# Supplementary Tables

**Table S1.** MS/MS transitions used for individual phospholipid species.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PC** | | **PE** | | **SM** | | **PI** | | **LPC** | |
| Name | Q1 / Q3 | Name | Q1 / Q3 | Name | Q1 / Q3 | Name | Q1 / Q3 | 16:1 | 494.3 / 184.1 |
| 32:1 | 732.4 / 184.1 | 34:2 | 716.5 / 575.5 | 32:1 | 675.4 / 184.1 | 34:3 | 831.5 / 241.0 | 16:0 | 496.3 / 184.1 |
| 32:0 | 734.4 / 184.1 | P-36:4 | 724.5 / 583.5 | 34:2 | 701.4 / 184.1 | 34:2 | 833.5 / 241.0 | 18:2 | 520.3 / 184.1 |
| 34:3 | 756.4 / 184.1 | P-36:2 | 728.6 / 587.6 | 34:1 | 703.4 / 184.1 | 34:1 | 835.5 / 241.0 | 18:1 | 522.3 / 184.1 |
| 34:2 | 758.4 / 184.1 | 36:5 | 738.5 / 597.5 | 34:0 | 705.4 / 184.1 | O-36:2 and/or  P-36:1 | 847.6 / 241.0 | 18:0 | 524.3 / 184.1 |
| 34:1 | 760.4 / 184.1 | 36:4 | 740.5 / 599.5 | 36:2 | 729.4 / 184.1 | O-36:1 and/or  P-36:0 | 849.6 / 241.0 | 20:4 | 544.3 / 184.1 |
| 34:0 | 762.4 / 184.1 | 36:2 | 744.6 / 603.6 | 36:1 | 731.4 / 184.1 | 36:4 | 857.5 / 241.0 | 22:6 | 568.3 / 184.1 |
| 36:5 | 780.4 / 184.1 | P-38:6 | 748.5 / 607.5 | 38:1 | 759.4 / 184.1 | 36:3 | 859.5 / 241.0 | 18:1-D7 | 529.4 / 184.1 |
| 36:4 | 782.4 / 184.1 | P-38:5 and/or O-38:6 | 750.5 / 609.5 | 39:1 | 773.4 / 184.1 | 36:2 | 861.5 / 241.0 |  |  |
| 36:3 | 784.4 / 184.1 | O-38:0 and/or 38:7 | 762.6 / 621.6 | 40:2 | 785.5 / 184.1 | 36:1 | 863.6 / 241.0 |  |  |
| 36:2 | 786.4 / 184.1 | 38:6 | 764.5 / 623.5 | 40:1 | 787.5 / 184.1 | 36:0 and/or  P-38:6 | 865.6 / 241.0 |  |  |
| 36:1 | 788.4 / 184.1 | 38:5 | 766.5 / 625.5 | 40:0 | 789.5 / 184.1 | 38:4 | 885.6 / 241.0 |  |  |
| 36:0 | 790.4 / 184.1 | 38:4 | 768.6 / 627.6 | 41:2 | 799.5 / 184.1 | 38:3 | 887.6 / 241.0 |  |  |
| 38:6 | 806.5 / 184.1 | 38:3 | 770.6 / 629.6 | 41:1 | 801.5 / 184.1 | 40:6 | 909.6 / 241.0 |  |  |
| 38:5 | 808.5 / 184.1 | O-40:2 and/or  P-40:1 and/or 40:9 | 786.6 / 645.6 | 42:3 | 811.5 / 184.1 | 40:5 | 911.6 / 241.0 |  |  |
| 38:4 | 810.5 / 184.1 | O-40:1 and/or P-40:0 and/or 40:8 | 788.6 / 647.6 | 42:2 | 813.5 / 184.1 | 15:0-18:1-D7 | 828.5 / 241.0 |  |  |
| 38:3 | 812.5 / 184.1 | O-40:0 and/or 40:7 | 790.6 / 649.6 | 42:1 | 815.5 / 184.1 |  |  |  |  |
| 40:6 | 834.5 / 184.1 | 40:6 | 792.6 / 651.6 | 43:2 | 827.5 / 184.1 |  |  |  |  |
| 40:5 | 836.5 / 184.1 | O-42:2 and/or P-42:1 and/or 42:9 | 814.7 / 673.7 | 18:1-D9 | 738.4 / 184.1 |  |  |  |  |
| 15:0-18:1-D7 | 753.5 / 184.1 | 15:0-18:1-D7 | 711.3 / 570.3 |  |  |  |  |  |  |

