

Table S4. Top 50 Features from Lipidomics Analysis

Lipid Species	f.value	p.value	-LOG10(p)	FDR	Fisher's LSD
Cer 37:1;2O Cer 19:1;2O/18:0	130.93	3.88E-07	6.4117	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; HFD2 - LFD2; LFD2 - LFD0
Cer 41:0;2O Cer 18:0;2O/23:0	107.29	8.43E-07	6.0742	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 43:1;4O Cer 28:0;3O/15:1;(2OH)	98.288	1.19E-06	5.9262	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 40:0;2O	97.173	1.24E-06	5.9069	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 39:0;2O Cer 16:0;2O/23:0	86.74	1.92E-06	5.7157	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 40:0;2O Cer 16:0;2O/24:0	84.701	2.11E-06	5.6758	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
SM 42:1;2O	81.79	2.41E-06	5.6171	0.00030366	HFD2 - HFD0; LFD0 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 42:1;2O Cer 18:1;2O/24:0	78.619	2.81E-06	5.5509	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 40:1;2O	76.223	3.17E-06	5.4991	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 43:4;3O Cer 28:2;3O/15:2	73.847	3.58E-06	5.4461	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 42:2;3O Cer 18:1;2O/24:1;O	73.096	3.72E-06	5.4291	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 39:1;2O	71.995	3.95E-06	5.4037	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0

Cer 43:3;4O Cer 21:3;3O/22:0;(2OH)	71.059	4.15E-06	5.3819	0.00030366	HFD2 - HFD0; LFD0 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 41:1;2O Cer 18:1;2O/23:0	70.717	4.23E-06	5.3738	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d40:0	69.807	4.44E-06	5.3522	0.00030366	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 42:3;4O Cer 19:3;3O/23:0;(2OH)	64.235	6.11E-06	5.2138	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d41:1	63.346	6.45E-06	5.1907	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
SM d42:0	63.256	6.48E-06	5.1883	0.00035448	HFD2 - HFD0; LFD0 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 41:2;2O Cer 18:1;2O/23:1	62.987	6.59E-06	5.1812	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 42:0;2O	61.304	7.31E-06	5.1363	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d39:1	61.042	7.43E-06	5.1292	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 43:3;3O Cer 18:2;2O/25:1;O	59.715	8.08E-06	5.0928	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 38:0;2O Cer 16:0;2O/22:0	59.337	8.27E-06	5.0823	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 39:2;2O Cer 16:1;2O/23:1	59.288	8.30E-06	5.0809	0.00035448	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
PS 39:1 PS 21:0_18:1	57.838	9.12E-06	5.04	0.00037393	HFD2 - HFD0; HFD0 - LFD0; HFD0 - LFD2; HFD2 - LFD0; HFD2 - LFD2

Cer 37:0;2O Cer 16:0;2O/21:0	53.876	1.19E-05	4.9229	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 39:1;2O Cer 16:1;2O/23:0	53.344	1.24E-05	4.9065	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d38:1	53.071	1.26E-05	4.8981	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d43:1	52.124	1.35E-05	4.8685	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d42:0	52.11	1.36E-05	4.868	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 38:1;2O Cer 18:1;2O/20:0	51.724	1.39E-05	4.8558	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d33:1	51.672	1.40E-05	4.8542	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; HFD2 - LFD2; LFD2 - LFD0
Cer 42:3;3O Cer 18:1;2O/24:2;O	51.444	1.42E-05	4.8469	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 41:1;3O Cer 18:1;2O/23:0;(2OH)	50.947	1.48E-05	4.831	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 43:1;2O	50.217	1.56E-05	4.8073	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d40:1	50.12	1.57E-05	4.8041	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 39:1;4O	49.972	1.59E-05	4.7992	0.00043983	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 30:0;2O	48.016	1.85E-05	4.7338	0.00049789	HFD2 - HFD0; HFD0 - LFD0; LFD2 - HFD0; HFD2 - LFD0; HFD2 - LFD2; LFD2 - LFD0

Cer d32:1	47.604	1.91E-05	4.7197	0.00050113	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; HFD2 - LFD2; LFD2 - LFD0
SM 44:1;2O	45.46	2.27E-05	4.6444	0.00057612	HFD2 - HFD0; LFD0 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d44:1	44.874	2.38E-05	4.6233	0.00057612	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 38:2;2O	44.733	2.41E-05	4.6181	0.00057612	HFD2 - HFD0; HFD0 - LFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d42:1	44.695	2.42E-05	4.6167	0.00057612	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 40:0;3O	43.231	2.74E-05	4.5625	0.00062249	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 30:1;2O	43.16	2.76E-05	4.5599	0.00062249	HFD2 - HFD0; HFD0 - LFD0; HFD2 - LFD0; HFD2 - LFD2; LFD2 - LFD0
SM 41:0;2O (1)	42.944	2.81E-05	4.5517	0.00062249	HFD2 - HFD0; LFD0 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 48:3;4O Cer 33:2;3O(FA 15:0)	42.754	2.85E-05	4.5445	0.00062249	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
PC 34:0 (1)	42.28	2.98E-05	4.5264	0.00063549	HFD2 - HFD0; LFD0 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer 41:0;4O Cer 18:0;3O/23:0;(2OH)	41.817	3.10E-05	4.5085	0.00064869	HFD2 - HFD0; LFD2 - HFD0; HFD2 - LFD0; LFD2 - LFD0
Cer d36:1	40.929	3.36E-05	4.4737	0.00068877	HFD2 - HFD0; HFD0 - LFD0; LFD2 - HFD0; HFD2 - LFD0; HFD2 - LFD2; LFD2 - LFD0