secondary anova

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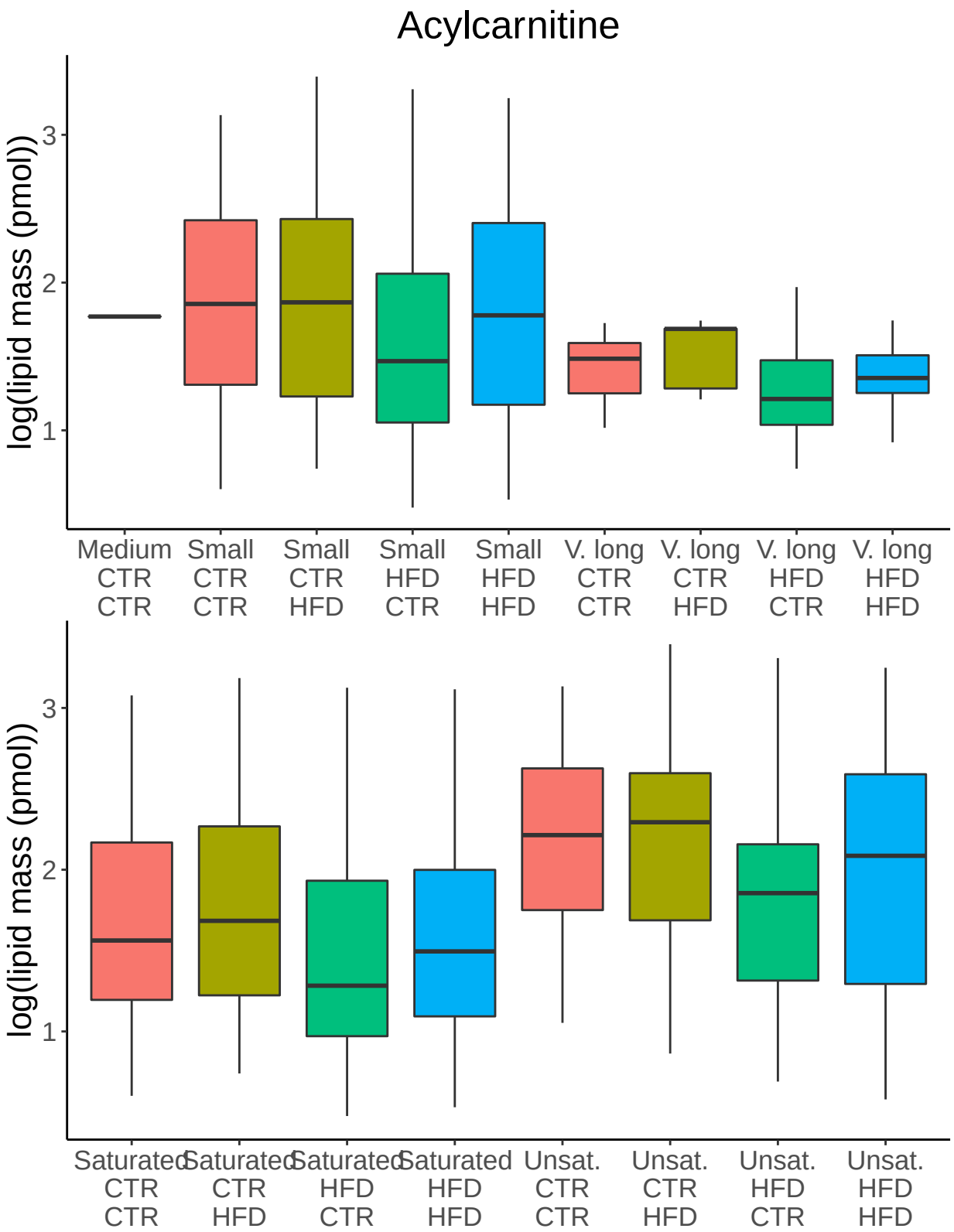
Acylcarnitine




```
## Analysis of Variance Table
```

```
##
## Response: acchain$value
##                                                Df  Sum Sq Mean Sq
## acchain$M_Diet                                  1   4.096  4.0958
## acchain$PW_Diet                                 1   0.940  0.9397
## acchain$variable                                2   4.127  2.0633
## acchain$M_Diet:acchain$PW_Diet                  1   0.558  0.5579
## acchain$M_Diet:acchain$variable                 1   0.044  0.0440
## acchain$PW_Diet:acchain$variable                1   0.001  0.0012
## acchain$M_Diet:acchain$PW_Diet:acchain$variable 1   0.062  0.0624
## Residuals                                     339 153.594  0.4531
##                                               F value   Pr(>F)
## acchain$M_Diet                                 9.0399 0.002839 **
## acchain$PW_Diet                                2.0741 0.150744
## acchain$variable                               4.5538 0.011179 *
## acchain$M_Diet:acchain$PW_Diet                 1.2314 0.267924
## acchain$M_Diet:acchain$variable                0.0970 0.755595
## acchain$PW_Diet:acchain$variable               0.0027 0.958248
## acchain$M_Diet:acchain$PW_Diet:acchain$variable 0.1378 0.710696
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: acchain$value
##                                                 Df  Sum Sq Mean Sq
## acchain$M_Diet                                   1   4.096  4.0958
## acchain$PW_Diet                                  1   0.940  0.9397
## acchain$Saturated                                1  13.125 13.1248
## acchain$M_Diet:acchain$PW_Diet                   1   0.551  0.5508
## acchain$M_Diet:acchain$Saturated                 1   0.089  0.0886
## acchain$PW_Diet:acchain$Saturated                1   0.020  0.0199
## acchain$M_Diet:acchain$PW_Diet:acchain$Saturated 1   0.127  0.1272
## Residuals                                      340 144.475  0.4249
##                                                F value    Pr(>F)
## acchain$M_Diet                                  9.6388  0.002065 **
## acchain$PW_Diet                                 2.2115  0.137913
## acchain$Saturated                              30.8871 5.533e-08 ***
## acchain$M_Diet:acchain$PW_Diet                  1.2961  0.255724
## acchain$M_Diet:acchain$Saturated                0.2085  0.648227
## acchain$PW_Diet:acchain$Saturated               0.0468  0.828823
## acchain$M_Diet:acchain$PW_Diet:acchain$Saturated 0.2994  0.584603
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = acchain$value ~ acchain$combinations)
##
## $`acchain$combinations`
##                                       diff        lwr         upr     p adj
## CTR.CTR.small-CTR.CTR.medium  0.126253664 -1.9872219 2.239729232 1.0000000
```

```
## CTR.CTR.vlong-CTR.CTR.medium -0.350479000 -2.5793852 1.878427153 0.9999118
## CTR.HFD.small-CTR.CTR.medium  0.130960867 -1.9894899 2.251411620 0.9999999
## CTR.HFD.vlong-CTR.CTR.medium -0.248173974 -2.5501784 2.053830403 0.9999952
## HFD.CTR.small-CTR.CTR.medium -0.178901309 -2.2909208 1.933118195 0.9999993
## HFD.CTR.vlong-CTR.CTR.medium -0.492089799 -2.7071945 1.723014945 0.9988488
## HFD.HFD.small-CTR.CTR.medium  0.006682883 -2.1083516 2.121717406 1.0000000
## HFD.HFD.vlong-CTR.CTR.medium -0.407517476 -2.6540437 1.839008763 0.9997409
## CTR.CTR.vlong-CTR.CTR.small  -0.476732664 -1.2531097 0.299644414 0.6024096
## CTR.HFD.small-CTR.CTR.small   0.004707203 -0.3573013 0.366715665 1.0000000
## CTR.HFD.vlong-CTR.CTR.small  -0.374427638 -1.3408452 0.591989910 0.9540730
## HFD.CTR.small-CTR.CTR.small  -0.305154974 -0.6139674 0.003657455 0.0556215
## HFD.CTR.vlong-CTR.CTR.small  -0.618343463 -1.3541612 0.117474283 0.1807512
## HFD.HFD.small-CTR.CTR.small  -0.119570782 -0.4483713 0.209229709 0.9684487
## HFD.HFD.vlong-CTR.CTR.small  -0.533771140 -1.3593733 0.291830985 0.5315689
## CTR.HFD.small-CTR.CTR.vlong   0.481439866 -0.3137292 1.276608899 0.6210042
## CTR.HFD.vlong-CTR.CTR.vlong   0.102305026 -1.0956960 1.300306086 0.9999992
## HFD.CTR.small-CTR.CTR.vlong   0.171577690 -0.6008269 0.943982234 0.9988494
## HFD.CTR.vlong-CTR.CTR.vlong  -0.141610799 -1.1627236 0.879502034 0.9999663
## HFD.HFD.small-CTR.CTR.vlong   0.357161882 -0.4234490 1.137772814 0.8862419
## HFD.HFD.vlong-CTR.CTR.vlong  -0.057038476 -1.1446333 1.030556362 1.0000000
## CTR.HFD.vlong-CTR.HFD.small  -0.379134840 -1.3607128 0.602443124 0.9548859
## HFD.CTR.small-CTR.HFD.small  -0.309862176 -0.6632706 0.043546283 0.1388722
## HFD.CTR.vlong-CTR.HFD.small  -0.623050666 -1.3786697 0.132568404 0.2014684
## HFD.HFD.small-CTR.HFD.small  -0.124277984 -0.4952796 0.246723614 0.9810120
## HFD.HFD.vlong-CTR.HFD.small  -0.538478343 -1.3817762 0.304819524 0.5489963
## HFD.CTR.small-CTR.HFD.vlong   0.069272664 -0.8939564 1.032501759 0.9999998
## HFD.CTR.vlong-CTR.HFD.vlong  -0.243915825 -1.4160391 0.928207431 0.9992843
## HFD.HFD.small-CTR.HFD.vlong   0.254856856 -0.7149653 1.224678972 0.9962150
## HFD.HFD.vlong-CTR.HFD.vlong  -0.159343502 -1.3898166 1.071129595 0.9999801
## HFD.CTR.vlong-HFD.CTR.small  -0.313188489 -1.0448135 0.418436528 0.9196993
## HFD.HFD.small-HFD.CTR.small   0.185584192 -0.1337231 0.504891528 0.6725655
## HFD.HFD.vlong-HFD.CTR.small  -0.228616167 -1.0504837 0.593251390 0.9944053
## HFD.HFD.small-HFD.CTR.vlong   0.498772681 -0.2415109 1.239056285 0.4726857
## HFD.HFD.vlong-HFD.CTR.vlong   0.084572323 -0.9744503 1.143594948 0.9999995
## HFD.HFD.vlong-HFD.HFD.small  -0.414200359 -1.2437852 0.415384434 0.8263059
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = acchain$value ~ acchain$satcombinations)
##
## $`acchain$satcombinations`
##                                                 diff         lwr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    0.49794588  0.06750316
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.05612581 -0.34459456
## CTR.HFD.Unsaturated-CTR.CTR.Saturated    0.42816076 -0.08114594
## HFD.CTR.Saturated-CTR.CTR.Saturated     -0.24550510 -0.58705798
## HFD.CTR.Unsaturated-CTR.CTR.Saturated    0.11832263 -0.29587108
## HFD.HFD.Saturated-CTR.CTR.Saturated     -0.08176983 -0.44556033
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    0.32235169 -0.12812222
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   -0.44182008 -0.91334646
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -0.06978512 -0.63648931
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   -0.74345098 -1.16584734
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.37962326 -0.86265197
```

```
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   -0.57971571 -1.02028789
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -0.17559419 -0.69007165
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    0.37203495 -0.17243682
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.30163090 -0.69369539
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.06219682 -0.39454448
## HFD.HFD.Saturated-CTR.HFD.Saturated     -0.13789563 -0.54947760
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.26622589 -0.22365465
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   -0.67366586 -1.17619054
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated -0.30983813 -0.86430104
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   -0.50993059 -1.02782654
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated -0.10580907 -0.68787387
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    0.36382772 -0.04199757
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.16373527 -0.19049809
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    0.56785679  0.12506509
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   -0.20009245 -0.62480333
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.20402907 -0.29693256
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.40412152 -0.05604111
##                                                 upr     p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    0.92838861 0.0111024
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.45684618 0.9998802
## CTR.HFD.Unsaturated-CTR.CTR.Saturated    0.93746746 0.1729778
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.09604778 0.3590256
## HFD.CTR.Unsaturated-CTR.CTR.Saturated    0.53251633 0.9883860
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.28202068 0.9973362
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    0.77282560 0.3649916
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.02970631 0.0847329
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated  0.49691906 0.9999499
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   -0.32105462 0.0000041
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated  0.10340546 0.2461429
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   -0.13914353 0.0018725
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.33888327 0.9677976
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    0.91650672 0.4274159
## HFD.CTR.Saturated-CTR.HFD.Saturated      0.09043358 0.2717488
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.51893812 0.9999009
