SUPPORTING INFORMATION

Gastroprotective effect and mechanisms of Chinese sumac fruits (*Rhus chinensis* Mill.) against ethanol-induced gastric ulcer in mice

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Characterization of the major bioactive compounds in the ethanol extract of Chinese sumac fruits

The major bioactive compounds in the ethanol extract of Chinese sumac fruits were separated by using a Thermo Fisher Ultimate 3000 UHPLC System (Thermo Fisher Scientific, Germany) coupled with an Agilent Zorbax SB-C18 column (1.7 μm, 2.1 mm × 100 mm), and then characterized by a high resolution mass spectrometer (Q-Exactive Orbitrap, Thermo Fisher Scientific, Bremen, Germany) in the negative mode. The parameters of HPLC were set as follows: mobile phases, 0.1% formic acid in water (A) and acetonitrile (B); flow rate, 0.1 mL/min; elution procedure, 0–2min, 5% B; 2–4min, 5%–30% B; 4–6min, 30%–38% B; 6–9min, 38% B; 9–10min, 38%–5% B; 10–12min, 5% B; column temperature, 30°C; volume of sample injection, 2.0 μl. The following Mass parameters were used in the current work: full MS scan range, 50–1000 m/z; auxiliary gas flow, 9 L/min; sheath gas flow rate, 33 L/min; sweep gas, 4 L/min; S-lens RF level, 50%; spray voltage, 3.3 kV, capillary temperature, 330 °C; heater temperature, 360 °C.

Fig. S1 The chromatograms of ethanol extract of Chinese sumac fruits. Peaks identification and their MS data are shown in Table S1. The base peak chromatogram is shown in Fig. A.

