Table S1: Protons and Chemical Shift (in ppm) for the lipid constituents and headgroups identified in HDL lipid extract by NMR and selected signals for Lipid Quantification

Lipid constituents and headgroups	^{1}H NMR signal assignment	Chemical Shift (ppm)	Quantification of lipids from selected well-resolved NMR signals
Cholesterol molecule	$C_{18}H_3$	0.68	**Total Cholesterol, FC, CE**
	$C_{26}H_3$, $C_{27}H_3$, $C_{21}H$	0.87	
	$C_{19}H_3$	1.00	
	C_3H	3.40	
	C_6H	5.36	
Glycerol backbone	C_1H^u and C_3H^u of glycerol backbone of TG and DAGPLs	4.16	
	C_1H^d and C_3H^d of glycerol backbone of TG	4.32	**TG**
	C_1H^d and C_3H^d of glycerol backbone of DAGPLs	4.40	
	C_2H of glycerol backbone in ether glycerophospholipids	5.15	**Ether GPLs**
	C_2H of glycerol backbone in total DAGPLs	5.18	**Total Diacyl glycerophospholipids (DAGPLs)**
	C_2H of glycerol backbone in TG	5.22	
Sphingosine moiety	-CH$_2$-CH=C*H*CHOH	5.40	
	-CH$_2$-C*H*=CHCHOH	5.70	**Total SLs**
Head-group and substituent	-CH$_2$-CH$_2$-N$^+$(CH$_3$)$_3$ (choline)	3.20	**Total choline-containing PLs (PC, SM, LPC)**
	-CH$_2$-CH$_2$-N$^+$(CH$_3$)$_3$	3.59	
	-CH$_2$-CH$_2$-N$^+$(CH$_3$)$_3$	4.24	
	-CH$_2$-CH$_2$-NH$_3^+$ (ethanolamine)	3.10	**PE**
	-OCH=CHCH$_2$	5.90	**PLA (ether GPLs)**
Fatty acid chains	ω-CH$_3$ (methyl) in fatty acyl chains	0.88	
	ω-CH$_3$ (methyl) of total omega-3 FA	0.95	
	-(CH$_2$)$_n$- (methylene) in fatty acyl chains	1.30	
	-CO-CH$_2$-CH$_2$- (β-methylene) in the fatty acyl chains	1.59	
	β-CH$_2$ (β-methylene) of the sum of AA+EPA	1.67	**AA (20:4 ω-6) + EPA (20:5 ω-3)**
	-CH$_2$-CH= (allylic) in fatty acyl chains	2.04	**UFA**
	-CO-CH$_2$ (α-methylene) in the fatty acyl chains	2.30	**Total FA**
	α and β CH$_2$ (methylene) of DHA	2.38	**DHA (22:6 ω-3)**
	-CH=CH-CH$_2$-CH=CH- of linoleic acid	2.75	**LA (18:2 ω-6)**
	-(CH=CH-CH$_2$-CH=CH)n, n > 1 in the fatty acyl chains	2.80	**PUFA**
	-CH=CH- in the fatty acyl chains	5.36	

Key AA, arachidonic acid; CE, cholesteryl ester; DAGPLs, Diacyl glycerophospholipids; DHA, docosahexaenoic acid; EPA, eicosapentaenoic acid; FA, fatty acids; FC, free cholesterol; GPLs, glycerophospholipids; LA, Linoleic acid; LPC, lysophosphatidylcholine; PC, phosphatidylcholine; PE, phosphatidylethanolamine; PLA, plasmalogens; PUFA, polyunsaturated fatty acids; SLs, Sphingolipids; SM, sphingomyelin; TG, triglycerides; UFA, Unsaturated fatty acids.