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.27368634 0.9709376
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.75610642 0.7146297
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   -0.17114117 0.0013898
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.24462478 0.6844996
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.00796537 0.0571146
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.47625574 0.9993220
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    0.76965302 0.1159912
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.51796863 0.8524304
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    1.01064849 0.0027753
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.22461843 0.8394893
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.70499069 0.9186637
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.86428415 0.1327962
```

Ceramides

```
## Analysis of Variance Table
##
## Response: cerchain$value
```

```
##                                  Df Sum Sq Mean Sq F value  Pr(>F)
## cerchain$M_Diet                   1  0.092 0.09169  0.2368 0.62697
## cerchain$PW_Diet                  1  0.357 0.35726  0.9226 0.33770
## cerchain$variable                 1  1.239 1.23890  3.1993 0.07485 .
## cerchain$M_Diet:cerchain$PW_Diet  1  0.041 0.04059  0.1048 0.74639
## Residuals                       256 99.132 0.38723
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: cerchain$value
##                                                    Df Sum Sq Mean Sq
## cerchain$M_Diet                                     1  0.092 0.09169
## cerchain$PW_Diet                                    1  0.357 0.35726
## cerchain$Saturated                                  1  3.081 3.08100
## cerchain$M_Diet:cerchain$PW_Diet                    1  0.020 0.01956
## cerchain$M_Diet:cerchain$Saturated                  1  0.004 0.00407
## cerchain$PW_Diet:cerchain$Saturated                 1  1.458 1.45846
## cerchain$M_Diet:cerchain$PW_Diet:cerchain$Saturated 1  0.028 0.02790
## Residuals                                         253 95.821 0.37874
##                                                   F value   Pr(>F)
## cerchain$M_Diet                                    0.2421 0.623133
## cerchain$PW_Diet                                   0.9433 0.332362
## cerchain$Saturated                                 8.1349 0.004701 **
## cerchain$M_Diet:cerchain$PW_Diet                   0.0517 0.820390
## cerchain$M_Diet:cerchain$Saturated                 0.0107 0.917505
## cerchain$PW_Diet:cerchain$Saturated                3.8508 0.050817 .
## cerchain$M_Diet:cerchain$PW_Diet:cerchain$Saturated 0.0737 0.786303
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = cerchain$value ~ cerchain$combinations)
##
## $`cerchain$combinations`
##                                       diff        lwr       upr     p adj
## CTR.CTR.small-CTR.CTR.medium  1.13033929 -0.5912656 2.8519442 0.3736145
## CTR.HFD.small-CTR.CTR.medium  1.01949895 -0.7089998 2.7479977 0.4857030
## HFD.CTR.small-CTR.CTR.medium  1.14183828 -0.5782900 2.8619665 0.3621670
## HFD.HFD.small-CTR.CTR.medium  1.08217319 -0.6409492 2.8052956 0.4202000
## CTR.HFD.small-CTR.CTR.small  -0.11084034 -0.4365945 0.2149138 0.8831279
## HFD.CTR.small-CTR.CTR.small   0.01149899 -0.2664381 0.2894361 0.9999621
## HFD.HFD.small-CTR.CTR.small  -0.04816610 -0.3440691 0.2477369 0.9916876
## HFD.CTR.small-CTR.HFD.small   0.12233933 -0.1955185 0.4401972 0.8280387
## HFD.HFD.small-CTR.HFD.small   0.06267424 -0.2710070 0.3963555 0.9857112
## HFD.HFD.small-HFD.CTR.small  -0.05966510 -0.3468522 0.2275220 0.9791924
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = cerchain$value ~ cerchain$satcombinations)
```

```
##
## $`cerchain$satcombinations`
##                                                 diff         lwr       upr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   -0.088183434 -0.62140018 0.4450333
## CTR.HFD.Saturated-CTR.CTR.Saturated     -0.001185229 -0.40649232 0.4041219
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   -0.512170464 -1.15792802 0.1335871
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.036381106 -0.30908125 0.3818435
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   -0.093125638 -0.60278163 0.4165304
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.048027896 -0.31992662 0.4159824
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   -0.402382334 -0.96444214 0.1596775
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.086998206 -0.48065437 0.6546508
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -0.423987029 -1.18224716 0.3342731
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.124564540 -0.40202814 0.6511572
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.004942204 -0.65124309 0.6413587
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.136211330 -0.40540305 0.6778257
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -0.314198899 -1.00257876 0.3741810
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -0.510985235 -1.18545700 0.1634865
## HFD.CTR.Saturated-CTR.HFD.Saturated      0.037566334 -0.35898579 0.4341185
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   -0.091940410 -0.63752136 0.4536405
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.049213125 -0.36707989 0.4655061
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   -0.401197105 -0.99602529 0.1936311
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.548551569 -0.09174724 1.1888504
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.419044825 -0.32283627 1.1609259
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.560198360 -0.09251050 1.2129072
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.109788130 -0.66902478 0.8886010
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   -0.129506744 -0.63222832 0.3732148
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.011646790 -0.34664119 0.3699348
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   -0.438763439 -0.99454305 0.1170162
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.141153534 -0.37728187 0.6595889
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated -0.309256695 -0.97955213 0.3610387
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   -0.450410229 -1.02044291 0.1196225
##                                                 p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   0.9996285
## CTR.HFD.Saturated-CTR.CTR.Saturated     1.0000000
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   0.2342477
## HFD.CTR.Saturated-CTR.CTR.Saturated     0.9999824
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   0.9992836
## HFD.HFD.Saturated-CTR.CTR.Saturated     0.9999239
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   0.3624316
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   0.9997761
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated 0.6813966
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   0.9962541
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated 1.0000000
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   0.9945234
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated 0.8589235
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   0.2892143
## HFD.CTR.Saturated-CTR.HFD.Saturated     0.9999915
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   0.9995793
## HFD.HFD.Saturated-CTR.HFD.Saturated     0.9999611
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   0.4428572
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   0.1541303
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated 0.6699912
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   0.1524617
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated 0.9998721
```

```
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   0.9936532
## HFD.HFD.Saturated-HFD.CTR.Saturated     1.0000000
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   0.2395993
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   0.9911224
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated 0.8519812
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   0.2385853
```

DGs 1.2

```
## Analysis of Variance Table
##
## Response: DGs1.2chain$value
##                                      Df Sum Sq Mean Sq F value Pr(>F)
## DGs1.2chain$M_Diet                    1   0.44  0.4380  0.6786 0.4104
## DGs1.2chain$PW_Diet                   1   3.26  3.2620  5.0531 0.0249 *
## DGs1.2chain$variable                  1   0.00  0.0007  0.0010 0.9742
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet   1   1.24  1.2446  1.9280 0.1654
## Residuals                           691 446.08  0.6456
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: DGs1.2chain$value
##                                                                 Df Sum Sq
## DGs1.2chain$M_Diet                                               1   0.44
## DGs1.2chain$PW_Diet                                              1   3.26
## DGs1.2chain$Saturated                                            1   0.41
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet                           1   1.24
