Comparative Analysis of Feeding Mode and Microbiome Composition in Poison Frog Tadpoles

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Last updated on 11 July, 2022

Project Description: Fill out

Initial Setup

#Import Files ## Environmental Data

Bacterial Data

Simple Hypothesis Testing - R. imitator

```
# R. imitator field egg-fed vs. field detritus-fed

otus.design.imitator <- subset(otus.design, Species == "imitator")
dim(otus.design.imitator)
```

```
## [1]   11 8277
```

```
design.final.i <- otus.design.imitator[,c(1:4)] # seaparate design file
otu.i <- otus.design.imitator[,-c(1:4)] # separate otu file

# OTU table - remove otus w/ < 2 occurrences across all sites
otu_removal <- otu.i[, which(colSums(otu.i) >= 2)]
dim(otu_removal) # 4696 OTUs
```

```
## [1]   11 4696
```

```
otu.i <- otu.i[, which(colSums(otu.i) >= 2)]

# Make Relative Abundance Matrices
dataREL.i <- otu.i
for(i in 1:dim(otu.i)[1]){
  dataREL.i[i,] <- otu.i[i,]/sum(otu.i[i,])
}
```

```r
#PERMANOVA
new.data.i <-cbind(design.final.i,dataREL.i)
adonis = adonis(new.data.i[,-c(1:4)]~Diet, method = "bray", data = new.data.i, perm=1000)
```

```
## 'adonis' will be deprecated: use 'adonis2' instead
```

```
adonis
```

```
## $aov.tab
## Permutation: free
## Number of permutations: 1000
##
## Terms added sequentially (first to last)
##
##           Df SumsOfSqs MeanSqs F.Model     R2  Pr(>F)
## Diet       1    0.5298 0.52977  1.6685 0.1564 0.01698 *
## Residuals  9    2.8575 0.31750         0.8436
## Total     10    3.3873                 1.0000
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## $call
## adonis(formula = new.data.i[, -c(1:4)] ~ Diet, data = new.data.i,
##     permutations = 1000, method = "bray")
##
## $coefficients
##                  Otu0001     Otu0002     Otu0003     Otu0004    Otu0005
## (Intercept)   0.02992557  0.05036716  0.08069574  0.01961264 0.04908082
## Diet1        -0.01565968  0.02879378 -0.06204041 -0.01634792 0.02271554
##                  Otu0006     Otu0007     Otu0008     Otu0009    Otu0010
## (Intercept)   0.01834002 0.003407768  0.03051916  0.02443266 0.033203512
## Diet1        -0.01813349 0.001572961  0.02541797 -0.01131528 0.006250583
##                  Otu0011     Otu0012     Otu0013      Otu0014     Otu0015
## (Intercept)   0.01652553  0.01955613 0.015110076  0.007890291 0.003709338
## Diet1        -0.01486603  0.01706985 0.009220559 -0.007853684 0.003395269
##                  Otu0016     Otu0017    Otu0018    Otu0019      Otu0020
## (Intercept)  0.013846197  0.01013371 0.01021216 0.01054907 0.0088741121
## Diet1        0.003477551 -0.01012094 0.00844498 0.00481530 0.0009214268
##                  Otu0021     Otu0022     Otu0023      Otu0024      Otu0025
## (Intercept)  0.004076467 0.011807571 0.006058338  0.0074227633  0.008647467
## Diet1       -0.002682353 0.003613397 0.003609024 -0.0002619811 -0.008647467
##                  Otu0026     Otu0027     Otu0028     Otu0029     Otu0030
## (Intercept) 0.004348653 0.004892264 0.004325113 0.006682496 0.002146644
## Diet1       0.001546703 0.002229351 0.003302342 0.004177805 0.001716270
##                   Otu0031        Otu0033       Otu0034     Otu0035      Otu0036
## (Intercept)   0.0021998520   0.0067539977   0.007473507 0.006450788 2.509073e-04
## Diet1        -0.0005517294  -0.0008331689  -0.007279497 0.002298109 1.669953e-05
##                  Otu0037     Otu0038      Otu0039      Otu0040     Otu0041
## (Intercept) 2.759705e-05 0.003801785 0.0049878012 0.0017301628 0.008204648
## Diet1       2.759705e-05 0.003522790 0.0002247657 0.0007019919 0.008204648
##                 Otu0042       Otu0043      Otu0044       Otu0045       Otu0046
## (Intercept) 0.006018428  1.976499e-05 0.004601868  0.0007895172  0.002390795
## Diet1       0.001002584 -1.031337e-05 0.001873036 -0.0005154203 -0.001003250
```

```
##               Otu0047      Otu0048      Otu0049      Otu0050      Otu0051
## (Intercept)  9.694719e-05 0.003511129  0.004314042 0.004982492  0.004484613
## Diet1       -9.694719e-05 0.001500728 -0.004314042 0.001380873 -0.002715034
##               Otu0052      Otu0053      Otu0054      Otu0055      Otu0056
## (Intercept) 0.0011655073 6.517205e-05  0.003808826  0.004048462  0.0001955162
## Diet1       0.0009711242 -6.517205e-05 -0.003459117 -0.004048462 -0.0001955162
##               Otu0057      Otu0058      Otu0059      Otu0060      Otu0061
## (Intercept) 0.003486607 0.006657582 0.005142292  3.366777e-04  0.001960369
## Diet1       0.003109502 0.005970731 0.003302749 -6.302903e-05 -0.001065358
##               Otu0062      Otu0063      Otu0064      Otu0065      Otu0066
## (Intercept)  0.0031556596  1.828798e-05 0.004508092 0.002529305  0.0008916164
## Diet1       -0.0002252831 -1.828798e-05 0.004508092 0.001615060 -0.0008916164
##               Otu0067      Otu0068      Otu0070       Otu0071      Otu0072
## (Intercept) 0.002458756 0.004031983  0.0006085354 0.0006771464 0.002860535
## Diet1       0.002458756 0.003794801 -0.0001082425 0.0004304308 0.002197697
##               Otu0073      Otu0074       Otu0075       Otu0076      Otu0077
## (Intercept)  0.003205107  0.002002342 8.435791e-04  2.559262e-05 0.0020012634
## Diet1       -0.003205107 -0.001926932 5.938852e-05 -6.689389e-06 0.0003881412
##               Otu0078      Otu0079      Otu0080       Otu0082      Otu0083
## (Intercept)  0.0005712842 0.005392238  0.0027303383 0.0009450401  0.002857009
## Diet1       -0.0005712842 0.003806726 -0.0001323274 0.0005801764 -0.002621070
##               Otu0084       Otu0085       Otu0086      Otu0087      Otu0088
## (Intercept)  0.001162422  8.173412e-06  0.0001603588 0.0023851789  0.001932354
## Diet1       -0.001162422 -3.447603e-06 -0.0001310993 0.0001056179 -0.001932354
##               Otu0089       Otu0092      Otu0093      Otu0094      Otu0095
## (Intercept)  0.0001174913  0.0004276803 0.0002291311 0.00389431  0.002108562
## Diet1       -0.0001174913 -0.0004154781 0.0002167953 0.00389431 -0.000304194
##               Otu0096      Otu0097      Otu0098       Otu0099       Otu0100
## (Intercept)  0.001603320  0.001293034 0.0006864162  0.0001336417  1.087565e-05
## Diet1       -0.001435406 -0.001219820 0.0004788133 -0.0001336417 -1.087565e-05
##               Otu0101      Otu0102       Otu0103       Otu0105      Otu0106
## (Intercept)  0.002097216 0.003871366  0.0009284465 0.0009812654  0.002268727
## Diet1       -0.001865190 0.003694315 -0.0007284116 0.0008044519 -0.001583201
##               Otu0107       Otu0108       Otu0109      Otu0110      Otu0111
## (Intercept)  0.0020307527  0.002135053 0.001300493  0.002165971 0.001772661
## Diet1       -0.0009958006 -0.002135053 0.001293976 -0.001258756 0.001737897
##               Otu0112      Otu0113      Otu0114       Otu0115      Otu0116
## (Intercept) 0.001980551 0.003858918  0.00150004  0.0017811283 0.001606832
## Diet1       0.001980551 0.003853481 -0.00150004 -0.0009816535 0.001333973
##               Otu0117      Otu0118       Otu0119      Otu0120      Otu0121
## (Intercept)  0.001754731 1.037044e-04  0.001523127 0.0004659987 0.001871803
## Diet1       -0.001754731 5.245712e-05 -0.001267158 0.0004072645 0.001871803
##               Otu0122      Otu0124      Otu0125       Otu0126       Otu0127
## (Intercept) 0.0013921398 0.0008035793 1.607444e-04  0.0017186214  0.0013429433
## Diet1       0.0006069602 0.0007784260 5.261954e-05 -0.0005411809 -0.0009034431
##               Otu0128      Otu0130       Otu0131       Otu0132      Otu0133
## (Intercept) 1.069004e-03  0.001547493  0.0015025207  0.001482475  0.001287952
## Diet1       8.566484e-05 -0.001542768 -0.0004328859 -0.001273734 -0.001287952
##               Otu0134      Otu0135       Otu0136       Otu0137      Otu0138
## (Intercept) 0.0012220828  1.241786e-04  9.681689e-05 0.0008885207  0.0014603429
## Diet1       0.0009589878 -6.274313e-05 -9.681689e-05 0.0008734816 -0.0008837942
##               Otu0139      Otu0140       Otu0141       Otu0142      Otu0144
## (Intercept) 7.088713e-06 0.0009919542  0.0013200977  0.001629963  1.540243e-04
## Diet1       7.088713e-06 0.0008452781 -0.0001426687 -0.001629963 -5.116385e-05
```

```
##               Otu0145      Otu0146      Otu0148       Otu0149      Otu0150
## (Intercept) 0.002009593 0.0005452521 6.612715e-04  5.346188e-05 0.0004097216
## Diet1       0.002009593 0.0002387017 8.068049e-05 -2.329779e-05 0.0003679160
##              Otu0151      Otu0152      Otu0153     Otu0154      Otu0155
## (Intercept)  0.0004974055  0.0002589924 0.001131108 0.001330200 4.287831e-04
## Diet1       -0.0003143716 -0.0001369697 0.000672176 0.001185731 9.591424e-05
##              Otu0156      Otu0157      Otu0158      Otu0159      Otu0160
## (Intercept)  0.0010741451  0.0002378516 0.0002333083 0.0010807304  0.001170373
## Diet1        0.0001554553 -0.0002378516 0.0001605404 0.0001184346 -0.001082193
##              Otu0161      Otu0162      Otu0163      Otu0164      Otu0165
## (Intercept)  0.0012882997 0.0010356099 4.105782e-05  0.0011490419 0.0011529671
## Diet1       -0.0009701227 0.0008730712 2.872199e-05 -0.0004376781 0.0001280055
##              Otu0166       Otu0167      Otu0168       Otu0169     Otu0170
## (Intercept)  1.392209e-04 0.0008516533  1.132919e-03 0.001697755 0.001595362
## Diet1       -2.962272e-05 0.0005802667 -2.185501e-05 0.001697755 0.001053434
##              Otu0171       Otu0172       Otu0173       Otu0174
## (Intercept)  0.0003698062  0.0010881765  0.0002363794 0.0011139013
## Diet1       -0.0002849444 -0.0004004022 -0.0002363794 0.0006298471
##              Otu0175       Otu0177       Otu0178      Otu0179       Otu0180
## (Intercept)  0.0007426243  8.619449e-05 0.0009268606 0.0008328067  0.0010897519
## Diet1       -0.0007426243 -7.980945e-05 0.0008288755 0.0006657781 -0.0004843884
##              Otu0181       Otu0182       Otu0183       Otu0186
## (Intercept) 1.959165e-04  0.0010299469  0.0007146233  0.0010509622
## Diet1       8.159613e-05 -0.0008286264 -0.0004740313 -0.0007567348
##              Otu0187       Otu0188      Otu0189       Otu0190      Otu0191
## (Intercept)  0.0006965551 0.0002835485 6.455215e-04  0.0009307700 0.0009358155
## Diet1       -0.0004130066 0.0002835485 6.976676e-05 -0.0003024964 0.0007944234
##              Otu0192       Otu0193       Otu0194      Otu0195       Otu0196
## (Intercept)  1.998961e-05 0.0010897029  0.0009174301 0.002345258  0.0009704568
## Diet1       -1.998961e-05 0.0009298875 -0.0001446999 0.002345258 -0.0003371984
##              Otu0197      Otu0198      Otu0199      Otu0200      Otu0202
## (Intercept)  0.0007392479 0.0007640449 0.0006600818 0.0004556788 0.0007645051
## Diet1       -0.0007392479 0.0006319903 0.0000598518 0.0003862775 0.0003531476
##              Otu0203       Otu0204       Otu0205       Otu0206
## (Intercept) 0.0006812105  0.0009226661  0.0008408768  0.0008102362
## Diet1       0.0002453445 -0.0004842682 -0.0008408768 -0.0008102362
##              Otu0207       Otu0208      Otu0209      Otu0210       Otu0211
## (Intercept)  0.0009002330 0.0008993850 0.0007134722 0.0005136267  0.0009870536
## Diet1       -0.0006342373 0.0008194306 0.0002550331 0.0001427226 -0.0004619425
##              Otu0212      Otu0213      Otu0214       Otu0215        Otu0216
## (Intercept) 0.001351989 0.001389366  0.0002922006  7.268023e-04  0.0007923885
## Diet1       0.001351989 0.001290212 -0.0002922006 -4.162104e-06 -0.0003812432
##              Otu0217       Otu0218       Otu0219      Otu0220      Otu0221
## (Intercept)  1.053931e-04  0.0008172508 6.817013e-04 0.0001056262 0.0001037651
## Diet1       -9.319087e-05 -0.0003158477 8.408025e-06 0.0000487165 0.0001037651
##              Otu0222      Otu0223      Otu0224       Otu0225       Otu0226
## (Intercept) 1.508205e-05 1.409571e-04  0.0007534765  0.0001212405 0.0001342249
## Diet1       1.508205e-05 2.494537e-05 -0.0003703379 -0.0001212405 0.0001342249
##              Otu0227       Otu0228      Otu0230      Otu0231      Otu0232
## (Intercept)  0.0008366137 3.473407e-04 1.614460e-04 0.0005956084 0.0006273397
## Diet1       -0.0003983485 1.057646e-05 7.907312e-05 0.0005434708 0.0003232498
##              Otu0233       Otu0234       Otu0235      Otu0236      Otu0237
## (Intercept) 0.0010743166  1.119024e-04  9.297583e-05 0.0006494534 5.816895e-04
## Diet1       0.0005118077 -3.459631e-06 -9.297583e-05 0.0006211703 4.754465e-05
```

```
##               Otu0239       Otu0240       Otu0241      Otu0242     Otu0243
## (Intercept)  0.0006845853  0.0002287769 1.317806e-04  5.288701e-05 0.000208542
## Diet1       -0.0006845853 -0.0002287769 5.100189e-05 -5.288701e-05 0.000208542
##               Otu0244       Otu0245       Otu0246      Otu0247     Otu0248
## (Intercept)  0.000668224  0.0007143524  2.165789e-04 0.0006934031 1.164705e-04
## Diet1       -0.000668224 -0.0006371885 -3.720089e-05 0.0005371492 7.728766e-05
##               Otu0249       Otu0250       Otu0251      Otu0252     Otu0253
## (Intercept)  0.0004232194 0.0004392729 0.0003403850  6.100642e-05 3.016409e-05
## Diet1       -0.0003108705 0.0003703914 0.0002408895 -2.319995e-05 3.016409e-05
##               Otu0254       Otu0255       Otu0256       Otu0257
## (Intercept)  0.0006714075  0.0006886974  0.0003519116  4.393700e-05
## Diet1       -0.0004651902 -0.0006886974 -0.0003519116 -2.885495e-05
##               Otu0258       Otu0259       Otu0260       Otu0263       Otu0264
## (Intercept) 0.0002928530  0.0007128674  0.0001562249 0.0004131725  0.0001588932
## Diet1       0.0002261375 -0.0004739285 -0.0001562249 0.0002108936 -0.0001588932
##               Otu0266       Otu0267       Otu0268       Otu0269       Otu0270
## (Intercept) 0.0007227091 0.0004331397  0.0006209419 0.0005698598  0.0006340903
## Diet1       0.0004223000 0.0002415946 -0.0003751998 0.0001056560 -0.0006340903
##               Otu0271       Otu0272       Otu0274       Otu0275       Otu0276
## (Intercept)  0.0001801863 8.353405e-05 0.001245517  0.0005530915 0.0005209529
## Diet1       -0.0001165877 7.201222e-05 0.001168063 -0.0003856221 0.0004637405
##               Otu0277       Otu0278       Otu0279       Otu0280       Otu0284
## (Intercept)  0.0005167373  1.998961e-05 0.0004705378  0.0001477602  0.000430257
## Diet1       -0.0005167373 -1.998961e-05 0.0003857649 -0.0001241311 -0.000430257
##               Otu0285       Otu0286       Otu0287       Otu0288       Otu0289
## (Intercept) 0.0004045049  3.88061e-05 1.915513e-05 1.245705e-04  0.0006289145
## Diet1       0.0001322862 -3.88061e-05 1.915513e-05 6.833926e-05 -0.0006289145
##               Otu0290       Otu0291       Otu0293       Otu0294       Otu0295
## (Intercept) 0.0003282748  0.0005712404 5.599358e-05 4.715673e-05 0.0002365981
## Diet1       0.0003098025 -0.0004640624 4.797421e-05 4.715673e-05 0.0001981042
##               Otu0296       Otu0297       Otu0298       Otu0299       Otu0300
## (Intercept) 0.0003586702 4.418876e-06  0.0005593919 2.154041e-04  0.0005090012
## Diet1       0.0002343095 3.069325e-07 -0.0005593919 1.643895e-05 -0.0002026476
##               Otu0301       Otu0302       Otu0303       Otu0304       Otu0306
## (Intercept) 0.0003708407 0.0005677448  0.0002124535  0.0005134305  5.613562e-05
## Diet1       0.0003364736 0.0002569297 -0.0001699212 -0.0002782997 -5.613562e-05
##               Otu0307       Otu0308       Otu0309       Otu0310       Otu0311
## (Intercept) 0.0004352195 0.0007304063 2.262307e-05 0.0003692919 4.522363e-04
## Diet1       0.0001346852 0.0007096558 2.262307e-05 0.0002915940 7.687167e-05
##               Otu0312       Otu0314       Otu0315       Otu0316       Otu0317
## (Intercept)  0.0003865447  3.050901e-04  5.055536e-05 0.0001037193 0.0001566656
## Diet1       -0.0003865447 -9.788615e-05 -5.055536e-05 0.0001037193 0.0001087551
##               Otu0319       Otu0321       Otu0322       Otu0323       Otu0324
## (Intercept) 0.0008055756  3.249353e-04  0.0005170687 0.0003818119 0.0004261693
## Diet1       0.0006908502 -5.243283e-05 -0.0004044262 0.0002403497 0.0002383499
##               Otu0325       Otu0326       Otu0327       Otu0328       Otu0329
## (Intercept) 2.262307e-05  0.0004500041  0.0004570541  0.0005049560 1.637878e-05
## Diet1       2.262307e-05 -0.0004500041 -0.0004570541 -0.0003824638 8.154888e-06
##               Otu0330       Otu0332       Otu0333       Otu0334       Otu0335
## (Intercept) 2.614264e-04  8.715762e-06 5.532894e-04 0.0009193593  0.0004303480
## Diet1       6.270439e-05 -8.715762e-06 3.418442e-05 0.0008228139 -0.0002932996
##               Otu0336       Otu0337       Otu0338       Otu0339       Otu0340
## (Intercept)  0.0004973599 1.775769e-05 3.664198e-04  0.0003283367  0.0004464282
## Diet1       -0.0003320195 1.775769e-05 5.484221e-05 -0.0001930642 -0.0001262534
```

```
##               Otu0341       Otu0342       Otu0343       Otu0344       Otu0346
## (Intercept)  0.0005813564  0.000446099  2.023759e-05  0.0004369864 0.0003987905
## Diet1       -0.0005813564 -0.000446099 -2.023759e-05 -0.0004369864 0.0001970563
##               Otu0347       Otu0348       Otu0349       Otu0350       Otu0352
## (Intercept) 0.0004242623 3.110023e-05  0.0004539616  0.0004525671 0.0004389138
## Diet1       0.0004242623 1.887171e-05  0.0002911023 -0.0003427601 0.0004109793
##               Otu0353       Otu0354       Otu0355       Otu0356       Otu0357
## (Intercept)  0.0004399271 4.725809e-06 7.664086e-05  0.0004857763  0.0004273650
## Diet1       -0.0003569215 4.725809e-06 7.664086e-05 -0.0002967440 -0.0003291076
##               Otu0358       Otu0359       Otu0360       Otu0361       Otu0362
## (Intercept) 0.0001746260 4.156356e-05  0.0004686834 0.0004093600 0.0003698006
## Diet1       0.0001574921 3.585225e-05 -0.0003385754 0.0001432292 0.0001594899
##               Otu0364       Otu0365       Otu0366       Otu0367
## (Intercept)  0.0002875439  0.0004190383  0.0004139155  2.691009e-05
## Diet1       -0.0000265206 -0.0003485754 -0.0004139155 -2.691009e-05
##               Otu0368       Otu0369       Otu0370       Otu0371       Otu0372
## (Intercept)  8.019375e-06 2.302332e-04 0.0003603904 0.0003842955  0.0003498976
## Diet1       -8.019375e-06 9.005193e-05 0.0003439427 0.0001784664 -0.0003498976
##               Otu0373       Otu0374       Otu0375       Otu0376
## (Intercept)  2.284526e-05  0.0004164007  0.0003003943 0.0001562802
## Diet1       -2.284526e-05 -0.0001999800 -0.0001113619 0.0000867862
##               Otu0377       Otu0380       Otu0381       Otu0382       Otu0383
## (Intercept)  0.0004036893  0.0004335037 0.0002529973 0.0004535219 0.0001627363
## Diet1       -0.0003434092 -0.0002927412 0.0001552392 0.0001044438 0.0001627363
##               Otu0384       Otu0385       Otu0386       Otu0387       Otu0388
## (Intercept) 0.0002896301 0.0002922479 0.0005790480 0.0001570145 0.0002783366
## Diet1       0.0002896301 0.0001547846 0.0005209429 0.0000976814 0.0002783366
##               Otu0389       Otu0390       Otu0391       Otu0392       Otu0393
## (Intercept) 4.690448e-05 0.0004087884  0.0003432286 0.0003444346 0.0004381621
## Diet1       1.814952e-05 0.0001651066 -0.0003432286 0.0002581698 0.0004381621
##               Otu0394       Otu0395       Otu0396       Otu0397       Otu0398
## (Intercept)  1.452627e-05 7.088713e-06 0.0003026566 2.395323e-05  9.775808e-06
## Diet1       -1.452627e-05 7.088713e-06 0.0001826068 4.401618e-06 -9.775808e-06
##               Otu0399       Otu0400       Otu0402       Otu0403       Otu0404
## (Intercept)  0.0004030835 1.057017e-04  0.0004084017 0.0002376150 0.0003742676
## Diet1       -0.0003463738 8.966297e-05 -0.0001106210 0.0002129433 0.0003742676
##               Otu0405       Otu0406       Otu0407       Otu0408       Otu0409
## (Intercept)  3.716519e-04 0.0003157701 3.675807e-04 1.508205e-05 2.194739e-05
## Diet1       -1.653558e-05 0.0003099596 1.716763e-05 1.508205e-05 8.216701e-06
##               Otu0411       Otu0412       Otu0413       Otu0414       Otu0415
## (Intercept) 0.0001954375 0.0004394863 0.0001943635 0.0003170153 0.0002994488
## Diet1       0.0001412960 0.0001479987 0.0001389058 0.0002883595 0.0002764051
##               Otu0416       Otu0417       Otu0418       Otu0419       Otu0422
## (Intercept)  0.00018944 0.0001980713  0.0003441657 3.637423e-05 0.0004036976
## Diet1       -0.00018944 0.0001980713 -0.0002675452 2.033548e-05 0.0001740110
##               Otu0423       Otu0424       Otu0425       Otu0427       Otu0428
## (Intercept) 3.740719e-04  0.0003688371 0.0002477804 0.0005870372 0.0003127191
## Diet1       7.600425e-05 -0.0003121274 0.0001444617 0.0002435827 0.0001935418
##               Otu0429       Otu0430       Otu0431       Otu0432       Otu0433
## (Intercept)  0.0003710781  0.0003909335 0.0003247851 3.115161e-04  0.0003383815
## Diet1       -0.0002971884 -0.0002896810 0.0001998112 9.838859e-06 -0.0003383815
##               Otu0434       Otu0435       Otu0436       Otu0439       Otu0440
## (Intercept) 0.0001226074  5.437827e-06 0.0002217812 2.079336e-05 0.0005812581
## Diet1       0.0001168961 -5.437827e-06 0.0002142616 9.370731e-06 0.0005755468
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##                Otu0441         Otu0442         Otu0443         Otu0444
## (Intercept)  0.0001259067   5.711316e-06   3.104259e-04   0.0003548174
## Diet1       -0.0001259067  -5.711316e-06  -8.694942e-05  -0.0002236021
##                Otu0445         Otu0446       Otu0447        Otu0448        Otu0449
## (Intercept) 0.0006893025   9.775808e-06  0.000375306  4.813607e-05  0.0002966241
## Diet1       0.0006893025  -9.775808e-06  0.000224005  2.507752e-05  0.0002385190
##                Otu0450         Otu0451         Otu0452        Otu0453
## (Intercept)  0.0003298561   5.711316e-06   3.048854e-04   0.0003510290
## Diet1       -0.0003298561  -5.711316e-06  -6.859492e-05  -0.0003144222
##                Otu0454         Otu0456         Otu0457        Otu0458
## (Intercept) 6.349506e-05  0.0003477576   2.570092e-05   3.453628e-04
## Diet1      -6.349506e-05  0.0003282060  -2.570092e-05  -5.938378e-05
##                Otu0459        Otu0460        Otu0461        Otu0462        Otu0463
## (Intercept) 0.0003055554  0.0002285676  0.0003256620  6.137205e-05  9.785691e-05
## Diet1      -0.0003055554  0.0002285676  0.0002965889 -6.137205e-05 -9.785691e-05
##                Otu0464        Otu0465       Otu0466        Otu0468        Otu0469
## (Intercept) 2.621596e-04  8.92367e-05  0.0002890724  1.916662e-04  4.931922e-05
## Diet1      -4.312909e-05  8.92367e-05 -0.0002890724 -2.627781e-06  4.931922e-05
##                Otu0470        Otu0471        Otu0472        Otu0473
## (Intercept) 8.019375e-06   1.981299e-04   8.376286e-05   0.0001918101
## Diet1      -8.019375e-06  -4.337788e-05  -8.376286e-05  -0.0001918101
##                Otu0474        Otu0475        Otu0476        Otu0477        Otu0478
## (Intercept) 2.850740e-04  0.0001264895   0.0003316371  0.0002393534   0.0003788351
## Diet1      -8.437076e-05  0.0001264895  -0.0001681736  0.0001613398  -0.0003788351
##                Otu0479        Otu0480        Otu0481        Otu0483        Otu0484
## (Intercept) 1.998961e-05   0.0003252129  0.0003000519  0.0002625731  8.652716e-05
## Diet1      -1.998961e-05  -0.0001570603  0.0003000519  0.0002234699  5.866288e-05
##                Otu0485        Otu0486        Otu0487        Otu0488        Otu0489
## (Intercept) 1.328499e-04  0.0004636189  0.0003529952  6.786921e-05   0.0002917577
## Diet1      -9.624311e-05  0.0002877695  0.0003013839  6.786921e-05  -0.0002917577
##                Otu0491        Otu0493        Otu0494        Otu0495        Otu0496
## (Intercept) 2.636623e-04   2.084181e-04   8.566974e-06  0.0002848413  0.0002443387
## Diet1       4.824104e-05  -2.763909e-05  -8.566974e-06  0.0002848413  0.0001845103
##                Otu0498        Otu0499        Otu0500        Otu0501
## (Intercept) 0.0002470367   3.204743e-04   3.152748e-05   0.0001240151
## Diet1       0.0001888734  -9.687579e-05  -3.152748e-05  -0.0001240151
##                Otu0502        Otu0503        Otu0504        Otu0505        Otu0506
## (Intercept)  0.0002833046  8.847901e-05  1.686750e-04   0.0002939832  0.0003884146
## Diet1       -0.0001422705  8.196180e-05  6.329754e-05  -0.0001461044  0.0003162403
##                Otu0507        Otu0508        Otu0509        Otu0510        Otu0511
## (Intercept)  0.0002485522   2.691151e-04  0.000170162   0.0002861823  2.630978e-04
## Diet1       -0.0001292802  -8.410663e-05  0.000170162  -0.0002711002  3.209958e-06
##                Otu0512        Otu0513        Otu0514        Otu0516        Otu0517
## (Intercept) 0.0002720497   0.0003072744  0.0002609062  2.105159e-05  0.0001348879
## Diet1       0.0000227491  -0.0003072744  0.0002609062 -2.105159e-05  0.0001023019
##                Otu0518        Otu0520        Otu0521        Otu0523        Otu0524
## (Intercept) 9.775808e-06  0.0001583615   0.000133865  1.427829e-05   2.061671e-04
## Diet1      -9.775808e-06  0.0001583615  -0.000133865 -1.427829e-05  -4.453579e-05
##                Otu0525        Otu0526        Otu0527        Otu0528        Otu0529
## (Intercept) 0.0002397277   0.0002658813   0.0002522816  6.816469e-05  1.729816e-04
## Diet1       0.0002332105  -0.0001994681  -0.0002522816 -6.816469e-05  7.372133e-05
##                Otu0532        Otu0534        Otu0535        Otu0536        Otu0537
## (Intercept)  0.000286757   5.711316e-06  0.0001890323  6.852422e-05   0.000303175
## Diet1       -0.000286757  -5.711316e-06  0.0001890323  6.852422e-05  -0.000303175
```

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##                 Otu0538      Otu0539      Otu0540      Otu0541
## (Intercept) 0.0005099860  6.321714e-05  0.0002471758  0.0002467560
## Diet1       0.0004539929 -6.321714e-05 -0.0001195790 -0.0002101492
##                 Otu0542      Otu0543      Otu0544      Otu0546      Otu0547
## (Intercept)  0.0001515412  0.0002199948  1.772707e-04 0.0002128999 0.0002823922
## Diet1       -0.0001515412 -0.0001493585 -7.452236e-05 0.0001277535 0.0001804480
##                 Otu0548      Otu0549      Otu0551      Otu0552      Otu0553
## (Intercept) 5.097792e-05  0.0002676300 2.147762e-04  0.0002055165 0.0002556519
## Diet1       5.097792e-05 -0.0002337738 8.294979e-05 -0.0002055165 0.0001863803
##                 Otu0554      Otu0555      Otu0556      Otu0557      Otu0560
## (Intercept) 0.0003265780  0.0001981552 0.0002033109 6.651228e-05  0.0002859098
## Diet1       0.0002727585 -0.0001712077 0.0001166924 6.651228e-05 -0.0002028572
##                 Otu0561      Otu0562      Otu0563      Otu0564      Otu0565
## (Intercept)  0.0002554739  0.0002344824 0.0002169110 2.392266e-04  0.0001929862
## Diet1       -0.0001527047 -0.0001345930 0.0001744192 2.736305e-05 -0.0001929862
##                 Otu0566      Otu0567      Otu0568      Otu0569
## (Intercept)  0.0002147199  0.0002329650  1.954720e-04 0.0001892271
## Diet1       -0.0002147199 -0.0001701862 -1.116544e-05 0.0001835158
##                 Otu0570      Otu0571      Otu0572      Otu0573      Otu0574
## (Intercept)  0.0002188376 3.615558e-05 1.880553e-04  0.0002084151  1.060944e-04
## Diet1       -0.0001869124 2.527993e-05 8.063549e-05 -0.0002084151 -2.304819e-05
##                 Otu0575      Otu0576      Otu0577      Otu0578      Otu0579
## (Intercept) 0.0001606775  0.0001057089 1.155921e-04  0.0002030493 0.0001265446
## Diet1       0.0001606775 -0.0001057089 3.563373e-05 -0.0002030493 0.0000797671
##                 Otu0580      Otu0581      Otu0582      Otu0583      Otu0584
## (Intercept)  0.0002113187 0.0001357384 0.0002073994 0.0001573888  2.418990e-04
## Diet1       -0.0002113187 0.0001357384 0.0002073994 0.0001573888 -7.279126e-05
##                 Otu0585      Otu0586      Otu0587      Otu0588      Otu0589
## (Intercept)  1.746689e-05 0.0002486381  1.709374e-04  0.0002054840 0.0002612469
## Diet1       -1.746689e-05 0.0002377625 -1.498575e-05 -0.0001349128 0.0002406872
##                 Otu0591      Otu0592      Otu0594      Otu0595      Otu0596
## (Intercept) 0.0002460188 8.411006e-05  0.0002209593  0.000216394  0.0001657268
## Diet1       0.0002320836 8.411006e-05 -0.0001270750 -0.000216394 -0.0000849925
##                 Otu0598      Otu0599      Otu0602      Otu0603      Otu0604
## (Intercept)  9.721003e-06 1.727412e-04 0.0001689199 0.0001814059  0.0002306398
## Diet1       -9.721003e-06 2.737128e-07 0.0001456779 0.0001814059 -0.0000973329
##                 Otu0606      Otu0607      Otu0608      Otu0609      Otu0610
## (Intercept) 1.380424e-04  1.777301e-04  0.0002155739 2.126384e-04  1.127938e-05
## Diet1       8.983934e-05 -2.177843e-05 -0.0001966707 7.626847e-05 -1.127938e-05
##                 Otu0611      Otu0612      Otu0613      Otu0614      Otu0615
## (Intercept) 1.647620e-04 0.0002622645  0.0001780107 0.0001865732  8.85254e-05
## Diet1       5.537583e-05 0.0001953281 -0.0001780107 0.0001783493 -8.85254e-05
##                 Otu0616      Otu0617      Otu0618      Otu0619      Otu0620
## (Intercept) 0.0001783451 0.0001907679 0.0001612882 0.0002850344  0.0001804701
## Diet1       0.0001783451 0.0001798922 0.0001504125 0.0002679755 -0.0001804701
##                 Otu0621      Otu0622      Otu0623      Otu0624      Otu0625
## (Intercept) 0.0001305453 3.544356e-05 3.113957e-05  8.241969e-05  6.990304e-05
## Diet1       0.0001140975 3.544356e-05 2.462236e-05 -2.098418e-05 -6.990304e-05
##                 Otu0626      Otu0627      Otu0628      Otu0631      Otu0632
## (Intercept)  0.0001233438  0.0002401549 0.0001639639 4.261403e-05 0.0001139935
## Diet1       -0.0000308028  0.0002347171 0.0001574467 2.957962e-05 0.0001025708
##                 Otu0633      Otu0634      Otu0635      Otu0636
## (Intercept)  0.0001827621  0.0004380622  0.0001655301  1.500859e-04
## Diet1       -0.0001827621  0.0004216144 -0.0001560785 -2.446424e-05
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##                 Otu0637       Otu0639       Otu0640       Otu0641
## (Intercept)  1.610800e-05  0.0002225773  1.185981e-04  2.791821e-05
## Diet1       -1.025951e-06 -0.0001615659 -4.832196e-05  2.140101e-05
##                 Otu0642       Otu0643       Otu0644       Otu0645
## (Intercept)  0.0001873704  0.0001640929  1.603875e-05  6.318088e-05
## Diet1       -0.0001698745 -0.0001640929 -1.603875e-05 -6.318088e-05
##                 Otu0646       Otu0647       Otu0648       Otu0649       Otu0650
## (Intercept)  5.127391e-05  1.290225e-05  0.0001895779  4.725809e-06  1.881543e-04
## Diet1        2.219794e-05 -1.321617e-07  0.0001895779  4.725809e-06  6.801829e-05
##                 Otu0651       Otu0652       Otu0653       Otu0654       Otu0655
## (Intercept)  8.169568e-05  0.0001925192  4.914821e-05  0.0001931184  0.0001746234
## Diet1        8.169568e-05 -0.0001675469  3.772558e-05 -0.0001263475  0.0001585847
##                 Otu0656       Otu0657       Otu0659       Otu0660       Otu0661
## (Intercept)  5.539625e-05  1.649048e-04  0.0003493266  0.000157697   4.725809e-06
## Diet1       -5.539625e-05 -6.469951e-05  0.0003086530 -0.000157697   4.725809e-06
##                 Otu0663       Otu0664       Otu0665       Otu0666       Otu0667
## (Intercept)  5.972890e-05  1.042864e-04  0.0001531492  2.689657e-05  9.42825e-05
## Diet1        4.669449e-05  7.277971e-05 -0.0001531492  2.689657e-05  9.42825e-05
##                 Otu0669       Otu0670       Otu0671       Otu0672       Otu0673
## (Intercept)  0.0001269418  5.376517e-05  0.0001784341  0.0002033604  3.91634e-05
## Diet1        0.0001269418  4.043507e-05 -0.0001689825 -0.0002033604  3.91634e-05
##                 Otu0674       Otu0677       Otu0678       Otu0679       Otu0680
## (Intercept)  1.654263e-04  0.0002282512  7.292053e-05  7.290238e-05  5.778593e-05
## Diet1       -5.411013e-05  0.0001996946  1.126135e-05  2.157063e-05 -5.778593e-05
##                 Otu0681       Otu0683       Otu0684       Otu0685       Otu0687
## (Intercept)  1.043647e-04  3.973747e-05  2.736727e-05  0.0001824818  9.637917e-05
## Diet1        4.902525e-05 -9.573380e-06  2.736727e-05 -0.0001824818  6.211128e-05
##                 Otu0688       Otu0689       Otu0690       Otu0691
## (Intercept)  1.644337e-04  0.000174876   0.0001664352  8.356480e-05
## Diet1       -8.197612e-05 -0.000174876  -0.0001108809 -1.419328e-05
##                 Otu0692       Otu0694       Otu0695       Otu0696       Otu0697
## (Intercept)  1.535584e-04  6.088185e-05  0.0001417558  0.0001499711  0.0002011555
## Diet1       -4.187814e-05  6.088185e-05 -0.0000887445  0.0001419518  0.0002011555
##                 Otu0698       Otu0699       Otu0700       Otu0702       Otu0707
## (Intercept)  5.218562e-06  0.0001594875  0.0001679076  1.024610e-04  0.0001206564
## Diet1       -4.927536e-07  0.0001342245 -0.0001435030  6.545348e-05  0.0001206564
##                 Otu0708       Otu0710       Otu0711       Otu0712       Otu0713
## (Intercept)  1.450845e-04  0.0002418664  1.560084e-05  0.0001836197  9.444010e-05
## Diet1        9.006609e-05  0.0002418664 -6.149224e-06  0.0001685805  7.730616e-05
##                 Otu0714       Otu0716       Otu0717       Otu0718       Otu0719
## (Intercept)  0.0001223603  1.771665e-04  1.163486e-04  0.0001337284  0.0001460648
## Diet1        0.0001223603 -4.977241e-05  3.012278e-05  0.0001337284 -0.0001460648
##                 Otu0720       Otu0722       Otu0723       Otu0724       Otu0725
## (Intercept)  5.613689e-05  8.619809e-05  0.0003217630  0.0001770065  1.070215e-04
## Diet1       -2.778204e-05  8.619809e-05  0.0003152458  0.0001770065 -4.659141e-05
##                 Otu0726       Otu0727       Otu0729       Otu0731       Otu0732
## (Intercept)  1.765179e-05  8.725691e-05  0.0001851459  0.0001488504  0.0001287511
## Diet1        6.229154e-06  5.351191e-05 -0.0001305772 -0.0001299472  0.0001287511
##                 Otu0733       Otu0735       Otu0736       Otu0739       Otu0740
## (Intercept)  1.139846e-04  0.0001642882  1.324532e-04  0.0001230436  3.788998e-05
## Diet1        3.305142e-05 -0.0001457009 -9.349022e-05  0.0001012923 -3.788998e-05
##                 Otu0741       Otu0742       Otu0743       Otu0744       Otu0746
## (Intercept)  1.638389e-04  1.278309e-04  1.136742e-04  1.553458e-05  1.567633e-05
## Diet1        6.949185e-05  4.229822e-05 -9.477093e-05 -1.553458e-05 -1.567633e-05
```

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##                  Otu0747       Otu0748       Otu0749       Otu0751       Otu0752
## (Intercept) 0.0003367587  0.0001602642  7.633682e-05 0.0003050566  8.880448e-05
## Diet1       0.0003367587 -0.0001118496 -1.248639e-05 0.0003050566 -8.818446e-06
##                  Otu0753       Otu0754       Otu0755       Otu0756       Otu0758
## (Intercept) 0.0002490061  1.289686e-04  1.016453e-04 1.295143e-04 0.0001129434
## Diet1       0.0002490061 -7.225889e-05 -9.691954e-05 4.534062e-05 0.0001129434
##                  Otu0760       Otu0761       Otu0762       Otu0763       Otu0764
## (Intercept) 5.711316e-06 1.793770e-05  4.324692e-05  8.061880e-05  0.0001311143
## Diet1      -5.711316e-06 1.222639e-05  4.324692e-05 -3.456039e-05 -0.0001311143
##                  Otu0765       Otu0766       Otu0767       Otu0768       Otu0769
## (Intercept) 0.0002380197 0.0001416208 8.496631e-05  1.489402e-04 1.164840e-04
## Diet1       0.0001158460 0.0000823747 5.550465e-05 -4.005875e-05 4.560296e-05
##                  Otu0770       Otu0771       Otu0772       Otu0773       Otu0774
## (Intercept)  0.0001493919  0.0001516118  0.0001664887 7.264097e-05 0.0001131153
## Diet1       -0.0001493919 -0.0001516118 -0.0001664887 5.008220e-05 0.0001131153
##                  Otu0775       Otu0776       Otu0777       Otu0778       Otu0779
## (Intercept) 2.262307e-05 0.0001597431  9.868665e-05 4.810324e-05  0.0001555449
## Diet1       2.262307e-05 0.0001076055 -9.868665e-05 1.041570e-05 -0.0001555449
##                  Otu0781       Otu0782       Otu0783       Otu0784       Otu0787
## (Intercept)  0.0001125327  0.0001502887 1.049685e-04 0.0001566264 2.734888e-05
## Diet1       -0.0001125327 -0.0001502887 7.777932e-05 0.0001566264 2.734888e-05
##                  Otu0788       Otu0789       Otu0790       Otu0791       Otu0792
## (Intercept)  0.0001450064  0.0001272445 9.688953e-05 0.0001482582  2.427616e-05
## Diet1       -0.0000389775 -0.0001272445 5.841050e-05 0.0001482582 -9.194113e-06
##                  Otu0793       Otu0797       Otu0798       Otu0799
## (Intercept)  0.0001327613 8.489238e-05  9.991719e-05  0.0001411081
## Diet1       -0.0001327613 4.820682e-05 -4.856514e-05 -0.0001283380
##                  Otu0800       Otu0801       Otu0803       Otu0804       Otu0805
## (Intercept)  1.258058e-04 1.468522e-04 0.0001135112  8.633422e-05  0.0001212129
## Diet1       -2.202476e-06 5.360657e-05 0.0001135112 -7.688260e-05 -0.0001212129
##                  Otu0806       Otu0807       Otu0808       Otu0809       Otu0810
## (Intercept) 1.654033e-05 0.0001121555  3.074092e-05 1.140505e-04 4.725809e-06
## Diet1       1.654033e-05 0.0001041361 -3.074092e-05 7.054792e-05 4.725809e-06
##                  Otu0812       Otu0814       Otu0815       Otu0816       Otu0817
## (Intercept) 0.0001155614 2.554017e-05  0.0001415989  8.341803e-05 9.446345e-05
## Diet1       0.0001039404 2.554017e-05 -0.0001415989 -3.460897e-05 3.414097e-05
##                  Otu0818       Otu0820       Otu0823       Otu0824       Otu0825
## (Intercept) 4.006802e-05  1.056977e-04  1.058702e-04 5.901170e-05  6.719802e-05
## Diet1       4.006802e-05 -4.686922e-05 -8.671512e-05 5.330038e-05 -4.279349e-05
##                  Otu0826       Otu0828       Otu0829       Otu0831       Otu0832
## (Intercept) 0.0001344084 1.137786e-04  0.0001322814  1.232513e-04  9.202297e-05
## Diet1       0.0001344084 5.434666e-05 -0.0001078769 -7.126738e-05 -9.202297e-05
##                  Otu0833       Otu0834       Otu0835       Otu0837       Otu0838
## (Intercept) 1.141778e-04  0.0001456539  3.141224e-05 0.0001396477  5.711316e-06
## Diet1       9.134713e-05 -0.0001305718 -3.141224e-05 0.0001280267 -5.711316e-06
##                  Otu0839       Otu0840       Otu0841       Otu0842       Otu0843
## (Intercept)  1.418061e-04 1.052125e-04 7.651756e-05  0.0001047793  1.570529e-04
## Diet1       -8.629608e-05 9.150488e-06 7.651756e-05 -0.0001047793 -8.383928e-05
##                  Otu0844       Otu0845       Otu0846       Otu0847       Otu0848
## (Intercept) 4.001208e-05 0.0001757587 7.398361e-05 0.0001267129 1.557121e-04
## Diet1       1.745331e-05 0.0001138187 7.398361e-05 0.0001267129 3.658707e-05
##                  Otu0849       Otu0850       Otu0851       Otu0852
## (Intercept) 1.305914e-04  0.0001025203 4.107081e-05  0.0001327347
## Diet1      -9.751076e-05 -0.0001025203 4.107081e-05 -0.0001327347
```

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##               Otu0853       Otu0854       Otu0856       Otu0857       Otu0858
## (Intercept)  1.320608e-04  1.721849e-04  1.083988e-04  4.912722e-05  6.551957e-05
## Diet1       -8.736546e-05  1.948837e-05 -5.687304e-06 -4.912722e-05  6.551957e-05
##               Otu0859       Otu0860       Otu0861       Otu0862       Otu0863
## (Intercept)  0.000114057   8.537524e-05  8.416749e-05  1.096664e-04  1.032532e-04
## Diet1       -0.000114057  -3.067748e-05  6.461588e-05  1.126222e-06  1.806265e-05
##               Otu0864       Otu0865       Otu0866       Otu0867       Otu0868
## (Intercept)  1.141456e-04  1.159379e-04  0.00011788   1.061338e-04  5.490969e-05
## Diet1       -9.249176e-05 -8.285729e-05 -0.00011788  -9.668215e-05  4.187528e-05
##               Otu0869       Otu0870       Otu0871       Otu0872       Otu0873
## (Intercept)  1.368842e-04  0.0001006156  4.366876e-05  0.0001532732  0.0001074067
## Diet1       -5.211473e-05  0.0000587108  2.154478e-05  0.0001532732  0.0001015962
##               Otu0874       Otu0875       Otu0876       Otu0878       Otu0879
## (Intercept)  1.440651e-04  3.670419e-05  1.569776e-05  1.228533e-04  1.296172e-04
## Diet1       -4.447185e-05  3.126637e-05 -6.157167e-07  7.012906e-05 -5.938174e-05
##               Otu0880       Otu0883       Otu0884       Otu0885       Otu0886
## (Intercept)  1.603875e-05  0.0001093379  8.863053e-05  0.000137288   3.050566e-05
## Diet1       -1.603875e-05 -0.0001093379 -7.642827e-05  0.000137288   3.050566e-05
##               Otu0887       Otu0888       Otu0889       Otu0890       Otu0891
## (Intercept)  1.462974e-05  0.0001206286  4.244932e-05  0.0001077551  1.890323e-05
## Diet1        1.462974e-05 -0.0001206286  4.244932e-05 -0.0001077551  1.890323e-05
##               Otu0892       Otu0893       Otu0894       Otu0895       Otu0898
## (Intercept)  7.409012e-05  0.0001236934  1.202612e-04  7.669002e-05  1.798730e-05
## Diet1        4.943470e-05 -0.0001236934 -4.918617e-05  7.669002e-05  1.217679e-05
##               Otu0899       Otu0902       Otu0903       Otu0904       Otu0905
## (Intercept)  6.822404e-05  6.629643e-05  1.508205e-05  1.038616e-04  1.028819e-04
## Diet1       -3.655072e-05  9.756269e-06  1.508205e-05  9.734437e-05  7.821022e-05
##               Otu0906       Otu0907       Otu0908       Otu0910
## (Intercept)  9.075256e-05  9.492172e-05  0.0001335796  1.175570e-04
## Diet1       -3.051673e-05 -9.857164e-06  0.0001056451 -8.447635e-05
##               Otu0911       Otu0912       Otu0913       Otu0914       Otu0916
## (Intercept)  0.0001177682  7.387977e-05  1.091016e-04  0.0001169068  3.200120e-05
## Diet1       -0.0001055659  7.387977e-05  5.533034e-06 -0.0001169068  2.548399e-05
##               Otu0917       Otu0918       Otu0919       Otu0920       Otu0921
## (Intercept)  6.326328e-05  9.334362e-05  0.0001082339  0.0001124076  1.281078e-04
## Diet1        4.070451e-05  6.727480e-05  0.0001082339  0.0001124076  9.993776e-05
##               Otu0922       Otu0923       Otu0924       Otu0925
## (Intercept)  1.266184e-04  5.377961e-05  1.347809e-04  3.001120e-05
## Diet1       -9.172847e-05 -5.377961e-05 -7.376962e-05 -1.780893e-05
##               Otu0926       Otu0927       Otu0928       Otu0929
## (Intercept)  1.142263e-05  0.0001060561  0.0001039832  1.287383e-04
## Diet1       -1.142263e-05 -0.0001060561 -0.0000457225 -6.196738e-05
##               Otu0930       Otu0932       Otu0933       Otu0934       Otu0935
## (Intercept)  0.0001056593  0.000135483   1.226649e-04  5.091285e-05  8.274606e-05
## Diet1       -0.0001056593  0.000135483  -4.945131e-05 -5.091285e-05 -5.195649e-05
##               Otu0936       Otu0938       Otu0939       Otu0940       Otu0941
## (Intercept)  1.582421e-05  0.0001184866  2.262307e-05  6.025027e-05  1.064422e-04
## Diet1        7.804834e-06  0.0001184866  2.262307e-05 -2.946069e-05  9.118107e-05
##               Otu0942       Otu0943       Otu0944       Otu0945       Otu0946
## (Intercept)  9.788088e-05  3.910946e-05  1.078014e-04  0.0001294469  1.011501e-04
## Diet1       -9.788088e-05 -8.003966e-06  4.176381e-05  0.0000210597  8.401616e-05
##               Otu0947       Otu0948       Otu0949       Otu0950
## (Intercept)  1.054274e-04  4.978976e-05  1.269924e-04  6.710930e-05
## Diet1       -9.124999e-05  3.235823e-05 -3.843852e-05 -5.490703e-05
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##                  Otu0951        Otu0952        Otu0953        Otu0955        Otu0956
## (Intercept)  9.256498e-05  8.859123e-05   8.040578e-05  1.020233e-04  7.662052e-05
## Diet1       -7.506909e-05  8.859123e-05  -2.376010e-05  6.292008e-05  7.662052e-05
##                  Otu0957        Otu0958        Otu0959        Otu0960        Otu0962
## (Intercept)  1.097432e-04   7.436427e-05   9.654648e-05  9.993243e-05   5.268158e-06
## Diet1        9.329539e-05  -7.436427e-05  -9.654648e-05  8.850980e-05  -5.423496e-07
##                  Otu0963        Otu0964        Otu0965        Otu0966        Otu0967
## (Intercept)  8.300557e-05  1.057220e-04  0.0001077122   6.517205e-06   9.505182e-05
## Diet1        8.300557e-05  9.410102e-05  0.0001077122  -6.517205e-06  -9.505182e-05
##                  Otu0968        Otu0969        Otu0972        Otu0973        Otu0974
## (Intercept)  6.306566e-05  8.909096e-05  2.950245e-05  6.521392e-05   1.025248e-04
## Diet1        3.043870e-05 -5.248416e-05  2.298524e-05  2.606976e-05  -8.975469e-05
##                  Otu0975        Otu0976        Otu0977        Otu0981        Otu0982
## (Intercept)  1.036636e-04  3.892547e-05  7.469469e-05   1.128233e-04  1.508205e-05
## Diet1        1.242268e-05  1.014186e-05 -7.469469e-05  -7.621655e-05  1.508205e-05
##                  Otu0983        Otu0984        Otu0985        Otu0986        Otu0987
## (Intercept)  9.682931e-05   0.0001247464  1.165297e-05  1.117076e-04   6.602240e-05
## Diet1       -9.682931e-05  -0.0001003418  3.429080e-06  1.394948e-05  -4.239336e-05
##                  Otu0988        Otu0989        Otu0991       Otu0992
## (Intercept)  4.335885e-05   1.067258e-04   8.542198e-05  0.0001103406
## Diet1       -4.335885e-05  -4.860772e-05  -6.626685e-05  0.0001046293
##                  Otu0993        Otu0994        Otu0995        Otu0996        Otu1000
## (Intercept)  9.688788e-05  0.0001414866  8.696046e-05   9.307260e-05   8.874112e-05
## Diet1       -6.412314e-05  0.0001114082  6.982652e-05  -1.120268e-05  -2.730561e-05
##                  Otu1001        Otu1002        Otu1003        Otu1004        Otu1005
## (Intercept)  3.815452e-05  7.921883e-05   8.717638e-05  7.725976e-05  8.976614e-05
## Diet1        5.565733e-07  7.510689e-05  -8.717638e-05  6.094628e-05  8.976614e-05
##                  Otu1006        Otu1007        Otu1008       Otu1009
## (Intercept)   0.0001018456   1.310365e-04   8.597823e-05   6.193392e-05
## Diet1        -0.0001018456  -4.562062e-05  -8.597823e-05  -6.193392e-05
##                  Otu1010        Otu1011        Otu1012        Otu1013        Otu1014
## (Intercept)  9.834567e-05   5.605711e-05   1.079982e-04  0.0001035663  1.466942e-04
## Diet1        7.115654e-05  -9.114947e-06  -3.478465e-05  0.0001035663  1.885773e-05
##                  Otu1015        Otu1017        Otu1018        Otu1019        Otu1021
## (Intercept)  4.962990e-05   9.527513e-05  4.542684e-05  0.0001021607   8.007571e-05
## Diet1       -2.127505e-05  -7.637190e-05  3.998901e-05  0.0001021607  -8.007571e-05
##                  Otu1022        Otu1023        Otu1024        Otu1025        Otu1026
## (Intercept)  1.029126e-04  9.500407e-05   1.001532e-04  1.169156e-04  8.505275e-05
## Diet1        1.810708e-05 -7.992203e-05  -7.179837e-05  1.086657e-05  5.898393e-05
##                  Otu1027        Otu1028        Otu1029        Otu1030        Otu1031
## (Intercept)  7.999398e-05  4.932176e-05   8.404018e-05  8.816103e-05   1.743152e-05
## Diet1        7.247439e-05  2.757046e-05  -1.613365e-05  8.816103e-05  -1.743152e-05
##                  Otu1032        Otu1033        Otu1034        Otu1037        Otu1038
## (Intercept)  8.85629e-05  1.508205e-05   5.862076e-05  5.011374e-05  3.398209e-05
## Diet1       -8.85629e-05  1.508205e-05  -5.862076e-05  4.440243e-05  3.398209e-05
##                  Otu1039        Otu1040        Otu1042        Otu1043       Otu1044
## (Intercept)  9.727156e-05   7.284183e-05   8.898517e-05  7.325003e-05  0.000102798
## Diet1        7.065244e-05  -7.284183e-05  -7.390312e-05  7.325003e-05  0.000102798
##                  Otu1045        Otu1047        Otu1050        Otu1051        Otu1052
## (Intercept)  9.613901e-05   1.040667e-04  8.196422e-05   7.426837e-05  5.389733e-05
## Diet1       -9.613901e-05  -7.390261e-05  6.892981e-05  -3.173610e-05  8.276887e-06
##                  Otu1053        Otu1054        Otu1055        Otu1056        Otu1057
## (Intercept)  9.628310e-05  7.867069e-05  3.076074e-05  8.120771e-05   8.361308e-05
## Diet1       -8.408083e-05  6.704967e-05  3.076074e-05  2.276008e-05  -8.361308e-05
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##                Otu1058        Otu1059        Otu1060        Otu1061
## (Intercept)  8.358593e-05   1.442708e-05   8.881226e-05   0.0001127938
## Diet1       -8.358593e-05  -1.442708e-05  -8.881226e-05  -0.0001127938
##                Otu1062        Otu1064        Otu1066      Otu1067      Otu1068
## (Intercept)  5.168327e-05   4.997195e-05   0.0002262307  1.83034e-05  8.79012e-05
## Diet1        1.960577e-05   4.997195e-05   0.0002262307  1.83034e-05  4.67932e-05
##                Otu1069        Otu1071        Otu1072        Otu1073
## (Intercept)  6.194125e-05   9.290736e-05   3.007835e-05   8.668141e-05
## Diet1        6.194125e-05  -4.092346e-05  -3.007835e-05  -2.997170e-05
##                Otu1074        Otu1075        Otu1076        Otu1077
## (Intercept)  8.246875e-05   1.246794e-04   9.443340e-05   1.026938e-04
## Diet1       -8.246875e-05  -2.656741e-06  -8.804835e-05   3.752172e-05
##                Otu1078        Otu1079        Otu1080        Otu1081        Otu1082
## (Intercept)  7.591887e-05   6.916553e-05   0.0001241403   2.552832e-05   9.980537e-05
## Diet1       -7.591887e-05   2.022509e-05   0.0000524510   1.971782e-05   9.980537e-05
##                Otu1083        Otu1084        Otu1086        Otu1087        Otu1088
## (Intercept)  9.427961e-05   7.790241e-05   0.0001009805   7.708058e-05   0.0001202633
## Diet1        4.645948e-05   5.324887e-05  -0.0001009805   3.146516e-05   0.0001202633
##                Otu1090        Otu1091        Otu1092        Otu1093        Otu1094
## (Intercept)  8.341412e-05   8.717059e-05   2.637969e-05   5.962318e-05   8.798227e-05
## Diet1        6.386251e-05  -6.276606e-05   2.637969e-05  -5.962318e-05  -8.798227e-05
##                Otu1096        Otu1097        Otu1098        Otu1099        Otu1100
## (Intercept)  4.355966e-05   4.768882e-05   2.650469e-05   5.711241e-05   6.241954e-05
## Diet1        4.355966e-05   4.768882e-05  -2.650469e-05   3.252564e-06   1.791921e-05
##                Otu1101        Otu1102        Otu1103        Otu1104
## (Intercept)  9.734201e-05   9.255883e-05   7.546183e-05   6.024916e-05
## Diet1       -8.513974e-05  -6.690466e-06  -7.546183e-05  -1.144010e-05
##                Otu1106        Otu1109        Otu1111        Otu1112        Otu1113
## (Intercept)  9.395979e-05   9.607478e-05   7.99074e-05   1.452627e-05   7.314354e-05
## Diet1       -9.395979e-05  -7.800014e-06  -7.99074e-05  -1.452627e-05   6.562395e-05
##                Otu1114        Otu1115        Otu1117        Otu1118        Otu1119
## (Intercept)  6.126507e-05   9.910853e-05   7.597421e-05   8.114054e-05   5.643018e-05
## Diet1       -2.345860e-05  -2.475930e-05   2.595439e-05   2.750990e-05   3.795794e-05
##                Otu1120        Otu1121        Otu1122        Otu1123        Otu1124
## (Intercept)  0.0001022502   9.617370e-05   9.124088e-05   7.755040e-05   7.166301e-05
## Diet1        0.0001022502   6.065752e-05  -9.124088e-05  -5.839527e-05   6.078735e-05
##                Otu1126        Otu1127        Otu1129        Otu1130
## (Intercept)  7.884526e-05   8.854243e-05   8.882912e-05   7.995842e-05
## Diet1        7.884526e-05  -8.854243e-05  -5.803954e-05  -7.995842e-05
##                Otu1131        Otu1132        Otu1133        Otu1134        Otu1135
## (Intercept)  8.134711e-05   9.903927e-06   8.056110e-05   1.059385e-04   8.019375e-06
## Diet1       -8.134711e-05   9.903927e-06  -9.673967e-06   7.728269e-05  -8.019375e-06
##                Otu1136        Otu1137        Otu1138        Otu1139        Otu1140
## (Intercept)  9.463976e-05   3.161062e-05   0.0001275068   5.661543e-05   6.646842e-05
## Diet1        4.330801e-05  -3.161062e-05   0.0001275068   5.080492e-05   5.484741e-05
##                Otu1141        Otu1142        Otu1144        Otu1145
## (Intercept)  9.663561e-05   5.870497e-05   7.114957e-05   7.932758e-05
## Diet1       -3.562428e-05  -4.011766e-05  -7.114957e-05  -2.187918e-05
##                Otu1146        Otu1147        Otu1148        Otu1149        Otu1150
## (Intercept)  2.209576e-05   8.350378e-05   8.957097e-05   8.578223e-05   9.174709e-05
## Diet1        2.209576e-05  -5.987474e-05  -7.736870e-05   9.993429e-06   1.111338e-05
##                Otu1151        Otu1152        Otu1153        Otu1154        Otu1155
## (Intercept)  5.836948e-05   6.461222e-05   6.124806e-05   3.050566e-05   5.889307e-05
## Diet1        5.836948e-05   1.799533e-05   3.517924e-05   3.050566e-05   5.889307e-05
```

