Supplementary Data

Main Bioactive Components and Their Biological Activities from Natural and Processed Rhizomes of *Polygonum sibiricum*

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Table S1. Retention time, LODs, LOQs, and regression analysis for five components of *Polygonum sibiricum* in reversed phase HPLC.

Compounds	T_m (min) [a]	Regression equation	Correlation coefficient	LOD (μg/mL) [a]	LOQ (μg/mL) [a]
5-HMF (**1**)	9.50	y = 526.24x-693.24	0.9994	3.63	11.02
Scopoletin (**2**)	50.10	y = 268.12x-57.62	0.9999	6.64	20.14
Isoquercetin (**3**)	68.00	y = 140.12x+48.98	0.9998	12.71	38.53
Hyperoside (**4**)	63.00	y = 132.53x+8.73	0.9996	11.95	36.21
Rutin (**5**)	60.00	y = 456.35x+4.53	0.9992	4.62	14.02

[a] Tm: Retention time; LOD: Limit of detection; LOQ: Limit of quantification; LOD was counted as = 3.3 × the standard deviation of the intercept / the slope of the standard curve; LOQ was counted as = 10 × the standard deviation of the intercept / the slope of the standard curve. (LOD and LOQ was calculated with reference to the International Conference on Harmonization's (ICH) content.)

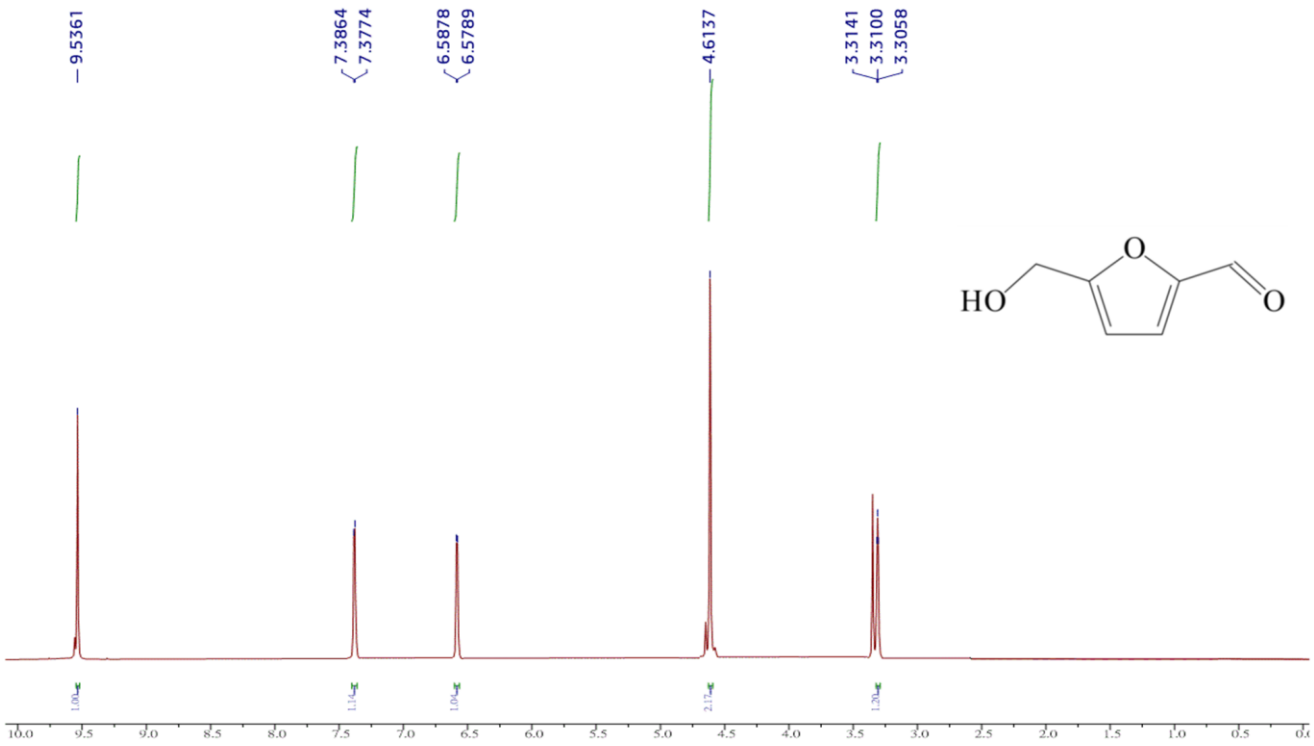


Figure S1. The ^{1}H-NMR spectrum (400 MHz, Methanol-d_4) of 5-HMF (**1**).