## DGs1.2chain$M_Diet:DGs1.2chain$Saturated                         1   0.00
## DGs1.2chain$PW_Diet:DGs1.2chain$Saturated                        1   0.43
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet:DGs1.2chain$Saturated     1   0.01
## Residuals                                                      688 445.23
##                                                                Mean Sq
## DGs1.2chain$M_Diet                                              0.4380
## DGs1.2chain$PW_Diet                                             3.2620
## DGs1.2chain$Saturated                                           0.4126
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet                          1.2413
## DGs1.2chain$M_Diet:DGs1.2chain$Saturated                        0.0047
## DGs1.2chain$PW_Diet:DGs1.2chain$Saturated                       0.4282
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet:DGs1.2chain$Saturated    0.0091
## Residuals                                                       0.6471
##                                                                F value
## DGs1.2chain$M_Diet                                              0.6769
## DGs1.2chain$PW_Diet                                             5.0407
## DGs1.2chain$Saturated                                           0.6376
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet                          1.9181
## DGs1.2chain$M_Diet:DGs1.2chain$Saturated                        0.0073
## DGs1.2chain$PW_Diet:DGs1.2chain$Saturated                       0.6617
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet:DGs1.2chain$Saturated    0.0140
## Residuals
##                                                                 Pr(>F)
## DGs1.2chain$M_Diet                                             0.41094
```

```
## DGs1.2chain$PW_Diet                                          0.02507 *
## DGs1.2chain$Saturated                                        0.42486
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet                       0.16651
## DGs1.2chain$M_Diet:DGs1.2chain$Saturated                     0.93185
## DGs1.2chain$PW_Diet:DGs1.2chain$Saturated                    0.41623
## DGs1.2chain$M_Diet:DGs1.2chain$PW_Diet:DGs1.2chain$Saturated 0.90574
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = DGs1.2chain$value ~ DGs1.2chain$combinations)
##
## $`DGs1.2chain$combinations`
##                                       diff         lwr        upr     p adj
## CTR.CTR.small-CTR.CTR.medium  0.06360824 -2.13961368 2.26683015 0.9999912
## CTR.HFD.small-CTR.CTR.medium  0.10534125 -2.10127278 2.31195527 0.9999345
## HFD.CTR.small-CTR.CTR.medium -0.06509970 -2.26765745 2.13745804 0.9999903
## HFD.HFD.small-CTR.CTR.medium  0.15000847 -2.05399880 2.35401575 0.9997316
## CTR.HFD.small-CTR.CTR.small   0.04173301 -0.21424178 0.29770780 0.9918122
## HFD.CTR.small-CTR.CTR.small  -0.12870794 -0.34696985 0.08955397 0.4896224
## HFD.HFD.small-CTR.CTR.small   0.08640024 -0.14603406 0.31883454 0.8477301
## HFD.CTR.small-CTR.HFD.small  -0.17044095 -0.42063470 0.07975280 0.3383641
## HFD.HFD.small-CTR.HFD.small   0.04466723 -0.21798149 0.30731595 0.9903843
## HFD.HFD.small-HFD.CTR.small   0.21510818 -0.01094385 0.44116021 0.0709695
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = DGs1.2chain$value ~ DGs1.2chain$satcombinations)
##
## $`DGs1.2chain$satcombinations`
##                                                  diff         lwr       upr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   -0.15069010 -0.68439449 0.3830143
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.01986105 -0.28439726 0.3241194
## CTR.HFD.Unsaturated-CTR.CTR.Saturated    0.04679696 -0.61227935 0.7058733
## HFD.CTR.Saturated-CTR.CTR.Saturated     -0.13163246 -0.39096618 0.1277013
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   -0.25627604 -0.76337323 0.2508212
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.06686684 -0.20935143 0.3430851
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    0.07509428 -0.49098471 0.6411733
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.17055115 -0.38280534 0.7239076
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated  0.19748706 -0.60750478 1.0024789
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.01905764 -0.51092752 0.5490428
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.10558594 -0.79171847 0.5805466
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.21755694 -0.32089159 0.7560055
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.22578438 -0.50502046 0.9565892
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    0.02693591 -0.64815268 0.7020245
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.15149351 -0.44917960 0.1461926
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   -0.27613709 -0.80387812 0.2516039
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.04700579 -0.26549951 0.3595111
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.05523323 -0.52941064 0.6398771
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   -0.17842942 -0.83449760 0.4776388
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated -0.30307300 -1.09067636 0.4845304
```

```
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.02006988 -0.64285396 0.6829937
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.02829732 -0.79851397 0.8551086
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   -0.12464358 -0.62782490 0.3785377
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.19849930 -0.07046243 0.4674610
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    0.20672674 -0.35584708 0.7693006
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.32314288 -0.18894500 0.8352308
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.33137032 -0.38023554 1.0429762
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.00822744 -0.56232656 0.5787814
##                                             p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   0.9894533
## CTR.HFD.Saturated-CTR.CTR.Saturated     0.9999994
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   0.9999989
## HFD.CTR.Saturated-CTR.CTR.Saturated     0.7836447
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   0.7874260
## HFD.HFD.Saturated-CTR.CTR.Saturated     0.9958785
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   0.9999197
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   0.9823440
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9955221
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   1.0000000
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated 0.9997821
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   0.9233672
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9820972
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   1.0000000
## HFD.CTR.Saturated-CTR.HFD.Saturated     0.7813549
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   0.7558782
## HFD.HFD.Saturated-CTR.HFD.Saturated     0.9998129
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   0.9999921
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   0.9915775
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated 0.9402119
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   1.0000000
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated 1.0000000
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   0.9952454
## HFD.HFD.Saturated-HFD.CTR.Saturated     0.3268980
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   0.9530524
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   0.5385563
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated 0.8499814
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   1.0000000
```

DGs 1.3

```
## Analysis of Variance Table
##
## Response: DGs1.3chain$value
##                                          Df  Sum Sq Mean Sq F value
## DGs1.3chain$M_Diet                        1  0.1111 0.11112  0.8898
## DGs1.3chain$PW_Diet                       1  2.0223 2.02232 16.1940
## DGs1.3chain$variable                      1  0.0012 0.00125  0.0100
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet    1  0.6286 0.62865  5.0340
## Residuals                               227 28.3480 0.12488
##                                            Pr(>F)
## DGs1.3chain$M_Diet                        0.34654
## DGs1.3chain$PW_Diet                     7.792e-05 ***
```

```
## DGs1.3chain$variable                       0.92040
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet   0.02582 *
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: DGs1.3chain$value
##                                                                 Df  Sum Sq
## DGs1.3chain$M_Diet                                               1  0.1111
## DGs1.3chain$PW_Diet                                              1  2.0223
## DGs1.3chain$Saturated                                            1  0.9325
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet                           1  0.6232
## DGs1.3chain$M_Diet:DGs1.3chain$Saturated                         1  0.0818
## DGs1.3chain$PW_Diet:DGs1.3chain$Saturated                        1  0.0021
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet:DGs1.3chain$Saturated     1  0.1407
