -0.0214569 0.0538070 -4.239e-02 0.0310183
## Otu02419 0.8745552 0.533122 -0.5635446 -0.7222194 2.551e-01 -0.7360361
## Otu02421 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02422 -0.4234832 0.021274 0.5094087 -0.6505072 1.452e-01 0.1417561
## Otu02424 0.3088023 0.367933 -0.4244356 -0.9168994 3.636e-01 -1.0812428
## Otu02425 0.5689516 0.443892 -0.4884019 -0.8273800 3.138e-01 -0.9225069
## Otu02426 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02427 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02428 -0.8582192 0.290554 -0.6211716 -0.1203214 -2.051e+00 0.3995838
## Otu02429 0.2602972 0.426554 -0.4006182 -0.4837574 4.024e-01 -0.5320264
## Otu02430 -0.7871111 0.311306 -0.4862891 0.0830063 -1.545e+00 0.3940583
## Otu02431 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02432 -0.6547424 -0.402684 0.6959352 -0.7244696 2.734e-01 -1.3273369
## Otu02435 -0.2999965 0.514686 0.8693855 0.1162140 -1.987e+00 -0.0916134
## Otu02436 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372

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## Otu02438 -0.5947122 -0.195106 0.0206163 -0.2664042 4.857e-01 0.3570069
## Otu02439 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu02441 -0.9341456 0.176312 -0.0745277 -0.3161406 6.366e-01 -0.0042126
## Otu02444 0.9905302 0.231990 0.7489062 -0.0033486 -1.470e-01 -0.2928123
## Otu02445 0.0626815 -1.261088 -0.0204585 0.1482136 2.108e-01 0.4213688
## Otu02447 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02448 -0.4001787 0.467477 0.6708242 -0.1307257 -1.360e+00 0.4193955
## Otu02449 1.0656244 -0.656954 -0.3190628 -0.1739849 2.790e-02 -0.1172331
## Otu02451 -0.6376761 0.384585 -0.4603866 1.4074578 6.384e-01 -0.0361102
## Otu02452 -0.7911309 0.165124 -0.2447264 -0.3604438 6.276e-01 -0.3609683
## Otu02454 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu02455 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02456 0.2387875 -1.550390 0.1639620 -0.0841082 1.186e-01 0.5714059
## Otu02457 -0.6598676 0.321568 0.1998778 -0.8261033 1.552e-01 1.4959267
## Otu02459 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02460 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu02461 -0.6297585 0.348018 -0.2893699 0.7693401 5.464e-01 0.6985631
## Otu02462 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02464 -0.6913562 0.279369 -0.1235510 -0.1365251 6.534e-01 1.0651604
## Otu02465 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02466 0.9435497 -1.004699 -0.2160323 -0.0951238 3.568e-03 -0.0659088
## Otu02467 -0.8609003 0.220132 0.0698499 -0.9057278 -1.055e-01 0.6042894
## Otu02468 1.0153239 -0.800241 -0.2766094 -0.1414904 1.788e-02 -0.0960851
## Otu02469 0.9435497 -1.004699 -0.2160323 -0.0951238 3.568e-03 -0.0659088
## Otu02471 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02472 0.6718107 -0.867111 -0.1007288 -0.2144991 8.120e-02 0.1881738
## Otu02474 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02475 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu02476 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02477 -0.8137653 0.284441 -0.5152298 -0.0501837 -1.210e+00 0.5658132
## Otu02478 -0.5535272 -1.141909 0.0819116 -0.7264252 3.366e-01 -1.1002788
## Otu02479 -0.4433411 0.441487 0.1983334 0.8860948 -9.244e-01 -0.1211395
## Otu02483 1.1391972 -0.447372 -0.3811579 -0.2215133 4.257e-02 -0.1481656
## Otu02484 -0.8013980 0.317739 -0.7175816 0.6075146 -1.720e+00 0.0529309
## Otu02485 -0.6868623 0.281168 -0.0922932 -0.1868867 6.455e-01 1.0905196
## Otu02486 -0.8357435 0.311816 -0.7289191 0.3592091 -2.144e+00 0.0945701
## Otu02487 -0.6777110 0.284833 -0.0286399 -0.2894428 6.293e-01 1.1421610
## Otu02488 1.0133820 -0.805773 -0.2749705 -0.1402359 1.749e-02 -0.0952686
## Otu02489 1.0586722 0.630740 -0.6311640 -0.3585245 2.487e-01 -0.0464471
## Otu02490 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02491 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02494 1.0992760 -0.561093 -0.3474646 -0.1957239 3.461e-02 -0.1313813
## Otu02497 1.0191435 0.181563 -0.5746881 0.0146222 1.426e-01 -0.2232186
## Otu02498 0.5161566 0.428477 -0.4754205 -0.8455471 3.239e-01 -0.9547209
## Otu02499 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu02500 0.3432821 0.637293 1.9613473 0.0624389 -2.422e-01 -0.7031015
## Otu02501 1.3297836 0.095538 -0.5420120 -0.3446333 8.057e-02 -0.2282945
## Otu02502 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02503 0.6433942 -0.357871 1.4053365 0.2650867 -2.740e-01 -0.2218097
## Otu02504 0.6075847 0.503533 -0.0513476 -0.6336426 1.946e-01 -0.8323309
## Otu02505 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02506 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02507 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02508 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu02509 0.1961822 0.335050 -0.3967443 -0.9556528 3.852e-01 -1.1499604
## Otu02511 -0.1523367 0.140294 -0.3343740 -0.3680872 -6.923e-01 0.6307300
## Otu02513 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu02514 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02515 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02517 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02518 -0.5740452 -0.415938 0.1700878 -0.7731697 5.162e-01 0.4527800
## Otu02519 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02520 0.9318982 -0.421948 0.3548611 -0.0193906 -8.805e-02 -0.1767034
## Otu02522 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02523 -0.6231307 0.319676 0.3462363 -0.9228390 5.778e-01 1.6122533
## Otu02526 -0.1061478 -0.800295 0.2004755 -0.3878283 3.527e-01 1.1205977
## Otu02527 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02528 -0.4913540 0.308288 -0.3862307 0.4891909 5.158e-01 -0.6648438
## Otu02530 -0.4155653 -0.127437 0.2332292 -0.6602745 5.627e-01 1.6132398
## Otu02531 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02532 -0.7813443 0.291737 -0.5158234 0.2153037 -8.467e-01 0.4992636
## Otu02533 -0.0319207 0.148147 -0.4122632 0.5469951 4.548e-01 0.1386716
## Otu02535 0.4198557 0.500905 -0.5029746 -0.1901640 4.085e-01 0.3098445
## Otu02537 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02539 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02540 -0.2227452 0.480441 0.2974198 0.8057656 3.515e-01 0.0395495
## Otu02541 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02545 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02546 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02547 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu02549 -0.5535272 -1.141909 0.0819116 -0.7264252 3.366e-01 -1.1002788
## Otu02550 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02552 -0.5633533 0.321772 0.7810702 0.2826601 2.078e-01 -0.9447362
## Otu02555 1.0001901 -0.843352 -0.2638366 -0.1317139 1.486e-02 -0.0897223
## Otu02556 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02557 -0.6577838 0.330921 0.0906096 -0.4835502 2.917e-01 1.3147556
## Otu02558 1.1161541 -0.513013 -0.3617097 -0.2066274 3.798e-02 -0.1384775
## Otu02560 -1.1227678 0.144221 -0.4990066 -0.6465111 -1.870e+00 -0.5913069
## Otu02561 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu02564 0.2985209 -1.677038 -0.0254571 0.5118647 2.378e-02 0.0546497
## Otu02566 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02568 0.8614628 -1.238534 -0.1467514 -0.0420952 -1.280e-02 -0.0313967
## Otu02569 -0.3643313 0.387972 1.7409504 -0.3404204 -7.820e-03 -1.1936900
## Otu02571 0.0193516 0.569652 2.2897629 0.0514936 -2.424e-01 -0.8636514
## Otu02572 -0.8845721 0.238699 -0.4554446 -0.1949347 -9.749e-01 0.3005406
## Otu02574 0.7977066 -0.388180 -0.2220330 -0.3347449 1.237e-01 0.1536948
## Otu02575 0.5721326 0.599246 -0.6494482 0.6710127 3.468e-01 -0.4145743
## Otu02576 -0.3222671 0.345921 -0.2368977 -0.6998418 -5.982e-01 0.2836247
## Otu02577 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02578 0.8251460 -0.889578 0.2959980 0.0314632 -8.563e-02 -0.1011046
## Otu02579 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02580 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu02581 -0.6798109 0.288134 0.7936725 -0.4614358 -8.135e-01 -0.9262368
## Otu02582 0.4386950 -0.297290 -0.3919311 0.6551318 2.392e-01 -0.2605375
## Otu02583 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02584 1.2566706 -0.112734 -0.4803049 -0.2974018 6.599e-02 -0.1975553
## Otu02585 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02586 0.9247339 0.173586 0.9219674 0.0534439 -1.788e-01 -0.2893845

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## Otu02588 -0.8231370 0.285730 -0.5375642 -0.0649699 -1.387e+00 0.5307691
## Otu02590 0.8614628 -1.238534 -0.1467514 -0.0420952 -1.280e-02 -0.0313967
## Otu02591 0.4959785 -0.498612 0.3689493 0.4525123 -2.616e-02 -0.1440613
## Otu02592 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02593 -0.3682322 -0.235005 0.3273811 -0.7055218 3.936e-01 1.1768221
## Otu02594 0.0089877 0.623539 1.6863325 0.2796996 -1.421e+00 -0.2331693
## Otu02595 -0.6903080 0.338242 0.0541363 -0.7240684 -5.359e-02 1.6071738
## Otu02596 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu02597 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02598 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02599 0.2911075 0.485563 -0.0842860 -0.7569676 3.576e-01 0.7220510
## Otu02600 -1.0430693 0.155288 -0.2809933 0.3833037 6.625e-01 -1.3095265
## Otu02601 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02602 -0.0847544 0.064724 0.8277568 0.5864442 1.419e-01 0.0926395
## Otu02603 0.8405600 -1.298079 -0.1291095 -0.0285918 -1.696e-02 -0.0226084
## Otu02605 0.1585390 0.395924 -0.5452792 -0.6863667 -5.352e-01 -0.6685843
## Otu02607 0.1946513 0.036752 1.5381242 0.2943740 -9.963e-01 -0.1917674
## Otu02609 0.3046462 -1.693606 0.1569905 -0.0261186 7.390e-02 0.4665482
## Otu02610 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02611 -0.9523356 0.195707 -0.1419345 -0.7501087 -3.919e-01 0.3118637
## Otu02612 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu02613 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu02616 0.9434929 -0.626019 0.1291012 -0.0531362 -5.137e-02 -0.1370433
## Otu02617 0.4198557 0.500905 -0.5029746 -0.1901640 4.085e-01 0.3098445
## Otu02618 0.7752451 0.579807 -0.3321671 -0.6540712 2.684e-01 0.3214247
## Otu02620 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02621 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu02622 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02623 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02624 -0.1147701 0.393217 1.0551768 -0.5068564 1.006e-01 -1.1345452
## Otu02626 0.8986789 -1.132520 -0.1781616 -0.0661370 -5.377e-03 -0.0470436
## Otu02627 -0.8316472 0.183844 0.6554372 -0.9644222 4.361e-01 -0.3859255
## Otu02628 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02629 0.8986789 -1.132520 -0.1781616 -0.0661370 -5.377e-03 -0.0470436
## Otu02631 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02632 0.8821683 -1.179552 -0.1642267 -0.0554711 -8.669e-03 -0.0401020
## Otu02633 -0.9513360 0.157506 0.0178363 -0.7721507 7.083e-01 0.3158650
## Otu02634 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu02638 -1.1177558 0.147925 -0.5051582 -0.6359875 -1.899e+00 -0.5725256
## Otu02642 0.8821683 -1.179552 -0.1642267 -0.0554711 -8.669e-03 -0.0401020
## Otu02643 -0.3850294 -0.112960 0.9772965 -0.2941482 1.652e-01 -0.7167960
## Otu02644 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02645 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu02646 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu02648 0.8567010 0.609027 -0.7372614 -0.4097844 -7.885e-01 -0.1776491
## Otu02649 0.9490155 -0.989129 -0.2206454 -0.0986548 4.658e-03 -0.0682068
## Otu02650 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02652 0.2306986 0.680164 2.2610925 0.4430025 -2.655e-01 -0.1506396
## Otu02653 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02654 0.2881401 -0.411913 -0.4486443 -0.1617568 -1.151e+00 0.0137031
## Otu02655 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02656 0.7262434 -0.033328 -0.4046904 -0.5706557 2.036e-01 -0.6156474
## Otu02658 0.5215305 -1.494297 0.7892348 0.2564104 -1.839e-01 -0.0223223
## Otu02660 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248

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## Otu02661 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu02662 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02663 -0.2103763 0.300702 -0.4519401 -0.0590423 4.270e-01 -0.9003175
## Otu02665 -0.4329363 -0.528910 -0.4588520 -0.0818340 -2.101e+00 0.1625629
## Otu02666 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02668 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu02669 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02670 -0.7878667 0.355900 -0.6735846 0.7024168 -1.615e+00 -0.0976861
## Otu02671 0.3417198 0.569590 0.5716442 0.0570134 1.479e-01 0.1335710
## Otu02672 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02674 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02675 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu02676 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02677 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02678 -0.6960167 0.310108 0.0694435 -0.2013242 -3.864e-01 0.4665164
## Otu02680 1.1692838 0.653221 -0.6533601 -0.3876763 2.210e-01 -0.1081393
## Otu02681 -0.7357026 0.343303 -0.4865409 1.5323585 6.024e-01 -0.7083884
## Otu02682 -0.8099361 0.283914 -0.5061042 -0.0441421 -1.138e+00 0.5801319
## Otu02683 1.2881954 0.746997 0.1944129 -0.2325092 -3.935e-02 -0.3554260
## Otu02684 -0.6224557 0.289669 0.6129764 -0.2014580 3.932e-01 -0.1979264
## Otu02685 -0.0663368 0.571137 1.1543912 1.2035249 -4.900e-02 -0.3071348
## Otu02686 1.0608550 -0.670540 -0.3150374 -0.1709038 2.695e-02 -0.1152279
## Otu02688 0.9794411 0.440939 0.9773707 0.0304510 -1.840e-01 -0.3333307
## Otu02689 0.7089370 -0.586974 -0.2720952 -0.3641575 1.229e-01 -0.4050653
## Otu02691 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02692 0.4198557 0.500905 -0.5029746 -0.1901640 4.085e-01 0.3098445
## Otu02693 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu02694 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02695 -0.1655025 0.429474 -0.7275801 0.1611553 -1.447e+00 -0.0278056
## Otu02696 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu02697 0.7048850 -0.421921 -0.1725474 -0.3494031 1.385e-01 0.2281014
## Otu02698 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02699 -1.3407250 -0.016847 -0.2314939 -1.1041507 -5.702e-01 -1.4080509
## Otu02701 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02704 0.7893784 0.776772 1.9368676 0.2503749 -3.491e-01 -0.4181973
## Otu02705 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02707 0.9229517 -1.063375 -0.1986477 -0.0818174 -5.382e-04 -0.0572487
## Otu02710 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu02711 0.9863919 0.616049 -0.6166598 -0.3394750 2.668e-01 -0.0061337
## Otu02712 1.2179256 0.751191 0.4398776 -0.1644839 -8.298e-02 -0.3642687
## Otu02713 -0.0616974 0.513976 -0.5971695 1.4205217 4.900e-01 -0.4743273
## Otu02714 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu02715 -0.6255506 0.325861 0.3267804 -0.9076904 6.066e-01 1.6878790
## Otu02718 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02719 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02720 0.7484351 0.651806 0.9034026 -0.1853848 -8.007e-02 -0.5988220
## Otu02722 -0.2843708 -0.784199 -0.3674977 -0.0426412 -1.789e+00 0.1541489
## Otu02723 0.6055963 -0.145295 0.5697338 0.0329347 -5.836e-01 -0.1641513
## Otu02724 -0.4836341 0.458127 0.2265495 0.5439070 -1.536e+00 -0.1501957
## Otu02725 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02727 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02728 -0.4647801 0.453234 0.2708272 0.5853176 -7.918e-01 0.0576486
## Otu02729 -0.9242592 0.158722 -0.1980962 -0.3084238 6.993e-01 0.1513659
## Otu02730 1.2881954 0.746997 0.1944129 -0.2325092 -3.935e-02 -0.3554260

```

```

## 0tu02732 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## 0tu02737 0.9318982 -0.421948 0.3548611 -0.0193906 -8.805e-02 -0.1767034
## 0tu02738 -0.6278426 0.365774 0.1043412 -0.3061155 6.924e-01 1.4942785
## 0tu02739 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02740 -0.8704384 0.200907 0.4905892 -0.6438143 -7.582e-01 -1.0571740
## 0tu02744 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02747 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## 0tu02748 -0.5890137 -0.226122 0.1915232 -0.7929690 5.646e-01 0.8275377
## 0tu02749 -0.4329363 -0.528910 -0.4588520 -0.0818340 -2.101e+00 0.1625629
## 0tu02750 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02751 -0.3636488 0.422287 0.6638315 0.2323527 3.374e-01 0.5372284
## 0tu02753 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## 0tu02754 -0.6653073 0.411761 -0.5948128 1.5856417 -1.630e-01 -0.3763579
## 0tu02755 0.4674954 0.223630 -0.1940149 -0.5729789 3.604e-01 0.7370894
## 0tu02757 0.3187866 -0.369199 0.1538572 -0.0179609 -9.910e-01 -0.0496244
## 0tu02758 0.7220629 -1.635633 -0.0290985 0.0479580 -4.059e-02 0.0272117
## 0tu02760 0.4653062 0.413629 -0.4629173 -0.8630452 3.336e-01 -0.9857484
## 0tu02761 0.8514168 -0.055158 0.3413239 -0.1461343 -1.766e-03 -0.0062681
## 0tu02762 0.9744498 -0.916676 -0.2421119 -0.1150855 9.728e-03 -0.0789002
## 0tu02763 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02765 -0.6747725 0.320330 -0.2246413 0.3058905 6.797e-01 0.8523695
## 0tu02766 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## 0tu02767 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02769 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## 0tu02771 -0.1090794 0.524428 0.5173627 0.0082114 -1.806e+00 -0.0975508
## 0tu02772 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02773 -1.0475999 0.138659 -0.4232671 0.0646658 -3.446e-01 -0.8446088
## 0tu02774 -0.2460794 -0.651562 -0.1219913 0.1323933 4.023e-01 0.6284696
## 0tu02775 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## 0tu02777 0.7414115 0.566259 -0.5675003 -0.2749102 3.281e-01 0.1305009
## 0tu02778 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## 0tu02781 -0.8322385 0.225011 0.2352759 -1.0281593 6.729e-01 0.9433981
## 0tu02783 1.0065458 0.084067 0.5590898 -0.0351270 -1.157e-01 -0.2631921
## 0tu02785 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## 0tu02786 0.8304082 -1.326998 -0.1205414 -0.0220337 -1.899e-02 -0.0183403
## 0tu02787 -0.8857022 0.256947 -0.3775038 0.9776174 6.445e-01 -1.0309649
## 0tu02789 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## 0tu02790 -0.7313152 0.300362 -0.2796721 -0.0329557 -4.794e-01 0.7220365
## 0tu02791 0.1516175 0.364650 -0.3109656 -0.9062293 4.216e-01 -0.5741172
## 0tu02792 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02793 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02795 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## 0tu02796 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## 0tu02798 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## 0tu02801 0.5215305 -1.494297 0.7892348 0.2564104 -1.839e-01 -0.0223223
## 0tu02802 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02803 -0.4481586 -0.136680 -0.1108342 -1.0089595 4.807e-01 -0.9816346
## 0tu02804 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## 0tu02805 1.0218920 -0.781531 -0.2821529 -0.1457334 1.919e-02 -0.0988465
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## 0tu02807 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## 0tu02808 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## 0tu02809 1.1230884 -0.493260 -0.3675622 -0.2111069 3.936e-02 -0.1413929
## 0tu02810 0.9559119 0.766832 1.3551371 0.0891607 -2.457e-01 -0.3972406

```

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## Otu02811 0.7130088 -1.661425 -0.0214569 0.0538070 -4.239e-02 0.0310183
## Otu02812 -0.1185770 0.440982 0.2988479 -0.0962387 3.656e-01 0.5871458
## Otu02813 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02815 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02817 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02820 -0.3761978 0.392690 -0.7495095 -0.2698860 -2.406e+00 0.0781698
## Otu02823 0.2146901 -1.451086 -0.0581814 0.6979029 1.137e-01 -0.0685622
## Otu02824 0.2584293 -0.719678 1.2797140 0.1080025 -1.658e-01 -0.4085603
## Otu02825 0.4017555 -0.171414 0.5516270 0.0244355 5.417e-02 0.1355296
## Otu02826 -0.2426773 0.416806 0.0797082 -0.7876875 6.062e-01 1.5526231
## Otu02827 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu02828 1.0133820 -0.805773 -0.2749705 -0.1402359 1.749e-02 -0.0952686
## Otu02829 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02832 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu02835 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02836 0.1204412 0.645560 1.7591562 0.9811237 -2.102e-01 -0.3565459
## Otu02837 -0.3835801 -1.305269 0.0899502 -0.5854637 2.714e-01 -0.9107272
## Otu02838 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## Otu02839 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02840 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02841 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu02842 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02844 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu02846 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02847 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02848 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02849 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02850 -1.0957815 0.164164 -0.5321286 -0.5898486 -2.030e+00 -0.4901821
## Otu02854 0.9496986 0.111603 -0.3826836 -0.4330089 1.968e-01 0.1878108
## Otu02855 0.5525040 -0.156786 0.7728631 -0.0981361 -4.350e-02 0.1015842
## Otu02857 -0.4129985 -0.666605 0.6769594 -0.5281785 1.857e-01 -1.0520958
## Otu02858 0.4748373 -0.841180 -0.1849100 -0.0090076 1.648e-01 0.2089410
## Otu02859 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02861 -0.8628107 0.307149 -0.7378540 0.1635233 -2.477e+00 0.1273852
## Otu02862 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02863 1.3606840 0.183562 -0.5680918 -0.3645952 8.673e-02 -0.2412860
## Otu02864 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu02865 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu02866 1.1051969 -0.544226 -0.3524619 -0.1995489 3.579e-02 -0.1338707
## Otu02867 -1.3001574 0.013132 -0.2812851 -1.0189718 -8.120e-01 -1.2560332
## Otu02868 -0.7388400 0.286353 -0.2328468 -0.2222545 -2.624e-01 0.8892111
## Otu02869 1.2566706 -0.112734 -0.4803049 -0.2974018 6.599e-02 -0.1975553
## Otu02870 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu02871 1.1414587 -0.440930 -0.3830666 -0.2229743 4.302e-02 -0.1491164
## Otu02872 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02873 0.4879751 0.722763 1.7253499 0.6216492 -2.223e-01 -0.4444236
## Otu02874 -0.6625553 0.246759 1.3143768 -0.6450420 1.745e-01 -1.4502180
## Otu02875 -0.1162611 0.406263 0.1242889 -0.8435479 4.327e-01 1.0591506
## Otu02877 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02878 1.0762048 -0.626814 -0.3279926 -0.1808198 3.001e-02 -0.1216814
## Otu02879 0.9775500 -0.907845 -0.2447284 -0.1170883 1.035e-02 -0.0802037
## Otu02880 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02881 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02882 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```

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## Otu02883 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu02884 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02885 -0.1920012 0.465304 -0.5328565 1.1581090 5.304e-01 -0.1911017
## Otu02886 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02889 -0.7345784 0.330342 -0.1057451 -0.6222406 -6.581e-01 1.3270624
## Otu02890 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02892 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02893 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu02895 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu02897 -0.6213177 0.366610 -0.6384786 1.9079742 4.700e-01 -0.2321344
## Otu02898 -0.9242592 0.158722 -0.1980962 -0.3084238 6.993e-01 0.1513659
## Otu02899 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02902 0.7589423 -0.069827 -0.4700782 0.3128836 1.957e-01 -0.2653130
## Otu02903 0.5171088 -1.126747 1.1392408 0.3013623 -2.399e-01 -0.0918667
## Otu02904 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu02907 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02909 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02910 -0.6054733 0.422079 -0.5750615 2.0182192 5.748e-01 -0.4488983
## Otu02911 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu02913 -0.5082734 0.340000 1.0442199 -0.6600500 2.664e-01 0.1061940
## Otu02915 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02916 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu02918 0.3008709 0.562753 -0.6270744 0.9917818 4.081e-01 -0.4401469
## Otu02919 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02922 -0.4921401 0.352700 0.9482359 -0.0411574 2.035e-01 -0.4662470
## Otu02923 0.4760627 0.611349 0.8733002 -0.3009355 3.929e-02 0.2324907
## Otu02924 1.3797221 0.237794 -0.5841598 -0.3768938 9.052e-02 -0.2492903
## Otu02925 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02926 0.7059936 -1.681409 -0.0155361 0.0583389 -4.379e-02 0.0339678
## Otu02935 0.4729413 -0.559709 -0.2365666 -0.4826098 1.829e-01 -0.5878308
## Otu02936 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02937 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02938 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02939 1.0893289 0.649846 -0.7349504 -0.4361809 -4.833e-01 -0.2259179
## Otu02940 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02941 -0.1784035 0.526484 0.7915322 1.3369656 4.771e-02 -0.2774882
## Otu02942 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02943 0.3780279 -0.237856 -0.4983145 -0.2034891 -1.099e+00 -0.0175567
## Otu02945 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu02946 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02947 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02948 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02949 -0.6207897 -0.055931 -0.3954389 0.9160418 -2.069e-02 -0.5760222
## Otu02950 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02951 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02954 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02955 0.1347739 -0.176061 -0.0536976 -0.5008972 -2.567e-02 0.6571417
## Otu02956 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02957 1.3483063 0.148302 -0.5576450 -0.3565990 8.426e-02 -0.2360820
## Otu02958 0.0421649 0.424141 -0.4271846 -0.0906233 5.030e-01 0.5204966
## Otu02961 -0.6491992 0.315516 -0.1793445 0.3464304 5.568e-01 0.7963812
## Otu02963 -0.3156781 0.351412 -0.3553773 0.0036865 5.925e-01 0.7200789
## Otu02964 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu02965 -0.6149956 0.388743 -0.6131745 1.9519632 5.118e-01 -0.3186255

