

## 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

**Authors:** Nattha Muangritdech,<sup>a</sup> Piya Prajumwongs,<sup>a</sup> Nisana Namwat,<sup>ab</sup> Poramate Klanrit,<sup>ab</sup> Arporn Wangwiwatsin,<sup>ab</sup> Hasaya Dokduang,<sup>d</sup> Sirinya Sitthirak,<sup>e</sup> Attapol Titapun,<sup>ac</sup> and Watcharin Loilome<sup>\*ab</sup>

<sup>a</sup> Cholangiocarcinoma Research Institute, Khon Kaen University, Khon Kaen 40002, Thailand. E-mail: nattha@kkuemail.com

<sup>b</sup> Department of Systems Biosciences and Computational Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.

<sup>c</sup> Department of Surgery, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.

<sup>d</sup> Faculty of Medicine, Mahasarakham University, Mahasarakham 44000, Thailand.

<sup>e</sup> Department of Medical Technology, School of Allied Health Sciences, Walailak University, Nakhon Si Thammarat 80161, Thailand.

\* Corresponding authors: Department of Systems Biosciences and Computational Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen 40000, Thailand.

E-mail address: watclo@kku.ac.th (Watcharin Loilome)

**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.

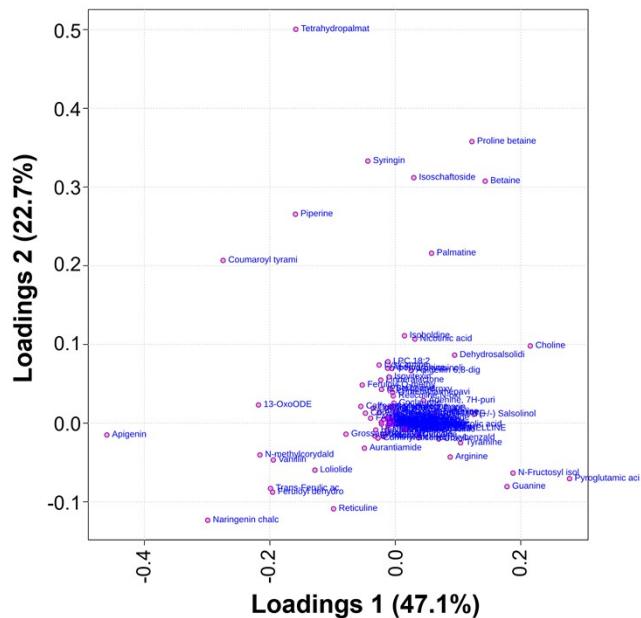
**Fig. S2:** Partial least-squares discriminant analysis (PLS-DA) loading plots of *T. crispa* extracts prepared using different solvents. The loading plots highlight the ions that contribute most to the separation among solvent-based extracts. Variables positioned far from the center exert a greater 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. crispa* extracts prepared using different solvents

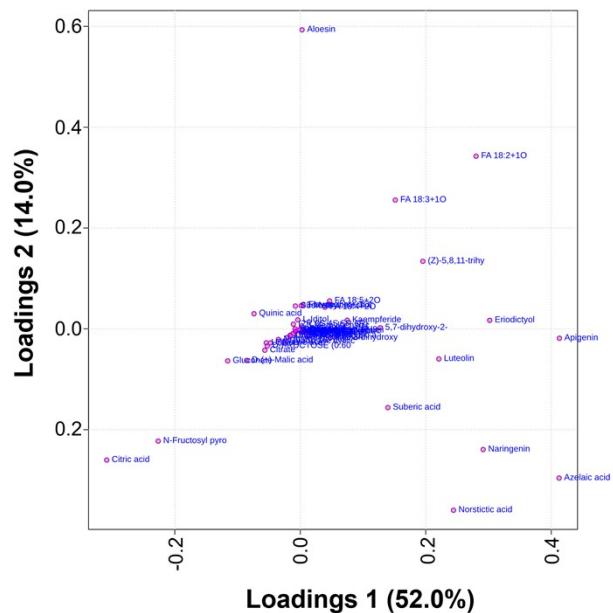
| Solvents      | TPC<br>(µg GAE/mg extract) | DPPH<br>(% inhibition) | FRAP<br>(µg TEAC/mg extract) |
|---------------|----------------------------|------------------------|------------------------------|
| Ethyl acetate | 72.1 ± 3.8                 | 45.3 ± 2.5             | 155.2 ± 9.7                  |
| Ethanol       | 142.6 ± 5.3                | 18.4 ± 1.2             | 320.8 ± 10.1                 |
| Water         | 110.2 ± 4.9                | 26.8 ± 1.9             | 245.6 ± 12.0                 |

Note: Data are presented as mean ± 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)

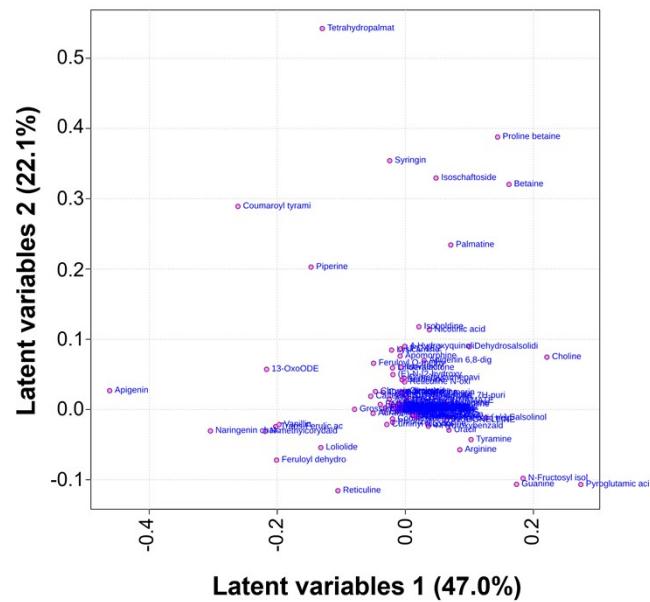


(B)

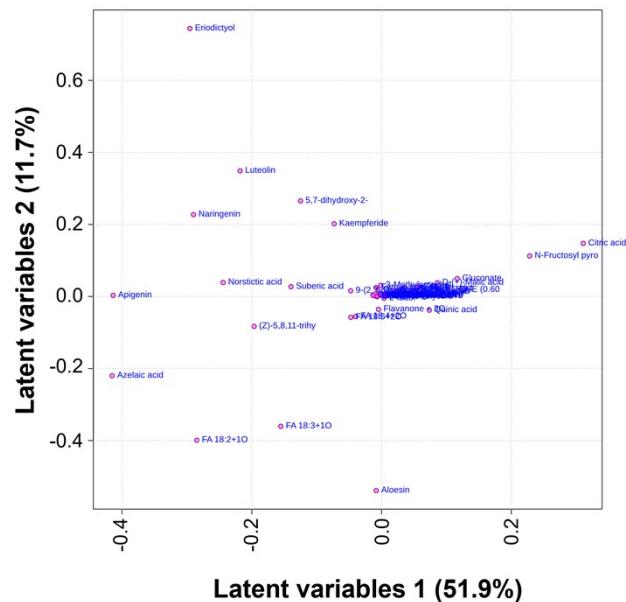


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(A)



(B)



**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.