## Residuals                                                      224 27.1976
##                                                                Mean Sq
## DGs1.3chain$M_Diet                                             0.11112
## DGs1.3chain$PW_Diet                                            2.02232
## DGs1.3chain$Saturated                                          0.93248
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet                         0.62323
## DGs1.3chain$M_Diet:DGs1.3chain$Saturated                       0.08183
## DGs1.3chain$PW_Diet:DGs1.3chain$Saturated                      0.00211
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet:DGs1.3chain$Saturated   0.14070
## Residuals                                                      0.12142
##                                                                F value
## DGs1.3chain$M_Diet                                              0.9152
## DGs1.3chain$PW_Diet                                            16.6559
## DGs1.3chain$Saturated                                           7.6799
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet                          5.1330
## DGs1.3chain$M_Diet:DGs1.3chain$Saturated                        0.6739
## DGs1.3chain$PW_Diet:DGs1.3chain$Saturated                       0.0174
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet:DGs1.3chain$Saturated    1.1588
## Residuals
##                                                                   Pr(>F)
## DGs1.3chain$M_Diet                                              0.339777
## DGs1.3chain$PW_Diet                                           6.234e-05 ***
## DGs1.3chain$Saturated                                           0.006053 **
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet                          0.024431 *
## DGs1.3chain$M_Diet:DGs1.3chain$Saturated                        0.412561
## DGs1.3chain$PW_Diet:DGs1.3chain$Saturated                       0.895179
## DGs1.3chain$M_Diet:DGs1.3chain$PW_Diet:DGs1.3chain$Saturated    0.282873
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = DGs1.3chain$value ~ DGs1.3chain$combinations)
##
## $`DGs1.3chain$combinations`
##                                   diff          lwr         upr     p adj
```

```
## CTR.CTR.small-CTR.CTR.long   0.08227469 -0.897156448  1.06170583 0.9993655
## CTR.HFD.small-CTR.CTR.long  -0.22806578 -1.211886867  0.75575531 0.9687870
## HFD.CTR.small-CTR.CTR.long  -0.03958789 -1.018062092  0.93888630 0.9999652
## HFD.HFD.small-CTR.CTR.long  -0.13626562 -1.116652766  0.84412153 0.9954478
## CTR.HFD.small-CTR.CTR.small -0.31034047 -0.506799745 -0.11388119 0.0002037
## HFD.CTR.small-CTR.CTR.small -0.12186259 -0.289505253  0.04578008 0.2698495
## HFD.HFD.small-CTR.CTR.small -0.21854031 -0.397009555 -0.04007106 0.0078684
## HFD.CTR.small-CTR.HFD.small  0.18847788 -0.003153646  0.38010941 0.0563685
## HFD.HFD.small-CTR.HFD.small  0.09180016 -0.109371038  0.29297136 0.7190595
## HFD.HFD.small-HFD.CTR.small -0.09667772 -0.269818322  0.07646288 0.5405457
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = DGs1.3chain$value ~ DGs1.3chain$satcombinations)
##
## $`DGs1.3chain$satcombinations`
##                                                diff         lwr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   -0.133863427 -0.40915357
## CTR.HFD.Saturated-CTR.CTR.Saturated     -0.269931051 -0.54175829
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   -0.508124816 -0.83093113
## HFD.CTR.Saturated-CTR.CTR.Saturated     -0.117700815 -0.34939200
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   -0.259234191 -0.52479368
## HFD.HFD.Saturated-CTR.CTR.Saturated     -0.253417982 -0.50019398
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   -0.290846171 -0.57816334
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   -0.136067624 -0.44075798
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -0.374261388 -0.72518885
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.016162613 -0.25333130
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.125370763 -0.42448279
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   -0.119554554 -0.40212235
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -0.156982744 -0.47556918
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -0.238193765 -0.58641132
## HFD.CTR.Saturated-CTR.HFD.Saturated      0.152230237 -0.11372531
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.010696860 -0.28523116
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.016513070 -0.26268210
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   -0.020915120 -0.33651408
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.390424001  0.07254632
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.248890625 -0.09445651
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.254706834 -0.07432783
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.217278645 -0.14316077
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   -0.141533376 -0.40107942
## HFD.HFD.Saturated-HFD.CTR.Saturated     -0.135717167 -0.37601011
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   -0.173145356 -0.45491380
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.005816209 -0.26728036
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated -0.031611980 -0.34182883
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   -0.037428189 -0.33172574
##                                                upr     p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    0.141426720 0.8132855
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.001896189 0.0531010
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   -0.185318505 0.0000727
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.113990369 0.7766977
## HFD.CTR.Unsaturated-CTR.CTR.Saturated    0.006325296 0.0612676
## HFD.HFD.Saturated-CTR.CTR.Saturated     -0.006641987 0.0394430
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   -0.003529006 0.0449150
```

```
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.168622735 0.8714445
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -0.023333931 0.0274399
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.285656528 0.9999996
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated  0.173741268 0.9045401
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.163013239 0.9001346
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.161603696 0.8026999
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    0.110023788 0.4226349
## HFD.CTR.Saturated-CTR.HFD.Saturated      0.418185786 0.6534465
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.306624877 1.0000000
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.295708237 0.9999997
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.294683839 0.9999993
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.708301682 0.0052883
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.592237762 0.3449746
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.583741494 0.2620766
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.577718055 0.5904262
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    0.118012664 0.7075064
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.104575773 0.6688491
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    0.108623092 0.5659337
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.278912774 1.0000000
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.278604872 0.9999857
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.256869357 0.9999354
```

Dihydrohceramide

```
## Analysis of Variance Table
##
## Response: dhchain$value
##                                Df  Sum Sq  Mean Sq F value  Pr(>F)
## dhchain$M_Diet                  1  0.2589 0.258946  2.7608 0.09884 .
## dhchain$PW_Diet                 1  0.1971 0.197148  2.1019 0.14935
## dhchain$variable                1  0.0622 0.062216  0.6633 0.41677
## dhchain$M_Diet:dhchain$PW_Diet  1  0.1482 0.148239  1.5805 0.21079
## Residuals                     140 13.1312 0.093794
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: dhchain$value
##                                                        Df  Sum Sq Mean Sq
## dhchain$M_Diet                                          1  0.2589 0.25895
## dhchain$PW_Diet                                         1  0.1971 0.19715
## dhchain$Saturated                                       1  1.8157 1.81569
## dhchain$M_Diet:dhchain$PW_Diet                          1  0.1620 0.16198
## dhchain$M_Diet:dhchain$Saturated                        1  0.0315 0.03152
## dhchain$PW_Diet:dhchain$Saturated                       1  0.2208 0.22082
## dhchain$M_Diet:dhchain$PW_Diet:dhchain$Saturated        1  0.1023 0.10229
## Residuals                                             137 11.0093 0.08036
##                                                       F value    Pr(>F)
## dhchain$M_Diet                                         3.2223   0.07485 .
## dhchain$PW_Diet                                        2.4533   0.11958
## dhchain$Saturated                                     22.5944 4.997e-06 ***
## dhchain$M_Diet:dhchain$PW_Diet                         2.0156   0.15796
```