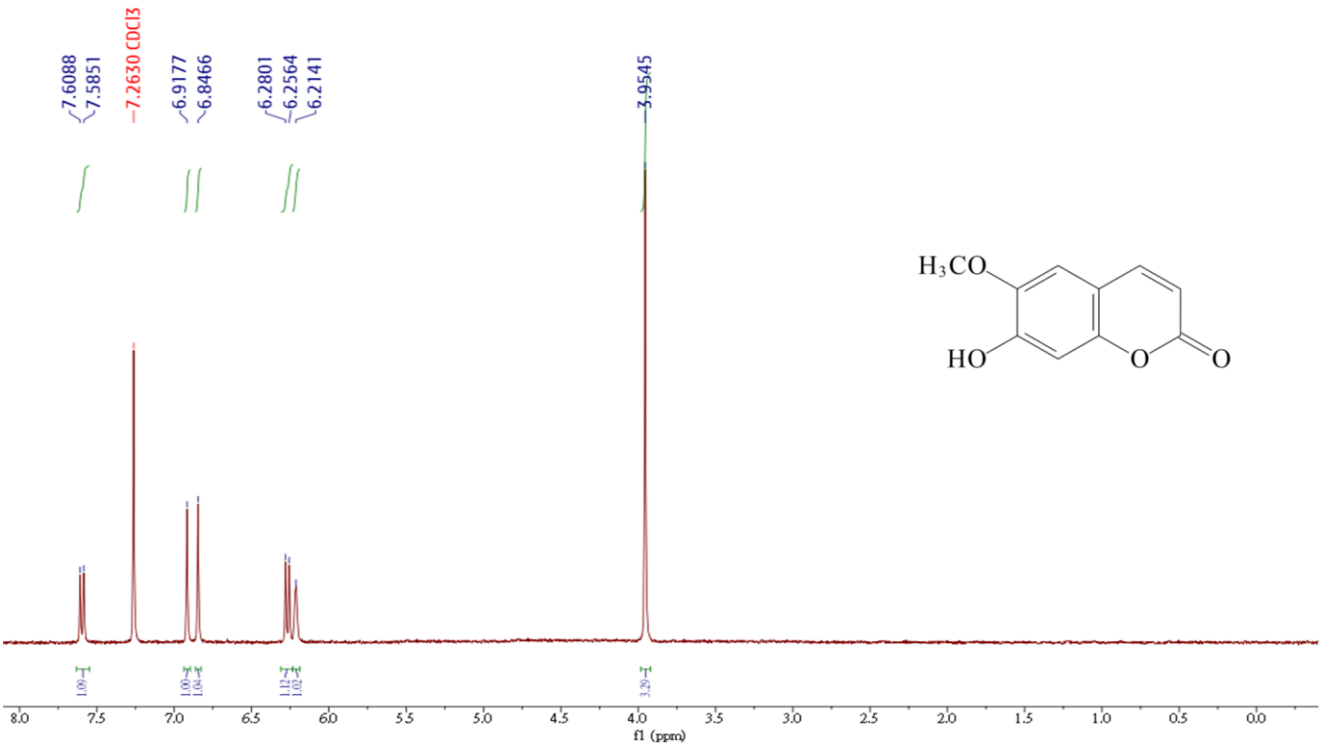


Figure S2. The ^{1}H-NMR spectrum (600 MHz, DMSO-d_6) of scopoletin (**2**).

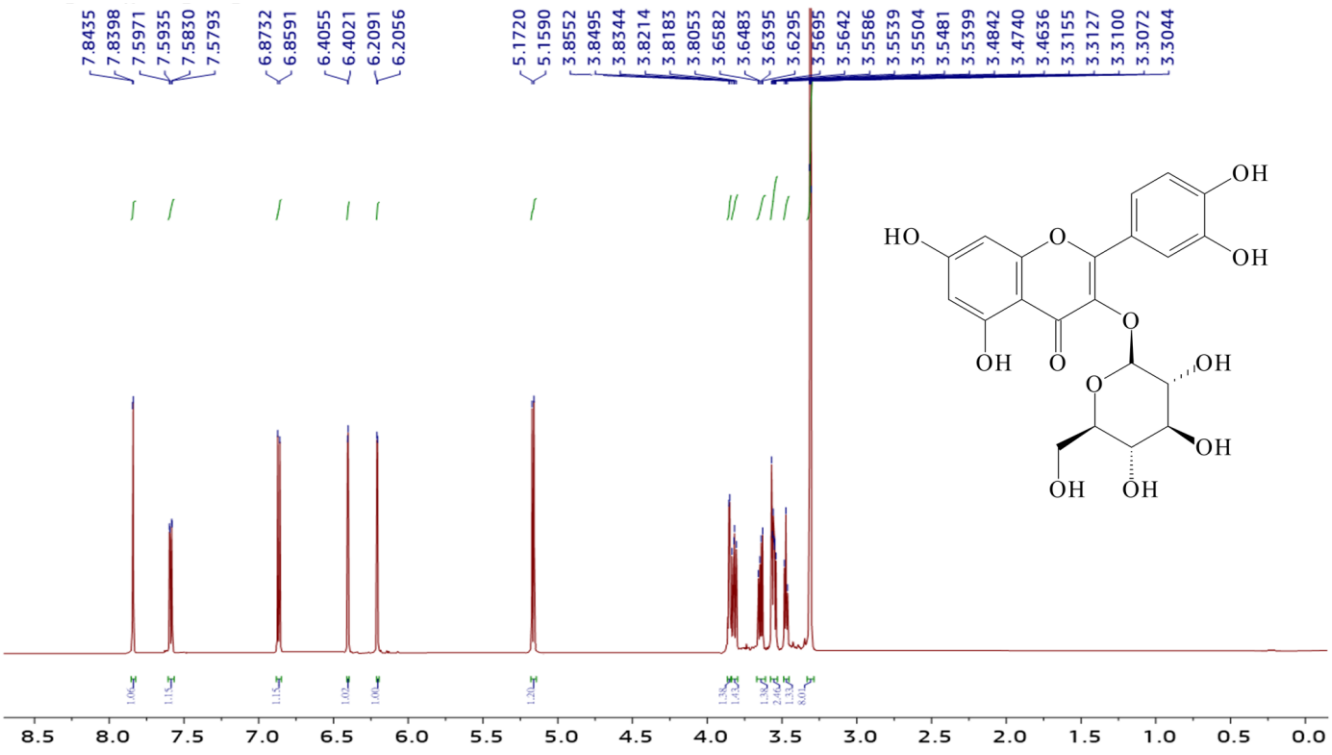


Figure S3. The ^{1}H-NMR spectrum (600 MHz, Methanol-d_4) of isoquercetin (**3**).