```



```

## Otu02967 -1.0958465 0.085639 0.1454063 -1.2059743 7.163e-01 -0.1292141
## Otu02968 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02970 -0.6207205 0.318304 0.1211935 -0.2450743 5.026e-01 1.0664886
## Otu02971 -0.2392250 0.274950 -0.3238403 -0.6464658 5.128e-01 -0.5334167
## Otu02972 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu02974 0.7172210 -1.649426 -0.0250120 0.0510859 -4.155e-02 0.0292474
## Otu02975 1.0287510 -0.761993 -0.2879418 -0.1501644 2.055e-02 -0.1017303
## Otu02977 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02979 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu02980 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02982 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu02983 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu02988 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu02991 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu02992 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu02993 0.0611709 0.452548 0.3348794 -0.6385732 3.458e-01 0.2658938
## Otu02997 1.2575468 0.748826 0.3014737 -0.2028395 -5.838e-02 -0.3592828
## Otu03001 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03002 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu03003 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03004 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03005 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03007 -0.8988431 0.225250 -0.4069667 0.9021276 5.912e-01 -0.9286243
## Otu03009 0.2995232 -0.382509 -0.0334898 -0.4256764 3.046e-01 0.7779350
## Otu03012 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03014 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03016 -0.0098933 -0.192854 1.5262388 -0.0785695 -1.056e-01 -0.7556594
## Otu03017 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu03018 1.3297836 0.095538 -0.5420120 -0.3446333 8.057e-02 -0.2282945
## Otu03019 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03020 -0.4623910 0.377566 -0.7503657 -0.2601056 -2.519e+00 0.0960544
## Otu03022 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu03024 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu03026 0.2775390 0.568760 1.5219374 -0.1442727 -1.156e-01 -0.8111649
## Otu03029 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03030 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu03031 0.9863919 0.616049 -0.6166598 -0.3394750 2.668e-01 -0.0061337
## Otu03034 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu03036 -0.2803243 0.392494 0.0241271 -0.6482179 5.793e-01 1.3298622
## Otu03039 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03040 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu03042 -0.6179821 0.392527 -0.1275945 0.5279512 6.639e-01 0.7815338
## Otu03044 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu03045 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03047 1.2881954 0.746997 0.1944129 -0.2325092 -3.935e-02 -0.3554260
## Otu03048 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03050 0.1230857 0.632419 2.1063106 0.0407670 -1.799e-01 0.1880719
## Otu03051 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03052 0.2962502 -1.722177 0.0563480 0.1601812 6.593e-02 0.2647032
## Otu03056 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03057 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03058 1.0033581 -0.834327 -0.2665104 -0.1337604 1.549e-02 -0.0910543
## Otu03059 0.3193071 0.514731 -0.7426001 -0.3488057 -1.494e+00 -0.0661431
## Otu03060 0.2495066 0.417299 0.2058436 -0.6885115 2.209e-01 -1.0255921

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## Otu03061 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03062 0.6724415 -0.531785 -0.1701948 -0.2983935 1.672e-01 0.3385320
## Otu03063 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03064 -0.2148688 0.379351 -0.5968617 -0.1548209 -9.813e-01 -0.4401751
## Otu03065 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03066 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03067 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03068 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03070 1.0950727 -0.573067 -0.3439170 -0.1930086 3.378e-02 -0.1296141
## Otu03071 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03073 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03074 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu03075 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu03076 0.8695376 -0.447689 -0.3402974 -0.1583222 1.193e-01 0.0050618
## Otu03077 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu03078 0.8465988 -1.280877 -0.1342062 -0.0324930 -1.576e-02 -0.0251474
## Otu03079 -0.6723020 0.317110 -0.4250004 0.8903210 6.069e-01 0.4177621
## Otu03080 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03081 -0.3385122 -0.165760 -0.3940679 1.6208539 4.519e-01 -0.3785795
## Otu03082 -0.7497975 0.303934 -0.1223331 -0.6215494 -1.088e+00 0.9051200
## Otu03083 -0.7850567 -0.003915 -0.1985913 -0.4323779 -5.804e-01 0.2495189
## Otu03084 -0.7081118 0.344527 -0.4823239 0.8244012 -1.010e-01 0.2046592
## Otu03085 1.0033581 -0.834327 -0.2665104 -0.1337604 1.549e-02 -0.0910543
## Otu03087 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03089 -0.1897974 0.470617 1.9906002 -0.1621422 -1.145e-01 -1.0435584
## Otu03090 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03091 0.5917199 0.562531 -0.7398939 -0.3797167 -1.136e+00 -0.1226671
## Otu03092 1.1144527 -0.517860 -0.3602737 -0.2055282 3.764e-02 -0.1377621
## Otu03094 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03098 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03099 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03100 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03101 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03103 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu03104 -0.4338938 0.391808 0.4750538 0.2074563 4.086e-01 0.6185264
## Otu03105 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03106 0.7030249 -1.689865 -0.0130305 0.0602567 -4.438e-02 0.0352159
## Otu03107 -0.6848890 0.313354 -0.3448977 0.5955830 6.719e-01 0.5750842
## Otu03108 -0.1464553 0.444393 -0.6967138 0.5644110 -8.325e-01 -0.1313653
## Otu03109 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03110 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03111 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03112 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03113 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03114 1.0979514 0.651533 -0.5250908 -0.5645227 2.470e-01 0.1529150
## Otu03115 1.1684399 -0.364070 -0.4058386 -0.2404043 4.840e-02 -0.1604602
## Otu03118 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03119 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03121 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03123 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03125 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03126 -0.0513389 -0.722697 0.3595009 -0.4569771 1.610e-01 -0.8163292
## Otu03127 -0.1298314 0.345526 -0.3704249 -0.3442544 5.173e-01 0.0418277
## Otu03128 1.0181232 -0.792267 -0.2789720 -0.1432987 1.844e-02 -0.0972620

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## Otu03129 -0.3298976 0.427665 1.1500441 -0.2600643 1.960e-01 0.2958415
## Otu03130 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03132 -0.2733251 0.443422 1.5735620 0.1167201 -2.203e-02 -0.9302479
## Otu03136 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03137 0.5039893 -0.036196 2.1777347 0.4347380 -4.060e-01 -0.2982101
## Otu03138 1.0895207 0.758856 0.8884182 -0.0401804 -1.627e-01 -0.3804273
## Otu03139 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03140 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03143 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03144 -1.0809068 0.128577 -0.3285946 0.0814952 1.287e-01 -1.1463764
## Otu03145 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03148 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03150 -0.8737043 0.224154 -0.0551008 -0.8046243 -6.545e-01 0.4307614
## Otu03151 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03153 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03154 0.1469668 -1.352694 0.2159562 -0.2020147 1.225e-01 0.5636757
## Otu03155 1.1617090 0.195439 0.1269629 -0.1719756 -3.684e-02 -0.2663251
## Otu03156 -0.6267589 -0.373585 -0.0848289 -1.0574543 4.714e-01 -1.4632994
## Otu03157 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03158 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu03159 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03160 1.0887477 -0.591084 -0.3385788 -0.1889226 3.251e-02 -0.1269549
## Otu03162 0.6853278 0.477871 -0.5170168 -0.7873340 2.914e-01 -0.8514974
## Otu03165 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03166 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03171 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu03174 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03175 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03176 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03179 -0.1169250 -0.810897 0.1278186 -0.2565326 3.501e-01 0.9813298
## Otu03183 0.1932412 0.454847 -0.4575006 -0.1304395 4.652e-01 0.4362357
## Otu03184 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03186 0.2372265 -0.618821 -0.2030489 0.0144856 2.702e-01 0.3555130
## Otu03187 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03188 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03190 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03191 0.7277152 -1.619532 -0.0338690 0.0443066 -3.946e-02 0.0248353
## Otu03196 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03197 -0.6177490 0.379103 -0.6241951 1.9328048 4.936e-01 -0.2809563
## Otu03198 0.7277152 -1.619532 -0.0338690 0.0443066 -3.946e-02 0.0248353
## Otu03200 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu03201 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03202 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03203 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu03205 0.8405600 -1.298079 -0.1291095 -0.0285918 -1.696e-02 -0.0226084
## Otu03206 -0.6122938 0.398201 -0.6023603 1.9707627 5.297e-01 -0.3555891
## Otu03208 0.7762502 0.012918 -0.4243895 -0.5657034 1.988e-01 -0.5978912
## Otu03209 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03210 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03211 -1.0199527 0.220201 -0.6251980 -0.4306328 -2.483e+00 -0.2060314
## Otu03213 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03214 -1.4085934 -0.067001 -0.1481947 -1.2466524 -1.655e-01 -1.6623720
## Otu03216 -0.4208655 0.384852 -0.7499532 -0.2648175 -2.465e+00 0.0874381
## Otu03217 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375

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## Otu03219 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03220 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03221 -0.6304886 0.348053 -0.2017598 0.5089246 5.728e-01 0.9013046
## Otu03222 0.2426798 -1.560337 0.1952558 -0.1084738 7.215e-02 0.4497662
## Otu03223 -0.1303635 0.504738 -0.5915059 1.5017200 5.055e-01 -0.4808007
## Otu03224 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu03225 0.7277152 -1.619532 -0.0338690 0.0443066 -3.946e-02 0.0248353
## Otu03233 -0.5776618 -0.109948 -0.0113452 0.0002988 -5.743e-01 -0.1169480
## Otu03235 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu03236 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03237 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03238 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03239 -0.3664807 -0.413878 -0.1615840 0.1262242 4.769e-01 0.7092285
## Otu03241 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03242 -0.6606100 0.322363 0.0790547 -0.5324334 7.047e-01 1.6216075
## Otu03243 -0.4320585 0.378047 0.9417026 -0.0368967 2.588e-01 -0.1246482
## Otu03245 0.2123164 0.470225 -0.0439446 -0.7737135 3.722e-01 0.7872510
## Otu03248 0.6094461 0.653830 0.6136518 0.2749425 3.984e-02 -0.2276491
## Otu03249 0.0605860 -0.581568 1.2201670 -0.0630648 -8.168e-02 -0.6199664
## Otu03252 0.9370691 0.767956 1.4209583 0.1074016 -2.574e-01 -0.3996118
## Otu03253 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03256 -0.2352715 0.559181 0.6210436 1.5500789 2.303e-01 -0.5018332
## Otu03259 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03260 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03263 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03264 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03265 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu03266 1.0762048 -0.626814 -0.3279926 -0.1808198 3.001e-02 -0.1216814
## Otu03267 0.8376255 -0.302364 0.1100247 -0.1996690 2.636e-02 0.0133187
## Otu03269 0.3821421 0.525289 -0.6925070 0.7786429 2.913e-01 -0.2344424
## Otu03271 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03272 0.3417198 0.569590 0.5716442 0.0570134 1.479e-01 0.1335710
## Otu03273 -0.6200294 0.363535 0.0609594 -0.0493437 6.296e-01 1.1120436
## Otu03274 -1.1397252 0.092849 -0.2217160 0.0182726 6.736e-01 -1.4806208
## Otu03276 -0.8318648 0.301107 -0.4378605 -0.4156662 -2.098e+00 0.5483026
## Otu03277 -0.0701547 0.571320 1.6125352 -0.1582789 8.928e-02 0.7530713
## Otu03278 0.8524284 0.681812 0.1151578 0.2900319 8.776e-02 -0.3954408
## Otu03281 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03282 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03283 -0.1466805 0.385760 -0.3892895 -0.0408529 5.502e-01 0.6258227
## Otu03284 -0.1736435 0.502831 1.4164100 -0.3556765 1.022e-01 0.7028240
## Otu03286 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03287 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03288 0.3058513 0.666258 1.1783597 0.8723489 -4.154e-02 -0.4563913
## Otu03289 -0.6219758 0.316725 0.3555210 -0.9300682 5.640e-01 1.5761634
## Otu03290 -0.1558149 0.409023 0.5571076 -0.6434585 3.473e-01 0.1851205
## Otu03291 0.0111116 0.584889 1.6709700 0.3651760 -4.275e-02 0.1034995
## Otu03294 -0.4037874 0.477946 0.2069497 1.3631305 3.989e-01 -0.2177529
## Otu03297 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03298 -0.0683885 0.490551 -0.6239510 1.3739644 4.457e-01 -0.3827862
## Otu03299 1.0868165 -0.596585 -0.3369488 -0.1876750 3.213e-02 -0.1261429
## Otu03304 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03305 -1.1232173 -0.594299 0.0549648 -1.1989507 5.550e-01 -1.7356859
## Otu03306 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```

##	Otu03307	0.1409026	0.494931	-0.7060007	0.2533331	-8.733e-01	-0.1528829
##	Otu03309	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03310	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu03311	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03313	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03315	0.9834710	-0.890978	-0.2497257	-0.1209132	1.153e-02	-0.0826931
##	Otu03317	-0.6619889	0.319037	-0.1721835	0.1885242	6.348e-01	1.0490165
##	Otu03320	0.0066257	0.445970	-0.3678803	-0.5493177	-8.207e-01	0.4475552
##	Otu03323	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03324	1.0868165	-0.596585	-0.3369488	-0.1876750	3.213e-02	-0.1261429
##	Otu03325	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu03326	0.9579025	-0.963814	-0.2281460	-0.1043958	6.430e-03	-0.0719432
##	Otu03327	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03328	0.5161566	0.428477	-0.4754205	-0.8455471	3.239e-01	-0.9547209
##	Otu03329	1.3734491	0.219925	-0.5788654	-0.3728415	8.927e-02	-0.2466529
##	Otu03330	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu03333	-0.3132606	0.186303	-0.2714810	-1.1309560	4.829e-01	-1.4608082
##	Otu03334	-0.1096098	0.532510	1.3465409	0.3223897	7.970e-02	0.2432164
##	Otu03335	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu03336	-0.9242592	0.158722	-0.1980962	-0.3084238	6.993e-01	0.1513659
##	Otu03338	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03340	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu03341	-0.6134843	0.345582	0.1209325	-0.1114768	5.494e-01	0.9170612
##	Otu03342	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu03344	1.1145959	0.642106	-0.6423861	-0.3732632	2.347e-01	-0.0776378
##	Otu03345	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03346	0.4631287	0.539532	-0.6951244	0.6909712	2.798e-01	-0.2405067
##	Otu03347	-0.6266706	0.347870	-0.6599038	1.8707284	4.345e-01	-0.1589016
##	Otu03350	-0.8266120	0.338240	-0.6984872	0.4231988	-2.074e+00	-0.0095883
##	Otu03351	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03352	0.9682943	-0.934211	-0.2369166	-0.1111090	8.501e-03	-0.0763122
##	Otu03356	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu03357	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03358	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu03359	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu03361	0.9761079	-0.911953	-0.2435113	-0.1161566	1.006e-02	-0.0795973
##	Otu03362	0.7172210	-1.649426	-0.0250120	0.0510859	-4.155e-02	0.0292474
##	Otu03363	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03364	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu03366	0.8469741	0.773334	1.7356758	0.1946189	-3.133e-01	-0.4109494
##	Otu03367	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu03370	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu03371	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03372	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu03373	-0.2112134	-0.575646	0.2934218	-0.5520664	3.109e-01	0.9899517
##	Otu03374	0.1193661	0.479647	-0.7445864	-0.3261182	-1.756e+00	-0.0246566
##	Otu03376	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu03378	-0.3177920	0.500561	0.7212604	0.3994894	-1.561e+00	-0.1164068
##	Otu03379	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu03384	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu03385	1.2971508	0.002579	-0.5144700	-0.3235523	7.406e-02	-0.2145745
##	Otu03388	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu03392	1.1391972	-0.447372	-0.3811579	-0.2215133	4.257e-02	-0.1481656
##	Otu03393	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119

```

## Otu03394 -0.6326411 0.348156 0.0565379 -0.2588487 6.508e-01 1.4990398
## Otu03395 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03396 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03397 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03400 0.7676853 0.034184 1.3350455 0.1890014 -2.547e-01 -0.2812027
## Otu03401 0.7426405 -1.577015 -0.0464659 0.0346647 -3.649e-02 0.0185602
## Otu03403 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03405 0.9213426 -1.067959 -0.1972897 -0.0807779 -8.590e-04 -0.0565722
## Otu03406 -0.6113728 0.410459 -0.2830571 1.0870120 6.448e-01 0.3037931
## Otu03407 -0.5555196 0.332762 1.0413700 -0.2007953 2.526e-01 -0.7641814
## Otu03408 0.9959305 -0.855486 -0.2602415 -0.1289622 1.401e-02 -0.0879314
## Otu03409 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03410 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03411 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03415 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03416 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03417 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03418 1.0815369 0.635387 -0.6357522 -0.3645505 2.430e-01 -0.0591996
## Otu03419 -0.5658986 0.321894 1.0864996 -0.6252091 3.000e-01 -0.2379321
## Otu03420 -0.2151721 0.534995 0.6781885 1.4415839 1.353e-01 -0.3679251
## Otu03421 0.8304082 -1.326998 -0.1205414 -0.0220337 -1.899e-02 -0.0183403
## Otu03422 0.5103169 -0.562173 1.6768649 0.3704104 -3.259e-01 -0.1986898
## Otu03427 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03428 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03430 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu03431 -0.5206149 0.125759 -0.2204961 -1.2023083 5.227e-01 -1.5873300
## Otu03434 0.7529634 -1.547609 -0.0551783 0.0279961 -3.443e-02 0.0142201
## Otu03435 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03437 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03438 0.7529634 -1.547609 -0.0551783 0.0279961 -3.443e-02 0.0142201
## Otu03440 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03441 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu03442 0.7032325 0.582098 -0.7387861 -0.3923701 -9.899e-01 -0.1458053
## Otu03444 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03446 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03447 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03448 -0.5697021 0.228562 -0.4238730 0.2200262 4.819e-01 -0.9261914
## Otu03451 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu03453 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu03454 0.5198266 -1.352665 0.9241061 0.2737322 -2.055e-01 -0.0491205
## Otu03455 -0.8075556 0.257012 -0.0234935 -0.2861818 6.917e-01 0.5850045
## Otu03456 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03457 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu03459 0.9807029 -0.898864 -0.2473895 -0.1191250 1.098e-02 -0.0815292
## Otu03461 1.3734491 0.219925 -0.5788654 -0.3728415 8.927e-02 -0.2466529
## Otu03463 1.0539960 -0.690079 -0.3092485 -0.1664728 2.559e-02 -0.1123441
## Otu03464 0.8991512 0.692236 0.5429792 -0.2327297 1.432e-02 -0.0157912
## Otu03465 0.0443377 0.485310 0.3328085 0.0715154 3.012e-01 0.3614075
## Otu03466 0.1413034 -0.315764 0.8496877 0.9218093 7.367e-05 -0.2907988
## Otu03468 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03469 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu03470 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03471 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03472 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009

```

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## Otu03473 0.1842685 0.575111 0.2690125 0.5967082 -4.688e-01 -0.2994369
## Otu03474 -0.2101584 0.546336 1.1069155 0.1637480 -1.822e+00 -0.1327713
## Otu03475 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu03476 0.7426405 -1.577015 -0.0464659 0.0346647 -3.649e-02 0.0185602
## Otu03477 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu03478 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03480 0.7172210 -1.649426 -0.0250120 0.0510859 -4.155e-02 0.0292474
## Otu03481 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03482 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu03483 -0.2988716 -0.547345 -0.1393514 0.1296883 4.350e-01 0.6638797
## Otu03484 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03485 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03486 0.9584625 -0.962218 -0.2286187 -0.1047576 6.541e-03 -0.0721786
## Otu03487 -0.6111193 0.402313 -0.5976594 1.9789347 5.375e-01 -0.3716570
## Otu03488 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu03489 -0.3705482 0.452952 0.8221730 -0.2735940 -9.008e-01 0.4983492
## Otu03491 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03494 1.3483063 0.148302 -0.5576450 -0.3565990 8.426e-02 -0.2360820
## Otu03496 -0.7370533 0.379060 -0.6409257 1.0686036 -1.013e+00 -0.2132240
## Otu03497 -1.1164164 0.075321 -0.1667836 -0.4005557 6.934e-01 -0.8835469
## Otu03498 0.8796190 0.238610 1.1363384 0.1040199 -2.158e-01 -0.3067694
## Otu03499 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03500 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03501 -1.1633489 0.050685 -0.1874299 -0.7695576 1.762e-01 -0.7439482
## Otu03502 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu03503 0.9314459 -1.039179 -0.2058168 -0.0873047 1.155e-03 -0.0608199
## Otu03506 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03507 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03508 0.7893784 0.776772 1.9368676 0.2503749 -3.491e-01 -0.4181973
## Otu03509 0.8589147 -0.219222 0.7904986 0.0732281 -1.621e-01 -0.2231475
## Otu03511 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03512 0.1751202 -0.543010 -0.1875873 -0.6252355 2.559e-01 -0.8113378
## Otu03513 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu03515 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu03516 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu03517 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03518 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03519 -0.8157883 0.301661 -0.3760504 -0.4559976 -1.900e+00 0.6182011
## Otu03523 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03524 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03526 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03533 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03534 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03536 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03537 -0.6816548 0.332165 0.0977324 -0.7550108 -6.756e-03 1.5571672
## Otu03540 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03541 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03543 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03544 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03545 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03548 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03549 0.7344407 -1.600374 -0.0395453 0.0399619 -3.812e-02 0.0220076
## Otu03550 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03551 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375