```
## dhchain$M_Diet:dhchain$Saturated                   0.3922   0.53218
## dhchain$PW_Diet:dhchain$Saturated                  2.7478   0.09967 .
## dhchain$M_Diet:dhchain$PW_Diet:dhchain$Saturated  1.2729   0.26119
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = dhchain$value ~ dhchain$combinations)
##
## $`dhchain$combinations`
##                                       diff         lwr       upr     p adj
## CTR.CTR.small-CTR.CTR.long   2.229810e-01 -0.63419317 1.0801552 0.9518460
## CTR.HFD.small-CTR.CTR.long   3.692588e-01 -0.49389478 1.2324123 0.7614961
## HFD.CTR.small-CTR.CTR.long   3.542667e-01 -0.50147768 1.2100111 0.7827518
## HFD.HFD.small-CTR.CTR.long   3.691664e-01 -0.48923142 1.2275643 0.7579418
## CTR.HFD.small-CTR.CTR.small  1.462778e-01 -0.07057207 0.3631276 0.3415102
## HFD.CTR.small-CTR.CTR.small  1.312857e-01 -0.05388511 0.3164565 0.2913995
## HFD.HFD.small-CTR.CTR.small  1.461854e-01 -0.05088477 0.3432556 0.2479624
## HFD.CTR.small-CTR.HFD.small -1.499208e-02 -0.22611926 0.1961351 0.9996654
## HFD.HFD.small-CTR.HFD.small -9.233748e-05 -0.22172971 0.2215450 1.0000000
## HFD.HFD.small-HFD.CTR.small  1.489974e-02 -0.17585534 0.2056548 0.9995120
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = dhchain$value ~ dhchain$satcombinations)
##
## $`dhchain$satcombinations`
##                                                    diff         lwr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   -0.103823751 -0.44876571
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.222073000 -0.02666819
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   -0.232854370 -0.65249438
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.171777127 -0.04023672
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   -0.106631266 -0.43588575
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.202480270 -0.02333725
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   -0.154945136 -0.51906495
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.325896751 -0.03915551
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -0.129030619 -0.62651299
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.275600878 -0.06548686
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.002807515 -0.42683522
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.306304021 -0.04353098
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -0.051121385 -0.50275643
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -0.454927370 -0.89124827
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.050295873 -0.29366405
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   -0.328704267 -0.67897090
## HFD.HFD.Saturated-CTR.HFD.Saturated     -0.019592730 -0.27507609
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   -0.377018136 -0.76024318
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.404631497 -0.01184615
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.126223104 -0.36051324
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.435334640  0.01166341
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.077909234 -0.43305749
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   -0.278408394 -0.60362279
```

```
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.030703143 -0.18918192
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   -0.326722263 -0.68719297
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.309111536 -0.02526563
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated -0.048313870 -0.48808400
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   -0.357425406 -0.72618387
##                                                upr     p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    0.241118211 0.9829828
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.470814186 0.1173140
## CTR.HFD.Unsaturated-CTR.CTR.Saturated    0.186785638 0.6819931
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.383790977 0.2068287
## HFD.CTR.Unsaturated-CTR.CTR.Saturated    0.222623220 0.9741953
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.428297791 0.1140136
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    0.209174676 0.8937078
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.690949011 0.1173549
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated  0.368451754 0.9929583
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.616688619 0.2097529
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated  0.421220185 1.0000000
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.656139021 0.1329302
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.400513658 0.9999688
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -0.018606466 0.0344312
## HFD.CTR.Saturated-CTR.HFD.Saturated      0.193072300 0.9982962
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.021562362 0.0828577
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.235890631 0.9999979
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.006206906 0.0573300
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.821109139 0.0634616
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.612959449 0.9929652
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.859005865 0.0393814
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.588875956 0.9997673
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    0.046806007 0.1524847
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.250588210 0.9998709
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    0.033748440 0.1060397
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.643488699 0.0924121
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.391456265 0.9999746
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.011333063 0.0646671
```

Glucosylceramide

```
## Analysis of Variance Table
##
## Response: Gluchain$value
##                                  Df  Sum Sq Mean Sq F value  Pr(>F)
## Gluchain$M_Diet                   1  0.5331 0.53312  4.1778 0.04228 *
## Gluchain$PW_Diet                  1  0.0021 0.00213  0.0167 0.89735
## Gluchain$variable                 1  0.0040 0.00403  0.0316 0.85910
## Gluchain$M_Diet:Gluchain$PW_Diet  1  0.0732 0.07323  0.5739 0.44963
## Residuals                       198 25.2666 0.12761
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: Gluchain$value
##                                                 Df  Sum Sq Mean Sq
```

```
## Gluchain$M_Diet                                          1  0.5331 0.53312
## Gluchain$PW_Diet                                         1  0.0021 0.00213
## Gluchain$Saturated                                       1  0.3572 0.35722
## Gluchain$M_Diet:Gluchain$PW_Diet                         1  0.0751 0.07510
## Gluchain$M_Diet:Gluchain$Saturated                       1  0.0019 0.00187
## Gluchain$PW_Diet:Gluchain$Saturated                      1  0.0001 0.00007
## Gluchain$M_Diet:Gluchain$PW_Diet:Gluchain$Saturated      1  0.0019 0.00188
## Residuals                                              195 24.9077 0.12773
##                                                       F value  Pr(>F)
## Gluchain$M_Diet                                        4.1738 0.04240 *
## Gluchain$PW_Diet                                       0.0167 0.89740
## Gluchain$Saturated                                     2.7967 0.09606 .
## Gluchain$M_Diet:Gluchain$PW_Diet                       0.5880 0.44413
## Gluchain$M_Diet:Gluchain$Saturated                     0.0147 0.90376
## Gluchain$PW_Diet:Gluchain$Saturated                    0.0006 0.98087
## Gluchain$M_Diet:Gluchain$PW_Diet:Gluchain$Saturated    0.0147 0.90366
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = Gluchain$value ~ Gluchain$combinations)
##
## $`Gluchain$combinations`
##                                      diff        lwr        upr     p adj
## CTR.CTR.small-CTR.CTR.long     -0.04687207 -1.0392386 0.94549449 0.9999351
## CTR.HFD.small-CTR.CTR.long     -0.09686230 -1.0942791 0.90055451 0.9988697
## HFD.CTR.small-CTR.CTR.long     -0.18087491 -1.1721157 0.81036588 0.9870590
## HFD.HFD.small-CTR.CTR.long     -0.15288745 -1.1463384 0.84056346 0.9932255
## CTR.HFD.small-CTR.CTR.small    -0.04999023 -0.2626402 0.16265975 0.9669974
## HFD.CTR.small-CTR.CTR.small    -0.13400284 -0.3154912 0.04748554 0.2542731
## HFD.HFD.small-CTR.CTR.small    -0.10601538 -0.2992108 0.08718000 0.5567364
## HFD.CTR.small-CTR.HFD.small    -0.08401261 -0.2913455 0.12332027 0.7982000
## HFD.HFD.small-CTR.HFD.small    -0.05602516 -0.2736793 0.16162904 0.9543398
## HFD.HFD.small-HFD.CTR.small     0.02798746 -0.1593394 0.21531436 0.9939531
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = Gluchain$value ~ Gluchain$satcombinations)
##
## $`Gluchain$satcombinations`
##                                                    diff        lwr        upr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated       -0.101219140 -0.5194219 0.31698361
## CTR.HFD.Saturated-CTR.CTR.Saturated         -0.047472545 -0.3023460 0.20740087
## CTR.HFD.Unsaturated-CTR.CTR.Saturated       -0.172174479 -0.6867994 0.34245042
## HFD.CTR.Saturated-CTR.CTR.Saturated         -0.130299126 -0.3475398 0.08694151
## HFD.CTR.Unsaturated-CTR.CTR.Saturated       -0.263303282 -0.6610934 0.13448688
## HFD.HFD.Saturated-CTR.CTR.Saturated         -0.104042792 -0.3354274 0.12734182
## HFD.HFD.Unsaturated-CTR.CTR.Saturated       -0.224929083 -0.6679969 0.21813871
## CTR.HFD.Saturated-CTR.CTR.Unsaturated        0.053746596 -0.3820107 0.48950388
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated     -0.070955338 -0.6952651 0.55335447
## HFD.CTR.Saturated-CTR.CTR.Unsaturated       -0.029079986 -0.4439504 0.38579041
```

```
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.162084141 -0.6942129 0.37004457
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   -0.002823652 -0.4252722 0.41962492
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -0.123709943 -0.6904842 0.44306429
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -0.124701934 -0.6536912 0.40428735
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.082826582 -0.3321945 0.16654136
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   -0.215830737 -0.6320373 0.20037580
## HFD.HFD.Saturated-CTR.HFD.Saturated     -0.056570248 -0.3183521 0.20521156
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   -0.177456538 -0.6371303 0.28221720
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.041875353 -0.4700452 0.55379595
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated -0.091128803 -0.7019530 0.51969540
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.068131687 -0.4499494 0.58621280
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated -0.052754604 -0.6939864 0.58847724
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   -0.133004156 -0.5272895 0.26128118
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.026256334 -0.1990496 0.25156224
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   -0.094629957 -0.5345538 0.34529388
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.159260490 -0.2429910 0.56151199
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.038374199 -0.5135103 0.59025870
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   -0.120886291 -0.5679638 0.32619125
##                                             p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   0.9955799
## CTR.HFD.Saturated-CTR.CTR.Saturated     0.9991677
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   0.9701367
## HFD.CTR.Saturated-CTR.CTR.Saturated     0.5951229
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   0.4656795
## HFD.HFD.Saturated-CTR.CTR.Saturated     0.8663486
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   0.7759281
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   0.9999468
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9999695
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   0.9999989
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated 0.9824355
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   1.0000000
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9976896
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   0.9962487
## HFD.CTR.Saturated-CTR.HFD.Saturated     0.9713137
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   0.7564394
## HFD.HFD.Saturated-CTR.HFD.Saturated     0.9978319
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   0.9359751
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   0.9999968
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated 0.9998081
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   0.9999178
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated 0.9999967
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   0.9687465
## HFD.HFD.Saturated-HFD.CTR.Saturated     0.9999638
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   0.9978944
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   0.9272471
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated 0.9999990
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   0.9912988
```

Hexocylceramides

```
## Analysis of Variance Table
##
```

