Supplementary Material

Lipidomics Reveal the Cognitive Improvement Effects of *Acer truncatum Bunge* Seed Oil on Hypoxic-ischemia Encephalopathy Rats

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Supplementary Tables and Figures

Table S1. Unsaturated fatty acids index of serum. (Sham group vs HIE group)

	UI - Sham group	UI -HIE group	P-value	
SM	0.00628	0.007085	0.030915	
Cer	0.008113	0.011099	0.000302	
PA	0.007253	0.010235	0.022527	
PS	0.014628	0.026247	0.017471	
PC	0.058791	0.071834	7.22E-05	

Table S2. Unsaturated fatty acids index of serum. (Control group vs ASO group)

	UI -Control group	UI -ASO group	<i>P</i> -value
PI	0.004321	0.005474	0.007461

Table S3. Unsaturated fatty acids index of brain. (Sham group vs HIE group)

	UI - Sham group	UI -HIE group	<i>P</i> -value
CoA	0.000161	9.85E-05	0.02494
PA	0.007003	0.008158	0.045373
PC-O	0.005258	0.003894	0.024176

Table S4. Unsaturated fatty acids index of brain. (Control group vs ASO group)

	UI -Control group	UI -ASO group	P-value	
PE	0.00726	0.008447	0.036418	



Figure S1. HIE induced lipids changes in serum. A-D. Contents of Glycerophospholipid, Lysophospholipids, Plasmalogen and Other lipids in the serum. E-P. The corresponding change in each fatty acid chain on the Sham and HIE group. Q-U. The corresponding changes of unsaturation index in both Sham group and HIE group. Compared to the Sham group, */**/*** indicates *P*-value < 0.05/< 0.01 / < 0.001.



Figure S2. Venn diagram of all metabolites of 0 day and 30 days among the serum and brain sample matrices.



Figure S3. Correlation analysis of lipid changes in serum before and after consecutive feeding. A. Correlation analysis of lipids that changed significantly on day 0 with its change after 30 days of consecutive feds. B. Correlation analysis of lipids that changed significantly for 30 days of consecutive feeding with its change at day 0. * indicates significant differences from the Control group at *P*-value ≤ 0.05 .



Figure S4. Correlation analysis of changes in lipid chain composition in serum before and after consecutive feeding. A. Correlation analysis of lipid chain that changed significantly on day 0 with its change after 30 days of consecutive feds. B. Correlation analysis of lipid chain that changed significantly for 30 days of consecutive feeding with its change at day 0. * indicates significant differences from the Control group at *P*- value ≤ 0.05 .



Figure S5. Correlation analysis of lipid changes in brain before and after consecutive feeding. A. Correlation analysis of lipids that changed significantly on day 0 with its change after 30 days of consecutive feds. B. Correlation analysis of lipids that changed significantly for 30 days of consecutive feeding with its change at day 0. * indicates significant differences from the Control group at *P*-value ≤ 0.05 .



Figure S6. Correlation analysis of changes in lipid chain composition in brain before and after consecutive feeding. A. Correlation analysis of lipid chain that changed significantly on day 0 with its change after 30 days of consecutive feds. B. Correlation analysis of lipid chain that changed significantly for 30 days of consecutive feeding with its change at day 0. * indicates significant differences from the Control group at *P*-value ≤ 0.05 .



Figure S7. Quantitative analysis of HE-stained sections. */**/*** indicates P-value < 0.05/ < 0.01 / < 0.001.



Figure S8. Comparison between the same compounds. A. Contents of same compound in the serum in different groups. B. Contents of same compound in the brain in different groups. */**/*** indicates *P*-value < 0.05/ < 0.01 / < 0.001.