**Supplementary Table S4** sPLS-DA statistical pipeline results from plasma

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Stability2 | | | Significance3 | | |  |
| Metabolite1 | t | N(t) | *P* | t | N(t) | *P* | Direction4 |
| C0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C10 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C10:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C12 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C12:DC | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C14 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C14:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C14:1-OH | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C14:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C16 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C16-OH | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C16:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C16:2-OH | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C18 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C18:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C18:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C3-DC (C4:OH) | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C3-OH | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C3:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C4:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C5-DC (C6:OH) | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C5-M-DC | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C5-OH (C3-DC-M) | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C5:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C6 (C4:1-DC) | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C6:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C8 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| C9 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C28:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C30:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C32:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C32:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C32:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C32:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C34:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C34:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C34:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C34:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C36:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C36:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C36:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C36:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C36:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C36:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C38:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C38:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C38:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C38:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C38:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C40:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C40:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C40:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C40:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C40:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C40:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C42:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C42:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C42:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C42:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C42:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC aa C42:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C30:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C32:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C34:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C34:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C34:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C34:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C36:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C36:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C36:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C36:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C36:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C38:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C40:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C40:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C40:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C40:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C40:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C40:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C42:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C42:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C42:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C42:3 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C42:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C42:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C44:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C44:5 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| PC ae C44:6 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C14:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C16:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C16:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C17:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C18:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C18:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C18:2 | 3 | 744 | 0.744 | 0 | 1000 | 1 |  |
| lysoPC a C20:3 | 2 | 816 | 0.816 | 0 | 1000 | 1 |  |
| lysoPC a C20:4 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| lysoPC a C26:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| SM (OH) C14:1 | 24 | 37 | 0.037 | 0.9066 | 0 | 0 | ID |
| SM (OH) C16:1 | 2 | 800 | 0.8 | 0 | 1000 | 1 |  |
| SM (OH) C22:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| SM (OH) C22:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| SM (OH) C24:1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| SM C16:0 | 6 | 573 | 0.573 | 0 | 1000 | 1 |  |
| SM C16:1 | 2 | 809 | 0.809 | 0 | 1000 | 1 |  |
| SM C18:0 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| SM C18:1 | 2 | 817 | 0.817 | 0 | 1000 | 1 |  |
| SM C20:2 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| SM C24:0 | 2 | 812 | 0.812 | 0 | 1000 | 1 |  |
| SM C24:1 | 12 | 334 | 0.334 | 0 | 1000 | 1 |  |
| H1 | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Ala | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Arg | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Asn | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Cit | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Gln | 1 | 884 | 0.884 | 0 | 1000 | 1 |  |
| Glu | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Gly | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| His | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Ile | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Leu | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Lys | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Met | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Orn | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Phe | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Pro | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Ser | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Thr | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Trp | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Tyr | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Val | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Ac-Orn | 24 | 64 | 0.064 | -1.0855 | 1 | 0,001 | ILW |
| Carnosine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Creatinine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Kynurenine | 24 | 66 | 0.066 | 0.1169 | 177 | 0,177 | ILW |
| Met-SO | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Putrescine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Sarcosine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Serotonin | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Spermidine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Spermine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| Taurine | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| alpha-AAA | 0 | 1000 | 1 | 0 | 1000 | 1 |  |
| total-DMA | 0 | 1000 | 1 | 0 | 1000 | 1 |  |

1Full names are listed in Supplementary Table S1. Metabolite concentrations are reported in *μM*.

2For the stability “t” represent the number of time that the metabolite was selected in the leave one out procedure (LOO) while “t\*” represents the number of time that the metabolites was selected in the LOO obtained after the permutation. N(t) indicates the number of times that (t\* ≥ t) and *P* the associated probability.

3For the significance“t” represents the absolute value of the regression coefficient of the metabolite, while t\* represents the relative one obtained after the permutation. N(t) indicates the number of times that (|t\*| ≥ |t|) and *P* the associated probability.

4Direction: “ID” indicates metabolite concentration higher in Italian Duroc; “ILW” indicates metabolite concentration higher in Italian Large White. “-” indicates metabolites that did not have any weight in the classification.