```
## Response: hexchain$value
##                                  Df  Sum Sq Mean Sq F value  Pr(>F)
## hexchain$M_Diet                   1   0.030 0.03034  0.0610 0.80515
## hexchain$PW_Diet                  1   0.022 0.02203  0.0443 0.83351
## hexchain$variable                 1   1.395 1.39450  2.8033 0.09545 .
## hexchain$M_Diet:hexchain$PW_Diet  1   0.092 0.09237  0.1857 0.66695
## Residuals                       227 112.921 0.49745
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: hexchain$value
##                                                    Df  Sum Sq Mean Sq
## hexchain$M_Diet                                     1   0.030  0.0303
## hexchain$PW_Diet                                    1   0.022  0.0220
## hexchain$Saturated                                  1  11.416 11.4162
## hexchain$M_Diet:hexchain$PW_Diet                    1   0.139  0.1387
## hexchain$M_Diet:hexchain$Saturated                  1   0.018  0.0184
## hexchain$PW_Diet:hexchain$Saturated                 1   0.225  0.2255
## hexchain$M_Diet:hexchain$PW_Diet:hexchain$Saturated 1   0.007  0.0069
## Residuals                                         224 102.602  0.4580
##                                                   F value    Pr(>F)
## hexchain$M_Diet                                    0.0662    0.7971
## hexchain$PW_Diet                                   0.0481    0.8266
## hexchain$Saturated                                24.9238 1.198e-06 ***
## hexchain$M_Diet:hexchain$PW_Diet                   0.3028    0.5827
## hexchain$M_Diet:hexchain$Saturated                 0.0402    0.8414
## hexchain$PW_Diet:hexchain$Saturated                0.4922    0.4837
## hexchain$M_Diet:hexchain$PW_Diet:hexchain$Saturated  0.0152    0.9021
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = hexchain$value ~ hexchain$combinations)
##
## $`hexchain$combinations`
##                                       diff        lwr       upr     p adj
## CTR.CTR.small-CTR.CTR.long    1.170289781 -0.7844983 3.1250779 0.4695183
## CTR.HFD.small-CTR.CTR.long    1.228055979 -0.7354938 3.1916057 0.4238535
## HFD.CTR.small-CTR.CTR.long    1.168816689 -0.7840615 3.1216949 0.4698111
## HFD.HFD.small-CTR.CTR.long    1.144683583 -0.8120126 3.1013797 0.4933823
## CTR.HFD.small-CTR.CTR.small   0.057766198 -0.3343351 0.4498675 0.9943024
## HFD.CTR.small-CTR.CTR.small  -0.001473092 -0.3360611 0.3331149 1.0000000
## HFD.HFD.small-CTR.CTR.small  -0.025606198 -0.3818023 0.3305899 0.9996574
## HFD.CTR.small-CTR.HFD.small  -0.059239290 -0.4417052 0.3232266 0.9930953
## HFD.HFD.small-CTR.HFD.small  -0.083372396 -0.4848780 0.3181332 0.9791471
## HFD.HFD.small-HFD.CTR.small  -0.024133106 -0.3696941 0.3214279 0.9996945
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
```

```
## Fit: aov(formula = hexchain$value ~ hexchain$satcombinations)
##
## $`hexchain$satcombinations`
##                                              diff         lwr         upr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    0.44435840 -0.15344534 1.04216213
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.04672462 -0.43524016 0.52868940
## CTR.HFD.Unsaturated-CTR.CTR.Saturated    0.60839245 -0.11145857 1.32824347
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.01369115 -0.39711017 0.42449248
## HFD.CTR.Unsaturated-CTR.CTR.Saturated    0.47053568 -0.10181782 1.04288918
## HFD.HFD.Saturated-CTR.CTR.Saturated     -0.05271764 -0.49026518 0.38482989
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    0.57322965 -0.05578456 1.20224386
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   -0.39763378 -1.03870687 0.24343931
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated  0.16403406 -0.67075343 0.99882154
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   -0.43066724 -1.02010968 0.15877519
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated  0.02617729 -0.68535148 0.73770605
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   -0.49707604 -1.10546119 0.11130911
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.12887125 -0.62898330 0.88672581
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    0.56166783 -0.19450073 1.31783639
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.03303346 -0.50458741 0.43852048
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.42381107 -0.19359798 1.04122011
## HFD.HFD.Saturated-CTR.HFD.Saturated     -0.09944226 -0.59447078 0.39558626
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.52650503 -0.14376676 1.19677682
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   -0.59470130 -1.30762385 0.11822126
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated -0.13785677 -0.95461216 0.67889862
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   -0.66111010 -1.38977235 0.06755216
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated -0.03516280 -0.89257736 0.82225175
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    0.45684453 -0.10677024 1.02045930
## HFD.HFD.Saturated-HFD.CTR.Saturated     -0.06640880 -0.49246151 0.35964392
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    0.55953850 -0.06153473 1.18061172
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   -0.52325333 -1.10665004 0.06014338
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.10269397 -0.63525098 0.84063892
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.62594729 -0.01313178 1.26502637
##                                             p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   0.3124395
## CTR.HFD.Saturated-CTR.CTR.Saturated     0.9999899
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   0.1665420
## HFD.CTR.Saturated-CTR.CTR.Saturated     1.0000000
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   0.1943209
## HFD.HFD.Saturated-CTR.CTR.Saturated     0.9999553
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   0.1031243
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   0.5538243
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9988379
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   0.3346563
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated 1.0000000
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   0.2008358
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9995485
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   0.3133633
## HFD.CTR.Saturated-CTR.HFD.Saturated     0.9999989
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   0.4178963
## HFD.HFD.Saturated-CTR.HFD.Saturated     0.9986599
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   0.2447644
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   0.1794007
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated 0.9995701
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   0.1063348
```

```
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated 1.0000000
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   0.2093892
## HFD.HFD.Saturated-HFD.CTR.Saturated     0.9997466
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   0.1115827
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   0.1149923
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated 0.9998814
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   0.0596038
```

Lactosylceramide

```
## Analysis of Variance Table
##
## Response: Lacchain$value
##                                  Df Sum Sq Mean Sq F value  Pr(>F)
## Lacchain$M_Diet                   1  11615 11614.7  5.7285 0.01744 *
## Lacchain$PW_Diet                  1   1650  1650.2  0.8139 0.36785
## Lacchain$variable                 1   2550  2549.6  1.2575 0.26321
## Lacchain$M_Diet:Lacchain$PW_Diet  1   3740  3739.8  1.8445 0.17566
## Residuals                       247 500796  2027.5
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: Lacchain$value
##                                                    Df Sum Sq Mean Sq
## Lacchain$M_Diet                                     1  11615 11614.7
## Lacchain$PW_Diet                                    1   1650  1650.2
## Lacchain$Saturated                                  1   3046  3045.6
## Lacchain$M_Diet:Lacchain$PW_Diet                    1   3332  3332.1
## Lacchain$M_Diet:Lacchain$Saturated                  1    165   164.8
## Lacchain$PW_Diet:Lacchain$Saturated                 1   3821  3820.8
## Lacchain$M_Diet:Lacchain$PW_Diet:Lacchain$Saturated 1     29    28.6
## Residuals                                         244 496693  2035.6
##                                                   F value  Pr(>F)
## Lacchain$M_Diet                                    5.7057 0.01767 *
## Lacchain$PW_Diet                                   0.8107 0.36881
## Lacchain$Saturated                                 1.4961 0.22245
## Lacchain$M_Diet:Lacchain$PW_Diet                   1.6369 0.20197
## Lacchain$M_Diet:Lacchain$Saturated                 0.0810 0.77622
## Lacchain$PW_Diet:Lacchain$Saturated                1.8770 0.17194
## Lacchain$M_Diet:Lacchain$PW_Diet:Lacchain$Saturated 0.0140 0.90577
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = Lacchain$value ~ Lacchain$combinations)
##
## $`Lacchain$combinations`
##                                   diff        lwr          upr     p adj
```

```