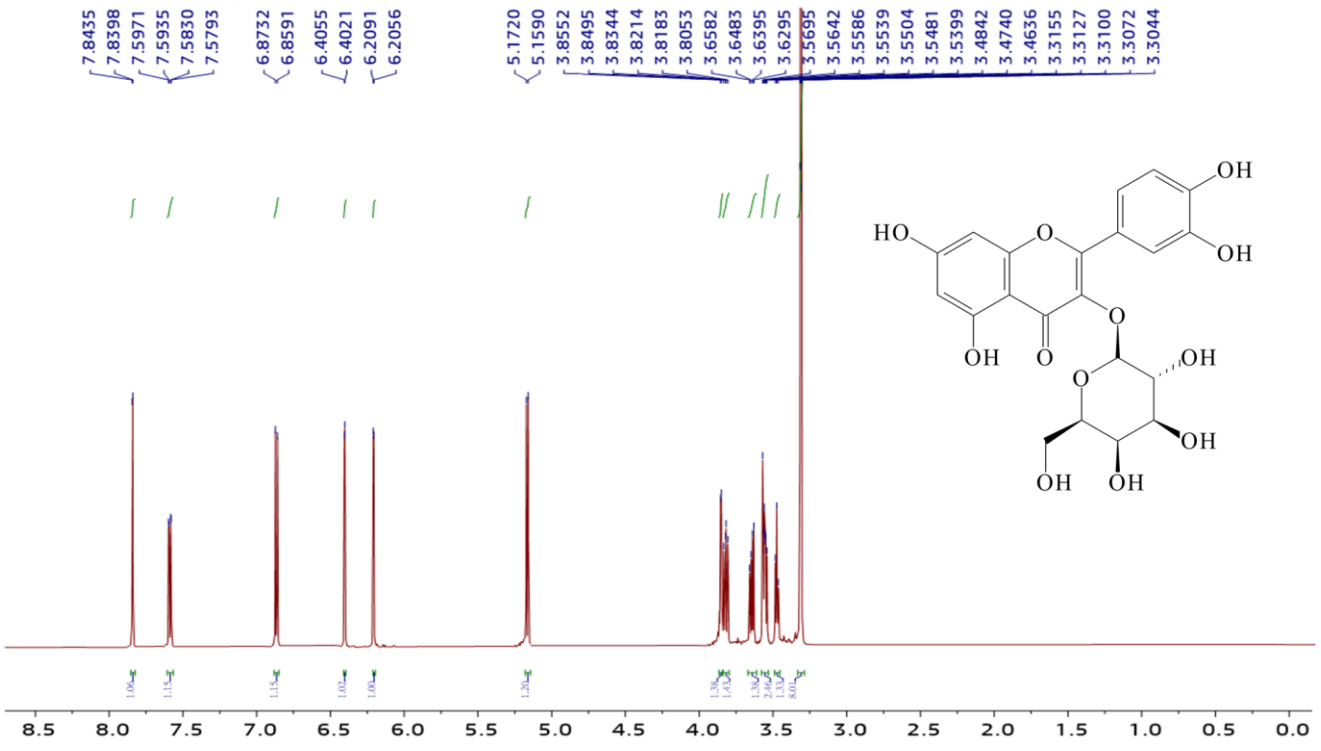


Figure S4. The ^{1}H-NMR spectrum (600 MHz, Methanol-d_4) of hyperoside (**4**)

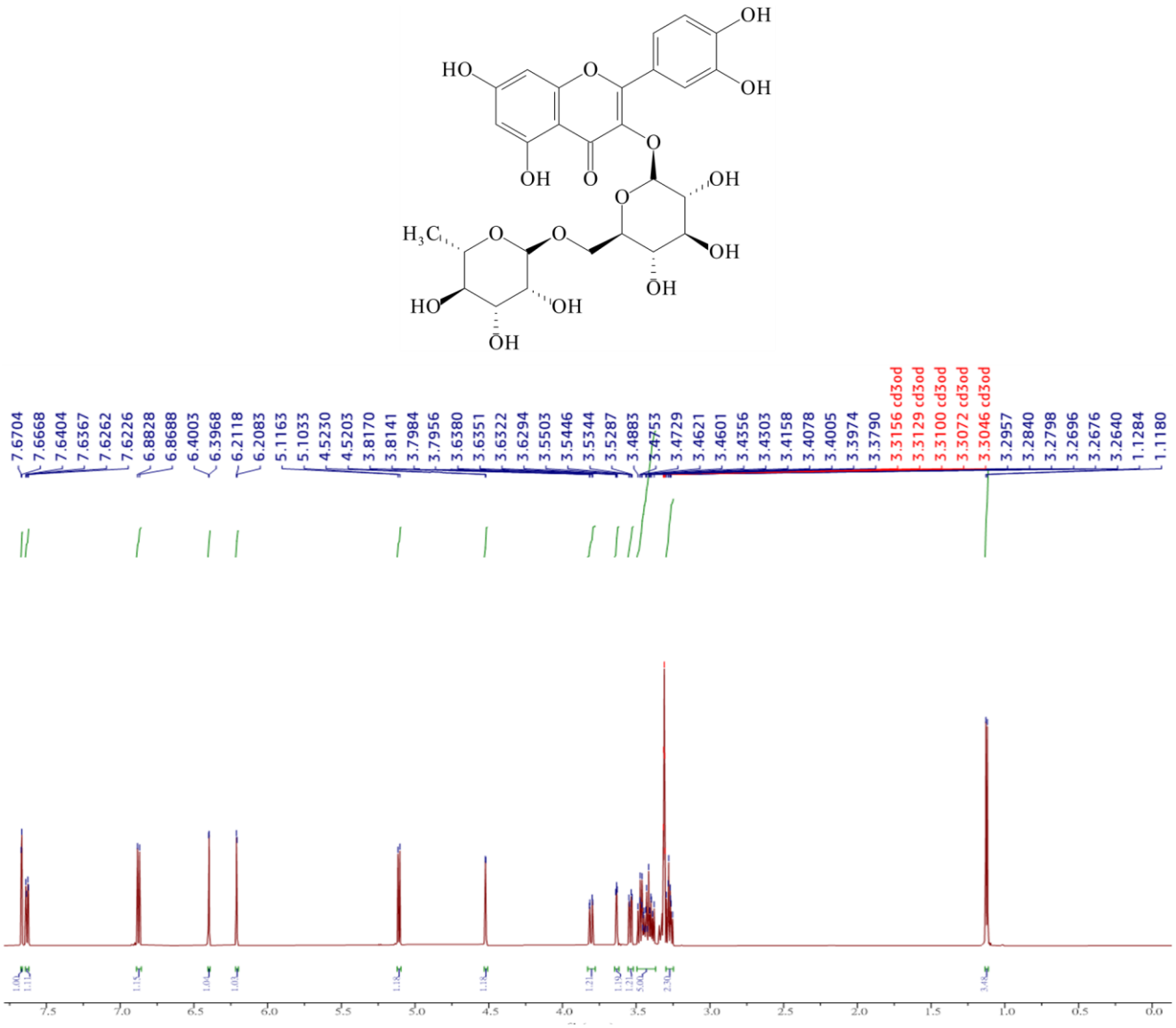
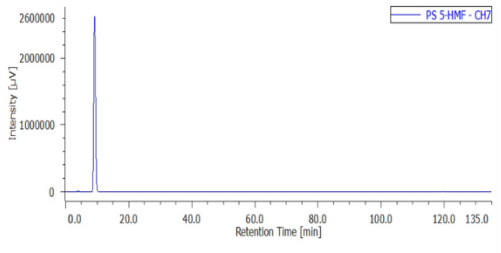
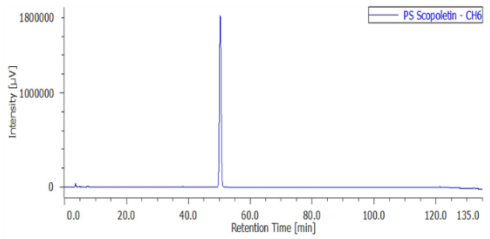


Figure S5. The ^{1}H-NMR spectrum (600 MHz, Methanol-d_4) of rutin (**5**).