```
##              Otu1156      Otu1157      Otu1159      Otu1160      Otu1161
## (Intercept)  9.001891e-05  7.341066e-05 2.262307e-05 3.482533e-05  7.544578e-05
## Diet1       -7.781665e-05 -7.341066e-05 2.262307e-05 3.482533e-05 -7.544578e-05
##              Otu1164      Otu1165      Otu1167       Otu1168
## (Intercept)  8.391778e-05  8.534108e-05  9.721003e-06  4.499999e-05
## Diet1       -8.391778e-05 -8.534108e-05 -9.721003e-06 -2.137094e-05
##              Otu1169      Otu1171      Otu1172      Otu1173       Otu1174
## (Intercept)  9.988941e-05  7.593282e-05  6.407118e-05 1.066495e-04  6.647348e-05
## Diet1        9.988941e-05  5.618711e-05  6.407118e-05 9.361507e-05 -4.780757e-07
##              Otu1176      Otu1177      Otu1178       Otu1179
## (Intercept)  7.345439e-05  6.814439e-05 8.043078e-05  8.719113e-05
## Diet1       -4.253568e-05 -8.367039e-06 5.436196e-05 -8.719113e-05
##              Otu1180      Otu1181      Otu1183       Otu1184
## (Intercept)  7.694421e-05 6.930073e-05  6.167915e-06  9.328851e-05
## Diet1       -7.276553e-06 4.974911e-05 -6.167915e-06 -6.312442e-05
##              Otu1185      Otu1186      Otu1187      Otu1188       Otu1189
## (Intercept)  6.861821e-05  8.777316e-05 0.0001042871 6.551750e-05  4.744251e-05
## Diet1       -2.608593e-05  7.635053e-05 0.0001042871 5.409487e-05 -9.384148e-06
##              Otu1191      Otu1192      Otu1193       Otu1195      Otu1197
## (Intercept)  4.556737e-05  4.811644e-05 5.907261e-05  9.314032e-05 7.405986e-05
## Diet1        4.556737e-05 -4.811644e-05 5.907261e-05 -9.314032e-05 2.560660e-06
##              Otu1198      Otu1199      Otu1200       Otu1201
## (Intercept)  7.139145e-05 8.297123e-05  7.213636e-05  7.176710e-05
## Diet1       -7.139145e-05 8.297123e-05 -7.213636e-05 -4.723344e-05
##              Otu1202      Otu1203       Otu1205       Otu1207
## (Intercept)  6.363036e-05  6.908881e-05  6.01176e-05  6.597448e-05
## Diet1       -6.363036e-05 -7.653298e-06 -6.01176e-05 -4.681935e-05
##              Otu1208      Otu1209      Otu1210       Otu1211
## (Intercept)  8.444612e-05  9.399486e-05 9.641298e-05  1.027986e-05
## Diet1       -8.444612e-05 -9.399486e-05 9.641298e-05 -1.027986e-05
##              Otu1212      Otu1213      Otu1214       Otu1215
## (Intercept)  6.264452e-05  3.258603e-05  5.869578e-05  5.927808e-05
## Diet1       -6.264452e-05 -3.258603e-05 -5.869578e-05 -4.037485e-05
##              Otu1216      Otu1217      Otu1218       Otu1219       Otu1220
## (Intercept)  7.445601e-05 4.599339e-05 8.719849e-05  3.245387e-05  7.081062e-05
## Diet1       -2.920988e-05 2.424209e-05 1.792690e-05 -1.968378e-05 -1.391305e-05
##              Otu1221      Otu1222      Otu1223       Otu1225       Otu1226
## (Intercept)  6.534939e-05 4.207574e-05 3.724854e-05  6.955097e-05  6.112334e-05
## Diet1        6.534939e-05 2.654117e-05 4.084060e-06 -6.955097e-05 -6.112334e-05
##              Otu1227      Otu1230      Otu1231       Otu1232       Otu1233
## (Intercept)  8.335898e-05 8.101819e-05  0.0001016002 7.019907e-05  8.622553e-05
## Diet1        8.335898e-05 8.101819e-05 -0.0000412720 5.877644e-05 -8.622553e-05
##              Otu1236      Otu1237      Otu1238       Otu1239       Otu1240
## (Intercept)  8.105199e-05  7.84562e-05  7.031742e-05 5.108035e-05  3.529604e-05
## Diet1       -2.004067e-05 -7.84562e-05 -4.591289e-05 5.108035e-05  3.529604e-05
##              Otu1243      Otu1245      Otu1248       Otu1249      Otu1250
## (Intercept)  9.670153e-05  7.203281e-05  6.173462e-05 1.508205e-05 0.0001054227
## Diet1       -2.060816e-05 -7.203281e-05 -3.951291e-05 1.508205e-05 0.0001054227
##              Otu1251      Otu1253      Otu1254       Otu1256      Otu1257
## (Intercept)  7.345919e-05  4.891997e-05 6.251578e-05  6.247361e-05 5.604584e-05
## Diet1       -2.179122e-05 -4.891997e-05 6.251578e-05 -6.247361e-05 5.604584e-05
##              Otu1258      Otu1259      Otu1260       Otu1261
## (Intercept)  6.211640e-05  7.685234e-05  7.023386e-05  3.360512e-05
## Diet1       -2.380614e-05 -5.187999e-05 -3.192360e-05 -1.942770e-05
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##                Otu1262         Otu1263         Otu1264         Otu1265         Otu1267
## (Intercept)  3.408804e-05   6.893185e-05   7.494539e-05   3.511774e-05   9.464151e-05
## Diet1       -3.408804e-05  -6.893185e-05  -3.713893e-05   3.511774e-05   6.093517e-05
##                Otu1268         Otu1269         Otu1270         Otu1271         Otu1272
## (Intercept)  7.779039e-05   5.380819e-05   6.670609e-05  8.036632e-05   7.406536e-05
## Diet1       -6.558813e-05  -4.908238e-05   6.099478e-05  3.063394e-05  -3.444965e-05
##                Otu1273         Otu1274         Otu1275         Otu1276
## (Intercept)  6.737174e-05   5.410264e-05   5.761432e-05   2.315029e-05
## Diet1       -6.737174e-05  -5.410264e-05   5.761432e-05  -2.315029e-05
##                Otu1277         Otu1278         Otu1279         Otu1280
## (Intercept)  4.523138e-05   5.180345e-05   2.033678e-05   6.808137e-05
## Diet1       -4.523138e-05   4.769150e-05  -2.033678e-05  -6.808137e-05
##                Otu1281         Otu1282         Otu1283         Otu1286         Otu1287
## (Intercept)  2.281022e-05   7.779039e-05   5.373293e-05  2.87242e-05    5.876698e-05
## Diet1       -2.281022e-05  -6.558813e-05   4.550905e-05  2.87242e-05   -1.150889e-05
##                Otu1289         Otu1290         Otu1291         Otu1292         Otu1293
## (Intercept)  4.904327e-05   4.313617e-05   4.054722e-05   6.391558e-05   4.235856e-05
## Diet1        4.904327e-05  -6.038953e-07   4.054722e-05  -6.391558e-05  -1.309909e-05
##                Otu1294         Otu1295         Otu1297         Otu1298
## (Intercept)  6.517205e-05   7.244034e-05   9.184080e-05   6.391558e-05
## Diet1       -6.517205e-05  -7.244034e-05  -1.348524e-06  -6.391558e-05
##                Otu1299         Otu1301         Otu1303         Otu1304         Otu1305
## (Intercept)  7.329406e-05   6.475427e-05   4.952261e-05   4.511753e-05   2.151788e-05
## Diet1        6.918211e-05  -5.255200e-05   1.321942e-05  -4.511753e-05  -2.151788e-05
##                Otu1306         Otu1307         Otu1309         Otu1310         Otu1311
## (Intercept)  0.0001188013  3.016409e-05   1.067445e-04  9.985866e-05   5.159364e-05
## Diet1        0.0001188013  3.016409e-05   9.532185e-05  4.120381e-05   3.528016e-05
##                Otu1312         Otu1313         Otu1314         Otu1316
## (Intercept)  4.761285e-05   6.067302e-05   7.456019e-05   5.996882e-05
## Diet1        2.476759e-05  -6.067302e-05  -7.456019e-05  -5.996882e-05
##                Otu1317         Otu1318         Otu1320         Otu1321
## (Intercept)  6.843066e-05   6.357345e-05   6.768633e-05  0.0001496645
## Diet1       -6.843066e-05  -6.357345e-05  -5.260429e-05  0.0001496645
##                Otu1322         Otu1323         Otu1324         Otu1325         Otu1326
## (Intercept)  3.395357e-05   3.985416e-05   6.737336e-05  6.889516e-05   4.356548e-05
## Diet1       -9.549042e-06  -3.985416e-05   3.478734e-05  5.176121e-05  -1.189216e-05
##                Otu1327         Otu1328         Otu1329         Otu1330         Otu1331
## (Intercept)  8.791229e-05   7.895568e-05   3.197388e-05   5.762538e-05   6.071082e-05
## Diet1        9.705826e-06  -7.895568e-05   1.893947e-05  -3.431226e-05  -6.071082e-05
##                Otu1332         Otu1333         Otu1334         Otu1336         Otu1339
## (Intercept)  8.307507e-05  8.680815e-05   5.929249e-05   3.433279e-05   7.888819e-05
## Diet1        8.307507e-05  5.961902e-05   5.929249e-05   2.199696e-05  -7.250315e-05
##                Otu1340         Otu1341         Otu1343         Otu1344         Otu1345
## (Intercept)  4.343002e-05   5.917894e-05   7.061238e-05  7.088713e-06   6.810025e-05
## Diet1       -4.343002e-05  -5.917894e-05   5.440324e-06  7.088713e-06  -3.617503e-05
##                Otu1346         Otu1348         Otu1350         Otu1352         Otu1353
## (Intercept)  8.394660e-05   2.606882e-05   6.350776e-05  0.0001132968   3.159915e-05
## Diet1        2.119221e-05  -2.606882e-05  -1.469870e-05  0.0001132968  -1.651710e-05
##                Otu1355         Otu1356         Otu1357         Otu1358         Otu1359
## (Intercept)  6.825184e-05  2.262307e-05   6.768418e-05   5.746539e-05   1.32309e-05
## Diet1       -5.316980e-05  2.262307e-05  -2.355670e-05   5.746539e-05  -1.32309e-05
##                Otu1360         Otu1361         Otu1363         Otu1364         Otu1365
## (Intercept)  1.699264e-05   5.575186e-05   3.822459e-05   3.523147e-05   6.789138e-05
## Diet1        1.699264e-05   3.832033e-05   1.867298e-05   3.523147e-05  -5.843976e-05
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##                 Otu1366       Otu1367       Otu1368       Otu1369       Otu1370
## (Intercept) 5.746539e-05  4.681356e-05  4.824116e-05  7.904313e-05  3.777445e-05
## Diet1       5.746539e-05  2.089873e-05 -3.547107e-05 -1.871495e-05  3.777445e-05
##                 Otu1371       Otu1372       Otu1373       Otu1374       Otu1375
## (Intercept)  6.517205e-05  8.066577e-05  6.633026e-05  5.029503e-05  6.832545e-05
## Diet1       -6.517205e-05  1.549372e-05  6.633026e-05  2.575767e-05 -3.363807e-06
##                 Otu1376       Otu1379       Otu1380       Otu1381       Otu1382
## (Intercept) 1.060658e-04  1.127938e-05  7.226568e-05  8.566974e-06  3.858401e-05
## Diet1       6.696256e-05 -1.127938e-05  2.811690e-05 -8.566974e-06 -3.858401e-05
##                 Otu1383       Otu1384       Otu1385       Otu1386
## (Intercept) 3.092173e-05  4.642297e-05  5.756273e-05  3.534587e-05
## Diet1       1.788732e-05 -4.642297e-05 -5.283692e-05 -3.534587e-05
##                 Otu1387       Otu1389       Otu1391       Otu1392       Otu1393
## (Intercept)  6.965448e-05  5.002206e-05  6.065791e-05  6.030176e-05  4.663176e-05
## Diet1       -4.524995e-05 -2.166720e-05  6.065791e-05  2.270381e-05 -4.663176e-05
##                 Otu1394       Otu1395       Otu1397       Otu1398       Otu1399
## (Intercept) 4.233726e-05  5.075388e-05  5.782321e-05  5.850134e-05  6.764764e-05
## Diet1       2.358047e-06 -4.602807e-05  3.988337e-05  7.661055e-06 -5.544537e-05
##                 Otu1400       Otu1401       Otu1402       Otu1403       Otu1404
## (Intercept)  4.200849e-05 6.918474e-05  5.711316e-06 3.483383e-05  4.562044e-05
## Diet1       -4.200849e-05 6.918474e-05 -5.711316e-06 3.483383e-05 -4.562044e-05
##                 Otu1405       Otu1406       Otu1407      Otu1408       Otu1410
## (Intercept) 4.076706e-05 3.338544e-05  5.847621e-05 3.13574e-05  7.059178e-05
## Diet1       3.665512e-05 3.338544e-05  3.091440e-05 3.13574e-05 -5.537789e-06
##                 Otu1411       Otu1412       Otu1413       Otu1414
## (Intercept)  5.918956e-05  4.772270e-05  3.251614e-05  4.407636e-05
## Diet1       -5.446376e-05 -9.916229e-06 -1.833872e-05 -1.544080e-06
##                 Otu1415       Otu1416       Otu1417       Otu1418       Otu1419
## (Intercept)  4.747137e-05 2.262307e-05  5.454161e-05 0.0001069475  6.191345e-05
## Diet1       -4.747137e-05 2.262307e-05 -5.454161e-05 0.0001069475 -6.191345e-05
##                 Otu1420       Otu1421       Otu1422       Otu1423       Otu1425
## (Intercept) 1.277009e-05  6.642418e-05 0.0001159215  6.233571e-05  7.803778e-05
## Diet1       1.277009e-05 -6.642418e-05 0.0001159215 -6.233571e-05 -1.770960e-05
##                Otu1426       Otu1428       Otu1429      Otu1430       Otu1431
## (Intercept) 2.95191e-05 4.725809e-06  5.704307e-05 1.247372e-05 1.083318e-04
## Diet1       9.96748e-06 4.725809e-06 -5.704307e-05 4.454349e-06 7.265271e-05
##                 Otu1432       Otu1433       Otu1434       Otu1435
## (Intercept)  6.490898e-05  5.360375e-05  4.122877e-05  3.694447e-05
## Diet1       -9.204714e-06 -5.360375e-05  4.122877e-05 -3.694447e-05
##                 Otu1436       Otu1437       Otu1438       Otu1439       Otu1441
## (Intercept)  5.845661e-05 1.508205e-05  1.654033e-05  6.101132e-05  5.165549e-05
## Diet1       -3.930148e-05 1.508205e-05  1.654033e-05  6.101132e-05 -3.306818e-05
##                 Otu1442       Otu1443       Otu1444       Otu1445       Otu1446
## (Intercept) 5.058699e-05 7.471344e-05  5.213764e-05  6.682176e-05  5.865485e-05
## Diet1       5.058699e-05 1.856627e-05 -5.213764e-05 -6.682176e-05 -5.865485e-05
##                 Otu1447       Otu1448       Otu1449       Otu1450       Otu1451
## (Intercept) 6.268596e-05 3.176699e-05  5.782270e-05  6.109443e-05 5.292027e-05
## Diet1       6.268596e-05 1.880957e-05 -3.341817e-05 -4.889217e-05 2.029331e-05
##                 Otu1452       Otu1453       Otu1454       Otu1455       Otu1456
## (Intercept)  5.112038e-05 7.315593e-05  6.298132e-05 5.806663e-05 2.781741e-05
## Diet1       -1.976299e-05 7.315593e-05 -6.298132e-05 5.806663e-05 8.265794e-06
##                 Otu1457       Otu1458       Otu1459       Otu1460       Otu1462
## (Intercept) 4.189927e-05  5.229457e-05  6.718244e-05  4.314607e-05  4.469531e-05
## Diet1       2.796037e-06 -5.229457e-05 -3.057564e-05 -3.203522e-05  4.469531e-05
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##                 Otu1463       Otu1464       Otu1466       Otu1467       Otu1468
## (Intercept) 1.608656e-05  3.814404e-05  2.704562e-05  9.417677e-05  3.861318e-05
## Diet1      -1.608656e-05 -3.175900e-05 -1.011755e-05  2.359982e-05  4.422886e-06
##                 Otu1469       Otu1470       Otu1471       Otu1472       Otu1473
## (Intercept) 5.258303e-05  5.539625e-05  3.598289e-05  3.322331e-05  4.721475e-05
## Diet1       5.258303e-05 -5.539625e-05 -3.598289e-05  1.147200e-05  1.594311e-06
##                 Otu1474       Otu1475       Otu1476       Otu1478       Otu1481
## (Intercept) 3.584463e-05  3.988184e-05  5.481478e-05  4.998613e-05  3.848312e-05
## Diet1      -3.584463e-05  1.758355e-05  4.829758e-05 -1.167587e-05 -3.848312e-05
##                 Otu1482       Otu1483       Otu1484       Otu1485       Otu1486
## (Intercept) 1.503918e-05  6.243088e-05  5.765075e-05  4.927072e-05  5.398896e-05
## Diet1      -1.503918e-05  6.243088e-05 -5.765075e-05 -4.616613e-07  5.398896e-05
##                 Otu1487       Otu1488       Otu1489       Otu1490       Otu1491
## (Intercept) 4.181616e-05  5.631998e-05  4.765225e-05  5.839027e-05  6.291412e-05
## Diet1       3.379678e-05  4.000650e-05 -3.654140e-05 -5.839027e-05 -6.291412e-05
##                 Otu1493       Otu1495       Otu1496       Otu1498
## (Intercept) 2.709264e-05  5.967867e-05  3.910323e-05  4.854618e-05
## Diet1      -1.201059e-05 -4.459662e-05 -3.910323e-05 -4.854618e-05
##                 Otu1499       Otu1501       Otu1502       Otu1503       Otu1504
## (Intercept) 5.711316e-06  4.347063e-05  5.50429e-05   4.510121e-05  6.687885e-05
## Diet1      -5.711316e-06 -4.347063e-05 -5.50429e-05  -4.510121e-05  6.722141e-06
##                 Otu1505       Otu1506       Otu1507       Otu1509       Otu1511
## (Intercept) 4.357186e-05  2.835485e-05  7.076433e-05  5.377718e-05  6.224686e-05
## Diet1       1.395135e-06  2.835485e-05  4.820556e-05 -5.377718e-05  3.216850e-05
##                 Otu1512       Otu1513       Otu1514       Otu1515       Otu1516
## (Intercept) 8.715762e-06  4.070571e-05  8.770748e-05  4.694453e-05  4.296315e-05
## Diet1      -8.715762e-06 -2.652828e-05  8.770748e-05 -3.276711e-05  2.792398e-05
##                 Otu1517       Otu1518       Otu1519       Otu1520       Otu1521
## (Intercept) 3.050566e-05  7.349079e-05  2.87242e-05   8.013604e-05  6.39165e-05
## Diet1       3.050566e-05  7.349079e-05  2.87242e-05   8.013604e-05 -6.39165e-05
##                 Otu1522       Otu1523       Otu1525       Otu1526       Otu1527
## (Intercept) 1.443554e-05  1.155071e-05  4.676122e-05  5.186276e-05  4.622153e-05
## Diet1       1.401125e-06  3.531336e-06 -4.676122e-05 -5.186276e-05 -4.622153e-05
##                 Otu1528       Otu1529       Otu1530       Otu1531       Otu1533
## (Intercept) 5.516527e-05  3.619022e-05  4.156588e-05  4.997672e-05  4.854618e-05
## Diet1       5.516527e-05  3.619022e-05 -1.934417e-05  4.997672e-05 -4.854618e-05
##                 Otu1534       Otu1535       Otu1536       Otu1537       Otu1538
## (Intercept) 5.228549e-05  3.858568e-05  7.246380e-05  2.692216e-05  5.134907e-05
## Diet1       5.228549e-05  3.858568e-05  6.158814e-05 -2.692216e-05  2.279250e-05
##                 Otu1542       Otu1543       Otu1544       Otu1545       Otu1547
## (Intercept) 4.139377e-05  4.675218e-05  4.862794e-05  5.108035e-05  4.121552e-05
## Diet1      -7.537622e-06  4.675218e-05 -2.716085e-05  5.108035e-05  3.540501e-05
##                 Otu1550       Otu1551       Otu1552       Otu1553       Otu1554
## (Intercept) 5.851894e-05  2.887288e-05  5.801539e-05  1.903239e-05  4.332662e-05
## Diet1       5.851894e-05 -9.717749e-06 -1.367387e-05 -1.903239e-05  3.680942e-05
##                 Otu1555       Otu1556       Otu1557       Otu1558       Otu1559
## (Intercept) 3.142348e-05  2.689657e-05  4.439621e-05  5.242608e-05  5.894741e-05
## Diet1       2.490627e-05  2.689657e-05  1.583963e-05  3.287446e-05 -5.894741e-05
##                 Otu1560       Otu1561       Otu1562       Otu1563       Otu1564
## (Intercept) 5.213764e-05  6.628421e-05  3.643244e-05  4.354007e-05  5.417428e-05
## Diet1      -5.213764e-05  1.112157e-06 -3.170663e-05  1.747125e-05 -4.197202e-05
##                 Otu1565       Otu1566       Otu1567       Otu1568       Otu1569
## (Intercept) 5.461285e-05  6.454041e-05  5.213764e-05  6.015671e-05  6.015671e-05
## Diet1       3.137082e-05  3.478117e-05 -5.213764e-05 -6.015671e-05 -6.015671e-05
```

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##               Otu1571      Otu1572      Otu1573      Otu1575      Otu1576
## (Intercept) 5.470347e-05 4.201325e-05 3.511774e-05  2.552059e-05  4.236184e-05
## Diet1      -3.962143e-05 3.790131e-05 3.511774e-05 -5.482348e-07 -4.236184e-05
##               Otu1578      Otu1580      Otu1581      Otu1582      Otu1583
## (Intercept) 6.598729e-05  2.99239e-05 4.175558e-05  5.277296e-05  5.35486e-05
## Diet1      -2.074115e-05 -2.99239e-05 -9.745457e-06 -4.057070e-05 -5.35486e-05
##               Otu1584      Otu1585      Otu1586      Otu1587      Otu1588
## (Intercept) 2.608929e-05 4.311458e-05  5.325233e-05 5.31084e-05  5.75284e-05
## Diet1      -2.608929e-05 1.052855e-05 -1.191973e-05 5.31084e-05 -5.75284e-05
##               Otu1589      Otu1590      Otu1591      Otu1593      Otu1594
## (Intercept) 3.791974e-05  4.947848e-05 4.725809e-06 1.508205e-05 4.062168e-05
## Diet1       1.265681e-05 -4.947848e-05 4.725809e-06 1.508205e-05 4.062168e-05
##               Otu1595      Otu1597      Otu1598      Otu1600      Otu1601
## (Intercept)  1.303441e-05  4.835982e-05 5.404987e-05 3.929573e-05 3.913601e-05
## Diet1       -1.303441e-05 -4.835982e-05 2.045574e-05 3.236543e-06 2.826036e-05
##               Otu1602      Otu1603       Otu1604       Otu1605      Otu1606
## (Intercept) 5.906924e-05  5.566786e-05  4.797385e-05  4.440702e-05 1.886072e-05
## Diet1       2.047173e-05 -3.224410e-06 -9.665874e-07 -6.096758e-06 1.314940e-05
##               Otu1607      Otu1609       Otu1611       Otu1612       Otu1613
## (Intercept) 4.403355e-05 5.555426e-06  3.289555e-05  4.569053e-05  2.736517e-05
## Diet1       4.403355e-05 5.555426e-06 -3.289555e-05 -4.569053e-05 -1.824993e-06
##               Otu1614      Otu1615      Otu1617      Otu1618      Otu1619
## (Intercept) 5.76619e-05 4.151521e-05 1.508205e-05 2.799424e-05 9.451617e-06
## Diet1      -5.76619e-05 1.544639e-05 1.508205e-05 6.242935e-06 9.451617e-06
##               Otu1620      Otu1621      Otu1622      Otu1623      Otu1624
## (Intercept)  4.401270e-05 4.702602e-05 2.234765e-05 3.544356e-05 2.756822e-05
## Diet1       -2.817604e-05 2.959450e-05 2.234765e-05 3.544356e-05 2.756822e-05
##               Otu1626      Otu1627      Otu1628       Otu1630      Otu1631
## (Intercept) 9.903927e-06  1.997961e-05 3.71028e-05  4.283487e-05 7.688675e-05
## Diet1       9.903927e-06 -7.209523e-06 3.71028e-05 -4.283487e-05 6.385234e-05
##               Otu1633      Otu1634       Otu1635      Otu1636      Otu1637
## (Intercept)  4.346168e-05  3.383815e-05  2.089374e-05 4.625044e-05 5.451574e-05
## Diet1       -4.346168e-05 -3.383815e-05 -2.089374e-05 3.973324e-05 5.451574e-05
##               Otu1638      Otu1640      Otu1641      Otu1642      Otu1643
## (Intercept) 3.511774e-05 8.204663e-05 3.189071e-05  4.07837e-05  5.639691e-05
## Diet1       3.511774e-05 8.204663e-05 1.189951e-06 -4.07837e-05 -5.639691e-05
##               Otu1644      Otu1645      Otu1647      Otu1648      Otu1649
## (Intercept) 3.831026e-05 3.544356e-05 5.168560e-05  4.196384e-05  4.876355e-05
## Diet1       3.831026e-05 3.544356e-05 1.706711e-06 -4.196384e-05 -4.876355e-05
##               Otu1650      Otu1651      Otu1652       Otu1653      Otu1656
## (Intercept) 4.931046e-05 4.571684e-05 3.981846e-05  4.887904e-05 2.965834e-05
## Diet1       9.331248e-06 4.571684e-05 1.126189e-05 -4.887904e-05 1.171850e-05
##               Otu1657      Otu1659       Otu1660       Otu1661      Otu1663
## (Intercept) 2.696846e-05  5.007191e-05 3.152925e-05  5.967695e-05 4.788783e-05
## Diet1       1.633931e-05 -1.518201e-05 -2.207763e-05 -4.459490e-05 4.788783e-05
##               Otu1664      Otu1667      Otu1668       Otu1669      Otu1670
## (Intercept)  7.304465e-06 2.874967e-05 4.732857e-05  4.171345e-05 6.285725e-05
## Diet1       -9.194217e-07 2.293917e-05 1.368276e-05 -3.906985e-06 3.852440e-05
##               Otu1671      Otu1673      Otu1675       Otu1676      Otu1677
## (Intercept)  4.562044e-05 5.232123e-05 5.911435e-06  6.133416e-05 2.826851e-05
## Diet1       -4.562044e-05 5.232123e-05 4.736085e-07  6.133416e-05 -2.826851e-05
##               Otu1678      Otu1679      Otu1680      Otu1681      Otu1682
## (Intercept) 6.533949e-05  4.475678e-05 4.795391e-05 3.908603e-05  4.887904e-05
## Diet1       6.533949e-05 -4.475678e-05 4.143670e-05 3.364820e-05 -4.887904e-05
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##                 Otu1683       Otu1684       Otu1685       Otu1687       Otu1688
## (Intercept) 1.744495e-05  4.260915e-05  3.834762e-05  2.267806e-05  3.770512e-05
## Diet1       1.744495e-05 -9.528492e-06 -3.834762e-05 -9.907970e-06  3.770512e-05
##                 Otu1689       Otu1690       Otu1691       Otu1692       Otu1693
## (Intercept) 3.871784e-05  4.562044e-05  4.469531e-05  4.022354e-05  2.606882e-05
## Diet1       2.568343e-05 -4.562044e-05  4.469531e-05 -4.022354e-05 -2.606882e-05
##                 Otu1694       Otu1695       Otu1696       Otu1697       Otu1698
## (Intercept) 4.904381e-05  1.226905e-05  3.34684e-05   4.157282e-05  4.857880e-05
## Diet1       4.904381e-05 -6.678296e-08  3.34684e-05  -3.212120e-05 -2.520393e-06
##                 Otu1699       Otu1701       Otu1702       Otu1703       Otu1704
## (Intercept) 4.548828e-05  4.355966e-05  5.130253e-05  3.755915e-05  4.236184e-05
## Diet1      -3.271819e-05  4.355966e-05 -2.113843e-05  4.973125e-06 -4.236184e-05
##                 Otu1705       Otu1706       Otu1710       Otu1712       Otu1715
## (Intercept) 4.469531e-05  6.167336e-05  3.862381e-05  1.120066e-05  3.666345e-05
## Diet1       4.469531e-05  5.623553e-05 -3.862381e-05  2.976769e-06  1.059463e-05
##                 Otu1716       Otu1717       Otu1718       Otu1719       Otu1720
## (Intercept) 9.577566e-06  5.983309e-05  3.262696e-05  5.022862e-05  1.922743e-05
## Diet1       9.577566e-06  1.178237e-06 -3.262696e-05  5.022862e-05 -3.241910e-07
##                 Otu1721       Otu1722       Otu1723       Otu1724       Otu1725
## (Intercept) 4.555436e-05  4.178033e-05  5.063235e-05  2.733526e-05  4.194576e-05
## Diet1      -3.916931e-05  1.161198e-05 -5.063235e-05  2.733526e-05 -2.974350e-05
##                 Otu1726       Otu1727       Otu1728       Otu1729       Otu1730
## (Intercept) 4.186172e-05  3.633508e-05  3.487206e-05  4.469531e-05  3.258603e-05
## Diet1      -2.205387e-05  2.246879e-06  2.183765e-05  4.469531e-05 -3.258603e-05
##                 Otu1731       Otu1733       Otu1735       Otu1736       Otu1737
## (Intercept) 5.046467e-05  3.666102e-05  4.469531e-05  5.013116e-05  2.816487e-05
## Diet1      -5.046467e-05  2.954686e-06  4.469531e-05 -5.013116e-05  2.816487e-05
##                 Otu1740       Otu1741       Otu1742       Otu1743       Otu1744
## (Intercept) 4.866621e-05  4.654355e-05  4.128566e-05  3.695679e-05  3.026084e-05
## Diet1      -3.970907e-06  4.110573e-05  2.894982e-05  3.043958e-05  3.071712e-06
##                 Otu1745       Otu1746       Otu1748       Otu1749       Otu1750
## (Intercept) 3.609195e-05  4.880906e-05  1.508205e-05  4.153001e-05  1.303441e-05
## Diet1      -3.011286e-06  4.880906e-05  1.508205e-05 -4.153001e-05 -1.303441e-05
##                 Otu1751       Otu1752       Otu1753       Otu1754       Otu1755
## (Intercept) 4.1153e-05    4.441139e-05  3.337501e-05  5.920103e-05  4.469531e-05
## Diet1      -4.1153e-05    4.441139e-05  3.337501e-05  5.920103e-05  4.469531e-05
##                 Otu1756       Otu1758       Otu1759       Otu1763       Otu1764
## (Intercept) 3.740184e-05  5.078246e-05  2.682156e-05  9.577566e-06  3.997921e-05
## Diet1      -3.740184e-05 -1.999288e-05  2.682156e-05  9.577566e-06 -3.997921e-05
##                 Otu1765       Otu1766       Otu1767       Otu1769
## (Intercept) 4.152969e-05  4.511753e-05  3.135094e-05  4.943450e-05
## Diet1      -1.712516e-05 -4.511753e-05 -6.946407e-06  2.377909e-05
##                 Otu1770       Otu1771       Otu1772       Otu1773       Otu1774
## (Intercept) 3.258603e-05  2.958329e-05  1.736995e-05  5.875625e-05  3.511774e-05
## Diet1      -3.258603e-05 -2.958329e-05  1.736995e-05  2.115831e-05  3.511774e-05
##                 Otu1775       Otu1776       Otu1777       Otu1778       Otu1780
## (Intercept) 7.072105e-05  4.383350e-05  3.424603e-05  4.051782e-05  6.768028e-05
## Diet1       5.768664e-05  2.640198e-05 -3.424603e-05 -2.831555e-05  6.768028e-05
##                 Otu1781       Otu1782       Otu1783       Otu1784       Otu1785
## (Intercept) 3.945866e-05  3.445598e-05  3.831026e-05  2.475452e-05  4.389583e-05
## Diet1      -2.668857e-05  3.445598e-05  3.831026e-05  1.823732e-05 -1.835565e-05
##                 Otu1786       Otu1787       Otu1788       Otu1789       Otu1790
## (Intercept) 4.670863e-05  3.483047e-05  2.360395e-05  3.67434e-05   7.648061e-05
## Diet1      -4.670863e-05  2.901996e-05  8.069373e-06 -3.67434e-05   6.344620e-05
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##              Otu1791       Otu1792       Otu1793       Otu1794
## (Intercept)  2.932742e-05  4.236184e-05  4.123429e-05  4.054618e-05
## Diet1       -2.932742e-05 -4.236184e-05 -1.179893e-06 -4.054618e-05
##              Otu1795       Otu1796       Otu1797       Otu1798       Otu1799
## (Intercept)  7.088713e-06  3.137102e-05  5.810508e-06  4.150278e-05  2.856923e-05
## Diet1        7.088713e-06  3.137102e-05 -5.810508e-06  4.150278e-05 -2.143767e-07
##              Otu1800       Otu1801       Otu1802       Otu1803       Otu1805
## (Intercept)  1.202906e-05  3.712355e-05  2.905906e-05  3.877283e-05  2.527783e-05
## Diet1       -1.202906e-05 -3.712355e-05  2.905906e-05 -6.847610e-06  1.775824e-05
##              Otu1806       Otu1807       Otu1808       Otu1809       Otu1810
## (Intercept)  1.364216e-05  2.506259e-05  4.664426e-05  1.35356e-05   4.530290e-05
## Diet1        1.364216e-05 -1.561097e-05 -3.156221e-05 -1.35356e-05  -3.891786e-05
##              Otu1811       Otu1812       Otu1814       Otu1815       Otu1816
## (Intercept)  4.236184e-05  3.164798e-05  3.071776e-05  1.602869e-05  3.078957e-05
## Diet1       -4.236184e-05 -1.887789e-05  3.071776e-05  9.511485e-06  3.078957e-05
##              Otu1817       Otu1818       Otu1820       Otu1821       Otu1822
## (Intercept)  4.236184e-05  3.333877e-05  1.955162e-05  3.499179e-05  3.831026e-05
## Diet1       -4.236184e-05  2.030436e-05 -1.955162e-05  3.499179e-05  3.831026e-05
##              Otu1823       Otu1824       Otu1825       Otu1826       Otu1827
## (Intercept)  2.545115e-05  4.236184e-05  3.078957e-05  4.075006e-05  4.445385e-05
## Diet1        8.902535e-08 -4.236184e-05  3.078957e-05 -4.075006e-05  4.445385e-05
##              Otu1828       Otu1831       Otu1833       Otu1834       Otu1835
## (Intercept)  3.534587e-05  5.284996e-05  5.354480e-05  4.111279e-05  3.827109e-05
## Diet1       -3.534587e-05  4.703945e-05  4.051039e-05 -3.638698e-05 -1.386656e-05
##              Otu1836       Otu1837       Otu1838       Otu1839       Otu1841
## (Intercept)  2.362904e-05  6.357787e-05  3.192522e-05  4.937711e-05  5.029251e-05
## Diet1        2.362904e-05  5.054346e-05  3.192522e-05 -4.937711e-05 -1.541113e-06
##              Otu1843       Otu1844       Otu1845       Otu1846       Otu1847
## (Intercept)  4.150278e-05  1.222852e-05  3.08437e-05   1.392607e-05  2.552913e-05
## Diet1        4.150278e-05 -1.222852e-05  3.08437e-05   1.392607e-05 -2.552913e-05
##              Otu1849       Otu1851       Otu1852       Otu1853       Otu1854
## (Intercept)  2.87327e-05   1.427829e-05  2.606882e-05  4.286303e-05  4.441139e-05
## Diet1        2.87327e-05  -1.427829e-05 -2.606882e-05 -4.286303e-05  4.441139e-05
##              Otu1855       Otu1856       Otu1857       Otu1858
## (Intercept)  3.534587e-05  1.587694e-05  3.040471e-05  3.584463e-05
## Diet1       -3.534587e-05 -3.674676e-06 -3.040471e-05 -3.584463e-05
##              Otu1859       Otu1860       Otu1861       Otu1862       Otu1863
## (Intercept)  5.566987e-05  8.223887e-06  3.602846e-05  4.236184e-05  3.831026e-05
## Diet1        3.172114e-05 -8.223887e-06 -3.602846e-05 -4.236184e-05  3.831026e-05
##              Otu1864       Otu1865       Otu1866       Otu1867       Otu1868
## (Intercept)  4.875558e-05  7.321359e-05  3.910323e-05  2.87327e-05   3.140025e-05
## Diet1       -6.389218e-06  7.321359e-05 -3.910323e-05  2.87327e-05  -4.115935e-06
##              Otu1869       Otu1870       Otu1871       Otu1872       Otu1873
## (Intercept)  2.554017e-05  3.851068e-05  3.910323e-05  1.841668e-05  3.486305e-05
## Diet1        2.554017e-05  3.851068e-05 -3.910323e-05 -3.334630e-06 -3.486305e-05
##              Otu1875       Otu1876       Otu1877       Otu1878       Otu1879
## (Intercept)  5.711316e-06  3.258603e-05  3.585537e-05  4.690960e-05  8.019375e-06
## Diet1       -5.711316e-06 -3.258603e-05  2.855724e-06  3.939001e-05 -8.019375e-06
##              Otu1880       Otu1881       Otu1882       Otu1883       Otu1884
## (Intercept)  3.018249e-05  3.778489e-05  1.142263e-05  3.885178e-05  2.790308e-05
## Diet1        3.018249e-05  3.778489e-05 -1.142263e-05 -3.885178e-05  2.790308e-05
##              Otu1885       Otu1886       Otu1887       Otu1890
## (Intercept)  3.910323e-05  2.702656e-05  8.715762e-06  3.254367e-05
## Diet1       -3.910323e-05 -5.559469e-06 -8.715762e-06 -2.781786e-05
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##              Otu1892       Otu1893       Otu1895       Otu1897       Otu1898
## (Intercept)  3.213433e-05  5.210593e-05  3.283334e-05  3.192522e-05  2.987294e-05
## Diet1       -3.213433e-05  1.951990e-05  2.473165e-07  3.192522e-05 -2.987294e-05
##              Otu1899       Otu1900       Otu1901       Otu1902       Otu1903
## (Intercept)  3.511774e-05  2.685370e-05  5.399813e-05  4.014348e-05  4.135774e-05
## Diet1        3.511774e-05 -3.224656e-06  2.141210e-05  1.148771e-05 -4.135774e-05
##              Otu1904       Otu1905       Otu1906       Otu1907       Otu1908
## (Intercept)  2.217076e-05  3.199130e-05  2.741598e-05  3.424603e-05  4.166760e-05
## Diet1        2.217076e-05  2.547409e-05  5.664677e-06 -3.424603e-05  2.042171e-05
##              Otu1909       Otu1910       Otu1911       Otu1912       Otu1913
## (Intercept)  4.511753e-05  3.831026e-05  4.511753e-05  4.391457e-05  5.129968e-05
## Diet1       -4.511753e-05  3.831026e-05 -4.511753e-05  6.030132e-06  2.411055e-05
##              Otu1914       Otu1915       Otu1917       Otu1919       Otu1920
## (Intercept)  9.775808e-06  2.00392e-05   4.498098e-05  3.596748e-05  2.835485e-05
## Diet1       -9.775808e-06 -2.00392e-05  -6.394598e-07 -3.596748e-05  2.835485e-05
##              Otu1921       Otu1922       Otu1923       Otu1924
## (Intercept)  4.171587e-05  3.627644e-05  2.324203e-05  2.477018e-05
## Diet1       -3.699007e-05 -3.627644e-05 -2.324203e-05 -2.004437e-05
##              Otu1925       Otu1926       Otu1928       Otu1929       Otu1930
## (Intercept)  2.805038e-05  3.483383e-05  3.443542e-05  1.913554e-05  2.331312e-05
## Diet1        8.498760e-06  3.483383e-05  1.488380e-05 -6.933278e-06  2.331312e-05
##              Otu1931       Otu1932       Otu1933       Otu1934
## (Intercept)  1.955162e-05  9.451617e-06  3.426789e-05  4.411515e-05
## Diet1       -1.955162e-05  9.451617e-06 -3.426789e-05 -4.411515e-05
##              Otu1936       Otu1938       Otu1939       Otu1940       Otu1941
## (Intercept)  4.309223e-05  3.584463e-05  3.70337e-05   2.960421e-05  3.555668e-05
## Diet1       -1.868770e-05 -3.584463e-05 -3.70337e-05   2.208463e-05 -3.546556e-06
##              Otu1942       Otu1943       Otu1944       Otu1945       Otu1947
## (Intercept)  4.412638e-05  4.511753e-05  3.426789e-05  2.87327e-05   3.910323e-05
## Diet1        2.908721e-05 -4.511753e-05 -3.426789e-05  2.87327e-05  -3.910323e-05
##              Otu1948       Otu1950       Otu1952       Otu1954
## (Intercept)  3.910323e-05  4.511753e-05  9.709727e-06  3.960442e-05
## Diet1       -3.910323e-05 -4.511753e-05 -3.324684e-06 -3.960442e-05
##              Otu1955       Otu1956       Otu1959       Otu1960       Otu1962
## (Intercept)  3.096965e-05  4.574159e-05  3.993928e-05  2.906310e-05  3.910323e-05
## Diet1        3.096965e-05  2.860764e-05 -2.773702e-05 -3.522926e-06 -3.910323e-05
##              Otu1963       Otu1964       Otu1965       Otu1967       Otu1968
## (Intercept)  3.877283e-05  3.943771e-05  3.870675e-05  2.554017e-05  3.024387e-05
## Diet1       -6.847610e-06 -1.030738e-05 -3.964852e-07  2.554017e-05  3.024387e-05
##              Otu1969       Otu1970       Otu1971       Otu1972       Otu1973
## (Intercept)  3.416666e-05  3.719421e-05  3.511774e-05  2.848401e-05  2.973018e-05
## Diet1       -3.416666e-05 -3.719421e-05  3.511774e-05 -9.580776e-06  2.973018e-05
##              Otu1974       Otu1975       Otu1977       Otu1979
## (Intercept)  2.281022e-05  2.990805e-05  2.337768e-05  3.516169e-05
## Diet1       -2.281022e-05 -2.990805e-05  2.337768e-05 -1.062803e-05
##              Otu1980       Otu1981       Otu1983       Otu1984       Otu1985
## (Intercept)  3.503874e-05  3.789227e-05  3.284554e-05  4.441084e-05  2.539211e-05
## Diet1       -3.503874e-05 -7.728173e-06  2.873360e-05  3.689126e-05  2.539211e-05
##              Otu1986       Otu1987       Otu1988       Otu1989       Otu1990
## (Intercept)  2.778334e-05  3.714856e-05  3.770512e-05  1.583666e-05  1.955162e-05
## Diet1        1.474893e-05 -1.799343e-05  3.770512e-05  1.583666e-05 -1.955162e-05
##              Otu1991       Otu1992       Otu1993       Otu1994       Otu1995
## (Intercept)  3.011980e-05  3.258603e-05  1.127938e-05  2.87327e-05   3.511774e-05
## Diet1       -2.539399e-05 -3.258603e-05 -1.127938e-05  2.87327e-05   3.511774e-05
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##                   Otu1996       Otu1997       Otu1998       Otu1999       Otu2000
## (Intercept) 2.234765e-05 3.369483e-05  3.565943e-05 1.277009e-05  2.068328e-05
## Diet1       2.234765e-05 2.788432e-05 -3.565943e-05 1.277009e-05 -6.505854e-06
##                   Otu2002       Otu2003       Otu2004       Otu2005       Otu2006
## (Intercept)  4.135774e-05 3.511774e-05 3.531598e-05  3.360984e-05 1.220226e-05
## Diet1       -4.135774e-05 3.511774e-05 1.576437e-05 -1.852780e-05 1.220226e-05
##                   Otu2007       Otu2008       Otu2010       Otu2011       Otu2012
## (Intercept) 1.243322e-05  3.828421e-05 5.577959e-05  3.577855e-05 2.713954e-05
## Diet1       6.721908e-06 -2.608195e-05 2.319356e-05 -2.939351e-05 2.062234e-05
##                   Otu2013       Otu2014       Otu2015       Otu2016       Otu2017
## (Intercept)  3.577855e-05  3.258603e-05 1.318985e-05  3.954946e-05 3.538206e-05
## Diet1       -2.939351e-05 -3.258603e-05 1.318985e-05 -3.954946e-05 9.313242e-06
##                   Otu2018       Otu2019       Otu2020       Otu2021
## (Intercept)  2.055972e-05  7.519589e-06  2.990805e-05 2.599195e-05
## Diet1       -2.055972e-05 -7.519589e-06 -2.990805e-05 2.599195e-05
##                   Otu2022       Otu2023       Otu2025       Otu2026
## (Intercept)  4.135774e-05  2.990805e-05 2.759705e-05  2.922311e-05
## Diet1       -4.135774e-05 -2.990805e-05 2.759705e-05 -8.682556e-07
##                   Otu2027       Otu2028       Otu2030       Otu2031
## (Intercept)  2.791922e-05  2.926134e-05  2.812479e-05  2.759286e-05
## Diet1       -2.791922e-05 -2.287630e-05 -2.812479e-05 -2.759286e-05
##                   Otu2032       Otu2033       Otu2034       Otu2035       Otu2036
## (Intercept) 2.554017e-05 3.313912e-05  3.136614e-05  3.584463e-05  2.990805e-05
## Diet1       2.554017e-05 2.100780e-05 -7.737095e-06 -3.584463e-05 -2.990805e-05
##                   Otu2037       Otu2040       Otu2041       Otu2042       Otu2043
## (Intercept) 3.511774e-05  3.584463e-05  3.507114e-05 4.270121e-05  2.990805e-05
## Diet1       3.511774e-05 -3.584463e-05 -3.507114e-05 4.270121e-05 -2.990805e-05
##                   Otu2045       Otu2046       Otu2047      Otu2048       Otu2049
## (Intercept) 4.028147e-05 3.018249e-05 2.599195e-05  3.73468e-05 2.698661e-05
## Diet1       2.072985e-05 3.018249e-05 2.599195e-05 -3.73468e-05 2.117610e-05
##                   Otu2050       Otu2052       Otu2053       Otu2054       Otu2055
## (Intercept)  2.990805e-05  4.146361e-05 2.599195e-05 2.069463e-05 3.444401e-05
## Diet1       -2.990805e-05 -1.067404e-05 2.599195e-05 7.660220e-06 2.302138e-05
##                   Otu2056       Otu2057       Otu2058       Otu2059       Otu2060
## (Intercept)  4.410656e-05 3.511774e-05 5.574336e-05 2.067597e-05 2.599195e-05
## Diet1       -4.410656e-05 3.511774e-05 3.831184e-05 1.265659e-05 2.599195e-05
##                   Otu2062       Otu2063       Otu2064      Otu2065
## (Intercept)  3.584463e-05  2.358666e-05  4.135774e-05 2.554017e-05
## Diet1       -3.584463e-05 -4.683424e-06 -4.135774e-05 2.554017e-05
##                   Otu2067       Otu2068       Otu2069       Otu2070       Otu2071
## (Intercept)  3.061095e-05 1.552543e-05  3.584463e-05 2.457216e-05 5.589777e-05
## Diet1       -2.588514e-05 9.008229e-06 -3.584463e-05 1.655278e-05 5.589777e-05
##                   Otu2072       Otu2073       Otu2075      Otu2076       Otu2077
## (Intercept) 1.915513e-05  3.405323e-05  2.281022e-05 2.87327e-05  1.142263e-05
## Diet1       1.915513e-05 -2.460162e-05 -2.281022e-05 2.87327e-05 -1.142263e-05
##                   Otu2078       Otu2079      Otu2080       Otu2081       Otu2083
## (Intercept)  3.118784e-05  2.659970e-05  4.04536e-05  9.882493e-06 4.889190e-05
## Diet1       -3.118784e-05 -2.187389e-05 -4.04536e-05 -5.156684e-06 5.676723e-06
##                   Otu2084       Otu2085       Otu2086       Otu2087
## (Intercept)  4.152969e-05  3.368587e-05  1.528907e-05  3.314618e-05
## Diet1       -1.712516e-05 -3.368587e-05 -1.528907e-05 -3.314618e-05
##                   Otu2088       Otu2089       Otu2090       Otu2092      Otu2093
## (Intercept) 2.965266e-05  2.804145e-05  3.759794e-05 2.542044e-05 3.192522e-05
## Diet1       1.333918e-05 1.972632e-06 -3.759794e-05 1.238603e-05 3.192522e-05
```

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##                Otu2094       Otu2097       Otu2098       Otu2099       Otu2100
## (Intercept)  2.718913e-05  2.893182e-05  3.914770e-05  2.427742e-05  3.192522e-05
## Diet1       -2.718913e-05 -1.672955e-05  2.772507e-05 -1.482581e-05  3.192522e-05
##                Otu2101       Otu2102       Otu2103       Otu2106       Otu2108
## (Intercept)  2.362904e-05  2.281022e-05  5.922986e-05  2.87327e-05   3.050566e-05
## Diet1        2.362904e-05 -2.281022e-05  5.922986e-05  2.87327e-05   3.050566e-05
##                Otu2109       Otu2110       Otu2111       Otu2112
## (Intercept)  3.169033e-05  2.565275e-05  3.258603e-05  3.759794e-05
## Diet1       -2.696452e-05 -1.345048e-05 -3.258603e-05 -3.759794e-05
##                Otu2113       Otu2114       Otu2115       Otu2116       Otu2118
## (Intercept)  3.759794e-05  4.217539e-05  2.841635e-05  4.646827e-05  2.641224e-05
## Diet1       -3.759794e-05  1.418160e-05 -2.841635e-05  4.646827e-05  2.641224e-05
##                Otu2119       Otu2121       Otu2123       Otu2124       Otu2125
## (Intercept)  1.827457e-05  4.810180e-05  3.258603e-05  2.875496e-05  3.774540e-05
## Diet1        1.827457e-05  4.239048e-05 -3.258603e-05 -2.875496e-05 -1.138609e-06
##                Otu2126       Otu2127       Otu2128       Otu2130
## (Intercept)  3.589412e-05  3.949455e-05  2.957716e-05  3.258603e-05
## Diet1       -3.589412e-05 -2.887754e-06 -2.957716e-05 -3.258603e-05
##                Otu2133       Otu2134       Otu2136       Otu2137
## (Intercept)  2.772882e-05  2.718913e-05  6.097776e-06  2.965084e-05
## Diet1       -2.772882e-05 -2.718913e-05  2.872680e-07 -1.049571e-05
##                Otu2138       Otu2139       Otu2140       Otu2141       Otu2142
## (Intercept)  2.055972e-05  1.852899e-05  1.827457e-05  2.262307e-05  2.211164e-05
## Diet1       -2.055972e-05 -1.214395e-05  1.827457e-05  2.262307e-05 -2.211164e-05
##                Otu2144       Otu2146       Otu2147       Otu2148
## (Intercept)  3.205092e-05  4.309517e-05  2.855658e-05  8.019375e-06
## Diet1       -1.928083e-05  3.006076e-05 -2.855658e-05 -8.019375e-06
##                Otu2150       Otu2151       Otu2154       Otu2155
## (Intercept)  2.606882e-05  2.810754e-05  3.620105e-05  3.283577e-05
## Diet1       -2.606882e-05 -4.478492e-06 -3.147524e-05 -3.283577e-05
##                Otu2157       Otu2158       Otu2159       Otu2160       Otu2161
## (Intercept)  1.508205e-05  3.245387e-05  2.126614e-05  2.186604e-05  3.717462e-05
## Diet1        1.508205e-05 -1.968378e-05  2.126614e-05  5.418268e-06  3.717462e-05
##                Otu2163       Otu2164       Otu2165       Otu2166       Otu2167
## (Intercept)  2.917905e-05  2.718913e-05  3.89697e-05   3.759794e-05  2.507706e-05
## Diet1        7.427744e-06 -2.718913e-05  3.89697e-05  -3.759794e-05 -2.507706e-05
##                Otu2168       Otu2169       Otu2170       Otu2171       Otu2173
## (Intercept)  3.192522e-05  5.532626e-05  1.718031e-05  2.772770e-05  2.824777e-05
## Diet1        3.192522e-05  4.229185e-05 -1.718031e-05  2.121049e-05  2.253645e-05
##                Otu2174       Otu2175       Otu2176       Otu2178       Otu2179
## (Intercept)  3.192522e-05  3.258603e-05  3.232170e-05  3.437929e-05  3.717462e-05
## Diet1        3.192522e-05 -3.258603e-05 -6.781529e-06  1.262798e-05  3.717462e-05
##                Otu2180       Otu2182       Otu2183       Otu2185       Otu2186
## (Intercept)  2.388094e-05  3.483383e-05  3.759794e-05  3.398528e-05  7.984411e-06
## Diet1        2.388094e-05  3.483383e-05 -3.759794e-05  3.398528e-05  1.467206e-06
##                Otu2187       Otu2189       Otu2190       Otu2191       Otu2192
## (Intercept)  3.091871e-05  4.095321e-05  1.969570e-05  1.915513e-05  3.674036e-05
## Diet1        3.091871e-05  3.007756e-05 -7.493434e-06  1.915513e-05  1.206870e-05
##                Otu2194       Otu2195       Otu2196       Otu2198       Otu2199
## (Intercept)  2.832060e-05  3.078265e-05  2.932085e-05  2.932742e-05  3.447551e-05
## Diet1        6.569297e-06 -3.078265e-05  2.932085e-05 -2.932742e-05 -3.447551e-05
##                Otu2201       Otu2202       Otu2203       Otu2204       Otu2205
## (Intercept)  2.844879e-05  2.178236e-05  3.383815e-05  3.192522e-05  3.928780e-05
## Diet1        2.844879e-05 -4.286463e-06 -3.383815e-05  3.192522e-05 -9.123703e-06
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##                   Otu2206        Otu2207        Otu2208      Otu2209      Otu2212
## (Intercept) 2.297290e-05   2.614728e-05   2.606882e-05   1.74959e-05  4.517377e-05
## Diet1       1.145107e-05  -2.614728e-05  -2.606882e-05   1.74959e-05  2.803982e-05
##                   Otu2213        Otu2215        Otu2216      Otu2217      Otu2218
## (Intercept)  1.629301e-05  3.212563e-05   2.796295e-05   2.932742e-05  2.87327e-05
## Diet1       -1.629301e-05  3.212563e-05   1.813969e-05  -2.932742e-05  2.87327e-05
##                   Otu2219        Otu2220        Otu2221      Otu2222      Otu2223
## (Intercept) 2.673501e-05   1.915513e-05   2.262137e-05   3.205738e-05  3.258603e-05
## Diet1       1.851113e-05   1.915513e-05  -2.262137e-05   1.902297e-05 -3.258603e-05
##                   Otu2224        Otu2225        Otu2226      Otu2227      Otu2228
## (Intercept)  2.517312e-05   3.192522e-05   1.382988e-05   1.181452e-05  9.451617e-06
## Diet1       -2.044731e-05   3.192522e-05  -1.382988e-05   1.181452e-05  9.451617e-06
##                   Otu2229        Otu2231        Otu2232      Otu2233      Otu2235
## (Intercept)  2.650681e-05  9.577566e-06   2.525626e-05   3.383815e-05   1.996637e-05
## Diet1       -2.650681e-05  9.577566e-06   2.525626e-05  -3.383815e-05  -1.996637e-05
##                   Otu2236        Otu2237        Otu2238      Otu2240      Otu2242
## (Intercept) 4.922513e-05   1.762806e-05   6.385044e-06   3.454992e-05   1.596261e-05
## Diet1       3.619072e-05   4.593647e-06   6.385044e-06   3.454992e-05   1.596261e-05
##                   Otu2244        Otu2245        Otu2246      Otu2247
## (Intercept)  2.580011e-05   2.175131e-05   2.466525e-05   2.932742e-05
## Diet1       -2.580011e-05  -2.175131e-05  -5.762018e-06  -2.932742e-05
##                   Otu2248        Otu2249        Otu2250      Otu2252      Otu2253
## (Intercept)  2.891135e-05  6.385044e-06   2.87327e-05    2.223976e-05   2.932742e-05
## Diet1       -1.670909e-05  6.385044e-06   2.87327e-05   -2.431903e-06  -2.932742e-05
##                   Otu2254        Otu2255        Otu2256      Otu2257      Otu2259
## (Intercept)  2.554017e-05   3.057105e-05   3.785501e-05   1.776022e-05  2.932742e-05
## Diet1        2.554017e-05   2.513322e-05  -1.248219e-06  -8.308602e-06 -2.932742e-05
##                   Otu2260        Otu2261        Otu2262      Otu2263      Otu2264
## (Intercept) 4.296412e-05   2.281022e-05   2.932742e-05   2.957435e-05  1.277009e-05
## Diet1       3.154149e-05  -2.281022e-05  -2.932742e-05  -2.957435e-05  1.277009e-05
##                   Otu2265        Otu2266        Otu2267      Otu2269      Otu2270
## (Intercept)  2.853925e-05   2.932742e-05   4.217469e-05   2.636465e-05   2.863374e-05
## Diet1        1.624845e-06  -2.932742e-05   3.071453e-06  -8.244792e-07  -2.863374e-05
##                   Otu2271        Otu2272        Otu2273      Otu2274
## (Intercept)  1.948554e-05   1.629301e-05   3.383815e-05   2.105379e-05
## Diet1       -1.310049e-05  -1.629301e-05  -3.383815e-05  -2.105379e-05
##                   Otu2275        Otu2276        Otu2278      Otu2279      Otu2280
## (Intercept) 2.48429e-05    7.444722e-06   2.932742e-05   1.631348e-05   1.257666e-05
## Diet1       -2.48429e-05   2.006895e-06  -2.932742e-05  -1.631348e-05  -1.257666e-05
##                   Otu2282        Otu2283        Otu2284      Otu2285      Otu2286
## (Intercept)  3.463366e-05  1.83034e-05    3.383815e-05   4.163500e-05  2.216184e-05
## Diet1       -4.469570e-06  1.83034e-05   -3.383815e-05   3.611143e-06  1.564463e-05
##                   Otu2287        Otu2288        Otu2290      Otu2291      Otu2294
## (Intercept) 3.054291e-05   2.87327e-05    1.948554e-05   2.421666e-05  3.993990e-05
## Diet1       2.402571e-05   2.87327e-05   -1.310049e-05  -1.783162e-05  2.038828e-05
##                   Otu2295        Otu2296        Otu2298      Otu2299      Otu2300
## (Intercept)  2.562363e-05   2.707346e-05   1.202906e-05   2.234765e-05  3.293313e-05
## Diet1       -2.562363e-05   2.707346e-05  -1.202906e-05   2.234765e-05  3.293313e-05
##                   Otu2301        Otu2302        Otu2303      Otu2304      Otu2305
## (Intercept) 2.87327e-05    2.87327e-05    2.149592e-05   3.216995e-05  2.891802e-05
## Diet1       2.87327e-05    2.87327e-05    2.149592e-05  -1.996769e-05 -1.614793e-05
##                   Otu2306        Otu2307        Otu2309      Otu2310      Otu2311
## (Intercept)  2.331427e-05   3.0831e-05    3.376426e-05   3.262885e-05   3.021908e-05
## Diet1       -2.331427e-05  -3.0831e-05    2.724706e-05  -3.262885e-05  -2.366947e-06
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##                   Otu2312       Otu2313       Otu2315       Otu2319
## (Intercept)  2.757099e-05  2.447022e-05  3.383815e-05  3.183338e-05
## Diet1       -2.757099e-05 -2.447022e-05 -3.383815e-05 -3.183338e-05
##                   Otu2320      Otu2321       Otu2323       Otu2326
## (Intercept)  2.932742e-05 3.421759e-05  2.500991e-05  3.283577e-05
## Diet1       -2.932742e-05 8.148768e-06 -2.500991e-05 -3.283577e-05
##                   Otu2330       Otu2332       Otu2333       Otu2334
## (Intercept)  4.111944e-06  2.493388e-05  2.932742e-05  2.662898e-05
## Diet1       -4.111944e-06 -9.851835e-06 -2.932742e-05 -2.662898e-05
##                   Otu2335       Otu2336       Otu2337       Otu2339       Otu2340
## (Intercept)  2.932742e-05  4.327575e-05  9.293654e-06  1.364216e-05  2.664033e-05
## Diet1       -2.932742e-05  4.327575e-05  9.293654e-06  1.364216e-05 -1.246290e-05
##                   Otu2341       Otu2342       Otu2343       Otu2344       Otu2345
## (Intercept) 1.181452e-05  3.360984e-05  2.606882e-05 2.216184e-05  1.303441e-05
## Diet1       1.181452e-05 -1.852780e-05 -2.606882e-05 1.564463e-05 -1.303441e-05
##                   Otu2346       Otu2347       Otu2348      Otu2349       Otu2351
## (Intercept)  2.932742e-05  2.460696e-05  1.830257e-05  3.13574e-05  5.073953e-05
## Diet1       -2.932742e-05 -2.460696e-05 -1.357676e-05  3.13574e-05  2.467070e-05
##                   Otu2352       Otu2353      Otu2354       Otu2355       Otu2356
## (Intercept)  2.447022e-05  5.073953e-05  2.87327e-05  2.770836e-05  2.589105e-05
## Diet1       -2.447022e-05  2.467070e-05  2.87327e-05 -2.770836e-05 -6.735914e-06
##                  Otu2358      Otu2360      Otu2361        Otu2362       Otu2364
## (Intercept) 2.87327e-05 2.810349e-05 1.83034e-05   3.677563e-05  2.807359e-05
## Diet1       2.87327e-05 2.810349e-05 1.83034e-05  -1.688403e-07 -2.807359e-05
##                   Otu2365       Otu2366       Otu2367       Otu2368       Otu2371
## (Intercept)  2.822549e-05  2.126614e-05  3.164131e-05  2.932742e-05 2.219590e-05
## Diet1       -2.822549e-05  2.126614e-05  3.164131e-05 -2.932742e-05 9.161492e-06
##                   Otu2372       Otu2375       Otu2376      Otu2378       Otu2380
## (Intercept)  2.580011e-05  2.906310e-05  2.571547e-05  2.87327e-05  2.932742e-05
## Diet1       -2.580011e-05 -3.522926e-06 -2.571547e-05  2.87327e-05 -2.932742e-05
##                   Otu2381       Otu2382       Otu2383       Otu2384       Otu2385
## (Intercept)  1.220226e-05  6.517205e-06  5.437827e-06  2.858326e-05  2.486645e-05
## Diet1        1.220226e-05 -6.517205e-06 -5.437827e-06  8.023538e-06  1.344382e-05
##                   Otu2386       Otu2387       Otu2389       Otu2390       Otu2391
## (Intercept) 4.273418e-05  2.716867e-05  2.570092e-05  2.932742e-05 1.654033e-05
## Diet1       1.827714e-05 -2.716867e-05 -2.570092e-05 -2.932742e-05 1.654033e-05
##                   Otu2392       Otu2394       Otu2395       Otu2396
## (Intercept) 5.837142e-05  2.462941e-05  2.447022e-05  3.501248e-05
## Diet1       5.837142e-05 -1.045199e-05 -2.447022e-05 -1.060795e-05
##                   Otu2397       Otu2398       Otu2399       Otu2400       Otu2401
## (Intercept)  1.955162e-05  2.484893e-05  3.104466e-05  8.747948e-06  2.879878e-05
## Diet1       -1.955162e-05 -1.219889e-06  3.104466e-05  8.747948e-06  2.228157e-05
##                   Otu2403       Otu2405       Otu2406       Otu2407
## (Intercept)  1.565054e-05 1.508205e-05  1.303441e-05  6.517205e-06
## Diet1       -1.565054e-05 1.508205e-05 -1.303441e-05 -6.517205e-06
##                   Otu2408       Otu2410       Otu2412       Otu2414
## (Intercept)  2.606882e-05  2.092683e-05  1.141534e-05  2.017375e-05
## Diet1       -2.606882e-05  4.613347e-06 -1.141534e-05 -1.270520e-06
##                   Otu2415       Otu2416       Otu2417       Otu2418       Otu2419
## (Intercept)  4.961226e-06  4.312400e-05  2.593666e-05  2.606882e-05 3.128225e-05
## Diet1       -4.961226e-06  3.008959e-05 -1.316657e-05 -2.606882e-05 2.040659e-05
##                   Otu2420       Otu2421       Otu2422       Otu2423       Otu2424
## (Intercept)  1.403439e-05  6.517205e-06  9.903927e-06  1.079963e-05  1.865592e-05
## Diet1       -1.403439e-05 -6.517205e-06  9.903927e-06  4.282420e-06 -1.393011e-05
```

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##                 Otu2425       Otu2427       Otu2428       Otu2429       Otu2430
## (Intercept) 2.525626e-05 1.770466e-05 2.120865e-05  2.284526e-05 2.554017e-05
## Diet1       2.525626e-05 6.829005e-06 1.539814e-05 -2.284526e-05 2.554017e-05
##                 Otu2433       Otu2434       Otu2435       Otu2436
## (Intercept)  2.606882e-05  3.007835e-05  2.366356e-05  9.372863e-06
## Diet1       -2.606882e-05 -3.007835e-05 -2.366356e-05 -9.372863e-06
##                 Otu2437       Otu2438       Otu2439       Otu2440       Otu2442
## (Intercept)  1.303441e-05 2.167393e-05  2.175131e-05 5.679685e-05  6.167915e-06
## Diet1       -1.303441e-05 1.025129e-05 -2.175131e-05 4.877747e-05 -6.167915e-06
##                 Otu2443      Otu2445       Otu2446       Otu2452       Otu2454
## (Intercept)  2.355089e-05 1.56787e-05 1.922121e-05  1.092463e-05  1.587694e-05
## Diet1       -2.355089e-05 1.56787e-05 1.270401e-05 -1.092463e-05 -3.674676e-06
##                 Otu2455       Otu2456       Otu2457      Otu2459       Otu2460
## (Intercept)  2.907597e-05  2.283069e-05  2.606882e-05 2.554017e-05 2.061604e-05
## Diet1       -2.907597e-05 -2.283069e-05 -2.606882e-05 2.554017e-05 5.576861e-06
##                 Otu2461       Otu2462      Otu2463      Otu2464      Otu2466
## (Intercept)  1.955162e-05  2.059604e-05 1.462974e-05  1.84366e-05 1.890323e-05
## Diet1       -1.955162e-05 -2.059604e-05 1.462974e-05 -1.84366e-05 1.890323e-05
##                 Otu2467      Otu2469      Otu2470       Otu2471       Otu2475
## (Intercept)  2.032727e-05 3.695527e-05 1.890323e-05  1.776022e-05  2.498944e-05
## Diet1       -1.424036e-06 3.695527e-05 1.890323e-05 -8.308602e-06 -2.498944e-05
##                 Otu2476       Otu2477       Otu2478       Otu2479
## (Intercept)  9.775808e-06  2.606882e-05  2.606882e-05  3.395233e-05
## Diet1       -9.775808e-06 -2.606882e-05 -2.606882e-05 -9.547801e-06
##                 Otu2480       Otu2481      Otu2482      Otu2484       Otu2485
## (Intercept)  2.283069e-05  1.644777e-05 2.554017e-05 2.554017e-05  1.503918e-05
## Diet1       -2.283069e-05 -1.644777e-05 2.554017e-05 2.554017e-05 -1.503918e-05
##                 Otu2486       Otu2487       Otu2488      Otu2489      Otu2490
## (Intercept)  2.694610e-05  3.007835e-05  2.675383e-05 2.525626e-05 2.554017e-05
## Diet1       -1.186405e-05 -3.007835e-05 -2.036878e-05 2.525626e-05 2.554017e-05
##                 Otu2491      Otu2492       Otu2493      Otu2495       Otu2496
## (Intercept)  2.440453e-05 2.788096e-05  1.743152e-05 3.660679e-05  1.508418e-05
## Diet1        2.440453e-05 2.788096e-05 -1.743152e-05 3.660679e-05 -1.508418e-05
##                 Otu2497       Otu2498      Otu2500      Otu2501      Otu2503
## (Intercept)  2.873217e-05  2.837453e-05 2.173084e-05 1.181452e-05 2.788096e-05
## Diet1       -1.365013e-05 -2.837453e-05 -2.173084e-05 1.181452e-05 2.788096e-05
##                 Otu2504      Otu2506      Otu2507      Otu2509       Otu2511
## (Intercept)  3.007835e-05 1.678172e-05 3.007835e-05 2.031111e-05  2.175131e-05
## Diet1       -3.007835e-05 1.107041e-05 -3.007835e-05 2.031111e-05 -2.175131e-05
##                 Otu2512      Otu2513      Otu2514      Otu2516      Otu2518
## (Intercept)  9.775808e-06 3.091655e-05 1.890323e-05 1.890323e-05 2.964722e-05
## Diet1       -9.775808e-06 1.432958e-05 1.890323e-05 1.890323e-05 2.964722e-05
##                 Otu2520       Otu2521      Otu2522       Otu2524      Otu2526
## (Intercept)  2.606882e-05  1.829778e-05 2.554017e-05  2.606882e-05 3.078957e-05
## Diet1       -2.606882e-05 -1.829778e-05 2.554017e-05 -2.606882e-05 3.078957e-05
##                 Otu2528       Otu2529      Otu2530       Otu2531
## (Intercept)  2.389913e-05  3.476103e-05  2.606882e-05  2.057543e-05
## Diet1       -2.389913e-05 -1.035650e-05 -2.606882e-05 -5.493388e-06
##                 Otu2533      Otu2534       Otu2536      Otu2537      Otu2538
## (Intercept) 3.413066e-05 4.008323e-05  2.324203e-05 1.890323e-05 1.890323e-05
## Diet1       3.001871e-05 4.008323e-05 -2.324203e-05 1.890323e-05 1.890323e-05
##                 Otu2539      Otu2540      Otu2542       Otu2543      Otu2545
## (Intercept)  3.007835e-05 3.426601e-05 2.554017e-05  1.427829e-05 3.979932e-05
## Diet1       -3.007835e-05 3.426601e-05 2.554017e-05 -1.427829e-05 3.979932e-05
```

