**Table e-1: Included metabolites in (sub-)pathways**

|  |  |  |  |
| --- | --- | --- | --- |
| Metabolite pathway | Metabolite  subpathway | Metabolite abbreviation | Metabolite name |
| Lipids | VLDL | XXL-VLDL-P | Concentration of chylomicrons and extremely large VLDL particles |
|  |  | XXL-VLDL-L | Total lipids in chylomicrons and extremely large VLDL |
|  |  | XXL-VLDL-PL | Phospholipids in chylomicrons and extremely large VLDL |
|  |  | XXL-VLDL-C | Total cholesterol in chylomicrons and extremely large VLDL |
|  |  | XXL-VLDL-CE | Cholesterol esters in chylomicrons and extremely large VLDL |
|  |  | XXL-VLDL-FC | Free cholesterol in chylomicrons and extremely large VLDL |
|  |  | XXL-VLDL-TG | Triglycerides in chylomicrons and extremely large VLDL |
|  |  | XL-VLDL-P | Concentration of very large VLDL particles |
|  |  | XL-VLDL-L | Total lipids in very large VLDL |
|  |  | XL-VLDL-PL | Phospholipids in very large VLDL |
|  |  | XL-VLDL-C | Total cholesterol in very large VLDL |
|  |  | XL-VLDL-CE | Cholesterol esters in very large VLDL |
|  |  | XL-VLDL-FC | Free cholesterol in very large VLDL |
|  |  | XL-VLDL-TG | Triglycerides in very large VLDL |
|  |  | L-VLDL-P | Concentration of large VLDL particles |
|  |  | L-VLDL-L | Total lipids in large VLDL |
|  |  | L-VLDL-PL | Phospholipids in large VLDL |
|  |  | L-VLDL-C | Total cholesterol in large VLDL |
|  |  | L-VLDL-CE | Cholesterol esters in large VLDL |
|  |  | L-VLDL-FC | Free cholesterol in large VLDL |
|  |  | L-VLDL-TG | Triglycerides in large VLDL |
|  |  | M-VLDL-P | Concentration of medium VLDL particles |
|  |  | M-VLDL-L | Total lipids in medium VLDL |
|  |  | M-VLDL-PL | Phospholipids in medium VLDL |
|  |  | M-VLDL-C | Total cholesterol in medium VLDL |
|  |  | M-VLDL-CE | Cholesterol esters in medium VLDL |
|  |  | M-VLDL-FC | Free cholesterol in medium VLDL |
|  |  | M-VLDL-TG | Triglycerides in medium VLDL |
|  |  | S-VLDL-P | Concentration of small VLDL particles |
|  |  | S-VLDL-L | Total lipids in small VLDL |
|  |  | S-VLDL-PL | Phospholipids in small VLDL |
|  |  | S-VLDL-C | Total cholesterol in small VLDL |
|  |  | S-VLDL-CE | Cholesterol esters in small VLDL |
|  |  | S-VLDL-FC | Free cholesterol in small VLDL |
|  |  | S-VLDL-TG | Triglycerides in small VLDL |
|  |  | XS-VLDL-P | Concentration of very small VLDL particles |
|  |  | XS-VLDL-L | Total lipids in very small VLDL |
|  |  | XS-VLDL-PL | Phospholipids in very small VLDL |
|  |  | XS-VLDL-C | Total cholesterol in very small VLDL |
|  |  | XS-VLDL-CE | Cholesterol esters in very small VLDL |
|  |  | XS-VLDL-FC | Free cholesterol in very small VLDL |
|  |  | XS-VLDL-TG | Triglycerides in very small VLDL |
|  |  | VLDL-D | Mean diameter for VLDL particles |
|  |  | VLDL-C | Total cholesterol in VLDL |
|  |  | VLDL-TG | Triglycerides in VLDL |
|  | IDL | IDL-P | Concentration of IDL particles |
|  |  | IDL-L | Total lipids in IDL |
|  |  | IDL-PL | Phospholipids in IDL |
|  |  | IDL-C | Total cholesterol in IDL |
|  |  | IDL-CE | Cholesterol esters in IDL |
|  |  | IDL-FC | Free cholesterol in IDL |
|  |  | IDL-TG | Triglycerides in IDL |
|  | LDL | L-LDL-P | Concentration of large LDL particles |
|  |  | L-LDL-L | Total lipids in large LDL |
|  |  | L-LDL-PL | Phospholipids in large LDL |
|  |  | L-LDL-C | Total cholesterol in large LDL |
|  |  | L-LDL-CE | Cholesterol esters in large LDL |
|  |  | L-LDL-FC | Free cholesterol in large LDL |
|  |  | L-LDL-TG | Triglycerides in large LDL |
|  |  | M-LDL-P | Concentration of medium LDL particles |
|  |  | M-LDL-L | Total lipids in medium LDL |
|  |  | M-LDL-PL | Phospholipids in medium LDL |
|  |  | M-LDL-C | Total cholesterol in medium LDL |
|  |  | M-LDL-CE | Cholesterol esters in medium LDL |
|  |  | M-LDL-FC | Free cholesterol in medium LDL |
|  |  | M-LDL-TG | Triglycerides in medium LDL |
|  |  | S-LDL-P | Concentration of small LDL particles |
|  |  | S-LDL-L | Total lipids in small LDL |