```

```

## Otu03552 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03553 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu03556 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu03558 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03561 0.3440241 0.441835 -0.4655121 -0.4691393 3.987e-01 -0.2224590
## Otu03562 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03566 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03568 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu03570 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu03572 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03574 1.3297836 0.095538 -0.5420120 -0.3446333 8.057e-02 -0.2282945
## Otu03575 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03577 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03578 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03579 0.7190790 0.562206 0.1624160 -0.4978212 1.128e-01 -0.7283286
## Otu03580 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03584 -0.6457272 0.372438 -0.4406927 1.2690120 6.441e-01 0.0681143
## Otu03585 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03587 1.2361482 -0.171195 -0.4629841 -0.2841442 6.190e-02 -0.1889270
## Otu03588 1.2881954 0.746997 0.1944129 -0.2325092 -3.935e-02 -0.3554260
## Otu03591 1.1614043 -0.384112 -0.3999006 -0.2358593 4.700e-02 -0.1575022
## Otu03594 1.2361482 -0.171195 -0.4629841 -0.2841442 6.190e-02 -0.1889270
## Otu03595 1.2005786 -0.272519 -0.4329636 -0.2611661 5.481e-02 -0.1739724
## Otu03597 0.3619556 -0.558025 1.3815640 0.1963155 -1.727e-01 0.1056670
## Otu03598 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03599 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu03600 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu03601 -0.6248350 0.338749 -0.4189320 1.2179942 4.556e-01 0.2191366
## Otu03602 1.3606840 0.183562 -0.5680918 -0.3645952 8.673e-02 -0.2412860
## Otu03605 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03607 1.3411419 0.743836 0.0094613 -0.2837645 -6.466e-03 -0.3487632
## Otu03609 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03610 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu03611 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03612 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03614 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03615 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03616 1.3401065 0.124944 -0.5507244 -0.3513019 8.263e-02 -0.2326345
## Otu03617 0.7344407 -1.600374 -0.0395453 0.0399619 -3.812e-02 0.0220076
## Otu03618 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03620 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03622 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03623 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu03624 0.5161106 -1.043770 1.2182567 0.3115105 -2.525e-01 -0.1075667
## Otu03626 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03627 1.3483063 0.148302 -0.5576450 -0.3565990 8.426e-02 -0.2360820
## Otu03629 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu03632 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03633 -1.1496699 0.043379 -0.0412978 -0.6782497 6.162e-01 -0.9645463
## Otu03635 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03638 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu03639 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu03641 1.0674231 -0.651830 -0.3205809 -0.1751468 2.826e-02 -0.1179893
## Otu03645 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536

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## Otu03646 0.5311192 0.214481 -0.5396573 0.6445447 2.966e-01 -0.3465197
## Otu03647 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03649 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03650 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu03652 0.7414115 0.566259 -0.5675003 -0.2749102 3.281e-01 0.1305009
## Otu03653 -0.6494195 0.378127 -0.1073887 0.0835088 -1.778e+00 0.2940915
## Otu03654 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu03657 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03659 -0.7109856 0.349429 -0.3086912 0.2992635 -6.584e-01 0.3799040
## Otu03663 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03665 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu03666 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03667 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu03668 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu03669 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu03670 0.4373708 0.703747 1.7656614 0.2494047 -8.441e-01 -0.3291997
## Otu03671 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu03672 -0.2337021 -0.409279 -0.3304307 1.4459911 3.878e-01 -0.3198434
## Otu03675 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03677 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03678 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03680 -0.7798078 0.050080 -0.1567650 -1.2914985 5.724e-01 -1.7454822
## Otu03681 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu03683 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03685 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03688 1.2005786 -0.272519 -0.4329636 -0.2611661 5.481e-02 -0.1739724
## Otu03689 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03690 1.0799608 -0.616115 -0.3311627 -0.1832462 3.076e-02 -0.1232606
## Otu03691 -0.7369678 0.304376 -0.0730066 -0.6537353 -9.297e-01 0.9609015
## Otu03692 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03693 0.4893647 -0.863097 0.3804325 0.1151325 3.530e-03 0.0827617
## Otu03694 -0.8805667 0.173048 0.2847295 -1.1201421 5.801e-01 0.4442882
## Otu03695 0.2587074 -1.648064 0.0440025 0.1582576 8.922e-02 0.2898849
## Otu03699 -1.3543933 -0.062491 -0.1170085 -0.8110158 6.589e-01 -1.7704179
## Otu03700 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03705 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03708 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03710 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03711 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03713 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03714 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03715 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03717 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03718 -0.7790238 0.321864 -0.5648591 0.3471844 -1.385e+00 0.3597470
## Otu03719 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03721 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03722 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03724 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu03727 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03728 0.1836077 0.658851 2.2470254 0.1216271 -2.375e-01 0.0830811
## Otu03729 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu03730 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03733 -1.0880618 0.065745 0.2079938 -1.2547056 6.234e-01 -0.3724935
## Otu03734 0.1022656 0.668053 1.7076343 1.0808680 -1.228e-01 -0.4803272

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## Otu03736 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03737 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03738 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03739 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu03740 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu03742 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu03743 -0.7973587 0.282185 -0.4761299 -0.0242979 -8.998e-01 0.6271636
## Otu03746 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03747 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03748 0.7306146 -0.112566 -0.4007849 -0.1742413 2.158e-01 0.1014036
## Otu03750 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03751 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03753 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03754 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03757 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03758 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03759 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu03760 -0.1933403 -0.676746 -0.1675355 0.5236343 3.676e-01 0.3149222
## Otu03768 -1.2955568 -0.041557 0.1312580 -1.3892691 6.668e-01 -1.1892752
## Otu03774 0.7893784 0.776772 1.9368676 0.2503749 -3.491e-01 -0.4181973
## Otu03775 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03776 0.5161566 0.428477 -0.4754205 -0.8455471 3.239e-01 -0.9547209
## Otu03778 1.3297836 0.095538 -0.5420120 -0.3446333 8.057e-02 -0.2282945
## Otu03779 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03781 0.3193071 0.514731 -0.7426001 -0.3488057 -1.494e+00 -0.0661431
## Otu03782 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03785 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03789 -0.6625553 0.246759 1.3143768 -0.6450420 1.745e-01 -1.4502180
## Otu03790 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03791 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03792 0.7529634 -1.547609 -0.0551783 0.0279961 -3.443e-02 0.0142201
## Otu03793 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu03795 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03801 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03805 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03811 0.0288089 -1.096358 0.2415108 -0.3174912 1.847e-01 0.7042974
## Otu03812 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03813 -0.1021598 -1.097302 -0.2554546 0.0054276 -1.406e+00 0.1438295
## Otu03814 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03816 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03817 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03825 0.8732050 0.771769 1.6440467 0.1692258 -2.971e-01 -0.4076485
## Otu03826 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03828 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu03830 1.0868165 -0.596585 -0.3369488 -0.1876750 3.213e-02 -0.1261429
## Otu03831 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu03833 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03840 1.1051969 -0.544226 -0.3524619 -0.1995489 3.579e-02 -0.1338707
## Otu03841 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03844 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03845 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03847 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03848 0.8478226 -0.790243 0.3085018 0.0206607 -8.614e-02 -0.1171635
## Otu03849 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu03850 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03856 -0.5722522 0.212403 0.7314773 -0.8405339 2.975e-01 -1.4787451
## Otu03857 0.7529634 -1.547609 -0.0551783 0.0279961 -3.443e-02 0.0142201
## Otu03861 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu03862 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu03864 0.5957545 0.563605 -0.2985343 -0.6481198 3.815e-01 0.6772428
## Otu03865 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu03866 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03871 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu03873 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03874 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03876 -0.6868623 0.281168 -0.0922932 -0.1868867 6.455e-01 1.0905196
## Otu03878 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03880 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03881 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03883 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03888 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03889 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03892 1.0147196 0.658788 -0.6859531 0.1476499 2.467e-01 -0.3728504
## Otu03893 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03894 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03897 -0.7124126 0.334298 -0.0256939 -0.6732249 -3.554e-01 1.4673117
## Otu03900 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03903 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03905 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03906 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu03908 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu03910 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu03913 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu03914 -1.0750820 0.179461 -0.5575344 -0.5463864 -2.154e+00 -0.4126155
## Otu03916 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03918 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## Otu03920 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03921 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03922 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu03925 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu03926 0.2752951 0.471524 -0.4739661 -0.1520649 4.447e-01 0.3904713
## Otu03927 0.7962861 -0.381122 -0.4085092 0.1703740 1.074e-01 -0.1388503
## Otu03930 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu03932 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu03933 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu03941 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu03944 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03946 -0.3293952 0.316605 -0.3810747 0.0293901 5.376e-01 -0.5313290
## Otu03949 -1.0958465 0.085639 0.1454063 -1.2059743 7.163e-01 -0.1292141
## Otu03951 0.2346990 0.691086 2.1291095 0.8450741 -3.088e-01 -0.3867722
## Otu03952 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu03954 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03955 0.8745552 0.533122 -0.5635446 -0.7222194 2.551e-01 -0.7360361
## Otu03956 -0.4652753 -0.789391 -0.2417946 -0.3264845 -1.132e+00 -0.3248425
## Otu03961 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03962 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu03963 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03964 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256

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## Otu03965 1.1513011 -0.412893 -0.3913735 -0.2293325 4.499e-02 -0.1532544
## Otu03966 -0.0623700 0.551427 1.6751227 -0.2070102 -3.598e-03 0.5097919
## Otu03967 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu03970 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03972 -0.3877934 0.411021 0.6997592 -0.0492761 3.442e-01 0.7257964
## Otu03975 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03976 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03977 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu03978 -0.8630251 0.307420 -0.5696273 -0.3267963 -2.412e+00 0.5143439
## Otu03979 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu03982 -0.2233310 -0.433375 -0.3241336 1.4286880 3.815e-01 -0.3140313
## Otu03983 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03984 -0.6816527 0.301663 -0.0628089 -0.2760768 6.996e-01 1.3496848
## Otu03985 0.5208634 -1.438848 0.8420375 0.2631920 -1.923e-01 -0.0328139
## Otu03988 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03989 1.3401065 0.124944 -0.5507244 -0.3513019 8.263e-02 -0.2326345
## Otu03992 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03994 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03995 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu03997 -0.7136556 -0.104621 -0.3072077 -0.1866526 -4.089e-01 0.2167539
## Otu03998 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu03999 -0.3448129 0.498898 0.7508921 0.0925014 -2.069e+00 -0.0710816
## Otu04001 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04002 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## Otu04004 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu04006 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu04008 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu04009 -0.8090861 0.317046 -0.3748278 -0.4508632 -1.675e+00 0.8556314
## Otu04011 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu04012 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04014 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04016 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04017 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04022 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04023 1.0608550 -0.670540 -0.3150374 -0.1709038 2.695e-02 -0.1152279
## Otu04027 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04029 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04032 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04034 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04035 -0.4448769 0.463646 0.4863252 0.0395568 -2.252e+00 -0.0252390
## Otu04037 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04039 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu04041 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04042 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04043 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04044 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04047 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu04048 -0.0782219 0.523450 2.1501957 -0.0481731 -1.827e-01 -0.9475827
## Otu04049 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu04051 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04052 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu04054 -0.5206149 0.125759 -0.2204961 -1.2023083 5.227e-01 -1.5873300
## Otu04058 -0.2582054 0.496959 1.1604849 -0.3898123 2.966e-01 1.1558845
## Otu04060 0.4853588 -0.368067 -0.4190314 0.5180304 1.602e-01 -0.1243253

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## Otu04062 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04065 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04066 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04067 0.7220629 -1.635633 -0.0290985 0.0479580 -4.059e-02 0.0272117
## Otu04068 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04069 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04070 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04071 0.7529634 -1.547609 -0.0551783 0.0279961 -3.443e-02 0.0142201
## Otu04072 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04073 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04075 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04076 1.1865481 -0.312487 -0.4211219 -0.2521023 5.201e-02 -0.1680735
## Otu04077 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu04079 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04080 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04081 1.0991005 0.758284 0.8549541 -0.0494543 -1.568e-01 -0.3792217
## Otu04088 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04090 -0.3861039 -0.178643 -0.4949361 1.5173990 3.277e-01 -0.1033743
## Otu04091 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu04095 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04096 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04099 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04100 -0.9731307 0.192724 -0.1467724 -0.8195930 -5.892e-01 0.2551557
## Otu04102 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04105 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04108 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04109 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04110 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04111 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04112 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04113 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04114 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04115 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu04116 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04117 -0.6071552 0.406477 0.0572651 -0.0463057 -2.550e+00 0.0491061
## Otu04121 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04124 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04127 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu04128 1.3297836 0.095538 -0.5420120 -0.3446333 8.057e-02 -0.2282945
## Otu04129 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu04133 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu04137 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04138 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04143 0.4198557 0.500905 -0.5029746 -0.1901640 4.085e-01 0.3098445
## Otu04145 0.8821683 -1.179552 -0.1642267 -0.0554711 -8.669e-03 -0.0401020
## Otu04147 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04148 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04152 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04154 1.3401065 0.124944 -0.5507244 -0.3513019 8.263e-02 -0.2326345
## Otu04158 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04160 0.2557221 0.047651 1.7586799 0.1539032 -1.624e-01 0.1946447
## Otu04163 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04164 0.6062336 0.695928 1.2094755 0.0941522 -7.326e-01 -0.3111548
## Otu04168 0.7277152 -1.619532 -0.0338690 0.0443066 -3.946e-02 0.0248353

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## Otu04169 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04170 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu04171 -0.9657579 0.147176 -0.3003600 0.1400390 6.160e-01 -0.4790132
## Otu04172 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04175 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04178 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04179 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04181 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04187 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04188 -0.5506899 0.316553 1.0692650 -0.0349535 1.625e-01 -1.1019032
## Otu04189 -1.0142496 0.132611 -0.2543514 0.0173830 6.523e-01 -0.6892712
## Otu04191 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04193 -0.1162818 0.080443 0.0404821 -0.7690307 4.323e-01 0.6213058
## Otu04196 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04197 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04198 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04202 0.9175695 0.769120 1.4890738 0.1262784 -2.695e-01 -0.4020656
## Otu04205 0.5096733 -0.508678 1.7278061 0.3769528 -3.340e-01 -0.2088116
## Otu04207 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04209 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04210 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04215 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04216 0.0421649 0.424141 -0.4271846 -0.0906233 5.030e-01 0.5204966
## Otu04217 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04218 -0.0638077 -0.804016 -0.2272762 1.1625428 2.840e-01 -0.2246337
## Otu04219 -0.1000678 0.424948 -0.1031630 -0.3752566 -1.271e+00 -0.3928649
## Otu04220 0.8009793 0.599244 -0.5483050 -0.1451836 2.793e-01 0.0992216
## Otu04222 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04225 -0.6113728 0.410459 -0.2830571 1.0870120 6.448e-01 0.3037931
## Otu04226 0.4942804 -0.336834 -0.3833227 0.5801068 2.193e-01 -0.2463800
## Otu04230 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04231 -0.7487559 0.292444 -0.2163001 -0.3502364 -6.317e-01 0.8688595
## Otu04236 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04239 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04240 0.0635298 -0.213884 -0.5267252 -0.1835720 -1.545e+00 0.0413942
## Otu04242 -0.6211972 0.409447 -0.5006963 1.6908310 6.268e-01 -0.2494389
## Otu04250 -0.4086458 0.437470 0.7988446 -0.5750391 4.624e-01 1.4781350
## Otu04253 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu04258 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04261 -0.1659162 -1.514496 0.1002458 -0.4049239 1.879e-01 -0.6679546
## Otu04265 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu04267 -0.8478871 0.226718 0.2050285 -1.0162762 7.135e-01 0.9940144
## Otu04271 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04272 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04275 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu04278 0.9684944 0.560551 -0.5866426 -0.6898942 2.371e-01 -0.6787171
## Otu04279 0.7344407 -1.600374 -0.0395453 0.0399619 -3.812e-02 0.0220076
## Otu04280 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04281 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04284 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04287 0.9250330 -0.245389 0.5392957 0.0067611 -1.179e-01 -0.2106535
## Otu04293 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04295 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04296 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658

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## Otu04298 0.4631287 0.539532 -0.6951244 0.6909712 2.798e-01 -0.2405067
## Otu04299 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04302 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04307 -0.3671584 0.498088 0.1919040 1.6846829 3.235e-01 -0.4300024
## Otu04309 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04311 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04313 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu04315 -0.0522439 -0.917515 0.1947694 -0.3403652 3.161e-01 1.0347742
## Otu04316 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04317 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04326 -0.2594541 -0.199661 0.4405565 -0.6822699 2.469e-01 -1.1473491
## Otu04328 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu04329 0.9208030 0.602719 -0.6034982 -0.3221890 2.832e-01 0.0304476
## Otu04330 -0.6304886 0.348053 -0.2017598 0.5089246 5.728e-01 0.9013046
## Otu04331 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04332 -0.6726530 0.408413 -0.5995340 1.5327048 -2.500e-01 -0.3596555
## Otu04335 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04337 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu04339 -0.7463095 0.328249 -0.1481116 -0.5952577 -8.183e-01 1.2528367
## Otu04340 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04342 0.4766960 0.542348 -0.7410365 -0.3666648 -1.287e+00 -0.0988004
## Otu04344 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04347 0.7766407 -0.710233 0.6261626 0.0979582 -1.413e-01 -0.1403512
## Otu04349 -0.0723267 -0.169169 0.5683647 0.7184715 1.730e-01 0.0173511
## Otu04353 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu04354 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04356 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04360 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04363 0.1293628 0.676793 1.7948649 1.0432001 -1.511e-01 -0.4786007
## Otu04368 0.5198266 -1.352665 0.9241061 0.2737322 -2.055e-01 -0.0491205
## Otu04370 0.8647084 0.610432 -0.7371819 -0.4106930 -7.780e-01 -0.1793106
## Otu04371 -0.3083478 0.444003 1.1032201 -0.5356476 2.303e-01 0.9365028
## Otu04372 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04373 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## Otu04374 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04377 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu04380 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04381 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu04387 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04388 -0.9946066 0.121424 -0.1722602 -0.4473844 7.018e-01 -0.1121124
## Otu04389 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04391 -1.2471478 -0.002015 -0.1970157 -0.4158035 6.259e-01 -1.5329265
## Otu04392 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04393 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04394 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu04395 -0.7347680 0.329229 -0.6955869 1.0892245 -8.984e-01 -0.0278486
## Otu04396 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04397 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04398 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04399 -1.0958465 0.085639 0.1454063 -1.2059743 7.163e-01 -0.1292141
## Otu04400 0.3316230 0.493450 -0.1050302 -0.7483566 3.502e-01 0.6885242
## Otu04402 0.0484413 -1.356088 -0.1628487 0.0451574 -1.090e+00 0.1353002
## Otu04405 -1.0631068 0.188310 -0.5722323 -0.5212425 -2.225e+00 -0.3677414
## Otu04408 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu04409 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04410 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04414 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04415 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04417 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04418 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04419 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu04420 -0.0782219 0.523450 2.1501957 -0.0481731 -1.827e-01 -0.9475827
## Otu04422 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04423 -0.8973338 0.172997 -0.2079849 -0.2552368 6.984e-01 0.2522118
## Otu04425 -0.7069067 0.334034 -0.6863899 1.2906515 -5.548e-01 -0.0616266
## Otu04426 1.0167056 -0.350415 0.1283838 -0.0930075 -4.649e-02 -0.1804181
## Otu04432 -0.0504294 -0.441130 0.7299455 -0.3284011 1.476e-01 0.6975938
## Otu04433 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04434 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu04435 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04437 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04438 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04439 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04441 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04444 0.1751202 -0.543010 -0.1875873 -0.6252355 2.559e-01 -0.8113378
## Otu04446 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04448 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04450 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04454 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04455 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04456 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04457 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04460 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04462 0.9959305 -0.855486 -0.2602415 -0.1289622 1.401e-02 -0.0879314
## Otu04468 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04471 0.8821683 -1.179552 -0.1642267 -0.0554711 -8.669e-03 -0.0401020
## Otu04473 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu04474 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu04475 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04476 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04480 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04487 -0.8180930 0.302730 -0.4567572 -0.2741795 -1.587e+00 0.6945577
## Otu04489 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04491 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04497 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04498 -0.7172627 0.305055 0.0027544 -0.7031697 -6.872e-01 1.0465766
## Otu04502 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04503 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu04504 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04505 0.0569957 0.294411 -0.3625207 -1.0035480 4.119e-01 -1.2348881
## Otu04506 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04511 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04512 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04514 1.0594797 0.644609 -0.7352470 -0.4327939 -5.224e-01 -0.2197244
## Otu04515 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04516 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04523 -0.6213177 0.366610 -0.6384786 1.9079742 4.700e-01 -0.2321344
## Otu04525 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770

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## Otu04526 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04529 0.8449255 0.661456 0.2916395 -0.3446160 1.094e-01 0.1468923
## Otu04530 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu04537 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04538 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04545 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu04546 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04547 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04553 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04554 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04555 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04557 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu04558 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04561 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu04563 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04564 -0.0389973 -0.023147 0.1810194 0.4003453 1.840e-01 -0.5345308
## Otu04566 -1.1975617 0.055487 -0.1862459 -0.2001533 6.803e-01 -1.5829995
## Otu04570 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04571 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu04572 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu04575 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04576 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04577 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04578 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04579 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu04582 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu04585 -0.5426886 0.408697 0.3051220 -0.2080336 -1.756e+00 0.3293977
## Otu04588 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04590 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu04592 -0.0701547 0.571320 1.6125352 -0.1582789 8.928e-02 0.7530713
## Otu04596 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04598 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04600 1.1391972 -0.447372 -0.3811579 -0.2215133 4.257e-02 -0.1481656
## Otu04604 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04605 -0.6228397 0.379347 -0.0133364 0.1170664 6.780e-01 1.1326519
## Otu04608 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04609 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04610 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04612 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04613 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04618 -0.6599500 0.291945 0.0948988 -0.4884842 5.980e-01 1.2423869
## Otu04622 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04625 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu04627 0.9959305 -0.855486 -0.2602415 -0.1289622 1.401e-02 -0.0879314
## Otu04631 1.0061195 0.635455 -0.4836626 -0.5798093 2.716e-01 0.2487938
## Otu04632 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04633 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04636 -1.0387011 0.206346 -0.6021870 -0.4699983 -2.371e+00 -0.2762865
## Otu04637 -0.9812034 0.150866 0.1729724 -1.1182680 7.150e-01 0.3901067
## Otu04639 0.9584625 -0.962218 -0.2286187 -0.1047576 6.541e-03 -0.0721786
## Otu04640 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04643 -0.1897974 0.470617 1.9906002 -0.1621422 -1.145e-01 -1.0435584
## Otu04646 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04648 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494

