

Supplementary Table 1 – List of metabolites measured by NMR-based metabolomics

Abbreviation	Full Name	Abbreviation	Full Name
Lipoprotein Subclasses		Lipoprotein Subclass Ratios	
XXL-VLDL-P	Concentration of chylomicrons and extremely large VLDL particles	XXL-VLDL-PL_%	Phospholipids to total lipids ratio in chylomicrons and extremely large VLDL
XXL-VLDL-L	Total lipids in chylomicrons and extremely large VLDL	XXL-VLDL-C_%	Total cholesterol to total lipids ratio in chylomicrons and extremely large VLDL
XXL-VLDL-PL	Phospholipids in chylomicrons and extremely large VLDL	XXL-VLDL-CE_%	Cholesterol esters to total lipids ratio in chylomicrons and extremely large VLDL
XXL-VLDL-C	Total cholesterol in chylomicrons and extremely large VLDL	XXL-VLDL-FC_%	Free cholesterol to total lipids ratio in chylomicrons and extremely large VLDL
XXL-VLDL-CE	Cholesterol esters in chylomicrons and extremely large VLDL	XXL-VLDL-TG_%	Triglycerides to total lipids ratio in chylomicrons and extremely large VLDL
XXL-VLDL-FC	Free cholesterol in chylomicrons and extremely large VLDL	XL-VLDL-PL_%	Phospholipids to total lipids ratio in very large VLDL
XXL-VLDL-TG	Triglycerides in chylomicrons and extremely large VLDL	XL-VLDL-C_%	Total cholesterol to total lipids ratio in very large VLDL
XL-VLDL-P	Concentration of very large VLDL particles	XL-VLDL-CE_%	Cholesterol esters to total lipids ratio in very large VLDL
XL-VLDL-L	Total lipids in very large VLDL	XL-VLDL-FC_%	Free cholesterol to total lipids ratio in very large VLDL
XL-VLDL-PL	Phospholipids in very large VLDL	XL-VLDL-TG_%	Triglycerides to total lipids ratio in very large VLDL
XL-VLDL-C	Total cholesterol in very large VLDL	L-VLDL-PL_%	Phospholipids to total lipids ratio in large VLDL
XL-VLDL-CE	Cholesterol esters in very large VLDL	L-VLDL-C_%	Total cholesterol to total lipids ratio in large VLDL
XL-VLDL-FC	Free cholesterol in very large VLDL	L-VLDL-CE_%	Cholesterol esters to total lipids ratio in large VLDL

XL-VLDL-TG	Triglycerides in very large VLDL	L-VLDL-FC_%	Free cholesterol to total lipids ratio in large VLDL
L-VLDL-P	Concentration of large VLDL particles	L-VLDL-TG_%	Triglycerides to total lipids ratio in large VLDL
L-VLDL-L	Total lipids in large VLDL	M-VLDL-PL_%	Phospholipids to total lipids ratio in medium VLDL
L-VLDL-PL	Phospholipids in large VLDL	M-VLDL-C_%	Total cholesterol to total lipids ratio in medium VLDL
L-VLDL-C	Total cholesterol in large VLDL	M-VLDL-CE_%	Cholesterol esters to total lipids ratio in medium VLDL
L-VLDL-CE	Cholesterol esters in large VLDL	M-VLDL-FC_%	Free cholesterol to total lipids ratio in medium VLDL
L-VLDL-FC	Free cholesterol in large VLDL	M-VLDL-TG_%	Triglycerides to total lipids ratio in medium VLDL
L-VLDL-TG	Triglycerides in large VLDL	S-VLDL-PL_%	Phospholipids to total lipids ratio in small VLDL
M-VLDL-P	Concentration of medium VLDL particles	S-VLDL-C_%	Total cholesterol to total lipids ratio in small VLDL
M-VLDL-L	Total lipids in medium VLDL	S-VLDL-CE_%	Cholesterol esters to total lipids ratio in small VLDL
M-VLDL-PL	Phospholipids in medium VLDL	S-VLDL-FC_%	Free cholesterol to total lipids ratio in small VLDL
M-VLDL-C	Total cholesterol in medium VLDL	S-VLDL-TG_%	Triglycerides to total lipids ratio in small VLDL
M-VLDL-CE	Cholesterol esters in medium VLDL	XS-VLDL-PL_%	Phospholipids to total lipids ratio in very small VLDL
M-VLDL-FC	Free cholesterol in medium VLDL	XS-VLDL-C_%	Total cholesterol to total lipids ratio in very small VLDL
M-VLDL-TG	Triglycerides in medium VLDL	XS-VLDL-CE_%	Cholesterol esters to total lipids ratio in very small VLDL
S-VLDL-P	Concentration of small VLDL particles	XS-VLDL-FC_%	Free cholesterol to total lipids ratio in very small VLDL
S-VLDL-L	Total lipids in small VLDL	XS-VLDL-TG_%	Triglycerides to total lipids ratio in very small VLDL
S-VLDL-PL	Phospholipids in small VLDL	IDL-PL_%	Phospholipids to total lipids ratio in IDL

