**S9 Table.** Targeted validity verification of GC-MS based metabolomics in plasma. Precision obtained with different normalization strategies for the QC samples is shown.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compound name** |  | **No Norm** | **IS Norm** | **Next QC Norm** |
| **Avg** | **RSD(%)** | **RSD(%)** | **RSD(%)** |
|  L-valine 1  | 275290 | 25.4 | 19.8 | 5.3 |
|  L-alanine 1  | 160164 | 48.2 | 36.9 | 25.9 |
|  L-proline 1  | 99717 | 17.7 | 6.5 | 5.0 |
|  L-valine 2  | 146276 | 36.4 | 23.8 | 13.2 |
|  urea  | 2374297 | 28.0 | 16.1 | 12.5 |
|  benzoic acid  | 42051 | 19.3 | 9.6 | 5.6 |
|  L-serine 1  | 132759 | 16.2 | 5.5 | 5.4 |
|  glycerol  | 363088 | 23.1 | 10.7 | 6.9 |
|  L-threonine 1  | 177012 | 13.8 | 3.8 | 5.8 |
|  L-proline 2  | 76489 | 21.0 | 11.3 | 12.1 |
|  glycine  | 718597 | 26.9 | 15.5 | 6.5 |
|  succinic acid  | 25363 | 16.6 | 8.4 | 6.9 |
|  glyceric acid  | 8145 | 18.3 | 6.6 | 6.2 |
|  porphine 1  | 12997 | 40.9 | 30.0 | 18.1 |
|  L-serine 2  | 61059 | 37.4 | 25.0 | 12.9 |
|  L-alanine 2  | 17618 | 58.2 | 58.1 | 37.1 |
|  L-threonine 2  | 28819 | 37.6 | 25.4 | 13.0 |
|  L-methionine 1  | 11210 | 14.8 | 7.1 | 6.9 |
|  DL-3-aminoisobutyric acid 2  | 21387 | 53.6 | 53.7 | 43.3 |
|  capric acid  | 4122 | 27.2 | 22.4 | 11.8 |
|  iminodiacetic acid 1  | 40517 | 36.7 | 40.3 | 21.1 |
|  trans-4-hydroxy-L-proline 1  | 13604 | 15.1 | 5.8 | 6.6 |
|  D-threitol  | 8319 | 19.8 | 7.6 | 7.0 |
|  aspartic acid 2  | 17280 | 42.4 | 31.2 | 11.5 |
|  L-glutamic acid 3 (dehydrated)  | 465172 | 19.7 | 7.3 | 6.9 |
|  L-glutamic acid 1  | 148708 | 14.0 | 8.6 | 8.7 |
|  L-glutamine 1  | 128226 | 57.7 | 48.7 | 38.5 |
|  Phenylalanine 1  | 142196 | 13.5 | 5.3 | 5.6 |
|  alpha ketoglutaric acid  | 36909 | 18.7 | 7.9 | 8.5 |
|  L-glutamic acid 2  | 109250 | 51.3 | 41.3 | 26.5 |
|  tartaric acid  | 3220 | 14.5 | 4.7 | 8.5 |
|  lauric acid  | 16212 | 18.2 | 7.1 | 5.9 |
|  pyrophosphate  | 70201 | 76.3 | 67.6 | 53.0 |
|  L-asparagine 2  | 3718 | 30.6 | 28.2 | 29.1 |
|  citrulline 1  | 7010 | 33.5 | 29.6 | 22.0 |
|  glycerol 1-phosphate  | 89735 | 19.8 | 14.2 | 19.1 |
|  hypoxanthine  | 6900 | 28.3 | 18.0 | 15.0 |
|  citric acid  | 147510 | 18.5 | 6.5 | 6.6 |
|  citrulline 2  | 2020 | 34.3 | 28.8 | 24.9 |
|  Myristic Acid d27  | 7515720 | 13.5 | - | 6.8 |
|  fructose 1  | 45062 | 45.8 | 42.7 | 42.1 |
|  tyrosine 1  | 165205 | 17.9 | 7.5 | 10.5 |
|  D-glucose 1  | 23187217 | 4.6 | 10.4 | 5.0 |
|  D-glucose 2  | 4044972 | 14.0 | 3.5 | 9.6 |
|  L-lysine 2  | 40010 | 34.9 | 31.8 | 35.8 |
|  L-tyrosine 2  | 57341 | 31.8 | 26.0 | 28.4 |
|  palmitoleic acid  | 21948 | 15.9 | 5.5 | 8.3 |
|  palmitic acid  | 158063 | 12.7 | 11.8 | 9.6 |
|  myo-inositol  | 80334 | 32.3 | 22.4 | 24.7 |
|  uric acid 1  | 463291 | 27.6 | 28.1 | 12.4 |
|  linoleic acid  | 111767 | 14.0 | 4.1 | 7.8 |
|  L-tryptophan 2  | 129038 | 24.1 | 19.9 | 14.1 |
|  oleic acid  | 259050 | 13.1 | 5.2 | 8.1 |
|  stearic acid  | 227000 | 15.3 | 19.6 | 10.8 |
|  alpha tocophereol  | 62327 | 19.8 | 7.8 | 6.2 |
|  cholesterol  | 1278135 | 18.0 | 5.3 | 6.7 |