```

##	Otu04652	0.5644163	0.530286	-0.5319832	-0.2282630	3.723e-01	0.2292177
##	Otu04653	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu04654	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu04656	1.1066391	-0.540118	-0.3536790	-0.2004806	3.608e-02	-0.1344770
##	Otu04660	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04661	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu04666	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04667	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu04668	1.1242845	-0.489853	-0.3685716	-0.2118796	3.960e-02	-0.1418958
##	Otu04669	0.8152080	-1.370297	-0.1077125	-0.0122143	-2.202e-02	-0.0119496
##	Otu04671	-0.6317613	0.348114	-0.0490451	0.0549900	6.189e-01	1.2547067
##	Otu04674	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04676	0.2712493	-1.672822	0.0481268	0.1589002	8.144e-02	0.2814725
##	Otu04677	-0.6404830	0.380350	-0.4535207	1.3591912	6.404e-01	0.0002257
##	Otu04679	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu04680	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04682	0.2826651	-0.485897	1.2920132	0.1128122	-1.024e-01	0.2533699
##	Otu04684	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu04685	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04687	0.8708553	-1.211779	-0.1546786	-0.0481628	-1.092e-02	-0.0353456
##	Otu04690	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04699	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04701	0.7426405	-1.577015	-0.0464659	0.0346647	-3.649e-02	0.0185602
##	Otu04705	-0.6219758	0.316725	0.3555210	-0.9300682	5.640e-01	1.5761634
##	Otu04706	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu04707	0.7309573	0.587277	-0.3595285	-0.6256136	3.453e-01	0.5360818
##	Otu04708	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu04710	-1.3180163	-0.022326	-0.1123732	-0.6550626	6.941e-01	-1.7962207
##	Otu04711	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04712	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04714	0.5208634	-1.438848	0.8420375	0.2631920	-1.923e-01	-0.0328139
##	Otu04716	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04718	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu04720	1.1684399	-0.364070	-0.4058386	-0.2404043	4.840e-02	-0.1604602
##	Otu04721	1.0033581	-0.834327	-0.2665104	-0.1337604	1.549e-02	-0.0910543
##	Otu04724	-1.1891524	0.018277	-0.1008106	-0.8316796	7.086e-01	-0.8407609
##	Otu04726	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu04727	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04728	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu04732	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04735	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu04736	0.0799352	0.481126	-0.5195757	0.5588766	4.762e-01	0.0315411
##	Otu04740	0.8238499	0.603541	-0.4014352	-0.6101504	3.204e-01	0.4390957
##	Otu04743	1.1684399	-0.364070	-0.4058386	-0.2404043	4.840e-02	-0.1604602
##	Otu04747	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu04748	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu04750	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu04753	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu04756	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu04758	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu04761	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu04762	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu04763	-0.0623700	0.551427	1.6751227	-0.2070102	-3.598e-03	0.5097919
##	Otu04765	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119

```

## Otu04768 -0.3095820 -0.357908 0.2220102 -0.5669548 4.907e-01 1.4444975
## Otu04769 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04771 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu04772 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu04776 1.1051969 -0.544226 -0.3524619 -0.1995489 3.579e-02 -0.1338707
## Otu04778 0.1293628 0.676793 1.7948649 1.0432001 -1.511e-01 -0.4786007
## Otu04779 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu04784 1.0061195 0.635455 -0.4836626 -0.5798093 2.716e-01 0.2487938
## Otu04788 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04790 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04791 -0.8443120 0.310759 -0.5020454 -0.3698389 -2.156e+00 0.6327469
## Otu04793 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04796 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04797 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04798 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04799 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu04800 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04802 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04803 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04804 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04808 -0.2782894 0.242292 -0.1996987 -1.0493512 5.061e-01 -0.7916207
## Otu04811 1.1684399 -0.364070 -0.4058386 -0.2404043 4.840e-02 -0.1604602
## Otu04814 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu04816 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04817 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04818 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04819 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu04820 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04821 -0.4097711 0.387078 -0.4136904 -0.4701701 -1.298e+00 0.6950644
## Otu04824 -0.0072007 0.457548 -0.2873350 0.0293210 4.646e-01 0.7032151
## Otu04825 -0.3315982 -0.314480 0.3194581 -0.6697191 3.743e-01 1.1332234
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## Otu04830 -1.2268274 0.011116 0.1139117 -1.3061795 7.178e-01 -0.7225432
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## Otu04834 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu04836 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
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## Otu04844 -1.0814508 0.075380 -0.1403655 -0.6189317 7.049e-01 -0.4373772
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## Otu04853 0.4990626 -0.995478 -0.0283014 -0.1955669 1.379e-01 0.4184706
## Otu04857 1.0033581 -0.834327 -0.2665104 -0.1337604 1.549e-02 -0.0910543
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## Otu04860 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04862 0.2422075 -1.615491 0.0385767 0.1574122 9.945e-02 0.3009522
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## Otu04865 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04867 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04870 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04872 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04873 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04874 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu04877 0.5059377 -0.198152 2.0235090 0.4149305 -3.813e-01 -0.2675662
## Otu04879 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu04881 -0.7638010 0.346493 -0.6805980 0.8775088 -1.295e+00 -0.0760790
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## Otu04885 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04886 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu04889 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu04890 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu04893 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu04894 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04897 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04899 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04900 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04903 -0.8117980 0.227564 -0.3429677 0.3812532 6.207e-01 0.1539552
## Otu04907 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu04910 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04911 0.7407051 0.695793 1.1237275 -0.0918565 -1.137e-01 -0.1099170
## Otu04912 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu04914 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu04917 -0.0009379 -0.937271 0.8173559 -0.1696126 7.791e-03 -0.6148080
## Otu04920 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu04921 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04923 1.0147196 0.658788 -0.6859531 0.1476499 2.467e-01 -0.3728504
## Otu04925 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu04926 -1.2977698 -0.030561 -0.1592507 -0.6023515 6.415e-01 -1.6450272
## Otu04927 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04930 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04931 0.3054641 0.452183 -0.2739730 -0.7885310 4.198e-01 0.1227911
## Otu04933 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04938 -0.6528748 0.308978 -0.1846497 0.3429482 5.506e-01 0.7526171
## Otu04940 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
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## Otu04944 -0.1333529 0.520427 1.5100862 -0.3018466 6.389e-02 0.6329298
## Otu04948 1.3079146 0.745820 0.1255303 -0.2515985 -2.710e-02 -0.3529445
## Otu04949 -0.8392760 0.286938 -0.4059762 1.1529509 6.391e-01 -0.9487841
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## Otu04951 0.4009057 0.440920 -0.3210335 -0.8228867 3.425e-01 -0.3440888
## Otu04952 -0.6481215 0.322629 0.1676564 -0.6644644 6.664e-01 1.6329871
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## Otu04954 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04957 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
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## Otu04961 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
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## Otu04972 0.4593108 0.539715 -0.2369803 -0.6708326 4.181e-01 0.8196994
## Otu04974 1.0793888 -0.617744 -0.3306799 -0.1828767 3.065e-02 -0.1230201
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## Otu04977 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu04981 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04983 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu04984 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04986 0.1813947 0.669847 1.9565166 0.9085448 -2.628e-01 -0.3726709
## Otu04988 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04990 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu04991 -0.2358852 -0.522123 0.2987577 -0.5761783 3.239e-01 1.0193139

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## Otu04993 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
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## Otu04996 -0.0782219 0.523450 2.1501957 -0.0481731 -1.827e-01 -0.9475827
## Otu04998 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu04999 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu05000 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05001 0.1532439 -1.308320 -0.0954895 0.8004184 1.513e-01 -0.1029969
## Otu05005 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05009 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05011 0.6138435 0.604857 -0.6528886 0.6216892 3.373e-01 -0.4106421
## Otu05012 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu05015 -0.1223590 0.436563 -0.6762024 1.3247882 3.629e-01 -0.1966649
## Otu05016 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu05018 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05021 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05029 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
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## Otu05031 0.5059377 -0.198152 2.0235090 0.4149305 -3.813e-01 -0.2675662
## Otu05033 -0.2609607 0.487779 1.1383366 -0.2973437 -3.375e-01 0.6676391
## Otu05034 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05036 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05039 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05042 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05044 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05045 1.0674231 -0.651830 -0.3205809 -0.1751468 2.826e-02 -0.1179893
## Otu05047 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05048 0.1417770 -1.339432 0.1742311 -0.1695272 1.844e-01 0.7258620
## Otu05049 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
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## Otu05053 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
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## Otu05056 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu05058 -0.2462648 -0.495598 0.2153077 -0.5112032 4.478e-01 1.3436864
## Otu05060 -0.7848531 0.252430 -0.0343667 -0.0157533 5.597e-01 0.1627208
## Otu05062 0.2094372 -1.488219 0.2024453 -0.1409620 8.964e-02 0.4893287
## Otu05064 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05065 -1.3420391 -0.055524 -0.1262250 -0.7654889 6.551e-01 -1.7430598
## Otu05066 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05067 -0.8583124 0.308261 -0.5526074 -0.3376362 -2.348e+00 0.5441626
## Otu05068 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
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## Otu05073 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
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## Otu05075 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
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## Otu05082 0.0362890 -0.640053 0.6443562 -0.1982749 1.786e-01 0.7932571
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## Otu05088 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu05091 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05092 -0.7936556 0.281676 -0.4673047 -0.0184553 -8.298e-01 0.6410108

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## Otu05094 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
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## Otu05102 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05106 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05108 -0.0186869 0.454796 -0.6795529 1.2125585 3.482e-01 -0.2044279
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## Otu05110 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
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## Otu05113 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05114 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu05116 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05117 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05122 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05129 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05131 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05132 1.0793888 -0.617744 -0.3306799 -0.1828767 3.065e-02 -0.1230201
## Otu05134 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05140 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu05142 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05143 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05147 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05149 0.5178783 -1.190709 1.0783318 0.2935397 -2.301e-01 -0.0797644
## Otu05151 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05152 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05154 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05157 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05158 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05159 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05161 1.3401065 0.124944 -0.5507244 -0.3513019 8.263e-02 -0.2326345
## Otu05162 -0.6177490 0.379103 -0.6241951 1.9328048 4.936e-01 -0.2809563
## Otu05165 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05167 0.4631287 0.539532 -0.6951244 0.6909712 2.798e-01 -0.2405067
## Otu05168 -0.7665255 0.303358 -0.1866480 -0.5795836 -1.294e+00 0.8323888
## Otu05170 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu05171 -0.9026061 0.146738 0.6391816 -1.0069284 4.471e-01 -0.6942135
## Otu05172 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05173 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05182 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu05184 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu05186 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05187 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05189 -0.6246194 0.404284 -0.4923250 1.6319815 6.292e-01 -0.2051359
## Otu05190 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu05193 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05196 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05198 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu05199 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05207 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05208 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu05210 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05215 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05219 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05221 0.9775500 -0.907845 -0.2447284 -0.1170883 1.035e-02 -0.0802037

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## Otu05222 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05223 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05226 1.2005786 -0.272519 -0.4329636 -0.2611661 5.481e-02 -0.1739724
## Otu05231 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05235 -0.7704922 0.323069 -0.7073796 0.8309515 -1.339e+00 0.0154620
## Otu05236 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu05238 0.4118022 0.509058 -0.1460824 -0.7313157 3.354e-01 0.6221755
## Otu05243 -0.3745955 0.338456 -0.1471852 -0.3393312 5.761e-01 0.1711810
## Otu05244 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05245 -1.4287719 -0.081913 -0.1234284 -1.2890206 -4.524e-02 -1.7379861
## Otu05248 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05249 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05261 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu05268 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05272 0.3285619 0.492854 -0.1034629 -0.7490072 3.507e-01 0.6910573
## Otu05279 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05282 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## Otu05283 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05285 -0.6525647 0.330276 0.1332937 -0.6304467 7.067e-01 1.7255721
## Otu05289 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05294 -0.6985814 0.335469 -0.6836417 1.3508399 -4.522e-01 -0.0717198
## Otu05300 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu05301 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05302 0.2703584 0.528751 0.6260426 -0.2788040 -5.343e-01 -0.5975122
## Otu05303 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05306 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05308 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05311 -0.3050633 -1.380742 0.0936641 -0.5203385 2.413e-01 -0.8231531
## Otu05313 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu05314 0.7893784 0.776772 1.9368676 0.2503749 -3.491e-01 -0.4181973
## Otu05316 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05317 0.1532439 -1.308320 -0.0954895 0.8004184 1.513e-01 -0.1029969
## Otu05319 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05321 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu05326 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu05329 0.0915925 0.619808 1.8872560 0.3937003 -1.244e-01 0.0103549
## Otu05334 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05337 -0.4256054 -0.297159 -0.1810265 0.1231947 5.136e-01 0.7488862
## Otu05338 1.2881954 0.746997 0.1944129 -0.2325092 -3.935e-02 -0.3554260
## Otu05341 0.8353168 0.634653 -0.6711558 0.3597952 2.873e-01 -0.3897632
## Otu05343 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu05344 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05347 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05349 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05358 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05359 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu05360 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05361 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05363 -0.4805212 0.370525 0.4841653 -0.1731647 4.323e-01 0.8866564
## Otu05371 0.1647487 0.487746 -0.5806882 -0.4305042 -1.136e+00 0.2624920
## Otu05373 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05374 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05375 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05376 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu05377 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu05379 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## Otu05382 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu05383 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05386 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05396 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu05401 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05402 -0.0484259 -0.917698 -0.2633746 1.0214386 1.778e-01 -0.0254320
## Otu05405 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05406 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu05407 0.5141931 -0.884380 1.3700378 0.3310040 -2.768e-01 -0.1377249
## Otu05408 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05412 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05419 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05420 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05421 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05423 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05424 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu05426 0.5170174 -0.381116 0.3014557 -0.2760037 4.688e-02 -0.5172427
## Otu05427 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05432 -0.6502304 0.295838 0.1625047 -0.5974085 5.809e-01 1.2972350
## Otu05438 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05439 -0.6309108 0.339558 0.2836854 -0.8741362 6.706e-01 1.8553902
## Otu05441 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05442 0.9390626 -1.017482 -0.2122452 -0.0922251 2.674e-03 -0.0640222
## Otu05450 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05451 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu05461 0.8961988 -1.139584 -0.1760684 -0.0645349 -5.872e-03 -0.0460009
## Otu05465 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu05466 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05468 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05470 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05475 -0.1897974 0.470617 1.9906002 -0.1621422 -1.145e-01 -1.0435584
## Otu05476 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## Otu05477 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05479 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05480 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05481 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05482 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05484 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05492 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu05497 -0.6547096 0.257804 1.1473537 -0.6997066 2.373e-01 -0.9264598
## Otu05498 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05499 0.2113182 -0.208793 0.0414820 -0.5543302 2.742e-01 0.6839574
## Otu05502 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## Otu05504 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu05506 0.5198266 -1.352665 0.9241061 0.2737322 -2.055e-01 -0.0491205
## Otu05511 0.7529634 -1.547609 -0.0551783 0.0279961 -3.443e-02 0.0142201
## Otu05512 -0.6376761 0.384585 -0.4603866 1.4074578 6.384e-01 -0.0361102
## Otu05516 -0.6632525 0.332667 -0.4409726 1.0361505 6.075e-01 0.2999086
## Otu05517 1.2575468 0.748826 0.3014737 -0.2028395 -5.838e-02 -0.3592828
## Otu05518 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05519 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu05522 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```


##	Otu05528	0.7855962	-1.454651	-0.0827203	0.0069151	-2.792e-02	0.0005002
##	Otu05530	0.1293628	0.676793	1.7948649	1.0432001	-1.511e-01	-0.4786007
##	Otu05531	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu05538	0.3228670	0.515826	-0.1754263	-0.6935454	4.546e-01	0.9621561
##	Otu05539	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu05541	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu05543	1.2971508	0.002579	-0.5144700	-0.3235523	7.406e-02	-0.2145745
##	Otu05545	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05548	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05552	0.6138435	0.604857	-0.6528886	0.6216892	3.373e-01	-0.4106421
##	Otu05555	0.8469741	0.773334	1.7356758	0.1946189	-3.133e-01	-0.4109494
##	Otu05559	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05560	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu05561	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05563	-0.0782219	0.523450	2.1501957	-0.0481731	-1.827e-01	-0.9475827
##	Otu05564	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu05572	0.7665440	-1.508923	-0.0666404	0.0192229	-3.172e-02	0.0085103
##	Otu05573	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05574	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu05578	-0.0022291	0.277118	-0.3479583	-1.0239277	4.233e-01	-1.2710255
##	Otu05579	-0.6051587	0.404437	-0.2921510	1.2180926	5.876e-01	0.0328251
##	Otu05581	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05582	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu05593	-0.6244576	0.336874	-0.3693950	1.0838108	4.599e-01	0.2968504
##	Otu05594	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05598	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05609	-0.5316947	0.308723	1.5015573	-0.5113740	9.450e-02	-1.3376536
##	Otu05610	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu05613	0.4748373	-0.841180	-0.1849100	-0.0090076	1.648e-01	0.2089410
##	Otu05614	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05616	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu05618	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu05620	-0.7885507	0.355588	-0.6740242	0.6974878	-1.623e+00	-0.0961309
##	Otu05624	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu05627	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu05632	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu05633	-0.1265051	-0.756026	0.2026304	-0.4057532	3.665e-01	1.1530099
##	Otu05636	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu05637	0.7305141	0.586885	-0.7385150	-0.3954658	-9.541e-01	-0.1514661
##	Otu05638	-0.6093215	0.375009	-0.0856092	0.5533079	5.685e-01	0.4749431
##	Otu05639	-0.2925950	-0.026610	1.2539954	-0.3811656	7.789e-02	-0.6126076
##	Otu05640	-0.2482795	0.414614	-0.6929823	0.9829147	-3.367e-01	-0.1217982
##	Otu05641	-0.0918999	0.442576	-0.7466852	-0.3021456	-2.033e+00	0.0191798
##	Otu05642	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05650	-0.8477595	0.309744	-0.7328856	0.2723380	-2.292e+00	0.1091377
##	Otu05652	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu05654	0.6585215	0.104536	-0.2157936	-0.5324821	2.245e-01	0.3486010
##	Otu05659	0.8152080	-1.370297	-0.1077125	-0.0122143	-2.202e-02	-0.0119496
##	Otu05660	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05665	-0.1987671	0.511179	1.2349073	-0.1049315	2.098e-01	0.7908172
##	Otu05666	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu05667	-0.6251969	0.333819	-0.1228878	0.3728225	5.166e-01	0.8058533
##	Otu05672	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu05673	-0.1017870	0.508583	-0.5938629	1.4679280	4.991e-01	-0.4781067

```

## Otu05683 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu05689 -1.1547311 0.052136 0.1312474 -1.2510232 7.170e-01 -0.3959547
## Otu05694 -1.3001574 0.013132 -0.2812851 -1.0189718 -8.120e-01 -1.2560332
## Otu05695 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## Otu05697 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05699 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05701 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05704 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05705 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05706 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05708 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu05712 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu05713 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05714 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05718 1.3219707 0.744981 0.0764297 -0.2652057 -1.837e-02 -0.3511757
## Otu05727 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05728 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05731 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05732 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu05734 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05736 0.1836077 0.658851 2.2470254 0.1216271 -2.375e-01 0.0830811
## Otu05738 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu05740 0.0237181 -1.075595 -0.2139022 0.9154781 1.458e-01 -0.0087799
## Otu05742 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05743 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05746 -0.3132606 0.186303 -0.2714810 -1.1309560 4.829e-01 -1.4608082
## Otu05747 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05748 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05753 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu05755 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05756 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05758 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu05759 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu05760 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05762 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05764 0.7975465 0.577668 -0.5787647 -0.2897046 3.140e-01 0.0991923
## Otu05765 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05766 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05767 0.5161566 0.428477 -0.4754205 -0.8455471 3.239e-01 -0.9547209
## Otu05775 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05777 -0.7180615 0.387716 -0.6287192 1.2054681 -7.878e-01 -0.2564070
## Otu05778 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05779 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05780 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05781 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05785 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05786 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05787 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05789 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05790 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05791 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05792 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu05793 0.4828135 -0.367945 -0.1136020 -0.3898388 2.524e-01 0.5824788
## Otu05794 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu05795 1.3297836 0.095538 -0.5420120 -0.3446333 8.057e-02 -0.2282945
## Otu05798 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu05806 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05808 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05809 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05811 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05812 0.3391788 0.567906 -0.6302340 0.9464824 3.994e-01 -0.4365356
## Otu05813 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05817 -0.6953774 0.337338 0.0358286 -0.7124083 -1.228e-01 1.5750987
## Otu05820 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05821 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05824 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05825 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05831 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05832 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05834 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu05841 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05844 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu05845 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05846 1.3162029 0.056852 -0.5305499 -0.3358601 7.786e-02 -0.2225847
## Otu05847 0.4964738 -0.821867 -0.2809849 0.4315600 1.004e-01 -0.0662346
## Otu05848 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu05849 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05850 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu05852 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05855 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05859 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05861 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05862 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05864 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05866 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05867 -0.7885507 0.355588 -0.6740242 0.6974878 -1.623e+00 -0.0961309
## Otu05868 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05869 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05873 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05875 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05878 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05879 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05884 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05885 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu05886 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05890 0.9139732 0.063753 -0.3352642 -0.4489102 1.643e-01 0.1233308
## Otu05895 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05896 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05898 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu05900 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05901 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05908 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05911 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu05914 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## Otu05916 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05918 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05919 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05921 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu05924 1.1684399 -0.364070 -0.4058386 -0.2404043 4.840e-02 -0.1604602
## Otu05926 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05927 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05929 -0.7905068 0.319984 -0.5135903 0.1042633 -1.505e+00 0.5001789
## Otu05936 0.4788666 0.683307 1.5703469 0.0097504 -1.179e-01 0.1008273
## Otu05939 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05940 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu05941 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05943 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05948 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu05950 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu05951 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05952 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu05955 0.3240891 0.515079 -0.6906308 0.8414880 2.995e-01 -0.2300953
## Otu05957 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu05965 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05968 -0.1922475 -0.942499 -0.3108503 -0.0183383 -1.596e+00 0.1489316
## Otu05972 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu05974 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu05977 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu05979 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu05981 -0.6304886 0.348053 -0.2017598 0.5089246 5.728e-01 0.9013046
## Otu05984 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu05987 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu05990 -0.8362078 0.312206 -0.4727771 -0.3884797 -2.046e+00 0.6840247
## Otu05995 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu05996 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu05998 1.0793888 -0.617744 -0.3306799 -0.1828767 3.065e-02 -0.1230201
## Otu06001 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu06004 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06006 -1.2496931 -0.001893 0.1084136 -1.3236727 7.181e-01 -0.8261224
## Otu06011 -0.9355870 0.166357 -0.2548826 0.2572841 5.453e-01 -0.5736051
## Otu06017 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06019 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06023 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06027 0.0976045 0.506640 0.7033117 -0.5254269 2.073e-01 0.6619936
## Otu06028 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu06030 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu06031 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu06032 -0.8377274 0.033169 -0.1425236 -1.3114291 5.835e-01 -1.7808232
## Otu06033 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06039 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu06040 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu06048 -0.6525647 0.330276 0.1332937 -0.6304467 7.067e-01 1.7255721
## Otu06050 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06053 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06062 -0.2101584 0.546336 1.1069155 0.1637480 -1.822e+00 -0.1327713
## Otu06071 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06072 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06075 -0.1659162 -1.514496 0.1002458 -0.4049239 1.879e-01 -0.6679546
## Otu06077 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu06081 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu06083 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu06084 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681