S-VLDL-C	Total cholesterol in small VLDL	IDL-C_%	Total cholesterol to total lipids ratio in IDL
S-VLDL-CE	Cholesterol esters in small VLDL	IDL-CE_%	Cholesterol esters to total lipids ratio in IDL
S-VLDL-FC	Free cholesterol in small VLDL	IDL-FC_%	Free cholesterol to total lipids ratio in IDL
S-VLDL-TG	Triglycerides in small VLDL	IDL-TG_%	Triglycerides to total lipids ratio in IDL
XS-VLDL-P	Concentration of very small VLDL particles	L-LDL-PL_%	Phospholipids to total lipids ratio in large LDL
XS-VLDL-L	Total lipids in very small VLDL	L-LDL-C_%	Total cholesterol to total lipids ratio in large LDL
XS-VLDL-PL	Phospholipids in very small VLDL	L-LDL-CE_%	Cholesterol esters to total lipids ratio in large LDL
XS-VLDL-C	Total cholesterol in very small VLDL	L-LDL-FC_%	Free cholesterol to total lipids ratio in large LDL
XS-VLDL-CE	Cholesterol esters in very small VLDL	L-LDL-TG_%	Triglycerides to total lipids ratio in large LDL
XS-VLDL-FC	Free cholesterol in very small VLDL	M-LDL-PL_%	Phospholipids to total lipids ratio in medium LDL
XS-VLDL-TG	Triglycerides in very small VLDL	M-LDL-C_%	Total cholesterol to total lipids ratio in medium LDL
IDL-P	Concentration of IDL particles	M-LDL-CE_%	Cholesterol esters to total lipids ratio in medium LDL
IDL-L	Total lipids in IDL	M-LDL-FC_%	Free cholesterol to total lipids ratio in medium LDL
IDL-PL	Phospholipids in IDL	M-LDL-TG_%	Triglycerides to total lipids ratio in medium LDL
IDL-C	Total cholesterol in IDL	S-LDL-PL_%	Phospholipids to total lipids ratio in small LDL
IDL-CE	Cholesterol esters in IDL	S-LDL-C_%	Total cholesterol to total lipids ratio in small LDL
IDL-FC	Free cholesterol in IDL	S-LDL-CE_%	Cholesterol esters to total lipids ratio in small LDL
IDL-TG	Triglycerides in IDL	S-LDL-FC_%	Free cholesterol to total lipids ratio in small LDL

L-LDL-P	Concentration of large LDL particles	S-LDL-TG_%	Triglycerides to total lipids ratio in small LDL
L-LDL-L	Total lipids in large LDL	XL-HDL-PL_%	Phospholipids to total lipids ratio in very large HDL
L-LDL-PL	Phospholipids in large LDL	XL-HDL-C_%	Total cholesterol to total lipids ratio in very large HDL
L-LDL-C	Total cholesterol in large LDL	XL-HDL-CE_%	Cholesterol esters to total lipids ratio in very large HDL
L-LDL-CE	Cholesterol esters in large LDL	XL-HDL-FC_%	Free cholesterol to total lipids ratio in very large HDL
L-LDL-FC	Free cholesterol in large LDL	XL-HDL-TG_%	Triglycerides to total lipids ratio in very large HDL
L-LDL-TG	Triglycerides in large LDL	L-HDL-PL_%	Phospholipids to total lipids ratio in large HDL
M-LDL-P	Concentration of medium LDL particles	L-HDL-C_%	Total cholesterol to total lipids ratio in large HDL
M-LDL-L	Total lipids in medium LDL	L-HDL-CE_%	Cholesterol esters to total lipids ratio in large HDL
M-LDL-PL	Phospholipids in medium LDL	L-HDL-FC_%	Free cholesterol to total lipids ratio in large HDL
M-LDL-C	Total cholesterol in medium LDL	L-HDL-TG_%	Triglycerides to total lipids ratio in large HDL
M-LDL-CE	Cholesterol esters in medium LDL	M-HDL-PL_%	Phospholipids to total lipids ratio in medium HDL
M-LDL-FC	Free cholesterol in medium LDL	M-HDL-C_%	Total cholesterol to total lipids ratio in medium HDL
M-LDL-TG	Triglycerides in medium LDL	M-HDL-CE_%	Cholesterol esters to total lipids ratio in medium HDL
S-LDL-P	Concentration of small LDL particles	M-HDL-FC_%	Free cholesterol to total lipids ratio in medium HDL
S-LDL-L	Total lipids in small LDL	M-HDL-TG_%	Triglycerides to total lipids ratio in medium HDL
S-LDL-PL	Phospholipids in small LDL	S-HDL-PL_%	Phospholipids to total lipids ratio in small HDL
S-LDL-C	Total cholesterol in small LDL	S-HDL-C_%	Total cholesterol to total lipids ratio in small HDL

