

## Supplementary Information

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**Article Title:** LC-MS-based metabolomic characterization of *Tinospora crispa* extracts: impact of solvent selection on phytochemical composition and antioxidant properties

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**The following Supplementary Information is available for this article:**

**Table S1:** Metabolite identification.xlsx

**Table S2:** Antioxidant properties and phenolic content of *T. crispa* extracts prepared using different solvents

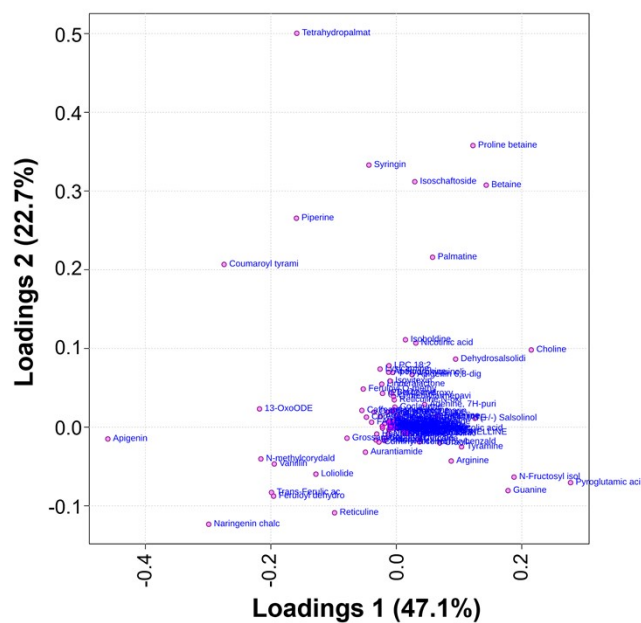
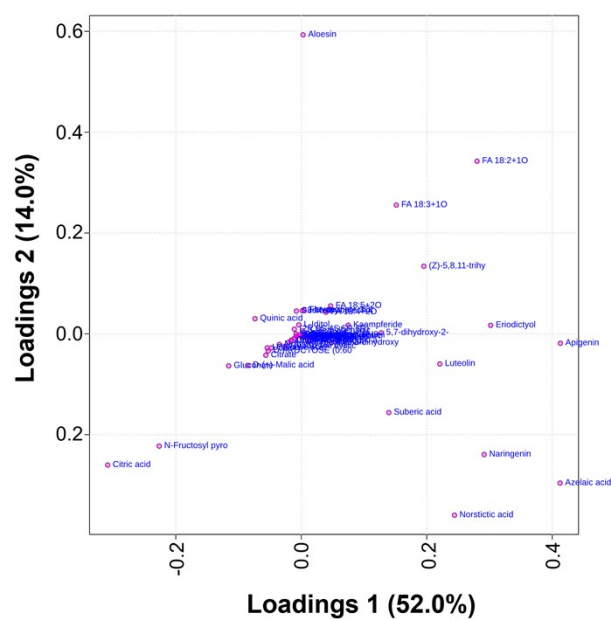
**Fig. S1:** Principal Component Analysis (PCA) loading plots of *T. crispa* extracts prepared using different solvents. The PCA loading plots illustrate the ions contributing to group separation among extracts. The X-axis and Y-axis represent the first and second principal components (PC1 and PC2), respectively. Panel (A) shows the loading plot for positive mode, while Panel (B) shows the loading plot for negative mode.

**Fig. S2:** Partial least-squares discriminant analysis (PLS-DA) loading plots of *T. crispa* extracts prepared using different solvents. The loading plots highlight the ions that contribute most to the separation among solvent-based extracts. Variables positioned far from the center exert a greater influence on group discrimination. The X- and Y-axes represent the first and second latent variables (LV1 and LV2), respectively. Panel (A) shows the loading plot for positive mode, while Panel (B) shows the loading plot for negative mode.