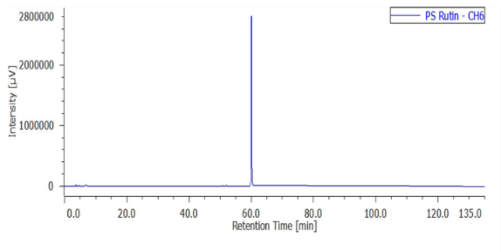
(A) 5-HMF (500 µL), 280 nm



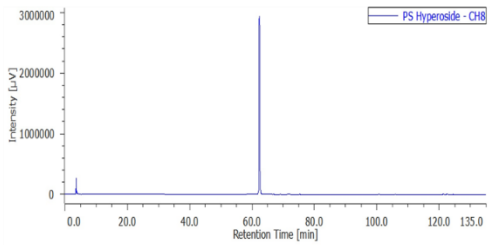
(B) Scopoletin (500 µL), 280 nm



(C) Rutin (500 µL), 280 nm



(D) Hyperoside (500 µL), 280 nm



(E) Isoquercetin (500 µL), 280 nm

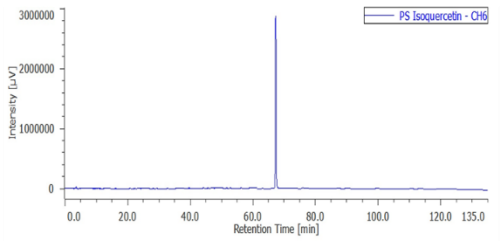


Figure S6. Reversed-phase HPLC chromatogram of isolated pure compounds (A to E).

H_2O (500 µL), 280 nm

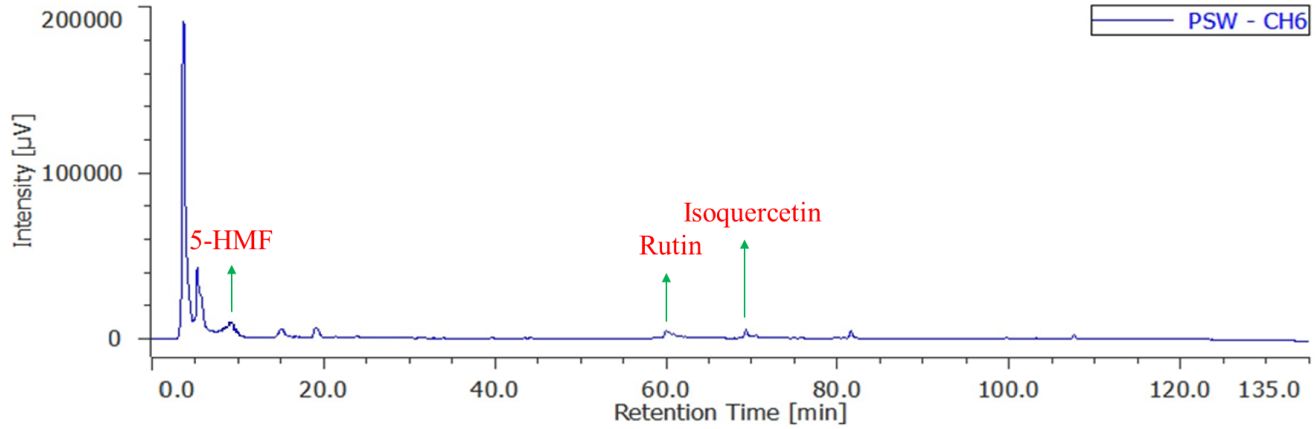


Figure S7. Reversed-phase HPLC chromatogram of water extract in PS.

Methanol (500 µL), 280 nm

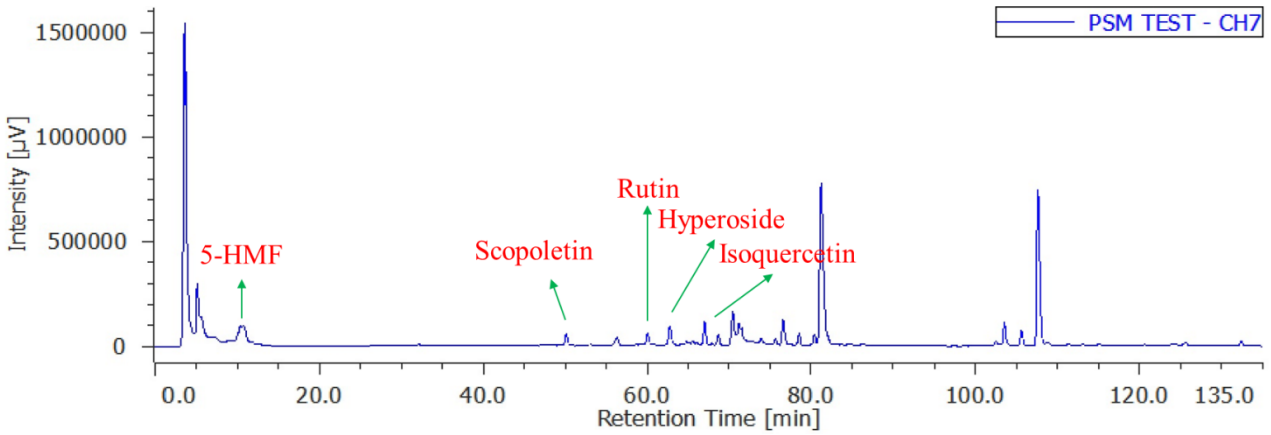


Figure S8. Reversed-phase HPLC chromatogram of methanol extract in PS.