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##              Otu2546      Otu2547      Otu2548      Otu2549      Otu2550
## (Intercept)  3.185341e-05 1.915513e-05 9.577566e-06 1.890323e-05 1.690076e-05
## Diet1       -1.677137e-05 1.915513e-05 9.577566e-06 1.890323e-05 1.038355e-05
##              Otu2551      Otu2552      Otu2554     Otu2555      Otu2556
## (Intercept)  2.957716e-05  2.587058e-05 4.13326e-05 2.234765e-05  1.631348e-05
## Diet1       -2.957716e-05 -6.715448e-06 4.13326e-05 2.234765e-05 -1.631348e-05
##              Otu2557       Otu2558       Otu2560      Otu2562       Otu2563
## (Intercept)  2.580450e-05  2.498944e-05  1.928729e-05  2.324712e-05 2.554017e-05
## Diet1       -2.643235e-07 -2.498944e-05  6.252882e-06 -2.324712e-05 2.554017e-05
##              Otu2564      Otu2565       Otu2566      Otu2567       Otu2569
## (Intercept)  1.596261e-05  2.891135e-05 1.890323e-05  2.891135e-05 4.305792e-05
## Diet1        1.596261e-05 -1.670909e-05 1.890323e-05 -1.670909e-05 3.654071e-05
##              Otu2570      Otu2571      Otu2572       Otu2573       Otu2574
## (Intercept)  6.032819e-05 2.554017e-05  2.606882e-05  2.646181e-05  2.606882e-05
## Diet1        6.032819e-05 2.554017e-05 -2.606882e-05 -2.646181e-05 -2.606882e-05
##              Otu2575      Otu2576       Otu2577     Otu2578       Otu2579
## (Intercept)  2.606882e-05  3.476103e-05 1.83034e-05  8.715762e-06 2.554017e-05
## Diet1       -2.606882e-05 -1.035650e-05 1.83034e-05 -8.715762e-06 2.554017e-05
##              Otu2580      Otu2581       Otu2582      Otu2583      Otu2584
## (Intercept)  1.277009e-05  2.255877e-05 2.497235e-05  8.15674e-06 2.705135e-05
## Diet1        1.277009e-05 -2.255877e-05 2.497235e-05 -8.15674e-06 2.705135e-05
##              Otu2585      Otu2586       Otu2587      Otu2589      Otu2591
## (Intercept)  1.456517e-05  2.248603e-05 1.567534e-05  2.264146e-05  1.644777e-05
## Diet1        1.456517e-05 -3.582794e-06 9.864833e-06  2.264146e-05 -1.644777e-05
##              Otu2592       Otu2593      Otu2595       Otu2596       Otu2597
## (Intercept)  9.775808e-06 1.654033e-05 1.508205e-05  3.035124e-05 1.280003e-05
## Diet1       -9.775808e-06 1.654033e-05 1.508205e-05 -1.526920e-05 1.377397e-06
##              Otu2598       Otu2599      Otu2600      Otu2601      Otu2602
## (Intercept)  8.566974e-06 1.915513e-05 2.069463e-05 1.890323e-05  2.175131e-05
## Diet1       -8.566974e-06 1.915513e-05 7.660220e-06 1.890323e-05 -2.175131e-05
##              Otu2603       Otu2604       Otu2605      Otu2606       Otu2608
## (Intercept)  6.517205e-06  2.631856e-05 1.217053e-05 1.574478e-05  2.281022e-05
## Diet1       -6.517205e-06 -2.631856e-05 6.732704e-06 9.227573e-06 -2.281022e-05
##              Otu2609      Otu2610      Otu2611       Otu2613       Otu2614
## (Intercept)  1.277009e-05 3.050566e-05  1.903239e-05  2.631856e-05 1.491516e-05
## Diet1        1.277009e-05 3.050566e-05 -1.903239e-05 -2.631856e-05 8.397956e-06
##              Otu2615       Otu2616       Otu2617      Otu2618
## (Intercept)  2.174399e-05  1.141641e-05 1.508205e-05  2.631856e-05
## Diet1       -2.588862e-06 -5.031365e-06 1.508205e-05 -2.631856e-05
##              Otu2619       Otu2621       Otu2622       Otu2623      Otu2624
## (Intercept)  9.775808e-06  1.609037e-05  2.281022e-05  2.234765e-05 1.654033e-05
## Diet1       -9.775808e-06 -1.609037e-05 -2.281022e-05  2.234765e-05 1.654033e-05
##              Otu2625      Otu2627      Otu2628      Otu2629       Otu2631
## (Intercept)  1.439318e-05 2.220041e-05  2.35613e-05 3.523147e-05  2.631856e-05
## Diet1        6.169291e-06 1.676258e-05 -2.35613e-05 3.523147e-05 -2.631856e-05
##              Otu2632       Otu2634       Otu2635      Otu2636       Otu2637
## (Intercept)  2.352478e-05  1.629301e-05 1.654033e-05  2.281022e-05  2.35613e-05
## Diet1       -1.407316e-05 -1.629301e-05 1.654033e-05 -2.281022e-05 -2.35613e-05
##              Otu2638       Otu2639       Otu2640      Otu2641
## (Intercept)  2.281022e-05  2.523668e-05  2.234765e-05  2.575129e-05
## Diet1       -2.281022e-05 -8.321461e-07  2.234765e-05 -1.936624e-05
##              Otu2642       Otu2643       Otu2644      Otu2645      Otu2646
## (Intercept)  1.997851e-05  1.675487e-05  2.234765e-05 1.508205e-05 1.596261e-05
## Diet1       -1.075276e-06 -7.303254e-06  2.234765e-05 1.508205e-05 1.596261e-05
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##                  Otu2647        Otu2648        Otu2649        Otu2650        Otu2651
## (Intercept) 2.234765e-05  2.281022e-05  2.281022e-05  1.596261e-05  4.725809e-06
## Diet1       2.234765e-05 -2.281022e-05 -2.281022e-05  1.596261e-05  4.725809e-06
##                  Otu2652        Otu2653        Otu2655        Otu2656        Otu2657
## (Intercept) 1.522158e-05  2.281022e-05  2.816487e-05  4.472926e-05  1.955162e-05
## Diet1       -8.836540e-06 -2.281022e-05  2.816487e-05  4.472926e-05 -1.955162e-05
##                  Otu2658        Otu2660        Otu2661        Otu2663
## (Intercept) 2.281022e-05  9.577566e-06  2.281022e-05  2.160138e-05
## Diet1       -2.281022e-05  9.577566e-06 -2.281022e-05 -2.160138e-05
##                  Otu2664        Otu2665        Otu2667        Otu2669
## (Intercept) 2.631856e-05  2.631856e-05  2.241373e-05  2.281022e-05
## Diet1       -2.631856e-05 -2.631856e-05  1.589653e-05 -2.281022e-05
##                  Otu2670        Otu2671        Otu2672        Otu2673
## (Intercept) 1.955162e-05  2.160759e-05  1.858731e-05  7.519589e-06
## Diet1       -1.955162e-05 -2.160759e-05  1.858731e-05 -7.519589e-06
##                  Otu2674        Otu2675        Otu2676        Otu2677        Otu2678
## (Intercept) 2.281022e-05  2.191199e-05  3.986540e-05  2.712344e-05  1.507312e-05
## Diet1       -2.281022e-05  8.877581e-06  3.334819e-05  2.168562e-05  8.555919e-06
##                  Otu2680        Otu2681        Otu2682        Otu2683        Otu2684
## (Intercept) 1.456517e-05  2.143724e-05  2.631856e-05  3.523147e-05  4.796505e-05
## Diet1       1.456517e-05 -2.143724e-05 -2.631856e-05  3.523147e-05  4.252723e-05
##                  Otu2685        Otu2686        Otu2687        Otu2688
## (Intercept) 2.261198e-05  1.903239e-05  2.240727e-05  2.281022e-05
## Diet1       -3.456845e-06 -1.903239e-05 -2.240727e-05 -2.281022e-05
##                  Otu2690        Otu2691        Otu2692        Otu2693        Otu2694
## (Intercept) 2.373561e-05  4.725809e-06  2.234765e-05  2.281022e-05  1.539133e-05
## Diet1       -2.373561e-05  4.725809e-06  2.234765e-05 -2.281022e-05 -1.539133e-05
##                  Otu2695        Otu2696        Otu2697        Otu2698
## (Intercept) 5.278716e-05  2.319592e-05  2.281022e-05  2.457337e-05
## Diet1       5.278716e-05 -2.319592e-05 -2.281022e-05 -1.237111e-05
##                  Otu2699        Otu2700        Otu2702        Otu2703        Otu2705
## (Intercept) 2.021293e-05  2.118318e-05  4.490733e-05  1.829778e-05  1.739286e-05
## Diet1       -1.076132e-05  2.118318e-05  3.688795e-05 -1.829778e-05 -1.739286e-05
##                  Otu2706        Otu2707        Otu2708        Otu2709
## (Intercept) 1.248618e-05  2.648055e-05  2.581737e-05  2.281022e-05
## Diet1       1.248618e-05 -2.076025e-06 -2.581737e-05 -2.281022e-05
##                  Otu2710        Otu2711        Otu2712        Otu2713        Otu2715
## (Intercept) 2.281022e-05  2.400483e-05  9.577566e-06  2.215504e-05  1.220226e-05
## Diet1       -2.281022e-05 -2.400483e-05  9.577566e-06 -2.215504e-05  1.220226e-05
##                  Otu2716        Otu2717        Otu2719        Otu2720        Otu2721
## (Intercept) 2.453366e-05  2.584442e-05  2.689440e-05  2.506347e-05  2.281022e-05
## Diet1       2.453366e-05  2.584442e-05  7.342781e-06 -2.506347e-05 -2.281022e-05
##                  Otu2722        Otu2724        Otu2725        Otu2726        Otu2727
## (Intercept) 9.775808e-06  2.709264e-05  2.281022e-05  2.940485e-05  1.028123e-05
## Diet1       -9.775808e-06 -1.201059e-05 -2.281022e-05  2.529291e-05  1.028123e-05
##                  Otu2728        Otu2729        Otu2730        Otu2732        Otu2734
## (Intercept) 1.903239e-05  2.527768e-05  2.040496e-05  1.980785e-05  2.233858e-05
## Diet1       -1.903239e-05 -2.527768e-05 -2.040496e-05  1.980785e-05  4.945726e-06
##                  Otu2735        Otu2736        Otu2737        Otu2738        Otu2739
## (Intercept) 1.955162e-05  1.220226e-05  2.468844e-05  2.631856e-05  2.418023e-05
## Diet1       -1.955162e-05  1.220226e-05  2.468844e-05 -2.631856e-05 -1.141014e-05
##                  Otu2740        Otu2741        Otu2742        Otu2743
## (Intercept) 2.631856e-05  2.052659e-05  2.240727e-05  1.903239e-05
## Diet1       -2.631856e-05 -7.756501e-06 -2.240727e-05 -1.903239e-05
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##                 Otu2745        Otu2746        Otu2747      Otu2750
## (Intercept)  2.045991e-05   1.708989e-05   2.281022e-05 1.405823e-05
## Diet1       -2.045991e-05  -1.708989e-05  -2.281022e-05 1.023818e-06
##                 Otu2751        Otu2753        Otu2754        Otu2755        Otu2757
## (Intercept)  1.589007e-05 3.373392e-05 3.338544e-05 2.538843e-05  2.481499e-05
## Diet1       -1.589007e-05 3.373392e-05 3.338544e-05 1.235401e-05 -2.481499e-05
##                 Otu2758        Otu2762        Otu2763        Otu2764        Otu2766
## (Intercept)  2.281022e-05  2.281022e-05  1.654033e-05  1.220226e-05  1.930588e-05
## Diet1       -2.281022e-05 -2.281022e-05  1.654033e-05  1.220226e-05 -1.930588e-05
##                 Otu2767        Otu2768        Otu2770        Otu2771        Otu2773
## (Intercept)  4.270793e-05  3.667136e-05  9.775808e-06  2.655295e-05  3.050566e-05
## Diet1        4.270793e-05  3.667136e-05 -9.775808e-06 -1.147090e-05  3.050566e-05
##                 Otu2774        Otu2775        Otu2776        Otu2777        Otu2778
## (Intercept)  1.903239e-05  1.903239e-05  2.689657e-05  2.069013e-05  2.531844e-05
## Diet1       -1.903239e-05 -1.903239e-05  2.689657e-05 -2.069013e-05  5.471136e-06
##                 Otu2779        Otu2780        Otu2781        Otu2782        Otu2783
## (Intercept)  1.425152e-05 2.234765e-05  8.903838e-06  1.629301e-05  1.583666e-05
## Diet1       -1.481436e-06 2.234765e-05 -2.518794e-06 -1.629301e-05  1.583666e-05
##                 Otu2784        Otu2785        Otu2787        Otu2788        Otu2789
## (Intercept)  2.350363e-05 2.234765e-05 1.596261e-05 2.234765e-05  2.281022e-05
## Diet1        2.350363e-05 2.234765e-05 1.596261e-05 2.234765e-05 -2.281022e-05
##                 Otu2790        Otu2791        Otu2792        Otu2793        Otu2794
## (Intercept)  2.241373e-05  1.839023e-05  1.654033e-05  2.631856e-05  2.281022e-05
## Diet1        1.589653e-05 -1.839023e-05  1.654033e-05 -2.631856e-05 -2.281022e-05
##                 Otu2795        Otu2796        Otu2797      Otu2800
## (Intercept)  2.111416e-05  1.998961e-05  2.281022e-05  2.173084e-05
## Diet1       -2.111416e-05 -1.998961e-05 -2.281022e-05 -2.173084e-05
##                 Otu2802        Otu2805        Otu2806        Otu2808        Otu2809
## (Intercept) 3.979932e-05  5.711316e-06  2.281022e-05 2.234765e-05  1.998961e-05
## Diet1       3.979932e-05 -5.711316e-06 -2.281022e-05 2.234765e-05 -1.998961e-05
##                 Otu2810        Otu2811        Otu2812        Otu2813        Otu2814
## (Intercept)  1.417743e-05  2.281022e-05  2.193825e-05  1.827457e-05  2.523668e-05
## Diet1        1.417743e-05 -2.281022e-05 -1.555320e-05  1.827457e-05 -8.321461e-07
##                 Otu2815        Otu2817        Otu2819        Otu2822        Otu2824
## (Intercept)  9.807974e-06 2.234765e-05 3.418034e-05  2.281022e-05  2.212789e-05
## Diet1       -3.422930e-06 2.234765e-05 1.462872e-05 -2.281022e-05 -7.950464e-06
##                 Otu2827        Otu2828        Otu2829        Otu2831        Otu2832
## (Intercept)  2.631856e-05 3.021504e-05 2.234765e-05  2.281022e-05 2.539211e-05
## Diet1       -2.631856e-05 1.859402e-05 2.234765e-05 -2.281022e-05 2.539211e-05
##                 Otu2834        Otu2836        Otu2838        Otu2839
## (Intercept)  2.139682e-05 1.654033e-05  2.281022e-05  2.375494e-05
## Diet1       -2.139682e-05 1.654033e-05 -2.281022e-05 -2.375494e-05
##                 Otu2840        Otu2844        Otu2845        Otu2847        Otu2849
## (Intercept)  2.656845e-05 2.917905e-05 3.565748e-05  2.281022e-05  2.681835e-05
## Diet1       -2.656845e-05 7.427744e-06 9.588659e-06 -2.281022e-05 -2.681835e-05
##                 Otu2850        Otu2852        Otu2853        Otu2854
## (Intercept)  2.281022e-05  2.033678e-05 3.376426e-05  3.137506e-05
## Diet1       -2.281022e-05 -2.033678e-05 2.724706e-05 -1.210967e-06
##                 Otu2858        Otu2860        Otu2862        Otu2864
## (Intercept)  1.884492e-05  1.955162e-05  1.847224e-05  1.052689e-05
## Diet1       -1.884492e-05 -1.955162e-05 -1.847224e-05 -1.052689e-05
##                 Otu2865        Otu2866        Otu2870        Otu2872        Otu2873
## (Intercept) 3.770512e-05  1.955162e-05  1.713395e-05  1.955162e-05 4.236636e-05
## Diet1       3.770512e-05 -1.955162e-05 -1.713395e-05 -1.955162e-05 4.236636e-05
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##                 Otu2874       Otu2875       Otu2876       Otu2877       Otu2879
## (Intercept)  1.629301e-05 1.181452e-05  1.629301e-05 1.500704e-05  1.631348e-05
## Diet1       -1.629301e-05 1.181452e-05 -1.629301e-05 1.500704e-05 -1.631348e-05
##                 Otu2880       Otu2882       Otu2884       Otu2887
## (Intercept)  1.901193e-05  2.255877e-05 9.451617e-06  8.566974e-06
## Diet1       -1.901193e-05 -2.255877e-05 9.451617e-06 -8.566974e-06
##                 Otu2888       Otu2889       Otu2890       Otu2891
## (Intercept)  1.303441e-05 3.660679e-05  1.955162e-05  1.955162e-05
## Diet1       -1.303441e-05 3.660679e-05 -1.955162e-05 -1.955162e-05
##                 Otu2894       Otu2895       Otu2896       Otu2897      Otu2898
## (Intercept)  1.955162e-05  9.422459e-06  1.955162e-05  6.517205e-06 2.06663e-05
## Diet1       -1.955162e-05 -9.422459e-06 -1.955162e-05 -6.517205e-06 2.06663e-05
##                 Otu2899       Otu2901       Otu2902       Otu2903
## (Intercept)  1.72607e-05   1.303441e-05  1.955162e-05  1.713395e-05
## Diet1       -4.49061e-06  -1.303441e-05 -1.955162e-05 -1.713395e-05
##                 Otu2904       Otu2906       Otu2907       Otu2908       Otu2909
## (Intercept)  1.914867e-05  1.955162e-05 3.660679e-05 4.725809e-06  1.568336e-05
## Diet1       -1.914867e-05 -1.955162e-05 3.660679e-05 4.725809e-06 -1.568336e-05
##                 Otu2911       Otu2912       Otu2913       Otu2916
## (Intercept)  1.631348e-05  1.127938e-05  1.303441e-05  1.417743e-05
## Diet1       -1.631348e-05 -1.127938e-05 -1.303441e-05  1.417743e-05
##                 Otu2917       Otu2918       Otu2919       Otu2922
## (Intercept)  1.874573e-05 3.660679e-05  1.955162e-05  2.255877e-05
## Diet1       -1.874573e-05 3.660679e-05 -1.955162e-05 -2.255877e-05
##                 Otu2923       Otu2924       Otu2925       Otu2926       Otu2929
## (Intercept)  1.573296e-05 2.975015e-05  7.769482e-06  1.915513e-05  1.417743e-05
## Diet1       -1.573296e-05 1.261620e-05 -7.769482e-06  1.915513e-05  1.417743e-05
##                 Otu2930       Otu2931       Otu2932       Otu2933       Otu2934
## (Intercept) 3.948658e-05 3.236163e-05  1.915513e-05  1.955162e-05  1.417743e-05
## Diet1       3.948658e-05 1.932721e-05  1.915513e-05 -1.955162e-05  1.417743e-05
##                 Otu2935       Otu2936       Otu2937       Otu2938       Otu2940
## (Intercept)  1.915513e-05  1.513299e-05  1.482606e-05  1.915513e-05   1.955162e-05
## Diet1        1.915513e-05  1.513299e-05  1.071412e-05  1.915513e-05  -1.955162e-05
##                 Otu2941       Otu2942       Otu2943       Otu2944       Otu2945
## (Intercept)  1.955162e-05 1.417743e-05  1.955162e-05 9.577566e-06 1.773431e-05
## Diet1       -1.955162e-05 1.417743e-05 -1.955162e-05 9.577566e-06 1.420826e-06
##                 Otu2947       Otu2948       Otu2949       Otu2950
## (Intercept)  1.359457e-05 1.417743e-05  1.955162e-05  5.815766e-06
## Diet1       -1.359457e-05 1.417743e-05 -1.955162e-05 -5.815766e-06
##                 Otu2954       Otu2955       Otu2956       Otu2957
## (Intercept)  1.955162e-05  9.775808e-06  7.871738e-06 1.596261e-05
## Diet1       -1.955162e-05 -9.775808e-06 -7.871738e-06 1.596261e-05
##                 Otu2960       Otu2962       Otu2963       Otu2964
## (Intercept)  1.955162e-05  1.713395e-05  1.713395e-05  8.880110e-06
## Diet1       -1.955162e-05 -1.713395e-05 -1.713395e-05 -4.154301e-06
##                 Otu2965       Otu2966       Otu2967       Otu2968       Otu2969
## (Intercept)  1.955162e-05 1.417743e-05  1.955162e-05  1.631348e-05 3.770512e-05
## Diet1       -1.955162e-05 1.417743e-05 -1.955162e-05 -1.631348e-05 3.770512e-05
##                 Otu2970       Otu2976       Otu2977       Otu2978       Otu2979
## (Intercept) 3.660679e-05  2.255877e-05  1.303441e-05 1.915513e-05  1.955162e-05
## Diet1       3.660679e-05 -2.255877e-05 -1.303441e-05 1.915513e-05 -1.955162e-05
##                 Otu2980       Otu2981       Otu2982       Otu2983       Otu2984
## (Intercept)  2.092162e-05  1.955162e-05 2.513425e-05  2.442610e-05  1.955162e-05
## Diet1       -8.151537e-06 -1.955162e-05 1.147254e-05  1.690651e-05 -1.955162e-05
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##              Otu2986       Otu2988       Otu2989       Otu2990       Otu2991
## (Intercept) 1.955162e-05 3.660679e-05 2.042615e-05 8.157104e-06  1.955162e-05
## Diet1      -1.955162e-05 3.660679e-05 3.978378e-06 4.045161e-06 -1.955162e-05
##              Otu2992       Otu2993       Otu2994       Otu2995       Otu2996
## (Intercept) 1.471978e-05 1.791565e-05 2.370187e-05  9.360437e-06 9.451617e-06
## Diet1       8.909268e-06 1.791565e-05 4.150259e-06 -2.975393e-06 9.451617e-06
##              Otu2997       Otu2999       Otu3000       Otu3001       Otu3003
## (Intercept) 2.059604e-05 9.577566e-06  1.874573e-05  1.955162e-05  9.06911e-06
## Diet1      -2.059604e-05 9.577566e-06 -1.874573e-05 -1.955162e-05 -9.06911e-06
##              Otu3004       Otu3005       Otu3006       Otu3008       Otu3009
## (Intercept) 2.160920e-05 3.283974e-05  1.935337e-05  1.824373e-05  1.296833e-05
## Diet1      -1.421082e-07 3.283974e-05 -1.982426e-07 9.113999e-07 -6.583286e-06
##               Otu3010       Otu3011      Otu3012      Otu3013       Otu3014
## (Intercept) 2.307792e-05  1.713395e-05 3.660679e-05 1.56787e-05  1.631348e-05
## Diet1       1.326612e-06 -1.713395e-05 3.660679e-05 1.56787e-05 -1.631348e-05
##               Otu3016       Otu3017       Otu3019       Otu3020
## (Intercept) 1.631348e-05  1.955162e-05  1.955162e-05  1.629301e-05
## Diet1      -1.631348e-05 -1.955162e-05 -1.955162e-05 -1.629301e-05
##              Otu3024       Otu3025       Otu3026       Otu3027      Otu3028
## (Intercept) 1.834278e-05 1.915513e-05  1.955162e-05 1.417743e-05 9.451617e-06
## Diet1      -1.834278e-05 1.915513e-05 -1.955162e-05 1.417743e-05 9.451617e-06
##               Otu3029       Otu3031      Otu3032      Otu3034      Otu3035
## (Intercept)  6.517205e-06  1.713395e-05 1.277009e-05 1.915513e-05 6.385044e-06
## Diet1       -6.517205e-06 -1.713395e-05 1.277009e-05 1.915513e-05 6.385044e-06
##              Otu3036       Otu3038       Otu3039       Otu3040      Otu3041
## (Intercept) 4.524614e-05  1.955162e-05  2.000241e-05 1.277009e-05  2.255877e-05
## Diet1       4.524614e-05 -1.955162e-05 -8.472769e-07 1.277009e-05 -2.255877e-05
##              Otu3042       Otu3043      Otu3044       Otu3045       Otu3047
## (Intercept) 3.660679e-05  1.955162e-05 8.15674e-06  1.955162e-05  1.629301e-05
## Diet1       3.660679e-05 -1.955162e-05 -8.15674e-06 -1.955162e-05 -1.629301e-05
##               Otu3048      Otu3049      Otu3050      Otu3051      Otu3052
## (Intercept)  6.517205e-06 8.15674e-06 2.321972e-05 1.915513e-05 1.848140e-05
## Diet1       -6.517205e-06 -8.15674e-06 2.321972e-05 1.915513e-05 7.058772e-06
##              Otu3053       Otu3054       Otu3055       Otu3056      Otu3057
## (Intercept) 1.955162e-05 3.660679e-05  1.955162e-05 2.807921e-05  1.631348e-05
## Diet1      -1.955162e-05 3.660679e-05 -1.955162e-05 8.527589e-06 -1.631348e-05
##              Otu3058       Otu3059      Otu3061       Otu3064      Otu3065
## (Intercept) 3.369818e-05  1.432466e-05 7.088713e-06  2.175007e-05 1.83034e-05
## Diet1       3.369818e-05 -1.432466e-05 7.088713e-06 -2.175007e-05 1.83034e-05
##              Otu3066       Otu3069       Otu3070      Otu3072       Otu3073
## (Intercept) 9.577566e-06  1.666204e-05 6.385044e-06 2.468844e-05  1.955162e-05
## Diet1       9.577566e-06 -3.891956e-06 6.385044e-06 2.468844e-05 -1.955162e-05
##              Otu3074        Otu3076      Otu3077       Otu3078       Otu3079
## (Intercept) 2.050935e-05  1.565569e-05 1.596261e-05  1.948554e-05  1.955162e-05
## Diet1       9.577369e-07 -1.478261e-06 1.596261e-05 -1.310049e-05 -1.955162e-05
##              Otu3080       Otu3082       Otu3083      Otu3086
## (Intercept) 9.775808e-06  1.955162e-05  1.631348e-05 1.915513e-05
## Diet1      -9.775808e-06 -1.955162e-05 -1.631348e-05 1.915513e-05
##              Otu3087       Otu3088       Otu3089       Otu3091       Otu3093
## (Intercept) 1.955162e-05 1.915513e-05 4.524614e-05  2.255877e-05  1.955162e-05
## Diet1      -1.955162e-05 1.915513e-05 4.524614e-05 -2.255877e-05 -1.955162e-05
##              Otu3094       Otu3096       Otu3097       Otu3098      Otu3099
## (Intercept) 1.955162e-05 3.660679e-05  1.021092e-05  1.220226e-05 1.915513e-05
## Diet1      -1.955162e-05 3.660679e-05 -3.825875e-06  1.220226e-05 1.915513e-05
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##              Otu3100       Otu3101       Otu3102       Otu3103      Otu3104
## (Intercept) 1.596261e-05  1.631348e-05  2.217076e-05  1.955162e-05 2.81785e-05
## Diet1       1.596261e-05 -1.631348e-05  2.217076e-05 -1.955162e-05 2.81785e-05
##              Otu3105       Otu3107       Otu3109       Otu3111       Otu3112
## (Intercept)  1.955162e-05  8.566974e-06 1.596261e-05  1.277009e-05 3.660679e-05
## Diet1       -1.955162e-05 -8.566974e-06 1.596261e-05  1.277009e-05 3.660679e-05
##              Otu3114       Otu3116       Otu3118      Otu3119       Otu3120
## (Intercept) 1.915513e-05  2.105519e-05  1.39352e-05  1.631348e-05  2.0477e-05
## Diet1       1.915513e-05 -2.105519e-05 -1.39352e-05 -1.631348e-05 -2.0477e-05
##              Otu3122        Otu3123       Otu3124       Otu3125
## (Intercept)  2.523668e-05   1.142263e-05  1.468123e-05  1.427829e-05
## Diet1       -8.321461e-07  -1.142263e-05 -1.468123e-05 -1.427829e-05
##              Otu3126      Otu3127       Otu3128       Otu3129       Otu3130
## (Intercept) 1.683468e-05 2.162472e-05  8.019375e-06  2.004844e-05  1.709515e-05
## Diet1       1.683468e-05 2.779805e-06 -8.019375e-06 -2.004844e-05 -1.709515e-05
##              Otu3131       Otu3132       Otu3133      Otu3135       Otu3136
## (Intercept) 1.629301e-05  9.293654e-06  1.35356e-05  1.629301e-05  1.359457e-05
## Diet1       -1.629301e-05 9.293654e-06 -1.35356e-05 -1.629301e-05 -1.359457e-05
##              Otu3137       Otu3139       Otu3140       Otu3141
## (Intercept)  1.879897e-05  1.432789e-05  1.629301e-05 2.485785e-05
## Diet1       -1.879897e-05 -1.432789e-05 -1.629301e-05 5.306238e-06
##              Otu3143       Otu3145       Otu3147       Otu3148
## (Intercept)  1.629301e-05  8.969919e-06  1.359457e-05 9.903927e-06
## Diet1       -1.629301e-05 -8.969919e-06 -1.359457e-05 9.903927e-06
##              Otu3150       Otu3151       Otu3154       Otu3155
## (Intercept)  1.359457e-05  1.629301e-05  1.303441e-05  1.359457e-05
## Diet1       -1.359457e-05 -1.629301e-05 -1.303441e-05 -1.359457e-05
##              Otu3156      Otu3157       Otu3158       Otu3160
## (Intercept) 2.191199e-05  1.629301e-05  1.629301e-05  1.494743e-05
## Diet1       8.877581e-06 -1.629301e-05 -1.629301e-05 -1.494743e-05
##              Otu3161       Otu3162       Otu3163       Otu3164       Otu3165
## (Intercept)  1.629301e-05  8.566974e-06 1.677977e-05  2.091803e-05  7.26829e-06
## Diet1       -1.629301e-05 -8.566974e-06 8.760400e-06  3.486503e-06 -7.26829e-06
##              Otu3166       Otu3167       Otu3168       Otu3169
## (Intercept)  1.629301e-05  1.523297e-05  1.629301e-05  1.629301e-05
## Diet1       -1.629301e-05 -1.523297e-05 -1.629301e-05 -1.629301e-05
##              Otu3171      Otu3172       Otu3175       Otu3176       Otu3178
## (Intercept) 7.088713e-06  1.879897e-05  1.629301e-05  1.596261e-05  1.379758e-05
## Diet1       7.088713e-06 -1.879897e-05 -1.629301e-05 1.596261e-05 -9.071771e-06
##              Otu3179       Otu3180       Otu3181       Otu3182
## (Intercept)  1.548712e-05  1.114914e-05  2.004844e-05  1.427829e-05
## Diet1       -1.548712e-05 -1.114914e-05 -2.004844e-05 -1.427829e-05
##              Otu3184       Otu3185       Otu3186       Otu3187
## (Intercept)  1.575332e-05  1.629301e-05  3.050566e-05  1.629301e-05
## Diet1       -1.575332e-05 -1.629301e-05 3.050566e-05 -1.629301e-05
##              Otu3188       Otu3190       Otu3191      Otu3192       Otu3194
## (Intercept)  1.629301e-05  1.608656e-05 1.83034e-05  1.359457e-05 1.220226e-05
## Diet1       -1.629301e-05 -1.608656e-05 1.83034e-05 -1.359457e-05 1.220226e-05
##              Otu3195      Otu3196       Otu3197       Otu3198
## (Intercept)  1.629301e-05 1.596261e-05  1.629301e-05  1.427829e-05
## Diet1       -1.629301e-05 1.596261e-05 -1.629301e-05 -1.427829e-05
##              Otu3199       Otu3200       Otu3201       Otu3203
## (Intercept)  1.629301e-05  1.629301e-05 1.596261e-05  1.427829e-05
## Diet1       -1.629301e-05 -1.629301e-05 1.596261e-05 -1.427829e-05
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##                Otu3204        Otu3205        Otu3207        Otu3209        Otu3210
## (Intercept)  1.543232e-05   2.004844e-05  1.596261e-05   1.629301e-05   1.347376e-05
## Diet1       -1.543232e-05  -2.004844e-05  1.596261e-05  -1.629301e-05   1.347376e-05
##                Otu3211        Otu3213        Otu3214        Otu3215        Otu3216
## (Intercept)  1.629301e-05   1.731683e-05  1.596261e-05   1.887122e-05   1.740208e-05
## Diet1       -1.629301e-05  -2.234785e-06  1.596261e-05   1.887122e-05  -1.267627e-05
##                Otu3217        Otu3218        Otu3219        Otu3220        Otu3221
## (Intercept)  3.016409e-05   1.181452e-05  2.177983e-05   1.629301e-05   1.427829e-05
## Diet1         3.016409e-05   1.181452e-05  2.177983e-05  -1.629301e-05  -1.427829e-05
##                Otu3222        Otu3223        Otu3224        Otu3226        Otu3227
## (Intercept)  1.629301e-05   1.523297e-05  3.050566e-05   2.262307e-05   2.964722e-05
## Diet1       -1.629301e-05  -1.523297e-05  3.050566e-05   2.262307e-05   2.964722e-05
##                Otu3228        Otu3230        Otu3231        Otu3234        Otu3235
## (Intercept)  1.596261e-05   1.359457e-05  1.181452e-05   4.725809e-06   1.220226e-05
## Diet1         1.596261e-05  -1.359457e-05  1.181452e-05   4.725809e-06   1.220226e-05
##                Otu3237        Otu3238        Otu3240        Otu3241        Otu3242
## (Intercept)  1.359457e-05   4.725809e-06  1.264414e-05   1.819749e-05   2.252677e-05
## Diet1       -1.359457e-05   4.725809e-06  1.264414e-05   6.774860e-06   1.708894e-05
##                Otu3243        Otu3244        Otu3246        Otu3248        Otu3249
## (Intercept)  4.725809e-06   1.699264e-05  1.629301e-05   1.879897e-05   1.359457e-05
## Diet1         4.725809e-06   1.699264e-05 -1.629301e-05  -1.879897e-05  -1.359457e-05
##                Otu3250        Otu3251        Otu3253        Otu3254        Otu3257
## (Intercept)  1.596261e-05   1.629301e-05  1.711859e-05   2.766313e-05   6.517205e-06
## Diet1         1.596261e-05  -1.629301e-05  1.711859e-05   2.114593e-05  -6.517205e-06
##                Otu3258        Otu3259        Otu3260        Otu3261        Otu3263
## (Intercept)  1.567633e-05   2.759705e-05  1.629301e-05   1.629301e-05   2.482060e-05
## Diet1       -1.567633e-05   2.759705e-05 -1.629301e-05  -1.629301e-05   1.178619e-05
##                Otu3264        Otu3265        Otu3266        Otu3267        Otu3268
## (Intercept)  1.427829e-05   1.629301e-05  1.596261e-05   1.596261e-05   1.629301e-05
## Diet1       -1.427829e-05  -1.629301e-05  1.596261e-05   1.596261e-05  -1.629301e-05
##                Otu3269        Otu3271        Otu3272        Otu3273
## (Intercept)  1.303441e-05   2.023617e-05  9.775808e-06   1.452627e-05
## Diet1       -1.303441e-05  -8.033908e-06 -9.775808e-06  -1.452627e-05
##                Otu3275        Otu3276        Otu3277        Otu3279        Otu3280
## (Intercept)  1.501539e-05   1.83034e-05  1.83034e-05   1.629301e-05   1.548712e-05
## Diet1         4.139739e-06   1.83034e-05  1.83034e-05  -1.629301e-05  -1.548712e-05
##                Otu3282        Otu3283        Otu3284        Otu3285
## (Intercept)  1.765197e-05   1.913554e-05  1.523297e-05   1.629301e-05
## Diet1       -1.292617e-05  -6.933278e-06 -1.523297e-05  -1.629301e-05
##                Otu3286        Otu3287        Otu3288        Otu3289        Otu3290
## (Intercept)  1.277009e-05   1.359457e-05  1.347376e-05   1.629301e-05   1.779659e-05
## Diet1         1.277009e-05  -1.359457e-05  1.347376e-05  -1.629301e-05  -1.779659e-05
##                Otu3292        Otu3293        Otu3294        Otu3295        Otu3297
## (Intercept)  1.629301e-05   1.220226e-05  1.83034e-05   5.437827e-06   9.577566e-06
## Diet1       -1.629301e-05   1.220226e-05  1.83034e-05  -5.437827e-06   9.577566e-06
##                Otu3298        Otu3299        Otu3300        Otu3301        Otu3302
## (Intercept)  1.629301e-05   1.699264e-05  1.913554e-05   1.596261e-05   3.770512e-05
## Diet1       -1.629301e-05   1.699264e-05 -6.933278e-06   1.596261e-05   3.770512e-05
##                Otu3303        Otu3305        Otu3306        Otu3307        Otu3308
## (Intercept)  1.39983e-05   9.775808e-06  2.581559e-05   1.193321e-05   1.141571e-05
## Diet1       -1.39983e-05  -9.775808e-06  2.581559e-05  -7.207398e-06   7.865579e-07
##                Otu3309        Otu3311        Otu3313        Otu3314        Otu3315
## (Intercept)  1.629301e-05   1.596261e-05  1.913554e-05   1.181452e-05   8.880110e-06
## Diet1       -1.629301e-05   1.596261e-05 -6.933278e-06   1.181452e-05  -4.154301e-06
```

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##               Otu3316      Otu3317      Otu3318      Otu3319      Otu3321
## (Intercept) 1.629301e-05 1.271022e-05 1.596261e-05  6.517205e-06  1.629301e-05
## Diet1       -1.629301e-05 6.193014e-06 1.596261e-05 -6.517205e-06 -1.629301e-05
##               Otu3322      Otu3323      Otu3324      Otu3326      Otu3327
## (Intercept) 1.879897e-05  1.427829e-05 1.607184e-05 2.217076e-05 2.031111e-05
## Diet1       -1.879897e-05 -1.427829e-05 3.736012e-06 2.217076e-05 2.031111e-05
##               Otu3329      Otu3330      Otu3331      Otu3332
## (Intercept) 8.15674e-06  1.708989e-05 1.823170e-05  1.629301e-05
## Diet1       -8.15674e-06 -1.708989e-05 -1.184666e-05 -1.629301e-05
##               Otu3333      Otu3334      Otu3335      Otu3336      Otu3338
## (Intercept) 5.437827e-06 6.385044e-06  1.629301e-05 2.146709e-05  1.679421e-05
## Diet1       -5.437827e-06 6.385044e-06 -1.629301e-05 2.146709e-05 -1.679421e-05
##               Otu3339      Otu3340      Otu3341      Otu3342
## (Intercept) 1.879897e-05 1.430337e-05 5.218562e-06  1.303441e-05
## Diet1       -1.879897e-05 1.430337e-05 -4.927536e-07 -1.303441e-05
##               Otu3343      Otu3344      Otu3345      Otu3346      Otu3347
## (Intercept) 1.277811e-05  1.629301e-05  1.879897e-05 1.555275e-05 1.508205e-05
## Diet1       -1.277811e-05 -1.629301e-05 -1.879897e-05 1.555275e-05 1.508205e-05
##               Otu3348      Otu3349      Otu3350      Otu3351      Otu3352
## (Intercept) 1.462974e-05  1.427829e-05 4.725809e-06 1.252654e-05 2.321972e-05
## Diet1       1.462974e-05 -1.427829e-05 4.725809e-06 1.650886e-06 2.321972e-05
##               Otu3353      Otu3354      Otu3355      Otu3357
## (Intercept) 1.468123e-05  1.097729e-05  1.593771e-05  1.679421e-05
## Diet1       -1.468123e-05 -1.097729e-05 -1.010444e-07 -1.679421e-05
##               Otu3359      Otu3361      Otu3362      Otu3363      Otu3364
## (Intercept) 8.566974e-06  1.359457e-05  1.010746e-05 3.194555e-05 9.577566e-06
## Diet1       -8.566974e-06 -1.359457e-05 -3.722419e-06 3.194555e-05 9.577566e-06
##               Otu3365      Otu3366      Otu3367      Otu3369      Otu3372
## (Intercept) 1.596261e-05 1.181452e-05  1.879897e-05 1.264414e-05 1.596261e-05
## Diet1       1.596261e-05 1.181452e-05 -1.879897e-05 1.264414e-05 1.596261e-05
##               Otu3373      Otu3374      Otu3375      Otu3377      Otu3378
## (Intercept) 1.879897e-05 1.596261e-05 9.451617e-06 3.770512e-05  1.629301e-05
## Diet1       -1.879897e-05 1.596261e-05 9.451617e-06 3.770512e-05 -1.629301e-05
##               Otu3379      Otu3380      Otu3382      Otu3383      Otu3384
## (Intercept) 2.004844e-05 1.181452e-05 3.770512e-05 3.050566e-05  1.629301e-05
## Diet1       -2.004844e-05 1.181452e-05 3.770512e-05 3.050566e-05 -1.629301e-05
##               Otu3386      Otu3388      Otu3390      Otu3393      Otu3394
## (Intercept) 1.456517e-05 1.887122e-05  1.087565e-05  1.913554e-05 1.277009e-05
## Diet1       1.456517e-05 1.887122e-05 -1.087565e-05 -6.933278e-06 1.277009e-05
##               Otu3395      Otu3396      Otu3397      Otu3398
## (Intercept) 1.469328e-05 1.360592e-05  1.629301e-05  1.629301e-05
## Diet1       -1.469328e-05 5.715075e-07 -1.629301e-05 -1.629301e-05
##               Otu3400      Otu3401      Otu3402      Otu3403
## (Intercept) 5.711316e-06  1.629301e-05  1.413426e-05  1.629301e-05
## Diet1       -5.711316e-06 -1.629301e-05 -1.413426e-05 -1.629301e-05
##               Otu3404      Otu3405      Otu3406      Otu3407
## (Intercept) 1.629301e-05  1.629301e-05  1.467395e-05  1.69907e-05
## Diet1       -1.629301e-05 -1.629301e-05 -1.467395e-05 -1.69907e-05
##               Otu3408      Otu3409      Otu3410      Otu3411      Otu3412
## (Intercept) 1.528907e-05  9.775808e-06 2.262307e-05  1.359457e-05  1.181452e-05
## Diet1       -1.528907e-05 -9.775808e-06 2.262307e-05 -1.359457e-05  1.181452e-05
##               Otu3413      Otu3414      Otu3415      Otu3416      Otu3417
## (Intercept) 1.708989e-05 2.699369e-05 3.050566e-05 1.596261e-05 1.929098e-05
## Diet1       -1.708989e-05 1.537267e-05 3.050566e-05 1.596261e-05 1.929098e-05
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##                   Otu3418      Otu3420       Otu3421      Otu3423      Otu3424
## (Intercept) 1.079963e-05 1.283617e-05  1.671721e-05 2.06663e-05 1.887122e-05
## Diet1       4.282420e-06 6.318963e-06 -1.671721e-05 2.06663e-05 1.887122e-05
##                   Otu3425       Otu3426       Otu3427       Otu3428
## (Intercept)  1.303441e-05  1.303441e-05  1.359457e-05  2.057543e-05
## Diet1       -1.303441e-05 -1.303441e-05 -1.359457e-05 -5.493388e-06
##                   Otu3432       Otu3433      Otu3434      Otu3436       Otu3438
## (Intercept) 2.401471e-05  1.629301e-05 1.181452e-05 1.220226e-05  1.162102e-05
## Diet1       1.259208e-05 -1.629301e-05 1.181452e-05 1.220226e-05 -1.162102e-05
##                   Otu3439      Otu3440      Otu3442       Otu3443      Otu3444
## (Intercept)  1.629301e-05 3.050566e-05 1.596261e-05  1.879897e-05 1.548900e-05
## Diet1       -1.629301e-05 3.050566e-05 1.596261e-05 -1.879897e-05 1.005117e-05
##                   Otu3445       Otu3447      Otu3448      Otu3449      Otu3450
## (Intercept)  1.427829e-05 2.035900e-05 3.770512e-05 1.596261e-05 3.338544e-05
## Diet1       -1.427829e-05 4.045525e-06 3.770512e-05 1.596261e-05 3.338544e-05
##                   Otu3451       Otu3452        Otu3453       Otu3457      Otu3458
## (Intercept) 2.260163e-05  1.629301e-05   1.261834e-05  1.629301e-05 1.596261e-05
## Diet1       7.562458e-06 -1.629301e-05 -4.160731e-07 -1.629301e-05 1.596261e-05
##                   Otu3459       Otu3461      Otu3462       Otu3463
## (Intercept)  1.629301e-05  1.452627e-05 3.050566e-05  9.422459e-06
## Diet1       -1.629301e-05 -1.452627e-05 3.050566e-05 -9.422459e-06
##                   Otu3464      Otu3465       Otu3468      Otu3471       Otu3476
## (Intercept) 1.779518e-05 1.596261e-05  1.175950e-05 9.451617e-06  1.021271e-05
## Diet1       -1.779518e-05 1.596261e-05 -5.374452e-06 9.451617e-06 -1.021271e-05
##                   Otu3477       Otu3478       Otu3479      Otu3480       Otu3481
## (Intercept) 9.451617e-06  1.303441e-05  1.142263e-05 2.440453e-05  1.142263e-05
## Diet1       9.451617e-06 -1.303441e-05 -1.142263e-05 2.440453e-05 -1.142263e-05
##                   Otu3482       Otu3483      Otu3484       Otu3485       Otu3486
## (Intercept)  6.517205e-06  1.303441e-05 2.06663e-05  1.303441e-05  6.830857e-06
## Diet1       -6.517205e-06 -1.303441e-05 2.06663e-05 -1.303441e-05 -6.830857e-06
##                   Otu3487       Otu3489       Otu3490      Otu3491      Otu3492
## (Intercept)  1.303441e-05  6.517205e-06  1.183178e-05 9.451617e-06 2.06663e-05
## Diet1       -1.303441e-05 -6.517205e-06 -1.183178e-05 9.451617e-06 2.06663e-05
##                   Otu3493       Otu3494       Otu3496       Otu3497
## (Intercept) 9.643646e-06  1.272545e-05  6.517205e-06  1.303441e-05
## Diet1       3.126441e-06 -1.272545e-05 -6.517205e-06 -1.303441e-05
##                   Otu3498       Otu3499       Otu3500      Otu3501
## (Intercept) 9.775808e-06  5.711316e-06  8.529421e-06 1.871947e-05
## Diet1       -9.775808e-06 -5.711316e-06 -8.529421e-06 5.685059e-06
##                   Otu3502       Otu3503      Otu3504       Otu3505      Otu3506
## (Intercept)  1.303441e-05  1.249472e-05 7.088713e-06  1.303441e-05 1.508205e-05
## Diet1       -1.303441e-05 -1.249472e-05 7.088713e-06 -1.303441e-05 1.508205e-05
##                   Otu3507      Otu3508      Otu3511      Otu3512       Otu3513
## (Intercept) 9.643646e-06 2.440453e-05 1.277009e-05 1.039668e-05  1.303441e-05
## Diet1       3.126441e-06 2.440453e-05 1.277009e-05 4.685365e-06 -1.303441e-05
##                   Otu3515       Otu3516       Otu3518       Otu3520
## (Intercept)  1.303441e-05  1.142263e-05  1.303441e-05  1.142263e-05
## Diet1       -1.303441e-05 -1.142263e-05 -1.303441e-05 -1.142263e-05
##                   Otu3521       Otu3522       Otu3523       Otu3524
## (Intercept)  1.303441e-05  1.303441e-05  1.303441e-05  1.087565e-05
## Diet1       -1.303441e-05 -1.303441e-05 -1.303441e-05 -1.087565e-05
##                   Otu3525      Otu3526      Otu3528       Otu3529      Otu3530
## (Intercept) 9.426518e-06 1.073355e-05 1.277009e-05  1.503918e-05 9.451617e-06
## Diet1       -9.426518e-06 1.073355e-05 1.277009e-05 -1.503918e-05 9.451617e-06
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##                 Otu3531      Otu3533      Otu3534      Otu3535      Otu3536
## (Intercept)  1.503918e-05  1.303441e-05 2.440453e-05 9.451617e-06 9.451617e-06
## Diet1       -1.503918e-05 -1.303441e-05 2.440453e-05 9.451617e-06 9.451617e-06
##                 Otu3537      Otu3538      Otu3540      Otu3541      Otu3542
## (Intercept) 1.277009e-05  1.303441e-05  1.303441e-05 5.555426e-06 1.277009e-05
## Diet1       1.277009e-05 -1.303441e-05 -1.303441e-05 5.555426e-06 1.277009e-05
##                 Otu3543      Otu3544      Otu3545      Otu3546      Otu3547
## (Intercept) 1.277009e-05 1.277009e-05  1.303441e-05  9.426518e-06  4.111944e-06
## Diet1       1.277009e-05 1.277009e-05 -1.303441e-05 -9.426518e-06 -4.111944e-06
##                 Otu3550      Otu3551      Otu3552      Otu3553
## (Intercept)  1.087565e-05  1.277009e-05  1.303441e-05  8.223887e-06
## Diet1       -1.087565e-05  1.277009e-05 -1.303441e-05 -8.223887e-06
##                 Otu3555      Otu3556      Otu3557      Otu3559      Otu3561
## (Intercept)  1.303441e-05  1.142263e-05 9.577566e-06 3.016409e-05  1.303441e-05
## Diet1       -1.303441e-05 -1.142263e-05 9.577566e-06 3.016409e-05 -1.303441e-05
##                 Otu3562      Otu3564      Otu3566      Otu3567      Otu3569
## (Intercept) 3.016409e-05  1.303441e-05 1.283617e-05 4.725809e-06  1.303441e-05
## Diet1       3.016409e-05 -1.303441e-05 6.318963e-06 4.725809e-06 -1.303441e-05
##                 Otu3571      Otu3572      Otu3573      Otu3575
## (Intercept) 9.451617e-06  1.403679e-05  1.303441e-05  9.775808e-06
## Diet1       9.451617e-06 -1.403679e-05 -1.303441e-05 -9.775808e-06
##                 Otu3576      Otu3577      Otu3579      Otu3581      Otu3582
## (Intercept) 9.775808e-06  1.277009e-05  1.303441e-05  1.087565e-05  1.39983e-05
## Diet1       -9.775808e-06  1.277009e-05 -1.303441e-05 -1.087565e-05 -1.39983e-05
##                 Otu3583      Otu3584      Otu3586      Otu3587
## (Intercept)  1.303441e-05  1.587694e-05  1.087565e-05  8.715762e-06
## Diet1       -1.303441e-05 -3.674676e-06 -1.087565e-05 -8.715762e-06
##                 Otu3588      Otu3590      Otu3593      Otu3594      Otu3595
## (Intercept) 3.016409e-05  1.303441e-05  1.303441e-05  1.303441e-05 9.451617e-06
## Diet1       3.016409e-05 -1.303441e-05 -1.303441e-05 -1.303441e-05 9.451617e-06
##                 Otu3596      Otu3597      Otu3598      Otu3599      Otu3600
## (Intercept) 2.440453e-05  1.303441e-05 6.385044e-06  4.111944e-06 9.451617e-06
## Diet1       2.440453e-05 -1.303441e-05 6.385044e-06 -4.111944e-06 9.451617e-06
##                 Otu3601      Otu3602      Otu3603      Otu3604
## (Intercept)  1.587694e-05  1.296833e-05  1.340560e-05  1.806792e-05
## Diet1       -3.674676e-06 -6.583286e-06 5.181711e-06 -2.985870e-06
##                 Otu3605      Otu3607      Otu3608      Otu3610
## (Intercept)  1.303441e-05  1.303441e-05  1.142263e-05  1.303441e-05
## Diet1       -1.303441e-05 -1.303441e-05 -1.142263e-05 -1.303441e-05
##                 Otu3611      Otu3612      Otu3614      Otu3616      Otu3617
## (Intercept)  1.084851e-05  1.303441e-05 9.422459e-06  9.451617e-06  1.087565e-05
## Diet1        3.328919e-06 -1.303441e-05 -9.422459e-06 9.451617e-06 -1.087565e-05
##                 Otu3618      Otu3619      Otu3620      Otu3621      Otu3623
## (Intercept)  9.775808e-06 2.156200e-05 2.440453e-05  1.087565e-05  1.232677e-05
## Diet1       -9.775808e-06 1.504479e-05 2.440453e-05 -1.087565e-05 -1.232677e-05
##                 Otu3624      Otu3626      Otu3627      Otu3628
## (Intercept)  6.451125e-06  6.517205e-06  1.142263e-05  9.775808e-06
## Diet1       -6.608087e-08 -6.517205e-06 -1.142263e-05 -9.775808e-06
##                 Otu3629      Otu3631      Otu3634      Otu3636      Otu3637
## (Intercept) 9.775808e-06 9.451617e-06  1.277009e-05  1.303441e-05 9.775808e-06
## Diet1       -9.775808e-06 9.451617e-06  1.277009e-05 -1.303441e-05 -9.775808e-06
##                 Otu3639      Otu3640      Otu3641      Otu3643      Otu3644
## (Intercept) 6.517205e-06 9.293654e-06 8.956790e-06  1.162102e-05 8.566974e-06
## Diet1       -6.517205e-06 9.293654e-06 3.245474e-06 -1.162102e-05 -8.566974e-06
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##                 Otu3645       Otu3646      Otu3648       Otu3651      Otu3652
## (Intercept) 9.451617e-06  1.403679e-05 1.220226e-05  1.303441e-05 2.440453e-05
## Diet1       9.451617e-06 -1.403679e-05 1.220226e-05 -1.303441e-05 2.440453e-05
##                 Otu3654       Otu3655      Otu3656       Otu3657       Otu3658
## (Intercept) 1.277009e-05  1.261834e-05 9.451617e-06  1.087565e-05  1.603875e-05
## Diet1       1.277009e-05 -4.160731e-07 9.451617e-06 -1.087565e-05 -1.603875e-05
##                 Otu3659       Otu3661      Otu3662       Otu3665
## (Intercept) 1.087565e-05  1.303441e-05  1.087565e-05  1.453658e-05
## Diet1      -1.087565e-05 -1.303441e-05 -1.087565e-05 -1.453658e-05
##                 Otu3666       Otu3668      Otu3669       Otu3671      Otu3673
## (Intercept) 1.392607e-05  1.303441e-05  1.303441e-05 2.440453e-05 2.440453e-05
## Diet1       1.392607e-05 -1.303441e-05 -1.303441e-05 2.440453e-05 2.440453e-05
##                 Otu3675       Otu3676      Otu3677       Otu3678
## (Intercept) 1.303441e-05  1.303441e-05  1.175950e-05  1.503918e-05
## Diet1      -1.303441e-05 -1.303441e-05 -5.374452e-06 -1.503918e-05
##                 Otu3679       Otu3680      Otu3681       Otu3682
## (Intercept) 1.303441e-05  1.303441e-05  1.303441e-05  1.142263e-05
## Diet1      -1.303441e-05 -1.303441e-05 -1.303441e-05 -1.142263e-05
##                 Otu3683       Otu3684      Otu3685       Otu3686      Otu3687
## (Intercept) 1.303441e-05  1.087565e-05 1.277009e-05 1.277009e-05  1.114914e-05
## Diet1      -1.303441e-05 -1.087565e-05 1.277009e-05 1.277009e-05 -1.114914e-05
##                 Otu3688       Otu3690      Otu3692       Otu3694
## (Intercept) 1.303441e-05  1.503918e-05  6.517205e-06  1.303441e-05
## Diet1      -1.303441e-05 -1.503918e-05 -6.517205e-06 -1.303441e-05
##                 Otu3695       Otu3696      Otu3697       Otu3698       Otu3699
## (Intercept) 6.517205e-06 3.016409e-05 2.440453e-05 1.277009e-05  1.39983e-05
## Diet1      -6.517205e-06 3.016409e-05 2.440453e-05 1.277009e-05 -1.39983e-05
##                 Otu3700       Otu3701      Otu3702       Otu3703
## (Intercept) 1.296833e-05  1.303441e-05  1.303441e-05  9.775808e-06
## Diet1      -6.583286e-06 -1.303441e-05 -1.303441e-05 -9.775808e-06
##                 Otu3704       Otu3705      Otu3708       Otu3709      Otu3711
## (Intercept) 1.160361e-05 1.405823e-05  1.197436e-05 2.440453e-05  1.142263e-05
## Diet1       5.892290e-06 1.023818e-06 -1.197436e-05 2.440453e-05 -1.142263e-05
##                 Otu3712       Otu3714      Otu3715       Otu3718
## (Intercept) 1.142263e-05  1.043712e-05  1.087565e-05  1.303441e-05
## Diet1      -1.142263e-05 -9.855072e-07 -1.087565e-05 -1.303441e-05
##                 Otu3719       Otu3720      Otu3721       Otu3724       Otu3725
## (Intercept) 1.087565e-05 9.451617e-06  1.296833e-05  1.162102e-05 9.577566e-06
## Diet1      -1.087565e-05 9.451617e-06 -6.583286e-06 -1.162102e-05 9.577566e-06
##                 Otu3726       Otu3729      Otu3730       Otu3731      Otu3733
## (Intercept) 7.088713e-06 1.83034e-05  1.503918e-05 9.451617e-06  1.277009e-05
## Diet1       7.088713e-06 1.83034e-05 -1.503918e-05 9.451617e-06  1.277009e-05
##                 Otu3734       Otu3736      Otu3738       Otu3740      Otu3741
## (Intercept) 1.303441e-05  8.566974e-06  1.303441e-05 9.577566e-06 1.791358e-05
## Diet1      -1.303441e-05 -8.566974e-06 -1.303441e-05 9.577566e-06 6.490949e-06
##                 Otu3742       Otu3744      Otu3745       Otu3746
## (Intercept) 1.303441e-05  1.183178e-05 1.277009e-05  1.261834e-05
## Diet1      -1.303441e-05 -1.183178e-05 1.277009e-05 -4.160731e-07
##                 Otu3747       Otu3748      Otu3749       Otu3750
## (Intercept) 1.303441e-05  1.038228e-05 2.440453e-05  1.303441e-05
## Diet1      -1.303441e-05 -5.656471e-06 2.440453e-05 -1.303441e-05
##                 Otu3751       Otu3752      Otu3753       Otu3754      Otu3755
## (Intercept) 1.162102e-05 9.451617e-06  1.303441e-05  1.303441e-05 2.159925e-05
## Diet1      -1.162102e-05 9.451617e-06 -1.303441e-05 -1.303441e-05 8.564841e-06
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##                 Otu3756       Otu3757       Otu3758       Otu3759
## (Intercept) 1.692807e-05  1.263147e-05  1.249472e-05  1.303441e-05
## Diet1       1.692807e-05 -1.263147e-05 -1.249472e-05 -1.303441e-05
##                 Otu3760       Otu3761       Otu3763       Otu3764       Otu3765
## (Intercept)  1.303441e-05  1.296833e-05  1.087565e-05  1.277009e-05 2.440453e-05
## Diet1       -1.303441e-05 -6.583286e-06 -1.087565e-05  1.277009e-05 2.440453e-05
##                 Otu3768       Otu3769       Otu3770       Otu3772       Otu3773
## (Intercept)  1.303441e-05  1.303441e-05  6.385044e-06  2.030061e-05  8.715762e-06
## Diet1       -1.303441e-05 -1.303441e-05  6.385044e-06  1.458929e-05 -8.715762e-06
##                 Otu3774       Otu3777       Otu3779       Otu3780       Otu3781
## (Intercept)  1.226683e-05  8.223887e-06  1.462974e-05  1.277009e-05  1.303441e-05
## Diet1        1.226683e-05 -8.223887e-06  1.462974e-05  1.277009e-05 -1.303441e-05
##                 Otu3783       Otu3784       Otu3785       Otu3786
## (Intercept)  1.603875e-05  6.517205e-06  1.522158e-05  9.197621e-06
## Diet1       -1.603875e-05 -6.517205e-06 -8.836540e-06 -9.197621e-06
##                 Otu3787       Otu3788       Otu3790       Otu3792
## (Intercept)  1.277009e-05  1.142263e-05  1.303441e-05  1.303441e-05
## Diet1        1.277009e-05 -1.142263e-05 -1.303441e-05 -1.303441e-05
##                 Otu3793       Otu3794       Otu3795       Otu3799
## (Intercept)  1.303441e-05  1.303441e-05  1.303441e-05 1.220226e-05
## Diet1       -1.303441e-05 -1.303441e-05 -1.303441e-05 1.220226e-05
##                 Otu3800       Otu3801       Otu3802       Otu3803
## (Intercept)  1.303441e-05  1.303441e-05  1.087565e-05  9.775808e-06
## Diet1       -1.303441e-05 -1.303441e-05 -1.087565e-05 -9.775808e-06
##                 Otu3804       Otu3805       Otu3806       Otu3807       Otu3808
## (Intercept)  2.120865e-05  1.303441e-05  6.385044e-06  1.83034e-05   1.263147e-05
## Diet1        1.539814e-05 -1.303441e-05  6.385044e-06  1.83034e-05  -1.263147e-05
##                 Otu3810       Otu3811       Otu3812       Otu3813       Otu3814
## (Intercept)  1.303441e-05 3.016409e-05  1.303441e-05  1.731683e-05  1.871947e-05
## Diet1       -1.303441e-05 3.016409e-05 -1.303441e-05 -2.234785e-06  5.685059e-06
##                 Otu3815       Otu3818       Otu3819       Otu3820
## (Intercept)  1.303441e-05  1.087565e-05  1.087565e-05  1.303441e-05
## Diet1       -1.303441e-05 -1.087565e-05 -1.087565e-05 -1.303441e-05
##                 Otu3821       Otu3822       Otu3823       Otu3824       Otu3828
## (Intercept) 1.713802e-05  1.142263e-05 9.451617e-06 9.451617e-06 2.179926e-05
## Diet1       1.302607e-05 -1.142263e-05 9.451617e-06 9.451617e-06 1.768732e-05
##                 Otu3829       Otu3830       Otu3831       Otu3832       Otu3833
## (Intercept)  1.277009e-05  8.566974e-06  9.922451e-06  9.451617e-06  5.711316e-06
## Diet1        1.277009e-05 -8.566974e-06 -9.922451e-06  9.451617e-06 -5.711316e-06
##                 Otu3834       Otu3835       Otu3836       Otu3837       Otu3838
## (Intercept) 2.440453e-05 1.980785e-05 1.462974e-05  1.382988e-05  1.042484e-05
## Diet1       2.440453e-05 1.980785e-05 1.462974e-05 -1.382988e-05 -1.042484e-05
##                 Otu3839       Otu3843       Otu3845       Otu3846       Otu3847
## (Intercept) 1.10124e-05   1.37855e-05   9.426518e-06  1.303441e-05  1.087565e-05
## Diet1       -1.10124e-05  -1.37855e-05  -9.426518e-06 -1.303441e-05 -1.087565e-05
##                 Otu3850       Otu3851       Otu3852       Otu3854       Otu3855
## (Intercept) 1.83034e-05   1.249472e-05 1.858731e-05  1.220226e-05  7.519589e-06
## Diet1       1.83034e-05  -1.249472e-05 1.858731e-05  1.220226e-05 -7.519589e-06
##                 Otu3857       Otu3858       Otu3859       Otu3860
## (Intercept)  1.124301e-05  1.303441e-05  9.775808e-06  9.775808e-06
## Diet1       -1.791397e-06 -1.303441e-05 -9.775808e-06 -9.775808e-06
##                 Otu3861       Otu3862       Otu3863       Otu3864       Otu3865
## (Intercept)  6.517205e-06  1.222852e-05  1.628897e-05  1.02758e-05   1.303441e-05
## Diet1       -6.517205e-06 -1.222852e-05 1.628897e-05 -1.02758e-05  -1.303441e-05
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##                  Otu3866       Otu3867       Otu3870       Otu3871
## (Intercept) 1.220226e-05  8.019375e-06  1.333535e-05  1.263147e-05
## Diet1       1.220226e-05 -8.019375e-06 -1.333535e-05 -1.263147e-05
##                   Otu3872       Otu3873       Otu3874       Otu3875
## (Intercept)  1.290225e-05  8.747948e-06  1.303441e-05  1.303441e-05
## Diet1       -1.321617e-07  8.747948e-06 -1.303441e-05 -1.303441e-05
##                   Otu3877       Otu3879       Otu3880       Otu3881       Otu3882
## (Intercept)  9.775808e-06  8.223887e-06  9.240702e-06  8.223887e-06  9.577566e-06
## Diet1       -9.775808e-06 -8.223887e-06  3.529386e-06 -8.223887e-06  9.577566e-06
##                   Otu3883       Otu3884       Otu3886       Otu3887
## (Intercept)  1.503918e-05  1.871947e-05  1.124301e-05  6.517205e-06
## Diet1       -1.503918e-05  5.685059e-06 -1.791397e-06 -6.517205e-06
##                   Otu3888       Otu3890       Otu3893       Otu3894
## (Intercept)  1.813019e-05  1.303441e-05  1.303441e-05  9.775808e-06
## Diet1       -5.927930e-06 -1.303441e-05 -1.303441e-05 -9.775808e-06
##                   Otu3895       Otu3897       Otu3898       Otu3899
## (Intercept)  3.016409e-05  1.303441e-05  1.303441e-05  1.303441e-05
## Diet1        3.016409e-05 -1.303441e-05 -1.303441e-05 -1.303441e-05
##                   Otu3900       Otu3903       Otu3906       Otu3907
## (Intercept)  1.303441e-05  1.303441e-05  9.023573e-06  8.223887e-06
## Diet1       -1.303441e-05 -1.303441e-05 -9.023573e-06 -8.223887e-06
##                  Otu3909       Otu3910       Otu3912      Otu3914       Otu3916
## (Intercept) 2.440453e-05  1.303441e-05  1.162102e-05 1.079963e-05  1.142263e-05
## Diet1       2.440453e-05 -1.303441e-05 -1.162102e-05 4.282420e-06 -1.142263e-05
##                   Otu3917       Otu3918       Otu3919       Otu3920
## (Intercept)  1.303441e-05  9.775808e-06  1.087565e-05  1.087565e-05
## Diet1       -1.303441e-05 -9.775808e-06 -1.087565e-05 -1.087565e-05
##                   Otu3921       Otu3923       Otu3924      Otu3925
## (Intercept)  1.141534e-05  1.303441e-05  1.162102e-05 9.451617e-06
## Diet1       -1.141534e-05 -1.303441e-05 -1.162102e-05 9.451617e-06
##                   Otu3926       Otu3928       Otu3929      Otu3930       Otu3932
## (Intercept)  1.303441e-05  1.603875e-05  1.034732e-05 9.451617e-06  9.775808e-06
## Diet1       -1.303441e-05 -1.603875e-05  3.830110e-06 9.451617e-06 -9.775808e-06
##                   Otu3933      Otu3936       Otu3937      Otu3939       Otu3941
## (Intercept)  1.303441e-05 2.440453e-05  1.142263e-05 1.277009e-05  1.113034e-05
## Diet1       -1.303441e-05 2.440453e-05 -1.142263e-05 1.277009e-05 -1.113034e-05
##                   Otu3942       Otu3946       Otu3949      Otu3950       Otu3952
## (Intercept)  1.610800e-05  1.162102e-05  4.725809e-06 9.451617e-06  1.087565e-05
## Diet1       -1.025951e-06 -1.162102e-05  4.725809e-06 9.451617e-06 -1.087565e-05
##                  Otu3954       Otu3955      Otu3956       Otu3959      Otu3960
## (Intercept) 1.83034e-05  1.303441e-05 1.243322e-05  1.277009e-05  1.35356e-05
## Diet1       1.83034e-05 -1.303441e-05 6.721908e-06  1.277009e-05 -1.35356e-05
##                  Otu3961       Otu3964       Otu3965       Otu3966       Otu3967
## (Intercept) 1.062295e-05 1.277009e-05  1.303441e-05  8.903838e-06  9.451617e-06
## Diet1       -1.062295e-05 1.277009e-05 -1.303441e-05 -2.518794e-06  9.451617e-06
##                  Otu3969      Otu3971       Otu3973       Otu3975       Otu3977
## (Intercept) 1.073355e-05 6.385044e-06  2.149592e-05  1.508205e-05  7.581467e-06
## Diet1       1.073355e-05 6.385044e-06  2.149592e-05  1.508205e-05  1.870151e-06
##                  Otu3978       Otu3981       Otu3982       Otu3983
## (Intercept) 1.405823e-05  1.603875e-05  1.303441e-05  1.087565e-05
## Diet1       1.023818e-06 -1.603875e-05 -1.303441e-05 -1.087565e-05
##                  Otu3984       Otu3986       Otu3987       Otu3988       Otu3990
## (Intercept) 1.303441e-05 1.364216e-05  1.303441e-05  8.573177e-06  1.277009e-05
## Diet1       -1.303441e-05 1.364216e-05 -1.303441e-05 -8.573177e-06  1.277009e-05
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##                 Otu3991       Otu3992       Otu3995       Otu3996       Otu3998
## (Intercept)  1.503918e-05  1.219555e-05  2.440453e-05   1.263147e-05  2.156200e-05
## Diet1       -1.503918e-05  5.745360e-07  2.440453e-05  -1.263147e-05  1.504479e-05
##                 Otu3999       Otu4001       Otu4004       Otu4005
## (Intercept)  9.775808e-06  9.775808e-06  6.167915e-06  9.775808e-06
## Diet1       -9.775808e-06 -9.775808e-06 -6.167915e-06 -9.775808e-06
##                 Otu4007       Otu4009       Otu4012       Otu4015       Otu4016
## (Intercept)  1.596206e-05  9.775808e-06  9.775808e-06  6.517205e-06  1.508205e-05
## Diet1        8.442470e-06 -9.775808e-06 -9.775808e-06 -6.517205e-06  1.508205e-05
##                 Otu4017       Otu4019       Otu4022       Otu4024
## (Intercept)  9.775808e-06  7.088713e-06  9.775808e-06  8.715762e-06
## Diet1       -9.775808e-06  7.088713e-06 -9.775808e-06 -8.715762e-06
##                 Otu4025       Otu4026       Otu4027       Otu4028
## (Intercept)  9.775808e-06  9.775808e-06  1.127938e-05  9.775808e-06
## Diet1       -9.775808e-06 -9.775808e-06 -1.127938e-05 -9.775808e-06
##                 Otu4029       Otu4030       Otu4031       Otu4032       Otu4033
## (Intercept)   8.15674e-06  8.566974e-06  9.775808e-06  9.775808e-06  9.577566e-06
## Diet1        -8.15674e-06 -8.566974e-06 -9.775808e-06 -9.775808e-06  9.577566e-06
##                 Otu4034       Otu4035       Otu4036       Otu4037       Otu4038
## (Intercept)  6.385044e-06  9.372863e-06   1.83034e-05  9.775808e-06  1.220226e-05
## Diet1        6.385044e-06 -9.372863e-06   1.83034e-05 -9.775808e-06  1.220226e-05
##                 Otu4040       Otu4041       Otu4042       Otu4043       Otu4044
## (Intercept)  9.775808e-06  7.088713e-06  9.775808e-06  9.775808e-06   1.83034e-05
## Diet1       -9.775808e-06  7.088713e-06 -9.775808e-06 -9.775808e-06   1.83034e-05
##                 Otu4045       Otu4046       Otu4048       Otu4050
## (Intercept)  9.577566e-06  6.967601e-06  8.715762e-06  8.566974e-06
## Diet1        9.577566e-06 -6.967601e-06 -8.715762e-06 -8.566974e-06
##                 Otu4051       Otu4052       Otu4053       Otu4054
## (Intercept)  9.775808e-06  7.088713e-06  9.775808e-06  1.261834e-05
## Diet1       -9.775808e-06  7.088713e-06 -9.775808e-06 -4.160731e-07
##                 Otu4055       Otu4056       Otu4057       Otu4058       Otu4059
## (Intercept)  5.977516e-06   1.83034e-05  9.775808e-06  1.505792e-05  8.566974e-06
## Diet1       -5.977516e-06   1.83034e-05 -9.775808e-06  9.346607e-06 -8.566974e-06
##                 Otu4060       Otu4061       Otu4062       Otu4064
## (Intercept)  8.715762e-06  1.127938e-05  1.405823e-05  9.775808e-06
## Diet1       -8.715762e-06 -1.127938e-05  1.023818e-06 -9.775808e-06
##                 Otu4065       Otu4067       Otu4068       Otu4069
## (Intercept)  9.775808e-06  9.775808e-06  1.392607e-05  8.566974e-06
## Diet1       -9.775808e-06 -9.775808e-06  1.392607e-05 -8.566974e-06
##                 Otu4071       Otu4073       Otu4074       Otu4075
## (Intercept)  9.775808e-06  6.517205e-06  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 -6.517205e-06 -9.775808e-06 -9.775808e-06
##                 Otu4076       Otu4077       Otu4079       Otu4080       Otu4081
## (Intercept)   8.15674e-06  9.775808e-06  9.775808e-06   7.91833e-06  1.127938e-05
## Diet1        -8.15674e-06 -9.775808e-06 -9.775808e-06   7.91833e-06 -1.127938e-05
##                 Otu4082       Otu4083       Otu4084       Otu4086
## (Intercept)   8.15674e-06  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1        -8.15674e-06 -9.775808e-06 -9.775808e-06 -9.775808e-06
##                 Otu4087       Otu4089       Otu4091       Otu4092       Otu4093
## (Intercept)  8.715762e-06  1.079963e-05  2.262307e-05  1.508205e-05  9.643646e-06
## Diet1       -8.715762e-06  4.282420e-06  2.262307e-05  1.508205e-05  3.126441e-06
##                 Otu4095       Otu4097       Otu4098       Otu4099       Otu4100
## (Intercept)  9.775808e-06   1.83034e-05  9.775808e-06   8.15674e-06  9.775808e-06
## Diet1       -9.775808e-06   1.83034e-05 -9.775808e-06  -8.15674e-06 -9.775808e-06
```