S-LDL-CE	Cholesterol esters in small LDL	S-HDL-CE_%	Cholesterol esters to total lipids ratio in small HDL
S-LDL-FC	Free cholesterol in small LDL	S-HDL-FC_%	Free cholesterol to total lipids ratio in small HDL
S-LDL-TG	Triglycerides in small LDL	S-HDL-TG_%	Triglycerides to total lipids ratio in small HDL
XL-HDL-P	Concentration of very large HDL particles	Lipoprotein Particle Size	
XL-HDL-L	Total lipids in very large HDL	VLDL_D	Mean diameter for VLDL particles
XL-HDL-PL	Phospholipids in very large HDL	LDL_D	Mean diameter for LDL particles
XL-HDL-C	Total cholesterol in very large HDL	HDL_D	Mean diameter for HDL particles
XL-HDL-CE	Cholesterol esters in very large HDL	Apolipoproteins	
XL-HDL-FC	Free cholesterol in very large HDL	ApoA1	Apolipoprotein A-I
XL-HDL-TG	Triglycerides in very large HDL	ApoB	Apolipoprotein B
L-HDL-P	Concentration of large HDL particles	ApoB/ApoA1	Ratio of apolipoprotein B to apolipoprotein A-I
L-HDL-L	Total lipids in large HDL	Fatty Acids and Saturation Measures	
L-HDL-PL	Phospholipids in large HDL	TotFA	Total fatty acids
L-HDL-C	Total cholesterol in large HDL	UnSat	Estimated degree of unsaturation
L-HDL-CE	Cholesterol esters in large HDL	DHA	22:6, docosahexaenoic acid
L-HDL-FC	Free cholesterol in large HDL	LA	18:2, linoleic acid
L-HDL-TG	Triglycerides in large HDL	FAw3	Omega-3 fatty acids

M-HDL-P	Concentration of medium HDL particles	FAw6	Omega-6 fatty acids
M-HDL-L	Total lipids in medium HDL	PUFA	Polyunsaturated fatty acids
M-HDL-PL	Phospholipids in medium HDL	MUFA	Monounsaturated fatty acids; 16:1, 18:1
M-HDL-C	Total cholesterol in medium HDL	SFA	Saturated fatty acids
M-HDL-CE	Cholesterol esters in medium HDL	Fatty Acids (%)	
M-HDL-FC	Free cholesterol in medium HDL	DHA/FA	Ratio of 22:6 docosaheptaenoic acid to total fatty acids
M-HDL-TG	Triglycerides in medium HDL	LA/FA	Ratio of 18:2 linoleic acid to total fatty acids
S-HDL-P	Concentration of small HDL particles	FAw3/FA	Ratio of omega-3 fatty acids to total fatty acids
S-HDL-L	Total lipids in small HDL	FAw6/FA	Ratio of omega-6 fatty acids to total fatty acids
S-HDL-PL	Phospholipids in small HDL	PUFA/FA	Ratio of polyunsaturated fatty acids to total fatty acids
S-HDL-C	Total cholesterol in small HDL	MUFA/FA	Ratio of monounsaturated fatty acids to total fatty acids
S-HDL-CE	Cholesterol esters in small HDL	SFA/FA	Ratio of saturated fatty acids to total fatty acids
S-HDL-FC	Free cholesterol in small HDL	Glycolysis Related Metabolites	
S-HDL-TG	Triglycerides in small HDL	Glc	Glucose
Cholesterol		Lac	Lactate
Serum-C	Serum total cholesterol	Cit	Citrate
VLDL-C	Total cholesterol in VLDL	Amino Acids	

Remnant-C	Remnant cholesterol (non-HDL, non-LDL - cholesterol)	Ala	Alanine
LDL-C	Total cholesterol in LDL	Gln	Glutamine
HDL-C	Total cholesterol in HDL	His	Histidine
HDL2-C	Total cholesterol in HDL2	Branched-chained amino acids	
HDL3-C	Total cholesterol in HDL3	Ile	Isoleucine
EstC	Esterified cholesterol	Leu	Leucine
FreeC	Free cholesterol	Val	Valine
Glycerides and Phospholipids		Aromatic amino acids	
Serum-TG	Serum total triglycerides	Phe	Phenylalanine
VLDL-TG	Triglycerides in VLDL	Tyr	Tyrosine
LDL-TG	Triglycerides in LDL	Ketone Bodies	
HDL-TG	Triglycerides in HDL	Ace	Acetate
TotPG	Total phosphoglycerides	bOHBut	3-hydroxybutyrate
TG/PG	Ratio of triglycerides to phosphoglycerides	Fluid Balance and Inflammation	
PC	Phosphatidylcholine and other cholines	Crea	Creatinine
SM	Sphingomyelins	Alb	Albumin
TotCho	Total cholines	Gp	Glycoprotein acetyls, mainly a1-acid glycoprotein