Ethanol (500 µL), 280 nm

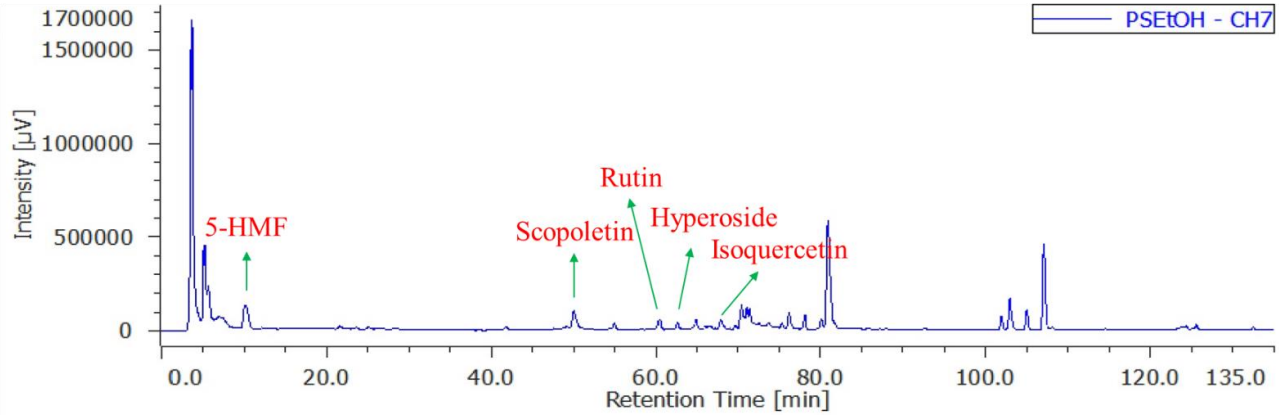


Figure S9. Reversed-phase HPLC chromatogram of ethanol extract in PS.

Acetone (500 µL), 280 nm

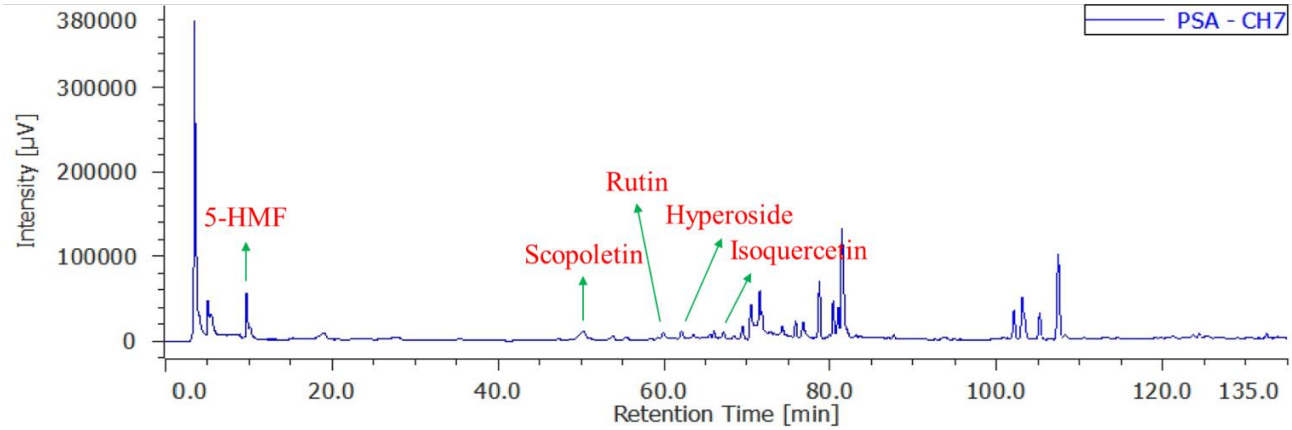


Figure S10. Reversed-phase HPLC chromatogram of acetone extract in PS.

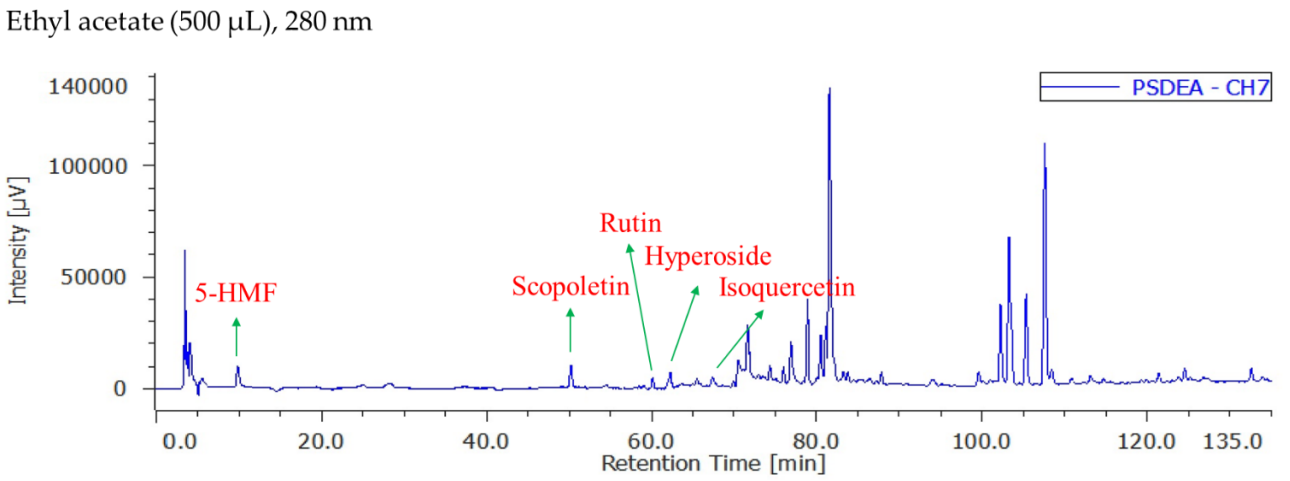


Figure S11. Reversed-phase HPLC chromatogram of ethyl acetate extract in PS.