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##              Otu4101        Otu4102        Otu4103        Otu4105        Otu4106
## (Intercept) 1.83034e-05  9.775808e-06 2.262307e-05 1.456517e-05 1.83034e-05
## Diet1       1.83034e-05 -9.775808e-06 2.262307e-05 1.456517e-05 1.83034e-05
##              Otu4107        Otu4108        Otu4109        Otu4110        Otu4111
## (Intercept)  9.775808e-06 6.385044e-06  9.775808e-06 1.83034e-05  9.775808e-06
## Diet1       -9.775808e-06 6.385044e-06 -9.775808e-06 1.83034e-05 -9.775808e-06
##              Otu4113        Otu4114        Otu4116        Otu4118
## (Intercept)  8.566974e-06 8.820046e-06  6.167915e-06  1.127938e-05
## Diet1       -8.566974e-06 3.382219e-06 -6.167915e-06 -1.127938e-05
##              Otu4119        Otu4120        Otu4121        Otu4122        Otu4123
## (Intercept)  9.775808e-06 1.226683e-05  9.775808e-06 1.83034e-05  8.566974e-06
## Diet1       -9.775808e-06 1.226683e-05 -9.775808e-06 1.83034e-05 -8.566974e-06
##              Otu4124        Otu4125        Otu4126        Otu4128        Otu4129
## (Intercept)  9.775808e-06 1.974329e-05  9.775808e-06 1.974329e-05 5.555426e-06
## Diet1       -9.775808e-06 1.974329e-05 -9.775808e-06 1.974329e-05 5.555426e-06
##              Otu4130        Otu4132        Otu4133        Otu4134        Otu4136
## (Intercept)  9.775808e-06 1.83034e-05   9.775808e-06 1.744495e-05  9.775808e-06
## Diet1       -9.775808e-06 1.83034e-05  -9.775808e-06 1.744495e-05 -9.775808e-06
##              Otu4139        Otu4140        Otu4141        Otu4142
## (Intercept)  9.775808e-06  9.775808e-06 9.903927e-06  6.517205e-06
## Diet1       -9.775808e-06 -9.775808e-06 9.903927e-06 -6.517205e-06
##              Otu4143        Otu4144        Otu4145        Otu4146
## (Intercept)  7.519589e-06  1.127938e-05  1.127798e-05  9.775808e-06
## Diet1       -7.519589e-06 -1.127938e-05 -1.127798e-05 -9.775808e-06
##              Otu4147        Otu4148        Otu4149        Otu4150
## (Intercept)  9.577566e-06  9.775808e-06  6.517205e-06  9.775808e-06
## Diet1        9.577566e-06 -9.775808e-06 -6.517205e-06 -9.775808e-06
##              Otu4153        Otu4154        Otu4155        Otu4156
## (Intercept)  1.127938e-05  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1       -1.127938e-05 -9.775808e-06 -9.775808e-06 -9.775808e-06
##              Otu4157        Otu4158        Otu4159        Otu4160
## (Intercept)  8.969919e-06 9.577566e-06  9.775808e-06  9.775808e-06
## Diet1       -8.969919e-06 9.577566e-06 -9.775808e-06 -9.775808e-06
##              Otu4161        Otu4162        Otu4163        Otu4166
## (Intercept)  9.775808e-06  8.715762e-06 9.643646e-06  6.517205e-06
## Diet1       -9.775808e-06 -8.715762e-06 3.126441e-06 -6.517205e-06
##              Otu4167        Otu4168        Otu4169        Otu4170        Otu4171
## (Intercept)  9.775808e-06 1.546087e-05 1.508205e-05  9.775808e-06 1.83034e-05
## Diet1       -9.775808e-06 8.943662e-06 1.508205e-05 -9.775808e-06 1.83034e-05
##              Otu4172        Otu4173        Otu4177        Otu4180        Otu4181
## (Intercept) 1.508205e-05 1.780096e-05 6.385044e-06  9.775808e-06 1.220226e-05
## Diet1       1.508205e-05 1.236313e-05 6.385044e-06 -9.775808e-06 1.220226e-05
##              Otu4182        Otu4183        Otu4184        Otu4188        Otu4190
## (Intercept)  8.15674e-06  9.775808e-06 4.725809e-06  9.775808e-06 9.709727e-06
## Diet1       -8.15674e-06 -9.775808e-06 4.725809e-06 -9.775808e-06 -3.324684e-06
##              Otu4191        Otu4193        Otu4195        Otu4199        Otu4200
## (Intercept)  9.775808e-06  1.127938e-05 9.577566e-06  8.15674e-06  8.715762e-06
## Diet1       -9.775808e-06 -1.127938e-05 9.577566e-06 -8.15674e-06 -8.715762e-06
##              Otu4201        Otu4204        Otu4207        Otu4208        Otu4209
## (Intercept)  8.666166e-06  8.15674e-06  8.15674e-06  4.111944e-06  9.775808e-06
## Diet1       -8.666166e-06 -8.15674e-06 -8.15674e-06 -4.111944e-06 -9.775808e-06
##              Otu4210        Otu4211        Otu4212        Otu4213        Otu4214
## (Intercept)  9.577566e-06  9.775808e-06 1.83034e-05 2.262307e-05 2.262307e-05
## Diet1        9.577566e-06 -9.775808e-06 1.83034e-05 2.262307e-05 2.262307e-05
```

```
##                Otu4215       Otu4216        Otu4217        Otu4219        Otu4220
## (Intercept)  9.775808e-06 7.088713e-06  9.775808e-06   9.775808e-06 9.577566e-06
## Diet1        -9.775808e-06 7.088713e-06 -9.775808e-06  -9.775808e-06 9.577566e-06
##                Otu4221       Otu4222        Otu4223        Otu4224        Otu4225
## (Intercept)  9.775808e-06  9.775808e-06 1.220226e-05  9.577566e-06 9.577566e-06
## Diet1        -9.775808e-06 -9.775808e-06 1.220226e-05  9.577566e-06 9.577566e-06
##                Otu4226      Otu4227        Otu4228        Otu4229       Otu4230
## (Intercept)  9.775808e-06 9.577566e-06 9.577566e-06  1.202906e-05 1.83034e-05
## Diet1        -9.775808e-06 9.577566e-06 9.577566e-06 -1.202906e-05 1.83034e-05
##                Otu4233       Otu4234        Otu4235        Otu4236        Otu4238
## (Intercept)  7.088713e-06  9.775808e-06  9.775808e-06 2.262307e-05  9.775808e-06
## Diet1         7.088713e-06 -9.775808e-06 -9.775808e-06 2.262307e-05 -9.775808e-06
##                Otu4240       Otu4241        Otu4243        Otu4244
## (Intercept)  7.088713e-06  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1         7.088713e-06 -9.775808e-06 -9.775808e-06 -9.775808e-06
##                Otu4245       Otu4246        Otu4249        Otu4250
## (Intercept)  8.566974e-06  1.202906e-05  9.775808e-06  9.775808e-06
## Diet1        -8.566974e-06 -1.202906e-05 -9.775808e-06 -9.775808e-06
##                Otu4253       Otu4254        Otu4255        Otu4256        Otu4257
## (Intercept)  8.880110e-06  8.566974e-06  7.088713e-06  9.775808e-06 1.508205e-05
## Diet1        -4.154301e-06 -8.566974e-06  7.088713e-06 -9.775808e-06 1.508205e-05
##                Otu4258       Otu4259        Otu4262        Otu4263
## (Intercept)  9.577566e-06  1.127938e-05  9.775808e-06  9.775808e-06
## Diet1         9.577566e-06 -1.127938e-05 -9.775808e-06 -9.775808e-06
##                Otu4265       Otu4266        Otu4269        Otu4270
## (Intercept)  9.775808e-06  9.775808e-06 9.577566e-06  6.167915e-06
## Diet1        -9.775808e-06 -9.775808e-06 9.577566e-06 -6.167915e-06
##                Otu4271       Otu4272        Otu4273        Otu4274
## (Intercept)  1.202906e-05  9.775808e-06  9.422459e-06  9.775808e-06
## Diet1        -1.202906e-05 -9.775808e-06 -9.422459e-06 -9.775808e-06
##                Otu4275       Otu4276        Otu4277        Otu4279
## (Intercept)  9.775808e-06  9.775808e-06  9.775808e-06 9.577566e-06
## Diet1        -9.775808e-06 -9.775808e-06 -9.775808e-06 9.577566e-06
##                Otu4280       Otu4281        Otu4282        Otu4283        Otu4284
## (Intercept)  9.775808e-06  4.725809e-06  2.262307e-05  9.372863e-06  8.566974e-06
## Diet1        -9.775808e-06  4.725809e-06  2.262307e-05 -9.372863e-06 -8.566974e-06
##                Otu4286       Otu4287        Otu4288        Otu4291        Otu4292
## (Intercept)  8.173412e-06  6.167915e-06  1.83034e-05   9.775808e-06 2.262307e-05
## Diet1        -3.447603e-06 -6.167915e-06  1.83034e-05  -9.775808e-06 2.262307e-05
##                Otu4293       Otu4295        Otu4298        Otu4304        Otu4305
## (Intercept)  1.83034e-05   8.566974e-06  9.775808e-06  1.83034e-05   8.15674e-06
## Diet1         1.83034e-05  -8.566974e-06 -9.775808e-06  1.83034e-05  -8.15674e-06
##                Otu4306       Otu4308        Otu4309        Otu4310
## (Intercept)  9.775808e-06  9.775808e-06  1.261834e-05  9.882493e-06
## Diet1        -9.775808e-06 -9.775808e-06 -4.160731e-07 -5.156684e-06
##                Otu4311       Otu4312        Otu4313        Otu4314        Otu4315
## (Intercept)  7.088713e-06 1.220226e-05  2.118318e-05  9.775808e-06  9.775808e-06
## Diet1         7.088713e-06 1.220226e-05  2.118318e-05 -9.775808e-06 -9.775808e-06
##                Otu4316       Otu4317        Otu4318        Otu4319
## (Intercept)  9.775808e-06  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1        -9.775808e-06 -9.775808e-06 -9.775808e-06 -9.775808e-06
##                Otu4320       Otu4321        Otu4322        Otu4325        Otu4326
## (Intercept)  9.775808e-06  8.15674e-06   8.15674e-06   9.775808e-06 1.83034e-05
## Diet1        -9.775808e-06 -8.15674e-06  -8.15674e-06  -9.775808e-06 1.83034e-05
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##                  Otu4327       Otu4328       Otu4331       Otu4332       Otu4335
## (Intercept) 1.974329e-05  9.775808e-06  9.775808e-06  9.775808e-06  9.577566e-06
## Diet1       1.974329e-05 -9.775808e-06 -9.775808e-06 -9.775808e-06  9.577566e-06
##                  Otu4336       Otu4340       Otu4342       Otu4343
## (Intercept)  9.775808e-06  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 -9.775808e-06 -9.775808e-06 -9.775808e-06
##                  Otu4347       Otu4348       Otu4349       Otu4350       Otu4351
## (Intercept)  9.775808e-06 2.262307e-05  6.385044e-06  9.775808e-06  8.630348e-06
## Diet1       -9.775808e-06 2.262307e-05  6.385044e-06 -9.775808e-06 -2.245305e-06
##                  Otu4352       Otu4354       Otu4355       Otu4356
## (Intercept)  8.566974e-06  9.775808e-06  9.577566e-06  9.775808e-06
## Diet1       -8.566974e-06 -9.775808e-06  9.577566e-06 -9.775808e-06
##                  Otu4357       Otu4358       Otu4359       Otu4360
## (Intercept)  9.775808e-06  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 -9.775808e-06 -9.775808e-06 -9.775808e-06
##                  Otu4361       Otu4363       Otu4364       Otu4366       Otu4367
## (Intercept)  9.775808e-06  1.127938e-05  9.577566e-06  8.15674e-06  7.088713e-06
## Diet1       -9.775808e-06 -1.127938e-05  9.577566e-06 -8.15674e-06  7.088713e-06
##                  Otu4369       Otu4370       Otu4371       Otu4372
## (Intercept)  6.167915e-06  9.775808e-06  1.127938e-05  9.577566e-06
## Diet1       -6.167915e-06 -9.775808e-06 -1.127938e-05  9.577566e-06
##                  Otu4373       Otu4374       Otu4375       Otu4376       Otu4377
## (Intercept)  9.775808e-06 7.088713e-06  9.577566e-06 7.088713e-06  8.566974e-06
## Diet1       -9.775808e-06 7.088713e-06  9.577566e-06 7.088713e-06 -8.566974e-06
##                  Otu4378       Otu4379       Otu4380       Otu4381       Otu4382
## (Intercept)  8.903838e-06 9.577566e-06  1.220226e-05  1.153896e-05  9.577566e-06
## Diet1       -2.518794e-06 9.577566e-06  1.220226e-05  6.633058e-07  9.577566e-06
##                  Otu4383       Otu4384       Otu4385       Otu4388       Otu4389
## (Intercept)  8.15674e-06  9.775808e-06  9.775808e-06  1.83034e-05  7.088713e-06
## Diet1       -8.15674e-06 -9.775808e-06 -9.775808e-06  1.83034e-05  7.088713e-06
##                  Otu4390       Otu4392       Otu4393       Otu4394
## (Intercept)  9.775808e-06  8.715762e-06  2.262307e-05  8.566974e-06
## Diet1       -9.775808e-06 -8.715762e-06  2.262307e-05 -8.566974e-06
##                  Otu4395       Otu4396       Otu4397       Otu4398
## (Intercept)  9.775808e-06  9.422459e-06  9.240702e-06  9.775808e-06
## Diet1       -9.775808e-06 -9.422459e-06  3.529386e-06 -9.775808e-06
##                  Otu4399       Otu4400       Otu4403       Otu4404
## (Intercept)  8.969919e-06  1.042484e-05  9.422459e-06  9.775808e-06
## Diet1       -8.969919e-06 -1.042484e-05 -9.422459e-06 -9.775808e-06
##                  Otu4406       Otu4407       Otu4408       Otu4409       Otu4410
## (Intercept) 9.577566e-06 9.577566e-06  6.048180e-06  9.775808e-06  1.546087e-05
## Diet1       9.577566e-06 9.577566e-06  3.368639e-07 -9.775808e-06  8.943662e-06
##                  Otu4412       Otu4413       Otu4414       Otu4415       Otu4417
## (Intercept) 9.577566e-06 7.088713e-06  1.248618e-05  8.15674e-06  9.775808e-06
## Diet1       9.577566e-06 7.088713e-06  1.248618e-05 -8.15674e-06 -9.775808e-06
##                  Otu4418       Otu4419       Otu4420       Otu4422       Otu4423
## (Intercept) 6.385044e-06 9.577566e-06  9.775808e-06  8.460680e-06  6.517205e-06
## Diet1       6.385044e-06 9.577566e-06 -9.775808e-06  2.650172e-06 -6.517205e-06
##                  Otu4424       Otu4425       Otu4426       Otu4427
## (Intercept)  9.775808e-06  9.775808e-06  9.775808e-06  6.451125e-06
## Diet1       -9.775808e-06 -9.775808e-06 -9.775808e-06 -6.608087e-08
##                  Otu4428       Otu4431       Otu4432       Otu4433       Otu4434
## (Intercept)  9.775808e-06  9.775808e-06 9.293654e-06  1.83034e-05  9.775808e-06
## Diet1       -9.775808e-06 -9.775808e-06 9.293654e-06  1.83034e-05 -9.775808e-06
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##                 Otu4435        Otu4436        Otu4437        Otu4439        Otu4441
## (Intercept)  9.775808e-06  9.775808e-06   8.15674e-06  9.775808e-06  7.984411e-06
## Diet1       -9.775808e-06 -9.775808e-06  -8.15674e-06 -9.775808e-06  1.467206e-06
##                 Otu4442        Otu4443       Otu4444        Otu4447        Otu4450
## (Intercept)  9.775808e-06 1.220226e-05 9.577566e-06   9.775808e-06  2.262307e-05
## Diet1       -9.775808e-06 1.220226e-05 9.577566e-06  -9.775808e-06  2.262307e-05
##                 Otu4451        Otu4452        Otu4454        Otu4455
## (Intercept)  9.775808e-06  8.566974e-06  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 -8.566974e-06 -9.775808e-06 -9.775808e-06
##                 Otu4456        Otu4458        Otu4459        Otu4460        Otu4461
## (Intercept)  9.775808e-06 9.577566e-06  1.83034e-05  4.111944e-06  1.974329e-05
## Diet1       -9.775808e-06 9.577566e-06  1.83034e-05 -4.111944e-06  1.974329e-05
##                 Otu4465        Otu4468        Otu4469        Otu4470      Otu4471
## (Intercept) 1.508205e-05 1.220226e-05  1.83034e-05 1.220226e-05   1.0277e-05
## Diet1       1.508205e-05 1.220226e-05  1.83034e-05 1.220226e-05  -1.0277e-05
##                 Otu4473        Otu4474        Otu4475        Otu4476
## (Intercept)  9.775808e-06 1.405823e-05   9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 1.023818e-06  -9.775808e-06 -9.775808e-06
##                 Otu4477        Otu4478       Otu4479        Otu4480        Otu4483
## (Intercept)  9.775808e-06 8.747948e-06 7.088713e-06   6.517205e-06  1.191164e-05
## Diet1       -9.775808e-06 8.747948e-06 7.088713e-06  -6.517205e-06  2.906246e-07
##                 Otu4485        Otu4487        Otu4488        Otu4491
## (Intercept) 1.539479e-05  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1       1.539479e-05 -9.775808e-06 -9.775808e-06 -9.775808e-06
##                 Otu4493        Otu4494        Otu4496        Otu4497
## (Intercept)  9.775808e-06  8.969919e-06  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 -8.969919e-06 -9.775808e-06 -9.775808e-06
##                 Otu4498        Otu4500        Otu4501        Otu4503       Otu4504
## (Intercept)  9.775808e-06 9.577566e-06  1.83034e-05   9.775808e-06   8.15674e-06
## Diet1       -9.775808e-06 9.577566e-06  1.83034e-05  -9.775808e-06  -8.15674e-06
##                 Otu4505        Otu4506       Otu4507        Otu4508
## (Intercept)  6.517205e-06  9.775808e-06  8.15674e-06  9.775808e-06
## Diet1       -6.517205e-06 -9.775808e-06 -8.15674e-06 -9.775808e-06
##                 Otu4509        Otu4512       Otu4513        Otu4514        Otu4517
## (Intercept)  6.167915e-06  8.715762e-06 1.405823e-05 4.725809e-06   9.775808e-06
## Diet1       -6.167915e-06 -8.715762e-06 1.023818e-06 4.725809e-06  -9.775808e-06
##                 Otu4518        Otu4519        Otu4520        Otu4521
## (Intercept)  9.775808e-06  1.202906e-05  6.385044e-06  8.880110e-06
## Diet1       -9.775808e-06 -1.202906e-05  6.385044e-06 -4.154301e-06
##                 Otu4523       Otu4524        Otu4525        Otu4526        Otu4528
## (Intercept)  9.775808e-06 7.088713e-06  9.775808e-06  9.775808e-06 7.088713e-06
## Diet1       -9.775808e-06 7.088713e-06 -9.775808e-06 -9.775808e-06 7.088713e-06
##                 Otu4529        Otu4530        Otu4531        Otu4533        Otu4534
## (Intercept) 2.262307e-05  9.775808e-06  1.127938e-05 6.385044e-06   1.127938e-05
## Diet1       2.262307e-05 -9.775808e-06 -1.127938e-05 6.385044e-06  -1.127938e-05
##                 Otu4535       Otu4537        Otu4539        Otu4540        Otu4542
## (Intercept) 1.834065e-05 9.577566e-06  1.127938e-05 1.220226e-05  8.566974e-06
## Diet1       1.182344e-05 9.577566e-06 -1.127938e-05 1.220226e-05 -8.566974e-06
##                 Otu4543        Otu4545        Otu4546       Otu4550        Otu4551
## (Intercept)  9.775808e-06 1.744495e-05  9.775808e-06 7.088713e-06  1.83034e-05
## Diet1       -9.775808e-06 1.744495e-05 -9.775808e-06 7.088713e-06  1.83034e-05
##                 Otu4553        Otu4556        Otu4557        Otu4558
## (Intercept) 1.744495e-05  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1       1.744495e-05 -9.775808e-06 -9.775808e-06 -9.775808e-06
```

```
##              Otu4559      Otu4564      Otu4565      Otu4566
## (Intercept)  9.775808e-06  1.974329e-05  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06  1.974329e-05 -9.775808e-06 -9.775808e-06
##              Otu4568      Otu4569      Otu4573      Otu4574
## (Intercept)  9.775808e-06  9.775808e-06  8.880110e-06  5.555426e-06
## Diet1       -9.775808e-06 -9.775808e-06 -4.154301e-06  5.555426e-06
##              Otu4575      Otu4577      Otu4578      Otu4580
## (Intercept)  9.775808e-06  9.775808e-06  8.566974e-06  7.088713e-06
## Diet1       -9.775808e-06 -9.775808e-06 -8.566974e-06  7.088713e-06
##              Otu4581      Otu4582      Otu4583      Otu4586      Otu4588
## (Intercept)  9.775808e-06  9.775808e-06  1.202906e-05  1.83034e-05  1.127938e-05
## Diet1       -9.775808e-06 -9.775808e-06 -1.202906e-05  1.83034e-05 -1.127938e-05
##              Otu4589      Otu4590      Otu4592      Otu4597      Otu4598
## (Intercept)  9.775808e-06  8.15674e-06  2.262307e-05  8.573177e-06  8.715762e-06
## Diet1       -9.775808e-06 -8.15674e-06  2.262307e-05 -8.573177e-06 -8.715762e-06
##              Otu4599      Otu4600      Otu4602      Otu4603      Otu4604
## (Intercept)  1.165297e-05  1.220226e-05  9.775808e-06  1.83034e-05  8.15674e-06
## Diet1        3.429080e-06  1.220226e-05 -9.775808e-06  1.83034e-05 -8.15674e-06
##              Otu4606      Otu4608      Otu4609      Otu4610
## (Intercept)  8.566974e-06  6.167915e-06  9.775808e-06  1.508205e-05
## Diet1       -8.566974e-06 -6.167915e-06 -9.775808e-06  1.508205e-05
##              Otu4613      Otu4614      Otu4615      Otu4616      Otu4618
## (Intercept)  8.666166e-06  2.262307e-05  9.372863e-06  6.385044e-06  9.577566e-06
## Diet1       -8.666166e-06  2.262307e-05 -9.372863e-06  6.385044e-06  9.577566e-06
##              Otu4619      Otu4620      Otu4621      Otu4622      Otu4623
## (Intercept)  1.83034e-05  1.884184e-05  9.775808e-06  8.566974e-06  9.775808e-06
## Diet1        1.83034e-05  1.132225e-05 -9.775808e-06 -8.566974e-06 -9.775808e-06
##              Otu4624      Otu4626      Otu4628      Otu4629      Otu4630
## (Intercept)  9.775808e-06  1.127798e-05  9.775808e-06  1.220226e-05  1.073355e-05
## Diet1       -9.775808e-06 -1.127798e-05 -9.775808e-06  1.220226e-05  1.073355e-05
##              Otu4632      Otu4633      Otu4634      Otu4635      Otu4636
## (Intercept)  1.248618e-05  4.725809e-06  9.775808e-06  9.775808e-06  9.775808e-06
## Diet1        1.248618e-05  4.725809e-06 -9.775808e-06 -9.775808e-06 -9.775808e-06
##              Otu4637      Otu4638      Otu4639      Otu4640      Otu4641
## (Intercept)  5.810508e-06  1.130082e-05  1.220226e-05  1.83034e-05  1.83034e-05
## Diet1       -5.810508e-06  3.781229e-06  1.220226e-05  1.83034e-05  1.83034e-05
##              Otu4642      Otu4644      Otu4645      Otu4647
## (Intercept)  1.201257e-05  9.775808e-06  8.715762e-06  9.775808e-06
## Diet1        6.574741e-06 -9.775808e-06 -8.715762e-06 -9.775808e-06
##              Otu4648      Otu4650      Otu4651      Otu4652      Otu4655
## (Intercept)  7.519589e-06  9.577566e-06  7.088713e-06  9.775808e-06  5.810508e-06
## Diet1       -7.519589e-06  9.577566e-06  7.088713e-06 -9.775808e-06 -5.810508e-06
##              Otu4658      Otu4660      Otu4661      Otu4663      Otu4665
## (Intercept)  8.715762e-06  9.775808e-06  4.418876e-06  8.566974e-06  9.860927e-06
## Diet1       -8.715762e-06 -9.775808e-06  3.069325e-07 -8.566974e-06  2.341338e-06
##              Otu4666      Otu4667      Otu4668      Otu4670
## (Intercept)  9.775808e-06  8.15674e-06  1.127938e-05  8.566974e-06
## Diet1       -9.775808e-06 -8.15674e-06 -1.127938e-05 -8.566974e-06
##              Otu4671      Otu4675      Otu4676      Otu4677
## (Intercept)  6.167915e-06  9.775808e-06  8.566974e-06  9.372863e-06
## Diet1       -6.167915e-06 -9.775808e-06 -8.566974e-06 -9.372863e-06
##              Otu4678      Otu4681      Otu4682      Otu4683
## (Intercept)  1.202906e-05  9.775808e-06  9.775808e-06  4.725809e-06
## Diet1       -1.202906e-05 -9.775808e-06 -9.775808e-06  4.725809e-06
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##              Otu4684      Otu4685      Otu4686      Otu4687      Otu4688
## (Intercept)  6.167915e-06  9.775808e-06 9.577566e-06 7.088713e-06  8.15674e-06
## Diet1       -6.167915e-06 -9.775808e-06 9.577566e-06 7.088713e-06 -8.15674e-06
##              Otu4690      Otu4693      Otu4695      Otu4696      Otu4698
## (Intercept)  1.127938e-05 1.83034e-05 1.508205e-05  1.261834e-05 1.220226e-05
## Diet1       -1.127938e-05 1.83034e-05 1.508205e-05 -4.160731e-07 1.220226e-05
##              Otu4700      Otu4703      Otu4705      Otu4708      Otu4709
## (Intercept) 7.088713e-06  1.127938e-05 1.83034e-05  6.167915e-06  9.372863e-06
## Diet1       7.088713e-06 -1.127938e-05 1.83034e-05 -6.167915e-06 -9.372863e-06
##              Otu4711      Otu4712      Otu4713      Otu4714      Otu4715
## (Intercept)  9.775808e-06  8.61657e-06 7.088713e-06  9.775808e-06  9.775808e-06
## Diet1       -9.775808e-06 -8.61657e-06 7.088713e-06 -9.775808e-06 -9.775808e-06
##              Otu4716      Otu4717      Otu4718      Otu4721
## (Intercept)  6.167915e-06  8.566974e-06  1.127938e-05  8.566974e-06
## Diet1       -6.167915e-06 -8.566974e-06 -1.127938e-05 -8.566974e-06
##              Otu4722      Otu4723      Otu4724      Otu4726
## (Intercept)  9.775808e-06  9.775808e-06  8.696429e-06  9.577566e-06
## Diet1       -9.775808e-06 -9.775808e-06 -8.696429e-06  9.577566e-06
##              Otu4727      Otu4728      Otu4729      Otu4730
## (Intercept)  9.775808e-06  8.566974e-06  1.127938e-05  8.15674e-06
## Diet1       -9.775808e-06 -8.566974e-06 -1.127938e-05 -8.15674e-06
##              Otu4731      Otu4732      Otu4733      Otu4734      Otu4735
## (Intercept)  9.775808e-06 1.044628e-05  9.775808e-06  9.775808e-06 9.577566e-06
## Diet1       -9.775808e-06 4.635769e-06 -9.775808e-06 -9.775808e-06 9.577566e-06
##              Otu4741      Otu4742      Otu4743      Otu4744
## (Intercept)  8.715762e-06  9.775808e-06  8.34308e-06  1.127798e-05
## Diet1       -8.715762e-06 -9.775808e-06 -8.34308e-06 -1.127798e-05
##              Otu4745      Otu4746      Otu4749      Otu4751      Otu4754
## (Intercept)  6.517205e-06  9.775808e-06  8.15674e-06 6.048180e-06 7.088713e-06
## Diet1       -6.517205e-06 -9.775808e-06 -8.15674e-06 3.368639e-07 7.088713e-06
##              Otu4756      Otu4757      Otu4758      Otu4763      Otu4764
## (Intercept)  1.087503e-05 7.088713e-06  9.775808e-06 2.262307e-05  1.127938e-05
## Diet1       -1.087503e-05 7.088713e-06 -9.775808e-06 2.262307e-05 -1.127938e-05
##              Otu4766      Otu4768      Otu4771      Otu4772
## (Intercept)  1.087503e-05  9.775808e-06  7.866479e-06  9.775808e-06
## Diet1       -1.087503e-05 -9.775808e-06 -7.866479e-06 -9.775808e-06
##              Otu4773      Otu4775      Otu4777      Otu4778      Otu4780
## (Intercept)  1.02385e-05  9.775808e-06  9.775808e-06  8.15674e-06 1.83034e-05
## Diet1       -1.02385e-05 -9.775808e-06 -9.775808e-06 -8.15674e-06 1.83034e-05
##              Otu4783      Otu4784      Otu4785      Otu4786      Otu4787
## (Intercept)  7.493798e-06  8.15674e-06  8.15674e-06  1.127798e-05 7.088713e-06
## Diet1       -7.493798e-06 -8.15674e-06 -8.15674e-06 -1.127798e-05 7.088713e-06
##              Otu4788      Otu4789      Otu4791      Otu4792
## (Intercept) 2.262307e-05  9.775808e-06  9.775808e-06  1.127938e-05
## Diet1       2.262307e-05 -9.775808e-06 -9.775808e-06 -1.127938e-05
##              Otu4794      Otu4795      Otu4804      Otu4805
## (Intercept)  1.127938e-05  8.529421e-06  9.775808e-06  9.775808e-06
## Diet1       -1.127938e-05 -8.529421e-06 -9.775808e-06 -9.775808e-06
##              Otu4808      Otu4809      Otu4810      Otu4813
## (Intercept)  9.775808e-06  9.775808e-06  8.715762e-06  8.15674e-06
## Diet1       -9.775808e-06 -9.775808e-06 -8.715762e-06 -8.15674e-06
##              Otu4815      Otu4816      Otu4819      Otu4821
## (Intercept)  6.517205e-06  6.114261e-06 8.464037e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.114261e-06 8.464037e-06 -6.517205e-06
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##              Otu4822       Otu4823       Otu4824       Otu4826
## (Intercept)  6.114261e-06  1.073355e-05  5.810508e-06  5.711316e-06
## Diet1       -6.114261e-06  1.073355e-05 -5.810508e-06 -5.711316e-06
##              Otu4827       Otu4829       Otu4830       Otu4831
## (Intercept)  6.517205e-06  6.517205e-06  5.555426e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  5.555426e-06 -6.517205e-06
##              Otu4832       Otu4834       Otu4839       Otu4840
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu4841       Otu4842       Otu4843       Otu4844
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  5.711316e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -5.711316e-06
##              Otu4847       Otu4848       Otu4849       Otu4850       Otu4851
## (Intercept)  1.508205e-05  6.517205e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1        1.508205e-05 -6.517205e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##              Otu4853       Otu4854       Otu4855       Otu4857
## (Intercept)  4.725809e-06  6.517205e-06  6.517205e-06  5.810508e-06
## Diet1        4.725809e-06 -6.517205e-06 -6.517205e-06 -5.810508e-06
##              Otu4858       Otu4860       Otu4862       Otu4865       Otu4867
## (Intercept)  4.111944e-06  6.385044e-06  1.508205e-05  6.385044e-06  6.517205e-06
## Diet1       -4.111944e-06  6.385044e-06  1.508205e-05  6.385044e-06 -6.517205e-06
##              Otu4868       Otu4869       Otu4870       Otu4871
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu4875       Otu4878       Otu4879       Otu4880
## (Intercept)  6.517205e-06  1.508205e-05  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06  1.508205e-05 -6.517205e-06 -6.517205e-06
##              Otu4881       Otu4886       Otu4888       Otu4890
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  5.977516e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -5.977516e-06
##              Otu4891       Otu4892       Otu4893       Otu4894       Otu4895
## (Intercept)  6.517205e-06  1.073355e-05  5.711316e-06  6.517205e-06  4.725809e-06
## Diet1       -6.517205e-06  1.073355e-05 -5.711316e-06 -6.517205e-06  4.725809e-06
##              Otu4897       Otu4898       Otu4900       Otu4902       Otu4903
## (Intercept)  5.437827e-06  9.293654e-06  6.048180e-06  6.517205e-06  1.220226e-05
## Diet1       -5.437827e-06  9.293654e-06  3.368639e-07 -6.517205e-06  1.220226e-05
##              Otu4904       Otu4905       Otu4908       Otu4909
## (Intercept)  5.711316e-06  5.437827e-06  1.220226e-05  6.517205e-06
## Diet1       -5.711316e-06 -5.437827e-06  1.220226e-05 -6.517205e-06
##              Otu4913       Otu4914       Otu4916       Otu4917
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu4920       Otu4921       Otu4923       Otu4924
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  1.220226e-05
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06  1.220226e-05
##              Otu4925       Otu4926       Otu4929       Otu4930
## (Intercept)  6.517205e-06  5.437827e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.437827e-06 -6.517205e-06 -6.517205e-06
##              Otu4931       Otu4933       Otu4934       Otu4935       Otu4936
## (Intercept)  6.517205e-06  1.220226e-05  5.437827e-06  6.385044e-06  5.810508e-06
## Diet1       -6.517205e-06  1.220226e-05 -5.437827e-06  6.385044e-06 -5.810508e-06
##              Otu4937       Otu4938       Otu4939       Otu4941
## (Intercept)  6.517205e-06  5.574571e-06  5.810508e-06  5.437827e-06
## Diet1       -6.517205e-06 -5.574571e-06 -5.810508e-06 -5.437827e-06
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##              Otu4942       Otu4943       Otu4944       Otu4946
## (Intercept)  6.517205e-06  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  1.220226e-05 -6.517205e-06
##              Otu4947       Otu4950       Otu4952       Otu4953
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu4954       Otu4955       Otu4956       Otu4957
## (Intercept)  6.517205e-06  1.220226e-05  6.517205e-06  5.810508e-06
## Diet1       -6.517205e-06  1.220226e-05 -6.517205e-06 -5.810508e-06
##              Otu4958       Otu4961       Otu4962       Otu4965
## (Intercept)  8.019375e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -8.019375e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu4966       Otu4967       Otu4968       Otu4969       Otu4971
## (Intercept)  1.508205e-05  6.517205e-06  1.508205e-05  6.517205e-06  6.517205e-06
## Diet1        1.508205e-05 -6.517205e-06  1.508205e-05 -6.517205e-06 -6.517205e-06
##              Otu4973       Otu4974       Otu4975       Otu4978       Otu4979
## (Intercept)  4.725809e-06  1.220226e-05  1.220226e-05  6.517205e-06  6.517205e-06
## Diet1        4.725809e-06  1.220226e-05  1.220226e-05 -6.517205e-06 -6.517205e-06
##              Otu4980       Otu4981       Otu4984       Otu4985
## (Intercept)  6.385044e-06  5.711316e-06  6.517205e-06  6.517205e-06
## Diet1        6.385044e-06 -5.711316e-06 -6.517205e-06 -6.517205e-06
##              Otu4986       Otu4987       Otu4988       Otu4991
## (Intercept)  6.517205e-06  6.517205e-06  1.508205e-05  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  1.508205e-05 -6.517205e-06
##              Otu4995       Otu4997       Otu4998       Otu4999
## (Intercept)  6.517205e-06  6.517205e-06  5.555426e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  5.555426e-06 -6.517205e-06
##              Otu5000       Otu5002       Otu5003       Otu5005
## (Intercept)  6.517205e-06  8.019375e-06  1.508205e-05  6.517205e-06
## Diet1       -6.517205e-06 -8.019375e-06  1.508205e-05 -6.517205e-06
##              Otu5006       Otu5007       Otu5008       Otu5009
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu5010       Otu5011       Otu5012       Otu5013       Otu5015
## (Intercept)  5.437827e-06  1.220226e-05  6.385044e-06  6.517205e-06  1.079963e-05
## Diet1       -5.437827e-06  1.220226e-05  6.385044e-06 -6.517205e-06  4.282420e-06
##              Otu5016       Otu5017       Otu5018       Otu5020       Otu5021
## (Intercept)  6.517205e-06  9.359735e-06  1.155071e-05  4.725809e-06  6.517205e-06
## Diet1       -6.517205e-06  2.842530e-06  3.531336e-06  4.725809e-06 -6.517205e-06
##              Otu5023       Otu5024       Otu5026       Otu5028       Otu5030
## (Intercept)  6.517205e-06  4.725809e-06  6.517205e-06  1.220226e-05  5.911435e-06
## Diet1       -6.517205e-06  4.725809e-06 -6.517205e-06  1.220226e-05  4.736085e-07
##              Otu5032       Otu5033       Otu5034       Otu5035       Otu5036
## (Intercept)  6.517205e-06  6.385044e-06  6.517205e-06  6.385044e-06  5.437827e-06
## Diet1       -6.517205e-06  6.385044e-06 -6.517205e-06  6.385044e-06 -5.437827e-06
##              Otu5038       Otu5039       Otu5040       Otu5041
## (Intercept)  6.517205e-06  5.711316e-06  6.451125e-06  6.385044e-06
## Diet1       -6.517205e-06 -5.711316e-06 -6.608087e-08  6.385044e-06
##              Otu5042       Otu5044       Otu5045       Otu5046
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  5.711316e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -5.711316e-06
##              Otu5047       Otu5048       Otu5050       Otu5052       Otu5053
## (Intercept)  4.725809e-06  6.385044e-06  4.725809e-06  6.517205e-06  5.810508e-06
## Diet1        4.725809e-06  6.385044e-06  4.725809e-06 -6.517205e-06 -5.810508e-06
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##              Otu5055       Otu5056       Otu5059       Otu5060       Otu5062
## (Intercept)  6.517205e-06  4.725809e-06  5.437827e-06  6.385044e-06  4.725809e-06
## Diet1       -6.517205e-06  4.725809e-06 -5.437827e-06  6.385044e-06  4.725809e-06
##              Otu5063       Otu5065       Otu5066       Otu5067
## (Intercept)  6.385044e-06  5.760912e-06  6.517205e-06  6.517205e-06
## Diet1        6.385044e-06 -5.760912e-06 -6.517205e-06 -6.517205e-06
##              Otu5068       Otu5069       Otu5071       Otu5072       Otu5073
## (Intercept)  6.517205e-06  5.711316e-06  4.111944e-06  1.220226e-05  6.385044e-06
## Diet1       -6.517205e-06 -5.711316e-06 -4.111944e-06  1.220226e-05  6.385044e-06
##              Otu5074       Otu5076       Otu5079       Otu5080
## (Intercept)  6.517205e-06  5.810508e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.810508e-06 -6.517205e-06 -6.517205e-06
##              Otu5081       Otu5082       Otu5083       Otu5084
## (Intercept)  5.437827e-06  6.385044e-06  6.517205e-06  6.517205e-06
## Diet1       -5.437827e-06  6.385044e-06 -6.517205e-06 -6.517205e-06
##              Otu5085       Otu5086       Otu5088       Otu5092
## (Intercept)  6.517205e-06  6.385044e-06  5.711316e-06  6.517205e-06
## Diet1       -6.517205e-06  6.385044e-06 -5.711316e-06 -6.517205e-06
##              Otu5094       Otu5095       Otu5096       Otu5097
## (Intercept)  5.437827e-06  6.517205e-06  5.437827e-06  6.385044e-06
## Diet1       -5.437827e-06 -6.517205e-06 -5.437827e-06  6.385044e-06
##              Otu5098       Otu5100       Otu5101       Otu5102
## (Intercept)  6.517205e-06  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  1.220226e-05 -6.517205e-06
##              Otu5103       Otu5104       Otu5106       Otu5108       Otu5109
## (Intercept)  5.437827e-06  7.519589e-06  1.220226e-05  5.314574e-06  7.26829e-06
## Diet1       -5.437827e-06 -7.519589e-06  1.220226e-05 -5.314574e-06 -7.26829e-06
##              Otu5110       Otu5111       Otu5112       Otu5115
## (Intercept)  6.517205e-06  6.517205e-06  6.385044e-06  5.437827e-06
## Diet1       -6.517205e-06 -6.517205e-06  6.385044e-06 -5.437827e-06
##              Otu5116       Otu5117       Otu5118       Otu5121
## (Intercept)  5.711316e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -5.711316e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##              Otu5122       Otu5123       Otu5125       Otu5126       Otu5127
## (Intercept)  6.385044e-06  1.508205e-05  6.517205e-06  4.111944e-06  6.517205e-06
## Diet1        6.385044e-06  1.508205e-05 -6.517205e-06 -4.111944e-06 -6.517205e-06
##              Otu5128       Otu5129       Otu5130       Otu5132
## (Intercept)  6.517205e-06  6.517205e-06  6.385044e-06  5.810508e-06
## Diet1       -6.517205e-06 -6.517205e-06  6.385044e-06 -5.810508e-06
##              Otu5133       Otu5134       Otu5135       Otu5136       Otu5137
## (Intercept)  6.451125e-06  1.220226e-05  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1       -6.608087e-08  1.220226e-05 -6.517205e-06 -6.517205e-06  6.385044e-06
##              Otu5139       Otu5140       Otu5142       Otu5144
## (Intercept)  6.517205e-06  5.437827e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.437827e-06 -6.517205e-06 -6.517205e-06
##              Otu5145       Otu5146       Otu5147       Otu5148
## (Intercept)  1.508205e-05  5.711316e-06  6.517205e-06  6.517205e-06
## Diet1        1.508205e-05 -5.711316e-06 -6.517205e-06 -6.517205e-06
##              Otu5149       Otu5150       Otu5151       Otu5152       Otu5154
## (Intercept)  6.517205e-06  1.220226e-05  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1       -6.517205e-06  1.220226e-05 -6.517205e-06 -6.517205e-06  6.385044e-06
##              Otu5156       Otu5157       Otu5158       Otu5159
## (Intercept)  5.437827e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -5.437827e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
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##               Otu5160       Otu5161       Otu5162       Otu5164       Otu5165
## (Intercept)  5.810508e-06  6.385044e-06  6.517205e-06  1.220226e-05  4.725809e-06
## Diet1       -5.810508e-06  6.385044e-06 -6.517205e-06  1.220226e-05  4.725809e-06
##               Otu5166       Otu5167       Otu5173       Otu5174       Otu5175
## (Intercept)  6.385044e-06  1.508205e-05  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1        6.385044e-06  1.508205e-05 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5176       Otu5178       Otu5180       Otu5181
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5183       Otu5184       Otu5185       Otu5186
## (Intercept)  5.810508e-06  1.364216e-05  5.711316e-06  5.810508e-06
## Diet1       -5.810508e-06  1.364216e-05 -5.711316e-06 -5.810508e-06
##               Otu5187       Otu5188       Otu5189       Otu5191
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  1.220226e-05
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06  1.220226e-05
##               Otu5193       Otu5194       Otu5195       Otu5198
## (Intercept)  6.517205e-06  1.220226e-05  5.711316e-06  5.711316e-06
## Diet1       -6.517205e-06  1.220226e-05 -5.711316e-06 -5.711316e-06
##               Otu5199       Otu5200       Otu5202       Otu5203
## (Intercept)  6.517205e-06  6.517205e-06  4.111944e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -4.111944e-06 -6.517205e-06
##               Otu5204       Otu5205       Otu5207       Otu5211       Otu5213
## (Intercept)  4.111944e-06  1.220226e-05  4.725809e-06  8.019375e-06  4.725809e-06
## Diet1       -4.111944e-06  1.220226e-05  4.725809e-06 -8.019375e-06  4.725809e-06
##               Otu5214       Otu5215       Otu5217       Otu5218       Otu5219
## (Intercept)  1.220226e-05  6.517205e-06  5.911435e-06  6.517205e-06  6.517205e-06
## Diet1        1.220226e-05 -6.517205e-06  4.736085e-07 -6.517205e-06 -6.517205e-06
##               Otu5220       Otu5221       Otu5223       Otu5224       Otu5225
## (Intercept)  5.977516e-06  1.220226e-05  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -5.977516e-06  1.220226e-05 -6.517205e-06  1.220226e-05 -6.517205e-06
##               Otu5226       Otu5232       Otu5234       Otu5237       Otu5238
## (Intercept)  1.220226e-05  5.711316e-06  1.220226e-05  6.517205e-06  1.220226e-05
## Diet1        1.220226e-05 -5.711316e-06  1.220226e-05 -6.517205e-06  1.220226e-05
##               Otu5239       Otu5240       Otu5241       Otu5242
## (Intercept)  6.385044e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1        6.385044e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5243       Otu5244       Otu5245       Otu5246
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5247       Otu5248       Otu5249       Otu5251
## (Intercept)  6.451125e-06  6.517205e-06  5.711316e-06  6.517205e-06
## Diet1       -6.608087e-08 -6.517205e-06 -5.711316e-06 -6.517205e-06
##               Otu5252       Otu5253       Otu5254       Otu5255       Otu5258
## (Intercept)  6.385044e-06  6.517205e-06  6.517205e-06  6.517205e-06  1.220226e-05
## Diet1        6.385044e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06  1.220226e-05
##               Otu5259       Otu5261       Otu5263       Otu5264       Otu5265
## (Intercept)  6.517205e-06  9.903927e-06  5.711316e-06  6.517205e-06  4.725809e-06
## Diet1       -6.517205e-06  9.903927e-06 -5.711316e-06 -6.517205e-06  4.725809e-06
##               Otu5266       Otu5268       Otu5269       Otu5270
## (Intercept)  1.220226e-05  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1        1.220226e-05 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5271       Otu5273       Otu5274       Otu5278
## (Intercept)  7.519589e-06  6.385044e-06  6.517205e-06  6.517205e-06
## Diet1       -7.519589e-06  6.385044e-06 -6.517205e-06 -6.517205e-06
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##                 Otu5279        Otu5282        Otu5284        Otu5286
## (Intercept)  6.517205e-06   6.517205e-06   6.385044e-06   6.517205e-06
## Diet1       -6.517205e-06  -6.517205e-06   6.385044e-06  -6.517205e-06
##                 Otu5287        Otu5288        Otu5289        Otu5293
## (Intercept)  5.711316e-06   6.517205e-06   6.517205e-06   5.437827e-06
## Diet1       -5.711316e-06  -6.517205e-06  -6.517205e-06  -5.437827e-06
##                 Otu5294        Otu5295        Otu5296        Otu5297        Otu5298
## (Intercept)  1.220226e-05   5.711316e-06   4.725809e-06   6.517205e-06   6.517205e-06
## Diet1        1.220226e-05  -5.711316e-06   4.725809e-06  -6.517205e-06  -6.517205e-06
##                 Otu5299        Otu5302        Otu5303        Otu5304
## (Intercept)  5.711316e-06   6.517205e-06   5.810508e-06   6.517205e-06
## Diet1       -5.711316e-06  -6.517205e-06  -5.810508e-06  -6.517205e-06
##                 Otu5305        Otu5307        Otu5308        Otu5310
## (Intercept)  4.111944e-06   8.019375e-06   6.517205e-06   6.517205e-06
## Diet1       -4.111944e-06  -8.019375e-06  -6.517205e-06  -6.517205e-06
##                 Otu5311        Otu5313        Otu5314        Otu5315        Otu5317
## (Intercept)  6.517205e-06   1.220226e-05   6.385044e-06   6.517205e-06   6.517205e-06
## Diet1       -6.517205e-06   1.220226e-05   6.385044e-06  -6.517205e-06  -6.517205e-06
##                 Otu5319        Otu5320        Otu5323        Otu5324        Otu5325
## (Intercept)  6.517205e-06   8.464037e-06   6.517205e-06   6.385044e-06   6.517205e-06
## Diet1       -6.517205e-06   8.464037e-06  -6.517205e-06   6.385044e-06  -6.517205e-06
##                 Otu5328        Otu5329        Otu5330        Otu5331
## (Intercept)  6.517205e-06   6.517205e-06   6.517205e-06   6.517205e-06
## Diet1       -6.517205e-06  -6.517205e-06  -6.517205e-06  -6.517205e-06
##                 Otu5332        Otu5333        Otu5334        Otu5335        Otu5336
## (Intercept)  6.517205e-06   6.385044e-06   8.019375e-06   7.519589e-06   6.385044e-06
## Diet1       -6.517205e-06   6.385044e-06  -8.019375e-06  -7.519589e-06   6.385044e-06
##                 Otu5337        Otu5340        Otu5341        Otu5342
## (Intercept)  5.711316e-06   6.517205e-06   6.517205e-06   6.517205e-06
## Diet1       -5.711316e-06  -6.517205e-06  -6.517205e-06  -6.517205e-06
##                 Otu5343        Otu5344        Otu5345        Otu5346        Otu5347
## (Intercept)  6.517205e-06   6.517205e-06   5.711316e-06   1.508205e-05   6.385044e-06
## Diet1       -6.517205e-06  -6.517205e-06  -5.711316e-06   1.508205e-05   6.385044e-06
##                 Otu5348        Otu5349        Otu5350        Otu5351
## (Intercept)  6.517205e-06   6.517205e-06   7.519589e-06   6.517205e-06
## Diet1       -6.517205e-06  -6.517205e-06  -7.519589e-06  -6.517205e-06
##                 Otu5352        Otu5356        Otu5358        Otu5359
## (Intercept)  1.220226e-05   6.517205e-06   6.517205e-06   6.517205e-06
## Diet1        1.220226e-05  -6.517205e-06  -6.517205e-06  -6.517205e-06
##                 Otu5361        Otu5362        Otu5363        Otu5364        Otu5365
## (Intercept)  6.517205e-06   6.517205e-06   1.220226e-05   1.220226e-05   5.810508e-06
## Diet1       -6.517205e-06  -6.517205e-06   1.220226e-05   1.220226e-05  -5.810508e-06
##                 Otu5366        Otu5369        Otu5370        Otu5372
## (Intercept)  6.517205e-06   5.437827e-06   6.517205e-06   5.437827e-06
## Diet1       -6.517205e-06  -5.437827e-06  -6.517205e-06  -5.437827e-06
##                 Otu5373        Otu5375        Otu5376        Otu5378
## (Intercept)  6.385044e-06   5.810508e-06   5.711316e-06   6.517205e-06
## Diet1        6.385044e-06  -5.810508e-06  -5.711316e-06  -6.517205e-06
##                 Otu5379        Otu5381        Otu5382        Otu5383        Otu5384
## (Intercept)  6.517205e-06   6.385044e-06   9.293654e-06   6.517205e-06   1.508205e-05
## Diet1       -6.517205e-06   6.385044e-06   9.293654e-06  -6.517205e-06   1.508205e-05
##                 Otu5386        Otu5387        Otu5390        Otu5394
## (Intercept)  6.517205e-06   6.517205e-06   4.725809e-06   5.711316e-06
## Diet1       -6.517205e-06  -6.517205e-06   4.725809e-06  -5.711316e-06
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##                    Otu5396       Otu5397       Otu5399       Otu5400
## (Intercept)  6.122699e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1       -1.396890e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##                    Otu5401       Otu5402       Otu5403       Otu5404
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                    Otu5405       Otu5406       Otu5407       Otu5408
## (Intercept)  6.517205e-06  6.385044e-06  5.437827e-06  6.517205e-06
## Diet1       -6.517205e-06  6.385044e-06 -5.437827e-06 -6.517205e-06
##                    Otu5410       Otu5411       Otu5412       Otu5415
## (Intercept)  6.517205e-06  5.711316e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.711316e-06 -6.517205e-06 -6.517205e-06
##                    Otu5416       Otu5417       Otu5419       Otu5422       Otu5423
## (Intercept)  8.019375e-06  8.820046e-06  1.220226e-05  6.517205e-06  6.517205e-06
## Diet1       -8.019375e-06  3.382219e-06  1.220226e-05 -6.517205e-06 -6.517205e-06
##                    Otu5424       Otu5426       Otu5427       Otu5429       Otu5430
## (Intercept)  1.220226e-05  5.437827e-06  9.903927e-06  6.517205e-06  6.385044e-06
## Diet1        1.220226e-05 -5.437827e-06  9.903927e-06 -6.517205e-06  6.385044e-06
##                    Otu5431       Otu5432       Otu5434       Otu5435       Otu5436
## (Intercept)  6.517205e-06  5.437827e-06  8.019375e-06  1.508205e-05  1.220226e-05
## Diet1       -6.517205e-06 -5.437827e-06 -8.019375e-06  1.508205e-05  1.220226e-05
##                    Otu5438       Otu5439       Otu5440       Otu5441       Otu5442
## (Intercept)  4.725809e-06  1.220226e-05  7.519589e-06  5.711316e-06  9.293654e-06
## Diet1        4.725809e-06  1.220226e-05 -7.519589e-06 -5.711316e-06  9.293654e-06
##                    Otu5443       Otu5444       Otu5447       Otu5448
## (Intercept)  5.711316e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -5.711316e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                    Otu5449       Otu5454       Otu5456       Otu5457
## (Intercept)  6.517205e-06  7.519589e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -7.519589e-06 -6.517205e-06 -6.517205e-06
##                    Otu5459       Otu5461       Otu5463       Otu5464
## (Intercept)  6.517205e-06  6.517205e-06  4.725809e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  4.725809e-06 -6.517205e-06
##                    Otu5468       Otu5469       Otu5471       Otu5473       Otu5474
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.385044e-06  1.220226e-05
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06  6.385044e-06  1.220226e-05
##                    Otu5475       Otu5476       Otu5478       Otu5479
## (Intercept)  6.517205e-06  6.385044e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06  6.385044e-06 -6.517205e-06 -6.517205e-06
##                    Otu5480       Otu5481       Otu5482       Otu5483
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.615452e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.615452e-06
##                    Otu5485       Otu5486       Otu5487       Otu5488
## (Intercept)  6.517205e-06  5.810508e-06  6.517205e-06  1.220226e-05
## Diet1       -6.517205e-06 -5.810508e-06 -6.517205e-06  1.220226e-05
##                    Otu5489       Otu5490       Otu5491       Otu5493
## (Intercept)  6.517205e-06  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06  1.220226e-05 -6.517205e-06
##                    Otu5494       Otu5495       Otu5496       Otu5501
## (Intercept)  5.711316e-06  8.820046e-06  6.517205e-06  8.019375e-06
## Diet1       -5.711316e-06  3.382219e-06 -6.517205e-06 -8.019375e-06
##                    Otu5503       Otu5507       Otu5508       Otu5509       Otu5510
## (Intercept)  6.517205e-06  6.385044e-06  1.220226e-05  6.385044e-06  6.517205e-06
## Diet1       -6.517205e-06  6.385044e-06  1.220226e-05  6.385044e-06 -6.517205e-06
```

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##               Otu5511      Otu5512      Otu5513      Otu5514
## (Intercept)  6.517205e-06 4.725809e-06 5.711316e-06 5.437827e-06
## Diet1       -6.517205e-06 4.725809e-06 -5.711316e-06 -5.437827e-06
##               Otu5515      Otu5517      Otu5519      Otu5523      Otu5526
## (Intercept)  4.111944e-06 1.220226e-05 9.903927e-06 5.711316e-06 6.517205e-06
## Diet1       -4.111944e-06 1.220226e-05 9.903927e-06 -5.711316e-06 -6.517205e-06
##               Otu5527      Otu5528      Otu5529      Otu5530
## (Intercept)  5.711316e-06 6.517205e-06 6.385044e-06 5.711316e-06
## Diet1       -5.711316e-06 -6.517205e-06 6.385044e-06 -5.711316e-06
##               Otu5531      Otu5532      Otu5533      Otu5534      Otu5536
## (Intercept)  7.519589e-06 6.517205e-06 1.508205e-05 1.220226e-05 6.517205e-06
## Diet1       -7.519589e-06 -6.517205e-06 1.508205e-05 1.220226e-05 -6.517205e-06
##               Otu5538      Otu5541      Otu5543      Otu5545      Otu5548
## (Intercept)  1.220226e-05 8.019375e-06 6.385044e-06 6.517205e-06 6.517205e-06
## Diet1        1.220226e-05 -8.019375e-06 6.385044e-06 -6.517205e-06 -6.517205e-06
##               Otu5549      Otu5550      Otu5552      Otu5553      Otu5554
## (Intercept)  5.711316e-06 1.220226e-05 6.385044e-06 1.220226e-05 5.437827e-06
## Diet1       -5.711316e-06 1.220226e-05 6.385044e-06 1.220226e-05 -5.437827e-06
##               Otu5555      Otu5556      Otu5557      Otu5560
## (Intercept)  1.220226e-05 6.517205e-06 6.517205e-06 6.517205e-06
## Diet1        1.220226e-05 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5561      Otu5563      Otu5564      Otu5565
## (Intercept)  6.517205e-06 6.517205e-06 6.517205e-06 6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5567      Otu5568      Otu5569      Otu5570
## (Intercept)  6.517205e-06 5.810508e-06 6.517205e-06 6.517205e-06
## Diet1       -6.517205e-06 -5.810508e-06 -6.517205e-06 -6.517205e-06
##               Otu5571      Otu5572      Otu5573      Otu5574
## (Intercept)  6.517205e-06 6.517205e-06 1.220226e-05 8.019375e-06
## Diet1       -6.517205e-06 -6.517205e-06 1.220226e-05 -8.019375e-06
##               Otu5575      Otu5576      Otu5577      Otu5579      Otu5580
## (Intercept)  6.517205e-06 1.508205e-05 6.517205e-06 6.385044e-06 6.385044e-06
## Diet1       -6.517205e-06 1.508205e-05 -6.517205e-06 6.385044e-06 6.385044e-06
##               Otu5581      Otu5582      Otu5584      Otu5585
## (Intercept)  6.517205e-06 1.220226e-05 6.517205e-06 6.517205e-06
## Diet1       -6.517205e-06 1.220226e-05 -6.517205e-06 -6.517205e-06
##               Otu5587      Otu5588      Otu5589      Otu5590
## (Intercept)  4.111944e-06 6.517205e-06 6.517205e-06 6.517205e-06
## Diet1       -4.111944e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5591      Otu5592      Otu5593      Otu5594      Otu5595
## (Intercept)  1.220226e-05 1.220226e-05 6.517205e-06 6.517205e-06 6.517205e-06
## Diet1        1.220226e-05 1.220226e-05 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5596      Otu5597      Otu5598      Otu5599      Otu5600
## (Intercept)  6.517205e-06 5.810508e-06 1.220226e-05 6.385044e-06 6.517205e-06
## Diet1       -6.517205e-06 -5.810508e-06 1.220226e-05 6.385044e-06 -6.517205e-06
##               Otu5601      Otu5602      Otu5603      Otu5604
## (Intercept)  6.517205e-06 1.220226e-05 6.517205e-06 6.517205e-06
## Diet1       -6.517205e-06 1.220226e-05 -6.517205e-06 -6.517205e-06
##               Otu5605      Otu5608      Otu5609      Otu5611
## (Intercept)  6.517205e-06 6.517205e-06 6.517205e-06 6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5613      Otu5615      Otu5616      Otu5619
## (Intercept)  6.517205e-06 6.517205e-06 6.517205e-06 1.220226e-05
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 1.220226e-05
```