## CTR.CTR.small-CTR.CTR.long   54.872727 -69.985363 179.73081797 0.7469341
## CTR.HFD.small-CTR.CTR.long   49.602857 -75.890648 175.09636207 0.8135589
## HFD.CTR.small-CTR.CTR.long   34.578571 -89.710869 158.86801140 0.9404816
## HFD.HFD.small-CTR.CTR.long   46.177551 -78.816972 171.17207383 0.8482145
## CTR.HFD.small-CTR.CTR.small  -5.269870 -32.025175  21.48543502 0.9829119
## HFD.CTR.small-CTR.CTR.small -20.294156 -40.667949   0.07963767 0.0514569
## HFD.HFD.small-CTR.CTR.small  -8.695176 -33.002733  15.61238035 0.8627719
## HFD.CTR.small-CTR.HFD.small -15.024286 -38.986098   8.93752618 0.4217064
## HFD.HFD.small-CTR.HFD.small  -3.425306 -30.810234  23.95962176 0.9969849
## HFD.HFD.small-HFD.CTR.small  11.598980  -9.594873  32.79283209 0.5608945
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = Lacchain$value ~ Lacchain$satcombinations)
##
## $`Lacchain$satcombinations`
##                                                diff        lwr       upr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    -2.9083333  -55.58697 49.770306
## CTR.HFD.Saturated-CTR.CTR.Saturated      -0.5383333  -32.64330 31.566632
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   -29.7083333  -94.53273 35.116060
## HFD.CTR.Saturated-CTR.CTR.Saturated     -19.5177083  -43.90318  4.867763
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   -21.0020833  -60.82339 18.819225
## HFD.HFD.Saturated-CTR.CTR.Saturated      -4.7678571  -33.91407 24.378356
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   -28.3083333  -84.11908 27.502416
## CTR.HFD.Saturated-CTR.CTR.Unsaturated     2.3700000  -52.51989 57.259885
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -26.8000000 -105.44078 51.840783
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   -16.6093750  -67.37178 34.153032
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -18.0937500  -77.82571 41.638212
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    -1.8595238  -55.07299 51.353938
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -25.4000000  -96.79335 45.993350
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -29.1700000  -95.80379 37.463793
## HFD.CTR.Saturated-CTR.HFD.Saturated     -18.9793750  -47.83265  9.873904
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   -20.4637500  -63.16735 22.239846
## HFD.HFD.Saturated-CTR.HFD.Saturated      -4.2295238  -37.20470 28.745652
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   -27.7700000  -85.67251 30.132506
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    10.1906250  -53.08642 73.467674
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated   8.7062500  -61.96956 79.382061
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    24.9404762  -40.31928 90.200229
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated   1.4000000  -79.37236 82.172355
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    -1.4843750  -38.73380 35.765048
## HFD.HFD.Saturated-HFD.CTR.Saturated      14.7498512  -10.77043 40.270131
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    -8.7906250  -62.79639 45.215140
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    16.2342262  -24.29194 56.760391
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  -7.3062500  -69.81791 55.205413
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   -23.5404762  -79.85631 32.775358
##                                             p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   0.9999998
## CTR.HFD.Saturated-CTR.CTR.Saturated     1.0000000
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   0.8561018
## HFD.CTR.Saturated-CTR.CTR.Saturated     0.2237492
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   0.7424238
## HFD.HFD.Saturated-CTR.CTR.Saturated     0.9996533
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   0.7788295
```

```
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   1.0000000
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9674743
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   0.9740550
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated 0.9832861
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   1.0000000
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9588975
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   0.8832363
## HFD.CTR.Saturated-CTR.HFD.Saturated     0.4764999
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   0.8251416
## HFD.HFD.Saturated-CTR.HFD.Saturated     0.9999322
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   0.8245262
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   0.9996875
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated 0.9999484
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   0.9400793
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated 1.0000000
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   1.0000000
## HFD.HFD.Saturated-HFD.CTR.Saturated     0.6429234
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   0.9996646
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   0.9239229
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated 0.9999639
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   0.9062196
```

Sphingomyelin

```
## Analysis of Variance Table
##
## Response: myechain$value
##                                  Df  Sum Sq Mean Sq F value Pr(>F)
## myechain$M_Diet                   1   0.055 0.05458  0.1418 0.7067
## myechain$PW_Diet                  1   0.167 0.16659  0.4327 0.5111
## myechain$variable                 1   0.632 0.63247  1.6427 0.2008
## myechain$M_Diet:myechain$PW_Diet  1   0.006 0.00627  0.0163 0.8985
## Residuals                       372 143.225 0.38501
```

```
## Analysis of Variance Table
##
## Response: myechain$value
##                                                    Df  Sum Sq Mean Sq
## myechain$M_Diet                                     1   0.055   0.055
## myechain$PW_Diet                                    1   0.167   0.167
## myechain$Saturated                                  1  39.587  39.587
## myechain$M_Diet:myechain$PW_Diet                    1   0.002   0.002
## myechain$M_Diet:myechain$Saturated                  1   0.021   0.021
## myechain$PW_Diet:myechain$Saturated                 1   0.973   0.973
## myechain$M_Diet:myechain$PW_Diet:myechain$Saturated 1   0.043   0.043
## Residuals                                         369 103.239   0.280
##                                                    F value Pr(>F)
## myechain$M_Diet                                     0.1951 0.6590
## myechain$PW_Diet                                    0.5954 0.4408
## myechain$Saturated                                141.4930 <2e-16 ***
## myechain$M_Diet:myechain$PW_Diet                    0.0065 0.9356
## myechain$M_Diet:myechain$Saturated                  0.0744 0.7851
## myechain$PW_Diet:myechain$Saturated                 3.4776 0.0630 .
```

```
## myechain$M_Diet:myechain$PW_Diet:myechain$Saturated   0.1528 0.6961
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = myechain$value ~ myechain$combinations)
##
## $`myechain$combinations`
##                                      diff        lwr       upr     p adj
## CTR.CTR.small-CTR.CTR.medium  0.80193530 -0.9072058 2.5110764 0.6999166
## CTR.HFD.small-CTR.CTR.medium  0.74641766 -0.9675205 2.4603558 0.7549865
## HFD.CTR.small-CTR.CTR.medium  0.76861028 -0.9395473 2.4767679 0.7318066
## HFD.HFD.small-CTR.CTR.medium  0.72982601 -0.9803983 2.4400503 0.7686372
## CTR.HFD.small-CTR.CTR.small  -0.05551764 -0.3249559 0.2139206 0.9800190
## HFD.CTR.small-CTR.CTR.small  -0.03332501 -0.2631407 0.1964907 0.9947195
## HFD.HFD.small-CTR.CTR.small  -0.07210929 -0.3168135 0.1725949 0.9281606
## HFD.CTR.small-CTR.HFD.small   0.02219263 -0.2409347 0.2853199 0.9993654
## HFD.HFD.small-CTR.HFD.small  -0.01659165 -0.2928178 0.2596345 0.9998347
## HFD.HFD.small-HFD.CTR.small  -0.03878427 -0.2765219 0.1989533 0.9917042
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = myechain$value ~ myechain$satcombinations)
##
## $`myechain$satcombinations`
##                                                 diff        lwr        upr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   -0.57267614 -0.8898402 -0.2555121
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.02515295 -0.3222828  0.3725887
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   -0.70560248 -1.0704207 -0.3407843
## HFD.CTR.Saturated-CTR.CTR.Saturated     -0.03330783 -0.3294438  0.2628281
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   -0.58931421 -0.8968441 -0.2817843
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.04125916 -0.2741574  0.3566757
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   -0.76034163 -1.0894783 -0.4312050
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.59782909  0.2394305  0.9562277
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated -0.13292634 -0.5081999  0.2423472
## HFD.CTR.Saturated-CTR.CTR.Unsaturated    0.53936831  0.2304437  0.8482929
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.01663807 -0.3365014  0.3032253
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.61393530  0.2864822  0.9413884
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated -0.18766549 -0.5283543  0.1530233
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   -0.73075543 -1.1319397 -0.3295711
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.05846078 -0.3983917  0.2814701
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   -0.61446716 -0.9643688 -0.2645655
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.01610621 -0.3407469  0.3729593
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   -0.78549458 -1.1545305 -0.4164587
## HFD.CTR.Saturated-CTR.HFD.Unsaturated    0.67229465  0.3146164  1.0299728
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated  0.11628827 -0.2508791  0.4834556
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.74686164  0.3730638  1.1206595