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## Otu06085 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06091 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06092 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06101 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu06104 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu06118 -0.6204675 0.317047 0.1544117 -0.3350543 5.055e-01 1.1186015
## Otu06120 -0.0663368 0.571137 1.1543912 1.2035249 -4.900e-02 -0.3071348
## Otu06122 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06127 -0.1162611 0.406263 0.1242889 -0.8435479 4.327e-01 1.0591506
## Otu06129 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu06132 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06134 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06137 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06138 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06142 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06143 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06144 -0.2167170 0.468305 1.6211183 -0.0140112 8.044e-03 -0.5355001
## Otu06147 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06153 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06155 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06156 -0.8404197 0.300812 -0.4707516 -0.3942045 -2.203e+00 0.5111072
## Otu06157 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06160 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06163 1.0793888 -0.617744 -0.3306799 -0.1828767 3.065e-02 -0.1230201
## Otu06164 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06170 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06171 1.0033581 -0.834327 -0.2665104 -0.1337604 1.549e-02 -0.0910543
## Otu06172 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06173 0.9143070 -1.088001 -0.1913517 -0.0762329 -2.262e-03 -0.0536142
## Otu06177 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06182 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06188 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06191 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06195 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06200 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06201 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu06208 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06218 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06223 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06226 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu06230 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu06234 1.2881954 0.746997 0.1944129 -0.2325092 -3.935e-02 -0.3554260
## Otu06235 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu06236 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06237 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06239 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu06243 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06244 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06245 -1.2977698 -0.030561 -0.1592507 -0.6023515 6.415e-01 -1.6450272
## Otu06252 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06254 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu06257 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06258 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06262 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375

```

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## Otu06266 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06268 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu06270 -1.3266165 -0.045659 0.0899173 -1.3825218 7.189e-01 -1.1745766
## Otu06274 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06279 1.0033581 -0.834327 -0.2665104 -0.1337604 1.549e-02 -0.0910543
## Otu06287 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06289 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06290 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06291 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu06292 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06298 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06299 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06301 -1.2903040 -0.004424 -0.1293687 -0.5504042 6.909e-01 -1.7471661
## Otu06302 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06303 0.4670955 0.519821 -0.1743928 -0.7195639 3.252e-01 0.5764201
## Otu06304 -0.6257064 0.371570 0.0540938 -0.1254200 6.862e-01 1.3398667
## Otu06306 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06309 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06310 -0.8137653 0.284441 -0.5152298 -0.0501837 -1.210e+00 0.5658132
## Otu06312 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu06314 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06317 -0.6073717 0.415433 -0.5826598 2.0050103 5.623e-01 -0.4229268
## Otu06321 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06325 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06328 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu06329 0.7665440 -1.508923 -0.0666404 0.0192229 -3.172e-02 0.0085103
## Otu06331 -0.3050633 -1.380742 0.0936641 -0.5203385 2.413e-01 -0.8231531
## Otu06332 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06334 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06337 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu06341 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06342 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06344 -0.2146634 0.431113 -0.4774218 0.7684091 5.465e-01 0.1022717
## Otu06351 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
## Otu06355 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06361 -1.0880618 0.065745 0.2079938 -1.2547056 6.234e-01 -0.3724935
## Otu06365 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu06367 0.4828135 -0.367945 -0.1136020 -0.3898388 2.524e-01 0.5824788
## Otu06368 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06371 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06373 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653
## Otu06388 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06389 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06400 0.9761079 -0.911953 -0.2435113 -0.1161566 1.006e-02 -0.0795973
## Otu06401 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06405 0.5007280 -0.995558 -0.2281478 0.3984636 7.756e-02 -0.0440005
## Otu06407 -0.0478342 -1.190652 -0.2220493 0.0197591 -1.292e+00 0.1407528
## Otu06412 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu06413 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06414 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06427 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06428 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06429 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06430 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390

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## Otu06432 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06433 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06434 -0.8377274 0.033169 -0.1425236 -1.3114291 5.835e-01 -1.7808232
## Otu06438 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu06439 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06441 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06442 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06452 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06453 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06455 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06460 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06461 0.5988376 0.564145 -0.2999252 -0.6476066 3.807e-01 0.6740239
## Otu06462 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06467 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu06471 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu06472 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06474 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06475 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
## Otu06480 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
## Otu06489 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06492 0.9175695 0.769120 1.4890738 0.1262784 -2.695e-01 -0.4020656
## Otu06493 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06498 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu06500 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06501 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06503 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06504 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06514 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06515 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06516 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06519 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## Otu06521 -0.2101584 0.546336 1.1069155 0.1637480 -1.822e+00 -0.1327713
## Otu06524 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu06525 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06526 -0.1162611 0.406263 0.1242889 -0.8435479 4.327e-01 1.0591506
## Otu06534 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06542 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06545 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06546 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu06547 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06552 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu06553 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu06554 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06558 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06560 -0.3590842 -0.237780 -0.4764074 1.4777141 3.157e-01 -0.0971377
## Otu06563 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06565 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu06571 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06574 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06575 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06576 -0.8023109 0.318255 -0.3503595 -0.4664469 -1.583e+00 0.8984997
## Otu06578 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu06581 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06582 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256

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## Otu06595 -1.2496931 -0.001893 0.1084136 -1.3236727 7.181e-01 -0.8261224
## Otu06601 0.1230857 0.632419 2.1063106 0.0407670 -1.799e-01 0.1880719
## Otu06603 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06605 -0.0444592 -0.937408 0.2573569 -0.3890965 2.232e-01 0.7914948
## Otu06612 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06614 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06615 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## Otu06616 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06619 0.7949189 -0.381056 -0.2444458 -0.3172940 1.569e-01 0.2408143
## Otu06621 0.5141931 -0.884380 1.3700378 0.3310040 -2.768e-01 -0.1377249
## Otu06623 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06625 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06626 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06627 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06629 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06630 -0.7704922 0.323069 -0.7073796 0.8309515 -1.339e+00 0.0154620
## Otu06635 -0.7368330 0.211587 1.2081315 -0.7209131 2.199e-01 -1.5141107
## Otu06641 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06642 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06643 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06644 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06646 0.1681446 0.679609 2.1071398 0.3639106 -1.129e+00 -0.3060844
## Otu06647 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06653 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu06655 -0.1778425 -0.047021 0.3441362 0.9861687 2.608e-01 -0.0911323
## Otu06656 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06659 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06660 0.5178783 -1.190709 1.0783318 0.2935397 -2.301e-01 -0.0797644
## Otu06661 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06662 0.0187315 0.559684 0.5240899 0.3705272 -1.092e+00 -0.2297105
## Otu06663 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06666 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06671 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06674 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06676 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06678 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06681 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06687 -0.6565613 0.356092 -0.4141910 1.0827079 6.518e-01 0.2083675
## Otu06688 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## Otu06691 -1.0355851 -0.678535 0.0591099 -1.1262648 5.214e-01 -1.6379449
## Otu06698 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06704 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06705 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06706 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06707 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu06709 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu06711 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06712 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06713 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu06715 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06721 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06725 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06731 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06734 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658

```



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## Otu06739 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06744 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06748 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu06750 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu06755 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06761 0.6435978 0.546909 0.2432300 -0.4986391 1.117e-01 -0.7650999
## Otu06762 0.7589423 -0.069827 -0.4700782 0.3128836 1.957e-01 -0.2653130
## Otu06774 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06776 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu06778 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06783 1.2575468 0.748826 0.3014737 -0.2028395 -5.838e-02 -0.3592828
## Otu06787 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06792 -0.6275151 0.330881 0.3109867 -0.8953932 6.301e-01 1.7492697
## Otu06793 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu06796 0.4631287 0.539532 -0.6951244 0.6909712 2.798e-01 -0.2405067
## Otu06799 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06804 0.0245601 0.629025 1.7275057 0.2879391 -1.392e+00 -0.2403036
## Otu06810 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06811 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06813 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu06814 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06815 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu06816 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653
## Otu06818 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06819 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06820 -0.6088274 0.410337 -0.5884864 1.9948812 5.526e-01 -0.4030110
## Otu06821 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06822 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06824 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06825 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06827 0.4631287 0.539532 -0.6951244 0.6909712 2.798e-01 -0.2405067
## Otu06829 -1.2903040 -0.004424 -0.1293687 -0.5504042 6.909e-01 -1.7471661
## Otu06830 -0.0916990 -0.956325 -0.0712249 0.1403035 3.065e-01 0.5249192
## Otu06832 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu06835 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06840 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06841 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06842 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06843 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06844 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu06846 -0.6171062 0.394903 -0.1481967 0.6020392 6.614e-01 0.7182225
## Otu06854 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu06859 1.1436844 -0.434590 -0.3849451 -0.2244121 4.347e-02 -0.1500521
## Otu06864 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06867 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu06868 -1.2496931 -0.001893 0.1084136 -1.3236727 7.181e-01 -0.8261224
## Otu06874 -0.2358852 -0.522123 0.2987577 -0.5761783 3.239e-01 1.0193139
## Otu06876 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu06877 -0.8340778 0.312103 -0.7283692 0.3712514 -2.123e+00 0.0925506
## Otu06878 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## Otu06887 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu06888 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu06889 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu06891 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```

##	Otu06897	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu06908	-0.5137838	-1.180112	0.0837915	-0.6934603	3.213e-01	-1.0559507
##	Otu06909	1.1066391	-0.540118	-0.3536790	-0.2004806	3.608e-02	-0.1344770
##	Otu06912	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu06918	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06920	-0.1922475	-0.942499	-0.3108503	-0.0183383	-1.596e+00	0.1489316
##	Otu06922	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06923	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06928	0.7975465	0.577668	-0.5787647	-0.2897046	3.140e-01	0.0991923
##	Otu06930	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06931	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu06933	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06939	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu06947	0.9761079	-0.911953	-0.2435113	-0.1161566	1.006e-02	-0.0795973
##	Otu06955	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06963	0.5119080	-0.694430	1.5509204	0.3542351	-3.057e-01	-0.1736653
##	Otu06968	1.0234626	0.762799	1.1191707	0.0237677	-2.037e-01	-0.3887400
##	Otu06975	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu06976	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06980	1.2675390	-0.081774	-0.4894778	-0.3044229	6.816e-02	-0.2021248
##	Otu06985	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu06993	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu06997	0.8708553	-1.211779	-0.1546786	-0.0481628	-1.092e-02	-0.0353456
##	Otu07003	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07007	1.2675390	-0.081774	-0.4894778	-0.3044229	6.816e-02	-0.2021248
##	Otu07024	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07032	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu07036	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07049	0.9761079	-0.911953	-0.2435113	-0.1161566	1.006e-02	-0.0795973
##	Otu07056	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu07064	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu07066	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07071	-0.4448769	0.463646	0.4863252	0.0395568	-2.252e+00	-0.0252390
##	Otu07072	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07076	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu07077	0.7855962	-1.454651	-0.0827203	0.0069151	-2.792e-02	0.0005002
##	Otu07079	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu07082	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07083	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu07090	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu07100	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu07101	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07108	-0.6227039	0.328159	-0.1391723	0.4601933	4.799e-01	0.6580252
##	Otu07111	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu07114	-0.0623700	0.551427	1.6751227	-0.2070102	-3.598e-03	0.5097919
##	Otu07115	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07120	-0.0529544	0.617987	1.2079543	1.2966395	3.957e-02	-0.4902170
##	Otu07122	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu07124	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu07129	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu07131	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu07133	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu07135	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu07136	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119

```

## Otu07142 0.8589147 -0.219222 0.7904986 0.0732281 -1.621e-01 -0.2231475
## Otu07144 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07154 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu07158 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07159 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07160 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu07161 -0.0701547 0.571320 1.6125352 -0.1582789 8.928e-02 0.7530713
## Otu07164 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu07172 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07173 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07176 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07181 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu07186 0.2384322 -0.782639 0.6705544 0.7343942 -1.967e-02 -0.1910897
## Otu07199 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07206 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07207 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07210 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu07214 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07221 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07223 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07225 0.1567876 -0.607761 -0.3947493 -0.1124278 -1.251e+00 0.0547229
## Otu07226 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07227 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07228 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07231 -1.1286714 0.139859 -0.4917608 -0.6589067 -1.834e+00 -0.6134293
## Otu07232 -1.0936944 0.165706 -0.5346902 -0.5854665 -2.043e+00 -0.4823612
## Otu07233 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07235 -0.1659162 -1.514496 0.1002458 -0.4049239 1.879e-01 -0.6679546
## Otu07236 -0.0769887 0.467218 -0.4216605 0.6465052 4.706e-01 0.2388579
## Otu07239 -0.0523923 -1.623620 0.1056156 -0.3107623 1.444e-01 -0.5413351
## Otu07240 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu07254 0.4445695 0.598738 0.6542456 0.0519978 9.482e-02 0.0547736
## Otu07256 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu07263 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07268 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu07275 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07279 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07283 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07289 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07293 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653
## Otu07305 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07306 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07310 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07313 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07316 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu07317 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07318 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07321 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07325 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07328 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07333 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07338 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu07342 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu07343 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372

```

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## Otu07361 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07369 -0.8650765 0.216938 0.2008953 -1.0294267 7.137e-01 0.9161484
## Otu07373 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07377 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07378 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07379 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu07380 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07384 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07386 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07393 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07398 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07400 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07402 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu07405 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07406 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07408 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07416 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu07426 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07429 0.5178783 -1.190709 1.0783318 0.2935397 -2.301e-01 -0.0797644
## Otu07432 0.8647084 0.610432 -0.7371819 -0.4106930 -7.780e-01 -0.1793106
## Otu07435 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07437 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653
## Otu07438 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu07443 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07446 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653
## Otu07450 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07457 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu07460 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07461 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu07462 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu07463 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07469 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07480 -0.9190660 0.235394 -0.3570424 0.8516153 6.483e-01 -1.0900235
## Otu07481 0.4593108 0.539715 -0.2369803 -0.6708326 4.181e-01 0.8196994
## Otu07494 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07497 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07500 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07501 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07502 -0.8735919 0.146829 1.0125143 -0.8606058 3.035e-01 -1.6317487
## Otu07505 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07513 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
## Otu07514 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07517 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu07519 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07521 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu07522 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07532 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07536 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu07537 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu07541 0.1888606 0.695984 1.9863987 0.9604921 -2.134e-01 -0.4748098
## Otu07542 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07545 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu07554 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu07557 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888

```

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## Otu07563 -0.6785078 0.405744 -0.6032971 1.4905118 -3.193e-01 -0.3463429
## Otu07566 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu07568 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07572 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07582 -0.0444592 -0.937408 0.2573569 -0.3890965 2.232e-01 0.7914948
## Otu07586 0.8290397 0.590279 -0.3597102 -0.6426379 2.585e-01 0.2769094
## Otu07591 -0.4448769 0.463646 0.4863252 0.0395568 -2.252e+00 -0.0252390
## Otu07592 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu07593 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07596 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07597 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu07608 1.2575468 0.748826 0.3014737 -0.2028395 -5.838e-02 -0.3592828
## Otu07609 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07613 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07619 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07630 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07634 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07638 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07640 -0.7069067 0.334034 -0.6863899 1.2906515 -5.548e-01 -0.0616266
## Otu07652 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu07654 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07655 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07658 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07667 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu07669 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07683 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07684 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07689 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
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## Otu07696 1.1066391 -0.540118 -0.3536790 -0.2004806 3.608e-02 -0.1344770
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## Otu07706 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07707 0.1419194 0.670370 2.0378008 0.3500347 -1.177e+00 -0.2940697
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## Otu07717 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07719 -0.7225517 0.331336 -0.6915543 1.1775438 -7.478e-01 -0.0426592
## Otu07720 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07723 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07727 -0.1096098 0.532510 1.3465409 0.3223897 7.970e-02 0.2432164
## Otu07729 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07735 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu07736 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07739 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07749 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07750 -1.3430289 -0.018550 -0.2286662 -1.1089881 -5.564e-01 -1.4166841
## Otu07752 0.7855962 -1.454651 -0.0827203 0.0069151 -2.792e-02 0.0005002
## Otu07761 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu07768 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07770 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07773 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07777 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07781 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07782 -0.0444592 -0.937408 0.2573569 -0.3890965 2.232e-01 0.7914948
## Otu07783 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248

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## Otu07785 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07786 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07795 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu07797 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07802 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07807 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07809 -0.0782219 0.523450 2.1501957 -0.0481731 -1.827e-01 -0.9475827
## Otu07810 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07811 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu07814 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07817 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07820 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07827 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07833 1.2971508 0.002579 -0.5144700 -0.3235523 7.406e-02 -0.2145745
## Otu07835 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07836 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07840 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07844 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu07848 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07854 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07858 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07860 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07861 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07866 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07867 -0.7047085 0.393802 -0.6201369 1.3016966 -6.297e-01 -0.2867686
## Otu07869 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07870 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07872 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07880 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07883 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu07884 -0.6065970 0.418145 -0.5795592 2.0104003 5.674e-01 -0.4335247
## Otu07886 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07888 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07894 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu07897 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07901 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07904 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu07913 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07916 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07919 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu07920 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07925 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu07929 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07931 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07932 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07935 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu07951 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu07966 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu07969 0.2050943 -1.477121 0.1675286 -0.1137755 1.415e-01 0.6250508
## Otu07970 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07974 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07975 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07976 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu07979 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu07984 -0.6737617 0.309426 -0.0096101 -0.3722105 7.015e-01 1.4516558
## Otu07985 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu07988 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07992 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu07998 -0.0523923 -1.623620 0.1056156 -0.3107623 1.444e-01 -0.5413351
## Otu08000 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu08004 0.7893784 0.776772 1.9368676 0.2503749 -3.491e-01 -0.4181973
## Otu08007 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu08021 0.4198557 0.500905 -0.5029746 -0.1901640 4.085e-01 0.3098445
## Otu08042 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu08048 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu08051 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
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## Otu08063 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu08065 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08081 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08091 -0.7172627 0.305055 0.0027544 -0.7031697 -6.872e-01 1.0465766
## Otu08092 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08093 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08096 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08099 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu08100 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08103 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08105 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu08106 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08107 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu08108 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu08124 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu08125 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08131 -0.6897861 0.076365 -0.1788998 -1.2605214 5.552e-01 -1.6905535
## Otu08135 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu08141 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu08148 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08153 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08155 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu08158 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08177 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08182 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08189 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu08194 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08199 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08211 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08217 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
## Otu08220 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu08222 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08223 0.5178783 -1.190709 1.0783318 0.2935397 -2.301e-01 -0.0797644
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## Otu08229 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu08232 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu08236 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08242 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu08251 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08265 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08266 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372

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## Otu08268 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08269 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08271 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08281 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08291 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08297 0.2050943 -1.477121 0.1675286 -0.1137755 1.415e-01 0.6250508
## Otu08306 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08308 -0.0623700 0.551427 1.6751227 -0.2070102 -3.598e-03 0.5097919
## Otu08310 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08312 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu08329 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08331 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu08332 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08339 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu08341 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08358 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08359 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08361 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu08365 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu08369 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08375 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08376 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu08378 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu08379 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08382 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu08391 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08410 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08411 0.8152080 -1.370297 -0.1077125 -0.0122143 -2.202e-02 -0.0119496
## Otu08413 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08420 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu08424 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08425 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08427 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu08432 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08434 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08436 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08463 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08469 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu08478 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08479 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08482 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu08484 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08485 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08493 0.5059377 -0.198152 2.0235090 0.4149305 -3.813e-01 -0.2675662
## Otu08495 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08498 0.1572533 0.648297 2.0637142 0.4169719 -1.910e-01 -0.0656377
## Otu08506 -1.0958465 0.085639 0.1454063 -1.2059743 7.163e-01 -0.1292141
## Otu08508 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08515 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu08518 -0.6565613 0.356092 -0.4141910 1.0827079 6.518e-01 0.2083675
## Otu08523 -0.9316202 0.146647 0.2658489 -1.1532510 5.907e-01 0.2433217
## Otu08526 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08531 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08534 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375

```



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## Otu08536 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08542 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08544 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08551 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu08554 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu08559 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08560 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu08561 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08569 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08571 -0.9369092 0.172927 -0.4284598 0.7274625 5.302e-01 -0.8459140
## Otu08572 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08576 -1.2445033 -0.015156 0.1501386 -1.3561602 6.561e-01 -0.9883087
## Otu08588 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08597 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08598 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08599 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08602 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08610 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08611 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08621 0.2035335 -0.188900 -0.0211055 -0.5055989 3.671e-01 0.9272368
## Otu08637 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08642 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08647 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08650 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu08655 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08664 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu08667 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu08676 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08677 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu08678 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08679 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu08682 -0.2478257 0.470434 1.2439349 -0.4547874 1.727e-01 0.8315120
## Otu08687 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08690 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08694 1.2675390 -0.081774 -0.4894778 -0.3044229 6.816e-02 -0.2021248
## Otu08695 0.0484413 -1.356088 -0.1628487 0.0451574 -1.090e+00 0.1353002
## Otu08697 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08699 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08702 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08708 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08709 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu08718 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08721 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08729 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu08735 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08749 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu08751 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu08752 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu08753 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu08760 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu08762 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu08764 0.7305141 0.586885 -0.7385150 -0.3954658 -9.541e-01 -0.1514661
## Otu08765 -0.0444592 -0.937408 0.2573569 -0.3890965 2.232e-01 0.7914948
## Otu08766 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681

```

##	Otu08768	0.8708553	-1.211779	-0.1546786	-0.0481628	-1.092e-02	-0.0353456
##	Otu08770	0.4945648	-0.821775	-0.0519129	-0.2493419	1.696e-01	0.4638685
##	Otu08772	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu08773	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu08775	0.5161566	0.428477	-0.4754205	-0.8455471	3.239e-01	-0.9547209
##	Otu08785	0.4631287	0.539532	-0.6951244	0.6909712	2.798e-01	-0.2405067
##	Otu08787	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08788	0.4593108	0.539715	-0.2369803	-0.6708326	4.181e-01	0.8196994
##	Otu08794	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08802	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08803	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu08807	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu08809	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08825	-0.0022291	0.277118	-0.3479583	-1.0239277	4.233e-01	-1.2710255
##	Otu08826	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu08834	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu08837	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu08843	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu08850	-0.3664807	-0.413878	-0.1615840	0.1262242	4.769e-01	0.7092285
##	Otu08851	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08852	-0.1096098	0.532510	1.3465409	0.3223897	7.970e-02	0.2432164
##	Otu08867	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu08869	0.7893784	0.776772	1.9368676	0.2503749	-3.491e-01	-0.4181973
##	Otu08870	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu08904	0.0684683	0.450015	-0.2498550	-0.4110690	5.094e-01	0.8603999
##	Otu08905	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08908	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08911	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08928	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu08939	-0.7704922	0.323069	-0.7073796	0.8309515	-1.339e+00	0.0154620
##	Otu08943	0.8469741	0.773334	1.7356758	0.1946189	-3.133e-01	-0.4109494
##	Otu08951	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08954	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu08964	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu08965	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08977	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu08979	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08985	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu08990	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu09004	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu09012	-0.3281336	-0.481143	-0.3914928	0.6734270	-8.599e-01	-0.0757342
##	Otu09036	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu09053	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu09055	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu09058	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu09068	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu09071	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu09075	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu09077	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu09084	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu09087	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu09089	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu09092	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu09095	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520

```

## Otu09098 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09106 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09109 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09110 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09114 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09117 -0.5922020 0.296020 0.9091700 -0.3047633 2.936e-01 -0.5778354
## Otu09120 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09122 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09126 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu09127 -0.6288006 0.347972 -0.4043117 1.1109973 5.117e-01 0.4325725
## Otu09134 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09138 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu09149 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu09152 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu09155 -0.7047085 0.393802 -0.6201369 1.3016966 -6.297e-01 -0.2867686
## Otu09156 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu09159 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09161 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09162 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09164 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09165 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09166 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09168 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09174 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## Otu09180 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09184 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09186 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09191 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu09195 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu09198 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu09202 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09203 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09204 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09210 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09212 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09218 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09241 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09254 -0.0484259 -0.917698 -0.2633746 1.0214386 1.778e-01 -0.0254320
## Otu09261 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09265 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09269 -0.8735919 0.146829 1.0125143 -0.8606058 3.035e-01 -1.6317487
## Otu09284 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu09302 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu09311 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09317 -0.8137653 0.284441 -0.5152298 -0.0501837 -1.210e+00 0.5658132
## Otu09325 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu09326 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09330 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09336 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu09350 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09361 -0.2352715 0.559181 0.6210436 1.5500789 2.303e-01 -0.5018332
## Otu09365 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09375 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09387 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390