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##                 Otu5621       Otu5622       Otu5623       Otu5624       Otu5625
## (Intercept)  6.517205e-06  8.019375e-06  1.508205e-05  1.220226e-05  4.725809e-06
## Diet1       -6.517205e-06 -8.019375e-06  1.508205e-05  1.220226e-05  4.725809e-06
##                 Otu5626       Otu5628       Otu5630       Otu5631
## (Intercept)  6.517205e-06  6.517205e-06  5.437827e-06  5.711316e-06
## Diet1       -6.517205e-06 -6.517205e-06 -5.437827e-06 -5.711316e-06
##                 Otu5632       Otu5633       Otu5634       Otu5637
## (Intercept)  6.517205e-06  5.711316e-06  4.725809e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.711316e-06  4.725809e-06 -6.517205e-06
##                 Otu5638       Otu5639       Otu5641       Otu5642
## (Intercept)  7.519589e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1       -7.519589e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##                 Otu5643       Otu5646       Otu5647       Otu5648
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5649       Otu5650       Otu5652       Otu5653
## (Intercept)  6.517205e-06  7.519589e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -7.519589e-06 -6.517205e-06 -6.517205e-06
##                 Otu5654       Otu5655       Otu5656       Otu5657
## (Intercept)  6.517205e-06  5.437827e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.437827e-06 -6.517205e-06 -6.517205e-06
##                 Otu5658       Otu5659       Otu5660       Otu5662
## (Intercept)  5.621507e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -8.956984e-07 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5663       Otu5664       Otu5665       Otu5666       Otu5667
## (Intercept)  9.359735e-06  9.359735e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1        2.842530e-06  2.842530e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5669       Otu5670       Otu5671       Otu5672
## (Intercept)  6.517205e-06  5.711316e-06  5.314574e-06  6.517205e-06
## Diet1       -6.517205e-06 -5.711316e-06 -5.314574e-06 -6.517205e-06
##                 Otu5673       Otu5674       Otu5675       Otu5676       Otu5677
## (Intercept)  1.220226e-05  6.114261e-06  7.519589e-06  1.220226e-05  5.437827e-06
## Diet1        1.220226e-05 -6.114261e-06 -7.519589e-06  1.220226e-05 -5.437827e-06
##                 Otu5678       Otu5679       Otu5681       Otu5682       Otu5684
## (Intercept)  1.220226e-05  5.437827e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1        1.220226e-05 -5.437827e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##                 Otu5686       Otu5687       Otu5688       Otu5690       Otu5691
## (Intercept)  7.519589e-06  6.517205e-06  1.220226e-05  4.725809e-06  7.519589e-06
## Diet1       -7.519589e-06 -6.517205e-06  1.220226e-05  4.725809e-06 -7.519589e-06
##                 Otu5692       Otu5693       Otu5694       Otu5695       Otu5696
## (Intercept)  8.019375e-06  6.385044e-06  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -8.019375e-06  6.385044e-06 -6.517205e-06  1.220226e-05 -6.517205e-06
##                 Otu5697       Otu5698       Otu5700       Otu5701       Otu5702
## (Intercept)  6.517205e-06  1.220226e-05  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -6.517205e-06  1.220226e-05 -6.517205e-06  1.220226e-05 -6.517205e-06
##                 Otu5703       Otu5704       Otu5706       Otu5708
## (Intercept)  6.517205e-06  6.517205e-06  5.437827e-06  5.711316e-06
## Diet1       -6.517205e-06 -6.517205e-06 -5.437827e-06 -5.711316e-06
##                 Otu5709       Otu5710       Otu5711       Otu5712       Otu5713
## (Intercept)  6.517205e-06  6.517205e-06  1.220226e-05  1.220226e-05  1.220226e-05
## Diet1       -6.517205e-06 -6.517205e-06  1.220226e-05  1.220226e-05  1.220226e-05
##                 Otu5714       Otu5716       Otu5717       Otu5718       Otu5722
## (Intercept)  4.111944e-06  6.385044e-06  5.437827e-06  6.517205e-06  6.385044e-06
## Diet1       -4.111944e-06  6.385044e-06 -5.437827e-06 -6.517205e-06  6.385044e-06
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##                 Otu5723       Otu5724       Otu5725       Otu5726       Otu5727
## (Intercept) 4.725809e-06  5.810508e-06  4.725809e-06  6.517205e-06  7.519589e-06
## Diet1       4.725809e-06 -5.810508e-06  4.725809e-06 -6.517205e-06 -7.519589e-06
##                 Otu5728       Otu5729       Otu5730       Otu5731
## (Intercept) 8.019375e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1      -8.019375e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5732       Otu5734       Otu5735       Otu5736
## (Intercept) 6.517205e-06  5.711316e-06  6.517205e-06  6.517205e-06
## Diet1      -6.517205e-06 -5.711316e-06 -6.517205e-06 -6.517205e-06
##                 Otu5737       Otu5738       Otu5739       Otu5740
## (Intercept) 6.517205e-06 6.385044e-06  6.517205e-06  6.517205e-06
## Diet1      -6.517205e-06 6.385044e-06 -6.517205e-06 -6.517205e-06
##                 Otu5741       Otu5743       Otu5745       Otu5747
## (Intercept) 4.111944e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1      -4.111944e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5749       Otu5750       Otu5751       Otu5753
## (Intercept) 6.517205e-06  5.711316e-06  1.220226e-05  5.711316e-06
## Diet1      -6.517205e-06 -5.711316e-06  1.220226e-05 -5.711316e-06
##                 Otu5754       Otu5756       Otu5757       Otu5758
## (Intercept) 6.517205e-06  5.711316e-06  6.517205e-06  1.220226e-05
## Diet1      -6.517205e-06 -5.711316e-06 -6.517205e-06  1.220226e-05
##                 Otu5761       Otu5762       Otu5763       Otu5764       Otu5765
## (Intercept) 6.517205e-06  6.517205e-06  6.517205e-06  1.220226e-05 1.508205e-05
## Diet1      -6.517205e-06 -6.517205e-06 -6.517205e-06  1.220226e-05 1.508205e-05
##                 Otu5766       Otu5767       Otu5769       Otu5770
## (Intercept) 6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1      -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5771       Otu5773       Otu5774       Otu5775
## (Intercept) 5.437827e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1      -5.437827e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                 Otu5778       Otu5779       Otu5785       Otu5786
## (Intercept) 5.711316e-06  6.517205e-06  6.517205e-06  1.508205e-05
## Diet1      -5.711316e-06 -6.517205e-06 -6.517205e-06  1.508205e-05
##                 Otu5788       Otu5789       Otu5793       Otu5796       Otu5798
## (Intercept) 6.517205e-06  6.517205e-06  4.725809e-06  6.517205e-06 1.508205e-05
## Diet1      -6.517205e-06 -6.517205e-06  4.725809e-06 -6.517205e-06 1.508205e-05
##                 Otu5800       Otu5801       Otu5802       Otu5803       Otu5805
## (Intercept) 6.385044e-06 1.220226e-05  6.478708e-06  1.220226e-05  6.517205e-06
## Diet1       6.385044e-06 1.220226e-05 -6.478708e-06  1.220226e-05 -6.517205e-06
##                 Otu5806       Otu5807       Otu5808       Otu5810       Otu5811
## (Intercept) 5.810508e-06  6.517205e-06  1.220226e-05  1.508205e-05  6.517205e-06
## Diet1      -5.810508e-06 -6.517205e-06  1.220226e-05  1.508205e-05 -6.517205e-06
##                 Otu5812       Otu5813       Otu5814       Otu5815
## (Intercept) 8.019375e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1      -8.019375e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##                 Otu5816       Otu5817       Otu5818       Otu5819
## (Intercept) 6.517205e-06  6.517205e-06  5.711316e-06  7.519589e-06
## Diet1      -6.517205e-06 -6.517205e-06 -5.711316e-06 -7.519589e-06
##                 Otu5820       Otu5822       Otu5824       Otu5825
## (Intercept) 6.517205e-06  4.111944e-06  6.517205e-06  4.111944e-06
## Diet1      -6.517205e-06 -4.111944e-06 -6.517205e-06 -4.111944e-06
##                 Otu5826       Otu5827       Otu5829       Otu5830
## (Intercept) 6.517205e-06  6.451125e-06  6.517205e-06  6.517205e-06
## Diet1      -6.517205e-06 -6.608087e-08 -6.517205e-06 -6.517205e-06
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##               Otu5831      Otu5832      Otu5834      Otu5836
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5837      Otu5839      Otu5840      Otu5842      Otu5843
## (Intercept)  6.517205e-06 1.508205e-05 8.019375e-06 1.220226e-05  6.517205e-06
## Diet1       -6.517205e-06 1.508205e-05 -8.019375e-06 1.220226e-05 -6.517205e-06
##               Otu5845      Otu5846      Otu5848      Otu5850      Otu5851
## (Intercept)  6.385044e-06  6.517205e-06  6.517205e-06 1.508205e-05  6.517205e-06
## Diet1        6.385044e-06 -6.517205e-06 -6.517205e-06 1.508205e-05 -6.517205e-06
##               Otu5852      Otu5853      Otu5854      Otu5855
## (Intercept)  7.519589e-06  6.517205e-06 1.220226e-05  6.517205e-06
## Diet1       -7.519589e-06 -6.517205e-06 1.220226e-05 -6.517205e-06
##               Otu5856      Otu5858      Otu5860      Otu5861
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  8.019375e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -8.019375e-06
##               Otu5863      Otu5864      Otu5865      Otu5866      Otu5867
## (Intercept)  6.517205e-06 6.385044e-06 1.508205e-05  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 6.385044e-06 1.508205e-05 -6.517205e-06 -6.517205e-06
##               Otu5868      Otu5870      Otu5871      Otu5872      Otu5873
## (Intercept)  5.711316e-06 6.385044e-06 6.385044e-06  6.517205e-06  6.517205e-06
## Diet1       -5.711316e-06 6.385044e-06 6.385044e-06 -6.517205e-06 -6.517205e-06
##               Otu5874      Otu5876      Otu5877      Otu5878
## (Intercept)  6.517205e-06  6.517205e-06 1.508205e-05  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 1.508205e-05 -6.517205e-06
##               Otu5880      Otu5881      Otu5883      Otu5884
## (Intercept)  6.517205e-06 6.385044e-06  4.111944e-06  6.517205e-06
## Diet1       -6.517205e-06 6.385044e-06 -4.111944e-06 -6.517205e-06
##               Otu5885      Otu5887      Otu5888      Otu5890
## (Intercept)  5.711316e-06  6.517205e-06  6.517205e-06 1.508205e-05
## Diet1       -5.711316e-06 -6.517205e-06 -6.517205e-06 1.508205e-05
##               Otu5891      Otu5892      Otu5893      Otu5894      Otu5896
## (Intercept)  6.517205e-06  5.437827e-06  6.517205e-06 4.725809e-06 4.725809e-06
## Diet1       -6.517205e-06 -5.437827e-06 -6.517205e-06 4.725809e-06 4.725809e-06
##               Otu5897      Otu5898      Otu5899      Otu5900      Otu5903
## (Intercept)  6.517205e-06  6.517205e-06 1.220226e-05  6.517205e-06 6.385044e-06
## Diet1       -6.517205e-06 -6.517205e-06 1.220226e-05 -6.517205e-06 6.385044e-06
##               Otu5904      Otu5905      Otu5906      Otu5908      Otu5910
## (Intercept)  6.517205e-06  6.517205e-06 4.725809e-06  6.517205e-06 9.359735e-06
## Diet1       -6.517205e-06 -6.517205e-06 4.725809e-06 -6.517205e-06 2.842530e-06
##               Otu5911      Otu5913      Otu5914      Otu5916      Otu5917
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06 6.385044e-06 9.359735e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 6.385044e-06 2.842530e-06
##               Otu5918      Otu5919      Otu5920      Otu5922
## (Intercept)  5.574571e-06 6.385044e-06  6.517205e-06  6.517205e-06
## Diet1       -5.574571e-06 6.385044e-06 -6.517205e-06 -6.517205e-06
##               Otu5923      Otu5926      Otu5927      Otu5929
## (Intercept)  6.517205e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -6.517205e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##               Otu5930      Otu5932      Otu5935      Otu5936      Otu5939
## (Intercept)  1.220226e-05  6.517205e-06 1.220226e-05 6.385044e-06  6.517205e-06
## Diet1        1.220226e-05 -6.517205e-06 1.220226e-05 6.385044e-06 -6.517205e-06
##               Otu5940      Otu5941      Otu5942      Otu5943      Otu5944
## (Intercept)  6.517205e-06  6.517205e-06 4.725809e-06  5.081818e-06 1.508205e-05
## Diet1       -6.517205e-06 -6.517205e-06 4.725809e-06 -3.560090e-07 1.508205e-05
```

```
##                 Otu5945         Otu5946         Otu5950         Otu5952         Otu5954
## (Intercept) 6.385044e-06  6.517205e-06  6.097776e-06  6.385044e-06  4.111944e-06
## Diet1       6.385044e-06 -6.517205e-06  2.872680e-07  6.385044e-06 -4.111944e-06
##                 Otu5958         Otu5959         Otu5961         Otu5962         Otu5963
## (Intercept) 1.220226e-05  5.810508e-06  6.517205e-06  6.517205e-06  1.364216e-05
## Diet1       1.220226e-05 -5.810508e-06 -6.517205e-06 -6.517205e-06  1.364216e-05
##                 Otu5964         Otu5965         Otu5966         Otu5968         Otu5970
## (Intercept) 4.725809e-06  6.517205e-06  1.079963e-05  4.725809e-06  7.018397e-06
## Diet1       4.725809e-06 -6.517205e-06  4.282420e-06  4.725809e-06 -7.018397e-06
##                 Otu5971         Otu5972         Otu5973         Otu5974
## (Intercept) 5.624167e-06  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1      -5.624167e-06 -6.517205e-06  1.220226e-05 -6.517205e-06
##                 Otu5975         Otu5976         Otu5977         Otu5980
## (Intercept) 6.451125e-06  6.163857e-06  6.517205e-06  8.019375e-06
## Diet1      -6.608087e-08 -6.163857e-06 -6.517205e-06 -8.019375e-06
##                 Otu5981         Otu5982         Otu5983         Otu5984
## (Intercept) 1.220226e-05  6.517205e-06  4.111944e-06  6.517205e-06
## Diet1       1.220226e-05 -6.517205e-06 -4.111944e-06 -6.517205e-06
##                 Otu5986         Otu5987         Otu5988         Otu5990         Otu5991
## (Intercept) 4.111944e-06  1.220226e-05  6.517205e-06  9.359735e-06  6.517205e-06
## Diet1      -4.111944e-06  1.220226e-05 -6.517205e-06  2.842530e-06 -6.517205e-06
##                 Otu5992         Otu5993         Otu5994         Otu5995
## (Intercept) 1.220226e-05  6.517205e-06  6.517205e-06  5.810508e-06
## Diet1       1.220226e-05 -6.517205e-06 -6.517205e-06 -5.810508e-06
##                 Otu5996         Otu5997         Otu5998         Otu5999         Otu6001
## (Intercept) 6.517205e-06  6.517205e-06  6.517205e-06  6.385044e-06  1.508205e-05
## Diet1      -6.517205e-06 -6.517205e-06 -6.517205e-06  6.385044e-06  1.508205e-05
##                 Otu6002         Otu6004         Otu6005         Otu6007
## (Intercept) 6.517205e-06  6.517205e-06  9.359735e-06  6.517205e-06
## Diet1      -6.517205e-06 -6.517205e-06  2.842530e-06 -6.517205e-06
##                 Otu6008         Otu6010         Otu6011         Otu6012
## (Intercept) 6.517205e-06  6.517205e-06  7.26829e-06   6.517205e-06
## Diet1      -6.517205e-06 -6.517205e-06 -7.26829e-06  -6.517205e-06
##                 Otu6014         Otu6015         Otu6016         Otu6018
## (Intercept) 6.517205e-06  6.517205e-06  6.517205e-06  8.019375e-06
## Diet1      -6.517205e-06 -6.517205e-06 -6.517205e-06 -8.019375e-06
##                 Otu6020         Otu6021         Otu6022         Otu6024
## (Intercept) 6.517205e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1      -6.517205e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##                 Otu6025         Otu6026         Otu6027         Otu6028
## (Intercept) 5.437827e-06  6.517205e-06  6.517205e-06  6.385044e-06
## Diet1      -5.437827e-06 -6.517205e-06 -6.517205e-06  6.385044e-06
##                 Otu6029         Otu6030         Otu6032         Otu6036         Otu6038
## (Intercept) 6.517205e-06  6.517205e-06  6.385044e-06  6.517205e-06  1.220226e-05
## Diet1      -6.517205e-06 -6.517205e-06  6.385044e-06 -6.517205e-06  1.220226e-05
##                 Otu6040         Otu6041         Otu6042         Otu6043         Otu6044
## (Intercept) 1.220226e-05  6.517205e-06  6.517205e-06  6.385044e-06  6.517205e-06
## Diet1       1.220226e-05 -6.517205e-06 -6.517205e-06  6.385044e-06 -6.517205e-06
##                 Otu6045         Otu6046         Otu6047         Otu6048
## (Intercept) 6.517205e-06  6.517205e-06  6.517205e-06  8.019375e-06
## Diet1      -6.517205e-06 -6.517205e-06 -6.517205e-06 -8.019375e-06
##                 Otu6049         Otu6050         Otu6053         Otu6054
## (Intercept) 1.508205e-05  6.517205e-06  6.517205e-06  7.018397e-06
## Diet1       1.508205e-05 -6.517205e-06 -6.517205e-06 -7.018397e-06
```

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##                  Otu6055       Otu6056       Otu6060       Otu6063       Otu6064
## (Intercept)  6.517205e-06  6.385044e-06  6.517205e-06  4.725809e-06  6.517205e-06
## Diet1       -6.517205e-06  6.385044e-06 -6.517205e-06  4.725809e-06 -6.517205e-06
##                  Otu6065       Otu6067       Otu6068       Otu6069
## (Intercept)  6.517205e-06  1.220226e-05  7.519589e-06  5.711316e-06
## Diet1       -6.517205e-06  1.220226e-05 -7.519589e-06 -5.711316e-06
##                  Otu6070       Otu6072       Otu6073       Otu6074
## (Intercept)  4.111944e-06  6.517205e-06  6.517205e-06  6.517205e-06
## Diet1       -4.111944e-06 -6.517205e-06 -6.517205e-06 -6.517205e-06
##                  Otu6075       Otu6076       Otu6077       Otu6079       Otu6081
## (Intercept)  6.517205e-06  6.385044e-06  1.220226e-05  6.517205e-06  1.508205e-05
## Diet1       -6.517205e-06  6.385044e-06  1.220226e-05 -6.517205e-06  1.508205e-05
##                  Otu6083       Otu6084       Otu6085       Otu6087
## (Intercept)  5.810508e-06  6.914941e-06  8.019375e-06  5.437827e-06
## Diet1       -5.810508e-06 -6.914941e-06 -8.019375e-06 -5.437827e-06
##                  Otu6091       Otu6092       Otu6095       Otu6098
## (Intercept)  8.019375e-06  5.810508e-06  6.517205e-06  7.519589e-06
## Diet1       -8.019375e-06 -5.810508e-06 -6.517205e-06 -7.519589e-06
##                  Otu6100       Otu6102       Otu6105       Otu6106       Otu6107
## (Intercept)  7.519589e-06  1.508205e-05  6.517205e-06  1.220226e-05  6.517205e-06
## Diet1       -7.519589e-06  1.508205e-05 -6.517205e-06  1.220226e-05 -6.517205e-06
##                  Otu6112       Otu6113
## (Intercept)  5.810508e-06  1.508205e-05
## Diet1       -5.810508e-06  1.508205e-05
##
## $coef.sites
##                RiBOC015    RiNEW021    RiNEW012    RiNEW018    RiNEW024    RiWAS001
## (Intercept) 0.75824347   0.7344756  0.72573068  0.76432020   0.7037160  0.81552470
## Diet1       0.08918665  -0.1052434  0.08846954  0.01698873  -0.1337898  0.07030348
##                RiNEW008    RiNEW006    RiNEW025    RiNEW023    RiNEW002
## (Intercept) 0.73101911  0.76602579   0.7040783   0.6919357  0.8016268
## Diet1       0.07324895  0.08625053  -0.1532653  -0.1397679  0.1040372
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##      [73,] 1.1278353
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## [387,] 0.8888035
## [388,] 0.9274449
## [389,] 1.1164403
## [390,] 0.8071972
## [391,] 0.8306308
## [392,] 1.0449379
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## [396,] 1.2906971
## [397,] 0.8098590
```

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## [400,] 0.9473429
## [401,] 1.0725247
## [402,] 1.1960589
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## [419,] 0.9733060
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## [431,] 0.9473429
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## [451,] 1.1136159
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## [558,] 0.9490800
## [559,] 0.9154712
```

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## [562,] 1.3475363
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## [567,] 0.8904169
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## [613,] 0.7520459
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## [667,] 0.8451489
```

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## [766,] 1.2985055
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## [768,] 0.9094491
## [769,] 1.2477917
## [770,] 1.2197988
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## [775,] 0.6708460
```

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## [786,] 0.8942706
## [787,] 0.9602174
## [788,] 0.9476409
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## [791,] 1.1547957
## [792,] 1.7060419
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## [795,] 1.0807625
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## [797,] 1.0288586
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## [807,] 0.8286433
## [808,] 0.8524287
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## [823,] 1.0084792
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## [827,] 0.8675803
## [828,] 0.6694257
## [829,] 1.0100095
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## [859,] 1.0084792
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## [933,] 1.0656881
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## [935,] 1.0238172
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## [937,] 0.8569355
```

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## [979,] 1.0961041
## [980,] 0.6848856
## [981,] 0.9448365
## [982,] 1.3421199
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## [991,] 0.8269978
```

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##   [992,] 1.0685489
##   [993,] 0.8919111
##   [994,] 0.8822379
##   [995,] 0.8904169
##   [996,] 0.8667111
##   [997,] 0.9369486
##   [998,] 1.1164403
##   [999,] 0.8451584
## [1000,] 1.2136851
##
## $model.matrix
##           (Intercept) Diet1
## RiBOC015            1    -1
## RiNEW021            1     1
## RiNEW012            1    -1
## RiNEW018            1    -1
## RiNEW024            1     1
## RiWAS001            1    -1
## RiNEW008            1    -1
## RiNEW006            1    -1
## RiNEW025            1     1
## RiNEW023            1     1
## RiNEW002            1    -1
##
## $terms
## new.data.i[, -c(1:4)] ~ Diet
## attr(,"variables")
## list(new.data.i[, -c(1:4)], Diet)
## attr(,"factors")
##                        Diet
## new.data.i[, -c(1:4)]     0
## Diet                      1
## attr(,"term.labels")
## [1] "Diet"
## attr(,"order")
## [1] 1
## attr(,"intercept")
## [1] 1
## attr(,"response")
## [1] 1
## attr(,".Environment")
## <environment: R_GlobalEnv>
##
## attr(,"class")
## [1] "adonis"
```

```
# Principal Coordinates Analysis
dataREL.dist <- vegdist(dataREL.i, method="bray")

pcoa <- cmdscale(dataREL.dist, k=3, eig=TRUE, add=FALSE)
  # Classical (Metric) Multidimensional Scaling; returns PCoA coordinates
  # eig=TRUE returns eigenvalues; k = # of dimensions to calculate

explainvar1b <- round(pcoa$eig[1] / sum(pcoa$eig), 3) * 100
```

```r
explainvar2b <- round(pcoa$eig[2] / sum(pcoa$eig), 3) * 100
sum.eigb <- sum(explainvar1b, explainvar2b)

explainvar1b #20.5
```

```
## [1] 20.5
```

```r
explainvar2b #16.1
```

```
## [1] 16.1
```

```r
pcoa.groups <- paste(new.data.i$Diet, new.data.i$Species, sep = "_")
pcoa.points <- data.frame(pcoa$points, group = pcoa.groups)

# Calculate Centroids (mean and SE)
pcoa.L.centroids <- melt(pcoa.points, id="group", measure.vars = c("X1", "X2"))
pcoa.centroids <- acast(pcoa.L.centroids, variable ~ group, mean)
pcoa.centroids.se <- acast(pcoa.L.centroids, variable ~ group, se)
pcoa.centroids.sd <- acast(pcoa.L.centroids, variable ~ group, sd)

# Combine
pcoa.cent.dataframe <- cbind(t(pcoa.centroids), t(pcoa.centroids.se))
colnames(pcoa.cent.dataframe) <- c("V1", "V2", "V1e", "V2e")
pcoa.cent.treats <- rownames(pcoa.cent.dataframe)

pcoa.col <- as.factor(sapply(strsplit(pcoa.cent.treats, "_"), `[`, 1))  # Diet

#Plot
df1a <- as.data.frame(pcoa.cent.dataframe)
plot1a <- ggplot(df1a, aes(x=V1, y=V2, colour=as.factor(pcoa.col), shape=as.factor(pcoa.col))) + theme_
plot1a +
  theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank(), axis.line = element_line
  theme(panel.background = element_blank()) +
  geom_errorbarh(aes(xmax=V1+V1e, xmin=V1-V1e, height=0.01), colour="black") +
  geom_errorbar(aes(ymax=V2+V2e, ymin=V2-V2e, width=0.01), colour="black") +
  geom_point(aes(colour=as.factor(pcoa.col)), size=5, stroke = 0.75, show.legend = TRUE) +
    scale_shape_manual(name = "Diet",
                   labels = c("detritus fed","egg fed"),
                   values = c(19, 17))+
  scale_colour_manual(name = "Diet",
                   labels = c("detritus fed","egg fed"),
                   values = c("darkgreen","darkorange")) +
  theme(axis.title = element_text(size=14), axis.text=element_text(size=14),
        axis.text.x = element_text(size=14),
        panel.border = element_rect(colour = "black", size=1.25)) +
  theme(axis.ticks.length=unit(0.3,"cm")) +
  xlab("PCoA 1 (20.5%)") + ylab("PCoA 2 (16.1%)") +
  ggtitle(label="Ranitomeya imitator 16S rRNA Community Composition") +
  theme(plot.title = element_text(color="black", size=14, face="bold.italic"))
```

Ranitomeya imitator 16S rRNA Community Composition
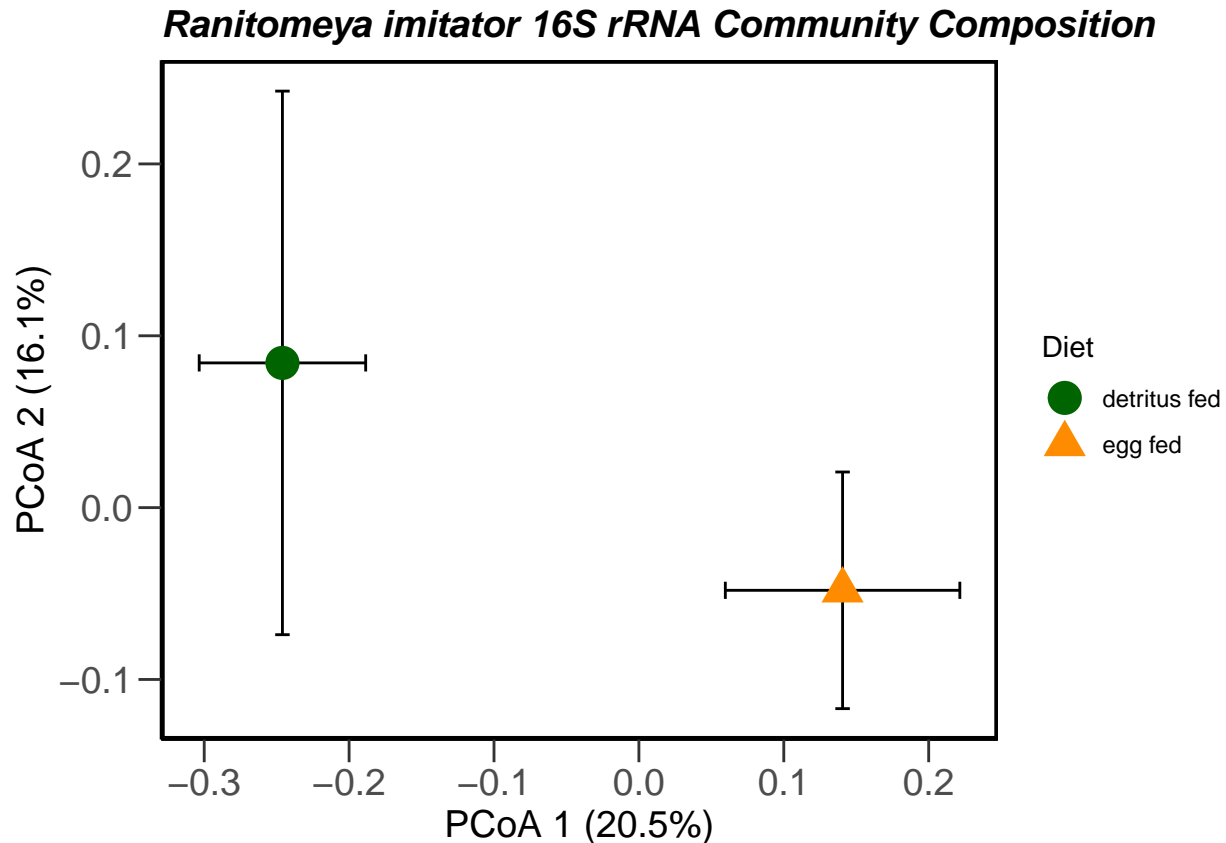

```
ggsave("../figures/Ordination_imitator_diet.pdf", plot=last_plot(), device=NULL, path=NULL, scale=1, wid
ggsave("../figures/Ordination_imitator_diet.png", plot=last_plot(), device=NULL, path=NULL, scale=1, wid
```

Bacterial community indicator species analysis - R. imitator diet

```
library("labdsv")
```

```
## Loading required package: mgcv
```

```
## This is mgcv 1.8-40. For overview type 'help("mgcv-package")'.
```

```
## Registered S3 method overwritten by 'labdsv':
##   method        from
##   summary.dist  ade4
```

```
## This is labdsv 2.0-1
## convert existing ordinations with as.dsvord()
```

```
##
## Attaching package: 'labdsv'
```

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

dataREL <- dataREL.i[, colSums(dataREL.i) > 0.05]
design.type <- new.data.i$Diet
bac.ind <- indval(dataREL, design.type)
levels(design.type)
```

```
## NULL
```

```
summary(bac.ind)
```

```
##          cluster indicator_value probability
## Otu0008        1          0.9164       0.045
## Otu0011        2          0.9498       0.021
## Otu0014        2          0.8552       0.038
##
## Sum of probabilities               =  14.449
##
## Sum of Indicator Values            =  23.03
##
## Sum of Significant Indicator Values =  2.72
##
## Number of Significant Indicators   =  3
##
## Significant Indicator Distribution
##
## 1 2
## 1 2
```

```
inds <- which(bac.ind$pval <= 0.05)
bac.indicators <- as.data.frame(matrix(NA, nrow = length(inds), ncol = 4))
colnames(bac.indicators) <- c("OTU", "Cluster", "IndVal", "Prob")

bac.indicators$OTU <- names(inds)
bac.indicators$Cluster <- bac.ind$maxcls[inds]
bac.indicators$IndVal <- bac.ind$indcls[inds]
bac.indicators$Prob <- bac.ind$pval[inds]

ind.tax <- tadpole.tax[which(as.character(tadpole.tax$OTU) %in% bac.indicators$OTU), ]
ind.tax <- ind.tax[match(ind.tax$OTU, bac.indicators$OTU), ]

indicator.bac <- cbind(bac.indicators, ind.tax[, -c(1)])

indicator.bac <- indicator.bac[order(as.numeric(indicator.bac$Cluster)), ]

table(indicator.bac$Cluster)
```

```
##
## 1 2
## 1 2
```

```
table(indicator.bac$Phylum)
```

```
##
## Bacteria_unclassified          Bacteroidetes         Proteobacteria
##                    1                      1                      1
```

```
table(indicator.bac$Cluster)
```

```
##
## 1 2
## 1 2
```

```
levels(design.type)
```

```
## NULL
```

```
# Export Bacteria Indicator Table
write.table(indicator.bac, "../data/BacterialIndicators_imitator_diet.txt",
            sep="\t", row.names = F, quote = F)
```

Simple Hypothesis Testing - R. variabilis

```
# R. variabilis lab egg-fed vs. field detritus-fed

otus.design.variabilis <- subset(otus.design, Species == "variabilis")
dim(otus.design.variabilis)
```

```
## [1]   10 8277
```

```
design.final.v <- otus.design.variabilis[,c(1:4)] # seaparate design file
otu.v <- otus.design.variabilis[,-c(1:4)] # separate otu file

# OTU table - remove otus w/ < 2 occurrences across all sites
otu.v <- otu.v[, which(colSums(otu.v) >= 2)]
dim(otu.v) # 2940 OTUs
```

```
## [1]   10 2940
```

```
# Make Relative Abundance Matrices
dataREL.v <- otu.v
for(i in 1:dim(otu.v)[1]){
  dataREL.v[i,] <- otu.v[i,]/sum(otu.v[i,])
}

#PERMANOVA
new.data.v <-cbind(design.final.v,dataREL.v)
adonis = adonis(new.data.v[,-c(1:4)]~Diet, method = "bray", data = new.data.v, perm=1000)
```

```
## 'adonis' will be deprecated: use 'adonis2' instead
```

```
adonis
```

```
## $aov.tab
## Permutation: free
## Number of permutations: 1000
##
## Terms added sequentially (first to last)
##
##           Df SumsOfSqs MeanSqs F.Model      R2 Pr(>F)
## Diet       1    0.4493 0.44930  1.4466 0.15314 0.1299
## Residuals  8    2.4847 0.31059         0.84686
## Total      9    2.9340                 1.00000
##
## $call
## adonis(formula = new.data.v[, -c(1:4)] ~ Diet, data = new.data.v,
##     permutations = 1000, method = "bray")
##
## $coefficients
##                Otu0001      Otu0002      Otu0003      Otu0004      Otu0005
## (Intercept) 0.07301776   0.09364737   0.024984875   0.11060263 0.013139343
## Diet1       0.07301776  -0.08443507  -0.008478123  -0.04303031 0.006553774
##                Otu0006      Otu0007     Otu0008      Otu0009      Otu0010
## (Intercept)  0.06283011 0.004921040 0.01960051   0.01243111   0.006000870
## Diet1       -0.03637455 0.004822792 0.01455977  -0.01243111  -0.004821784
##                Otu0011       Otu0012      Otu0013      Otu0014     Otu0015
## (Intercept)  0.012019022   0.0045836657 0.006569635   0.021625182 0.01297090
## Diet1       -0.006161274  -0.0001871769 0.001708576  -0.002695576 0.01085726
##                Otu0016       Otu0017      Otu0018      Otu0019      Otu0020
## (Intercept)  0.0017302595 0.0052789651   0.003290381 0.0052357573 0.004912953
## Diet1       -0.0002684327 0.0007048254  -0.001164480 0.0001721816 0.002661750
##                Otu0021       Otu0022      Otu0023      Otu0024       Otu0025
## (Intercept) 0.009184914 0.0016998482 0.006531431 0.0022767733 7.659548e-06
## Diet1       0.007843558 0.0007792697 0.003409851 0.0001764254 7.659548e-06
##                Otu0026      Otu0027      Otu0028      Otu0029      Otu0030
## (Intercept)  0.007434111 0.007422112 0.003322348   0.003618693 0.004621188
## Diet1       -0.002129248 0.006339503 0.001360193  -0.002138898 0.003013684
##                Otu0031      Otu0032      Otu0033      Otu0034       Otu0035
## (Intercept)  0.007112617 0.010009741 0.001395295 0.0013184114   0.003196672
## Diet1       -0.005333659 0.001388229 0.001078452 0.0007796577  -0.002021172
##                Otu0036       Otu0037      Otu0038       Otu0039      Otu0040
## (Intercept) 2.876888e-05   0.010549627 0.003311413   0.0002940792 0.003627802
## Diet1       1.741866e-05  -0.009087244 0.001040158  -0.0002940792 0.003588914
##                Otu0041      Otu0042      Otu0043      Otu0044      Otu0045
## (Intercept)  0.002857417 0.002380082 0.007264457   0.001970398 0.004302226
## Diet1       -0.002031460 0.001266514 0.004175583  -0.001508897 0.003509635
##                Otu0046       Otu0047      Otu0048      Otu0049      Otu0050
## (Intercept) 0.003883226   0.006567102 0.0018348441 0.0007994359 3.880459e-04
## Diet1       0.001328257  -0.000568382 0.0006489177 0.0003503894 6.129121e-05
##                Otu0051       Otu0052      Otu0053      Otu0056       Otu0057
## (Intercept) 0.0004778381   0.0038169972   0.006077637 0.006424259 0.0025918488
## Diet1       0.0002030937  -0.0005738876  -0.006077637 0.001103210 0.0009468771
##                   Otu0058       Otu0059       Otu0060       Otu0061       Otu0062
```

```
## (Intercept)  1.679632e-04  0.0022147657  9.457627e-05 0.002697688 0.0009323211
## Diet1        -7.339269e-05 -0.0008812348 -6.050664e-06 0.002296132 0.0003219472
##                  Otu0063      Otu0064      Otu0065      Otu0066       Otu0067
## (Intercept) 0.0050558742 0.001806439 0.0020627447   0.006036702  0.0035881739
## Diet1       0.0008457704 0.001806439 0.0009516336 -0.004996866 -0.0002235516
##                  Otu0068    Otu0069     Otu0070     Otu0071      Otu0072
## (Intercept) 1.232904e-04 0.00310467 0.004041307 0.004243749  0.002811874
## Diet1       -7.870292e-05 0.00310467 0.003081166 0.001715992 -0.001905049
##                  Otu0073      Otu0074     Otu0075     Otu0076      Otu0077
## (Intercept) 0.0006359508  0.003009486 0.002490019 0.004505399  0.002589224
## Diet1       0.0006132503 -0.001310497 0.001643744 0.003352214 -0.001929590
##                  Otu0078      Otu0079      Otu0080      Otu0081       Otu0082
## (Intercept) 0.005677911  1.851852e-05 0.0006820186  0.004070009  0.0031643882
## Diet1       0.005677911 -1.851852e-05 0.0002953142 -0.001163697 -0.0006512884
##                  Otu0083       Otu0084      Otu0085      Otu0086       Otu0087
## (Intercept) 1.079989e-04  2.919140e-03 0.004388977 0.0036416448 6.100776e-04
## Diet1       -7.162859e-05 -5.461823e-05 0.003267706 0.0001103499 2.642186e-05
##                  Otu0088      Otu0089      Otu0090     Otu0091      Otu0092
## (Intercept) 0.0016873409  0.003339206  0.004744393 0.002065525  0.003626339
## Diet1       0.0004909451 -0.003319839 -0.004744393 0.002065525 -0.003371424
##                  Otu0093      Otu0094      Otu0095     Otu0097       Otu0098
## (Intercept) 0.002380031 0.0004080317 0.0006328049 0.000416297  0.0025874268
## Diet1       0.001097344 0.0004080317 0.0004608180 0.000416297 -0.0009605455
##                  Otu0099       Otu0100      Otu0101      Otu0102      Otu0103
## (Intercept) 0.002534040  0.0038047485 0.0002725075 0.0001092291 0.0018313206
## Diet1       0.002199979 -0.0008437291 0.0001377964 0.0001010602 0.0002233457
##                  Otu0104      Otu0105       Otu0106      Otu0108       Otu0109
## (Intercept) 0.002412191 0.0022389831  1.704809e-04 1.234751e-05  0.0005306654
## Diet1       0.001716092 0.0004757268 -1.119991e-05 1.234751e-05 -0.0001802108
##                  Otu0110      Otu0111       Otu0112       Otu0114      Otu0115
## (Intercept) 0.0001313448 5.970754e-05  7.945147e-05  0.0009476215 2.566093e-04
## Diet1       0.0001066534 1.050958e-05 -1.315646e-05 -0.0006853324 3.425729e-06
##                  Otu0116       Otu0117      Otu0118      Otu0119     Otu0120
## (Intercept)  0.0004598419 0.0005109524 3.652660e-05 0.0006052331 0.002479168
## Diet1       -0.0001210694 0.0001935464 2.835774e-05 0.0006052331 0.001770546
##                  Otu0121       Otu0122       Otu0123      Otu0124      Otu0125
## (Intercept) 0.0001364315  0.0010445252  0.0027702333 0.0013638990 0.0013672299
## Diet1       0.0001364315 -0.0005760339 -0.0002282064 0.0001268992 0.0006893863
##                  Otu0126      Otu0128     Otu0129       Otu0130      Otu0131
## (Intercept) 0.0002117735 0.0004865727 0.001971797  0.0004525823 0.0002288309
## Diet1       0.0001824730 0.0001400831 0.001867655 -0.0004055396 0.0001688547
##                  Otu0132       Otu0133       Otu0134      Otu0135      Otu0136
## (Intercept) 6.166603e-05 0.0004757582  0.0008038634 0.001242662 0.001854608
## Diet1       3.079672e-05 0.0001977803 -0.0001233057 0.000827486 0.001128194
##                  Otu0137       Otu0138      Otu0139       Otu0140      Otu0141
## (Intercept) 0.0005040012  5.216571e-05 0.001683695  0.0004039849 5.209486e-05
## Diet1       0.0005040012 -4.586070e-05 0.001422640 -0.0001206497 1.861754e-05
##                  Otu0142      Otu0143       Otu0144      Otu0145      Otu0146
## (Intercept)  2.469576e-04 0.002088422  0.0017600696 0.0001751718 1.523743e-03
## Diet1       -6.411224e-05 0.001421755 -0.0008471396 0.0001751718 9.711294e-05
##                  Otu0147       Otu0148     Otu0149       Otu0150      Otu0151
## (Intercept) 0.002889317  0.0011197004 0.001744686  1.570287e-03 0.0013970030
## Diet1       0.002889317 -0.0008044498 0.000573805 -7.725741e-05 0.0009543443
##                  Otu0152       Otu0154      Otu0155      Otu0156      Otu0157
```

```
## (Intercept) 0.0018008943  0.0008153807   0.0015328182 0.0005651240 0.001569063
## Diet1        0.0002409574 -0.0002033779  -0.0001370139 0.0005292671 0.001333099
##                    Otu0158        Otu0159      Otu0160      Otu0161
## (Intercept)  0.0015311472   0.0004211002 3.882667e-05   6.986495e-05
## Diet1       -0.0001301242  -0.0001281433 3.882667e-05  -1.222754e-06
##                    Otu0162        Otu0163      Otu0164      Otu0166      Otu0167
## (Intercept)  4.834759e-04   0.0017260938 0.0002571092   0.001555900 0.0003112518
## Diet1       -5.807887e-05  -0.0008941412 0.0001804080  -0.001552619 0.0002540698
##                    Otu0168        Otu0169      Otu0170      Otu0171      Otu0172
## (Intercept)  1.006227e-04   0.0004328297 0.0002153386   0.0011780973 2.446916e-04
## Diet1       -1.571469e-05   0.0003161024 0.0001906472   0.0005023101 9.373166e-05
##                    Otu0173        Otu0175      Otu0176      Otu0177      Otu0178
## (Intercept)  0.001199440    0.0009284910   0.002111696  0.0015000938 4.200149e-04
## Diet1        0.000610903   -0.0007758181  -0.001985734  0.0000595598 -4.870699e-05
##                    Otu0179        Otu0180      Otu0181      Otu0182      Otu0183
## (Intercept)  7.110669e-04   1.484002e-04   1.123334e-03 3.237819e-05   0.0005150154
## Diet1       -3.141983e-05   2.830814e-05  -2.179467e-05 1.604046e-05  -0.0004162354
##                    Otu0184        Otu0185      Otu0186      Otu0187      Otu0188
## (Intercept)  0.002173161    0.0008952561 9.425884e-05   0.0004425709 0.000368559
## Diet1        0.002173161    0.0008952561 2.244966e-07  -0.0003415281 0.000368559
##                    Otu0189        Otu0190      Otu0191      Otu0192      Otu0193
## (Intercept)  0.000319588    8.84363e-05    7.733569e-05 0.0011331999 0.0007314640
## Diet1        0.000319588    8.84363e-05   -7.733569e-05 0.0005652322 0.0005833159
##                    Otu0194        Otu0195      Otu0197      Otu0198      Otu0199
## (Intercept)  0.0001549889   4.160646e-05 0.0001422505   0.0004412448 0.0010118275
## Diet1        0.0000920263   3.952333e-06 0.0001422505  -0.0001198812 0.0001756334
##                    Otu0200        Otu0201      Otu0202      Otu0203      Otu0204
## (Intercept)  0.0004854315   0.0013254383 1.013959e-04   0.0001947982 8.158557e-05
## Diet1        0.0003832795   0.0008409157 1.211919e-05   0.0001153466 4.074124e-05
##                    Otu0205        Otu0207      Otu0208      Otu0209      Otu0210
## (Intercept)  3.337635e-05   7.996575e-05 0.0001058054   0.0001987084 0.0003495861
## Diet1        3.337635e-05   6.762007e-05 0.0001058054   0.0001528854 0.0002021770
##                    Otu0211        Otu0212      Otu0213      Otu0214      Otu0215
## (Intercept)  1.018987e-05   8.850400e-05 6.381880e-05   0.0009159686 2.008892e-04
## Diet1       -2.772902e-06   7.554123e-05 -6.890541e-06 -0.0002041665 7.884236e-06
##                    Otu0217        Otu0218      Otu0219      Otu0220      Otu0221
## (Intercept)  0.0009935087   9.794158e-05 1.632108e-04   0.0004035636 0.0009394605
## Diet1        0.0004816611  -5.432997e-06 1.518321e-05   0.0004035636 0.0004489674
##                    Otu0222        Otu0223      Otu0224      Otu0225      Otu0226
## (Intercept)  0.0007524306   0.0010535356 6.658795e-05   0.0012091548 0.0005695078
## Diet1        0.0005010196   0.0001871421 6.658795e-05  -0.0006295812 0.0005695078
##                    Otu0227        Otu0228      Otu0229      Otu0230      Otu0231
## (Intercept)  1.003983e-04   0.0009696887 0.0009205503   0.0009172287 0.0002145407
## Diet1       -1.396579e-05  -0.0008179395 0.0002052912   0.0008574912 0.0002031904
##                    Otu0232        Otu0233      Otu0234      Otu0235      Otu0236
## (Intercept)  2.831299e-05   1.866579e-05 0.0005466479   0.0009978133 1.580013e-04
## Diet1        3.621636e-06  -1.538488e-05 0.0004199381   0.0001504405 -5.935158e-05
##                    Otu0237        Otu0238      Otu0240      Otu0241      Otu0242
## (Intercept)  1.003249e-04   0.001482407  0.0006262564   0.0008768014 0.0010225362
## Diet1        8.797924e-05  -0.001482407  0.0006262564  -0.0007900178 0.0001254862
##                    Otu0243        Otu0245      Otu0246      Otu0247      Otu0248
## (Intercept)  0.0004225534   4.684312e-05 0.0005709828   2.953322e-05 0.0006649310
## Diet1        0.0004225534   2.215176e-05 -0.0001486704 -1.984949e-05 0.0001995719
##                    Otu0249        Otu0250      Otu0251      Otu0252      Otu0253
```

```
## (Intercept) 1.791753e-04  0.0002179278   0.0004243419 0.0008306207 0.0009917340
## Diet1        1.100402e-05 -0.0001660090  -0.0001075791 0.0001610920 0.0001626842
##                     Otu0254       Otu0256        Otu0257       Otu0258       Otu0259
## (Intercept)  7.173839e-05  0.0005985452   0.0007068559  0.0005686998  5.114682e-05
## Diet1       -1.231209e-05 -0.0004932172   0.0003734202  0.0003234393 -1.457363e-05
##                     Otu0260       Otu0261       Otu0262       Otu0263       Otu0264
## (Intercept) 0.0005832572  0.0009829487  8.715222e-04 0.0002804025 0.0007423966
## Diet1       0.0003383346 -0.0003020075 -4.339087e-05 0.0001017546 0.0002090609
##                     Otu0265       Otu0266       Otu0267       Otu0268       Otu0269
## (Intercept)  0.001348065  1.516663e-04 2.556306e-04 8.145164e-05  8.852761e-05
## Diet1       -0.001266099 -6.618429e-07 3.373983e-05 5.775574e-05 -7.540400e-05
##                     Otu0270       Otu0271        Otu0272      Otu0273       Otu0274
## (Intercept) 2.608639e-05  0.0008802488   0.0009593840 0.0005336152  2.991223e-05
## Diet1       1.608470e-07 -0.0007217233  -0.0003412733 0.0005336152 -2.032631e-05
##                     Otu0275       Otu0276       Otu0277      Otu0278       Otu0279
## (Intercept)  2.430173e-04  2.777491e-04 0.0001258885 0.0007676219  2.527473e-04
## Diet1       -6.871015e-05 -5.782027e-05 0.0001258885 0.0002205727 -5.089216e-06
##                     Otu0280      Otu0281      Otu0282      Otu0283       Otu0284
## (Intercept) 0.0004196347 0.0007911414 0.000831792 0.0005565761  3.514719e-04
## Diet1       0.0004196347 0.0004371842 0.000831792 0.0005565761 -5.199732e-05
##                     Otu0285       Otu0286       Otu0287       Otu0288       Otu0289
## (Intercept) 0.0001887383 4.590154e-05 0.0008630874 0.0006047919 0.0001666914
## Diet1       0.0001546877 3.773267e-05 0.0007041843 0.0005233494 0.0001666914
##                     Otu0290       Otu0291       Otu0292       Otu0293       Otu0294
## (Intercept) 0.0002053652 2.626179e-05 0.0007419501 0.0009909259 0.0006081378
## Diet1       0.0001456277 9.924052e-06 0.0003787430 0.0001573924 0.0004659624
##                     Otu0295       Otu0296       Otu0297       Otu0299       Otu0300
## (Intercept) 0.0004636049 2.896985e-04  0.000846317 0.0005449879 2.952814e-05
## Diet1       0.0001812450 1.562515e-05 -0.000586290 0.0003824041 2.952814e-05
##                     Otu0301      Otu0302      Otu0303      Otu0304        Otu0305
## (Intercept) 2.636684e-04 3.292865e-05 4.865701e-04 5.918037e-05  0.0009608562
## Diet1       9.799023e-05 8.237288e-06 8.362438e-05 2.332355e-05 -0.0007973829
##                      Otu0306      Otu0307      Otu0308      Otu0309      Otu0310
## (Intercept)  0.0009250431 3.499916e-04 1.312266e-05 0.0007188524 0.0002334493
## Diet1       -0.0009250431 1.604118e-05 1.312266e-05 0.0004433043 0.0001063598
##                     Otu0311       Otu0312      Otu0313       Otu0314      Otu0315
## (Intercept) 4.218421e-05  0.0003014078 7.296467e-04  2.116408e-04 0.0006717693
## Diet1       4.218421e-05 -0.0002320527 1.342325e-05 -1.145637e-05 0.0004853835
##                     Otu0316      Otu0317       Otu0318       Otu0320      Otu0321
## (Intercept) 0.0005924140 0.0003744215  0.0007135811  0.0008967699 0.000187660
## Diet1       0.0004195745 0.0003176704 -0.0001876972 -0.0007459381 0.000113586
##                     Otu0322      Otu0323       Otu0324       Otu0325       Otu0327
## (Intercept) 1.895771e-05 1.076763e-04  1.678583e-04  7.489405e-04  1.926778e-05
## Diet1       1.895771e-05 8.298492e-05 -5.089626e-05 -9.513327e-05 -6.657760e-06
##                     Otu0328      Otu0329       Otu0330      Otu0331      Otu0332
## (Intercept) 1.804497e-05 0.0007650146  0.0004026986 0.0004136156 0.0005922595
## Diet1       1.804497e-05 0.0007650146 -0.0003681793 0.0004136156 0.0005922595
##                     Otu0333       Otu0336    Otu0337      Otu0338       Otu0339
## (Intercept) 4.837814e-05  1.879686e-05 0.00030313 0.0004571645  0.0002509716
## Diet1       2.786360e-05 -7.128684e-06 0.00030313 0.0004318561 -0.0002158539
##                     Otu0340      Otu0343      Otu0345      Otu0346      Otu0347
## (Intercept) 0.0001590241 0.0006869442 0.0006934815 0.0001800364 0.0001822641
## Diet1       0.0001508552 0.0002214930 0.0006934815 0.0001473609 0.0001268882
##                     Otu0348      Otu0349      Otu0350      Otu0351      Otu0352
```

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## (Intercept)  6.537730e-04 1.070676e-04 1.037522e-04  0.000944753  1.107888e-04
## Diet1       -9.523898e-05 8.671679e-06 9.153338e-06 -0.000944753 -2.097973e-05
##                 Otu0354      Otu0355      Otu0356      Otu0357      Otu0358
## (Intercept) 0.0004758971 0.0002196922  1.135022e-05 8.202261e-06 0.0003391271
## Diet1       0.0004758971 0.0002196922 -1.135022e-05 8.202261e-06 0.0002771600
##                 Otu0359      Otu0360      Otu0361      Otu0363      Otu0364
## (Intercept)  0.0006202286 1.614772e-05 2.071288e-04 0.0003727647  1.970575e-04
## Diet1       -0.0005851109 1.614772e-05 5.332213e-05 0.0003727647 -6.890284e-05
##                 Otu0365      Otu0367      Otu0368      Otu0369      Otu0370
## (Intercept) 9.749595e-05 3.061629e-04 0.0006831294 0.0001713202 2.931237e-04
## Diet1       2.612577e-05 9.050862e-05 0.0001287059 0.0001713202 9.520248e-05
##                 Otu0371      Otu0372      Otu0373      Otu0374      Otu0375
## (Intercept) 9.393356e-05 8.196515e-05  0.0007425226 4.00574e-05 0.0002343931
## Diet1       5.689652e-05 8.196515e-05 -0.0006664957 4.00574e-05 0.0001549415
##                 Otu0376      Otu0377       Otu0378      Otu0379      Otu0380
## (Intercept)  0.0005583327 4.709934e-05  6.092219e-04 0.0006877228  4.642155e-05
## Diet1       -0.0001107985 1.698448e-06 -5.355803e-06 0.0004153175 -2.665707e-05
##                 Otu0381      Otu0382       Otu0383      Otu0384      Otu0385
## (Intercept) 0.0001554475 4.914105e-05  0.0005126673 1.274010e-04  1.948257e-04
## Diet1       0.0001327470 2.862650e-05 -0.0001970727 9.036392e-05 -1.729257e-05
##                 Otu0386      Otu0387      Otu0388      Otu0389      Otu0390
## (Intercept)  2.592554e-05 0.0003846604 0.0001341499 0.0005071689 5.374687e-05
## Diet1       -2.592554e-05 0.0001807566 0.0001218042 0.0001744945 5.374687e-05
##                 Otu0391      Otu0392      Otu0393      Otu0394      Otu0395
## (Intercept)  5.193853e-05  1.377177e-04 5.077453e-05 0.0005063982 0.0004271530
## Diet1       -4.209582e-05 -3.079831e-05 5.077453e-05 0.0002812385 0.0003912962
##                 Otu0396      Otu0397       Otu0398       Otu0399      Otu0400
## (Intercept) 0.0001031014  0.0006701621  5.628460e-04  6.637616e-06 0.0004052722
## Diet1       0.0000430814 -0.0005837296 -5.006603e-05 -1.531251e-06 0.0004052722
##                 Otu0401      Otu0402      Otu0403      Otu0404      Otu0405
## (Intercept) 0.0005833454  4.659863e-05 1.410092e-04 6.315004e-05  1.085850e-04
## Diet1       0.0005339627 -5.402317e-06 2.989812e-05 3.945414e-05 -1.468704e-05
##                 Otu0406      Otu0407      Otu0408      Otu0409      Otu0410
## (Intercept) 1.107502e-04 4.306039e-05 0.0004151459 0.0004622410  0.000685865
## Diet1       7.048065e-06 3.071471e-05 0.0003810952 0.0003071028 -0.000685865
##                 Otu0411      Otu0413      Otu0414       Otu0415      Otu0416
## (Intercept)  0.0004091369 0.000169601  1.264664e-04  1.842022e-04 0.0002713786
## Diet1       -0.0001628008 0.000169601 -1.309264e-05 -3.832957e-06 0.0001328690
##                 Otu0417      Otu0418       Otu0419      Otu0420      Otu0421
## (Intercept) 0.0001560226 2.734498e-05  4.872594e-04 0.0003114883  0.0007531248
## Diet1       0.0001560226 2.734498e-05 -3.859578e-05 0.0003114883 -0.0002345295
##                 Otu0422      Otu0423      Otu0425       Otu0426       Otu0427
## (Intercept) 6.397764e-05 8.273313e-05 6.794509e-05  0.0005531768  3.068035e-05
## Diet1       6.397764e-05 3.472424e-05 6.794509e-05 -0.0001499060 -1.833285e-05
##                 Otu0428      Otu0429       Otu0430      Otu0431      Otu0433
## (Intercept) 1.150341e-04 3.280904e-06  1.890749e-05 7.911372e-05 6.893594e-05
## Diet1       -1.459361e-05 3.280904e-06 -5.783870e-06 3.048774e-05 6.893594e-05
##                 Otu0434      Otu0435      Otu0436       Otu0437      Otu0438
## (Intercept)  0.0004721199 0.0003897484 1.364472e-04  0.0005674991  0.000508895
## Diet1       -0.0002798454 0.0003443475 7.109625e-05 -0.0003405187 -0.000104017
##                 Otu0439      Otu0440      Otu0441      Otu0442      Otu0443
## (Intercept) 0.0003871888  4.812148e-05 0.0003309425 0.0004904122 3.046053e-05
## Diet1       0.0001852759 -3.729604e-06 0.0001185520 0.0002174116 5.769171e-06
##                 Otu0444      Otu0445      Otu0446      Otu0447      Otu0448
```