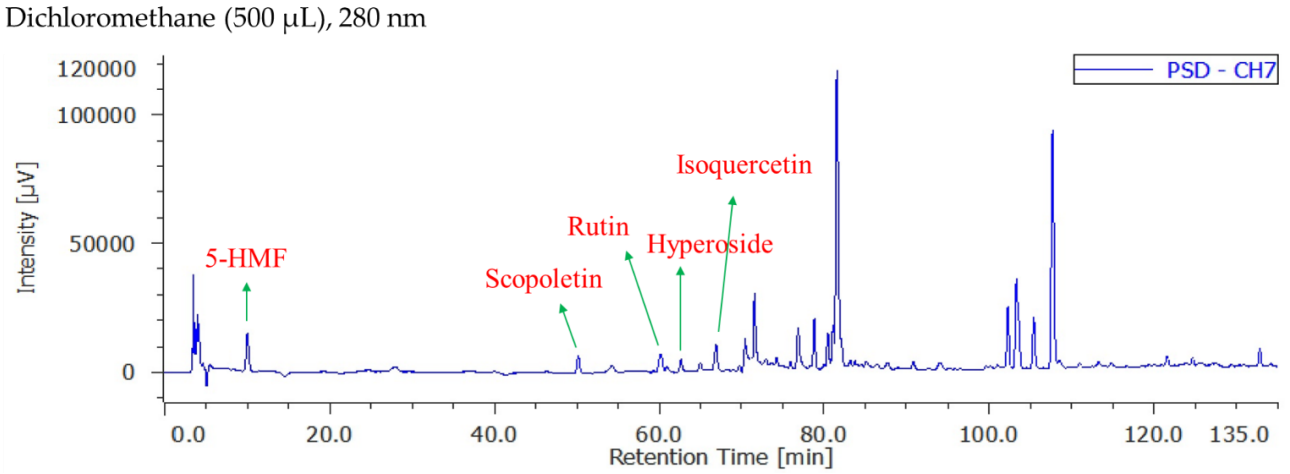


Figure S12. Reversed-phase HPLC chromatogram of dichoromethane extract in PS.

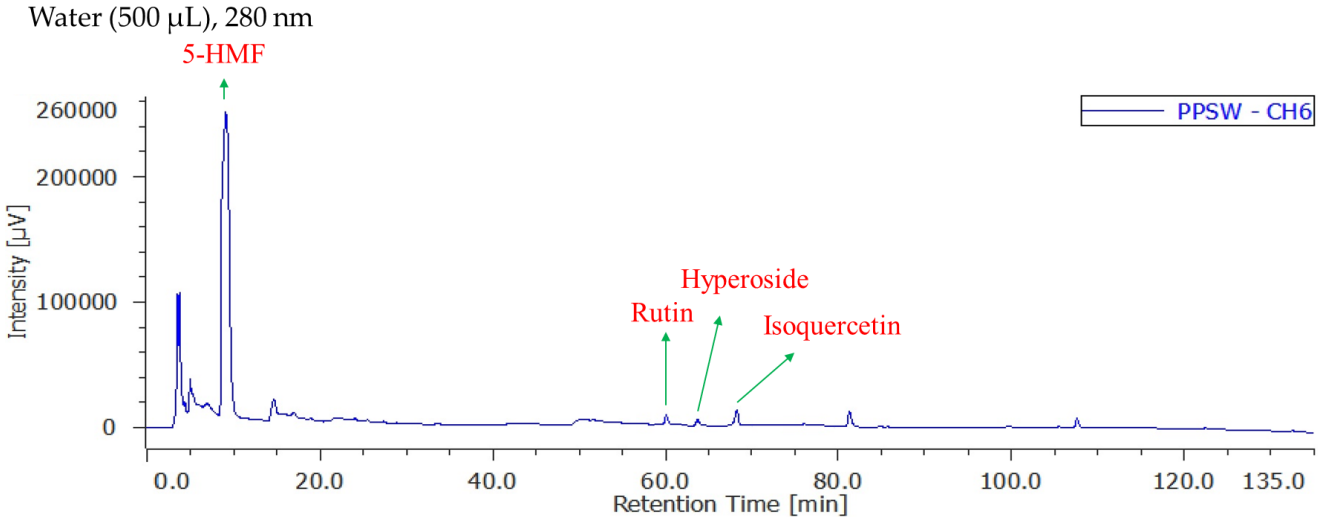


Figure S13. Reversed-phase HPLC chromatogram of water extract in PPS.

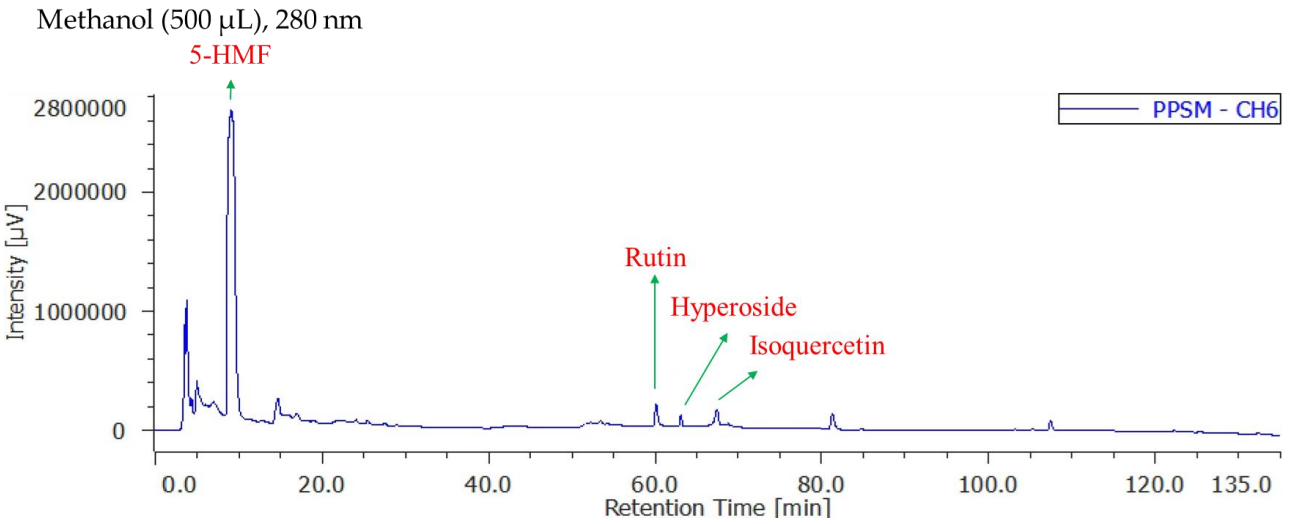


Figure S14. Reversed-phase HPLC chromatogram of methanol extract in PPS.