|  |  | S-LDL-PL | Phospholipids in small LDL |
|  |  | S-LDL-C | Total cholesterol in small LDL |
|  |  | S-LDL-CE | Cholesterol esters in small LDL |
|  |  | S-LDL-FC | Free cholesterol in small LDL |
|  |  | S-LDL-TG | Triglycerides in small LDL |
|  |  | LDL-D | Mean diameter for LDL particles |
|  |  | LDL-C | Total cholesterol in LDL |
|  |  | LDL-TG | Triglycerides in LDL |
|  | HDL | XL-HDL-P | Concentration of very large HDL particles |
|  |  | XL-HDL-L | Total lipids in very large HDL |
|  |  | XL-HDL-PL | Phospholipids in very large HDL |
|  |  | XL-HDL-C | Total cholesterol in very large HDL |
|  |  | XL-HDL-CE | Cholesterol esters in very large HDL |
|  |  | XL-HDL-FC | Free cholesterol in very large HDL |
|  |  | XL-HDL-TG | Triglycerides in very large HDL |
|  |  | L-HDL-P | Concentration of large HDL particles |
|  |  | L-HDL-L | Total lipids in large HDL |
|  |  | L-HDL-PL | Phospholipids in large HDL |
|  |  | L-HDL-C | Total cholesterol in large HDL |
|  |  | L-HDL-CE | Cholesterol esters in large HDL |
|  |  | L-HDL-FC | Free cholesterol in large HDL |
|  |  | L-HDL-TG | Triglycerides in large HDL |
|  |  | M-HDL-P | Concentration of medium HDL particles |
|  |  | M-HDL-L | Total lipids in medium HDL |
|  |  | M-HDL-PL | Phospholipids in medium HDL |
|  |  | M-HDL-C | Total cholesterol in medium HDL |
|  |  | M-HDL-CE | Cholesterol esters in medium HDL |
|  |  | M-HDL-FC | Free cholesterol in medium HDL |
|  |  | M-HDL-TG | Triglycerides in medium HDL |
|  |  | S-HDL-P | Concentration of small HDL particles |
|  |  | S-HDL-L | Total lipids in small HDL |
|  |  | S-HDL-PL | Phospholipids in small HDL |
|  |  | S-HDL-C | Total cholesterol in small HDL |
|  |  | S-HDL-CE | Cholesterol esters in small HDL |
|  |  | S-HDL-FC | Free cholesterol in small HDL |
|  |  | S-HDL-TG | Triglycerides in small HDL |
|  |  | HDL-D | Mean diameter for HDL particles |
|  |  | HDL-C | Total cholesterol in HDL |
|  |  | HDL2-C | Total cholesterol in HDL2 |
|  |  | HDL3-C | Total cholesterol in HDL3 |
|  |  | HDL-TG | Triglycerides in HDL |
|  | Sterol/Steroid | Serum-C | Serum total cholesterol |
|  |  | Remnant-C | Remnant cholesterol (non-HDL, non-LDL -cholesterol) |
|  |  | EstC | Esterified cholesterol |
|  |  | FreeC | Free cholesterol |
|  |  | Serum-TG | Serum total triglycerides |
|  | Glycerophospholipids | TotPG | Total phosphoglycerides |
|  |  | PC | Phosphatidylcholine and other cholines |
|  | Sphingolipid | SM | Sphingomyelins |
|  | Glycerolipid metabolism | TotCho | Total cholines |
|  | Fatty acid, summary measure | TotFA | Total fatty acids |
|  |  | UnsatDeg | Estimated degree of unsaturation |
|  |  | FAw3 | Omega-3 fatty acids |
|  |  | FAw6 | Omega-6 fatty acids |
|  |  | PUFA | Polyunsaturated fatty acids |
|  |  | MUFA | Monounsaturated fatty acids; 16:1, 18:1 |
|  |  | SFA | Saturated fatty acids |
|  | Essential fatty acid | DHA | 22:6, docosahexaenoic acid |
|  |  | LA | 18:2, linoleic acid |
|  | Ketone bodies | AcAce | Acetoacetate |
|  |  | bOHBut | 3-hydroxybutyrate |
| Carbohydrates | Glycolysis, gluconeogenesis, pyruvate metabolism | Glc | Glucose |
|  |  | Lac | Lactate |
|  |  | Pyr | Pyruvate |
| Energy | Krebs cycle | Cit | Citrate |
| Amino acids | Alanine and aspartate metabolism | Ala | Alanine |
|  | Glutamate metabolism | Gln | Glutamine |
|  | Histidine metabolism | His | Histidine |
|  | Valine, leucine and isoleucine metabolism | Ile | Isoleucine |
|  |  | Leu | Leucine |
|  |  | Val | Valine |
|  | Phenylalanine & tyrosine metabolism | Phe | Phenylalanine |
|  |  | Tyr | Tyrosine |
|  | Creatine metabolism | Crea | Creatinine |
| Peptides | Apolipoprotein | ApoA1 | Apolipoprotein A-I |
|  |  | ApoB | Apolipoprotein B |
|  | Protein | Alb | Albumin |
|  | Glycoprotein | Gp | Glycoprotein acetyls, mainly a1-acid glycoprotein |
| Abbreviations: HDL=High-density lipoprotein, IDL=Intermediate-density lipoprotein, LDL=Low-density lipoprotein, VLDL=Very-low-density lipoprotein. | | | |