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## (Intercept)   1.855831e-05 6.746818e-06 0.0001771688 4.349123e-05 0.0004561505
## Diet1         -5.948289e-06 6.746818e-06 0.0001771688 4.349123e-05 0.0000170399
##                    Otu0451      Otu0453      Otu0454      Otu0455      Otu0456
## (Intercept) 0.0004754829 7.659548e-06 0.0003919831 0.0003670040 5.996901e-05
## Diet1       0.0001247508 7.659548e-06 0.0003692827 0.0003219829 5.996901e-05
##                    Otu0457      Otu0458      Otu0460      Otu0461      Otu0462
## (Intercept)  0.0005610028 5.348936e-06 0.0001102442  1.071228e-04 0.0002564034
## Diet1        -0.0005513190 5.348936e-06 0.0001102442 -3.533508e-05 0.0002564034
##                    Otu0463      Otu0464      Otu0465      Otu0466      Otu0467
## (Intercept)  0.0001400181  7.396374e-05 0.0002674091  1.633773e-05  3.525480e-04
## Diet1        0.0001400181 -4.270120e-05 0.0001953259 -1.633773e-05 -1.059675e-05
##                    Otu0468      Otu0469      Otu0470      Otu0471      Otu0472
## (Intercept)  0.0002232984 3.722734e-04 0.0004897126 5.688543e-05 0.0002600359
## Diet1        -0.0001711778 3.747975e-05 0.0004815438 5.688543e-05 0.0000838722
##                    Otu0473      Otu0474      Otu0475      Otu0476      Otu0477
## (Intercept)  0.0002451174 3.947637e-05 0.0002147514  2.463237e-05  1.518186e-04
## Diet1        -0.0001001021 3.947637e-05 0.0001240120 -8.227851e-06 -3.840759e-06
##                    Otu0479      Otu0480      Otu0481      Otu0482      Otu0483
## (Intercept)  0.0005215084 2.505105e-05 1.947101e-05  0.000626847  9.774857e-05
## Diet1        -0.0003490621 1.270537e-05 1.947101e-05 -0.000626847 -1.633958e-06
##                    Otu0484      Otu0485      Otu0486      Otu0487      Otu0488
## (Intercept)  3.791503e-04 0.0002741951 7.776559e-05 4.233265e-05 0.0003580327
## Diet1        -7.930253e-05 0.0002628448 2.101448e-05 2.998697e-05 0.0002272075
##                    Otu0490      Otu0492      Otu0493      Otu0494      Otu0495
## (Intercept) 0.0004207280 3.476714e-04  1.489139e-04  0.0004020410  1.196259e-04
## Diet1       0.0002118469 9.388226e-05 -2.565496e-05 -0.0001467227 -4.405247e-05
##                    Otu0497      Otu0498      Otu0499      Otu0500      Otu0501
## (Intercept) 0.000464819  1.188845e-04 2.906448e-05 0.0002580441  0.0002754289
## Diet1       0.000464819 -4.801896e-05 2.906448e-05 0.0001965004 -0.0001343914
##                    Otu0502      Otu0503      Otu0504      Otu0505      Otu0506
## (Intercept) 2.893186e-05 0.0001546854  0.0002752514 1.865756e-05  1.016717e-04
## Diet1       2.076300e-05 0.0001546854 -0.0002686896 1.865756e-05 -8.683772e-05
##                    Otu0507      Otu0509      Otu0510      Otu0511      Otu0512
## (Intercept) 4.997777e-05 9.625628e-05 1.064624e-05 2.778531e-05  4.832778e-05
## Diet1       3.364004e-05 9.625628e-05 2.477376e-06 2.778531e-05 -1.202680e-05
##                    Otu0514      Otu0515      Otu0516      Otu0517      Otu0518
## (Intercept) 4.098257e-05 0.0004422762 0.0003875959 8.121447e-05  0.0003834380
## Diet1       4.098257e-05 0.0004195757 0.0002215742 6.825170e-05 -0.0001883827
##                    Otu0519      Otu0520      Otu0521      Otu0522      Otu0523
## (Intercept) 0.0001494662  0.0003057194 0.0001971125 0.0002297865 0.0003393538
## Diet1       0.0001494662 -0.0001609403 0.0001500991 0.0002297865 0.0002903406
##                    Otu0524      Otu0525      Otu0526      Otu0527      Otu0528
## (Intercept)  1.052955e-04 4.477707e-05  1.22533e-05  3.67599e-05 0.0002752962
## Diet1        -4.110929e-05 4.477707e-05 -1.22533e-05 -3.67599e-05 0.0002185451
##                    Otu0529      Otu0530      Otu0531      Otu0533      Otu0534
## (Intercept) 9.313654e-05 0.0002960236 0.0003289116 0.0003012663 0.0002509043
## Diet1       8.017377e-05 0.0001657527 0.0002948610 0.0001901552 0.0001147016
##                    Otu0535      Otu0536      Otu0539      Otu0541      Otu0542
## (Intercept) 2.966787e-05 0.0001828453 0.0003180542  1.944416e-05 5.326900e-05
## Diet1       2.966787e-05 0.0001828453 0.0002726533 -1.944416e-05 4.092332e-05
##                    Otu0543      Otu0544      Otu0545      Otu0546      Otu0547
## (Intercept) 1.112545e-05 5.922324e-05 2.893155e-04 6.177644e-05  5.114559e-05
## Diet1       1.112545e-05 5.922324e-05 6.231101e-05 6.177644e-05 -7.054970e-07
##                    Otu0548      Otu0550      Otu0553      Otu0555      Otu0556
```

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## (Intercept) 0.0003287126 3.902886e-04 2.768464e-05 3.695246e-05  1.065436e-04
## Diet1        0.0000581031 8.463299e-05 2.768464e-05 1.226110e-05 -2.660898e-05
##                     Otu0557       Otu0558       Otu0559      Otu0561      Otu0562
## (Intercept) 2.386953e-04  2.872570e-04  0.0004755844 4.921357e-06 2.11669e-05
## Diet1        5.599244e-05 -4.766656e-05 -0.0004311925 4.921357e-06 2.11669e-05
##                     Otu0563       Otu0564       Otu0565      Otu0566      Otu0567
## (Intercept) 5.149607e-05  3.169932e-05 4.841865e-05 9.683729e-06 1.936746e-05
## Diet1        1.260776e-05 -5.770052e-06 4.841865e-05 9.683729e-06 1.936746e-05
##                     Otu0569       Otu0571       Otu0572       Otu0574       Otu0575
## (Intercept)  1.161653e-04 0.0001987907  9.243690e-05 1.540764e-04  3.447519e-05
## Diet1       -5.364592e-05 0.0001987907 -1.943413e-05 7.895294e-05 -1.675880e-05
##                     Otu0576       Otu0577      Otu0578       Otu0579      Otu0581
## (Intercept)  0.0002345679 0.0001799590 6.561809e-06  1.163885e-04 0.0002632108
## Diet1       -0.0002345679 0.0001040337 6.561809e-06 -5.975798e-05 0.0002632108
##                    Otu0582      Otu0583      Otu0584       Otu0585      Otu0586
## (Intercept) 7.72018e-05 7.511227e-05 1.647439e-05  0.0002777415 2.917044e-05
## Diet1       7.72018e-05 7.511227e-05 1.647439e-05 -0.0002777415 2.917044e-05
##                     Otu0588       Otu0589       Otu0590        Otu0591      Otu0592
## (Intercept) 1.765692e-05  4.374023e-05 0.0003074179  0.0001506808 9.334537e-05
## Diet1       1.765692e-05 -5.457733e-06 0.0002116388 -0.0001256342 9.334537e-05
##                     Otu0593       Otu0595      Otu0596        Otu0597      Otu0598
## (Intercept) 0.0002990047  1.944416e-05 5.163314e-05  3.136294e-04 0.000271673
## Diet1       0.0002125850 -1.944416e-05 1.078881e-05 -1.655325e-05 0.000169521
##                    Otu0599      Otu0600     Otu0601      Otu0602       Otu0603
## (Intercept) 5.323451e-05 0.0002762932 0.000181276 8.832262e-05  6.934775e-05
## Diet1       5.323451e-05 0.0002762932 0.000181276 7.697240e-05 -2.139164e-05
##                    Otu0604      Otu0605      Otu0606        Otu0609      Otu0610
## (Intercept) 2.316958e-05 0.0003668024 1.048505e-04  3.195696e-05 0.0002870641
## Diet1       1.500071e-05 0.0001464353 1.890502e-05 -7.185054e-07 0.0002583807
##                    Otu0611      Otu0612       Otu0613      Otu0614      Otu0615
## (Intercept) 3.337635e-05 1.261002e-05  4.153193e-05 0.0001380461 0.0001571873
## Diet1       3.337635e-05 1.261002e-05 -4.153193e-05 0.0001380461 0.0001571873
##                    Otu0616      Otu0617      Otu0618      Otu0619      Otu0620
## (Intercept) 4.630268e-05 3.984714e-05 4.014635e-05 3.452530e-05 6.506078e-05
## Diet1       4.630268e-05 3.984714e-05 2.380861e-05 2.635644e-05 6.506078e-05
##                    Otu0621      Otu0622    Otu0623      Otu0624     Otu0625
## (Intercept) 7.347396e-05 0.0002385405 0.00011136 2.089039e-04 9.97468e-05
## Diet1       7.347396e-05 0.0001548684 0.00011136 6.075578e-05 9.97468e-05
##                     Otu0626       Otu0627      Otu0628        Otu0629      Otu0630
## (Intercept) 1.060253e-04  5.650903e-05 3.984085e-05  0.0004080207 0.0001634037
## Diet1       3.452604e-06 -3.077539e-05 1.533425e-05 -0.0004080207 0.0001634037
##                     Otu0631       Otu0632      Otu0634       Otu0635       Otu0636
## (Intercept) 8.858442e-05  9.310321e-05 1.359072e-05  3.281790e-05  1.135022e-05
## Diet1       8.858442e-05 -4.148767e-06 1.359072e-05 -4.219137e-06 -1.135022e-05
##                     Otu0637       Otu0638      Otu0640      Otu0641      Otu0642
## (Intercept) 0.0001878628  0.0003142722 6.231483e-05 0.0001179905 8.858194e-06
## Diet1       0.0001157796 -0.0001520824 5.096461e-05 0.0001066403 8.858194e-06
##                    Otu0644      Otu0645       Otu0646      Otu0647      Otu0648
## (Intercept) 2.251976e-04 1.915110e-04  2.151940e-04 0.0001389599 1.273842e-05
## Diet1       7.222628e-05 6.805425e-05 -3.084091e-05 0.0001389599 1.273842e-05
##                    Otu0649       Otu0650      Otu0651      Otu0652       Otu0653
## (Intercept) 0.0002182489  2.428414e-05 0.0001124674 3.280904e-06  2.069649e-04
## Diet1       0.0001451703 -1.797913e-05 0.0001124674 3.280904e-06 -3.702699e-05
##                    Otu0654      Otu0655      Otu0656      Otu0657      Otu0658
```

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## (Intercept)   8.168867e-06 8.176302e-05 0.0001384459 1.884850e-05  0.0003521769
## Diet1        -8.168867e-06 5.583747e-05 0.0001137545 1.067964e-05 -0.0001299217
##                     Otu0659      Otu0661      Otu0662      Otu0663      Otu0664
## (Intercept)  2.859103e-05  2.462713e-04  0.0002676688 1.027001e-04 4.648769e-05
## Diet1       -2.859103e-05 -3.870587e-05 -0.0001182057 7.819352e-05 4.648769e-05
##                     Otu0665      Otu0666      Otu0667      Otu0668      Otu0669
## (Intercept) 8.306222e-05 0.0001958899 6.672813e-05 2.914396e-04 9.437204e-05
## Diet1       7.171200e-05 0.0001845397 6.672813e-05 4.810763e-05 4.535884e-05
##                     Otu0670      Otu0671      Otu0673      Otu0674      Otu0675
## (Intercept) 0.000121397  1.234568e-05 0.0001925146  1.882706e-05 0.0001796928
## Diet1       0.000121397 -1.234568e-05 0.0000666667 -1.882706e-05 0.0001796928
##                     Otu0676      Otu0677      Otu0678      Otu0679      Otu0680
## (Intercept) 0.0001455314  2.366064e-05 6.496618e-05 6.309094e-05  1.921301e-04
## Diet1       0.0001455314 -2.264899e-06 5.679731e-05 5.174072e-05 -6.892506e-05
##                     Otu0681      Otu0682      Otu0683      Otu0684      Otu0686
## (Intercept) 1.207662e-04 2.47140e-04 0.0001739761 0.0001798953 2.391382e-04
## Diet1       -8.616775e-05 1.65539e-05 0.0001239763 0.0001798953 9.097985e-05
##                     Otu0687      Otu0688      Otu0690      Otu0691      Otu0692
## (Intercept)  9.542951e-05 2.100698e-05 1.234659e-05 5.985388e-05 9.842713e-06
## Diet1       -8.272656e-06 8.044209e-06 9.146302e-10 5.985388e-05 9.842713e-06
##                     Otu0693      Otu0694      Otu0695      Otu0696      Otu0697
## (Intercept)  0.0003537033 1.339586e-04  2.614705e-05 6.133998e-05 2.132588e-05
## Diet1       -0.0003462863 3.992429e-05 -2.286615e-05 6.133998e-05 2.132588e-05
##                     Otu0698      Otu0699      Otu0700      Otu0701      Otu0702
## (Intercept) 0.0002153538  2.117960e-05 1.389928e-05 0.0001517355  0.0001650108
## Diet1       0.0001046210 -1.149587e-05 1.389928e-05 0.0001517355 -0.0001460957
##                     Otu0703      Otu0704      Otu0705      Otu0706      Otu0707
## (Intercept)  2.232100e-04 0.0002169371 0.0001378719  2.292973e-04 0.0001839909
## Diet1       -1.514465e-05 0.0001562041 0.0001378719 -6.282586e-05 0.0001839909
##                     Otu0708      Otu0709      Otu0710      Otu0711
## (Intercept)  4.131497e-05  0.0003271605  5.928794e-05 2.322626e-04
## Diet1       -2.188634e-05 -0.0003271605 -1.478614e-05 4.691549e-05
##                     Otu0712      Otu0713      Otu0714      Otu0715      Otu0716
## (Intercept)  1.465025e-05 8.566323e-05 7.327425e-05 0.0001572694  3.155235e-05
## Diet1       -1.465025e-05 2.229846e-06 7.738558e-06 0.0001572694 -1.783037e-05
##                     Otu0717      Otu0718      Otu0719      Otu0720      Otu0721
## (Intercept) 6.401027e-05 2.132588e-05 1.852126e-05 9.270588e-05 8.694397e-05
## Diet1       2.715799e-05 2.132588e-05 1.852126e-05 2.360909e-05 8.694397e-05
##                     Otu0722      Otu0723      Otu0724      Otu0725      Otu0726
## (Intercept) 5.171836e-05 4.521139e-05  1.351697e-04  9.072791e-05 7.637353e-05
## Diet1       5.171836e-05 2.887366e-05 -9.183478e-05 -6.394348e-05 7.637353e-05
##                     Otu0727      Otu0728      Otu0730      Otu0732      Otu0733
## (Intercept) 4.336144e-05 0.000187861 0.0002143109  0.0001466469 9.896786e-05
## Diet1       4.336144e-05 0.000187861 0.0002029607 -0.0001128980 7.427650e-05
##                     Otu0734      Otu0736      Otu0737      Otu0738      Otu0739
## (Intercept) 0.0001327655 2.588952e-05  0.0002632438 0.0001302123 4.721738e-05
## Diet1       0.0001327655 2.588952e-05 -0.0001875837 0.0001302123 8.329071e-06
##                     Otu0740      Otu0743      Otu0744      Otu0745      Otu0746
## (Intercept) 0.0001880077  2.042217e-05 2.047232e-04 0.0002350653 1.792199e-04
## Diet1       0.0001880077 -2.042217e-05 8.339699e-05 0.0002123648 9.976838e-05
##                     Otu0748      Otu0749      Otu0750      Otu0752      Otu0753
## (Intercept) 1.878378e-05 5.411976e-05 8.202261e-05  6.697878e-05 1.452559e-05
## Diet1       1.878378e-05 2.961316e-05 8.202261e-05 -6.725779e-06 1.452559e-05
##                     Otu0754      Otu0755      Otu0757      Otu0758      Otu0759
```

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## (Intercept)  2.261597e-05  1.135022e-05 2.072003e-04 3.929043e-05 3.142205e-04
## Diet1        -2.075387e-06 -1.135022e-05 9.053537e-05 2.632766e-05 1.916223e-05
##                  Otu0760        Otu0761        Otu0762        Otu0763        Otu0766
## (Intercept) 0.0001896460  2.227880e-04  0.0001439609 0.0001325233 1.519165e-05
## Diet1        0.0001424389 -7.603098e-06 -0.0000603431 0.0001325233 1.519165e-05
##                  Otu0767        Otu0769        Otu0770        Otu0771        Otu0773
## (Intercept) 4.411035e-05  4.080414e-05 3.956816e-05  1.702533e-05 5.065939e-05
## Diet1        3.276013e-05 -9.195667e-06 2.821794e-05 -1.702533e-05 5.065939e-05
##                  Otu0774        Otu0775        Otu0776        Otu0778        Otu0780
## (Intercept) 1.641807e-04 1.847288e-04 1.166817e-05  0.0001706348 0.0001225528
## Diet1        8.887246e-05 3.135445e-05 1.166817e-05 -0.0001234788 0.0001225528
##                  Otu0781        Otu0782        Otu0783        Otu0784        Otu0785
## (Intercept) 1.024606e-04 4.193635e-06 4.986921e-05 9.763221e-06 0.0001507209
## Diet1        4.570949e-05 4.193635e-06 4.986921e-05 9.763221e-06 0.0001507209
##                  Otu0786        Otu0787        Otu0788        Otu0790        Otu0791
## (Intercept) 0.0001667278 1.791441e-04 6.305011e-06 3.263701e-05 5.86656e-05
## Diet1        0.0001440274 4.196465e-05 6.305011e-06 3.263701e-05 5.86656e-05
##                  Otu0792        Otu0794        Otu0795        Otu0796        Otu0797
## (Intercept) 1.976400e-04 2.153620e-04 0.0001954794 0.0001293755 5.526486e-05
## Diet1        3.658644e-06 6.996148e-05 0.0001207882 0.0001293755 2.258939e-05
##                  Otu0798        Otu0800        Otu0801        Otu0802        Otu0803
## (Intercept) 2.460678e-05 1.312362e-05 2.447384e-05  2.203775e-04  6.679457e-05
## Diet1        2.460678e-05 1.312362e-05 1.773395e-06 -7.219524e-05 -2.394483e-05
##                  Otu0804        Otu0805        Otu0806        Otu0807
## (Intercept)  8.641975e-05  1.296277e-05  0.0001604033  4.501695e-05
## Diet1        -8.641975e-05 -1.296277e-05 -0.0001604033 -1.979690e-05
##                  Otu0808        Otu0809        Otu0810        Otu0811        Otu0812
## (Intercept) 0.0001533787 4.789410e-05 0.0001255385 0.0001832478  4.968489e-05
## Diet1        0.0001533787 1.384344e-05 0.0001173696 0.0001462108 -7.035131e-07
##                  Otu0813        Otu0814        Otu0816        Otu0817        Otu0818
## (Intercept) 7.053945e-05 5.741583e-05 3.280904e-05 1.640452e-05 1.568671e-04
## Diet1        7.053945e-05 5.741583e-05 3.280904e-05 1.640452e-05 2.423579e-05
##                  Otu0819        Otu0820        Otu0821        Otu0822        Otu0823
## (Intercept) 1.999066e-04 1.513409e-05 0.0001097869 0.0001666984 9.842713e-06
## Diet1        8.879554e-05 1.513409e-05 0.0001097869 0.0001543527 9.842713e-06
##                  Otu0824        Otu0825        Otu0826        Otu0827        Otu0828
## (Intercept)  0.0001263221 3.937085e-05  3.440945e-05 1.421792e-04  7.835861e-05
## Diet1        -0.0000727533 3.937085e-05 -2.627592e-06 5.137745e-05 -7.835861e-05
##                  Otu0830        Otu0833        Otu0834        Otu0835        Otu0836
## (Intercept)  0.0002523487 2.51618e-05 7.416967e-06  0.0001266174 0.0002033583
## Diet1        -0.0002208236 2.51618e-05 7.416967e-06 -0.0001266174 0.0002033583
##                  Otu0837        Otu0838        Otu0840        Otu0841        Otu0842
## (Intercept) 4.235133e-05 1.849909e-04 1.559731e-05  6.312161e-05 1.403635e-05
## Diet1        4.235133e-05 2.286271e-05 1.559731e-05 -1.156956e-05 1.403635e-05
##                  Otu0844        Otu0845        Otu0846        Otu0847        Otu0848
## (Intercept) 7.219395e-05  1.278640e-05 4.108117e-05 4.216133e-05  1.304045e-05
## Diet1        1.202414e-05 -1.763742e-07 4.108117e-05 4.216133e-05 -6.478640e-06
##                  Otu0850        Otu0851        Otu0855        Otu0856        Otu0857
## (Intercept) 1.804497e-05 6.761501e-05 0.0001164246 1.804497e-05 8.692018e-05
## Diet1        1.804497e-05 6.761501e-05 0.0001164246 1.804497e-05 7.058245e-05
##                  Otu0858        Otu0860        Otu0861        Otu0862        Otu0863
## (Intercept) 5.039036e-05 4.656844e-05  9.792411e-05 1.677308e-05 2.765596e-05
## Diet1        5.039036e-05 2.064290e-05 -6.097900e-05 5.422858e-06 1.630574e-05
##                  Otu0865        Otu0867        Otu0868        Otu0870        Otu0871
```

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## (Intercept) 4.921357e-06  1.22533e-05 5.654076e-05  9.876543e-05 7.519999e-05
## Diet1        4.921357e-06 -1.22533e-05 4.419508e-05 -9.876543e-05 1.680185e-06
##                 Otu0872      Otu0873      Otu0875       Otu0876      Otu0877
## (Intercept)  3.538306e-05 3.591889e-05 0.0001039048  1.187736e-04 0.0001021273
## Diet1       -1.646803e-05 1.824484e-06 0.0001039048 -2.692231e-06 0.0001021273
##                 Otu0878      Otu0880      Otu0881      Otu0882      Otu0883
## (Intercept)  3.077113e-05 0.0001559833 0.0001021273 0.0001461154 1.021273e-05
## Diet1        3.077113e-05 0.0000163735 0.0001021273 0.0001461154 1.021273e-05
##                 Otu0884      Otu0885      Otu0886      Otu0887      Otu0889
## (Intercept)  2.859103e-05 3.929766e-05 5.577538e-05 5.741583e-05 4.70304e-05
## Diet1       -2.859103e-05 5.246993e-06 5.577538e-05 5.741583e-05 4.70304e-05
##                 Otu0891      Otu0892      Otu0894       Otu0895      Otu0896
## (Intercept)  1.305348e-04  4.57300e-05  8.726022e-06  1.229028e-04 9.702095e-05
## Diet1        9.548865e-05 -5.50399e-06 -3.619657e-06 -6.670111e-05 9.702095e-05
##                 Otu0897      Otu0898      Otu0899       Otu0900      Otu0901
## (Intercept)  1.350791e-04 1.587581e-04 3.242008e-05  0.0002345743 6.233719e-05
## Diet1        3.885882e-05 1.250676e-06 2.007440e-05 -0.0001481417 6.233719e-05
##                 Otu0902      Otu0903      Otu0904       Otu0906      Otu0909
## (Intercept)  3.530466e-05 1.313116e-04 5.249667e-05  3.462290e-05  0.000153521
## Diet1        3.530466e-05 4.863629e-05 5.249667e-05 -2.414139e-06 -0.000153521
##                 Otu0912      Otu0913      Otu0914      Otu0915       Otu0916
## (Intercept)  2.755047e-05  2.196675e-05 5.705688e-06 0.0001277149  1.162243e-04
## Diet1        1.458770e-05 -5.721209e-06 5.705688e-06 0.0001277149 -6.082275e-05
##                 Otu0917      Otu0918      Otu0919       Otu0920      Otu0921
## (Intercept)  4.449481e-05 3.65874e-05 1.069787e-05  4.53697e-05 2.420932e-05
## Diet1        3.153204e-05 3.65874e-05 1.069787e-05 -4.53697e-05 2.420932e-05
##                 Otu0923      Otu0925      Otu0926      Otu0928      Otu0929
## (Intercept)  6.732185e-05 4.800069e-05 1.458308e-04 1.784193e-05 6.305011e-06
## Diet1        3.464639e-05 4.800069e-05 2.097833e-05 1.784193e-05 6.305011e-06
##                 Otu0931      Otu0932      Otu0934      Otu0935       Otu0936
## (Intercept)  1.431788e-04 9.842713e-06 7.533408e-05 1.968543e-05  1.429669e-04
## Diet1        3.380217e-05 9.842713e-06 1.877796e-05 1.968543e-05 -4.682739e-05
##                 Otu0937      Otu0938      Otu0939       Otu0940       Otu0941
## (Intercept)  9.191458e-05 1.494908e-05 1.080409e-04  8.265010e-05  4.255211e-05
## Diet1        9.191458e-05 1.494908e-05 9.669063e-05 -1.621443e-05 -2.554923e-05
##                 Otu0943      Otu0944       Otu0946      Otu0948      Otu0949
## (Intercept)  8.529512e-05 1.974204e-05  1.551595e-05 7.124768e-05 1.109511e-05
## Diet1        8.529512e-05 1.974204e-05 -1.040959e-05 2.223448e-05 1.109511e-05
##                 Otu0950      Otu0951      Otu0952      Otu0953       Otu0954
## (Intercept)  5.314298e-05 1.446393e-05 1.968543e-05 2.397925e-05  0.0002069884
## Diet1       -4.986208e-05 1.446393e-05 1.968543e-05 3.464705e-06 -0.0001880733
##                 Otu0955      Otu0956       Otu0957       Otu0959       Otu0960
## (Intercept)  1.968543e-05 2.409319e-05  1.234568e-05  1.752398e-05  2.980576e-05
## Diet1        1.968543e-05 2.409319e-05 -1.234568e-05 -5.176468e-06 -2.238879e-05
##                 Otu0961      Otu0962       Otu0963      Otu0964       Otu0965
## (Intercept)  0.0001552083 1.342996e-04  3.853556e-05 1.726886e-05  2.468400e-05
## Diet1        0.0001100024 7.693276e-05 -1.331552e-05 1.726886e-05 -7.355239e-09
##                 Otu0966      Otu0968      Otu0969      Otu0970      Otu0971
## (Intercept)  0.0001549397 2.788769e-05 1.939804e-05 0.0002099012 0.0001099142
## Diet1        0.0001549397 2.788769e-05 1.939804e-05 0.0001234815 0.0001099142
##                 Otu0972      Otu0973      Otu0974       Otu0976      Otu0977
## (Intercept)  4.210905e-05  5.730342e-05 3.280904e-06  8.502120e-05 4.498697e-05
## Diet1        4.210905e-05 -4.089889e-05 3.280904e-06 -7.018727e-05 4.498697e-05
##                 Otu0978      Otu0979      Otu0980      Otu0982      Otu0985
```

```
## (Intercept) 0.0001195446 0.0001071852 0.0001975813 5.249447e-05 1.108726e-04
## Diet1       0.0000400930 0.0001071852 0.0001975813 5.249447e-05 2.083028e-05
##                 Otu0986      Otu0987      Otu0988      Otu0990      Otu0991
## (Intercept) 1.387737e-05 1.640452e-05 9.573210e-05 0.0001327518  9.809319e-06
## Diet1       2.527150e-06 1.640452e-05 6.168144e-05 0.0001327518 -6.528415e-06
##                 Otu0992      Otu0993      Otu0995      Otu0996      Otu0997
## (Intercept)  5.835384e-05 9.585916e-06 4.031305e-05 9.842713e-06 1.160327e-04
## Diet1       -1.383644e-06 9.585916e-06 1.424737e-06 9.842713e-06 9.969496e-05
##                 Otu0998      Otu0999      Otu1000      Otu1001      Otu1002
## (Intercept) 1.180212e-04  2.111170e-04  1.018987e-05  8.081299e-05 3.651753e-05
## Diet1       2.180098e-05 -9.998946e-05 -2.772902e-06 -7.238388e-06 3.651753e-05
##                 Otu1003      Otu1004      Otu1005      Otu1008      Otu1009
## (Intercept)  2.588386e-05 1.796548e-05  5.646809e-05 2.131532e-05 2.372009e-05
## Diet1       -1.932205e-05 1.796548e-05 -3.532915e-05 8.352549e-06 1.236986e-05
##                 Otu1010      Otu1011      Otu1013      Otu1015      Otu1016
## (Intercept) 2.236605e-05 2.296633e-05 1.604681e-05  8.906000e-05 0.0001008802
## Diet1       2.236605e-05 2.296633e-05 1.604681e-05 -4.873657e-05 0.0001008802
##                 Otu1018      Otu1020      Otu1021      Otu1023      Otu1025
## (Intercept) 1.252162e-04  1.381622e-04 7.659548e-06  8.726022e-06 8.202261e-06
## Diet1       6.385732e-05 -1.165243e-05 7.659548e-06 -3.619657e-06 8.202261e-06
##                 Otu1026      Otu1027     Otu1028      Otu1029      Otu1030
## (Intercept) 1.476407e-05  2.570495e-05 2.9228e-05 1.304413e-05 8.278068e-06
## Diet1       1.476407e-05 -5.164363e-06 2.9228e-05 1.304413e-05 1.092016e-07
##                 Otu1031      Otu1032      Otu1033      Otu1034      Otu1035
## (Intercept)  1.238897e-04  1.132325e-05  1.299683e-04 3.337635e-05 0.0001097869
## Diet1       -3.133597e-05 -1.639521e-06 -9.964186e-05 3.337635e-05 0.0001097869
##                 Otu1036      Otu1037      Otu1038      Otu1040      Otu1041
## (Intercept)  0.0001759284 2.591556e-05 6.023951e-05 6.173754e-05 0.0001450297
## Diet1       -0.0001759284 1.456534e-05 2.320247e-05 6.173754e-05 0.0001450297
##                 Otu1044      Otu1046      Otu1047      Otu1048      Otu1049
## (Intercept) 3.134645e-05 7.914867e-05  1.234568e-05 9.457517e-05 0.0001036389
## Diet1       5.420908e-06 7.914867e-05 -1.234568e-05 9.457517e-05 0.0001036389
##                 Otu1050      Otu1051      Otu1052     Otu1054      Otu1055
## (Intercept) 2.522004e-05 1.852126e-05  6.256305e-05  3.72532e-05 4.572962e-05
## Diet1       2.522004e-05 1.852126e-05 -8.339895e-06 -3.72532e-05 4.572962e-05
##                 Otu1057      Otu1059      Otu1062      Otu1063      Otu1064
## (Intercept)  2.127198e-05  0.000132700 3.684183e-05 0.0001081066 6.655617e-05
## Diet1       -1.158825e-05 -0.000126395 1.091629e-05 0.0000834152 1.754297e-05
##                 Otu1065      Otu1067      Otu1068      Otu1069      Otu1070
## (Intercept) 9.457517e-05  0.0001658151 1.695955e-05 3.859474e-05 9.457517e-05
## Diet1       9.457517e-05 -0.0001323286 1.695955e-05 3.859474e-05 9.457517e-05
##                 Otu1072      Otu1074      Otu1077     Otu1078      Otu1079
## (Intercept) 7.988030e-05 7.659548e-06 1.014189e-05  1.22533e-05 2.224391e-05
## Diet1       2.113828e-05 7.659548e-06 1.014189e-05 -1.22533e-05 9.281143e-06
##                 Otu1080      Otu1081      Otu1083      Otu1084      Otu1085
## (Intercept) 2.069935e-05  1.245766e-04  2.119294e-05 1.929737e-05 1.125166e-04
## Diet1       2.069935e-05 -6.626714e-05 -1.507509e-06 1.929737e-05 8.782524e-05
##                 Otu1087      Otu1088      Otu1089      Otu1090      Otu1091
## (Intercept) 1.174398e-05 1.601647e-05 0.0001404141 4.921357e-06 1.114688e-05
## Diet1       3.575115e-06 1.601647e-05 0.0001404141 4.921357e-06 1.114688e-05
##                 Otu1092      Otu1094      Otu1095      Otu1096      Otu1097
## (Intercept) 6.142602e-05 7.416967e-06 0.0001420806 3.843917e-05 3.208132e-05
## Diet1       1.502967e-05 7.416967e-06 0.0001193801 2.609349e-05 3.208132e-05
##                 Otu1098      Otu1099      Otu1100      Otu1102      Otu1103
```

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## (Intercept)   0.0001078271   3.615415e-05   8.38727e-06   1.967027e-05   8.168867e-06
## Diet1        -0.0001078271  -9.051755e-06   8.38727e-06  -4.836333e-06  -8.168867e-06
##                    Otu1104        Otu1105        Otu1107        Otu1108        Otu1110
## (Intercept)   4.353986e-05   5.122404e-05   1.306228e-04   7.148912e-05   4.429221e-05
## Diet1        -1.401172e-05   5.122404e-05  -5.496263e-05   7.148912e-05   4.429221e-05
##                    Otu1112        Otu1113        Otu1114        Otu1116        Otu1117
## (Intercept)   1.179831e-04   3.308137e-05   1.148317e-05   0.0001051637   7.416967e-06
## Diet1        -1.821954e-05   2.073569e-05   1.148317e-05   0.0001051637   7.416967e-06
##                    Otu1118        Otu1119        Otu1120        Otu1124        Otu1125
## (Intercept)   1.775573e-05   2.102574e-05   6.305011e-06   3.005282e-05   0.0001058388
## Diet1        -8.169813e-06   2.102574e-05   6.305011e-06   3.005282e-05   0.0001058388
##                    Otu1126        Otu1128        Otu1129        Otu1132        Otu1134
## (Intercept)   2.408822e-05   0.000112126    4.193635e-06   9.812417e-05   4.792958e-06
## Diet1        -1.837320e-06   0.000112126    4.193635e-06   8.577849e-05   4.792958e-06
##                    Otu1135        Otu1137        Otu1138        Otu1139        Otu1140
## (Intercept)   1.038251e-04   5.190719e-05   4.921357e-06   3.409179e-05   3.334251e-05
## Diet1         5.197404e-05   2.740059e-05   4.921357e-06   3.409179e-05  -1.850857e-05
##                    Otu1142        Otu1143        Otu1144        Otu1145        Otu1146
## (Intercept)   1.783615e-05   0.0001113900   1.456388e-05   2.302318e-05   3.044087e-05
## Diet1         4.873381e-06   0.0001032211   1.456388e-05   2.508630e-06   3.044087e-05
##                    Otu1150        Otu1151        Otu1152        Otu1153        Otu1154
## (Intercept)   1.078148e-05   2.672078e-05   3.048328e-05   6.561809e-06   4.643011e-05
## Diet1        -5.687456e-07  -1.031626e-05   5.976683e-06   6.561809e-06   4.643011e-05
##                    Otu1155        Otu1158        Otu1159        Otu1160        Otu1161
## (Intercept)   1.968543e-05   1.163576e-04   1.096449e-04   3.608995e-05   1.148317e-05
## Diet1         1.968543e-05   3.491516e-05   9.729923e-05   3.608995e-05   1.148317e-05
##                    Otu1162        Otu1163        Otu1166        Otu1167        Otu1168
## (Intercept)   1.274592e-04   0.0001123093   8.641297e-05   8.586496e-05   4.183019e-05
## Diet1         4.701219e-05   0.0001123093   8.641297e-05  -3.286074e-05   1.713883e-05
##                    Otu1169        Otu1170        Otu1171        Otu1172        Otu1174
## (Intercept)   9.633891e-06   9.879014e-05   1.909141e-05   1.804497e-05   1.282348e-05
## Diet1        -3.328880e-06   3.068880e-05   6.128637e-06   1.804497e-05   1.282348e-05
##                    Otu1175        Otu1177        Otu1178        Otu1180        Otu1182
## (Intercept)   1.200122e-04   8.202261e-06   1.640452e-05   2.49999e-05    0.0001106843
## Diet1         4.519035e-06   8.202261e-06   1.640452e-05  -2.49999e-05    0.0001106843
##                    Otu1183        Otu1185        Otu1186        Otu1187        Otu1188
## (Intercept)   8.874316e-05   7.99437e-06    2.977797e-05   2.495753e-05   3.145486e-05
## Diet1         3.075924e-05   7.99437e-06    2.977797e-05   2.495753e-05  -7.433457e-06
##                    Otu1189        Otu1190        Otu1191        Otu1192        Otu1194
## (Intercept)   1.778818e-05   0.0001418778   2.315134e-05   3.532615e-05   0.0001210466
## Diet1         1.778818e-05  -0.0001418778   2.315134e-05   3.532615e-05   0.0001210466
##                    Otu1196        Otu1199        Otu1201        Otu1202        Otu1204
## (Intercept)   8.787364e-05   9.114992e-06   1.273842e-05   1.398613e-05   9.883674e-05
## Diet1         5.083660e-05   9.114992e-06   1.273842e-05  -1.070523e-05   4.208563e-05
##                    Otu1205        Otu1206        Otu1207        Otu1210        Otu1211
## (Intercept)   2.319817e-05   9.724561e-05   2.116503e-05   1.611528e-05   7.895760e-05
## Diet1        -2.319817e-05   9.724561e-05  -4.760510e-06  -9.810265e-06   4.490693e-05
##                    Otu1213        Otu1214        Otu1215        Otu1216        Otu1217
## (Intercept)   2.460678e-05   1.304319e-05   3.922061e-05   1.304413e-05   1.640452e-05
## Diet1         2.460678e-05   8.042350e-08   3.922061e-05   1.304413e-05   1.640452e-05
##                    Otu1219        Otu1220        Otu1221        Otu1222        Otu1223
## (Intercept)   2.296633e-05   6.989388e-06   2.30362e-05    4.702751e-05   2.296633e-05
## Diet1         2.296633e-05   6.989388e-06   2.30362e-05    4.702751e-05   2.296633e-05
##                    Otu1224        Otu1226        Otu1227        Otu1228        Otu1229
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## (Intercept) 6.243169e-05 1.936746e-05 1.148317e-05 0.0001209703 0.0001162048
## Diet1        6.243169e-05 1.936746e-05 1.148317e-05 0.0001209703 0.0001162048
##                   Otu1230      Otu1232      Otu1234       Otu1235       Otu1236
## (Intercept)  2.434090e-05 3.485394e-05  8.90036e-05 7.734949e-05 3.280904e-06
## Diet1       -2.105999e-05 2.189117e-05  8.90036e-05 7.734949e-05 3.280904e-06
##                   Otu1238      Otu1239      Otu1240       Otu1241       Otu1242
## (Intercept)  1.633773e-05  3.793624e-05 3.081089e-05 8.547473e-05 9.719482e-05
## Diet1       -1.633773e-05 -1.391484e-05 3.081089e-05 7.412451e-05 1.674781e-05
##                   Otu1244      Otu1246      Otu1247       Otu1248       Otu1249
## (Intercept) 0.0001162048 4.028358e-05 7.845518e-05 2.713577e-05 4.951796e-05
## Diet1       0.0001162048 4.028358e-05 4.133531e-06 2.444416e-06 2.083455e-05
##                   Otu1252      Otu1253      Otu1254       Otu1255       Otu1256
## (Intercept) 1.058110e-04 9.842713e-06 3.674396e-05 7.250763e-05 4.921357e-06
## Diet1       4.706899e-05 9.842713e-06 3.674396e-05 7.250763e-05 4.921357e-06
##                   Otu1257      Otu1258      Otu1261       Otu1262       Otu1263
## (Intercept)  4.457386e-05 8.62984e-06  4.492877e-05 5.482947e-05 5.106366e-06
## Diet1       -1.544609e-05 8.62984e-06 -4.492877e-05 3.212903e-05 5.106366e-06
##                   Otu1265       Otu1266      Otu1267       Otu1269        Otu1270
## (Intercept)  5.140335e-05  1.082894e-04 6.561809e-06 1.483393e-05  1.296277e-05
## Diet1       -3.488561e-05 -4.133161e-05 6.561809e-06 1.483393e-05 -1.296277e-05
##                   Otu1275       Otu1276       Otu1278       Otu1279
## (Intercept)  1.549818e-05  7.051715e-05  2.205999e-05  7.015955e-05
## Diet1       -9.193173e-06 -1.377205e-05 -2.631364e-06 -1.926703e-05
##                   Otu1281      Otu1284      Otu1285       Otu1286       Otu1288
## (Intercept) 2.624724e-05 1.075232e-04 1.032674e-04 6.158697e-05 9.563535e-05
## Diet1       2.624724e-05 3.344915e-05 2.305881e-06 6.158697e-05 2.872446e-05
##                   Otu1289       Otu1290      Otu1291       Otu1293        Otu1294
## (Intercept) 9.454659e-06  3.169746e-05 1.403635e-05  2.952034e-05  1.101470e-05
## Diet1       9.454659e-06 -3.169746e-05 1.403635e-05 -1.967762e-05 -1.330975e-06
##                   Otu1296      Otu1299      Otu1300       Otu1301       Otu1302
## (Intercept) 9.622408e-05 1.312266e-05 9.669894e-05 8.202261e-06 7.608969e-05
## Diet1       7.153272e-05 1.312266e-05 4.831168e-05 8.202261e-06 5.338925e-05
##                   Otu1303      Otu1304     Otu1305       Otu1306      Otu1307
## (Intercept) 2.310295e-05 5.187646e-05 3.38075e-05 4.921357e-06 6.932402e-05
## Diet1       2.310295e-05 5.187646e-05 3.38075e-05 4.921357e-06 6.932402e-05
##                   Otu1308      Otu1311       Otu1312       Otu1315      Otu1319
## (Intercept) 5.617002e-05 1.440636e-05  4.079563e-05 1.012035e-04 4.083861e-05
## Diet1       5.617002e-05 1.440636e-05 -3.095291e-05 1.117008e-05 4.083861e-05
##                   Otu1320       Otu1322      Otu1323       Otu1325      Otu1326
## (Intercept)  2.161401e-05  4.165895e-05 6.173754e-05 4.487172e-05 1.140367e-05
## Diet1       -2.698980e-06 -1.019213e-05 6.173754e-05 2.853399e-05 1.140367e-05
##                   Otu1329       Otu1331      Otu1332       Otu1333       Otu1335
## (Intercept) 2.151089e-05  8.168867e-06 8.202261e-06  2.592554e-05  8.366868e-05
## Diet1       2.151089e-05 -8.168867e-06 8.202261e-06 -2.592554e-05 -6.834958e-05
##                   Otu1336      Otu1337       Otu1338      Otu1340      Otu1342
## (Intercept) 3.271712e-05  1.039894e-04 9.266598e-05 1.135477e-05 8.515933e-05
## Diet1       1.637938e-05 -4.724425e-05 3.511440e-05 1.135477e-05 6.046797e-05
##                   Otu1344      Otu1347      Otu1348      Otu1349      Otu1350
## (Intercept) 5.954642e-05 9.830044e-05 3.213269e-05 8.660845e-05 6.561809e-06
## Diet1       5.954642e-05 9.830044e-05 1.978701e-05 7.364568e-05 6.561809e-06
##                   Otu1351      Otu1353      Otu1354      Otu1356      Otu1358
## (Intercept) 7.416967e-05 4.098257e-05 5.945418e-05 3.551384e-05 4.792958e-06
## Diet1       7.416967e-05 4.098257e-05 5.945418e-05 1.917611e-05 4.792958e-06
##                   Otu1359      Otu1360      Otu1361      Otu1362      Otu1363
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## (Intercept) 5.501975e-05 2.460678e-05  2.242029e-05  1.053274e-04 4.357678e-05
## Diet1       4.267407e-05 2.460678e-05 -3.505254e-06 -7.627619e-05 4.357678e-05
##                 Otu1364      Otu1366      Otu1367      Otu1368      Otu1370
## (Intercept) 2.223861e-05  9.633891e-06 1.494908e-05 1.808358e-05  1.69292e-05
## Diet1       2.223861e-05 -3.328880e-06 1.494908e-05 5.737905e-06  1.69292e-05
##                 Otu1374      Otu1377      Otu1378      Otu1379      Otu1380
## (Intercept) 1.474026e-05 7.416967e-05 8.275319e-05 6.304422e-05 1.411922e-05
## Diet1       1.777486e-06 7.416967e-05 1.721750e-05 6.304422e-05 1.411922e-05
##                 Otu1381      Otu1382      Otu1383      Otu1386      Otu1388
## (Intercept) 5.949392e-05 2.595938e-05 2.503436e-05 1.148317e-05 5.981684e-05
## Diet1       4.814370e-05 2.595938e-05 2.503436e-05 1.148317e-05 5.981684e-05
##                 Otu1389      Otu1390       Otu1393      Otu1394       Otu1395
## (Intercept)  1.234568e-05 6.885716e-05  1.018987e-05 1.854242e-05 1.483393e-05
## Diet1       -1.234568e-05 6.885716e-05 -2.772902e-06 1.854242e-05 1.483393e-05
##                 Otu1396      Otu1397      Otu1400      Otu1401      Otu1402
## (Intercept) 5.210641e-05 7.416967e-06 1.191074e-05 8.202261e-06 4.674419e-05
## Diet1       5.210641e-05 7.416967e-06 1.191074e-05 8.202261e-06 4.674419e-05
##                 Otu1403      Otu1404       Otu1405      Otu1406       Otu1408
## (Intercept) 4.138651e-05 2.347296e-05  2.145650e-05 2.296633e-05  5.495695e-05
## Diet1       3.115291e-06 2.347296e-05 -2.856496e-06 2.296633e-05 -2.449461e-05
##                 Otu1409      Otu1412       Otu1413      Otu1414       Otu1415
## (Intercept) 4.668501e-05 1.112545e-05  3.018171e-05 4.921357e-06  2.469227e-05
## Diet1       4.668501e-05 1.112545e-05 -3.018171e-05 4.921357e-06 -1.234476e-05
##                 Otu1416      Otu1420      Otu1424      Otu1426      Otu1427
## (Intercept) 7.033115e-05 2.913917e-05 7.676977e-05 1.968543e-05 5.288909e-05
## Diet1       3.528502e-05 1.679349e-05 7.676977e-05 1.968543e-05 5.288909e-05
##                 Otu1428      Otu1430      Otu1432      Otu1434       Otu1435
## (Intercept) 5.886546e-05 3.868148e-05 5.348936e-06 1.191074e-05  2.890167e-05
## Diet1       5.886546e-05 2.733126e-05 5.348936e-06 1.191074e-05 -9.986640e-06
##                 Otu1437      Otu1438      Otu1439     Otu1440      Otu1441
## (Intercept) 6.496724e-05 4.493019e-05 1.765692e-05 5.67451e-05 8.258871e-06
## Diet1       3.904170e-05 8.888614e-06 1.765692e-05 5.67451e-05 8.258871e-06
##                 Otu1442      Otu1444      Otu1447      Otu1448      Otu1449
## (Intercept) 4.921357e-06 7.416967e-06 3.280904e-06 9.842713e-06 5.106366e-06
## Diet1       4.921357e-06 7.416967e-06 3.280904e-06 9.842713e-06 5.106366e-06
##                 Otu1451       Otu1452      Otu1453      Otu1456      Otu1457
## (Intercept)  2.675603e-05  9.762290e-06 9.842713e-06 1.822998e-05 8.202261e-06
## Diet1       -2.045102e-05 -3.200481e-06 9.842713e-06 1.822998e-05 8.202261e-06
##                 Otu1460      Otu1461     Otu1462      Otu1463       Otu1465
## (Intercept) 7.47454e-06 6.179031e-05 8.38727e-06 7.532826e-05  0.0001166649
## Diet1       7.47454e-06 3.908987e-05 8.38727e-06 7.532826e-05 -0.0001166649
##                 Otu1466      Otu1468      Otu1469       Otu1471      Otu1472
## (Intercept) 2.368944e-05 3.171497e-05 1.476407e-05  3.685228e-05 2.459014e-05
## Diet1       2.557799e-06 3.171497e-05 1.476407e-05 -3.685228e-05 1.323992e-05
##                 Otu1473      Otu1474      Otu1475      Otu1476      Otu1477
## (Intercept) 1.148317e-05 1.148317e-05 8.202261e-06 1.027029e-05 2.952814e-05
## Diet1       1.148317e-05 1.148317e-05 8.202261e-06 1.027029e-05 2.952814e-05
##                 Otu1478       Otu1479      Otu1480       Otu1481      Otu1482
## (Intercept)  1.135022e-05 7.135888e-05 6.797476e-05  1.296277e-05 5.560335e-05
## Diet1       -1.135022e-05 5.206100e-06 6.797476e-05 -1.296277e-05 1.856632e-05
##                 Otu1483      Otu1485       Otu1488      Otu1492      Otu1493
## (Intercept) 6.305011e-06 9.114992e-06  1.427430e-05 7.097343e-05 1.942863e-05
## Diet1       6.305011e-06 9.114992e-06 -6.857335e-06 2.557254e-05 1.942863e-05
##                 Otu1494      Otu1496      Otu1497      Otu1499      Otu1500
```

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## (Intercept) 9.163493e-05 8.202261e-06  7.967476e-05 6.129416e-05 2.624724e-05
## Diet1       9.163493e-05 8.202261e-06 -2.247724e-05 6.129416e-05 2.624724e-05
##                   Otu1503      Otu1505       Otu1506      Otu1507      Otu1508
## (Intercept) 6.305011e-06 4.921357e-06 1.273842e-05 6.561809e-06 6.372875e-05
## Diet1       6.305011e-06 4.921357e-06 1.273842e-05 6.561809e-06 6.372875e-05
##                   Otu1510      Otu1512      Otu1513      Otu1517      Otu1519
## (Intercept) 6.879683e-05 5.213059e-05 7.416967e-06 1.968543e-05 2.315134e-05
## Diet1       6.879683e-05 1.128625e-05 7.416967e-06 1.968543e-05 2.315134e-05
##                   Otu1520      Otu1522      Otu1523       Otu1524      Otu1528
## (Intercept)  1.611433e-05 2.151089e-05 6.452412e-05  8.573727e-05 1.148317e-05
## Diet1       -2.234034e-07 2.151089e-05 6.452412e-05 -8.573727e-05 1.148317e-05
##                   Otu1529      Otu1530      Otu1531     Otu1532     Otu1534
## (Intercept) 1.312362e-05  1.234568e-05 3.280904e-06 5.96208e-05 1.23959e-05
## Diet1       1.312362e-05 -1.234568e-05 3.280904e-06 5.96208e-05 1.23959e-05
##                   Otu1535      Otu1536      Otu1537      Otu1539       Otu1540
## (Intercept) 1.658953e-05 6.561809e-06 2.326455e-05 6.520894e-05  6.538330e-05
## Diet1       1.658953e-05 6.561809e-06 2.326455e-05 1.601098e-05 -8.136503e-06
##                   Otu1541       Otu1542      Otu1543      Otu1544      Otu1546
## (Intercept) 4.428649e-05  2.595345e-05 1.982205e-05 4.921357e-06 4.085092e-05
## Diet1       4.428649e-05 -2.267254e-05 1.982205e-05 4.921357e-06 4.085092e-05
##                   Otu1547      Otu1548      Otu1549       Otu1551      Otu1553
## (Intercept) 4.921357e-06 6.439417e-05 4.085092e-05  3.077182e-05 2.717226e-05
## Diet1       4.921357e-06 5.304395e-05 4.085092e-05 -3.077182e-05 2.717226e-05
##                   Otu1554      Otu1555      Otu1556      Otu1557      Otu1558
## (Intercept)  3.67599e-05 1.312362e-05 3.622002e-05 1.334237e-05 1.373621e-05
## Diet1       -3.67599e-05 1.312362e-05 3.622002e-05 3.796037e-07 1.373621e-05
##                   Otu1562       Otu1563       Otu1565      Otu1570       Otu1572
## (Intercept) 4.921357e-06  2.054794e-05  1.761189e-05 6.403454e-05  2.780681e-05
## Diet1       4.921357e-06 -4.143418e-06 -5.088556e-06 7.283432e-06 -1.759408e-05
##                    Otu1573      Otu1574      Otu1575       Otu1576      Otu1577
## (Intercept)  3.240693e-05 2.624724e-05 2.450160e-05  1.851852e-05 2.898543e-05
## Diet1       -3.240693e-05 2.624724e-05 8.163867e-06 -1.851852e-05 2.898543e-05
##                    Otu1579       Otu1580      Otu1581     Otu1584      Otu1586
## (Intercept)  9.080178e-05  3.783307e-05  2.5617e-05 1.35512e-05 3.280904e-06
## Diet1       -9.080178e-05 -1.891804e-05 -2.5617e-05 1.35512e-05 3.280904e-06
##                   Otu1587      Otu1589      Otu1591       Otu1592      Otu1593
## (Intercept) 4.921357e-06 3.280904e-06 5.271611e-05  8.050408e-05 5.186511e-05
## Diet1       4.921357e-06 3.280904e-06 5.271611e-05 -2.961157e-05 2.717375e-05
##                   Otu1595       Otu1596      Otu1598      Otu1599      Otu1601
## (Intercept) 1.968543e-05  8.208806e-05 1.234751e-05 3.993819e-05 1.312362e-05
## Diet1       1.968543e-05 -2.105939e-05 1.234751e-05 3.993819e-05 1.312362e-05
##                   Otu1602       Otu1605      Otu1606      Otu1608      Otu1609
## (Intercept) 9.763221e-06  1.21565e-05 1.968543e-05 7.072610e-05 2.777255e-05
## Diet1       9.763221e-06 -1.21565e-05 1.968543e-05 2.969701e-05 2.777255e-05
##                   Otu1610      Otu1613      Otu1616      Otu1617      Otu1618
## (Intercept) 7.213843e-05 2.206754e-05 2.643224e-05 5.896525e-05 1.753138e-05
## Diet1       2.375117e-05 2.206754e-05 2.643224e-05 3.626481e-05 1.753138e-05
##                   Otu1619      Otu1620       Otu1622      Otu1624      Otu1625
## (Intercept) 4.281429e-05  8.827617e-06  4.025190e-05 1.731725e-05 3.829774e-05
## Diet1       3.464543e-05 -2.522606e-06 -2.133686e-05 1.731725e-05 3.829774e-05
##                   Otu1626       Otu1627      Otu1629      Otu1632      Otu1634
## (Intercept) 4.821029e-05  4.039942e-05 6.006609e-05 4.800750e-05 9.842713e-06
## Diet1       4.821029e-05 -2.778940e-05 6.006609e-05 2.530706e-05 9.842713e-06
##                   Otu1635      Otu1636      Otu1638      Otu1639      Otu1641
```

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## (Intercept) 1.312362e-05 9.842713e-06  2.259666e-05 2.460678e-05  1.702533e-05
## Diet1       1.312362e-05 9.842713e-06 -1.629165e-05 2.460678e-05 -1.702533e-05
##                   Otu1644       Otu1646       Otu1648       Otu1650       Otu1651
## (Intercept)  1.278640e-05  6.915779e-05 5.106366e-06 6.482317e-06 1.397878e-05
## Diet1       -1.763742e-07 -2.164399e-05 5.106366e-06 6.482317e-06 1.397878e-05
##                   Otu1652       Otu1654       Otu1655       Otu1656       Otu1657
## (Intercept)  9.633891e-06 5.742374e-05 7.087001e-05 1.062705e-05 1.148317e-05
## Diet1       -3.328880e-06 5.742374e-05 2.768679e-06 1.062705e-05 1.148317e-05
##                   Otu1658       Otu1660       Otu1662        Otu1664       Otu1665
## (Intercept)  4.981019e-05 1.372198e-05 5.284736e-05  5.319001e-05 6.584911e-05
## Diet1        3.845997e-05 1.372198e-05 5.284736e-05 -5.319001e-05 6.584911e-05
##                   Otu1666       Otu1667      Otu1668       Otu1672       Otu1673
## (Intercept) 6.755989e-05 4.564204e-05 7.47454e-06 5.573438e-05 1.109511e-05
## Diet1       6.755989e-05 6.753729e-06 7.47454e-06 5.573438e-05 1.109511e-05
##                   Otu1674       Otu1675        Otu1677        Otu1681       Otu1683
## (Intercept) 7.262797e-05 3.787013e-05  1.676931e-05  9.453744e-06 4.627686e-05
## Diet1       7.262797e-05 3.787013e-05 -6.926594e-06 -2.891935e-06 4.627686e-05
##                   Otu1685        Otu1686       Otu1687        Otu1688       Otu1689
## (Intercept) 1.854242e-05  8.512667e-05 1.148317e-05  5.555556e-05 9.842713e-06
## Diet1       1.854242e-05 -8.512667e-05 1.148317e-05 -5.555556e-05 9.842713e-06
##                   Otu1693       Otu1695       Otu1696       Otu1700       Otu1701
## (Intercept) 1.075544e-05 3.088074e-05 4.921357e-06 4.582444e-05 1.372198e-05
## Diet1       1.075544e-05 3.088074e-05 4.921357e-06 4.582444e-05 1.372198e-05
##                   Otu1707       Otu1708       Otu1709        Otu1711       Otu1712
## (Intercept)  6.371854e-05 2.859737e-05 6.776324e-05  5.625567e-05 4.281018e-05
## Diet1       -4.382799e-06 2.859737e-05 4.506279e-05 -2.543300e-05 5.156046e-06
##                   Otu1713      Otu1714       Otu1716       Otu1718       Otu1720
## (Intercept) 4.580301e-05 4.4667e-05 3.740712e-05 9.683729e-06 1.330863e-05
## Diet1       4.580301e-05 4.4667e-05 2.444435e-05 9.683729e-06 1.330863e-05
##                   Otu1722       Otu1724       Otu1725       Otu1727       Otu1730
## (Intercept) 6.305011e-06 1.637113e-05 5.348936e-06 6.561809e-06 6.561809e-06
## Diet1       6.305011e-06 3.339438e-08 5.348936e-06 6.561809e-06 6.561809e-06
##                   Otu1732       Otu1733       Otu1734       Otu1737       Otu1738
## (Intercept) 4.85829e-05 1.593890e-05 5.191877e-05 1.784193e-05 5.379852e-05
## Diet1       4.85829e-05 2.976131e-06 5.191877e-05 1.784193e-05 1.295418e-05
##                   Otu1739       Otu1741      Otu1743       Otu1744        Otu1746
## (Intercept) 6.502434e-05 7.416967e-06 1.35512e-05 1.112545e-05  2.830235e-05
## Diet1       6.502434e-05 7.416967e-06 1.35512e-05 1.112545e-05 -1.058596e-05
##                   Otu1747       Otu1748       Otu1750       Otu1753       Otu1754
## (Intercept) 2.296633e-05 1.968543e-05 2.674468e-05 6.561809e-06 8.202261e-06
## Diet1       2.296633e-05 1.968543e-05 2.674468e-05 6.561809e-06 8.202261e-06
##                   Otu1757       Otu1759       Otu1760        Otu1761       Otu1762
## (Intercept) 6.440739e-05 9.457517e-06 2.387906e-05  7.915560e-05 3.574456e-05
## Diet1       6.440739e-05 9.457517e-06 2.387906e-05 -5.650723e-05 3.574456e-05
##                   Otu1763       Otu1765        Otu1766       Otu1767       Otu1768
## (Intercept) 2.805466e-05 4.921357e-06  8.168867e-06 2.416042e-05 5.017575e-05
## Diet1       2.805466e-05 4.921357e-06 -8.168867e-06 2.416042e-05 2.548439e-05
##                   Otu1769       Otu1770       Otu1772       Otu1774       Otu1779
## (Intercept) 9.457517e-06 6.561809e-06 1.23959e-05 1.247785e-05 5.443268e-05
## Diet1       9.457517e-06 6.561809e-06 1.23959e-05 1.321717e-07 5.443268e-05
##                   Otu1784        Otu1787       Otu1788        Otu1789        Otu1791
## (Intercept) 1.312362e-05  1.296277e-05 1.616605e-05  1.851852e-05  2.270044e-05
## Diet1       1.312362e-05 -1.296277e-05 1.616605e-05 -1.851852e-05 -2.270044e-05
##                   Otu1793       Otu1795       Otu1796       Otu1797       Otu1800
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## (Intercept) 9.882238e-06 1.640452e-05 1.148317e-05 3.769088e-05  4.084433e-05
## Diet1       9.882238e-06 1.640452e-05 1.148317e-05 2.634066e-05 -4.084433e-05
##                 Otu1802      Otu1804      Otu1805      Otu1806      Otu1807
## (Intercept) 8.202261e-06 5.111873e-05  2.459898e-05 3.733108e-05  1.633773e-05
## Diet1       8.202261e-06 5.111873e-05 -2.459898e-05 1.140554e-05 -1.633773e-05
##                 Otu1809      Otu1812      Otu1813      Otu1815      Otu1816
## (Intercept) 1.476407e-05 1.112545e-05 2.132588e-05 1.312362e-05  3.316613e-05
## Diet1       1.476407e-05 1.112545e-05 2.132588e-05 1.312362e-05 -5.722178e-06
##                 Otu1819      Otu1820      Otu1823      Otu1825
## (Intercept)  6.368602e-05  2.947056e-05  2.837556e-05  3.631499e-05
## Diet1       -3.846598e-05 -2.290875e-05 -2.837556e-05 -2.370496e-05
##                 Otu1827      Otu1829      Otu1830      Otu1832      Otu1833
## (Intercept)  1.234568e-05 4.880593e-05 3.319138e-05 5.332121e-05 8.38727e-06
## Diet1       -1.234568e-05 1.613046e-05 3.319138e-05 5.332121e-05 8.38727e-06
##                 Otu1835      Otu1836      Otu1838      Otu1840      Otu1842
## (Intercept) 4.921357e-06 4.921357e-06 1.283624e-05  6.428473e-05 6.294424e-05
## Diet1       4.921357e-06 4.921357e-06 1.283624e-05 -2.645466e-05 6.294424e-05
##                 Otu1844      Otu1846      Otu1847      Otu1848      Otu1849
## (Intercept) 2.112283e-05 3.010139e-05 9.714315e-06 3.319138e-05 1.109511e-05
## Diet1       2.112283e-05 2.193252e-05 9.714315e-06 3.319138e-05 1.109511e-05
##                 Otu1850      Otu1851      Otu1852      Otu1856      Otu1857
## (Intercept) 2.132588e-05 3.155315e-05 8.202261e-06 1.476407e-05  1.132137e-05
## Diet1       2.132588e-05 1.521542e-05 8.202261e-06 1.476407e-05 -5.016361e-06
##                 Otu1858      Otu1860      Otu1867      Otu1868      Otu1869
## (Intercept) 3.280904e-06  3.67599e-05  1.783161e-05 1.094045e-05 8.073862e-06
## Diet1       3.280904e-06 -3.67599e-05 -1.783161e-05 1.094045e-05 8.073862e-06
##                 Otu1872      Otu1874      Otu1875      Otu1876      Otu1879
## (Intercept) 2.182332e-05 5.134494e-05  3.576826e-05  1.135022e-05 5.091839e-05
## Diet1       2.182332e-05 5.134494e-05 -1.608283e-05 -1.135022e-05 1.686772e-05
##                 Otu1880      Otu1881      Otu1882      Otu1884      Otu1886
## (Intercept) 9.457517e-06 2.469502e-05 2.522004e-05 4.921357e-06 9.714315e-06
## Diet1       9.457517e-06 2.469502e-05 2.522004e-05 4.921357e-06 9.714315e-06
##                 Otu1887      Otu1888      Otu1889      Otu1891      Otu1892
## (Intercept) 3.906468e-05  6.810133e-05  4.959614e-05 1.804497e-05 1.802262e-05
## Diet1       3.906468e-05 -6.810133e-05 -2.392367e-05 1.804497e-05 6.672397e-06
##                 Otu1894      Otu1896      Otu1897      Otu1900      Otu1901
## (Intercept) 1.968543e-05 1.895771e-05  9.633891e-06 8.122769e-06 5.106366e-06
## Diet1       1.968543e-05 1.895771e-05 -3.328880e-06 8.122769e-06 5.106366e-06
##                 Otu1902      Otu1904      Otu1905      Otu1913      Otu1914
## (Intercept) 6.746818e-06 1.148317e-05 6.305011e-06 7.416967e-06 1.476407e-05
## Diet1       6.746818e-06 1.148317e-05 6.305011e-06 7.416967e-06 1.476407e-05
##                 Otu1915      Otu1916      Otu1918      Otu1923      Otu1924
## (Intercept)  2.482353e-05 1.968543e-05  5.225809e-05  2.110977e-05 6.561809e-06
## Diet1       -1.221351e-05 1.968543e-05 -4.595307e-05 -2.110977e-05 6.561809e-06
##                 Otu1925      Otu1926      Otu1927      Otu1928      Otu1929
## (Intercept) 1.620148e-05 3.280904e-06 4.963416e-05 6.561809e-06 1.148317e-05
## Diet1       1.620148e-05 3.280904e-06 4.963416e-05 6.561809e-06 1.148317e-05
##                 Otu1930      Otu1931      Otu1932      Otu1935      Otu1937
## (Intercept)  1.473068e-05 9.842713e-06  4.306904e-05  6.075684e-05 4.761625e-05
## Diet1       -1.607058e-06 9.842713e-06 -3.285631e-05 -2.367200e-05 2.330326e-05
##                 Otu1940      Otu1941      Otu1942      Otu1945      Otu1946
## (Intercept) 1.879872e-05 4.921357e-06 1.014189e-05  1.667125e-05 4.627686e-05
## Diet1       1.879872e-05 4.921357e-06 1.014189e-05 -9.254287e-06 4.627686e-05
##                 Otu1949      Otu1951      Otu1952      Otu1953      Otu1957
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## (Intercept) 2.242362e-05 1.804497e-05 1.56768e-05 2.288684e-05 5.134494e-05
## Diet1       2.242362e-05 1.804497e-05 1.56768e-05 2.288684e-05 5.134494e-05
##                  Otu1958      Otu1959      Otu1960     Otu1961      Otu1966
## (Intercept) 2.059816e-05 9.881323e-06  1.702533e-05 4.45018e-05 3.783007e-05
## Diet1       2.059816e-05 -2.464356e-06 -1.702533e-05 4.45018e-05 3.783007e-05
##                  Otu1967      Otu1968      Otu1974      Otu1976      Otu1977
## (Intercept)  2.592554e-05 1.158868e-05 6.561809e-06 1.804497e-05 1.372198e-05
## Diet1       -2.592554e-05 1.158868e-05 6.561809e-06 1.804497e-05 1.372198e-05
##                  Otu1978      Otu1981      Otu1982      Otu1983      Otu1985
## (Intercept) 3.152506e-05  1.135022e-05 1.640452e-05 1.109797e-05 2.131532e-05
## Diet1       3.152506e-05 -1.135022e-05 1.640452e-05 1.109797e-05 8.352549e-06
##                  Otu1988      Otu1989      Otu1990       Otu1993       Otu1994
## (Intercept) 2.551065e-05 8.202261e-06  2.117960e-05  2.979125e-05  9.633891e-06
## Diet1       2.551065e-05 8.202261e-06 -1.149587e-05 -4.259420e-06 -3.328880e-06
##                  Otu1996      Otu1997      Otu1999      Otu2000      Otu2001
## (Intercept)  2.259666e-05  2.592554e-05 1.695955e-05 4.921357e-06 4.819243e-05
## Diet1       -1.629165e-05 -2.592554e-05 1.695955e-05 4.921357e-06 4.819243e-05
##                  Otu2005      Otu2006      Otu2007      Otu2009      Otu2012
## (Intercept) 7.416967e-06 1.476407e-05 1.148317e-05 1.804497e-05 3.280904e-06
## Diet1       7.416967e-06 1.476407e-05 1.148317e-05 1.804497e-05 3.280904e-06
##                  Otu2015      Otu2019      Otu2024      Otu2025       Otu2028
## (Intercept) 2.054977e-05  4.320949e-05 1.804497e-05 1.437602e-05  1.296277e-05
## Diet1       2.054977e-05 -1.354162e-05 1.804497e-05 1.437602e-05 -1.296277e-05
##                  Otu2029      Otu2030       Otu2031       Otu2032      Otu2038
## (Intercept) 4.079332e-05  1.135022e-05  7.813292e-06  1.944416e-05 1.640452e-05
## Diet1       4.079332e-05 -1.135022e-05 -4.532387e-06 -1.944416e-05 1.640452e-05
##                  Otu2039      Otu2044      Otu2045       Otu2046      Otu2049
## (Intercept) 2.528105e-05 5.008514e-05 8.858194e-06  9.325345e-06 3.280904e-06
## Diet1       1.393082e-05 2.738470e-05 8.858194e-06 -3.020334e-06 3.280904e-06
##                  Otu2051      Otu2054      Otu2059      Otu2061      Otu2063
## (Intercept) 5.326051e-05  1.851852e-05 1.745387e-05 1.804497e-05 4.921357e-06
## Diet1       5.326051e-05 -1.851852e-05 1.745387e-05 1.804497e-05 4.921357e-06
##                  Otu2065      Otu2066      Otu2068       Otu2070      Otu2072
## (Intercept) 4.921357e-06  3.821827e-05  2.605299e-05  1.135022e-05 1.576253e-05
## Diet1       4.921357e-06 -1.853284e-05 -1.621028e-05 -1.135022e-05 1.576253e-05
##                  Otu2074      Otu2075      Otu2076       Otu2077      Otu2079
## (Intercept) 3.992014e-05  2.017784e-05  1.296277e-05  3.018171e-05 1.283624e-05
## Diet1       2.358240e-05 -1.387283e-05 -1.296277e-05 -3.018171e-05 1.283624e-05
##                  Otu2081      Otu2082       Otu2086      Otu2088      Otu2091
## (Intercept) 4.169431e-05 1.640452e-05  4.456342e-05 4.921357e-06 3.263701e-05
## Diet1       3.034409e-05 1.640452e-05 -4.456342e-05 4.921357e-06 3.263701e-05
##                  Otu2095      Otu2096      Otu2099      Otu2102      Otu2104
## (Intercept)  5.069321e-05 3.152506e-05 4.193635e-06 4.921357e-06 1.640452e-05
## Diet1       -6.057898e-06 3.152506e-05 4.193635e-06 4.921357e-06 1.640452e-05
##                  Otu2105     Otu2107       Otu2108      Otu2110      Otu2117
## (Intercept) 4.530294e-05 4.50185e-05  2.482353e-05 1.376816e-05 4.668356e-05
## Diet1       8.265907e-06 4.50185e-05 -1.221351e-05 5.599296e-06 1.282666e-06
##                  Otu2118      Otu2119     Otu2120      Otu2121      Otu2122
## (Intercept) 6.561809e-06 1.148317e-05 3.50168e-05 1.187944e-05 3.657171e-05
## Diet1       6.561809e-06 1.148317e-05 3.50168e-05 1.187944e-05 3.657171e-05
##                  Otu2128      Otu2129      Otu2131      Otu2132      Otu2135
## (Intercept) 9.683729e-06 3.596589e-05 1.914271e-05 4.944949e-05 1.476407e-05
## Diet1       9.683729e-06 2.300312e-05 1.914271e-05 2.575359e-05 1.476407e-05
##                  Otu2136      Otu2139      Otu2140      Otu2141      Otu2143
```