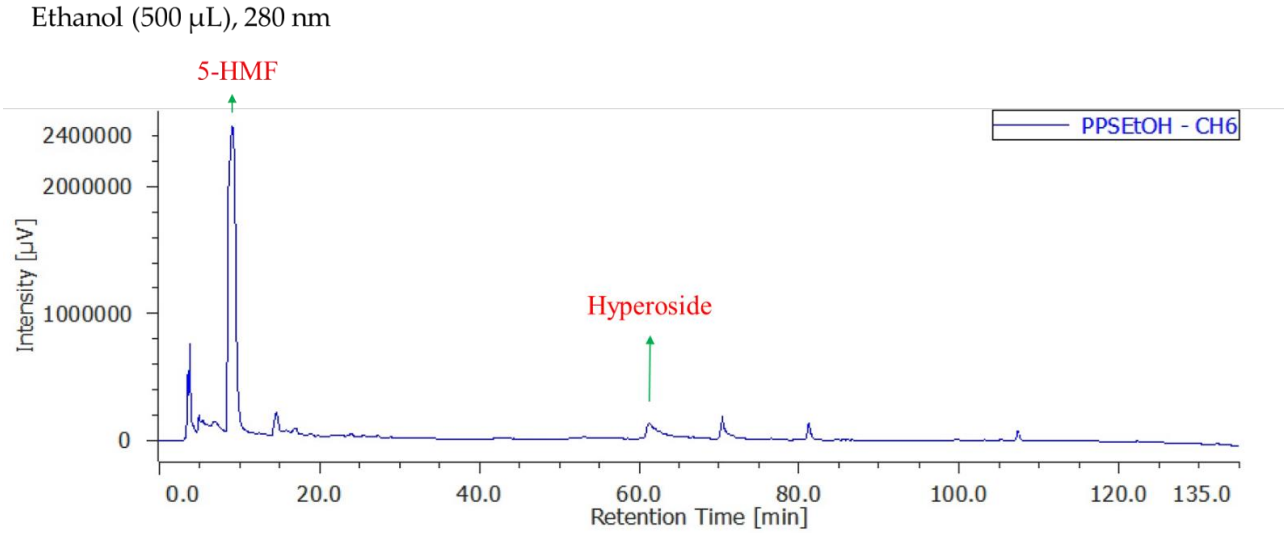


Figure S15. Reversed-phase HPLC chromatogram of ethanol extract in PPS.

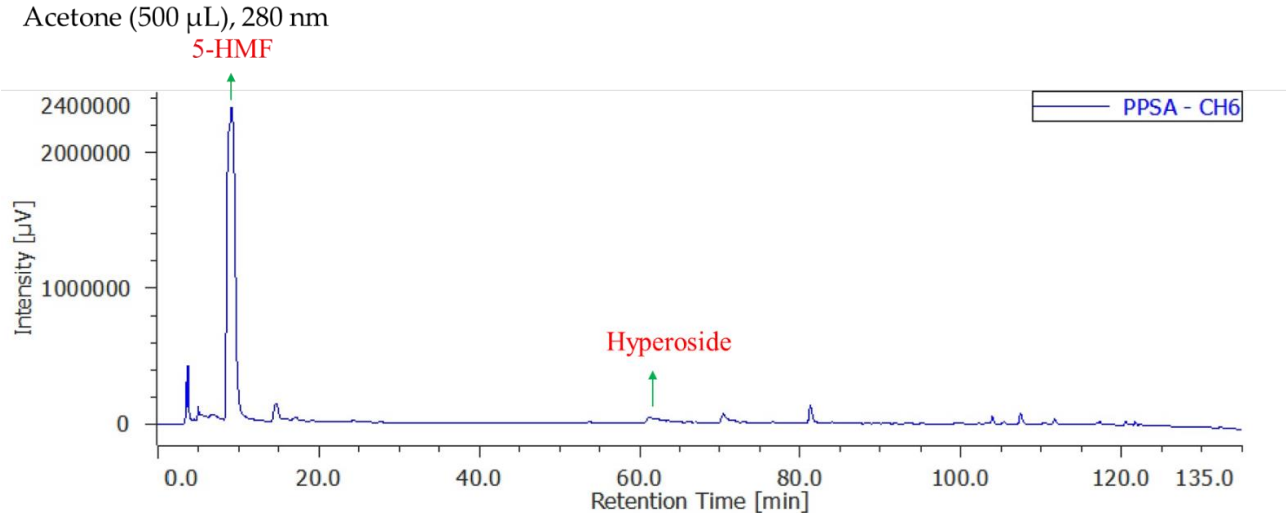


Figure S16. Reversed-phase HPLC chromatogram of acetone extract in PPS.

Ethyl acetate (500 µL), 280 nm

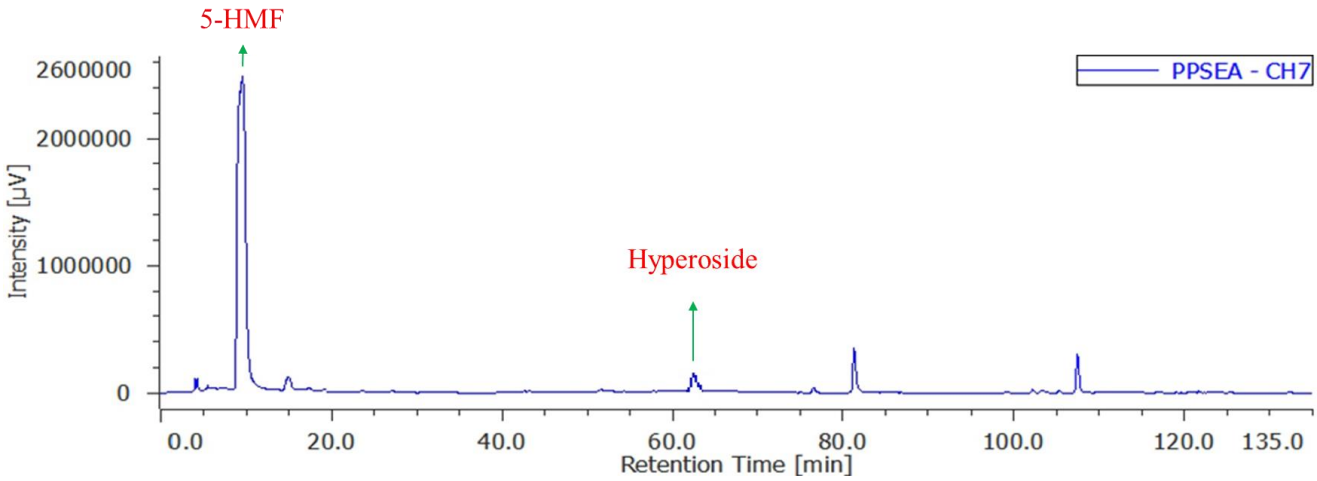


Figure S17. Reversed-phase HPLC chromatogram of ethyl acetate extract in PPS.