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## Otu09392 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09394 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu09401 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu09419 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09443 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09444 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu09445 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09470 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09475 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09480 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu09486 -0.0350435 -0.870848 -0.2098115 1.1145532 2.664e-01 -0.2085141
## Otu09488 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu09491 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09493 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09500 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09502 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09510 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09539 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu09545 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09552 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09553 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09554 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09564 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu09588 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09596 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09598 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09601 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09606 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09608 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09614 1.1999511 0.752264 0.5026655 -0.1470836 -9.415e-02 -0.3665307
## Otu09624 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09643 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09649 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09657 0.5161566 0.428477 -0.4754205 -0.8455471 3.239e-01 -0.9547209
## Otu09661 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09671 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09684 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09695 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu09698 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09700 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09702 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu09705 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09707 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09717 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09719 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09721 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu09722 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09724 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09725 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09727 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09730 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09742 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu09744 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09745 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu09747 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09748 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09749 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09750 -1.5573864 -0.176958 0.0344283 -1.5590694 7.215e-01 -2.2199390
## Otu09752 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu09756 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu09757 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09758 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09762 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu09790 0.1051513 0.449364 0.0109245 -0.7964899 3.919e-01 0.8759307
## Otu09796 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu09806 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09807 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09810 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09812 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09815 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09822 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09826 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09827 -0.8184328 0.314801 -0.7232048 0.4843592 -1.930e+00 0.0735832
## Otu09832 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu09833 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu09839 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09842 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09846 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09856 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09867 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09868 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09872 0.4198557 0.500905 -0.5029746 -0.1901640 4.085e-01 0.3098445
## Otu09873 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09880 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu09881 -0.6266706 0.347870 -0.6599038 1.8707284 4.345e-01 -0.1589016
## Otu09882 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09894 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09898 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09902 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09905 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09920 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09929 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09930 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu09936 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu09942 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu09946 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu09947 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu09960 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu10001 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10009 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu10011 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu10014 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu10026 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10029 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu10031 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu10036 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10037 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10048 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

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## Otu10052 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu10060 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10075 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10089 -0.1096098 0.532510 1.3465409 0.3223897 7.970e-02 0.2432164
## Otu10094 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu10097 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu10101 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10109 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10120 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu10121 -0.6565613 0.356092 -0.4141910 1.0827079 6.518e-01 0.2083675
## Otu10135 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu10136 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10140 -0.7743102 0.323252 -0.2492355 -0.5308523 -1.201e+00 1.0756682
## Otu10147 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10154 -0.6187372 0.308449 0.3815592 -0.9503418 5.253e-01 1.4749520
## Otu10155 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu10164 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu10177 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu10182 -0.9143139 0.298267 -0.7548553 -0.2088254 -3.112e+00 0.1898256
## Otu10185 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu10187 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu10190 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10191 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10194 -0.6699437 0.309242 -0.4677541 0.9895932 5.632e-01 0.3914496
## Otu10204 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu10212 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10228 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu10232 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10245 -0.2101584 0.546336 1.1069155 0.1637480 -1.822e+00 -0.1327713
## Otu10247 -0.6565613 0.356092 -0.4141910 1.0827079 6.518e-01 0.2083675
## Otu10265 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10276 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10282 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10290 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10296 -0.7132168 0.270615 -0.2756044 0.1084581 6.920e-01 0.9418009
## Otu10299 0.8469741 0.773334 1.7356758 0.1946189 -3.133e-01 -0.4109494
## Otu10300 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu10312 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10322 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10331 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu10335 0.0947717 0.475889 -0.0725255 -0.7315148 5.158e-01 1.2003032
## Otu10339 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu10340 0.1443223 -1.339554 -0.1311982 0.7383420 9.224e-02 0.0190578
## Otu10351 -0.1897974 0.470617 1.9906002 -0.1621422 -1.145e-01 -1.0435584
## Otu10365 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10368 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu10381 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10385 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu10386 0.4670955 0.519821 -0.1743928 -0.7195639 3.252e-01 0.5764201
## Otu10387 1.2118917 -0.240292 -0.4425117 -0.2684744 5.706e-02 -0.1787288
## Otu10393 -0.6343066 0.348236 0.2563842 -0.8528792 7.111e-01 1.9615108
## Otu10406 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10407 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu10408 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119

```

##	Otu10410	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10419	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10436	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10447	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10448	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10452	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10455	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10457	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10470	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10473	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10474	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10483	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10487	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10501	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10517	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10520	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10525	0.1154736	-1.365305	-0.0030984	0.1509186	1.780e-01	0.3859586
##	Otu10528	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10533	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10537	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10547	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10550	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10554	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10557	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu10567	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu10572	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10574	-0.6266706	0.347870	-0.6599038	1.8707284	4.345e-01	-0.1589016
##	Otu10575	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10576	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10585	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10587	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu10591	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu10612	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10628	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10632	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu10636	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10641	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10643	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu10658	-1.2358501	0.060654	-0.3602135	-0.8839474	-1.195e+00	-1.0150567
##	Otu10694	-0.9190660	0.235394	-0.3570424	0.8516153	6.483e-01	-1.0900235
##	Otu10702	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10708	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu10729	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10730	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10731	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu10733	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10738	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10740	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10751	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10757	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10762	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10763	-0.7132168	0.270615	-0.2756044	0.1084581	6.920e-01	0.9418009
##	Otu10770	-0.2478257	0.470434	1.2439349	-0.4547874	1.727e-01	0.8315120
##	Otu10795	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375

##	Otu10796	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10804	0.8353168	0.634653	-0.6711558	0.3597952	2.873e-01	-0.3897632
##	Otu10806	-0.6187372	0.308449	0.3815592	-0.9503418	5.253e-01	1.4749520
##	Otu10826	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10828	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu10829	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu10850	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10856	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10867	-1.5573864	-0.176958	0.0344283	-1.5590694	7.215e-01	-2.2199390
##	Otu10869	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10876	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10880	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10885	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10894	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu10903	-0.5999058	0.441570	-0.5527777	2.0569576	6.117e-01	-0.5250658
##	Otu10905	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10906	0.0421649	0.424141	-0.4271846	-0.0906233	5.030e-01	0.5204966
##	Otu10907	0.8708553	-1.211779	-0.1546786	-0.0481628	-1.092e-02	-0.0353456
##	Otu10921	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu10927	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10938	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu10958	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10962	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu10968	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681
##	Otu10975	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu10976	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10982	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu10989	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11000	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11012	1.0413735	-0.726036	-0.2985951	-0.1583186	2.307e-02	-0.1070372
##	Otu11021	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11033	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11041	1.0234626	0.762799	1.1191707	0.0237677	-2.037e-01	-0.3887400
##	Otu11046	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu11062	-0.6266706	0.347870	-0.6599038	1.8707284	4.345e-01	-0.1589016
##	Otu11071	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu11072	-0.9143139	0.298267	-0.7548553	-0.2088254	-3.112e+00	0.1898256
##	Otu11074	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu11075	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11110	0.5298188	-2.183265	0.1331546	0.1721488	-7.891e-02	0.1080375
##	Otu11114	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11116	0.8469741	0.773334	1.7356758	0.1946189	-3.133e-01	-0.4109494
##	Otu11133	1.2118917	-0.240292	-0.4425117	-0.2684744	5.706e-02	-0.1787288
##	Otu11158	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11174	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11177	0.0947717	0.475889	-0.0725255	-0.7315148	5.158e-01	1.2003032
##	Otu11179	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11192	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11199	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11203	0.8708553	-1.211779	-0.1546786	-0.0481628	-1.092e-02	-0.0353456
##	Otu11217	-0.6343066	0.348236	0.2563842	-0.8528792	7.111e-01	1.9615108
##	Otu11230	-0.8735919	0.146829	1.0125143	-0.8606058	3.035e-01	-1.6317487
##	Otu11232	1.5529281	0.731194	-0.7303449	-0.4887860	1.251e-01	-0.3221119
##	Otu11234	0.4939971	0.794404	2.9686862	0.5363213	-5.325e-01	-0.4553681


```

## Otu11237 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11238 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11240 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu11245 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11249 0.4939971 0.794404 2.9686862 0.5363213 -5.325e-01 -0.4553681
## Otu11257 -0.5999058 0.441570 -0.5527777 2.0569576 6.117e-01 -0.5250658
## Otu11262 0.8708553 -1.211779 -0.1546786 -0.0481628 -1.092e-02 -0.0353456
## Otu11269 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11272 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11280 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11292 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu11309 1.5529281 0.731194 -0.7303449 -0.4887860 1.251e-01 -0.3221119
## Otu11315 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu11320 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu11335 0.5298188 -2.183265 0.1331546 0.1721488 -7.891e-02 0.1080375
## Otu11414 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu11479 -0.6737617 0.309426 -0.0096101 -0.3722105 7.015e-01 1.4516558
## Otu11491 -0.1096098 0.532510 1.3465409 0.3223897 7.970e-02 0.2432164
## Otu11593 -1.2358501 0.060654 -0.3602135 -0.8839474 -1.195e+00 -1.0150567
## Otu11594 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu11640 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu11699 0.4593108 0.539715 -0.2369803 -0.6708326 4.181e-01 0.8196994
## Otu11758 -0.0444592 -0.937408 0.2573569 -0.3890965 2.232e-01 0.7914948
## Otu11818 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu11887 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu11961 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu11973 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu12080 -0.2101584 0.546336 1.1069155 0.1637480 -1.822e+00 -0.1327713
## Otu12096 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu12100 0.3193071 0.514731 -0.7426001 -0.3488057 -1.494e+00 -0.0661431
## Otu12105 -0.0701547 0.571320 1.6125352 -0.1582789 8.928e-02 0.7530713
## Otu12227 -0.7704922 0.323069 -0.7073796 0.8309515 -1.339e+00 0.0154620
## Otu12274 -0.6132882 0.394720 -0.6063408 1.9638430 5.231e-01 -0.3419837
## Otu12354 -0.6171062 0.394903 -0.1481967 0.6020392 6.614e-01 0.7182225
## Otu12394 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu12431 -1.0786461 0.132306 -0.2591747 0.2489441 6.666e-01 -1.3725024
## Otu12575 -0.6659770 0.289532 0.0529774 -0.4209419 6.087e-01 1.2083764
## Otu12577 -0.6699437 0.309242 -0.4677541 0.9895932 5.632e-01 0.3914496
## Otu12657 -1.1353016 0.046828 -0.1205880 -0.7253056 7.067e-01 -0.6390691
## Otu12726 -0.7571099 0.369918 -0.6538165 0.9240661 -1.250e+00 -0.1676201
## Otu12733 0.4765111 0.586382 -0.6415613 0.7840858 3.684e-01 -0.4235888
## Otu12909 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13007 -0.0916990 -0.956325 -0.0712249 0.1403035 3.065e-01 0.5249192
## Otu13035 -0.5316947 0.308723 1.5015573 -0.5113740 9.450e-02 -1.3376536
## Otu13098 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13183 0.3193071 0.514731 -0.7426001 -0.3488057 -1.494e+00 -0.0661431
## Otu13234 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13615 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13618 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13693 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13715 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13773 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13774 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13804 0.5119080 -0.694430 1.5509204 0.3542351 -3.057e-01 -0.1736653

```

```

## Otu13874 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13905 -0.0484259 -0.917698 -0.2633746 1.0214386 1.778e-01 -0.0254320
## Otu13927 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13936 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu13943 -0.0022291 0.277118 -0.3479583 -1.0239277 4.233e-01 -1.2710255
## Otu13997 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu14006 -0.5137838 -1.180112 0.0837915 -0.6934603 3.213e-01 -1.0559507
## Otu14102 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu14105 -0.6565613 0.356092 -0.4141910 1.0827079 6.518e-01 0.2083675
## Otu14285 -0.7743102 0.323252 -0.2492355 -0.5308523 -1.201e+00 1.0756682
## Otu14402 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu14413 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu14435 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu14510 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu14662 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu14768 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
## Otu14807 -0.0529544 0.617987 1.2079543 1.2966395 3.957e-02 -0.4902170
## Otu14819 0.4593108 0.539715 -0.2369803 -0.6708326 4.181e-01 0.8196994
## Otu14941 -0.6699437 0.309242 -0.4677541 0.9895932 5.632e-01 0.3914496
## Otu15021 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu15052 1.0234626 0.762799 1.1191707 0.0237677 -2.037e-01 -0.3887400
## Otu15079 1.0413735 -0.726036 -0.2985951 -0.1583186 2.307e-02 -0.1070372
##
##
## Site scores (weighted averages of species scores)
##
##          CCA1      CA1      CA2      CA3      CA4      CA5
## Ann2012_RNA    -1.02805 -0.1770 0.03443 -1.5591 0.72154 -2.2199
## Canyon2012_RNA -0.06051 0.7944 2.96869 0.5363 -0.53254 -0.4554
## Howe2012_RNA   -0.81357 0.3482 0.25638 -0.8529 0.71110 1.9615
## Ives2012_RNA   -0.83827 0.2706 -0.27560 0.1085 0.69195 0.9418
## Lily2012_RNA    0.87796 -2.1833 0.13315 0.1721 -0.07891 0.1080
## Mountain2012_RNA -1.00236 0.2983 -0.75486 -0.2088 -3.11236 0.1898
## Pony2012_RNA    1.61628 0.7312 -0.73034 -0.4888 0.12505 -0.3221
## Rush2012_RNA   -0.83871 0.3084 0.38156 -0.9503 0.52535 1.4750
## SecondPine2012_RNA -0.79899 0.3479 -0.65990 1.8707 0.43454 -0.1589
## UpperPine2012_RNA -0.73089 0.4416 -0.55278 2.0570 0.61168 -0.5251
##
##
## Site constraints (linear combinations of constraining variables)
##
##          CCA1      CA1      CA2      CA3      CA4      CA5
## Ann2012_RNA    -1.5574 -0.1770 0.03443 -1.5591 0.72154 -2.2199
## Canyon2012_RNA 0.4940 0.7944 2.96869 0.5363 -0.53254 -0.4554
## Howe2012_RNA   -0.6343 0.3482 0.25638 -0.8529 0.71110 1.9615
## Ives2012_RNA   -0.7132 0.2706 -0.27560 0.1085 0.69195 0.9418
## Lily2012_RNA    0.5298 -2.1833 0.13315 0.1721 -0.07891 0.1080
## Mountain2012_RNA -0.9143 0.2983 -0.75486 -0.2088 -3.11236 0.1898
## Pony2012_RNA    1.5529 0.7312 -0.73034 -0.4888 0.12505 -0.3221
## Rush2012_RNA   -0.6187 0.3084 0.38156 -0.9503 0.52535 1.4750
## SecondPine2012_RNA -0.6267 0.3479 -0.65990 1.8707 0.43454 -0.1589
## UpperPine2012_RNA -0.5999 0.4416 -0.55278 2.0570 0.61168 -0.5251
##
##

```

```
## Biplot scores for constraining variables
##
##           CCA1 CA1 CA2 CA3 CA4 CA5
## pcoa.res$points[, 2]  -1  0  0  0  0  0
anova(cca.dom, by = "axis")

## Permutation test for cca under reduced model
## Forward tests for axes
## Permutation: free
## Number of permutations: 999
##
## Model: cca(formula = OTUsREL.log ~ pcoa.res$points[, 2])
##           Df ChiSquare      F Pr(>F)
## CCA1       1   0.55751 2.2521 0.004 **
## Residual    8   1.98039
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Figure 3: Bacterial PCoA Plot with Env Vectors

```
# PCoA of Active Community
bray.BAC <- vegdist(decostand(OTUsREL, "log"), "bray")

## Warning: non-integer data: divided by smallest positive value

pcoa.BAC <- cmdscale(bray.BAC, k = 3, eig = T)
explainvar1 <- round(pcoa.BAC$eig[1] / sum(pcoa.BAC$eig), 3) * 100
explainvar2 <- round(pcoa.BAC$eig[2] / sum(pcoa.BAC$eig), 3) * 100

# PCoA of Resources
bray.RES <- vegdist(decostand(resREL.neg, "log"), "bray")

## Warning: non-integer data: divided by smallest positive value

pcoa.RES <- cmdscale(bray.RES, k = 3, eig = T)

# Resource Concentrations
cons.RES <- dat$DOC.t

# Initial Plot as PNG
png(filename="./figures/Figure3.png",
     width = 1300, height = 900, res = 96*2, bg = "white")

# Define Plot Parameters
par(opar)
par(mar = c(4.75, 5, 1, 1) + 0.5)

# Initiate Plot 1
plot(pcoa.BAC$points[,1], pcoa.BAC$points[,2],
     ylim = c(-0.3, 0.4), xlim = c(-0.4, 0.6),
     xlab = paste("PCoA 1 (", explainvar1, "%)", sep = ""),
     ylab = paste("PCoA 2 (", explainvar2, "%)", sep = ""),
     #xlab = "", ylab = "", xaxt = "n", yaxt = "n",
     pch = 22, cex = 2.0, type = "n", cex.lab = 1.5, cex.axis = 1,
```

```

axes = FALSE)

# Add Axes
axis(side = 1, labels = T, lwd.ticks = 2, cex.axis = 1.25, las = 1)
axis(side = 2, labels = T, lwd.ticks = 2, cex.axis = 1.25, las = 1,
     at = c(-0.2, 0, 0.2, 0.4))
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02,
     at = c(-0.2, 0, 0.2, 0.4))
axis(side = 1, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01)
axis(side = 2, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01,
     at = c(-0.2, 0, 0.2, 0.4))
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01,
     at = c(-0.2, 0, 0.2, 0.4))
abline(h = 0, v = 0, lty = 3)
box(lwd = 2)

# Add Points & Labels
points(pcoa.BAC$points[,1], pcoa.BAC$points[,2], pch = 22,
       cex = 2.5, bg = "gray", lwd = 2)
#text(pcoa.BAC$points[,1], pcoa.BAC$points[,2],
#     unlist(lapply(strsplit(row.names(pcoa.BAC$points),
#                             split = "_"), "[", 1)))

# Resource Concentration Vector
# res.con <- envfit(pcoa.BAC, cons.RES)
# con.arrows <- res.con[[1]]$arrows * 0.3
# arrows(0, 0, con.arrows[, 1], con.arrows[, 2], col = "gray10", length = 0.1, lwd = 2)
# text(con.arrows[, 1] * 1.2, con.arrows[, 2] * 1.2, "Conc.", col = "black", cex = 1)

# DOM Composition Vectors
res.com <- envfit(pcoa.BAC, pcoa.RES$points[,1:2])
com.arrows <- res.com[[1]]$arrows * 0.3
arrows(0, 0, -com.arrows[1, 1], com.arrows[1, 2],
       col = "gray30", length = 0.1, lwd = 4)
arrows(0, 0, -com.arrows[2, 1], -com.arrows[2, 2],
       col = "gray30", length = 0.1, lwd = 4)
text(-com.arrows[1, 1] - 0.02, com.arrows[1, 2] * 1.2, "DOM 1",
     col = "gray40", cex = 1.25, font = 3)
text(-com.arrows[2, 1] * 1.2, com.arrows[2, 2] + 0.08, "DOM 2",
     col = "gray40", cex = 1.25, font = 3)

text(0.48, -0.045, "Lily", col = "black", cex = 0.8)
text(0.56, 0.1, "Pony", col = "black", cex = 0.8)
text(-0.085, -0.24, "Ann", col = "black", cex = 0.8)
text(0.05, -0.145, "Canyon", col = "black", cex = 0.8)
text(-0.14, -0.08, "Howe", col = "black", cex = 0.8)
text(-0.12, -0.02, "Ives", col = "black", cex = 0.8)
text(-0.255, 0.08, "Mountain", col = "black", cex = 0.8)
text(-0.23, -0.18, "Rush", col = "black", cex = 0.8)
text(-0.235, 0.25, "Second", col = "black", cex = 0.8)
text(-0.19, 0.32, "Upper", col = "black", cex = 0.8)

```

```

# legend("bottomright", c("Resource Concentration Model",
#                          "Resource Composition Model"),
#        lwd = 2, col = c("gray10", "gray60", "gray60"), bty = "n")

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices
# ...

# ```{r fig.width=4, fig.height=4,echo=FALSE,fig.cap="Diversity"}
img <- readPNG("../figures/Figure3.png")
grid.raster(img)

```

Figure X2: Example

```

# Initial Plot as PNG
png(filename="../figures/FigureX2.png",
     width = 1300, height = 900, res = 96*2, bg = "white")

# Define Plot Parameters
par(opar)
par(mar = c(4, 5, 1, 1) + 0.5)

plot(pcoa.BAC$points[,1], pcoa.BAC$points[,2],
     ylim = c(-0.3, 0.4), xlim = c(-0.4, 0.6),
     xlab = paste("PCoA 1 (", explainvar1, "%)", sep = ""),
     ylab = paste("PCoA 2 (", explainvar2, "%)", sep = ""),
     #xlab = "", ylab = "", xaxt = "n", yaxt = "n",
     pch = 22, cex = 2.0, type = "n", cex.lab = 1.5, cex.axis = 1,
     axes = FALSE)

# Add Axes
axis(side = 1, labels = T, lwd.ticks = 2, cex.axis = 1.25, las = 1)
axis(side = 2, labels = T, lwd.ticks = 2, cex.axis = 1.25, las = 1,
     at = c(-0.2, 0, 0.2, 0.4))
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02,
     at = c(-0.2, 0, 0.2, 0.4))
axis(side = 1, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01)
axis(side = 2, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01,
     at = c(-0.2, 0, 0.2, 0.4))
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.01,
     at = c(-0.2, 0, 0.2, 0.4))
abline(h = 0, v = 0, lty = 3)
box(lwd = 2)

# Add Points & Labels
points(pcoa.BAC$points[,1], pcoa.BAC$points[,2], pch = 22,
       cex = 2.5, bg = "gray", lwd = 2)
#text(pcoa.BAC$points[,1], pcoa.BAC$points[,2],
#     #      unlist(lapply(strsplit(row.names(pcoa.BAC$points),

```

```

#      split = "_"), "[[", 1)))

# Resource Concentration Vector
# res.con <- envfit(pcoa.BAC, cons.RES)
# con.arrows <- res.con[[1]]$arrows * 0.3
# arrows(0, 0, con.arrows[, 1], con.arrows[, 2], col = "gray10", length = 0.1, lwd = 2)
# text(con.arrows[, 1] * 1.2, con.arrows[, 2] * 1.2, "Conc.", col = "black", cex = 1)

text(0.48, -0.045, "Lily", col = "black", cex = 0.8)
text(0.56, 0.1, "Pony", col = "black", cex = 0.8)
text(-0.085, -0.24, "Ann", col = "black", cex = 0.8)
text(0.05, -0.145, "Canyon", col = "black", cex = 0.8)
text(-0.14, -0.08, "Howe", col = "black", cex = 0.8)
text(-0.12, -0.02, "Ives", col = "black", cex = 0.8)
text(-0.255, 0.08, "Mountain", col = "black", cex = 0.8)
text(-0.23, -0.18, "Rush", col = "black", cex = 0.8)
text(-0.235, 0.25, "Second", col = "black", cex = 0.8)
text(-0.19, 0.32, "Upper", col = "black", cex = 0.8)

# legend("bottomright", c("Resource Concentration Model",
#                          "Resource Composition Model"),
#       lwd = 2, col = c("gray10", "gray60", "gray60"), bty = "n")

dev.off() # this writes plot to folder

## pdf
## 2

graphics.off() # shuts down open devices
# ``

# ``{r fig.width=4, fig.height=4,echo=FALSE,fig.cap="Diversity"}
img <- readPNG("../figures/FigureX2.png")
grid.raster(img)