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## (Intercept) 1.519165e-05  1.140274e-05 2.206754e-05 1.513409e-05 3.823964e-05
## Diet1        1.519165e-05 -1.560029e-06 2.206754e-05 1.513409e-05 3.823964e-05
##                     Otu2145       Otu2146       Otu2148       Otu2149       Otu2150
## (Intercept) 3.152506e-05 3.280904e-06 1.586181e-05 6.173754e-05  1.135022e-05
## Diet1        3.152506e-05 3.280904e-06 1.586181e-05 6.173754e-05 -1.135022e-05
##                     Otu2152       Otu2153       Otu2156       Otu2157       Otu2160
## (Intercept) 3.792411e-05 3.961347e-05  4.294063e-05  2.119294e-05  1.596178e-05
## Diet1        2.557843e-05 2.726779e-05 -1.043414e-05 -1.507509e-06 -8.544817e-06
##                     Otu2161       Otu2162       Otu2163       Otu2165       Otu2170
## (Intercept) 5.348936e-06 2.553183e-05 4.921357e-06 4.921357e-06 4.921357e-06
## Diet1        5.348936e-06 2.553183e-05 4.921357e-06 4.921357e-06 4.921357e-06
##                     Otu2171       Otu2172       Otu2173       Otu2177       Otu2179
## (Intercept)  2.015897e-05  5.253522e-05 8.501441e-06 3.152506e-05 3.280904e-06
## Diet1        -1.687807e-05 -4.623021e-05 8.501441e-06 3.152506e-05 3.280904e-06
##                     Otu2180       Otu2181       Otu2184       Otu2186       Otu2187
## (Intercept) 4.193635e-06 2.553183e-05 4.272195e-05 1.23959e-05 3.280904e-06
## Diet1        4.193635e-06 2.553183e-05 4.272195e-05 1.23959e-05 3.280904e-06
##                     Otu2188       Otu2190       Otu2191       Otu2193       Otu2194
## (Intercept) 6.173754e-05 9.763221e-06 1.261002e-05 1.68321e-05 9.433369e-06
## Diet1        6.173754e-05 9.763221e-06 1.261002e-05 1.68321e-05 1.264502e-06
##                     Otu2196       Otu2197       Otu2200       Otu2201       Otu2202
## (Intercept) 6.561809e-06 4.720415e-05 3.404766e-05  7.813292e-06 4.921357e-06
## Diet1        6.561809e-06 2.350825e-05 2.269744e-05 -4.532387e-06 4.921357e-06
##                     Otu2206       Otu2208       Otu2209       Otu2210       Otu2211
## (Intercept) 5.834087e-06  6.637616e-06 1.021273e-05  5.675111e-05 3.565735e-05
## Diet1        5.834087e-06 -1.531251e-06 1.021273e-05 -5.675111e-05 2.331167e-05
##                     Otu2213       Otu2214       Otu2219       Otu2220       Otu2221
## (Intercept) 8.202261e-06 6.173754e-05 1.576253e-05 6.561809e-06 3.280904e-06
## Diet1        8.202261e-06 6.173754e-05 1.576253e-05 6.561809e-06 3.280904e-06
##                     Otu2224       Otu2226       Otu2227       Otu2228       Otu2230
## (Intercept) 5.348936e-06 9.842713e-06 1.442778e-05 1.437602e-05 2.837255e-05
## Diet1        5.348936e-06 9.842713e-06 1.442778e-05 1.437602e-05 2.837255e-05
##                     Otu2231       Otu2232       Otu2234       Otu2237       Otu2238
## (Intercept) 1.644313e-05 3.280904e-06 1.658953e-05 4.921357e-06 1.744469e-05
## Diet1        4.097453e-06 3.280904e-06 1.658953e-05 4.921357e-06 1.744469e-05
##                     Otu2239       Otu2241       Otu2242       Otu2243       Otu2249
## (Intercept) 1.56768e-05 1.312362e-05 6.561809e-06 5.648668e-05 2.259937e-05
## Diet1        1.56768e-05 1.312362e-05 6.561809e-06 1.759837e-05 1.443050e-05
##                     Otu2251       Otu2255       Otu2257       Otu2258       Otu2261
## (Intercept) 1.476407e-05 1.234751e-05 4.921357e-06 4.607652e-05 5.106366e-06
## Diet1        1.476407e-05 1.234751e-05 4.921357e-06 1.202585e-05 5.106366e-06
##                     Otu2264       Otu2265       Otu2268       Otu2271       Otu2272
## (Intercept) 1.854242e-05  1.22533e-05 1.586181e-05 4.921357e-06 6.561809e-06
## Diet1        1.854242e-05 -1.22533e-05 1.586181e-05 4.921357e-06 6.561809e-06
##                     Otu2274       Otu2276       Otu2277       Otu2279       Otu2280
## (Intercept) 1.452559e-05 1.075544e-05 2.297865e-05  1.398613e-05  2.670906e-05
## Diet1        1.452559e-05 1.075544e-05 2.297865e-05 -1.070523e-05 -7.341604e-06
##                     Otu2281       Otu2283       Otu2287       Otu2289       Otu2290
## (Intercept) 4.357678e-05 9.842713e-06 6.561809e-06 3.289728e-05 4.921357e-06
## Diet1        4.357678e-05 9.842713e-06 6.561809e-06 3.289728e-05 4.921357e-06
##                     Otu2292       Otu2293       Otu2294       Otu2297       Otu2298
## (Intercept) 1.750226e-05 4.939003e-05 5.106366e-06 1.614772e-05 1.604681e-05
## Diet1        1.750226e-05 4.939003e-05 5.106366e-06 1.614772e-05 1.604681e-05
##                     Otu2299       Otu2300       Otu2303       Otu2308       Otu2309
```

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## (Intercept) 5.106366e-06 4.193635e-06 1.623182e-05 3.893904e-05 4.921357e-06
## Diet1       5.106366e-06 4.193635e-06 1.623182e-05 1.125109e-05 4.921357e-06
##                  Otu2314      Otu2316      Otu2317      Otu2318      Otu2321
## (Intercept) 4.075404e-05 3.375230e-05 1.476407e-05 3.987506e-05  1.135022e-05
## Diet1       4.075404e-05 2.558343e-05 1.476407e-05 5.824396e-06 -1.135022e-05
##                  Otu2322      Otu2324      Otu2325      Otu2327      Otu2328
## (Intercept) 2.892853e-05  3.141425e-05 3.106575e-05 4.019806e-05 3.790988e-05
## Diet1       2.892853e-05 -1.261218e-06 3.106575e-05 4.019806e-05 3.790988e-05
##                  Otu2329      Otu2330      Otu2331      Otu2332      Otu2337
## (Intercept) 1.312362e-05 1.513409e-05 2.297865e-05 6.305011e-06 1.148317e-05
## Diet1       1.312362e-05 1.513409e-05 2.297865e-05 6.305011e-06 1.148317e-05
##                  Otu2338      Otu2339      Otu2341      Otu2345       Otu2348
## (Intercept) 3.420139e-05 1.148317e-05 6.561809e-06 1.273556e-05  1.851852e-05
## Diet1       3.420139e-05 1.148317e-05 6.561809e-06 1.273556e-05 -1.851852e-05
##                  Otu2350      Otu2357      Otu2359       Otu2361      Otu2363
## (Intercept) 3.510856e-05  5.422458e-05 1.476407e-05  2.859313e-05 2.948451e-05
## Diet1       3.510856e-05 -4.454085e-05 1.476407e-05 -9.678094e-06 2.948451e-05
##                  Otu2369      Otu2370      Otu2371      Otu2373      Otu2374
## (Intercept) 2.537594e-05  5.115729e-05 4.921357e-06 3.341776e-05 3.337635e-05
## Diet1       2.537594e-05 -1.242238e-05 4.921357e-06 1.071732e-05 3.337635e-05
##                  Otu2377      Otu2379      Otu2381      Otu2382      Otu2383
## (Intercept) 4.24434e-05 3.170842e-05 1.148317e-05 1.148317e-05 2.264815e-05
## Diet1       4.24434e-05 3.170842e-05 1.148317e-05 1.148317e-05 2.264815e-05
##                  Otu2388      Otu2391       Otu2393      Otu2397      Otu2399
## (Intercept) 2.717226e-05  1.234568e-05  5.833247e-05 7.659548e-06 3.280904e-06
## Diet1       2.717226e-05 -1.234568e-05 -5.833247e-05 7.659548e-06 3.280904e-06
##                  Otu2400      Otu2402       Otu2403      Otu2404       Otu2405
## (Intercept) 1.166817e-05 3.061789e-05  1.851852e-05 3.904326e-05  2.859103e-05
## Diet1       1.166817e-05 3.061789e-05 -1.851852e-05 3.904326e-05 -2.859103e-05
##                  Otu2406      Otu2407      Otu2409      Otu2411      Otu2412
## (Intercept) 1.364738e-05 1.148317e-05 3.366684e-05 2.042546e-05 2.107445e-05
## Diet1       1.301700e-06 1.148317e-05 3.366684e-05 2.042546e-05 2.107445e-05
##                   Otu2413      Otu2415      Otu2419      Otu2420      Otu2421
## (Intercept)  3.537108e-05  2.436551e-05 3.280904e-06 9.683729e-06 9.842713e-06
## Diet1       -1.665954e-06 -1.452280e-05 3.280904e-06 9.683729e-06 9.842713e-06
##                  Otu2422      Otu2423       Otu2424      Otu2426       Otu2427
## (Intercept) 1.166817e-05 9.842713e-06  1.296277e-05 3.197748e-05  1.549818e-05
## Diet1       1.166817e-05 9.842713e-06 -1.296277e-05 3.197748e-05 -9.193173e-06
##                  Otu2428     Otu2431       Otu2432       Otu2436       Otu2437
## (Intercept) 6.561809e-06 2.69094e-05  4.540089e-05  2.042217e-05 6.561809e-06
## Diet1       6.561809e-06 2.69094e-05 -4.540089e-05 -2.042217e-05 6.561809e-06
##                  Otu2441       Otu2442       Otu2444      Otu2445      Otu2446
## (Intercept) 1.148317e-05  1.911547e-05  3.278786e-05 6.561809e-06 4.193635e-06
## Diet1       1.148317e-05 -1.399079e-06 -1.262806e-06 6.561809e-06 4.193635e-06
##                  Otu2447      Otu2448       Otu2449      Otu2450      Otu2451
## (Intercept) 2.158076e-05 2.966787e-05  4.636238e-05 3.215365e-05 1.148317e-05
## Diet1       2.158076e-05 2.966787e-05 -4.005737e-05 1.980797e-05 1.148317e-05
##                  Otu2452     Otu2453       Otu2454      Otu2458      Otu2460
## (Intercept) 1.336524e-05 1.35512e-05  1.558583e-05 2.522004e-05 1.585657e-05
## Diet1       1.336524e-05 1.35512e-05 -7.518998e-07 2.522004e-05 3.510890e-06
##                   Otu2461      Otu2462      Otu2463      Otu2465       Otu2468
## (Intercept)  1.234568e-05 9.683729e-06 1.483393e-05 2.042546e-05  4.540089e-05
## Diet1       -1.234568e-05 9.683729e-06 1.483393e-05 2.042546e-05 -4.540089e-05
##                  Otu2471      Otu2472      Otu2473      Otu2474      Otu2476
```

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## (Intercept) 3.280904e-06 1.312362e-05 1.312362e-05 3.080125e-05 1.276591e-05
## Diet1       3.280904e-06 1.312362e-05 1.312362e-05 3.080125e-05 1.276591e-05
##                 Otu2483      Otu2485      Otu2491      Otu2492      Otu2493
## (Intercept) 2.966787e-05 1.483393e-05  1.926778e-05  1.135022e-05  1.296277e-05
## Diet1       2.966787e-05 1.483393e-05 -6.657760e-06 -1.135022e-05 -1.296277e-05
##                 Otu2494      Otu2495      Otu2496      Otu2499      Otu2501
## (Intercept) 1.148317e-05  1.234568e-05 1.112545e-05 1.948238e-05 1.112545e-05
## Diet1       1.148317e-05 -1.234568e-05 1.112545e-05 1.948238e-05 1.112545e-05
##                 Otu2502      Otu2503      Otu2505     Otu2506      Otu2508
## (Intercept) 1.23959e-05 7.416967e-06 4.939003e-05 8.38727e-06 1.312362e-05
## Diet1       1.23959e-05 7.416967e-06 4.939003e-05 8.38727e-06 1.312362e-05
##                 Otu2509      Otu2510      Otu2512      Otu2513      Otu2515
## (Intercept) 4.921357e-06 4.939003e-05 8.202261e-06 9.683729e-06  4.343426e-05
## Diet1       4.921357e-06 4.939003e-05 8.202261e-06 9.683729e-06 -3.601730e-05
##                 Otu2517      Otu2518      Otu2519      Otu2521      Otu2523
## (Intercept) 1.312362e-05  1.22533e-05 2.042546e-05 4.921357e-06 2.389136e-05
## Diet1       1.312362e-05 -1.22533e-05 2.042546e-05 4.921357e-06 2.389136e-05
##                 Otu2525      Otu2526      Otu2527      Otu2531      Otu2532
## (Intercept) 1.330863e-05  9.034568e-06 1.312362e-05 4.921357e-06 1.312362e-05
## Diet1       1.330863e-05 -3.928203e-06 1.312362e-05 4.921357e-06 1.312362e-05
##                 Otu2535      Otu2541      Otu2543      Otu2544      Otu2547
## (Intercept) 2.042546e-05 2.704265e-05 1.852126e-05 1.765692e-05  1.296277e-05
## Diet1       2.042546e-05 2.704265e-05 1.852126e-05 1.765692e-05 -1.296277e-05
##                 Otu2548      Otu2550      Otu2553      Otu2556      Otu2559
## (Intercept) 8.202261e-06  1.939618e-05 1.403635e-05  8.168867e-06  3.154762e-05
## Diet1       8.202261e-06 -6.529361e-06 1.403635e-05 -8.168867e-06 -9.296716e-06
##                 Otu2560     Otu2561      Otu2564      Otu2568      Otu2577
## (Intercept) 7.416967e-06 1.23959e-05 9.457517e-06 3.428093e-05 8.202261e-06
## Diet1       7.416967e-06 1.23959e-05 9.457517e-06 3.428093e-05 8.202261e-06
##                  Otu2578      Otu2580      Otu2581      Otu2582     Otu2583
## (Intercept)  2.281912e-05 6.561809e-06 5.106366e-06  1.296277e-05  3.08642e-05
## Diet1       -2.281912e-05 6.561809e-06 5.106366e-06 -1.296277e-05 -3.08642e-05
##                 Otu2584      Otu2585      Otu2587       Otu2588      Otu2590
## (Intercept) 4.193635e-06 1.743046e-05 9.457517e-06  2.954867e-05 1.299522e-05
## Diet1       4.193635e-06 1.743046e-05 9.457517e-06 -4.502001e-06 1.299522e-05
##                 Otu2592      Otu2594      Otu2595      Otu2597       Otu2598
## (Intercept) 8.202261e-06 4.939003e-05 9.842713e-06 9.457517e-06  2.907805e-05
## Diet1       8.202261e-06 4.939003e-05 9.842713e-06 9.457517e-06 -2.277304e-05
##                 Otu2599      Otu2603      Otu2605      Otu2606      Otu2607
## (Intercept) 3.280904e-06 8.202261e-06 5.705688e-06 7.659548e-06 2.206754e-05
## Diet1       3.280904e-06 8.202261e-06 5.705688e-06 7.659548e-06 2.206754e-05
##                 Otu2609       Otu2610      Otu2612      Otu2614      Otu2616
## (Intercept) 7.659548e-06  1.296277e-05 2.595938e-05 9.457517e-06 4.193635e-06
## Diet1       7.659548e-06 -1.296277e-05 2.595938e-05 9.457517e-06 4.193635e-06
##                 Otu2617      Otu2619      Otu2620      Otu2626      Otu2630
## (Intercept) 8.202261e-06 1.069787e-05 3.051433e-05 2.842374e-05 2.540341e-05
## Diet1       8.202261e-06 1.069787e-05 3.051433e-05 1.607806e-05 2.540341e-05
##                 Otu2633      Otu2634      Otu2643      Otu2645      Otu2646
## (Intercept) 2.931569e-05 9.683729e-06 7.416967e-06 2.390919e-05 6.305011e-06
## Diet1       2.931569e-05 9.683729e-06 7.416967e-06 1.255897e-05 6.305011e-06
##                 Otu2650      Otu2651      Otu2652      Otu2654      Otu2659
## (Intercept) 3.280904e-06 1.576253e-05 4.921357e-06 3.389305e-05 1.148317e-05
## Diet1       3.280904e-06 1.576253e-05 4.921357e-06 3.389305e-05 1.148317e-05
##                 Otu2660      Otu2662      Otu2666      Otu2668      Otu2672
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## (Intercept)   2.592554e-05 2.058297e-05 1.148317e-05 1.148317e-05 4.921357e-06
## Diet1         -2.592554e-05 2.058297e-05 1.148317e-05 1.148317e-05 4.921357e-06
##                  Otu2673       Otu2675       Otu2677       Otu2679       Otu2680
## (Intercept) 1.965388e-05  8.168867e-06 3.280904e-06 1.561923e-05 8.38727e-06
## Diet1       1.965388e-05 -8.168867e-06 3.280904e-06 1.561923e-05 8.38727e-06
##                  Otu2689       Otu2691       Otu2694       Otu2700       Otu2701
## (Intercept) 3.188069e-05 8.202261e-06 9.683729e-06 7.47454e-06 2.737003e-05
## Diet1       -2.169974e-06 8.202261e-06 9.683729e-06 7.47454e-06 1.601981e-05
##                  Otu2703       Otu2704       Otu2706       Otu2712       Otu2714
## (Intercept) 1.234659e-05 1.148317e-05 6.561809e-06 7.47454e-06 2.873399e-05
## Diet1       9.146302e-10 1.148317e-05 6.561809e-06 7.47454e-06 2.873399e-05
##                  Otu2715       Otu2717       Otu2718       Otu2722       Otu2723
## (Intercept) 1.627158e-05 4.921357e-06 2.480408e-05 1.021273e-05 2.058297e-05
## Diet1       -6.428866e-06 4.921357e-06 2.480408e-05 1.021273e-05 2.058297e-05
##                  Otu2727       Otu2731       Otu2732       Otu2733       Otu2734
## (Intercept) 9.453744e-06  3.972578e-05 4.921357e-06 1.787228e-05 7.416967e-06
## Diet1       -2.891935e-06 -3.972578e-05 4.921357e-06 1.787228e-05 7.416967e-06
##                  Otu2736       Otu2737       Otu2744       Otu2746       Otu2748
## (Intercept) 9.114992e-06 3.280904e-06 2.977614e-05 6.261666e-06  2.116503e-05
## Diet1       9.114992e-06 3.280904e-06 5.084783e-06 6.261666e-06 -4.760510e-06
##                  Otu2749       Otu2750       Otu2751       Otu2752       Otu2754
## (Intercept) 1.148317e-05 6.561809e-06 3.280904e-06 2.713562e-05 3.280904e-06
## Diet1       1.148317e-05 6.561809e-06 3.280904e-06 2.713562e-05 3.280904e-06
##                  Otu2756       Otu2759       Otu2760       Otu2761       Otu2764
## (Intercept) 3.184531e-05 1.148317e-05  4.320988e-05 9.842713e-06 8.202261e-06
## Diet1       1.949963e-05 1.148317e-05 -4.320988e-05 9.842713e-06 8.202261e-06
##                  Otu2765       Otu2769       Otu2770       Otu2772       Otu2773
## (Intercept) 2.206754e-05 2.595938e-05 1.250141e-05 4.321628e-05 8.726937e-06
## Diet1       2.206754e-05 2.595938e-05 1.250141e-05 4.321628e-05 8.726937e-06
##                  Otu2779       Otu2781       Otu2782       Otu2786       Otu2787
## (Intercept) 8.168867e-06 1.20107e-05 1.234751e-05 1.148317e-05 3.280904e-06
## Diet1       -8.168867e-06 1.20107e-05 1.234751e-05 1.148317e-05 3.280904e-06
##                  Otu2798       Otu2799       Otu2801       Otu2803       Otu2804
## (Intercept) 1.148317e-05 2.206754e-05 1.148317e-05  2.45066e-05 1.744469e-05
## Diet1       1.148317e-05 2.206754e-05 1.148317e-05 -2.45066e-05 1.744469e-05
##                  Otu2805       Otu2807       Otu2813       Otu2815       Otu2816
## (Intercept) 8.202261e-06 3.220369e-05 6.561809e-06  2.234637e-05 2.026957e-05
## Diet1       8.202261e-06 3.220369e-05 6.561809e-06 -1.492940e-05 2.026957e-05
##                  Otu2818       Otu2820       Otu2821       Otu2823       Otu2825
## (Intercept) 1.148317e-05  3.972578e-05 9.842713e-06 2.206754e-05 3.389305e-05
## Diet1       1.148317e-05 -3.972578e-05 9.842713e-06 2.206754e-05 3.389305e-05
##                  Otu2826       Otu2830       Otu2833       Otu2835       Otu2837
## (Intercept) 1.148317e-05 1.422136e-05 1.148317e-05 3.389305e-05  2.965723e-05
## Diet1       1.148317e-05 1.422136e-05 1.148317e-05 3.389305e-05 -4.437182e-06
##                  Otu2841       Otu2842       Otu2843       Otu2846       Otu2848
## (Intercept) 2.878068e-05 1.148317e-05 1.148317e-05  4.024779e-05 1.148317e-05
## Diet1       6.080239e-06 1.148317e-05 1.148317e-05 -3.283083e-05 1.148317e-05
##                  Otu2851       Otu2855       Otu2856       Otu2857       Otu2859
## (Intercept) 1.075544e-05 2.22509e-05 2.324538e-05 1.075544e-05 2.22509e-05
## Diet1       1.075544e-05 2.22509e-05 6.907649e-06 1.075544e-05 2.22509e-05
##                  Otu2861       Otu2863       Otu2864       Otu2867       Otu2868
## (Intercept) 1.891503e-05 1.891503e-05  1.465025e-05 1.760778e-05 2.905119e-05
## Diet1       1.891503e-05 1.891503e-05 -1.465025e-05 1.760778e-05 2.905119e-05
##                  Otu2869       Otu2871       Otu2878       Otu2881       Otu2883
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## (Intercept) 8.202261e-06  3.337963e-05 2.797592e-05 2.678443e-05 1.891503e-05
## Diet1       8.202261e-06 -1.401217e-05 2.797592e-05 2.678443e-05 1.891503e-05
##                Otu2884      Otu2885      Otu2886      Otu2887      Otu2888
## (Intercept) 5.106366e-06 1.831571e-05 2.648429e-05  9.453744e-06 3.280904e-06
## Diet1       5.106366e-06 1.831571e-05 1.513407e-05 -2.891935e-06 3.280904e-06
##                Otu2892      Otu2893      Otu2895      Otu2897      Otu2898
## (Intercept) 8.202261e-06 3.405067e-05 4.921357e-06 6.561809e-06 6.305011e-06
## Diet1       8.202261e-06 -3.405067e-05 4.921357e-06 6.561809e-06 6.305011e-06
##                 Otu2900      Otu2901      Otu2905      Otu2908      Otu2910
## (Intercept)  1.889092e-05  1.234568e-05 2.567247e-05 1.15092e-05  3.703704e-05
## Diet1       -1.378455e-05 -1.234568e-05 2.567247e-05 1.58976e-07 -3.703704e-05
##                Otu2912      Otu2913      Otu2914      Otu2915      Otu2920
## (Intercept) 1.283624e-05 6.305011e-06 9.842713e-06 9.842713e-06  2.815078e-05
## Diet1       1.283624e-05 6.305011e-06 9.842713e-06 9.842713e-06 -5.899883e-06
##                 Otu2921      Otu2925       Otu2927      Otu2928      Otu2939
## (Intercept) 1.891837e-05  2.108461e-05  3.888831e-05 2.735797e-05 2.060439e-05
## Diet1       1.074950e-05 -1.780370e-05 -3.888831e-05 6.843424e-06 2.060439e-05
##                 Otu2944      Otu2946      Otu2950     Otu2951      Otu2952
## (Intercept)  1.944416e-05 2.650572e-05 1.483393e-05 1.53191e-05 2.736183e-05
## Diet1       -1.944416e-05 1.515549e-05 1.483393e-05 1.53191e-05 2.736183e-05
##                Otu2953      Otu2955      Otu2956      Otu2958      Otu2959
## (Intercept) 1.99403e-05 1.452559e-05 1.112545e-05 2.420932e-05 9.842713e-06
## Diet1       1.99403e-05 1.452559e-05 1.112545e-05 2.420932e-05 9.842713e-06
##                Otu2961      Otu2964      Otu2971      Otu2972      Otu2973
## (Intercept) 1.631851e-05 7.659548e-06 9.842713e-06 9.842713e-06 1.707372e-05
## Diet1       1.631851e-05 7.659548e-06 9.842713e-06 9.842713e-06 1.707372e-05
##                Otu2974      Otu2975      Otu2977      Otu2985      Otu2987
## (Intercept) 1.53191e-05 2.451622e-05 3.280904e-06 9.842713e-06  3.341829e-05
## Diet1       1.53191e-05 1.815778e-06 3.280904e-06 9.842713e-06 -1.596442e-05
##                Otu2990      Otu2995      Otu2996      Otu2998      Otu2999
## (Intercept) 1.021273e-05  1.025727e-05 3.280904e-06 9.842713e-06 1.112545e-05
## Diet1       1.021273e-05 -1.025727e-05 3.280904e-06 9.842713e-06 1.112545e-05
##                Otu3002      Otu3003      Otu3007      Otu3009      Otu3013
## (Intercept) 1.258091e-05 7.659548e-06 1.891503e-05 3.280904e-06 3.280904e-06
## Diet1       1.258091e-05 7.659548e-06 1.891503e-05 3.280904e-06 3.280904e-06
##                Otu3015      Otu3018      Otu3021     Otu3022      Otu3023
## (Intercept) 9.842713e-06  2.501970e-05 1.469228e-05  2.45066e-05 1.075544e-05
## Diet1       9.842713e-06 -9.030963e-06 1.469228e-05 -2.45066e-05 1.075544e-05
##                Otu3028      Otu3029       Otu3030      Otu3032      Otu3033
## (Intercept) 3.280904e-06 6.561809e-06  2.45066e-05  1.018987e-05 1.437602e-05
## Diet1       3.280904e-06 6.561809e-06 -2.45066e-05 -2.772902e-06 1.437602e-05
##                Otu3035      Otu3037      Otu3040      Otu3044       Otu3046
## (Intercept)  2.5617e-05 1.002772e-05 3.280904e-06 4.921357e-06  1.491568e-05
## Diet1       -2.5617e-05 1.002772e-05 3.280904e-06 4.921357e-06 -1.422049e-06
##                Otu3048       Otu3049      Otu3060      Otu3061      Otu3062
## (Intercept) 6.561809e-06  1.278640e-05 8.202261e-06 4.921357e-06 2.914807e-05
## Diet1       6.561809e-06 -1.763742e-07 8.202261e-06 4.921357e-06 1.779785e-05
##                Otu3063      Otu3065      Otu3066      Otu3067      Otu3068
## (Intercept)  3.077182e-05 9.457517e-06 4.921357e-06 9.842713e-06 1.891503e-05
## Diet1       -3.077182e-05 9.457517e-06 4.921357e-06 9.842713e-06 1.891503e-05
##                Otu3070      Otu3071       Otu3075       Otu3080      Otu3081
## (Intercept)  1.780276e-05 1.075544e-05  1.909250e-05  1.398613e-05 9.842713e-06
## Diet1       -1.149775e-05 1.075544e-05 -5.598861e-06 -1.070523e-05 9.842713e-06
##                Otu3084      Otu3085      Otu3090      Otu3092      Otu3095
```

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## (Intercept) 1.435473e-05 2.058297e-05 9.842713e-06 1.075544e-05 8.202261e-06
## Diet1       6.185859e-06 2.058297e-05 9.842713e-06 1.075544e-05 8.202261e-06
##                   Otu3097       Otu3098       Otu3106       Otu3107       Otu3108
## (Intercept)  1.619209e-05  1.865069e-05 2.532250e-05 4.921357e-06 2.229375e-05
## Diet1       -6.508358e-06 -6.040668e-06 1.009504e-06 4.921357e-06 2.229375e-05
##                   Otu3110       Otu3111       Otu3113       Otu3115       Otu3117
## (Intercept) 1.276591e-05 5.106366e-06 2.344262e-05 2.180217e-05 9.842713e-06
## Diet1       1.276591e-05 5.106366e-06 2.344262e-05 2.180217e-05 9.842713e-06
##                   Otu3121       Otu3123       Otu3126       Otu3128       Otu3132
## (Intercept) 9.842713e-06 1.234751e-05 7.416967e-06 4.921357e-06  1.913561e-05
## Diet1       9.842713e-06 1.234751e-05 7.416967e-06 4.921357e-06 -1.913561e-05
##                   Otu3134       Otu3138        Otu3142        Otu3144        Otu3145
## (Intercept) 1.002772e-05 1.562841e-05  2.333034e-05  2.937101e-05  1.296277e-05
## Diet1       1.002772e-05 1.562841e-05 -1.072032e-05 -2.937101e-05 -1.296277e-05
##                   Otu3146       Otu3148        Otu3149       Otu3152       Otu3153
## (Intercept) 1.276591e-05 6.989388e-06  2.837556e-05 8.202261e-06 9.114992e-06
## Diet1       1.276591e-05 6.989388e-06 -2.837556e-05 8.202261e-06 9.114992e-06
##                   Otu3159       Otu3162       Otu3165       Otu3170        Otu3171
## (Intercept) 1.760684e-05 3.280904e-06 1.852126e-05 2.251996e-05  1.234568e-05
## Diet1       4.644065e-06 3.280904e-06 1.852126e-05 2.251996e-05 -1.234568e-05
##                   Otu3173       Otu3174       Otu3177       Otu3183       Otu3189
## (Intercept)  3.240693e-05 8.202261e-06 2.420932e-05 8.202261e-06  3.08642e-05
## Diet1       -3.240693e-05 8.202261e-06 2.420932e-05 8.202261e-06 -3.08642e-05
##                   Otu3191       Otu3193       Otu3194       Otu3202       Otu3206
## (Intercept) 7.416967e-06  3.240693e-05 4.921357e-06 1.456388e-05 8.202261e-06
## Diet1       7.416967e-06 -3.240693e-05 4.921357e-06 1.456388e-05 8.202261e-06
##                   Otu3208       Otu3212       Otu3225       Otu3226       Otu3229
## (Intercept) 1.276591e-05 2.471546e-05 1.456388e-05 5.106366e-06 6.561809e-06
## Diet1       1.276591e-05 1.175269e-05 1.456388e-05 5.106366e-06 6.561809e-06
##                   Otu3232       Otu3233       Otu3234       Otu3235       Otu3236
## (Intercept) 8.202261e-06 1.598874e-05 9.457517e-06 4.921357e-06 1.997449e-05
## Diet1       8.202261e-06 1.598874e-05 9.457517e-06 4.921357e-06 8.624270e-06
##                   Otu3238       Otu3239       Otu3243        Otu3245       Otu3247
## (Intercept) 4.921357e-06 8.202261e-06 4.921357e-06  1.876719e-05 8.202261e-06
## Diet1       4.921357e-06 8.202261e-06 4.921357e-06 -3.933255e-06 8.202261e-06
##                   Otu3252       Otu3255       Otu3256       Otu3257       Otu3262
## (Intercept) 8.202261e-06 1.914125e-05 8.202261e-06 1.112545e-05 1.002772e-05
## Diet1       8.202261e-06 1.914125e-05 8.202261e-06 1.112545e-05 1.002772e-05
##                   Otu3270       Otu3272       Otu3274       Otu3276       Otu3277
## (Intercept)  2.042217e-05  1.135022e-05 1.276591e-05 3.280904e-06 7.416967e-06
## Diet1       -2.042217e-05 -1.135022e-05 1.276591e-05 3.280904e-06 7.416967e-06
##                   Otu3278       Otu3281       Otu3291       Otu3293       Otu3294
## (Intercept) 8.202261e-06 1.276591e-05 8.202261e-06 9.457517e-06 7.416967e-06
## Diet1       8.202261e-06 1.276591e-05 8.202261e-06 9.457517e-06 7.416967e-06
##                   Otu3295       Otu3296       Otu3297       Otu3304       Otu3305
## (Intercept) 9.457517e-06 1.562841e-05  1.234568e-05 8.202261e-06  8.168867e-06
## Diet1       9.457517e-06 1.562841e-05 -1.234568e-05 8.202261e-06 -8.168867e-06
##                   Otu3308       Otu3310       Otu3312       Otu3315        Otu3319
## (Intercept)  1.018987e-05 1.914125e-05 9.114992e-06 3.280904e-06  1.702533e-05
## Diet1       -2.772902e-06 1.914125e-05 9.114992e-06 3.280904e-06 -1.702533e-05
##                   Otu3320       Otu3325       Otu3328       Otu3329       Otu3333
## (Intercept) 2.12057e-05 6.561809e-06 1.854242e-05  1.234568e-05 9.057419e-06
## Diet1       2.12057e-05 6.561809e-06 1.854242e-05 -1.234568e-05 9.057419e-06
##                   Otu3334       Otu3337       Otu3341       Otu3347       Otu3350
```

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## (Intercept) 1.112545e-05 1.745189e-05 4.921357e-06 5.834087e-06 1.112545e-05
## Diet1       1.112545e-05 1.745189e-05 4.921357e-06 5.834087e-06 1.112545e-05
##                 Otu3356      Otu3358       Otu3359       Otu3360       Otu3362
## (Intercept) 1.094045e-05 2.27149e-05   1.135022e-05  2.837556e-05 9.683729e-06
## Diet1       1.094045e-05 2.27149e-05  -1.135022e-05 -2.837556e-05 9.683729e-06
##                 Otu3364      Otu3368       Otu3370       Otu3371       Otu3376
## (Intercept) 4.193635e-06  1.926778e-05 1.576253e-05  3.08642e-05  2.592554e-05
## Diet1       4.193635e-06 -6.657760e-06 1.576253e-05 -3.08642e-05 -2.592554e-05
##                 Otu3381      Otu3385       Otu3386       Otu3387       Otu3389
## (Intercept) 8.202261e-06 1.854242e-05 3.280904e-06 1.854242e-05 2.050905e-05
## Diet1       8.202261e-06 1.854242e-05 3.280904e-06 1.854242e-05 9.158823e-06
##                 Otu3391      Otu3392       Otu3399       Otu3400       Otu3409
## (Intercept) 1.276591e-05 1.854242e-05 1.256668e-05 1.535884e-05 3.280904e-06
## Diet1       1.276591e-05 1.854242e-05 1.256668e-05 4.008618e-06 3.280904e-06
##                 Otu3410      Otu3418       Otu3419       Otu3422       Otu3429
## (Intercept)  1.135022e-05 1.096671e-05 6.561809e-06 1.854242e-05 8.202261e-06
## Diet1       -1.135022e-05 1.096671e-05 6.561809e-06 1.854242e-05 8.202261e-06
##                 Otu3430      Otu3431       Otu3435       Otu3436       Otu3437
## (Intercept)  3.240693e-05 8.62984e-06  1.276591e-05  9.762290e-06 1.27659e-05
## Diet1       -3.240693e-05 8.62984e-06  1.276591e-05 -3.200481e-06 1.27659e-05
##                 Otu3441      Otu3446       Otu3453       Otu3454       Otu3455
## (Intercept) 7.47454e-06  1.002772e-05  1.234568e-05 1.798644e-05 8.202261e-06
## Diet1       7.47454e-06  1.002772e-05 -1.234568e-05 1.798644e-05 8.202261e-06
##                 Otu3456      Otu3460       Otu3463       Otu3466       Otu3467
## (Intercept) 1.429938e-05 1.094045e-05 3.280904e-06 3.086877e-05 1.081205e-05
## Diet1       1.429938e-05 1.094045e-05 3.280904e-06 3.086877e-05 1.081205e-05
##                 Otu3469      Otu3470       Otu3472       Otu3473       Otu3474
## (Intercept) 1.3166e-05   1.483393e-05 1.261002e-05 1.562841e-05 1.021273e-05
## Diet1       1.3166e-05   1.483393e-05 1.261002e-05 1.562841e-05 1.021273e-05
##                 Otu3475      Otu3482       Otu3488       Otu3489       Otu3495
## (Intercept) 1.261002e-05 9.683729e-06 1.562334e-05 3.280904e-06 1.936746e-05
## Diet1       1.261002e-05 9.683729e-06 4.273119e-06 3.280904e-06 1.936746e-05
##                 Otu3496      Otu3499       Otu3506       Otu3509       Otu3510
## (Intercept) 5.106366e-06  9.633891e-06 7.416967e-06  9.453744e-06 1.261002e-05
## Diet1       5.106366e-06 -3.328880e-06 7.416967e-06 -2.891935e-06 1.261002e-05
##                 Otu3512      Otu3514       Otu3517       Otu3519       Otu3526
## (Intercept) 7.416967e-06 6.561809e-06 4.921357e-06 6.561809e-06  1.296277e-05
## Diet1       7.416967e-06 6.561809e-06 4.921357e-06 6.561809e-06 -1.296277e-05
##                 Otu3527      Otu3532       Otu3539       Otu3541       Otu3547
## (Intercept)  2.592554e-05 1.261002e-05 1.483393e-05 3.280904e-06 7.416967e-06
## Diet1       -2.592554e-05 1.261002e-05 1.483393e-05 3.280904e-06 7.416967e-06
##                 Otu3548      Otu3549       Otu3554       Otu3558       Otu3560
## (Intercept) 6.561809e-06 6.561809e-06  2.270044e-05 1.936746e-05  1.558583e-05
## Diet1       6.561809e-06 6.561809e-06 -2.270044e-05 1.936746e-05 -7.518998e-07
##                 Otu3563      Otu3565       Otu3567       Otu3568       Otu3570
## (Intercept) 6.561809e-06 4.921357e-06 9.683729e-06 6.561809e-06 6.561809e-06
## Diet1       6.561809e-06 4.921357e-06 9.683729e-06 6.561809e-06 6.561809e-06
##                 Otu3574      Otu3578       Otu3580       Otu3585       Otu3589
## (Intercept) 7.659548e-06 1.562841e-05  2.592554e-05 6.561809e-06 1.021273e-05
## Diet1       7.659548e-06 1.562841e-05 -2.592554e-05 6.561809e-06 1.021273e-05
##                 Otu3591      Otu3592       Otu3598       Otu3599       Otu3606
## (Intercept) 6.561809e-06 6.561809e-06 5.348936e-06 5.348936e-06 6.989388e-06
## Diet1       6.561809e-06 6.561809e-06 5.348936e-06 5.348936e-06 6.989388e-06
##                 Otu3609      Otu3613       Otu3615       Otu3622       Otu3624
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## (Intercept) 4.921357e-06 1.261002e-05  2.270044e-05 1.021273e-05 3.280904e-06
## Diet1         4.921357e-06 1.261002e-05 -2.270044e-05 1.021273e-05 3.280904e-06
##                      Otu3625      Otu3626      Otu3630      Otu3632      Otu3633
## (Intercept) 1.745387e-05 9.683729e-06 1.261002e-05 1.906732e-05 1.593890e-05
## Diet1         1.745387e-05 9.683729e-06 1.261002e-05 7.717102e-06 2.976131e-06
##                      Otu3635      Otu3638      Otu3639      Otu3640      Otu3641
## (Intercept) 1.365671e-05  2.259666e-05  1.296277e-05 6.305011e-06 3.280904e-06
## Diet1         1.365671e-05 -1.629165e-05 -1.296277e-05 6.305011e-06 3.280904e-06
##                      Otu3642      Otu3647      Otu3648      Otu3649      Otu3650
## (Intercept)  1.702533e-05 1.021273e-05 5.106366e-06 1.936746e-05 6.561809e-06
## Diet1        -1.702533e-05 1.021273e-05 5.106366e-06 1.936746e-05 6.561809e-06
##                      Otu3653      Otu3660      Otu3663      Otu3664      Otu3667
## (Intercept) 1.021273e-05  1.633773e-05 1.261002e-05 1.261002e-05 1.112545e-05
## Diet1         1.021273e-05 -1.633773e-05 1.261002e-05 1.261002e-05 1.112545e-05
##                      Otu3670      Otu3672      Otu3674      Otu3689      Otu3691
## (Intercept) 6.561809e-06 6.561809e-06  1.450273e-05  1.278640e-05 2.469502e-05
## Diet1         6.561809e-06 6.561809e-06 -8.197717e-06 -1.763742e-07 2.469502e-05
##                      Otu3692      Otu3693      Otu3695      Otu3706      Otu3707
## (Intercept) 9.683729e-06 6.561809e-06 5.106366e-06 1.398796e-05 1.76781e-05
## Diet1         9.683729e-06 6.561809e-06 5.106366e-06 1.398796e-05 1.76781e-05
##                      Otu3710      Otu3713      Otu3716      Otu3717      Otu3722
## (Intercept) 4.921357e-06  2.592554e-05 1.021273e-05 1.252333e-05 6.561809e-06
## Diet1         4.921357e-06 -2.592554e-05 1.021273e-05 1.252333e-05 6.561809e-06
##                      Otu3723      Otu3727      Otu3728      Otu3732      Otu3735
## (Intercept)  1.851852e-05 6.989388e-06  2.270044e-05 4.921357e-06 1.520988e-05
## Diet1        -1.851852e-05 6.989388e-06 -2.270044e-05 4.921357e-06 7.041017e-06
##                      Otu3737      Otu3739      Otu3743      Otu3762      Otu3766
## (Intercept)  1.726286e-05 6.561809e-06 1.261002e-05  1.562658e-05 1.021273e-05
## Diet1        -7.050131e-06 6.561809e-06 1.261002e-05 -9.064775e-06 1.021273e-05
##                      Otu3767      Otu3770      Otu3771      Otu3775      Otu3776
## (Intercept) 6.561809e-06 3.280904e-06  2.469227e-05 6.561809e-06 6.746818e-06
## Diet1         6.561809e-06 3.280904e-06 -1.234476e-05 6.561809e-06 6.746818e-06
##                      Otu3778      Otu3782      Otu3784      Otu3789      Otu3791
## (Intercept) 9.300001e-06 1.021273e-05  1.296277e-05 1.021273e-05 6.561809e-06
## Diet1         9.300001e-06 1.021273e-05 -1.296277e-05 1.021273e-05 6.561809e-06
##                      Otu3796      Otu3797      Otu3798      Otu3799      Otu3806
## (Intercept)  1.926778e-05 1.598874e-05 1.682199e-05 3.280904e-06 9.683729e-06
## Diet1        -6.657760e-06 1.598874e-05 5.471765e-06 3.280904e-06 9.683729e-06
##                      Otu3809      Otu3816      Otu3817      Otu3825      Otu3826
## (Intercept) 6.561809e-06 1.483393e-05 6.561809e-06 6.561809e-06  1.944416e-05
## Diet1         6.561809e-06 1.483393e-05 6.561809e-06 6.561809e-06 -1.944416e-05
##                      Otu3827      Otu3833      Otu3840      Otu3841      Otu3842
## (Intercept) 1.109797e-05 8.926298e-06 1.823408e-05 1.261002e-05 1.71007e-05
## Diet1         1.109797e-05 7.574313e-07 1.823408e-05 1.261002e-05 1.71007e-05
##                      Otu3844      Otu3848      Otu3849      Otu3853      Otu3854
## (Intercept) 1.483393e-05 1.596732e-05 7.659548e-06 6.561809e-06 3.280904e-06
## Diet1         1.483393e-05 1.596732e-05 7.659548e-06 6.561809e-06 3.280904e-06
##                      Otu3855      Otu3856      Otu3861      Otu3866      Otu3867
## (Intercept) 5.106366e-06 2.020071e-05 6.305011e-06  8.228294e-06 9.683729e-06
## Diet1         5.106366e-06 8.850483e-06 6.305011e-06 -3.121928e-06 9.683729e-06
##                      Otu3868      Otu3869      Otu3876      Otu3878      Otu3885
## (Intercept) 6.561809e-06 7.47454e-06  1.127434e-05 9.457517e-06 1.936746e-05
## Diet1         6.561809e-06 7.47454e-06 -1.688428e-06 9.457517e-06 1.936746e-05
##                      Otu3887      Otu3889      Otu3891      Otu3892      Otu3896
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## (Intercept) 3.280904e-06 1.936746e-05 4.921357e-06 1.483393e-05 1.427796e-05
## Diet1       3.280904e-06 1.936746e-05 4.921357e-06 1.483393e-05 1.427796e-05
##                 Otu3901      Otu3902      Otu3904      Otu3905      Otu3908
## (Intercept) 1.3166e-05 1.261002e-05 1.038944e-05 6.561809e-06 1.59454e-05
## Diet1       1.3166e-05 1.261002e-05 2.220578e-06 6.561809e-06 1.59454e-05
##                 Otu3911      Otu3913      Otu3914      Otu3915      Otu3922
## (Intercept) 2.469502e-05 1.483393e-05 3.280904e-06 1.136803e-05  2.270044e-05
## Diet1       2.469502e-05 1.483393e-05 3.280904e-06 1.136803e-05 -2.270044e-05
##                 Otu3927      Otu3931      Otu3934      Otu3935      Otu3938
## (Intercept) 2.469502e-05 1.021273e-05 6.561809e-06 1.483393e-05  1.806914e-05
## Diet1       2.469502e-05 1.021273e-05 6.561809e-06 1.483393e-05 -7.856405e-06
##                 Otu3940      Otu3943      Otu3944      Otu3945      Otu3947
## (Intercept) 6.561809e-06  1.22533e-05 1.485536e-05 1.379788e-05 1.021273e-05
## Diet1       6.561809e-06 -1.22533e-05 1.485536e-05 2.447658e-06 1.021273e-05
##                 Otu3948      Otu3949      Otu3951      Otu3953      Otu3957
## (Intercept) 6.561809e-06 7.416967e-06 9.457517e-06 6.561809e-06 1.069787e-05
## Diet1       6.561809e-06 7.416967e-06 9.457517e-06 6.561809e-06 1.069787e-05
##                 Otu3958      Otu3962      Otu3963      Otu3968      Otu3969
## (Intercept) 6.561809e-06 1.339221e-05  2.270044e-05 6.561809e-06 6.305011e-06
## Diet1       6.561809e-06 1.339221e-05 -2.270044e-05 6.561809e-06 6.305011e-06
##                 Otu3970      Otu3971      Otu3972      Otu3974      Otu3975
## (Intercept) 9.454659e-06  8.168867e-06 4.921357e-06  1.702533e-05 9.683729e-06
## Diet1       9.454659e-06 -8.168867e-06 4.921357e-06 -1.702533e-05 9.683729e-06
##                 Otu3976      Otu3979      Otu3980      Otu3985      Otu3986
## (Intercept)  2.592554e-05  2.270044e-05 1.38333e-05 6.561809e-06 3.280904e-06
## Diet1       -2.592554e-05 -2.270044e-05 1.38333e-05 6.561809e-06 3.280904e-06
##                 Otu3989      Otu3993      Otu3994      Otu3997      Otu4000
## (Intercept) 1.367863e-05 1.141138e-05 6.561809e-06 6.561809e-06 1.112545e-05
## Diet1       1.367863e-05 1.141138e-05 6.561809e-06 6.561809e-06 1.112545e-05
##                 Otu4002      Otu4003      Otu4006      Otu4008      Otu4010
## (Intercept)  1.851852e-05 3.280904e-06 9.457517e-06 4.921357e-06 9.457517e-06
## Diet1       -1.851852e-05 3.280904e-06 9.457517e-06 4.921357e-06 9.457517e-06
##                 Otu4011      Otu4013      Otu4014      Otu4018      Otu4020
## (Intercept) 1.852126e-05 1.852126e-05 9.457517e-06  1.851852e-05 3.280904e-06
## Diet1       1.852126e-05 1.852126e-05 9.457517e-06 -1.851852e-05 3.280904e-06
##                 Otu4021      Otu4023      Otu4039      Otu4047      Otu4049
## (Intercept) 9.457517e-06 9.683729e-06 4.921357e-06 9.457517e-06 5.106366e-06
## Diet1       9.457517e-06 9.683729e-06 4.921357e-06 9.457517e-06 5.106366e-06
##                 Otu4063      Otu4066      Otu4070      Otu4072      Otu4078
## (Intercept) 4.921357e-06 4.921357e-06  1.619209e-05 9.457517e-06 9.457517e-06
## Diet1       4.921357e-06 4.921357e-06 -6.508358e-06 9.457517e-06 9.457517e-06
##                 Otu4085      Otu4088      Otu4090      Otu4094      Otu4096
## (Intercept) 1.234751e-05 4.921357e-06 9.457517e-06 3.280904e-06 7.659548e-06
## Diet1       1.234751e-05 4.921357e-06 9.457517e-06 3.280904e-06 7.659548e-06
##                 Otu4104      Otu4112      Otu4115      Otu4117      Otu4127
## (Intercept) 4.921357e-06 4.921357e-06  1.944416e-05 3.280904e-06 1.452559e-05
## Diet1       4.921357e-06 4.921357e-06 -1.944416e-05 3.280904e-06 1.452559e-05
##                 Otu4131      Otu4135      Otu4137      Otu4138      Otu4151
## (Intercept) 4.921357e-06  1.833025e-05 3.280904e-06 9.454659e-06 6.746818e-06
## Diet1       4.921357e-06 -5.982743e-06 3.280904e-06 9.454659e-06 6.746818e-06
##                 Otu4152      Otu4164      Otu4165      Otu4174      Otu4175
## (Intercept) 3.280904e-06 7.416967e-06 9.457517e-06  1.22533e-05  8.726022e-06
## Diet1       3.280904e-06 7.416967e-06 9.457517e-06 -1.22533e-05 -3.619657e-06
##                 Otu4176      Otu4178      Otu4179      Otu4185      Otu4186
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## (Intercept)  1.702533e-05 3.280904e-06 4.921357e-06 4.921357e-06 4.921357e-06
## Diet1       -1.702533e-05 3.280904e-06 4.921357e-06 4.921357e-06 4.921357e-06
##                  Otu4187      Otu4189      Otu4192      Otu4194      Otu4196
## (Intercept) 4.921357e-06  1.851852e-05 9.457517e-06 4.921357e-06 4.921357e-06
## Diet1       4.921357e-06 -1.851852e-05 9.457517e-06 4.921357e-06 4.921357e-06
##                  Otu4197      Otu4198      Otu4202      Otu4203      Otu4205
## (Intercept) 4.921357e-06  1.944416e-05 4.921357e-06 4.921357e-06 4.921357e-06
## Diet1       4.921357e-06 -1.944416e-05 4.921357e-06 4.921357e-06 4.921357e-06
##                  Otu4206      Otu4218      Otu4231      Otu4232      Otu4237
## (Intercept) 4.921357e-06 4.921357e-06 4.921357e-06 4.921357e-06 9.457517e-06
## Diet1       4.921357e-06 4.921357e-06 4.921357e-06 4.921357e-06 9.457517e-06
##                  Otu4239      Otu4242      Otu4247      Otu4248      Otu4251
## (Intercept) 4.921357e-06  1.944416e-05 9.457517e-06  1.851852e-05  1.22533e-05
## Diet1       4.921357e-06 -1.944416e-05 9.457517e-06 -1.851852e-05 -1.22533e-05
##                  Otu4252      Otu4260      Otu4261      Otu4264      Otu4267
## (Intercept) 4.921357e-06 4.921357e-06 9.457517e-06 4.921357e-06 7.659548e-06
## Diet1       4.921357e-06 4.921357e-06 9.457517e-06 4.921357e-06 7.659548e-06
##                  Otu4268      Otu4278      Otu4285      Otu4289      Otu4290
## (Intercept)  1.22533e-05 4.921357e-06  1.944416e-05 3.280904e-06  1.135022e-05
## Diet1       -1.22533e-05 4.921357e-06 -1.944416e-05 3.280904e-06 -1.135022e-05
##                  Otu4294      Otu4296      Otu4297      Otu4299      Otu4300
## (Intercept) 9.457517e-06  1.234568e-05 4.921357e-06 9.454659e-06 3.280904e-06
## Diet1       9.457517e-06 -1.234568e-05 4.921357e-06 9.454659e-06 3.280904e-06
##                  Otu4301      Otu4302      Otu4303      Otu4307      Otu4323
## (Intercept) 3.280904e-06 9.457517e-06 7.659548e-06 4.921357e-06 9.683729e-06
## Diet1       3.280904e-06 9.457517e-06 7.659548e-06 4.921357e-06 9.683729e-06
##                  Otu4324      Otu4329      Otu4330      Otu4333      Otu4334
## (Intercept) 9.683729e-06 4.921357e-06 8.258871e-06 7.659548e-06 4.921357e-06
## Diet1       9.683729e-06 4.921357e-06 8.258871e-06 7.659548e-06 4.921357e-06
##                  Otu4337      Otu4338      Otu4339      Otu4341      Otu4344
## (Intercept) 4.921357e-06 4.921357e-06 9.457517e-06 4.921357e-06 4.921357e-06
## Diet1       4.921357e-06 4.921357e-06 9.457517e-06 4.921357e-06 4.921357e-06
##                  Otu4345      Otu4346      Otu4353      Otu4362      Otu4365
## (Intercept) 4.921357e-06 1.452559e-05 4.921357e-06 4.921357e-06 1.112545e-05
## Diet1       4.921357e-06 1.452559e-05 4.921357e-06 4.921357e-06 1.112545e-05
##                  Otu4368      Otu4386      Otu4387      Otu4391      Otu4401
## (Intercept) 4.921357e-06 9.457517e-06 7.659548e-06 7.659548e-06 6.305011e-06
## Diet1       4.921357e-06 9.457517e-06 7.659548e-06 7.659548e-06 6.305011e-06
##                  Otu4402      Otu4405      Otu4411      Otu4416      Otu4421
## (Intercept) 1.452559e-05  1.851852e-05 1.128012e-05 1.452559e-05 9.457517e-06
## Diet1       1.452559e-05 -1.851852e-05 1.128012e-05 1.452559e-05 9.457517e-06
##                  Otu4429      Otu4430      Otu4438      Otu4440      Otu4445
## (Intercept) 1.112545e-05 9.457517e-06  8.168867e-06 9.457517e-06 3.280904e-06
## Diet1       1.112545e-05 9.457517e-06 -8.168867e-06 9.457517e-06 3.280904e-06
##                  Otu4446      Otu4448      Otu4449      Otu4453      Otu4457
## (Intercept) 7.659548e-06 7.416967e-06 5.106366e-06 1.452559e-05 3.280904e-06
## Diet1       7.659548e-06 7.416967e-06 5.106366e-06 1.452559e-05 3.280904e-06
##                  Otu4462      Otu4463      Otu4464      Otu4466      Otu4467
## (Intercept)  1.944416e-05  1.135022e-05 9.457517e-06 3.280904e-06 9.457517e-06
## Diet1       -1.944416e-05 -1.135022e-05 9.457517e-06 3.280904e-06 9.457517e-06
##                  Otu4472      Otu4481      Otu4482      Otu4484      Otu4486
## (Intercept) 1.112545e-05 1.852126e-05 1.852035e-05 9.683729e-06 4.921357e-06
## Diet1       1.112545e-05 1.852126e-05 6.174669e-06 9.683729e-06 4.921357e-06
##                  Otu4489      Otu4490      Otu4492      Otu4495      Otu4499
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## (Intercept) 4.921357e-06 1.225883e-05 1.112545e-05 9.457517e-06 1.852126e-05
## Diet1        4.921357e-06 1.225883e-05 1.112545e-05 9.457517e-06 1.852126e-05
##                  Otu4502      Otu4510      Otu4511      Otu4515      Otu4516
## (Intercept) 5.834087e-06 9.457517e-06 7.659548e-06 4.921357e-06  1.22533e-05
## Diet1        5.834087e-06 9.457517e-06 7.659548e-06 4.921357e-06 -1.22533e-05
##                  Otu4522      Otu4527      Otu4532      Otu4536      Otu4538
## (Intercept) 9.457517e-06 1.112545e-05 4.921357e-06 9.457517e-06 6.43341e-06
## Diet1        9.457517e-06 1.112545e-05 4.921357e-06 9.457517e-06 6.43341e-06
##                  Otu4541      Otu4544      Otu4547      Otu4548      Otu4549
## (Intercept) 9.457517e-06 1.128012e-05 7.416967e-06 4.921357e-06 4.193635e-06
## Diet1        9.457517e-06 1.128012e-05 7.416967e-06 4.921357e-06 4.193635e-06
##                  Otu4552      Otu4554      Otu4555      Otu4560      Otu4561
## (Intercept) 7.416967e-06 4.921357e-06 4.921357e-06 4.921357e-06 1.112545e-05
## Diet1        7.416967e-06 4.921357e-06 4.921357e-06 4.921357e-06 1.112545e-05
##                  Otu4562      Otu4563      Otu4567      Otu4570      Otu4571
## (Intercept)  1.702533e-05  9.809319e-06 9.457517e-06 4.921357e-06  1.135022e-05
## Diet1       -1.702533e-05 -6.528415e-06 9.457517e-06 4.921357e-06 -1.135022e-05
##                  Otu4572      Otu4576      Otu4579      Otu4584      Otu4585
## (Intercept) 1.452559e-05 4.921357e-06  1.944416e-05 9.457517e-06 7.659548e-06
## Diet1        1.452559e-05 4.921357e-06 -1.944416e-05 9.457517e-06 7.659548e-06
##                  Otu4587      Otu4591      Otu4593      Otu4594      Otu4595
## (Intercept) 4.921357e-06 9.457517e-06 4.921357e-06 4.921357e-06 7.659548e-06
## Diet1        4.921357e-06 9.457517e-06 4.921357e-06 4.921357e-06 7.659548e-06
##                  Otu4596      Otu4601      Otu4605      Otu4607      Otu4611
## (Intercept) 4.921357e-06  1.851852e-05  1.702533e-05 1.025819e-05 3.280904e-06
## Diet1        4.921357e-06 -1.851852e-05 -1.702533e-05 2.089321e-06 3.280904e-06
##                  Otu4612      Otu4617      Otu4625      Otu4627      Otu4631
## (Intercept) 3.280904e-06 1.038944e-05 1.452559e-05 1.112545e-05  1.605416e-05
## Diet1        3.280904e-06 2.220578e-06 1.452559e-05 1.112545e-05 -8.637195e-06
##                  Otu4643      Otu4646      Otu4649      Otu4653      Otu4654
## (Intercept) 1.452559e-05 7.659548e-06 1.114688e-05 9.457517e-06  1.944416e-05
## Diet1        1.452559e-05 7.659548e-06 1.114688e-05 9.457517e-06 -1.944416e-05
##                  Otu4656      Otu4657      Otu4659      Otu4662      Otu4664
## (Intercept)  1.535884e-05  1.132137e-05  9.759545e-06 7.814206e-06 1.359072e-05
## Diet1        4.008618e-06 -5.016361e-06 -9.759545e-06 7.814206e-06 1.359072e-05
##                  Otu4669      Otu4672      Otu4673      Otu4674      Otu4679
## (Intercept)  1.299067e-05 9.057419e-06 1.452559e-05 9.94823e-06 7.416967e-06
## Diet1       -9.709770e-06 9.057419e-06 1.452559e-05 9.94823e-06 7.416967e-06
##                  Otu4680      Otu4689      Otu4691      Otu4692      Otu4694
## (Intercept) 9.457517e-06 7.659548e-06  7.365338e-06 7.416967e-06 1.112545e-05
## Diet1        9.457517e-06 7.659548e-06 -8.035289e-07 7.416967e-06 1.112545e-05
##                  Otu4697      Otu4699      Otu4701       Otu4702      Otu4704
## (Intercept)  8.168867e-06 4.921357e-06  1.851852e-05  1.702533e-05 1.234751e-05
## Diet1       -8.168867e-06 4.921357e-06 -1.851852e-05 -1.702533e-05 1.234751e-05
##                  Otu4706      Otu4707      Otu4710      Otu4719      Otu4720
## (Intercept) 4.921357e-06 4.921357e-06 1.253610e-05 4.921357e-06 1.398705e-05
## Diet1        4.921357e-06 4.921357e-06 1.185878e-06 4.921357e-06 1.641367e-06
##                  Otu4725      Otu4736      Otu4737       Otu4738      Otu4739
## (Intercept)  1.944416e-05 9.457517e-06  1.22533e-05   1.234568e-05 1.452559e-05
## Diet1       -1.944416e-05 9.457517e-06 -1.22533e-05  -1.234568e-05 1.452559e-05
##                  Otu4740      Otu4747      Otu4748      Otu4750      Otu4752
## (Intercept) 4.921357e-06 7.659548e-06 3.280904e-06 1.112545e-05 1.114688e-05
## Diet1        4.921357e-06 7.659548e-06 3.280904e-06 1.112545e-05 1.114688e-05
##                  Otu4753      Otu4755      Otu4759      Otu4760      Otu4761
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## (Intercept) 9.683729e-06  1.702533e-05 1.112545e-05  8.168867e-06 9.454659e-06
## Diet1       9.683729e-06 -1.702533e-05 1.112545e-05 -8.168867e-06 9.454659e-06
##                 Otu4762       Otu4765       Otu4767       Otu4769       Otu4770
## (Intercept) 1.225883e-05  1.702533e-05 1.452559e-05 4.921357e-06 8.814849e-06
## Diet1       1.225883e-05 -1.702533e-05 1.452559e-05 4.921357e-06 8.814849e-06
##                 Otu4774       Otu4776       Otu4779       Otu4781       Otu4782
## (Intercept) 3.280904e-06  1.22533e-05 1.001349e-05 1.225883e-05 1.038944e-05
## Diet1       3.280904e-06 -1.22533e-05 1.001349e-05 1.225883e-05 2.220578e-06
##                 Otu4790       Otu4793       Otu4796       Otu4797
## (Intercept) 1.718754e-05  1.450273e-05  1.944416e-05 7.416967e-06
## Diet1      -7.503814e-06 -8.197717e-06 -1.944416e-05 7.416967e-06
##                 Otu4798       Otu4799       Otu4800       Otu4801       Otu4802
## (Intercept) 8.168867e-06 1.283624e-05  1.22533e-05 7.659548e-06  1.384398e-05
## Diet1      -8.168867e-06 1.283624e-05 -1.22533e-05 7.659548e-06 -1.384398e-05
##                 Otu4803       Otu4806       Otu4807       Otu4811       Otu4812
## (Intercept) 4.921357e-06 7.659548e-06 6.746818e-06 6.860989e-06 7.659548e-06
## Diet1       4.921357e-06 7.659548e-06 6.746818e-06 6.860989e-06 7.659548e-06
##                 Otu4814       Otu4817       Otu4818       Otu4820       Otu4825
## (Intercept) 3.280904e-06 5.106366e-06  1.296277e-05  9.633891e-06 3.280904e-06
## Diet1       3.280904e-06 5.106366e-06 -1.296277e-05 -3.328880e-06 3.280904e-06
##                 Otu4828       Otu4833       Otu4835       Otu4836       Otu4837
## (Intercept) 1.234751e-05  9.383595e-06  1.135022e-05 7.416967e-06  1.296277e-05
## Diet1       1.234751e-05 -1.966628e-06 -1.135022e-05 7.416967e-06 -1.296277e-05
##                 Otu4845       Otu4846       Otu4852       Otu4856       Otu4859
## (Intercept) 1.296277e-05 6.261666e-06 3.280904e-06  1.296277e-05 6.305011e-06
## Diet1      -1.296277e-05 6.261666e-06 3.280904e-06 -1.296277e-05 6.305011e-06
##                 Otu4861       Otu4863       Otu4864       Otu4872       Otu4874
## (Intercept) 5.106366e-06 3.280904e-06  8.168867e-06 6.305011e-06  1.296277e-05
## Diet1       5.106366e-06 3.280904e-06 -8.168867e-06 6.305011e-06 -1.296277e-05
##                 Otu4876       Otu4882       Otu4883       Otu4885       Otu4887
## (Intercept) 6.305011e-06  8.168867e-06  9.633891e-06 4.193635e-06 6.305011e-06
## Diet1       6.305011e-06 -8.168867e-06 -3.328880e-06 4.193635e-06 6.305011e-06
##                 Otu4889       Otu4896       Otu4899       Otu4906       Otu4910
## (Intercept)  1.135022e-05 3.280904e-06 3.280904e-06 6.305011e-06 3.280904e-06
## Diet1       -1.135022e-05 3.280904e-06 3.280904e-06 6.305011e-06 3.280904e-06
##                 Otu4912       Otu4918       Otu4919       Otu4922       Otu4927
## (Intercept)  1.234568e-05 3.280904e-06 9.683729e-06  1.296277e-05 3.280904e-06
## Diet1       -1.234568e-05 3.280904e-06 9.683729e-06 -1.296277e-05 3.280904e-06
##                 Otu4928       Otu4932       Otu4945       Otu4948       Otu4949
## (Intercept) 5.705688e-06  1.296277e-05 4.792958e-06  1.296277e-05  1.296277e-05
## Diet1       5.705688e-06 -1.296277e-05 4.792958e-06 -1.296277e-05 -1.296277e-05
##                 Otu4951       Otu4959       Otu4960       Otu4963       Otu4964
## (Intercept) 3.280904e-06 7.416967e-06  8.168867e-06 5.106366e-06 1.234751e-05
## Diet1       3.280904e-06 7.416967e-06 -8.168867e-06 5.106366e-06 1.234751e-05
##                 Otu4972       Otu4976       Otu4977       Otu4982       Otu4989
## (Intercept) 3.280904e-06 5.106366e-06 3.280904e-06 5.348936e-06 6.305011e-06
## Diet1       3.280904e-06 5.106366e-06 3.280904e-06 5.348936e-06 6.305011e-06
##                 Otu4990       Otu4993       Otu4994       Otu4996       Otu5001
## (Intercept) 5.106366e-06 3.280904e-06  1.296277e-05 3.280904e-06  1.296277e-05
## Diet1       5.106366e-06 3.280904e-06 -1.296277e-05 3.280904e-06 -1.296277e-05
##                 Otu5004       Otu5019       Otu5022       Otu5025       Otu5029
## (Intercept) 5.106366e-06 6.305011e-06 6.305011e-06 6.305011e-06 9.683729e-06
## Diet1       5.106366e-06 6.305011e-06 6.305011e-06 6.305011e-06 9.683729e-06
##                 Otu5031       Otu5037       Otu5043       Otu5049       Otu5051
```

