



Table S1. 50 most significant lipid species in the paired t-test between control and Parkinson's models. The first column (m/z) shows the experimentally detected mass of the assigned lipid species; m/z (teor) is the calculated mass of the lipid species; error (Da) is the error. in Da. between the experimental and calculated mass of the lipid species; error (ppm) shows the error in parts per million; Sig is the significance of the comparison in the test (*p < 0. 05;**p < 0. 01 and***p < 0. 01: ***).p is the p-value in the test(*p < 0. 05;**p < 0. 01 and***p < 0. 01: ***), and FC (MPD-MC)/MC is the Fold change between the Parkinson (MPD) and Control (MC) models

Assigned Lipid Specie	m/z	m/z (teor)	Error (Da)	Error (ppm)	Sig	P	FC (MDP-MC)/(MC)
[PS 37:2-H]-	800.5456	800.5448	-0.0008	-0.99	***	0.001	-54.0%
[PS 38:1-H]-	816.5772	816.5761	-0.0011	-1.31	**	0.002	-32.8%
[PS 40:1+Na-2H]-/[PS 42:4-H]-	866.5927	866.5894	-0.0033	-3.81	**	0.003	-22.4%
[PG 43:2-H]-	871.6445	871.6434	-0.0011	-1.23	**	0.003	263.6%
[PG 44:12-H]-	865.5007	865.5025	0.0019	2.15	**	0.004	-29.2%
[PS 38:2-H]-	814.5613	814.5604	-0.0009	-1.09	**	0.005	-28.3%
[PS 36:0+Na-2H]-	812.5455	812.5424	-0.0031	-3.77	*	0.011	-25.3%
[PS 40:2-H]-	842.5916	842.5917	0.0001	0.13	*	0.011	-34.4%
[PS 47:3+K-2H]-	976.6395	976.6415	0.0020	2.05	*	0.012	-58.6%
[PA 32:0-H]-	647.4655	647.4657	0.0003	0.39	*	0.013	41.9%
[Lyso-PS O-20:0+Na-2H]-	560.3362	560.3335	-0.0027	-4.87	*	0.015	-44.3%
[PA O-40:7-H]-/[PA P-40:6-H]-	731.5027	731.5021	-0.0006	-0.84	*	0.015	265.4%
[PS 37:1-H]-	802.5614	802.5604	-0.0010	-1.21	*	0.015	-26.0%
[Sulfatide t43:1 -H]-	920.6496	920.6501	0.0005	0.55	*	0.015	13.4%
[PE O-42:6-H]-/[PE P-42:5-H]-	804.5919	804.5913	-0.0006	-0.73	*	0.018	-20.8%
[Sulfatide t38:1 -H]-	850.5721	850.5719	-0.0001	-0.16	*	0.019	-16.5%
[PE 32:1-H]-	688.4951	688.4923	-0.0028	-4.07	*	0.020	102.5%
[PS 28:1+Na-2H]-/[PS 30:4-H]-	698.4048	698.4016	-0.0033	-4.65	*	0.020	-79.9%
[PE O-42:5-H]-/[PE P-42:4-H]-	806.6077	806.6069	-0.0008	-0.96	*	0.020	-15.1%
[PG O-34:2-H]-/[PG P-34:1-H]-	731.5222	731.5233	0.0010	1.41	*	0.022	150.3%