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated -0.05473915 -0.4401846  0.3307063
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   -0.55600638 -0.8550315 -0.2569813
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.07456699 -0.2325633  0.3816972
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   -0.72703380 -1.0482383 -0.4058293
```

```
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.63057337  0.3124427  0.9487041
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated -0.17102742 -0.5027660  0.1607112
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   -0.80160079 -1.1406634 -0.4625382
##                                                p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated   0.0000019
## CTR.HFD.Saturated-CTR.CTR.Saturated     0.9999987
## CTR.HFD.Unsaturated-CTR.CTR.Saturated   0.0000002
## HFD.CTR.Saturated-CTR.CTR.Saturated     0.9999731
## HFD.CTR.Unsaturated-CTR.CTR.Saturated   0.0000003
## HFD.HFD.Saturated-CTR.CTR.Saturated     0.9999249
## HFD.HFD.Unsaturated-CTR.CTR.Saturated   0.0000000
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   0.0000161
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated 0.9607057
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   0.0000049
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated 0.9999999
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   0.0000006
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated 0.7007899
## CTR.HFD.Unsaturated-CTR.HFD.Saturated   0.0000015
## HFD.CTR.Saturated-CTR.HFD.Saturated     0.9995314
## HFD.CTR.Unsaturated-CTR.HFD.Saturated   0.0000042
## HFD.HFD.Saturated-CTR.HFD.Saturated     1.0000000
## HFD.HFD.Unsaturated-CTR.HFD.Saturated   0.0000000
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   0.0000006
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated 0.9789096
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   0.0000001
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated 0.9998692
## HFD.CTR.Unsaturated-HFD.CTR.Saturated   0.0000008
## HFD.HFD.Saturated-HFD.CTR.Saturated     0.9956994
## HFD.HFD.Unsaturated-HFD.CTR.Saturated   0.0000000
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   0.0000001
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated 0.7670398
## HFD.HFD.Unsaturated-HFD.HFD.Saturated   0.0000000
```

Sphingosine

- Sphingomyelins only contain one sample

Triacylglycerols

```
## Analysis of Variance Table
##
## Response: TAGchain$value
##                                  Df Sum Sq Mean Sq F value    Pr(>F)
## TAGchain$M_Diet                   1   0.32  0.3154  0.7477    0.3875
## TAGchain$PW_Diet                  1  19.39 19.3859 45.9596 2.387e-11 ***
## TAGchain$variable                 1   0.00  0.0032  0.0076    0.9307
## TAGchain$M_Diet:TAGchain$PW_Diet  1   0.21  0.2127  0.5042    0.4779
## Residuals                       778 328.16  0.4218
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## Analysis of Variance Table
##
## Response: TAGchain$value
##                                                          Df  Sum Sq Mean Sq
## TAGchain$M_Diet                                           1   0.315  0.3154
## TAGchain$PW_Diet                                          1  19.386 19.3859
## TAGchain$Saturated                                        1  21.623 21.6234
## TAGchain$M_Diet:TAGchain$PW_Diet                          1   0.211  0.2108
## TAGchain$M_Diet:TAGchain$Saturated                        1   0.003  0.0029
## TAGchain$PW_Diet:TAGchain$Saturated                       1   0.401  0.4011
## TAGchain$M_Diet:TAGchain$PW_Diet:TAGchain$Saturated       1   0.230  0.2298
## Residuals                                               775 305.911  0.3947
##                                                         F value    Pr(>F)
## TAGchain$M_Diet                                          0.7990    0.3717
## TAGchain$PW_Diet                                        49.1126 5.257e-12 ***
## TAGchain$Saturated                                      54.7810 3.514e-13 ***
## TAGchain$M_Diet:TAGchain$PW_Diet                         0.5341    0.4651
## TAGchain$M_Diet:TAGchain$Saturated                       0.0074    0.9314
## TAGchain$PW_Diet:TAGchain$Saturated                      1.0162    0.3137
## TAGchain$M_Diet:TAGchain$PW_Diet:TAGchain$Saturated      0.5822    0.4457
## Residuals
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = TAGchain$value ~ TAGchain$combinations)
##
## $`TAGchain$combinations`
##                                      diff         lwr         upr     p adj
## CTR.CTR.vlong-CTR.CTR.small -0.07124058 -1.85111949  1.70863833 0.9999676
## CTR.HFD.small-CTR.CTR.small  0.28186525  0.08686699  0.47686350 0.0008025
## HFD.CTR.small-CTR.CTR.small -0.08502556 -0.25128763  0.08123651 0.6289772
## HFD.HFD.small-CTR.CTR.small  0.26440512  0.08734393  0.44146630 0.0004702
## CTR.HFD.small-CTR.CTR.vlong  0.35310582 -1.42921295  2.13542460 0.9829323
## HFD.CTR.small-CTR.CTR.vlong -0.01378498 -1.79318908  1.76561913 1.0000000
## HFD.HFD.small-CTR.CTR.vlong  0.33564570 -1.44479991  2.11609130 0.9858278
## HFD.CTR.small-CTR.HFD.small -0.36689080 -0.55750651 -0.17627509 0.0000018
## HFD.HFD.small-CTR.HFD.small -0.01746013 -0.21756494  0.18264468 0.9992835
## HFD.HFD.small-HFD.CTR.small  0.34943067  0.17720787  0.52165347 0.0000004
```

```
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = TAGchain$value ~ TAGchain$satcombinations)
##
## $`TAGchain$satcombinations`
##                                                  diff         lwr
## CTR.CTR.Unsaturated-CTR.CTR.Saturated     0.53006132  0.11665378
## CTR.HFD.Saturated-CTR.CTR.Saturated       0.30091403 -0.32756211
## CTR.HFD.Unsaturated-CTR.CTR.Saturated     0.80991651  0.38295105
## HFD.CTR.Saturated-CTR.CTR.Saturated      -0.18353985 -0.71921972
## HFD.CTR.Unsaturated-CTR.CTR.Saturated     0.45772109  0.04687338
## HFD.HFD.Saturated-CTR.CTR.Saturated       0.38315382 -0.18740278
```

```
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    0.77999389  0.36331826
## CTR.HFD.Saturated-CTR.CTR.Unsaturated   -0.22914728 -0.74106089
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated  0.27985519  0.05765532
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   -0.71360117 -1.10606289
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated -0.07234023 -0.26173166
## HFD.HFD.Saturated-CTR.CTR.Unsaturated   -0.14690750 -0.58577891
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.24993257  0.04821035
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    0.50900248 -0.01392129
## HFD.CTR.Saturated-CTR.HFD.Saturated     -0.48445388 -1.09935443
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.15680706 -0.35304154
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.08223978 -0.56327132
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.47907986 -0.03547658
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   -0.99345636 -1.40017484
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated -0.35219542 -0.56959559
## HFD.HFD.Saturated-CTR.HFD.Unsaturated   -0.42676269 -0.87842831
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated -0.02992262 -0.25814526
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    0.64126094  0.25149658
## HFD.HFD.Saturated-HFD.CTR.Saturated      0.56669367  0.01112616
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    0.96353374  0.56763098
## HFD.HFD.Saturated-HFD.CTR.Unsaturated   -0.07456728 -0.51102823
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.32227280  0.12585002
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.39684007 -0.04511117
##                                                upr     p adj
## CTR.CTR.Unsaturated-CTR.CTR.Saturated    0.94346885 0.0026695
## CTR.HFD.Saturated-CTR.CTR.Saturated      0.92939018 0.8308294
## CTR.HFD.Unsaturated-CTR.CTR.Saturated    1.23688197 0.0000003
## HFD.CTR.Saturated-CTR.CTR.Saturated      0.35214003 0.9679543
## HFD.CTR.Unsaturated-CTR.CTR.Saturated    0.86856880 0.0169631
## HFD.HFD.Saturated-CTR.CTR.Saturated      0.95371042 0.4547920
## HFD.HFD.Unsaturated-CTR.CTR.Saturated    1.19666952 0.0000005
## CTR.HFD.Saturated-CTR.CTR.Unsaturated    0.28276632 0.8747904
## CTR.HFD.Unsaturated-CTR.CTR.Unsaturated  0.50205506 0.0034853
## HFD.CTR.Saturated-CTR.CTR.Unsaturated   -0.32113944 0.0000012
## HFD.CTR.Unsaturated-CTR.CTR.Unsaturated  0.11705121 0.9426006
## HFD.HFD.Saturated-CTR.CTR.Unsaturated    0.29196391 0.9718429
## HFD.HFD.Unsaturated-CTR.CTR.Unsaturated  0.45165479 0.0044137
## CTR.HFD.Unsaturated-CTR.HFD.Saturated    1.03192624 0.0629648
## HFD.CTR.Saturated-CTR.HFD.Saturated      0.13044666 0.2454191
## HFD.CTR.Unsaturated-CTR.HFD.Saturated    0.66665566 0.9826093
## HFD.HFD.Saturated-CTR.HFD.Saturated      0.72775089 0.9999391
## HFD.HFD.Unsaturated-CTR.HFD.Saturated    0.99363630 0.0892526
## HFD.CTR.Saturated-CTR.HFD.Unsaturated   -0.58673788 0.0000000
## HFD.CTR.Unsaturated-CTR.HFD.Unsaturated -0.13479524 0.0000284
## HFD.HFD.Saturated-CTR.HFD.Unsaturated    0.02490293 0.0798411
## HFD.HFD.Unsaturated-CTR.HFD.Unsaturated  0.19830002 0.9999261
## HFD.CTR.Unsaturated-HFD.CTR.Saturated    1.03102530 0.0000194
## HFD.HFD.Saturated-HFD.CTR.Saturated      1.12226117 0.0418068
## HFD.HFD.Unsaturated-HFD.CTR.Saturated    1.35943650 0.0000000
## HFD.HFD.Saturated-HFD.CTR.Unsaturated    0.36189368 0.9995649
## HFD.HFD.Unsaturated-HFD.CTR.Unsaturated  0.51869557 0.0000208
## HFD.HFD.Unsaturated-HFD.HFD.Saturated    0.83879132 0.1154763
```