```

Generalist and Specialists Patterns

Spatial Generalists

```

# Define generalists as those found at all sites
sp.gens <- which(colSums(OTUsPA) >= 8)
sp.gen.tax <- OTU.tax[which(OTU.tax$OTU %in% names(sp.gens)), ]
table(sp.gen.tax$Order)

##
##               Actinomycetales Alphaproteobacteria_unclassified
##                   19                      2
## Armatimonadetes_gp5_unclassified      Bacteria_unclassified
##                   1                      3
##               Bacteroidales      Bacteroidetes_unclassified
##                   1                      3
##               Bdellovibrionales      Burkholderiales

```

```

##          1          37
##          Caulobacterales          Chloroflexales
##          11          1
##          Chromatiales          Clostridiales
##          1          1
##          Cytophagales          Desulfobacterales
##          4          1
##          Enterobacterales          Flavobacterales
##          1          8
##          Gallionellales Gammaproteobacteria_unclassified
##          2          1
##          Gemmatimonadales          Gp3
##          2          2
##          Limisphaera          Methylococcales
##          1          2
##          Methylophilales          Myxococcales
##          2          5
##          Neisseriales          Nitrosomonadales
##          3          2
##          Opitutales          Paludibaculum
##          2          1
##          Planctomycetales          Proteobacteria_unclassified
##          17          2
##          Pseudomonadales          Puniceococcales
##          6          1
##          Rhizobiales          Rhodobacterales
##          18          4
##          Rhodocyclales          Rhodospirillales
##          4          11
##          Rickettsiales          Rubrobacterales
##          1          1
##          SAR11          Solirubrobacterales
##          1          1
##          Spartobacteria_unclassified          Sphingobacterales
##          6          12
##          Sphingomonadales          Subdivision3_unclassified
##          10          2
##          Tepidisphaerales          Terrimicrobium
##          4          3
##          Verrucomicrobiales          Xanthomonadales
##          6          3

```

```

# Define specialists as those found at only 2 or fewer sites
sp.spec <- which(colSums(OTUsPA) <= 5)
sp.spe.tax <- OTU.tax[which(OTU.tax$OTU %in% names(sp.spec)), ]
table(sp.spe.tax$Order)

```

```

##
##          Acidimicrobiales
##          10
##          Acidipila
##          2
##          Acidobacteria_Gp1_unclassified
##          2
##          Acidobacteria_Gp3_unclassified

```

##		2
##	Acidobacteria_unclassified	
##		4
##	Actinobacteria_unclassified	
##		7
##	Actinomycetales	
##		93
##	Aeromonadales	
##		1
##	Alphaproteobacteria_incertae_sedis	
##		25
##	Alphaproteobacteria_unclassified	
##		119
##	Alteromonadales	
##		2
##	Aminicenantes_unclassified	
##		4
##	Anaerolineales	
##		118
##	Arenicellales	
##		1
##	Aridibacter	
##		2
##	Armatimonadales	
##		3
##	Armatimonadetes_gp2_unclassified	
##		2
##	Armatimonadetes_gp4_unclassified	
##		1
##	Armatimonadetes_gp5_unclassified	
##		13
##	Bacillales	
##		23
##	Bacilli_unclassified	
##		1
##	Bacteria_unclassified	
##		174
##	Bacteroidales	
##		88
##	Bacteroidetes_unclassified	
##		27
##	Bdellovibrionales	
##		88
##	Betaproteobacteria_unclassified	
##		30
##	Blastocatella	
##		1
##	Bryobacter	
##		2
##	Burkholderiales	
##		164
##	Caldilineales	
##		28
##	Campylobacterales	


```

## 18
## candidate_division_WPS-1_unclassified
## 25
## candidate_division_WPS-2_unclassified
## 3
## candidate_division_ZB3_unclassified
## 1
## Candidatus_Brocadiales
## 5
## Candidatus_Cloacamonas_unclassified
## 1
## Candidatus_Hydrogenedens_unclassified
## 9
## Candidatus_Koribacter
## 1
## Candidatus_Solibacter
## 15
## Caulobacteriales
## 60
## Chitinivibrionales
## 3
## Chlamydiales
## 9
## Chlorobiales
## 3
## Chloroflexales
## 8
## Chloroflexi_unclassified
## 18
## Chloroflexia_unclassified
## 1
## Chromatiales
## 44
## Chthonomonadales
## 11
## Clostridia_unclassified
## 29
## Clostridiales
## 174
## Coriobacteriales
## 5
## Cytophagales
## 82
## Dehalococcoidales
## 3
## Dehalogenimonas
## 4
## Deinococcales
## 4
## Deltaproteobacteria_incertae_sedis
## 1
## Deltaproteobacteria_unclassified
## 66
## Desulfarculales

```

##		1
##	Desulfobacterales	
##		61
##	Desulfovibrionales	
##		3
##	Desulfuromonadales	
##		17
##	Elusimicrobiales	
##		1
##	Enterobacterales	
##		15
##	Epsilonproteobacteria_unclassified	
##		7
##	Erysipelotrichales	
##		1
##	Ferrovales	
##		3
##	Fibrobacterales	
##		2
##	Fimbriimonadales	
##		5
##	Firmicutes_unclassified	
##		42
##	Flavobacterales	
##		89
##	Fusobacterales	
##		7
##	Gaiellales	
##		15
##	Gallionellales	
##		8
##	Gammaproteobacteria_incertae_sedis	
##		16
##	Gammaproteobacteria_unclassified	
##		90
##	Gemmatimonadales	
##		19
##	Gp1	
##		12
##	Gp10	
##		6
##	Gp13	
##		4
##	Gp16	
##		20
##	Gp17	
##		6
##	Gp18	
##		14
##	Gp19	
##		1
##	Gp2	
##		5
##	Gp22	

##	3
##	Gp23
##	5
##	Gp3
##	50
##	Gp4
##	4
##	Gp5
##	1
##	Gp6
##	23
##	Gp7
##	6
##	Granulicella
##	3
##	Holophagales
##	22
##	Hydrogenophilales
##	5
##	Ignavibacteriales
##	18
##	Ktedonobacterales
##	1
##	Lactobacillales
##	7
##	Latescibacteria_unclassified
##	20
##	Legionellales
##	50
##	Lentisphaerae_unclassified
##	1
##	Limisphaera
##	22
##	Methylococcales
##	127
##	Methylophilales
##	8
##	Myxococcales
##	260
##	Natranaerobiales
##	1
##	Nautiliales
##	7
##	Neisseriales
##	35
##	Nitrosomonadales
##	8
##	Nitrospirales
##	5
##	Oceanospirillales
##	15
##	Oligoflexales
##	4
##	Oligosphaerales

##		5
##	Omnitrophica_unclassified	
##		2
##	Opitutales	
##		25
##	Paludibaculum	
##		5
##	Parcubacteria_unclassified	
##		2
##	Parvularculales	
##		1
##	Pasteurellales	
##		2
##	Phycisphaerae_unclassified	
##		1
##	Phycisphaerales	
##		2
##	Planctomycetales	
##		275
##	Planctomycetes_unclassified	
##		12
##	Planctomycetia_unclassified	
##		6
##	Procabacteriales	
##		1
##	Proteobacteria_unclassified	
##		95
##	Pseudomonadales	
##		23
##	Puniceicoccales	
##		11
##	Rhizobiales	
##		161
##	Rhodobacterales	
##		31
##	Rhodocyclales	
##		67
##	Rhodospirillales	
##		291
##	Rickettsiales	
##		47
##	Rubrobacterales	
##		2
##	SAR11	
##		1
##	Selenomonadales	
##		7
##	Sneathiellales	
##		5
##	Solirubrobacterales	
##		16
##	Spartobacteria_unclassified	
##		47
##	Sphaerobacterales	

```

##                               5
##           Sphingobacteriales
##                               166
##           Sphingomonadales
##                               48
##           Spirochaetales
##                               30
##           SR1_unclassified
##                               1
##           Subdivision3_unclassified
##                               129
##           Subdivision5_unclassified
##                               13
##           Syntrophobacteriales
##                               53
##           Syntrophorhabdaceae
##                               16
##           Telmatobacter
##                               5
##           Tepidisphaerales
##                               15
##           Terrimicrobium
##                               27
##           Thermoanaerobacteriales
##                               4
##           Thermoanaerobaculum
##                               3
##           Thermoflexales
##                               1
##           Thermoleophilales
##                               2
##           Thiotrichales
##                               4
##           Verrucomicrobia_unclassified
##                               25
##           Verrucomicrobiales
##                               66
##           Victivallales
##                               1
##           Xanthomonadales
##                               54

```

Consumer-Resource Interaction

```

# Subset OTUs for most dominant
all.equal(colnames(OTUsREL), colnames(OTUsPA))

## [1] TRUE

# OTUsREL.dom <- OTUsREL[,which(colSums(as.matrix(OTUsREL)) > 0.005 )]

OTUsREL.dom <- OTUsREL[,which(colSums(as.matrix(OTUsREL)) > 0.01 &
                                colSums(OTUsPA) > 1)]

```

```

dim(OTUsREL.dom)

## [1] 10 158

row.names(OTUsREL.dom) <- gsub("2012_RNA", "", row.names(OTUsREL.dom))
write.table(OTUsREL.dom, "../data/OTUsREL.subset.txt", quote = F)

# which((log10(apply(OTUsREL.dom, 2, max)) -
#         log10(apply(OTUsREL.dom, 2, min))) > 2)

# Subset Resources for 100 most dominant
resREL.dom <- resREL.neg[,which(colSums(as.matrix(resREL.neg)) > 0.01)]
resREL.dom <- resREL.dom[,order(colSums(as.matrix(resREL.dom)), decreasing = T)[1:100]]

# Subset Resource for most influential
resREL.sc <- t(cor(pcoa.RES$points, resREL.neg))
resREL.sc <- as.matrix(resREL.sc)[,1:3]
resREL.sc <- resREL.sc[abs(resREL.sc[,1]) >= 0.7 | abs(resREL.sc[,2]) >= 0.7 |
                      abs(resREL.sc[,3]) >= 0.7, ]
resREL.inf <- resREL.neg[, which(colnames(resREL.neg) %in% rownames(resREL.sc))]
dim(resREL.inf)

## [1] 10 172

# Save Data
write.table(resREL.inf, "../data/ResREL.subset.txt", quote = F)

# Define Function
spear.matrix <- function(mat1 = "", mat2 = "", dim1 = "", dim2 = ""){
  mat.temp <- matrix(NA, dim1, dim2)
  row.names(mat.temp) <- colnames(mat1)
  colnames(mat.temp) <- colnames(mat2)
  mat.temp <- cor(mat1, mat2, method = "spearman")
  return(mat.temp)
}

dim1 <- dim(OTUsREL.dom)[2]
dim2 <- dim(resREL.inf)[2]

# Calculate Consumer Resource Correlations
spear.ConRes <- spear.matrix(mat1 = OTUsREL.dom, mat2 = resREL.inf, dim1, dim2)

# Isolate Relevant Interactions
spear.ConRes2 <- spear.ConRes
spear.ConRes2[which(spear.ConRes < 0.6 & spear.ConRes > -0.6)] <- 0
spear.ConRes3 <- spear.ConRes2

# Summary
str(spear.ConRes3)

## num [1:158, 1:172] 0 0 0 0 0 ...
## - attr(*, "dimnames")=List of 2
## ..$ : chr [1:158] "Otu00002" "Otu00003" "Otu00004" "Otu00005" ...
## ..$ : chr [1:172] "C1" "C3" "C8" "C10" ...

```

```

sum(spear.ConRes3 <= -0.7)

## [1] 779

sum(spear.ConRes3 >= 0.7)

## [1] 499

pos.cor.ConRes <- which(spear.ConRes3 >= 0.7)
neg.cor.ConRes <- which(spear.ConRes3 <= -0.7)

# Significance Test
sig.test.neg <- vector("list", 1000)
sig.test.pos <- vector("list", 1000)
for (i in 1:1000) {
  # Two IndepSwap Runs
  testA <- randomizeMatrix(as.matrix(OTUsREL.dom), null.model = "independentswap")
  testB <- randomizeMatrix(as.matrix(resREL.inf), null.model = "independentswap")
  # Co-Occurrence Analysis
  spear.ConRes.test <- spear.matrix(testA, testB, dim1, dim2)
  spear.ConRes2.test <- spear.ConRes.test
  spear.ConRes2.test[which(spear.ConRes.test <= 0.7 &
                           spear.ConRes.test >= -0.7)] <- 0
  spear.ConRes3.test <- as.matrix(spear.ConRes2.test)
  sig.test.neg[[i]] <- which(spear.ConRes3.test <= -0.7)
  sig.test.pos[[i]] <- which(spear.ConRes3.test >= 0.7)
}

# False Negatives
false.neg <- which((table(unlist(sig.test.neg)) / 1000) > 0.05)
false.pos <- which((table(unlist(sig.test.pos)) / 1000) > 0.05)
weak.neg <- which((table(unlist(sig.test.neg)) / 1000) > 0.05 &
                  (table(unlist(sig.test.neg)) / 1000) < 0.1)
weak.pos <- which((table(unlist(sig.test.pos)) / 1000) > 0.05 &
                  (table(unlist(sig.test.pos)) / 1000) < 0.1)

length(setdiff(neg.cor.ConRes, c(false.neg, weak.neg)))

## [1] 768

length(setdiff(pos.cor.ConRes, c(false.pos, weak.neg)))

## [1] 496

sum(length(setdiff(neg.cor.ConRes, c(false.neg, weak.neg))),
     length(setdiff(pos.cor.ConRes, c(false.pos, weak.neg)))) / 10000

## [1] 0.1264

# Remove Non Significant Interactions and Define Weak Interactions
spear.ConRes4 <- spear.ConRes3
bad.ints.neg <- sort(false.neg)
bad.ints.pos <- sort(false.pos)
for (i in 1:length(bad.ints.neg)){
  if (spear.ConRes4[bad.ints.neg[i]] < 0){
    spear.ConRes4[bad.ints.neg[i]] <- 0
  } else {}
}

```

```

}
for (i in 1:length(bad.ints.pos)){
  if (spear.ConRes4[bad.ints.pos[i]] > 0){
    spear.ConRes4[bad.ints.pos[i]] <- 0
  } else {}
}
weak.ints.neg <- sort(weak.neg)
weak.ints.pos <- sort(weak.pos)
for (i in 1:length(weak.ints.neg)){
  if (spear.ConRes4[weak.ints.neg[i]] < 0){
    spear.ConRes4[weak.ints.neg[i]] <- 0
  } else {}
}
for (i in 1:length(weak.ints.pos)){
  if (spear.ConRes4[weak.ints.pos[i]] > 0){
    spear.ConRes4[weak.ints.pos[i]] <- 0
  } else {}
}

# Remove Zero Sum Col and Rows
spear.ConRes5 <- spear.ConRes4[which(apply(spear.ConRes4, 1, min) < 0),
                                which(apply(spear.ConRes4, 2, min) < 0)]

# Summary
str(spear.ConRes5)

## num [1:149, 1:165] 0 0 0 0 0 ...
## - attr(*, "dimnames")=List of 2
## ..$ : chr [1:149] "Otu00002" "Otu00003" "Otu00004" "Otu00005" ...
## ..$ : chr [1:165] "C1" "C3" "C8" "C10" ...

dim(spear.ConRes5)

## [1] 149 165

sum(spear.ConRes5 < -0.7)

## [1] 768

sum(spear.ConRes5 > 0.7)

## [1] 477

percent.total <- (sum(spear.ConRes5 <= -0.7) + sum(spear.ConRes5 >= 0.7)) /
  (dim(spear.ConRes5)[1] * dim(spear.ConRes5)[2])
pos.cor.ConRes <- which(spear.ConRes5 >= 0.7)
neg.cor.ConRes <- which(spear.ConRes5 <= -0.7)
sum(colSums(spear.ConRes5) != 0) / dim(spear.ConRes)[2]

## [1] 0.9593023

sum(rowSums(spear.ConRes5) != 0) / dim(spear.ConRes)[1]

## [1] 0.943038

sum(pos.cor.ConRes != 0)

## [1] 477

```



```
sum(neg.cor.ConRes != 0)
```

```
## [1] 768
```

Resource Generalists

```
ConRes.matrix <- as.matrix(spear.ConRes5)
re.gens <- rownames(ConRes.matrix)[rowSums(ConRes.matrix <= -0.7) >= 4]
re.gen.tax <- OTU.tax[which(OTU.tax$OTU %in% re.gens), ]
table(re.gen.tax$Order)
```

```
##
##          Actinomycetales Armatimonadetes_gp5_unclassified
##                      7                                1
##      Bacteria_unclassified      Burkholderiales
##                      2                                2
##          Caulobacterales      Chromatiales
##                      3                                1
##          Desulfobacterales      Flavobacteriales
##                      2                                2
##          Limisphaera      Methylococcales
##                      1                                1
##          Myxococcales      Neisseriales
##                      3                                1
##          Planctomycetales      Pseudomonadales
##                      10                               1
##          Rhizobiales      Rhodocyclales
##                      2                                2
##          Rhodospirillales      Rickettsiales
##                      4                                1
##      Spartobacteria_unclassified      Sphingobacteriales
##                      1                                3
##          Sphingomonadales      Tepidisphaerales
##                      4                                2
##          Terrimicrobium      Verrucomicrobiales
##                      2                                8
##          Xanthomonadales
##                      1
```

```
re.spec <- rownames(ConRes.matrix)[rowSums(ConRes.matrix <= -0.7) <= 2]
re.spe.tax <- OTU.tax[which(OTU.tax$OTU %in% re.spec), ]
table(re.gen.tax$Order)
```

```
##
##          Actinomycetales Armatimonadetes_gp5_unclassified
##                      7                                1
##      Bacteria_unclassified      Burkholderiales
##                      2                                2
##          Caulobacterales      Chromatiales
##                      3                                1
##          Desulfobacterales      Flavobacteriales
##                      2                                2
##          Limisphaera      Methylococcales
```

##	1	1
##	Myxococcales	Neisseriales
##	3	1
##	Planctomycetales	Pseudomonadales
##	10	1
##	Rhizobiales	Rhodocyclales
##	2	2
##	Rhodospirillales	Rickettsiales
##	4	1
##	Spartobacteria_unclassified	Sphingobacteriales
##	1	3
##	Sphingomonadales	Tepidisphaerales
##	4	2
##	Terrimicrobium	Verrucomicrobiales
##	2	8
##	Xanthomonadales	
##	1	

Figure 4: Generalists Plot

```
png(filename="../figures/Figure4.png",
      width = 1000, height = 1600, res = 96*2, bg = "white")
par(opar)

layout(matrix(1:2, nrow = 2, byrow = F))
par(mar = c(0.5, 1, 1, 1) + 0.1, oma = c(5, 6, 0, 0) + 0.1)

# Spatial Generalists
#Organize Data
per.sp.gens <- rowSums(OTUsREL[, c(sp.gens)])
all.equal(row.names(dat), gsub("2012_RNA", "", names(per.sp.gens)))

## [1] TRUE

# Stats & Prediction Frames
mod1 <- lm(per.sp.gens ~ DOC.t, data = dat)
mod1.p <- round(summary(mod1)$coefficients[2,4], 3)
pred.frame1 <- data.frame(DOC.t = seq(-2, 2, 0.1))

# Initiate Plot
plot(per.sp.gens ~ dat$DOC.t, type = "n",
      xlab = "", ylab = "", xlim = c(-2, 2), ylim = c(0.45, 0.9), axes = F,
      pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)

# Add Regression Model
add.hull(model = mod1, pred.frame = pred.frame1)
matlines(pred.frame1, predict(mod1, interval = "c", newdata=pred.frame1),
          lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(per.sp.gens ~ dat$DOC.t,
        pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
legend("bottomleft", legend = bquote(italic(P) == .(mod1.p)),
        bty = "n", cex = 1.25, inset = c(-0.05, 0.01))
```

```

# Axes and Labels
#mtext("[DOC] (Transformed)", side = 1, line = 3, cex = 1.5)
mtext("Spatial Generalists\n(Proportion)", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = F, cex.axis = 1.5)
axis(1, lwd = 2, tck = -0.02, labels = F)
axis(2, lwd = 2, labels = T, las = 1, at = c(seq(0.1, 0.9, 0.2)), cex.axis = 1.5)
axis(3, lwd = 2, tck = -0.02, labels = F)
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0.1, 0.9, 0.2)))
axis(1, lwd = 2, tck = 0.02, labels = F)
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0.1, 0.9, 0.2)))
axis(3, lwd = 2, tck = 0.02, labels = F)
axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0.1, 0.9, 0.2)))
box(lwd = 2)
abline(h = 0.5, lty = 3, lwd = 1, col = "gray50")

# Resource Generalists
#Organize Data
per.re.gens <- rowSums(OTUsREL[, c(re.gens)])
all.equal(row.names(dat), gsub("2012_RNA", "", names(per.re.gens)))

## [1] TRUE

# Stats & Prediction Frames
mod2 <- lm(per.re.gens ~ DOC.t, data = dat)
mod2.p <- round(summary(mod2)$coefficients[2,4], 3)
pred.frame1 <- data.frame(DOC.t = seq(-2, 2, 0.1))

# Initiate Plot
plot(per.re.gens ~ dat$DOC.t, # type = "n",
     xlab = "", ylab = "", xlim = c(-2, 2), ylim = c(0, 0.6), axes = F,
     pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)

# Add Regression Model
add.hull(model = mod2, pred.frame = pred.frame1)
matlines(pred.frame1, predict(mod2, interval = "c", newdata=pred.frame1),
         lty=c(2,3,3), lwd=c(4,2,2), col="black")
points(per.re.gens ~ dat$DOC.t,
       pch = 22, col = "black", bg = "gray", cex = 2, lwd = 2)
legend("bottomleft", legend = bquote(italic(P) == .(mod2.p)),
      bty = "n", cex = 1.25, inset = c(-0.05, 0.01))

# Axes and Labels
mtext("[DOC] (Transformed)", side = 1, line = 3, cex = 1.5)
mtext("Resource Generalists\n(Proportion)", side = 2, line = 3.5, cex = 1.5)
axis(1, lwd = 2, labels = T, cex.axis = 1.5)
axis(1, lwd = 2, tck = -0.02, labels = F)
axis(2, lwd = 2, labels = T, las = 1, at = c(seq(0.1, 0.9, 0.2)), cex.axis = 1.5)
axis(3, lwd = 2, tck = -0.02, labels = F)
axis(4, lwd = 2, tck = -0.02, labels = F, at = c(seq(0.1, 0.9, 0.2)))
axis(1, lwd = 2, tck = 0.02, labels = F)
axis(2, lwd = 2, tck = 0.02, labels = F, at = c(seq(0.1, 0.9, 0.2)))
axis(3, lwd = 2, tck = 0.02, labels = F)

```

```

axis(4, lwd = 2, tck = 0.02, labels = F, at = c(seq(0.1, 0.9, 0.2)))
box(lwd = 2)
abline(h = 0.5, lty = 3, lwd = 1, col = "gray50")

dev.off() # this writes plot to folder

## pdf
## 2

graphics.off() # shuts down open devices

img <- readPNG("../figures/Figure4.png")
grid.raster(img)