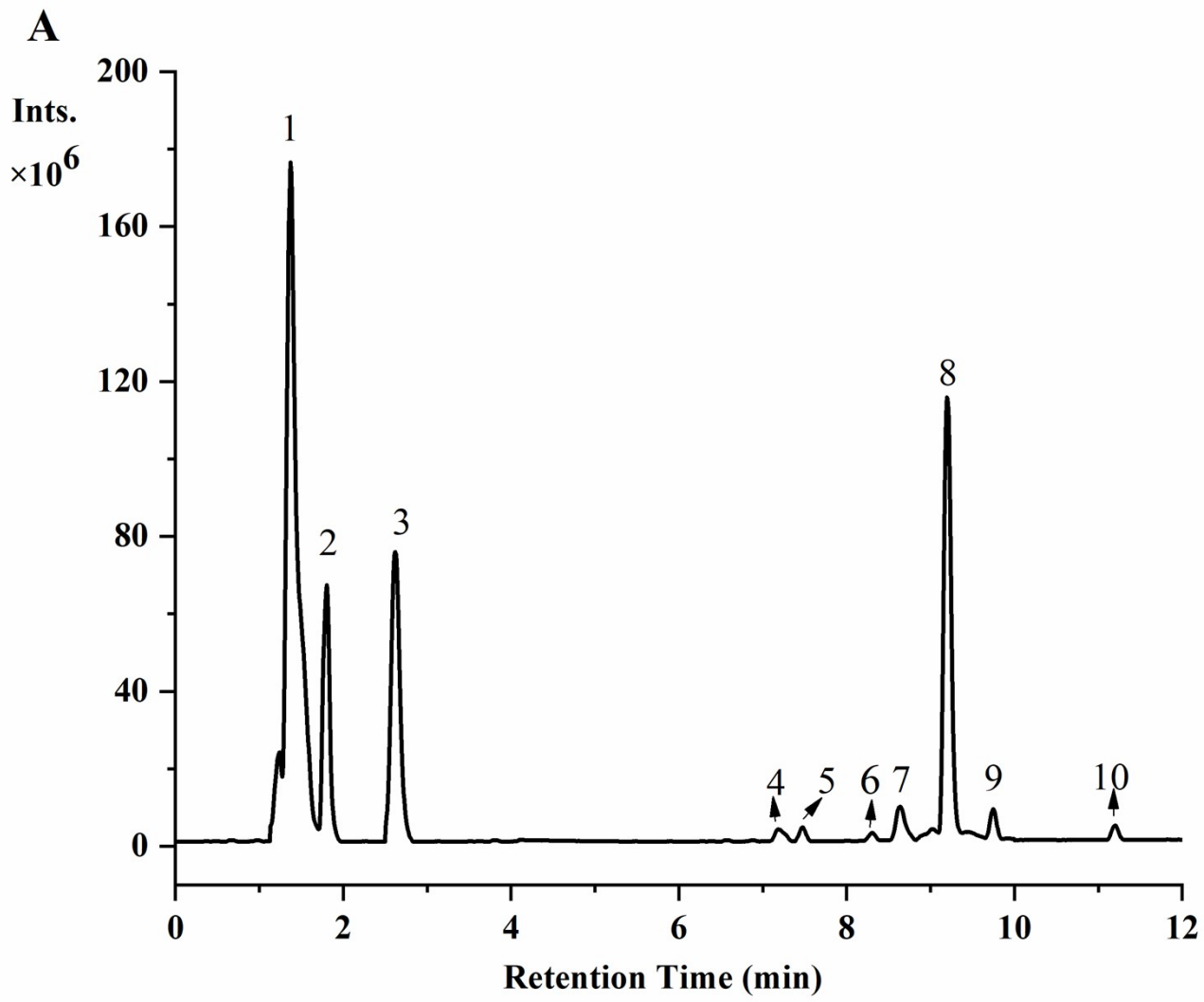
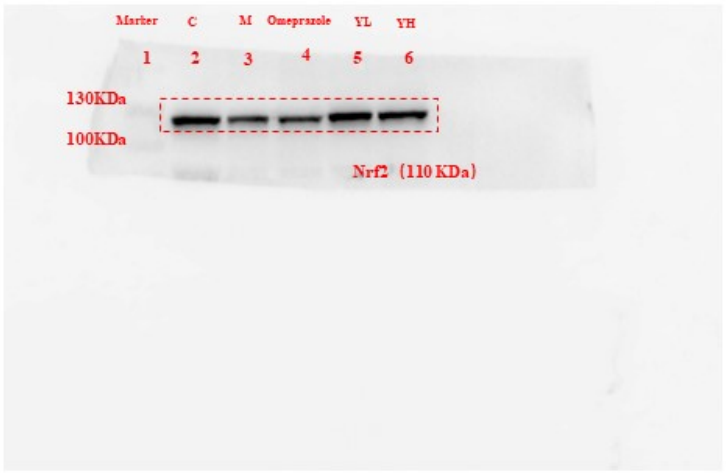


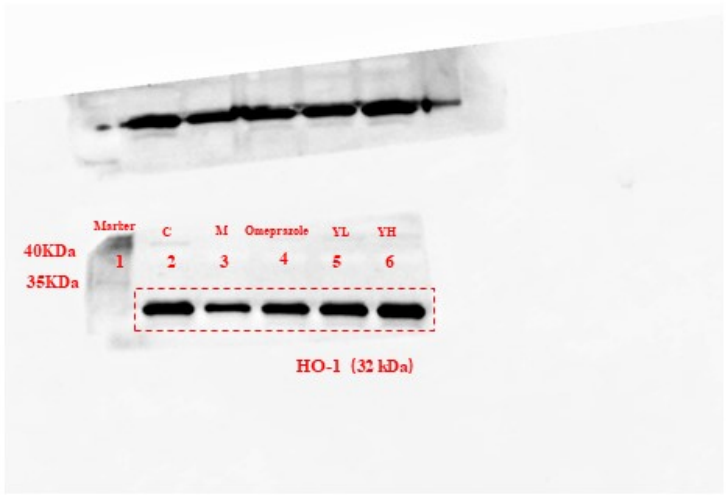
Table S1 Phenolic compounds identified in *Rhus chinensis* Mill. fruits by UHPLC-ESI-HRMS/MS in negative mode.