```
## (Intercept) 5.106366e-06 4.193635e-06 5.106366e-06  1.296277e-05 6.305011e-06
## Diet1         5.106366e-06 4.193635e-06 5.106366e-06 -1.296277e-05 6.305011e-06
##                   Otu5054       Otu5057       Otu5058       Otu5061       Otu5064
## (Intercept) 1.234751e-05  1.296277e-05 3.280904e-06  7.792917e-06  1.296277e-05
## Diet1         1.234751e-05 -1.296277e-05 3.280904e-06 -3.759499e-07 -1.296277e-05
##                   Otu5075       Otu5077       Otu5078       Otu5087       Otu5089
## (Intercept) 3.280904e-06 3.280904e-06 5.106366e-06  8.168867e-06 3.280904e-06
## Diet1         3.280904e-06 3.280904e-06 5.106366e-06 -8.168867e-06 3.280904e-06
##                   Otu5091       Otu5093       Otu5099       Otu5105       Otu5107
## (Intercept) 3.280904e-06  1.135022e-05 5.106366e-06  1.296277e-05  1.296277e-05
## Diet1         3.280904e-06 -1.135022e-05 5.106366e-06 -1.296277e-05 -1.296277e-05
##                   Otu5114       Otu5119       Otu5120       Otu5124       Otu5131
## (Intercept) 7.416967e-06 7.416967e-06 3.280904e-06 3.280904e-06 3.280904e-06
## Diet1         7.416967e-06 7.416967e-06 3.280904e-06 3.280904e-06 3.280904e-06
##                   Otu5138       Otu5141       Otu5143       Otu5155       Otu5168
## (Intercept) 3.280904e-06  8.168867e-06 5.106366e-06  8.168867e-06 4.193635e-06
## Diet1         3.280904e-06 -8.168867e-06 5.106366e-06 -8.168867e-06 4.193635e-06
##                   Otu5169       Otu5170       Otu5171       Otu5177       Otu5179
## (Intercept) 1.234751e-05  1.296277e-05  1.234568e-05 5.106366e-06 9.683729e-06
## Diet1         1.234751e-05 -1.296277e-05 -1.234568e-05 5.106366e-06 9.683729e-06
##                   Otu5182       Otu5190       Otu5192       Otu5196       Otu5197
## (Intercept) 9.683729e-06 3.280904e-06  1.234568e-05 3.280904e-06 3.280904e-06
## Diet1         9.683729e-06 3.280904e-06 -1.234568e-05 3.280904e-06 3.280904e-06
##                   Otu5201       Otu5208       Otu5209       Otu5212       Otu5222
## (Intercept)  8.168867e-06 9.683729e-06 7.416967e-06 3.280904e-06 3.280904e-06
## Diet1         -8.168867e-06 9.683729e-06 7.416967e-06 3.280904e-06 3.280904e-06
##                   Otu5227       Otu5228       Otu5229       Otu5230       Otu5231
## (Intercept) 5.106366e-06 5.106366e-06 7.416967e-06 5.106366e-06 7.416967e-06
## Diet1         5.106366e-06 5.106366e-06 7.416967e-06 5.106366e-06 7.416967e-06
##                   Otu5233       Otu5235       Otu5236       Otu5250       Otu5256
## (Intercept) 6.305011e-06 6.305011e-06 7.416967e-06 7.416967e-06 5.106366e-06
## Diet1         6.305011e-06 6.305011e-06 7.416967e-06 7.416967e-06 5.106366e-06
##                   Otu5257       Otu5260       Otu5262       Otu5267       Otu5272
## (Intercept)  8.168867e-06 6.305011e-06  1.234568e-05 5.106366e-06 3.280904e-06
## Diet1         -8.168867e-06 6.305011e-06 -1.234568e-05 5.106366e-06 3.280904e-06
##                   Otu5275       Otu5276       Otu5277       Otu5280       Otu5281
## (Intercept) 9.683729e-06  1.296277e-05 1.234751e-05 3.280904e-06 6.305011e-06
## Diet1         9.683729e-06 -1.296277e-05 1.234751e-05 3.280904e-06 6.305011e-06
##                   Otu5283       Otu5285       Otu5291       Otu5300       Otu5301
## (Intercept) 5.106366e-06  1.234568e-05  1.234568e-05  1.234568e-05 3.280904e-06
## Diet1         5.106366e-06 -1.234568e-05 -1.234568e-05 -1.234568e-05 3.280904e-06
##                   Otu5306       Otu5309       Otu5312       Otu5316       Otu5318
## (Intercept) 3.280904e-06  8.168867e-06 7.416967e-06  1.135022e-05 1.234568e-05
## Diet1         3.280904e-06 -8.168867e-06 7.416967e-06 -1.135022e-05 -1.234568e-05
##                   Otu5322       Otu5326       Otu5327       Otu5338       Otu5339
## (Intercept) 3.280904e-06 3.280904e-06 5.106366e-06 6.305011e-06  1.135022e-05
## Diet1         3.280904e-06 3.280904e-06 5.106366e-06 6.305011e-06 -1.135022e-05
##                   Otu5353       Otu5354       Otu5355       Otu5357       Otu5360
## (Intercept) 3.280904e-06 3.280904e-06 6.305011e-06  1.234568e-05 5.106366e-06
## Diet1         3.280904e-06 3.280904e-06 6.305011e-06 -1.234568e-05 5.106366e-06
##                   Otu5367       Otu5368       Otu5371       Otu5374       Otu5377
## (Intercept) 6.261666e-06 3.280904e-06 3.280904e-06 7.416967e-06 6.305011e-06
## Diet1         6.261666e-06 3.280904e-06 3.280904e-06 7.416967e-06 6.305011e-06
##                   Otu5380       Otu5385       Otu5388       Otu5389       Otu5391
```

```
## (Intercept) 9.683729e-06 9.683729e-06  1.051698e-05 3.280904e-06 7.416967e-06
## Diet1        9.683729e-06 9.683729e-06 -8.332465e-07 3.280904e-06 7.416967e-06
##                   Otu5395      Otu5398      Otu5409      Otu5413      Otu5414
## (Intercept)  1.135022e-05 1.234751e-05 3.280904e-06 3.280904e-06 7.416967e-06
## Diet1       -1.135022e-05 1.234751e-05 3.280904e-06 3.280904e-06 7.416967e-06
##                   Otu5420      Otu5425      Otu5428      Otu5446      Otu5450
## (Intercept) 6.305011e-06 6.305011e-06 6.305011e-06 3.280904e-06 3.280904e-06
## Diet1       6.305011e-06 6.305011e-06 6.305011e-06 3.280904e-06 3.280904e-06
##                   Otu5451      Otu5452      Otu5453      Otu5455      Otu5458
## (Intercept)  8.121838e-06  1.296277e-05 5.106366e-06 3.280904e-06 5.106366e-06
## Diet1       -4.840933e-06 -1.296277e-05 5.106366e-06 3.280904e-06 5.106366e-06
##                   Otu5460      Otu5462      Otu5465      Otu5466      Otu5467
## (Intercept) 4.193635e-06  8.168867e-06 6.305011e-06 6.305011e-06  1.135022e-05
## Diet1       4.193635e-06 -8.168867e-06 6.305011e-06 6.305011e-06 -1.135022e-05
##                   Otu5470      Otu5472      Otu5477      Otu5492      Otu5497
## (Intercept) 6.305011e-06 6.305011e-06 9.683729e-06 9.683729e-06 3.280904e-06
## Diet1       6.305011e-06 6.305011e-06 9.683729e-06 9.683729e-06 3.280904e-06
##                   Otu5498      Otu5499      Otu5500      Otu5502      Otu5504
## (Intercept) 3.280904e-06 3.280904e-06 3.280904e-06 6.305011e-06 5.106366e-06
## Diet1       3.280904e-06 3.280904e-06 3.280904e-06 6.305011e-06 5.106366e-06
##                   Otu5505      Otu5506      Otu5516      Otu5518      Otu5520
## (Intercept) 3.280904e-06 6.305011e-06 1.234751e-05 3.280904e-06 1.234751e-05
## Diet1       3.280904e-06 6.305011e-06 1.234751e-05 3.280904e-06 1.234751e-05
##                   Otu5521      Otu5522      Otu5524      Otu5525      Otu5537
## (Intercept)  8.168867e-06 3.280904e-06  1.135022e-05 3.280904e-06 4.193635e-06
## Diet1       -8.168867e-06 3.280904e-06 -1.135022e-05 3.280904e-06 4.193635e-06
##                   Otu5539      Otu5540      Otu5542      Otu5544      Otu5546
## (Intercept) 3.280904e-06 3.280904e-06 3.280904e-06 7.416967e-06 5.106366e-06
## Diet1       3.280904e-06 3.280904e-06 3.280904e-06 7.416967e-06 5.106366e-06
##                   Otu5547      Otu5551      Otu5558      Otu5559      Otu5562
## (Intercept)  1.234568e-05  8.168867e-06 7.416967e-06 3.280904e-06 3.280904e-06
## Diet1       -1.234568e-05 -8.168867e-06 7.416967e-06 3.280904e-06 3.280904e-06
##                   Otu5566      Otu5578      Otu5583      Otu5586      Otu5606
## (Intercept) 5.106366e-06  1.234568e-05 3.280904e-06 5.106366e-06 7.416967e-06
## Diet1       5.106366e-06 -1.234568e-05 3.280904e-06 5.106366e-06 7.416967e-06
##                   Otu5610      Otu5612      Otu5614      Otu5617      Otu5618
## (Intercept)  1.296277e-05 3.280904e-06 7.416967e-06 3.280904e-06 3.280904e-06
## Diet1       -1.296277e-05 3.280904e-06 7.416967e-06 3.280904e-06 3.280904e-06
##                   Otu5620      Otu5627      Otu5629      Otu5635      Otu5640
## (Intercept)  1.296277e-05  8.168867e-06 3.280904e-06 1.234751e-05 5.106366e-06
## Diet1       -1.296277e-05 -8.168867e-06 3.280904e-06 1.234751e-05 5.106366e-06
##                   Otu5644      Otu5645      Otu5668      Otu5680      Otu5683
## (Intercept) 6.305011e-06 3.280904e-06 7.416967e-06 3.280904e-06 7.416967e-06
## Diet1       6.305011e-06 3.280904e-06 7.416967e-06 3.280904e-06 7.416967e-06
##                   Otu5685      Otu5689      Otu5699      Otu5715      Otu5719
## (Intercept) 7.416967e-06  8.168867e-06 3.280904e-06 3.280904e-06 7.416967e-06
## Diet1       7.416967e-06 -8.168867e-06 3.280904e-06 3.280904e-06 7.416967e-06
##                   Otu5720      Otu5721      Otu5733      Otu5742      Otu5744
## (Intercept) 7.416967e-06 9.683729e-06  1.296277e-05  1.135022e-05 3.280904e-06
## Diet1       7.416967e-06 9.683729e-06 -1.296277e-05 -1.135022e-05 3.280904e-06
##                   Otu5746      Otu5748      Otu5752      Otu5759      Otu5760
## (Intercept) 5.106366e-06 5.106366e-06  1.296277e-05 5.106366e-06 1.234751e-05
## Diet1       5.106366e-06 5.106366e-06 -1.296277e-05 5.106366e-06 1.234751e-05
##                   Otu5768      Otu5772      Otu5776      Otu5777      Otu5780
```

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```
## (Intercept) 6.305011e-06 9.683729e-06 6.305011e-06  8.827617e-06  1.234568e-05
## Diet1        6.305011e-06 9.683729e-06 6.305011e-06 -2.522606e-06 -1.234568e-05
##                  Otu5782      Otu5783      Otu5784      Otu5787      Otu5790
## (Intercept) 1.234751e-05 7.416967e-06  1.296277e-05 3.280904e-06 5.106366e-06
## Diet1       1.234751e-05 7.416967e-06 -1.296277e-05 3.280904e-06 5.106366e-06
##                  Otu5791      Otu5792      Otu5794      Otu5795      Otu5797
## (Intercept) 9.882238e-06 9.683729e-06 7.416967e-06 5.106366e-06 9.683729e-06
## Diet1       9.882238e-06 9.683729e-06 7.416967e-06 5.106366e-06 9.683729e-06
##                  Otu5799      Otu5804      Otu5809      Otu5821      Otu5823
## (Intercept)  1.234568e-05 3.280904e-06 6.305011e-06 1.234751e-05 1.234751e-05
## Diet1       -1.234568e-05 3.280904e-06 6.305011e-06 1.234751e-05 1.234751e-05
##                  Otu5828      Otu5835      Otu5838      Otu5841      Otu5844
## (Intercept) 6.305011e-06 3.280904e-06 7.416967e-06 7.416967e-06 3.280904e-06
## Diet1       6.305011e-06 3.280904e-06 7.416967e-06 7.416967e-06 3.280904e-06
##                  Otu5847      Otu5849      Otu5857      Otu5859      Otu5862
## (Intercept)  8.168867e-06 9.683729e-06 7.416967e-06 7.416967e-06 6.305011e-06
## Diet1       -8.168867e-06 9.683729e-06 7.416967e-06 7.416967e-06 6.305011e-06
##                  Otu5869      Otu5875      Otu5879       Otu5882      Otu5886
## (Intercept) 3.280904e-06 6.305011e-06 3.280904e-06  1.234568e-05 7.416967e-06
## Diet1       3.280904e-06 6.305011e-06 3.280904e-06 -1.234568e-05 7.416967e-06
##                  Otu5889       Otu5901      Otu5902       Otu5909      Otu5912
## (Intercept)  8.168867e-06  8.121838e-06 6.305011e-06  1.296277e-05 7.416967e-06
## Diet1       -8.168867e-06 -4.840933e-06 6.305011e-06 -1.296277e-05 7.416967e-06
##                  Otu5921      Otu5924      Otu5925      Otu5928       Otu5933
## (Intercept)  1.296277e-05 5.106366e-06 3.280904e-06 5.106366e-06  1.296277e-05
## Diet1       -1.296277e-05 5.106366e-06 3.280904e-06 5.106366e-06 -1.296277e-05
##                  Otu5934       Otu5937      Otu5938       Otu5948      Otu5949
## (Intercept) 3.280904e-06  9.759545e-06 3.280904e-06  8.168867e-06 3.280904e-06
## Diet1       3.280904e-06 -9.759545e-06 3.280904e-06 -8.168867e-06 3.280904e-06
##                  Otu5951      Otu5953       Otu5956      Otu5957      Otu5960
## (Intercept) 1.234751e-05 9.683729e-06  1.234568e-05 1.234751e-05 3.280904e-06
## Diet1       1.234751e-05 9.683729e-06 -1.234568e-05 1.234751e-05 3.280904e-06
##                  Otu5967       Otu5969       Otu5978       Otu5979
## (Intercept)  8.168867e-06  1.135022e-05  1.234568e-05  1.051698e-05
## Diet1       -8.168867e-06 -1.135022e-05 -1.234568e-05 -8.332465e-07
##                  Otu5985      Otu5989       Otu6000      Otu6003      Otu6006
## (Intercept) 1.234751e-05 6.305011e-06  1.135022e-05 1.234751e-05 9.683729e-06
## Diet1       1.234751e-05 6.305011e-06 -1.135022e-05 1.234751e-05 9.683729e-06
##                  Otu6013       Otu6017      Otu6019       Otu6023      Otu6031
## (Intercept) 7.99437e-06  8.168867e-06 1.234751e-05  9.633891e-06 6.860989e-06
## Diet1       7.99437e-06 -8.168867e-06 1.234751e-05 -3.328880e-06 6.860989e-06
##                   Otu6033      Otu6034      Otu6035      Otu6037      Otu6039
## (Intercept)  1.265514e-05 5.106366e-06 6.305011e-06 3.280904e-06 5.348936e-06
## Diet1       -3.076313e-07 5.106366e-06 6.305011e-06 3.280904e-06 5.348936e-06
##                  Otu6051      Otu6052      Otu6057      Otu6058       Otu6059
## (Intercept) 5.106366e-06 3.280904e-06 5.106366e-06 7.416967e-06  8.168867e-06
## Diet1       5.106366e-06 3.280904e-06 5.106366e-06 7.416967e-06 -8.168867e-06
##                  Otu6061       Otu6062      Otu6066      Otu6071      Otu6078
## (Intercept) 6.305011e-06  1.234568e-05 7.416967e-06 9.683729e-06 6.305011e-06
## Diet1       6.305011e-06 -1.234568e-05 7.416967e-06 9.683729e-06 6.305011e-06
##                  Otu6080      Otu6082      Otu6086      Otu6088       Otu6089
## (Intercept) 7.416967e-06 9.683729e-06 1.234751e-05 6.305011e-06  8.168867e-06
## Diet1       7.416967e-06 9.683729e-06 1.234751e-05 6.305011e-06 -8.168867e-06
##                  Otu6090      Otu6093      Otu6094      Otu6096      Otu6097
```

```
## (Intercept) 6.305011e-06 6.305011e-06 6.305011e-06  8.168867e-06 9.683729e-06
## Diet1       6.305011e-06 6.305011e-06 6.305011e-06 -8.168867e-06 9.683729e-06
##                   Otu6099       Otu6101       Otu6103       Otu6108       Otu6109
## (Intercept) 6.261666e-06  1.296277e-05 3.280904e-06  1.234568e-05 6.305011e-06
## Diet1       6.261666e-06 -1.296277e-05 3.280904e-06 -1.234568e-05 6.305011e-06
##                   Otu6111       Otu6114
## (Intercept) 9.683729e-06 6.305011e-06
## Diet1       9.683729e-06 6.305011e-06
##
## $coef.sites
##               RvSAJ030   RvSAJ025   RvSAJ026   RvSAJ018   RvSAJ016   RvSAJ015
## (Intercept) 0.7144930  0.6793891  0.7663085  0.7893015  0.7887224  0.7147003
## Diet1       0.1381211 -0.0058162 -0.1286842 -0.1287337 -0.1060642 0.1387889
##               RvSAJ021   RvSAJ020   RvSAJ014   RvSAJ024
## (Intercept) 0.6653265  0.66999970  0.66457858  0.72663804
## Diet1       0.1166373 -0.01355392 0.09617379 -0.07001749
##
## $f.perms
##              [,1]
##    [1,] 1.0592461
##    [2,] 0.8437390
##    [3,] 0.8645669
##    [4,] 0.8003048
##    [5,] 0.4732040
##    [6,] 0.6091832
##    [7,] 0.9704276
##    [8,] 0.9431135
##    [9,] 1.8397253
##   [10,] 0.5123364
##   [11,] 1.0229933
##   [12,] 1.0986363
##   [13,] 1.4319038
##   [14,] 1.4627969
##   [15,] 1.1549783
##   [16,] 1.1296741
##   [17,] 1.0986363
##   [18,] 0.6748956
##   [19,] 0.7909577
##   [20,] 0.9540660
##   [21,] 0.6886966
##   [22,] 0.8527444
##   [23,] 0.6008101
##   [24,] 0.6373804
##   [25,] 0.6965694
##   [26,] 1.8693615
##   [27,] 0.8224603
##   [28,] 0.4782407
##   [29,] 1.1549783
##   [30,] 1.0893689
##   [31,] 0.8527444
##   [32,] 0.5928231
##   [33,] 0.7807348
##   [34,] 0.9540660
##   [35,] 1.7153781
```

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##    [36,] 1.0592461
##    [37,] 0.6800256
##    [38,] 0.8852248
##    [39,] 0.8738755
##    [40,] 1.0759246
##    [41,] 0.6806764
##    [42,] 0.5123364
##    [43,] 1.1296741
##    [44,] 1.8693615
##    [45,] 0.8174909
##    [46,] 0.8886569
##    [47,] 1.0958677
##    [48,] 2.3310502
##    [49,] 1.1608647
##    [50,] 2.8680091
##    [51,] 0.9025499
##    [52,] 1.0774867
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## [717,] 0.5140031
## [718,] 1.0702673
## [719,] 0.5788017
## [720,] 1.5944225
## [721,] 1.1866681
## [722,] 1.0251223
## [723,] 1.2716888
## [724,] 0.6716081
## [725,] 1.3619677
## [726,] 0.7955330
## [727,] 0.6748956
## [728,] 1.4466159
## [729,] 1.1042774
## [730,] 0.5656575
## [731,] 1.5944225
## [732,] 2.0088881
## [733,] 0.9524647
## [734,] 1.0679727
## [735,] 1.5944225
## [736,] 0.8852248
## [737,] 0.5065572
```

```
## [738,] 1.0994338
## [739,] 0.9524647
## [740,] 0.6965694
## [741,] 0.7738375
## [742,] 0.7133151
## [743,] 1.1695095
## [744,] 0.5858807
## [745,] 1.1608647
## [746,] 1.2702075
## [747,] 0.7562570
## [748,] 1.3240081
## [749,] 0.3479848
## [750,] 0.7897089
## [751,] 0.6405510
## [752,] 0.9011379
## [753,] 1.0592461
## [754,] 0.6091832
## [755,] 0.8645669
## [756,] 1.5525225
## [757,] 0.7562570
## [758,] 0.8645669
## [759,] 1.7817003
## [760,] 0.8645859
## [761,] 1.4627969
## [762,] 0.6186441
## [763,] 0.6924283
## [764,] 1.2929499
## [765,] 0.6800256
## [766,] 0.9431135
## [767,] 0.8852248
## [768,] 0.8191109
## [769,] 1.2001573
## [770,] 0.7079733
## [771,] 0.8645669
## [772,] 1.0759246
## [773,] 1.0751243
## [774,] 1.0994338
## [775,] 0.9065560
## [776,] 0.7721721
## [777,] 1.2390313
## [778,] 0.8856005
## [779,] 1.2523533
## [780,] 0.9526272
## [781,] 0.6800256
## [782,] 1.0199437
## [783,] 0.7923431
## [784,] 0.8174909
## [785,] 1.1449460
## [786,] 0.7562570
## [787,] 0.7471841
## [788,] 0.7079733
## [789,] 2.3310502
## [790,] 1.3996579
## [791,] 0.8645859
```

```
## [792,] 0.5896998
## [793,] 0.4263453
## [794,] 1.8542995
## [795,] 0.7471841
## [796,] 1.4359550
## [797,] 0.5592151
## [798,] 2.2023150
## [799,] 0.9524647
## [800,] 1.0308187
## [801,] 1.3692956
## [802,] 0.3479848
## [803,] 0.6280497
## [804,] 0.5896998
## [805,] 0.6125074
## [806,] 1.8026873
## [807,] 0.8204892
## [808,] 1.2390313
## [809,] 1.0308187
## [810,] 1.0958677
## [811,] 2.2023150
## [812,] 0.9958382
## [813,] 0.8288201
## [814,] 0.9566424
## [815,] 0.7208254
## [816,] 2.6749055
## [817,] 0.6186441
## [818,] 0.7208254
## [819,] 0.8033682
## [820,] 0.6091832
## [821,] 0.3272080
## [822,] 0.6405510
## [823,] 2.0088881
## [824,] 0.7401630
## [825,] 0.5858807
## [826,] 0.8645859
## [827,] 1.0527679
## [828,] 1.0527679
## [829,] 0.9958382
## [830,] 0.5123364
## [831,] 1.0308187
## [832,] 1.1695095
## [833,] 0.7808718
## [834,] 2.6749055
## [835,] 1.1042774
## [836,] 0.6155377
## [837,] 0.7709871
## [838,] 0.6886966
## [839,] 0.6843844
## [840,] 1.2001573
## [841,] 0.6844936
## [842,] 0.9991441
## [843,] 2.8680091
## [844,] 1.2744968
## [845,] 0.9802761
```

```
## [846,] 2.8680091
## [847,] 0.6924283
## [848,] 1.1042774
## [849,] 0.9027641
## [850,] 1.0016427
## [851,] 2.0185486
## [852,] 1.0592461
## [853,] 0.6843844
## [854,] 0.6405510
## [855,] 0.8288201
## [856,] 0.7955330
## [857,] 1.8026873
## [858,] 1.0958677
## [859,] 0.5221349
## [860,] 1.0986363
## [861,] 0.6844936
## [862,] 0.7208254
## [863,] 0.5788017
## [864,] 0.9246741
## [865,] 0.6008101
## [866,] 0.6934501
## [867,] 0.6435466
## [868,] 1.2529609
## [869,] 0.6653668
## [870,] 0.9860011
## [871,] 1.1695095
## [872,] 0.4782407
## [873,] 1.4627969
## [874,] 1.8693615
## [875,] 1.4302127
## [876,] 1.2535483
## [877,] 0.9525872
## [878,] 0.9566424
## [879,] 0.6008101
## [880,] 0.7923431
## [881,] 1.4319038
## [882,] 1.7153781
## [883,] 1.1939436
## [884,] 1.0759246
## [885,] 2.3310502
## [886,] 1.8542995
## [887,] 1.8026873
## [888,] 0.9298004
## [889,] 0.9246741
## [890,] 1.2535483
## [891,] 1.1042774
## [892,] 1.2529609
## [893,] 0.7923431
## [894,] 1.2529609
## [895,] 0.6886966
## [896,] 0.6965694
## [897,] 0.5592151
## [898,] 0.7562570
## [899,] 0.8852248
```

```
##   [900,] 0.7402940
##   [901,] 0.9704884
##   [902,] 1.3116063
##   [903,] 0.4663886
##   [904,] 0.5221349
##   [905,] 0.6843844
##   [906,] 0.9704276
##   [907,] 0.6800256
##   [908,] 0.7471841
##   [909,] 0.8774659
##   [910,] 0.3272080
##   [911,] 1.0702673
##   [912,] 0.5609137
##   [913,] 1.3387677
##   [914,] 1.3996579
##   [915,] 0.8852248
##   [916,] 1.8026873
##   [917,] 0.7471841
##   [918,] 1.8397253
##   [919,] 0.7897089
##   [920,] 0.7721721
##   [921,] 1.1947344
##   [922,] 0.6806764
##   [923,] 1.2822040
##   [924,] 0.7738375
##   [925,] 0.8479696
##   [926,] 1.2291011
##   [927,] 1.0774867
##   [928,] 1.1695095
##   [929,] 0.7738375
##   [930,] 1.2535483
##   [931,] 0.4710134
##   [932,] 1.0759246
##   [933,] 0.9015218
##   [934,] 1.0194509
##   [935,] 1.0308187
##   [936,] 0.4710134
##   [937,] 0.8234012
##   [938,] 0.7709871
##   [939,] 0.9802761
##   [940,] 0.9011379
##   [941,] 1.0958677
##   [942,] 0.9991441
##   [943,] 0.5140031
##   [944,] 2.2023150
##   [945,] 2.2579218
##   [946,] 1.5184939
##   [947,] 0.7401630
##   [948,] 0.9704884
##   [949,] 0.9157640
##   [950,] 2.0088881
##   [951,] 0.3479848
##   [952,] 0.6280497
##   [953,] 0.9561738
```

```
##    [954,] 0.6435466
##    [955,] 2.1457985
##    [956,] 1.8542995
##    [957,] 1.8693615
##    [958,] 0.8211585
##    [959,] 0.9561738
##    [960,] 0.5646203
##    [961,] 1.5184939
##    [962,] 0.4782407
##    [963,] 0.7909577
##    [964,] 1.2929499
##    [965,] 1.1181861
##    [966,] 0.8361215
##    [967,] 1.1902431
##    [968,] 0.5123364
##    [969,] 1.1866681
##    [970,] 0.4263453
##    [971,] 0.5656575
##    [972,] 0.8437390
##    [973,] 0.8191109
##    [974,] 1.1608647
##    [975,] 0.9558892
##    [976,] 1.2130169
##    [977,] 0.8033682
##    [978,] 0.5896998
##    [979,] 0.7402940
##    [980,] 0.7587608
##    [981,] 0.4764743
##    [982,] 0.5896998
##    [983,] 0.3479848
##    [984,] 0.8437390
##    [985,] 0.9803281
##    [986,] 1.0511748
##    [987,] 1.5944225
##    [988,] 0.8448429
##    [989,] 0.6155377
##    [990,] 1.2291011
##    [991,] 0.6186441
##    [992,] 1.8026873
##    [993,] 1.8981948
##    [994,] 1.3692956
##    [995,] 0.9860011
##    [996,] 0.5858807
##    [997,] 0.5318244
##    [998,] 0.4782407
##    [999,] 0.9561738
## [1000,] 0.6419015
##
## $model.matrix
##           (Intercept) Diet1
## RvSAJ030            1    -1
## RvSAJ025            1     1
## RvSAJ026            1     1
## RvSAJ018            1     1
```

```
## RvSAJ016          1      1
## RvSAJ015          1     -1
## RvSAJ021          1     -1
## RvSAJ020          1      1
## RvSAJ014          1     -1
## RvSAJ024          1      1
##
## $terms
## new.data.v[, -c(1:4)] ~ Diet
## attr(,"variables")
## list(new.data.v[, -c(1:4)], Diet)
## attr(,"factors")
##                      Diet
## new.data.v[, -c(1:4)]   0
## Diet                    1
## attr(,"term.labels")
## [1] "Diet"
## attr(,"order")
## [1] 1
## attr(,"intercept")
## [1] 1
## attr(,"response")
## [1] 1
## attr(,".Environment")
## <environment: R_GlobalEnv>
##
## attr(,"class")
## [1] "adonis"
```

```r
# Principal Coordinates Analysis
dataREL.dist <- vegdist(dataREL.v, method="bray")

pcoa <- cmdscale(dataREL.dist, k=3, eig=TRUE, add=FALSE)
  # Classical (Metric) Multidimensional Scaling; returns PCoA coordinates
  # eig=TRUE returns eigenvalues; k = # of dimensions to calculate

explainvar1b <- round(pcoa$eig[1] / sum(pcoa$eig), 3) * 100
explainvar2b <- round(pcoa$eig[2] / sum(pcoa$eig), 3) * 100
sum.eigb <- sum(explainvar1b, explainvar2b)

explainvar1b #31.7
```

```
## [1] 31.7
```

```r
explainvar2b #19.3
```

```
## [1] 19.3
```

```r
pcoa.groups <- paste(new.data.v$Diet, new.data.v$Species, sep = "_")
pcoa.points <- data.frame(pcoa$points, group = pcoa.groups)

# Calculate Centroids (mean and SE)
```

```r
pcoa.L.centroids <- melt(pcoa.points, id="group", measure.vars = c("X1", "X2"))
pcoa.centroids <- acast(pcoa.L.centroids, variable ~ group, mean)
pcoa.centroids.se <- acast(pcoa.L.centroids, variable ~ group, se)
pcoa.centroids.sd <- acast(pcoa.L.centroids, variable ~ group, sd)

# Combine
pcoa.cent.dataframe <- cbind(t(pcoa.centroids), t(pcoa.centroids.se))
colnames(pcoa.cent.dataframe) <- c("V1", "V2", "V1e", "V2e")
pcoa.cent.treats <- rownames(pcoa.cent.dataframe)

pcoa.col <- as.factor(sapply(strsplit(pcoa.cent.treats, "_"), `[`, 1))  # Diet

#Plot
df2a <- as.data.frame(pcoa.cent.dataframe)
plot1a <- ggplot(df2a, aes(x=V1, y=V2, colour=pcoa.col, shape=pcoa.col)) + theme_bw()
plot1a +
  theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank(), axis.line = element_lin
  theme(panel.background = element_blank()) +
  geom_errorbarh(aes(xmax=V1+V1e, xmin=V1-V1e, height=0.01), colour="black") +
  geom_errorbar(aes(ymax=V2+V2e, ymin=V2-V2e, width=0.01), colour="black") +
  geom_point(aes(colour=as.factor(pcoa.col)), size=5, stroke = 0.75, show.legend = TRUE) +
  scale_shape_manual(name = "Diet",
                     labels = c("detritus fed","egg fed"),
                     values = c(19, 17))+
  scale_colour_manual(name = "Diet",
                      labels = c("detritus fed","egg fed"),
                      values = c("darkgreen","darkorange")) +
  theme(axis.title = element_text(size=14), axis.text=element_text(size=14),
        axis.text.x = element_text(size=14),
        panel.border = element_rect(colour = "black", size=1.25)) +
  theme(axis.ticks.length=unit(0.3,"cm")) +
  xlab("PCoA 1 (31.7%)") + ylab("PCoA 2 (19.3%)") +
  ggtitle(label="Ranitomeya variabilis 16S rRNA Community Composition") +
  theme(plot.title = element_text(color="black", size=14, face="bold.italic"))
```

Ranitomeya variabilis 16S rRNA Community Composition
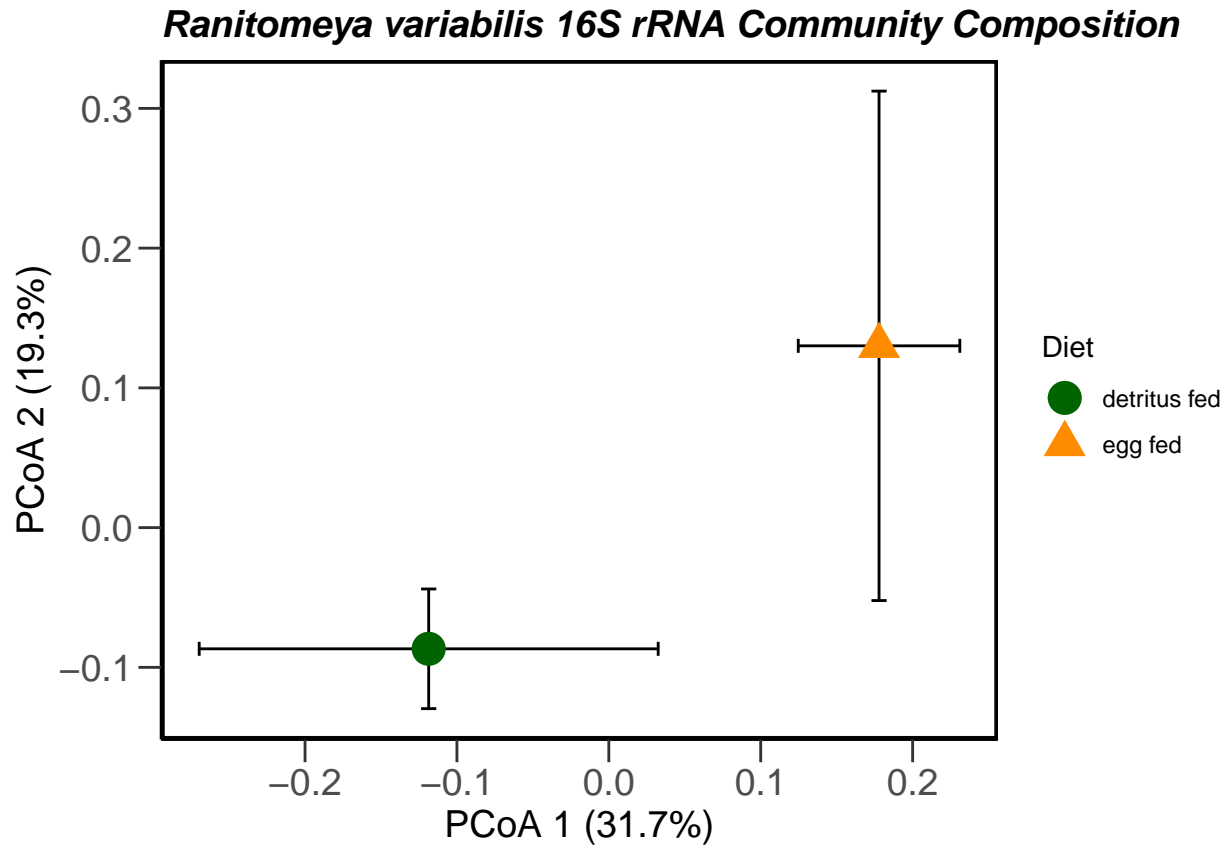
```
ggsave("../figures/Ordination_variabilis_diet.pdf", plot=last_plot(), device=NULL, path=NULL, scale=1,
ggsave("../figures/Ordination_variabilis_diet.png", plot=last_plot(), device=NULL, path=NULL, scale=1,
```

Bacterial community indicator species analysis - R. variabilis diet

```
library("labdsv")

dataREL <- dataREL.v[, colSums(dataREL.v) > 0.05]
design.type <- new.data.v$Diet
bac.ind <- indval(dataREL, design.type)
levels(design.type)
```

```
## NULL
```

```
summary(bac.ind)
```

```
##         cluster indicator_value probability
## Otu0005       1          0.7494       0.006
##
## Sum of probabilities                =  13.548
##
```

```
## Sum of Indicator Values              =  21.55
##
## Sum of Significant Indicator Values  =  0.75
##
## Number of Significant Indicators     =  1
##
## Significant Indicator Distribution
##
## 1
## 1
```

```
inds <- which(bac.ind$pval <= 0.05)
bac.indicators <- as.data.frame(matrix(NA, nrow = length(inds), ncol = 4))
colnames(bac.indicators) <- c("OTU", "Cluster", "IndVal", "Prob")

bac.indicators$OTU <- names(inds)
bac.indicators$Cluster <- bac.ind$maxcls[inds]
bac.indicators$IndVal <- bac.ind$indcls[inds]
bac.indicators$Prob <- bac.ind$pval[inds]

ind.tax <- tadpole.tax[which(as.character(tadpole.tax$OTU) %in% bac.indicators$OTU), ]
ind.tax <- ind.tax[match(ind.tax$OTU, bac.indicators$OTU), ]

indicator.bac <- cbind(bac.indicators, ind.tax[, -c(1)])

indicator.bac <- indicator.bac[order(as.numeric(indicator.bac$Cluster)), ]

table(indicator.bac$Cluster)
```

```
##
## 1
## 1
```

```
table(indicator.bac$Phylum)
```

```
##
## Bacteroidetes
##             1
```

```
table(indicator.bac$Cluster)
```

```
##
## 1
## 1
```

```
levels(design.type)
```

```
## NULL
```

```r
# Export Bacteria Indicator Table
write.table(indicator.bac, "../data/BacterialIndicators_variabilis_diet.txt",
            sep="\t", row.names = F, quote = F)
```

Diversity Metrics - Hypothesis Testing

```r
# Rarefy Abundances (min abundance is 13520. We are sampling to 13500)
min(rowSums(otu))
```

```
## [1] 13520
```

```r
otus.r <- rrarefy(otu, 13500)

# Fisher's Alpha
fisher <- fisher.alpha(otus.r)

# Species Richness
#richness <- rowSums((PWESdata.r >= 1))
richness <- rowSums((otu >= 1))

# Shannon Diversity
shannon <- diversity(otus.r, "shannon")

# Simpson's Evenness
simp.even <- apply(otus.r, 1, simp_even)

#Pielou's evenness
J <- shannon/log(specnumber(otus.r[,-c(1:1)]))

#combined richness, diversity, evenness
diversity <- cbind(design.final,richness,shannon,simp.even,J)
#write.csv(diversity,"../data/diversity.bact.raw.csv")
```

Diversity Metrics - Hypothesis Testing - by species

```r
#summary table for bacterial diversity
summary <- diversity %>% group_by(Species, Diet) %>% summarise(mean.richness=mean(richness), se.richnes
```

```
## `summarise()` has grouped output by 'Species'. You can override using the
## `.groups` argument.
```

```r
print(summary)
```

```
## # A tibble: 4 x 6
## # Groups:   Species [2]
##   Species    Diet     mean.richness se.richness mean.shannon se.shannon
```

```
##   <chr>       <chr>         <dbl>    <dbl>    <dbl>    <dbl>
## 1 imitator    detritus      1091.     74.9     4.36    0.213
## 2 imitator    egg fed       1208.    435.      5.12    0.485
## 3 variabilis  detritus       851.    130.      4.13    0.298
## 4 variabilis  egg fed        548      17.0      3.35    0.199
```

```r
write.csv(summary,"../data/diversity.bact.summary.csv")

#diversity <- read.csv("../data/diversity.bact.summary.csv", row.names=1)

library(lmerTest)
```

```
## Loading required package: lme4
## Loading required package: Matrix
##
## Attaching package: 'Matrix'
##
## The following objects are masked from 'package:tidyr':
##
##     expand, pack, unpack
##
## The following object is masked from 'package:reshape':
##
##     expand
##
##
## Attaching package: 'lme4'
##
## The following object is masked from 'package:labdsv':
##
##     factorize
##
## The following object is masked from 'package:nlme':
##
##     lmList
##
##
## Attaching package: 'lmerTest'
##
## The following object is masked from 'package:lme4':
##
##     lmer
##
## The following object is masked from 'package:stats':
##
##     step
```

```r
# R. imitator
diversity.i <- subset(diversity, Species == "imitator")
richness.lm.i <- lm(richness ~ Diet, data = diversity.i)
richness.lm.i
```

```
##
```

```
## Call:
## lm(formula = richness ~ Diet, data = diversity.i)
##
## Coefficients:
## (Intercept)  Dietegg fed
##      1091.2        117.1
```

```
summary(richness.lm.i)
```

```
##
## Call:
## lm(formula = richness ~ Diet, data = diversity.i)
##
## Residuals:
## RiNEW021 RiNEW024 RiWAS001 RiNEW008 RiNEW006 RiNEW025 RiNEW023
##   112.75    64.75   867.67  -391.33  -476.33  -220.25    42.75
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1091.2      245.0   4.455  0.00667 **
## Dietegg fed     117.1      374.2   0.313  0.76699
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 489.9 on 5 degrees of freedom
## Multiple R-squared:  0.01921,    Adjusted R-squared:  -0.177
## F-statistic: 0.09791 on 1 and 5 DF,  p-value: 0.767
```

```
evenness.lm.i <- lm(simp.even ~ Diet, data = diversity.i)
evenness.lm.i
```

```
##
## Call:
## lm(formula = simp.even ~ Diet, data = diversity.i)
##
## Coefficients:
## (Intercept)  Dietegg fed
##      0.02710      0.01988
```

```
summary(evenness.lm.i)
```

```
##
## Call:
## lm(formula = simp.even ~ Diet, data = diversity.i)
##
## Residuals:
##    RiNEW021    RiNEW024    RiWAS001    RiNEW008    RiNEW006    RiNEW025    RiNEW023
## -0.0164146 -0.0091182  0.0002296 -0.0150915  0.0148619  0.0226816  0.0028512
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 0.027103   0.008136   3.331   0.0207 *
```

```
## Dietegg fed 0.019885   0.012428    1.600    0.1705
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.01627 on 5 degrees of freedom
## Multiple R-squared:  0.3386, Adjusted R-squared:  0.2064
## F-statistic:  2.56 on 1 and 5 DF,  p-value: 0.1705
```

```
shannon.lm.i <- lm(shannon ~ Diet, data = diversity.i)
shannon.lm.i
```

```
##
## Call:
## lm(formula = shannon ~ Diet, data = diversity.i)
##
## Coefficients:
## (Intercept)  Dietegg fed
##      4.3632       0.7608
```

```
summary(shannon.lm.i)
```

```
##
## Call:
## lm(formula = shannon ~ Diet, data = diversity.i)
##
## Residuals:
## RiNEW021 RiNEW024 RiWAS001 RiNEW008 RiNEW006 RiNEW025 RiNEW023
## -0.59053 -0.03044  0.92103 -0.72362 -0.19741  0.27734  0.34363
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)   4.3632     0.3127  13.953  3.4e-05 ***
## Dietegg fed   0.7608     0.4776   1.593    0.172
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6254 on 5 degrees of freedom
## Multiple R-squared:  0.3366, Adjusted R-squared:  0.2039
## F-statistic: 2.537 on 1 and 5 DF,  p-value: 0.1721
```

```
# R. variabilis
diversity.v <- subset(diversity, Species == "variabilis")
richness.lm.v <- lm(richness ~ Diet, data = diversity.v)
richness.lm.v
```

```
##
## Call:
## lm(formula = richness ~ Diet, data = diversity.v)
##
## Coefficients:
## (Intercept)  Dietegg fed
##       851.3       -303.3
```

```
summary(richness.lm.v)
```

```
## 
## Call:
## lm(formula = richness ~ Diet, data = diversity.v)
## 
## Residuals:
##     Min      1Q  Median      3Q     Max
## -456.33  -56.00    4.50   31.92  507.67
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)    851.3      103.2   8.248  3.5e-05 ***
## Dietegg fed   -303.3      163.2  -1.859      0.1
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## Residual standard error: 252.8 on 8 degrees of freedom
## Multiple R-squared:  0.3016, Adjusted R-squared:  0.2143
## F-statistic: 3.454 on 1 and 8 DF,  p-value: 0.1001
```

```
evenness.lm.v <- lm(simp.even ~ Diet, data = diversity.v)
evenness.lm.v
```

```
## 
## Call:
## lm(formula = simp.even ~ Diet, data = diversity.v)
## 
## Coefficients:
## (Intercept)  Dietegg fed
##     0.03702     -0.01862
```

```
summary(evenness.lm.v)
```

```
## 
## Call:
## lm(formula = simp.even ~ Diet, data = diversity.v)
## 
## Residuals:
##        Min        1Q     Median        3Q       Max
## -0.028373 -0.021485 -0.001980  0.008714  0.068610
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.03702    0.01242   2.979   0.0176 *
## Dietegg fed -0.01862    0.01964  -0.948   0.3709
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## Residual standard error: 0.03043 on 8 degrees of freedom
## Multiple R-squared:  0.101,  Adjusted R-squared:  -0.0114
## F-statistic: 0.8986 on 1 and 8 DF,  p-value: 0.3709
```

```
shannon.lm.v <- lm(shannon ~ Diet, data = diversity.v)
shannon.lm.v
```

```
##
## Call:
## lm(formula = shannon ~ Diet, data = diversity.v)
##
## Coefficients:
## (Intercept)  Dietegg fed
##      4.1325      -0.7779
```

```
summary(shannon.lm.v)
```

```
##
## Call:
## lm(formula = shannon ~ Diet, data = diversity.v)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.89379 -0.38439 -0.04393  0.27838  1.03572
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)     4.1325     0.2558  16.155 2.17e-07 ***
## Dietegg fed    -0.7779     0.4044  -1.923   0.0907 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6266 on 8 degrees of freedom
## Multiple R-squared:  0.3162, Adjusted R-squared:  0.2307
## F-statistic: 3.699 on 1 and 8 DF,  p-value: 0.09065
```

#Plot shannon diversity

```
# Graphing Shannon Diversity
spp.labs <- c("Ranitomeya imitator", "Ranitomeya variabilis") #for facet labels
names(spp.labs) <- c("imitator", "variabilis")

p <- ggplot(diversity, aes(x=Diet, y=shannon, color=as.factor(Diet), shape=as.factor(Diet)))+ geom_boxpl
  geom_point(aes(color=factor(Diet)), size=2, position = position_jitterdodge()) +
  scale_shape_manual(name = "Diet",
                     labels = c("detritus fed","egg fed"),
                     values = c(19, 17))+
  scale_colour_manual(name = "Diet",
                      labels = c("detritus fed","egg fed"),
                      values = c("darkgreen","darkorange")) +
  stat_summary(fun.data=mean_cl_boot,size=0.75)
p1<-p+facet_wrap(~Species)+facet_grid(. ~ Species,labeller = labeller(Species=spp.labs)) + theme(strip.
p1 + theme_bw() +
    theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank(), axis.line
          =element_line(colour = "black")) +
    theme(axis.title=element_text(vjust=1,size=14,face="bold"),
```

```
        axis.text=element_text(size=14), axis.text.x = element_text(vjust=0.65, hjust=0.5,
        size=14), panel.border = element_rect(colour = "black",size=1)) +
    theme(axis.ticks.length=unit(0.3,"cm")) + labs(x = "Diet", y = "Shannon Diversity Index (H')") +
    theme(strip.text.x = element_text(size=14, face="italic"), strip.text.y =
        element_text(size=14, face="bold"), strip.background = element_rect(colour="black",
        fill="white", size=1)) +
        scale_x_discrete(breaks=c("detritus", "egg fed"), labels=c("detritus fed", "egg fed"))
```

```
## Warning: Computation failed in 'stat_summary()':
##
## Computation failed in 'stat_summary()':
```
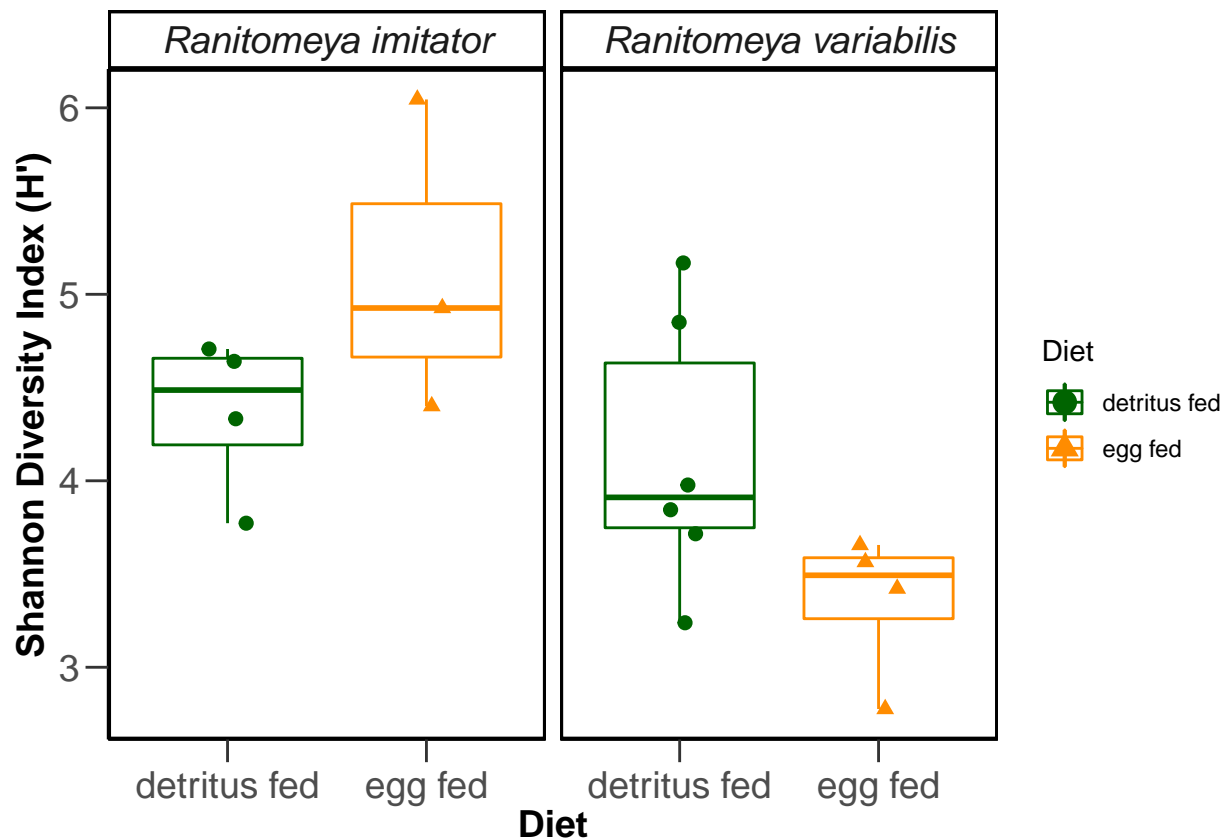


```
ggsave("../figures/shannon.pdf", plot=last_plot(), device=NULL, path=NULL, scale=1, width=7, height=5,
```

```
## Warning: Computation failed in 'stat_summary()':
##
## Computation failed in 'stat_summary()':
```

```
ggsave("../figures/shannon.png", plot=last_plot(), device=NULL, path=NULL, scale=1, width=7, height=5,
```

```
## Warning: Computation failed in 'stat_summary()':
##
## Computation failed in 'stat_summary()':
```
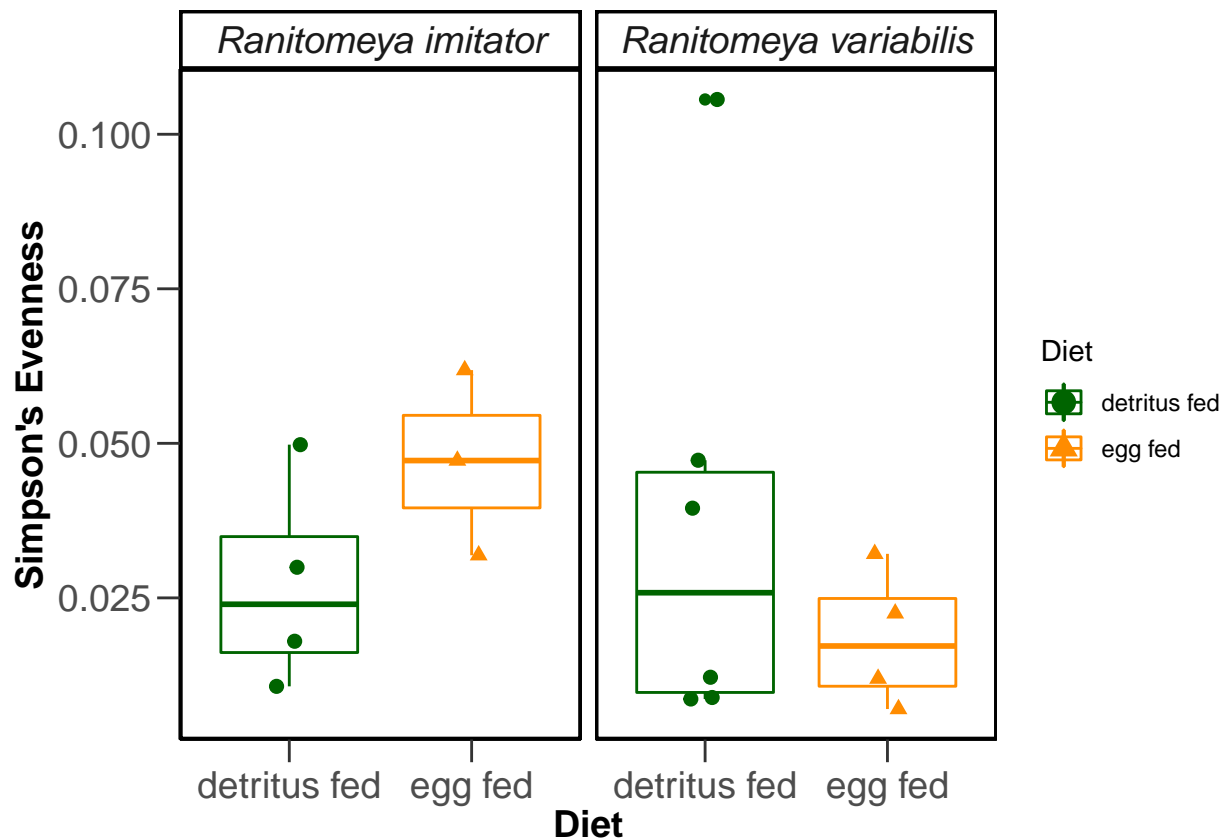
#Plot Evenness

```r
# Graphing Simpson's Evenness
p <- ggplot(diversity, aes(x=Diet, y=simp.even, color=as.factor(Diet), shape=as.factor(Diet)))+ geom_box
  geom_point(aes(color=factor(Diet)), size=2, position = position_jitterdodge()) +
  scale_shape_manual(name = "Diet",
                     labels = c("detritus fed","egg fed"),
                     values = c(19, 17)) +
  scale_colour_manual(name = "Diet",
                      labels = c("detritus fed","egg fed"),
                      values = c("darkgreen","darkorange")) +
  stat_summary(fun.data=mean_cl_boot,size=0.75)
p1<-p+facet_wrap(~Species)+facet_grid(. ~ Species,labeller = labeller(Species=spp.labs)) + theme(strip.
p1 + theme_bw() +
    theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank(), axis.line
          =element_line(colour = "black")) +
    theme(axis.title=element_text(vjust=1,size=14,face="bold"),
          axis.text=element_text(size=14), axis.text.x = element_text(vjust=0.65, hjust=0.5,
          size=14), panel.border = element_rect(colour = "black",size=1)) +
    theme(axis.ticks.length=unit(0.3,"cm")) + labs(x = "Diet", y = "Simpson's Evenness") +
    theme(strip.text.x = element_text(size=14, face="italic"), strip.text.y =
          element_text(size=14, face="bold"), strip.background = element_rect(colour="black",
          fill="white", size=1)) +
          scale_x_discrete(breaks=c("detritus", "egg fed"), labels=c("detritus fed", "egg fed"))
```

```
## Warning: Computation failed in 'stat_summary()':
##
## Computation failed in 'stat_summary()':
```

```
ggsave("../figures/simp.even.pdf", plot=last_plot(), device=NULL, path=NULL, scale=1, width=7, height=5
```

```
## Warning: Computation failed in `stat_summary()`:
##
## Computation failed in `stat_summary()`:
```

```
ggsave("../figures/simp.even.png", plot=last_plot(), device=NULL, path=NULL, scale=1, width=7, height=5
```

```
## Warning: Computation failed in `stat_summary()`:
##
## Computation failed in `stat_summary()`:
```

#Plot Richness

```
# Graphing Richness
p <- ggplot(diversity, aes(x=Diet, y=richness, color=as.factor(Diet), shape=as.factor(Diet)))+ geom_boxp
  geom_point(aes(color=factor(Diet)), size=2, position = position_jitterdodge()) +
  scale_shape_manual(name = "Diet",
                labels = c("detritus fed","egg fed"),
                values = c(19, 17)) +
  scale_colour_manual(name = "Diet",
                labels = c("detritus fed","egg fed"),
                values = c("darkgreen","darkorange")) +
  stat_summary(fun.data=mean_cl_boot,size=0.75)
```

```
p1=p+facet_wrap(~Species)+facet_grid(. ~ Species,labeller = labeller(Species=spp.labs))
p1 + theme_bw() +
    theme(panel.grid.major = element_blank(), panel.grid.minor = element_blank(), axis.line
        =element_line(colour = "black")) +
    theme(axis.title=element_text(vjust=1,size=14,face="bold"),
        axis.text=element_text(size=14), axis.text.x = element_text(vjust=0.65, hjust=0.5,
        size=14), panel.border = element_rect(colour = "black",size=1)) +
    theme(axis.ticks.length=unit(0.3,"cm")) + labs(x = "Diet", y = "OTU Richness") +
    theme(strip.text.x = element_text(size=14, face="italic"), strip.text.y =
        element_text(size=14, face="bold"), strip.background = element_rect(colour="black",
        fill="white", size=1)) +
        scale_x_discrete(breaks=c("detritus", "egg fed"), labels=c("detritus fed", "egg fed"))
```

```
## Warning: Computation failed in `stat_summary()`:
##
## Computation failed in `stat_summary()`:
```
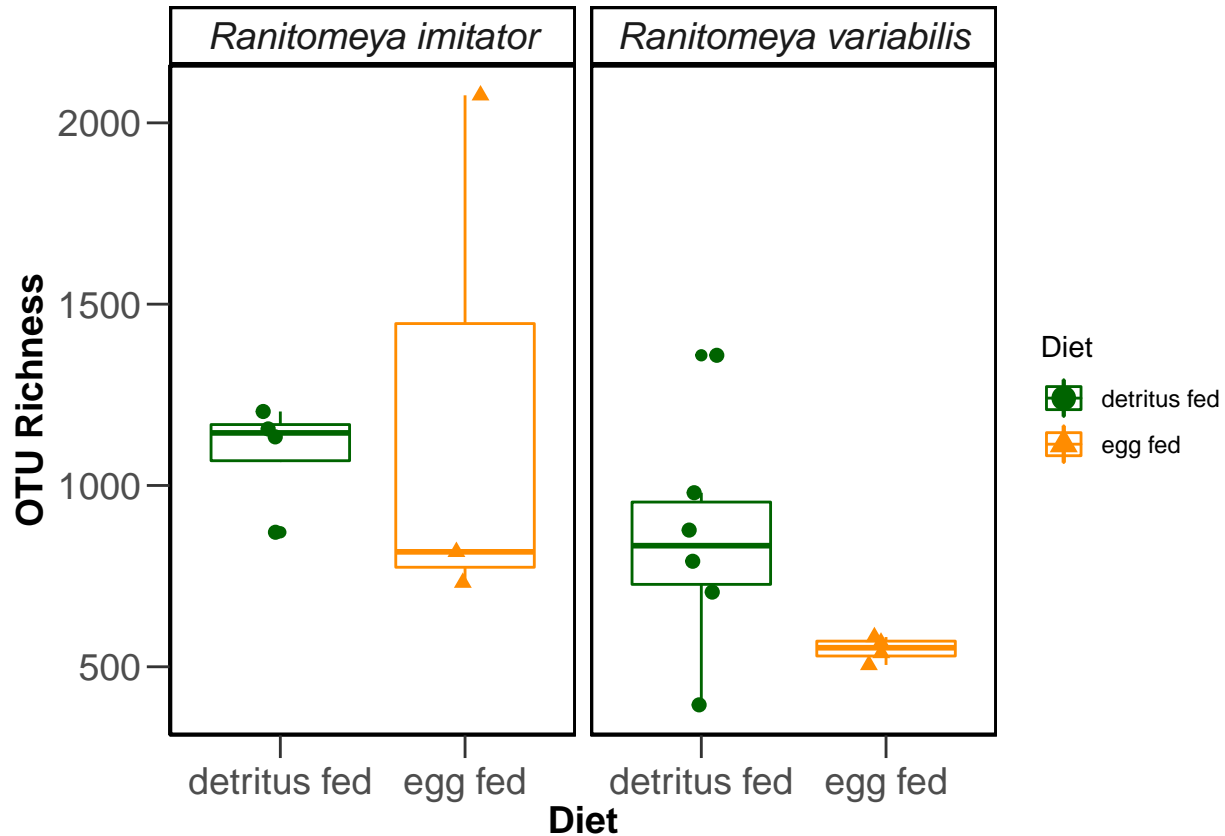


```
ggsave("../figures/richness.pdf", plot=last_plot(), device=NULL, path=NULL, scale=1, width=7, height=5,
```

```
## Warning: Computation failed in `stat_summary()`:
##
## Computation failed in `stat_summary()`:
```

```
ggsave("../figures/richness.png", plot=last_plot(), device=NULL, path=NULL, scale=1, width=7, height=5,
```

```
## Warning: Computation failed in 'stat_summary()':
##
## Computation failed in 'stat_summary()':
```

Bacterial community composition analysis - Species x Diet

Bacterial community indicator species analysis - Species x Diet