**Table S2.** Summary of mean and SD of analyte levels in whole serum for non-polar lipids, and phospholipids lipids by normolipidemic (NL, Total-C <230 mg/dL, and Total-TG <150 mg/dL), hypercholesterolemic (HC, Total-C >230 mg/dL and Total-TG <150 mg/dL), hyperlipidemic (HL, Total-C >230 mg/dL and Total-TG >150 mg/dL), and hypertriglyceridemic (HT, Total-C<230 mg/dL and Total-TG>150 mg/dL) sample categories.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Analyte/Sample Category | NL  (n=19) | | HC  (n=16) | | HL  (n=46) | | HT  (n=30) | |
|
|  | Mean (SD) | Range | Mean (SD) | Range | Mean (SD) | Range | Mean (SD) | Range |
|
| *Non-polar lipids (mg/dL)* | | | | | | | | |
| Total-C | 181 (29) | 124-217 | 269 (21) | 232-311 | 280 (31) | 232-355 | 188 (23) | 135-226 |
| Total-TG | 74 (28) | 33-136 | 90 (32) | 50-144 | 279 (107) | 155-573 | 268 (91) | 161-650 |
| Total-CE | 140 (22) | 97-167 | 218 (19) | 180-255 | 225 (28) | 182-294 | 147 (20) | 106-198 |
| Total-FC | 41 (8) | 27-56 | 52 (7) | 35-62 | 56 (9) | 31-89 | 41 (8) | 20-58 |
| *Polar lipids (µM)* | | | | | | | | |
| Total-PC | 2176 (404) | 1273-2905 | 2539 (530) | 1814-3897 | 2884 (671) | 2016-5415 | 2219 (344) | 1666-2912 |
| Total-SM | 443 (89) | 316-629 | 653 (75) | 549-745 | 601 (85) | 412-879 | 442 (73) | 339-602 |
| Total-PE | 162 (54.) | 64-275 | 183 (65) | 91-291 | 341 (155) | 136-866 | 269 (82) | 134-472 |
| Total-PI | 58 (14) | 34-91 | 65 (15) | 43-92 | 90 (22) | 55-168 | 68 (10) | 51-92 |
| Total-LPC | 514 (82) | 370-694 | 812 (232) | 507-1362 | 878 (218) | 508-1507 | 645 (188) | 444-1557 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Whole serum | | |  | HDL | | | LDL | |  |
| <7 nm | 7-10 nm | 10-13 nm | 13-18 nm | 18-23 nm | 23-30 nm | >30 nm |
| Analyte | Mean | Intra-run  CV (%)  (n=3) | Inter-day  CV (%)  (n=75) | Mean±SD (Inter-day, n=25) | | | | | | |
|
| *Non-polar lipids (µM)* | | | | | | | | | | |
| FC | 1148 | 5% | 7% | 12.1 (4) | 170 (17.1) | 101.5 (19.9) | 36.6 (15.3) | 322.5 (101.2) | 372.7 (52.8) | 135.5 (32.1) |
| CE | 3775 | 6% | 9% | 24.7 (2.2) | 853.9 (98.4) | 462.3 (109.5) | 110.2 (44) | 973.3 (205.9) | 1049.7 (230) | 305.3 (53.9) |
| TG | 1050 | 6% | 10% | 51.4 (4.4) | 215.3 (29.8) | 118.9 (47.8) | 54.1 (43.3) | 202.4 (19.5) | 269.4 (76.4) | 194.9 (50) |
| *Polar lipids (µM)* | | | | | | | | | | |
| PC | 2176 | 4% | 7% | 45.7 (8.6) | 838.3 (99.5) | 399.7 (58.3) | 91.9 (30.4) | 339 (65.5) | 357.4 (78.1) | 137.2 (33.7) |
| SM | 415 | 4% | 6% | 4.9 (1.7) | 77 (8.9) | 40.4 (6.1) | 12.2 (4.8) | 112.5 (21.3) | 127.4 (30) | 45 (7) |
| PE | 137 | 3% | 11% | 2.7 (0.6) | 52.6 (4.9) | 27 (5.4) | 6 (1.6) | 21.2 (6.2) | 21.2 (3.2) | 8.2 (1.3) |
| PI | 62 | 2% | 5% | 1.4 (0.3) | 26 (2.9) | 11.8 (2.8) | 2.5 (0.9) | 8.5 (1.7) | 8.8 (1.8) | 3.1 (0.7) |
| LPC | 517 | 4% | 6% | 142.8 (37.6) | 224 (119.1) | 43.8 (9.9) | 29.5 (11.3) | 44 (12.7) | 51.2 (12.4) | 34.8 (10.6) |

**Table S3.** Summary of repeated analysis of the quality control pool. Showing inter-day mean and CV (%) for whole serum concentration measurements, and mean±SD for the sum of fractions in the indicated size ranges.