Dichloromethane (500 µL), 280 nm

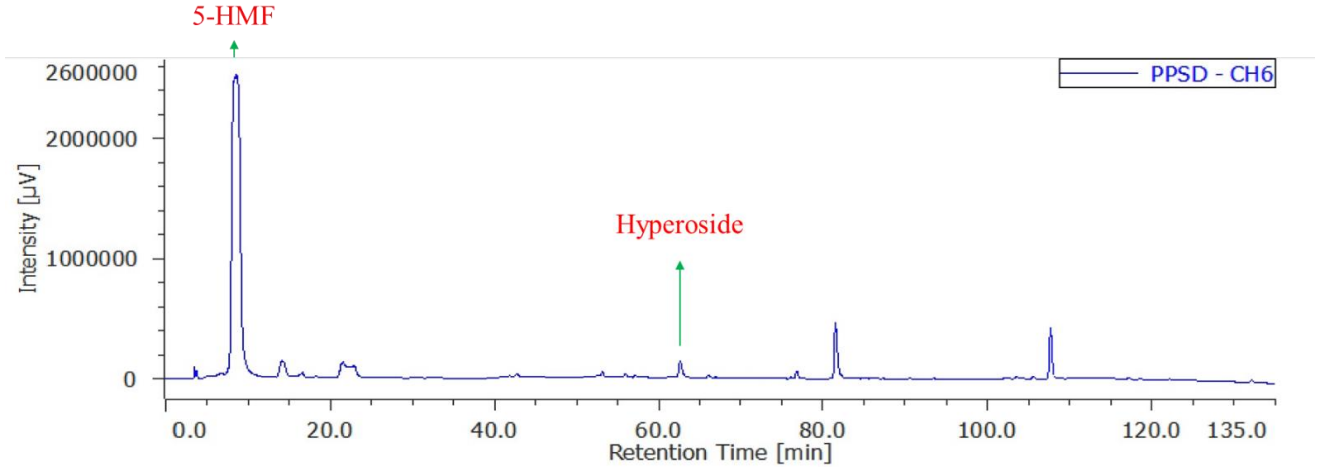


Figure S18. Reversed-phase HPLC chromatogram of dichoromethane extract in PPS.

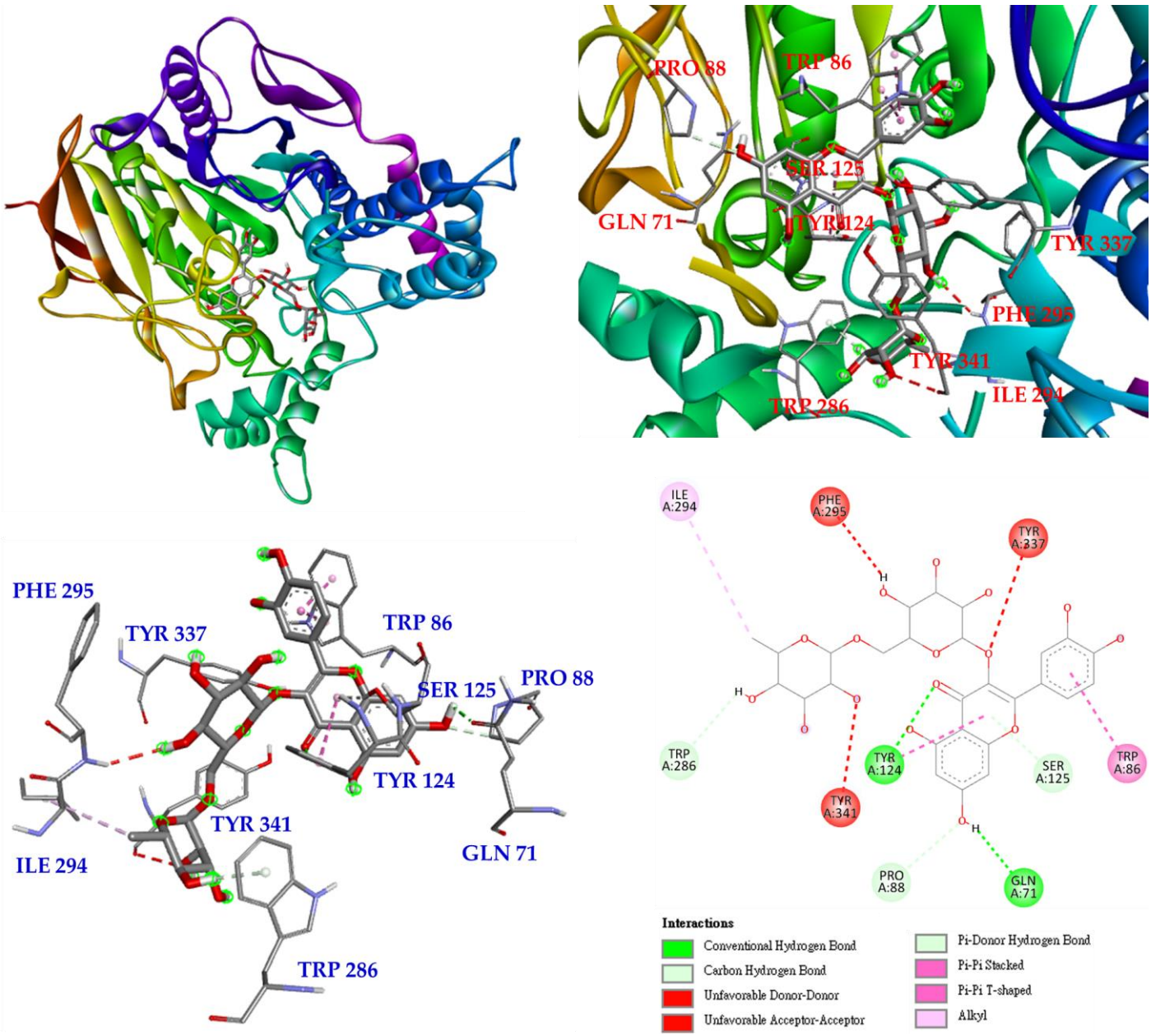


Figure S19. Interactions of rutin (**5**) with active sites of *E. electricus* AChE.