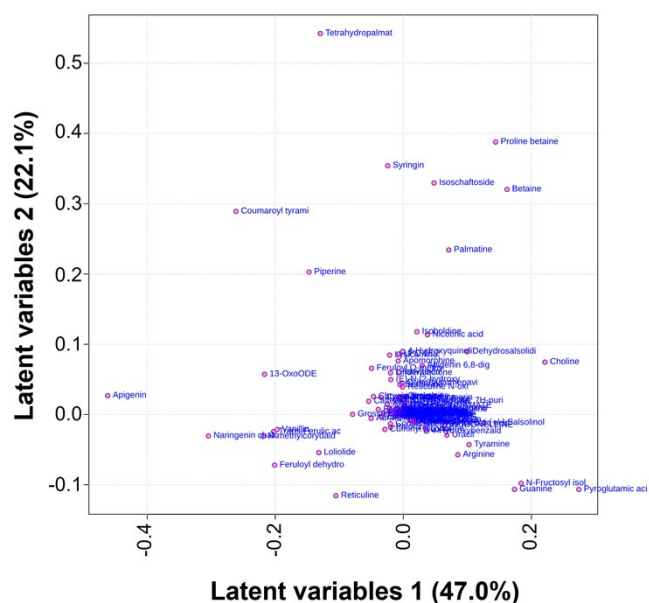
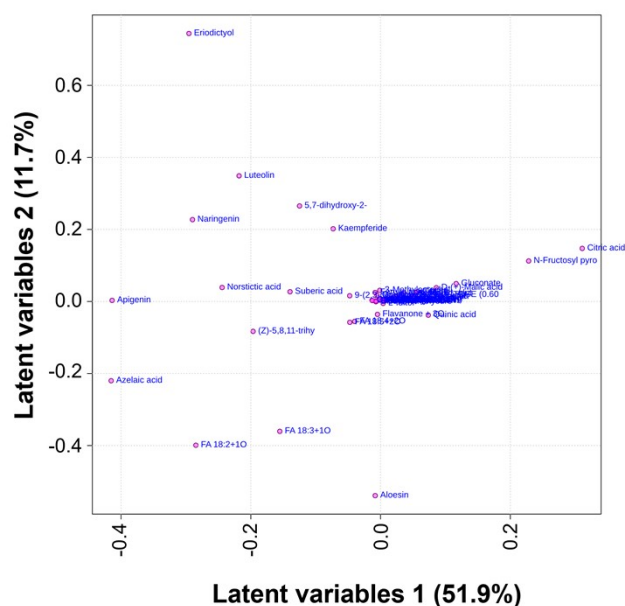
**Table S2:** Antioxidant properties and phenolic content of *T. crisper* extracts prepared using different solvents

Solvents	TPC ( $\mu\text{g}$ GAE/mg extract)	DPPH (% inhibition)	FRAP ( $\mu\text{g}$ TEAC/mg extract)
Ethyl acetate	72.1 $\pm$ 3.8	45.3 $\pm$ 2.5	155.2 $\pm$ 9.7
Ethanol	142.6 $\pm$ 5.3	18.4 $\pm$ 1.2	320.8 $\pm$ 10.1
Water	110.2 $\pm$ 4.9	26.8 $\pm$ 1.9	245.6 $\pm$ 12.0

Note: Data are presented as mean  $\pm$  SD (n = 5). DPPH: 2,2-diphenyl-1-picrylhydrazyl; FRAP: ferric reducing antioxidant power; TPC: total phenolic content; TEAC: Trolox equivalent antioxidant capacity; GAE: gallic acid equivalent.

**(A)****(B)**

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**Fig. S2:** Partial least-squares discriminant analysis (PLS-DA) loading plots of *T. crispata* extracts prepared using different solvents. The loading plots highlight the ions that contribute most to the separation among solvent-based extracts. Variables positioned far from the center exert a greater influence on group discrimination. The X- and Y-axes represent the first and second latent variables (LV1 and LV2), respectively. Panel (A) shows the loading plot for positive mode, while Panel (B) shows the loading plot for negative mode.