[PG O-34:3-H]-/[PG P-34:2-H]-	729.5076	729.5076	0.0000	-0.01	*	0.023	155.8%
[PS 38:2+Na-2H]-/[PS 40:5-H]-	836.5441	836.5424	-0.0017	-2.02	*	0.023	-29.8%
[PA 34:1-H]-	673.4812	673.4814	0.0002	0.33	*	0.023	19.8%
[PS 36:1-H]-	788.5444	788.5448	0.0004	0.46	*	0.023	-10.4%
[PE O-40:3-H]-/[PE P-40:2-H]-	782.6078	782.6069	-0.0009	-1.18	*	0.023	-42.0%
[Sulfatide t33:2 -H]-	778.4775	778.4780	0.0005	0.68	*	0.026	-53.7%
[PG O-40:4-H]-/[PG P-40:3-H]-	811.5863	811.5859	-0.0005	-0.57	*	0.032	188.0%
[PS O-38:7+K-2H]-/[PS P-38:6+K-2H]-	828.4576	828.4588	0.0012	1.42	*	0.032	-63.3%
[PA 40:3-H]-	753.5428	753.5440	0.0012	1.55	*	0.033	-60.6%
[PE 32:0-H]-	690.5085	690.5079	-0.0005	-0.78	*	0.038	72.3%
[CerP d42:1 -H]-	728.5960	728.5963	0.0003	0.45	*	0.041	266.9%
[PG O-40:3-H]-/[PG P-40:2-H]-	813.6009	813.6015	0.0006	0.71	*	0.043	57.6%
[Sulfatide d43:1 -H]-	904.6534	904.6552	0.0019	2.05	*	0.043	14.2%
[PS 29:2-H]-	688.4195	688.4196	0.0001	0.09	*	0.046	-75.8%
[PI O-30:0-H]-	767.5049	767.5081	0.0031	4.07	*	0.047	24.2%
[PE O-40:6-H]-/[PE P-40:5-H]-	776.5611	776.5600	-0.0011	-1.41	*	0.049	-11.7%
[PE 44:7-H]-	844.5867	844.5862	-0.0006	-0.65	ns	0.055	-57.1%
[PA 44:10-H]-	795.4987	795.4970	-0.0017	-2.07	ns	0.056	-83.8%
[PS 47:2+K-2H]-	978.6554	978.6572	0.0018	1.86	ns	0.056	-25.1%
[PS 48:2+K-2H]-	992.6723	992.6728	0.0005	0.50	ns	0.058	-34.4%
[PE 40:2-H]-	798.6029	798.6018	-0.0010	-1.29	ns	0.063	-36.2%
[PE 42:5-H]-	820.5869	820.5862	-0.0007	-0.85	ns	0.071	-18.7%
[PA 44:6-H]-	803.5644	803.5596	-0.0048	-5.99	ns	0.071	104.6%
[PE O-40:2-H]-/[PE P-40:1-H]-	784.6225	784.6226	0.0001	0.15	ns	0.072	-51.8%
[PI O-38:4-H]-	871.5713	871.5707	-0.0007	-0.75	ns	0.073	-38.2%
[PS O-31:1+Na-2H]-/[PS P-31:0+Na-2H]-/[PS O-33:4-H]-	726.4717	726.4693	-0.0024	-3.34	ns	0.075	-43.8%
[Sulfatide t41:1 -H]-	892.6186	892.6188	0.0002	0.24	ns	0.075	12.1%

[PS O-29:2-H]-	674.4440	674.4403	-0.0037	-5.43	ns	0.075	37.4%
[PS 34:2+Na-2H]-/[PS 36:5-H]-	780.4823	780.4798	-0.0025	-3.19	ns	0.078	-21.1%

Table S2. Changes in relative abundance of [PS 38:1], [PE 40:6], and [PG 46:10]. Results are expressed as percentages of change respect control group (mean ± SEM).

Tissues	Lipids					
	PS 38:1		PE 40:6		PG 46:10	
	MEAN	SEM	MEAN	SEM	MEAN	SEM
Caudate nucleus	8.00	8.00	9.27	4.18	40.91	12.04
Cerebellum	342.66	4.41	-30.86	3.00	144.15	28.24
Corpus Callosum	57.66	3.71	-3.48	2.98	44.58	1.90
Globus Pallidus	44.33	5.78	29.27	0.64	-20.71	5.23
Hypothalamus	120.33	9.60	15.71	4.19	-25.52	8.05
Hippocampus	68.66	2.60	-16.72	4.17	-36.47	11.78
Mesencephalon	74.66	10.17	5.75	6.88	-27.73	3.21
Putamen	34.66	5.36	36.19	4.78	3.09	38.76
Substantia nigra	51.00	7.63	54.61	6.81	7.08	17.08
Thalamus	35.00	18.02	10.20	2.61	-22.23	3.78