```

Figure S5: Interaction Plot


```

png(filename="../figures/FigureS5.png",
      width = 2400, height = 2400, res = 96*2, bg = "white")
par(opar)
# Custome Color Palette
jet.colors <- colorRampPalette(c("#00007F", "blue", "#007FFF", "cyan",
                                "#7FFF7F", "yellow", "#FF7F00", "red",
                                "#7F0000"))
jet.colors.W <- colorRampPalette(c("#00007F", "blue", "#007FFF", "cyan",
                                "white", "white", "white", "white",
                                "yellow", "#FF7F00", "red", "#7F0000"))
ConRes.matrix <- as.matrix(spear.ConRes5)
rownames(ConRes.matrix) <- gsub("Otu.0", "OTU", rownames(ConRes.matrix))
res.order <- order(colSums(abs(ConRes.matrix) >= 0.5), decreasing = T)
cons.order <- order(rowSums(abs(ConRes.matrix) >= 0.5), decreasing = T)
heatmap.2(ConRes.matrix[cons.order, res.order],
          col = jet.colors.W, Rowv = F, Colv = F,
          dendrogram = "none", na.rm = F, na.color = "white", trace = "none",
          density.info = "none", key.xlab = "Interaction", key.title = "",
          key.par=list(cex = 1, cex.lab = 1.5, mar = c(4, 4, 4, 4)),
          cexCol = 0.5, cexRow = 0.5, main = "",
          lhei = c(1, 5), lwid = c(1.5, 4))
mtext("Resource Availability", side = 3, line = 7, cex = 2, adj = 0.60)
#mtext("Available", side = 3, line = 0.8, cex = 1, adj = 0.2, padj = 1)
#mtext("Restrictive", side = 3, line = 0.8, cex = 1, adj = 1, padj = 1)
mtext("Consumer Strategy", side = 2, line = -3, cex = 2, adj = 0.325)
#mtext("Generalist", side = 2, line = -5, cex = 1, adj = 1, las = 1, at = 0.90)
#mtext("Specialist", side = 2, line = -5, cex = 1, adj = 1, las = 1, at = -0.12, xpd = T)
#arrows(x0 = 0.33, y0 = 1.015, x1 = 0.83, y1 = 1.015, length = 0.1, angle = 45, lwd = 3, xpd = T)
#arrows(x0 = 0.1, y0 = 0.85, x1 = 0.1, y1 = -0.08, length = 0.1, angle = 45, lwd = 3, xpd = T)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices
# ``

```

```
# ``{r fig.width=4, fig.height=4,echo=FALSE,fig.cap="Interaction Heatmap"}
```



```
img <- readPNG("../figures/FigureS5.png")
grid.raster(img)
```

Figure S6: Example Responders

```
png(filename="../figures/FigureS6.png",
     width = 1600, height = 900, res = 96*2)
par(opar)

# Example Taxa
abundancesR <- OTUsREL.dom
colnames(abundancesR) <- gsub("Otu.0", "OTU", colnames(abundancesR))
examples <- ConRes.matrix[cons.order, res.order]
otu.spread <- which((log10(apply(abundancesR, 2, max)) -
                      log10(apply(abundancesR, 2, min))) > 2)
#examples[which(row.names(examples) %in% names(otu.spread)), ]

# Set Plot Parameters
layout(matrix(c(1:2), 1, 2))
par(mar = c(1, 2, 0, 0) + 0.5, oma = c(4, 3, 0.5, 0.5))

# Negative Example
OTU.neg <- abundancesR[, which(colnames(abundancesR) == "OTU024")]
DOM.neg <- resREL.inf[, which(colnames(resREL.inf) == "C52")]
plot(OTU.neg * 100, DOM.neg * 1000, pch = 22, bg = "gray", cex = 2, lwd = 2,
     xlim = c(0, 3.5), ylim = c(0.8, 3.5), las = 1, cex.lab = 1.5,
     xlab = "", ylab = "", axes = F)
cor(OTU.neg, DOM.neg, method = "spearman")
lines(stats::lowess(DOM.neg * 1000 ~ OTU.neg * 100), lwd = 4, lty = 2)
axis(side=1, lwd.ticks = 2, tck=-0.04, labels = T, cex.axis = 0.8, las = 1)
axis(side=1, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
axis(side=2, lwd.ticks = 2, tck=0.01, labels = T, cex.axis = 0.8, las = 1)
axis(side=2, lwd.ticks = 2, tck=-0.04, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
box(lwd = 2)

# Positive Example
# examples[which(row.names(examples) %in% names(otu.spread)), which(colnames(examples) == "C789")]
OTU.pos <- abundancesR[, which(colnames(abundancesR) == "OTU070")]
DOM.pos <- resREL.inf[, which(colnames(resREL.inf) == "C789")]
plot(OTU.pos * 100, DOM.pos * 1000, pch = 22, bg = "gray", cex = 2, lwd = 2,
     xlim = c(0, 1.8), ylim = c(0, 1.15), las = 1, cex.lab = 1.5,
     xlab = "", ylab = "", axes = F)
cor(OTU.pos, DOM.pos, method = "spearman")
lines(stats::lowess(DOM.pos * 1000 ~ OTU.pos * 100), lwd = 4, lty = 2)
axis(side=1, lwd.ticks = 2, tck=-0.04, labels = T, cex.axis = 0.8, las = 1)
axis(side=1, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
```

```

axis(side=2, lwd.ticks = 2, tck=0.01, labels = T, cex.axis = 0.8, las = 1)
axis(side=2, lwd.ticks = 2, tck=-0.04, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
box(lwd = 2)

mtext("Species Abundance (%)", 1, line = 2, cex = 1.25, outer = T)
mtext("Resource Abundance (\u2030)", 2, line = 1, cex = 1.25, outer = T)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices

img <- readPNG("../figures/FigureS6.png")
grid.raster(img)

```

Who are the Generalists and Specialists

```

# length(specialists)
# length(generalists)
#
# generalists
# OTU.tax[,1] <- gsub("Otu000", "OTU", OTU.tax[,1])
# Gen.Tax <- OTU.tax[which(OTU.tax[,1] %in% generalists),]
# Spe.Tax <- OTU.tax[which(OTU.tax[,1] %in% specialists),]
#
# Gen.Tax.Class <- Gen.Tax$Class
# Spe.Tax.Class <- Spe.Tax$Class
# Gen.Tax.Gen <- Gen.Tax$Genus
# Spe.Tax.Gen <- Spe.Tax$Genus
#
# unique(Gen.Tax.Gen)
# unique(Spe.Tax.Gen)
#
# table(Gen.Tax.Gen)
# table(Spe.Tax.Gen)
#
# setdiff(unique(Gen.Tax.Gen), unique(Spe.Tax.Gen))
# setdiff(unique(Spe.Tax.Gen), unique(Gen.Tax.Gen))
# intersect(unique(Gen.Tax.Gen), unique(Spe.Tax.Gen))

```

Resource Generalists

```

# per.gens <- rowSums(OTUsREL[, c(generalists)])
# all.equal(row.names(dat), gsub("2012_RNA", "", names(per.gens)))
# plot(per.gens ~ dat$DOC.t)
# abline(h = 0.5)
#
# per.spes <- rowSums(OTUsREL[, c(specialists)])

```

```

# all.equal(row.names(dat), gsub("2012_RNA", "", names(per.spes)))
# plot(per.spes ~ dat$DOC.t)
#
# length(generalists)
#
# abundancesR <- OTUsREL
# colnames(abundancesR) <- gsub("Otu.0", "OTU", colnames(abundancesR))
# rownames(abundancesR) <- gsub("2012_RNA", "", rownames(abundancesR))
#
# spec.matrix <- matrix(NA, nrow = 10, ncol = 6)
# colnames(spec.matrix) <- c("Total.Rel.Gen", "Active.Rel.Gen", "Total.Num.Gen",
# "Total.Rel.Spe", "Active.Rel.Spe", "Total.Num.Spe")
# rownames(spec.matrix) <- rownames(abundancesD)
#
# for (i in 1:(dim(spec.matrix)[1])){
#   temp.gensT <- abundancesD[i, colnames(abundancesD) %in% generalists]
#   temp.gensA <- abundancesR[i, colnames(abundancesR) %in% generalists]
#   temp.specT <- abundancesD[i, colnames(abundancesD) %in% specialists]
#   temp.specA <- abundancesR[i, colnames(abundancesR) %in% specialists]
#   spec.matrix[i,1] <- round(sum(temp.gensT), 3)
#   spec.matrix[i,2] <- round(sum(temp.gensA), 3)
#   spec.matrix[i,3] <- sum(temp.gensT > 0)
#   spec.matrix[i,4] <- round(sum(temp.specT), 3)
#   spec.matrix[i,5] <- round(sum(temp.specA), 3)
#   spec.matrix[i,6] <- sum(temp.specA > 0)
# }
#
#
# t.test(spec.matrix[, 2], spec.matrix[,4], var.equal = T)
#

```

OLD STUFF

Generalist:Specialists Ratio Plot

```

png(filename="../figures/Figure4_old.png",
     width = 1600, height = 1600, res = 96*2)
par(opar)
layout(matrix(c(1,2), 2, 1))
par(mar = c(5, 5, 0, 0) + 0.5, oma = c(0.5, 1, 1, 1))

labs <- c("Ann", "Canyon", "Howe", "Ives", "Lily", "Mountain", "Pony", "Rush",
          "Second\nPine", "Upper\nPine")

# Initiate Plot
plot(spec.matrix[,2], type = "n",
     xlim = c(0.75, 10.25), ylim = c(0, 0.8),
     xaxt="n", yaxt="n", xlab = "", ylab = "")
points(seq(0.9, 9.9, 1), spec.matrix[,2], pch = 22, cex = 2,
       bg = "gray80", lwd = 2)

```

```

#points(seq(1.1, 10.1, 1), spec.matrix[,2], pch = 24, cex = 2,
#       bg = "cornflowerblue", lwd = 2)
points(seq(0.9, 9.9, 1), spec.matrix[,5], pch = 24, cex = 2,
       bg = "gray80", lwd = 2)
#points(seq(1.1, 10.1, 1), spec.matrix[,5], pch = 24, cex = 2,
#       bg = "wheat3", lwd = 2)

abline(h = 0.5, lwd = 2, lty = 3)
text(0.85, 0.45, "50%", cex = 1.5)
axis(side=1, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1, at = 1:10)
axis(side=1, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1, at = 1:10)
axis(side=2, lwd.ticks = 2, labels = T, cex.axis = 1.2, las = 1)
axis(side=2, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1, at = 1:10)
axis(side=3, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1, at = 1:10)
axis(side=4, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck=0.01, labels = F, cex.axis = 1)

mtext(side = 1, text = labs, line = 1, at = seq(1:10), padj = 0.5, cex = 0.8)
mtext(side = 1, text = "Lake", line = 3, cex = 1.5)
mtext(side = 2, "Proportion of Community", line = 3.5, cex = 1.5)

box(lwd = 2)

# Add Legend
#par(mar = c(0, 0, 0, 0) )
#plot.new()

legend("topright", legend = c("Generalists", "Specialists"),
      pch = c(22, 24), pt.lwd = 2,
      pt.bg = "gray80",
      bty = "n", pt.cex = 1.25, cex = 1, ncol = 2, y.intersp = 1.5)

generalism <- matrix(NA, 10, 10)
colnames(generalism) <- c(1:10)
rownames(generalism) <- rownames(abundancesR)
for (j in c(1:9)){
  for (i in 1:dim(generalism)[1]){
    generalism.temp <- rownames(ConRes.matrix)[rowSums(ConRes.matrix < -0.7) <= j]
    generalism.temp.2 <- abundancesR[i, colnames(abundancesR) %in% generalism.temp]
    generalism[i,j] <- round(sum(generalism.temp.2), 3)
  }
}
for (i in 1:dim(generalism)[1]){
  generalism.temp <- rownames(ConRes.matrix)[rowSums(ConRes.matrix < -0.7) <= 30]
  generalism.temp.2 <- abundancesR[i, colnames(abundancesR) %in% generalism.temp]
  generalism[i,10] <- round(sum(generalism.temp.2), 3)
}

plot(generalism[1,], type = 'n', las = 1, axes = F,
     xlim = c(0.5,10.5), ylim = c(0,0.9),
     ylab = "",

```



```

      xlab = "")
for (i in 1:10){
  points(generalism[i, ], pch = 22, bg = "gray", lwd = 2, cex = 1.5)
}

abline(v = 2.5, lty = 2, lwd = 2)
abline(v = 6.5, lty = 2, lwd = 2)
abline(h = 0.5, lwd = 2, lty = 3)
abline(h = 0.5, lwd = 2, lty = 3)

text(2.35, 0.85, "*", cex = 2)
text(6.5, 0.85, "**", cex = 2)
text(0.6, 0.55, "50%", cex = 1.5)

axis(side=1, lwd.ticks = 2, tck=-0.04, labels = c("2", "4", "6", "8", "10+"),
      at = c(seq(2,10,2)), cex.axis = 1, las = 1)
axis(side=2, lwd.ticks = 2, tck=-0.04, labels = T, cex.axis = 1, las = 1)

axis(side=1, lwd.ticks = 2, tck= 0.01, labels = F, cex.axis = 1)
axis(side=2, lwd.ticks = 2, tck= 0.01, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=3, lwd.ticks = 2, tck= 0.01, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck=-0.02, labels = F, cex.axis = 1)
axis(side=4, lwd.ticks = 2, tck= 0.01, labels = F, cex.axis = 1)

mtext(side = 1, "Number of Resources", cex = 1.5, line = 3)
mtext(side = 2, "Cumulative Proportion", cex = 1.5, line = 3.5)

box(lwd = 2)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices
#```

#```{r fig.width=4, fig.height=4,echo=FALSE,fig.cap="Interaction Heatmap"}
img <- readPNG("../figures/Figure4_old.png")
grid.raster(img)

```

Feature Selection

```

# Old Method (correlations)

library(randomForest)

# Random Forest Supervised Learning
resREL.neg
res.rf <- randomForest(lake.env$DOC ~ ., data = res.neg, importance = T, proximity = T)

# Unsupervised Random Forest
res.rf <- randomForest(res.neg, importance = T, proximity = T, ntree = 1000)

```

```

print(res.rf)
round(importance(res.rf, scale = F), 6)

varImpPlot(res.rf)

plot(res.rf$importance)


cor.mat <- cor(resREL.neg)
highlyCor <- caret::findCorrelation(cor.mat, cutoff = 0.95, names = F)
highlyCor
highlyCor.names <- caret::findCorrelation(cor.mat, cutoff = 0.95, names = T)
highlyCor.names

# You'd use the largest ion for each compound cluster as a proxy for size, and short retention time = m

hist((neg.meta$Rt), breaks = 50)
hist((neg.meta$Rt[-c(highlyCor)]), breaks = 50)

hist(log10(neg.meta$mz.max), breaks = 50)
hist(log10(neg.meta$mz.max[-c(highlyCor)]), breaks = 50)

cor.mat[6,]

heatmap(as.matrix(resREL.neg.log),
        distfun = function(x) vegdist(x, method = "bray"))

cor.mat <- cor(resREL.neg.log)
highlyCor <- caret::findCorrelation(cor.mat, cutoff = 0.95, names = F)
highlyCor

cor.mat[highlyCor, ]

heatmap(as.matrix(resREL.neg.log)[, -c(highlyCor)],
        distfun = function(x) vegdist(x, method = "bray"))

heatmap(as.matrix(resREL.neg.log)[, -c(highlyCor)])

res.Cluster <- kmeans(t(resREL.neg.log), 4)

library("NbClust")
nc <- NbClust(t(resREL.neg), min.nc = 10, max.nc = 50, method = "kmeans")
table(nc$Best.nc[1,])

fit.km <- kmeans(t(resREL.neg.log), 10, nstart = 25)

```

DOM Ordination by Molecule

```
png(filename="../figures/Supp_DOM.png",
      width = 900, height = 900, res = 96*2, bg = "white")
par(opar)

# Define Plot Parameters
layout(matrix(1))
par(mar = c(5, 5, 1, 1) + 0.5)

# Calculate DOM distance
res.Cor <- cor(resREL.neg)
res.Dis <- 1 - res.Cor

# Cluster Groups
res.Cluster <- kmeans(t(resREL.neg.log), 10)

res.pcoa <- cmdscale(res.Dis, k = 2, eig = T)
explainvar1 <- round(res.pcoa$eig[1] / sum(res.pcoa$eig), 3) * 100
explainvar2 <- round(res.pcoa$eig[2] / sum(res.pcoa$eig), 3) * 100

plot(res.pcoa$points[, 1], res.pcoa$points[, 2],
      xlim = c(-1, 1.2), ylim = c(-1.5, 1),
      xlab = paste("PCoA 1 (", explainvar1.res, "%)", sep = ""),
      ylab = paste("PCoA 2 (", explainvar2.res, "%)", sep = ""),
      xaxt = "n", yaxt = "n",
      pch = 17, cex = 2.0, type = "n", cex.lab = 1.5, cex.axis = 1,
      axes = FALSE)

# Add Axes
axis(side = 1, labels = T, lwd.ticks = 2, cex.axis = 1, las = 1)
axis(side = 2, labels = T, lwd.ticks = 2, cex.axis = 1, las = 1)
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=-0.02)
axis(side = 1, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 2, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 3, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
axis(side = 4, labels = F, lwd.ticks = 2, cex.axis = 1, las = 1, tck=0.02)
abline(h = 0, v = 0, lty = 3)
box(lwd = 2)

# Add Points
points(res.pcoa$points[, 1], res.pcoa$points[, 2], pch = 22,
       cex = 1, bg = "gray", lwd = 2)

#points(res.pcoa$points[, 1], res.pcoa$points[, 2], pch = 22,
#       cex = 1, bg = res.Cluster$cluster, lwd = 2)

#ordihull(res.pcoa, res.Cluster$cluster, lwd = 2, lty = 2, col = "red")

# Add Vectors
all.equal(neg.meta$Name, colnames(res.Dis))
res.fit <- envfit(res.pcoa, neg.meta[, 2:3])
```

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con.arrows <- res.fit[[1]]$arrows * 1.1
arrows(0, 0, con.arrows[, 1], con.arrows[, 2],
      col = "red", length = 0.1, lwd = 3)
text(con.arrows[, 1] * 1.2, con.arrows[, 2] * 1.2,
      rownames(con.arrows), col = "black", cex = 1)

dev.off() # this writes plot to folder
graphics.off() # shuts down open devices

img <- readPNG("../figures/Supp_DOM.png")
grid.raster(img)

```

Positive Ionization of Resources

```

resource.pos <- "../data/SpecAbundAvePos.csv"

res.pos.in <- read.csv(resource.pos, header=T, row.names=1)
rownames(res.pos.in) <- c("Ann", "blank", "CanyonChemo", "Canyon", "CanyonHypo",
                          "CanyonI", "CanyonII", "CanyonIII", "CanyonIV", "Howe",
                          "Ives", "Jordan", "Lily", "Mountain", "Pony", "Rush",
                          "SecondPine", "UpperPine")

blank.pos <- unlist(res.pos.in["blank", ])

res.hmwf.pos <- res.pos.in[-c(which(rownames(res.pos.in) %in%
                                c("blank", "CanyonChemo",
                                "CanyonHypo", "CanyonI", "CanyonII",
                                "CanyonIII", "CanyonIV", "Jordan"))), ]

for (i in 1:dim(res.hmwf.pos)[1]){
  res.hmwf.pos[i, ] <- res.hmwf.pos[i, ] - blank.pos * 1.1
}

res.hmwf.pos[res.hmwf.pos < 50] <- 0
res.hmwf.pos <- res.hmwf.pos[, colSums(res.hmwf.pos) > 0]
res.pos <- res.hmwf.pos[order(rownames(res.hmwf.pos)), ]

# Sequencing Coverage
coverage <- data.frame(Neg = rowSums(res.neg), Pos = rowSums(res.pos))
resources <- data.frame(Neg = dim(res.neg)[2], Pos = dim(res.pos)[2])

# Calculate Relative Abundance
resREL.pos <- res.pos
for(i in 1:dim(res.pos)[1]){
  resREL.pos[i,] <- res.pos[i,]/sum(res.pos[i,])
}

# Log Transform Relative Resource Abundance
resREL.pos.log <- suppressWarnings(decostand(resREL.pos, method="log"))

```

```

# Load Meta Data
x <- scan("../data/data_20151106/pos/spectra/MarioAquaticPos.msplib", what="", sep="\n")
ind.n <- grep("Name:", x)
pos.meta <- data.frame(matrix(NA, nrow = length(ind.n), ncol = 3))
colnames(pos.meta) <- c("Name", "Rt", "mz.max")

for (i in 1:length(ind.n)){
  pos.meta[i, 1] <- unlist(strsplit(x[ind.n[i]], ": "))[2]
  temp.comment <- unlist(strsplit(x[ind.n[i] + 12], " "))
  pos.meta[i, 2] <- as.numeric(gsub("Rt=", "",
                                   temp.comment[grepl("Rt=", temp.comment)]))
  temp.peaks <- unlist(strsplit(x[ind.n[i] + 14], " "))
  temp.mz <- as.numeric(temp.peaks[seq(1, length(temp.peaks), by = 2)])
  temp.intensity <- as.numeric(temp.peaks[seq(2, length(temp.peaks), by = 2)])
  pos.meta[i, 3] <- max(temp.mz)
}

pos.meta <- pos.meta[match(colnames(resREL.pos), pos.meta$Name), ]

```

DOM Scores with positive ionization

```

# Calculate Bray-Curtis
hmf.bray.res.pos <- vegdist(resREL.pos, method = "bray")
# hmf.bray.res <- vegdist(resREL.log, method = "bray")

dis.mean <- mean(hmf.bray.res.pos)

# Principal Coordinates Analysis
pcoa.res.pos <- cmdscale(hmf.bray.res.pos, eig = TRUE, k = 3)
explainvar1.res <- round(pcoa.res.pos$eig[1] / sum(pcoa.res.pos$eig), 3) * 100
explainvar2.res <- round(pcoa.res.pos$eig[2] / sum(pcoa.res.pos$eig), 3) * 100
explainvar3.res <- round(pcoa.res.pos$eig[3] / sum(pcoa.res.pos$eig), 3) * 100
sum.eig.res <- sum(explainvar1.res, explainvar2.res, explainvar3.res)

# DOM Scores
dom.scores.pos <- t(cor(pcoa.res.pos$points, resREL.pos, method = "spearman"))
dom.scores.pos <- as.matrix(dom.scores.pos)[,1:3]
dom.scores.pos <- dom.scores.pos[abs(dom.scores.pos[,1]) > 0.7 |
                                abs(dom.scores.pos[,2]) > 0.7 |
                                abs(dom.scores.pos[,3]) > 0.7, ]

dom.scores.pos <- as.data.frame(dom.scores.pos)
dom.scores.pos[, 4:5] <- NA
colnames(dom.scores.pos) <- c("Axis_1", "Axis_2", "Axis_3", "Rt", "mz")

for (i in 1:dim(dom.scores.pos)[1]){
  temp <- which(pos.meta$Name == rownames(dom.scores.pos)[i])
  dom.scores.pos[i, 4] <- as.numeric(pos.meta$Rt[temp[1]])
  dom.scores.pos[i, 5] <- as.numeric(pos.meta$mz.max[temp[1]])
}

write.table(round(dom.scores.pos, 3), file = "../data/HMWF_DOM_POS.txt",
            sep = "\t", quote = F, col.names = NA)

```