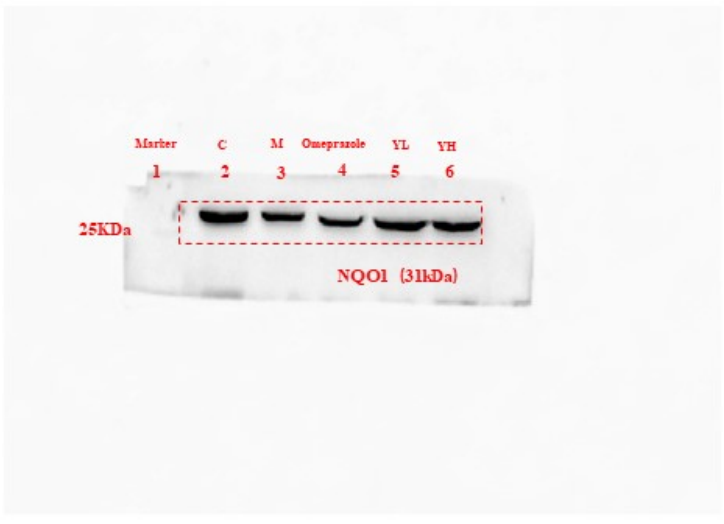
Peak No.	Compounds	Molecular formula	Retention time (min)	$[M-H]^-$ (*m/z*)	MS/MS ion fragments	Dry extract（μg/g）	Average percentage (%, Total identified phenolic content)
1	Malic acid	$C_4H_6O_5$	1.37	133.0132	127.7918, 129.2748	---	---
2	Citric acid	$C_6H_8O_7$	1.80	191.0190	111.0078	---	---
3	Gallic acid	$C_7H_6O_5$	2.62	169.0134	123.0072,124.0154	3641.46±185.36	50.66
4	Trigalloylglucose I	$C_{27}H_{24}O_{18}$	7.19	635.0899	125.0232, 169.0134	199.15±22.37	2.77
5	Trigalloylglucose II	$C_{27}H_{24}O_{18}$	7.48	635.0901	125.0232, 169.0134	178.36±16.54	2.48
6	Tetragalonyl glucose	$C_{34}H_{28}O_{22}$	8.31	787.1011	169.0134,295.0461	150.68±19.63	2.10
7	Myricetin-3-*O*-rhamnoside	$C_{21}H_{20}O_{12}$	8.64	463.0889	271.0250,255.0298	446.15±29.88	6.21
8	Quercetin-3-*O*-rhamnoside	$C_{21}H_{20}O_{11}$	9.20	447.0936	255.0297,151.0026,178.9978	2277.80±191.39	31.69
9	Kaempferol-3-*O*-hexoside	$C_{21}H_{20}O_{10}$	9.75	431.0986	227.0346, 229.0544, 228.0385	169.24±18.92	2.35
10	Quercetin	$C_{15}H_{10}O_6$	11.20	301.0358	65.0019, 121.0283	125.23±17.74	1.74

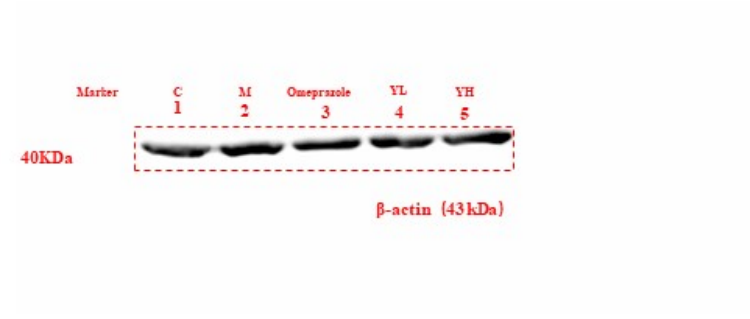
Values are expressed as the mean ± S.D. (n = 3, μg/g of dry extract); each standard curve was set with five different concentrations from 5.00 to 100.00 μg/mL depending on the response intensity. Gallic acid standard was used for quantifying the compounds 3,4,5 and 6; myricetin-3-*O*-rhamnoside standard was used for quantifying the compounds 7; quercetin-3-*O*-rhamnoside standard was used for quantifying the compounds 8; kaempferol standard was used for quantifying the compounds 9; quercetin standard was used for quantifying the compound 10. All the phenolic standards were purchased from Must bio-technology CO., LTD (Chengdu, Sichuan, China) with purity ≥97%.

Raw images of western blot in Figure 4

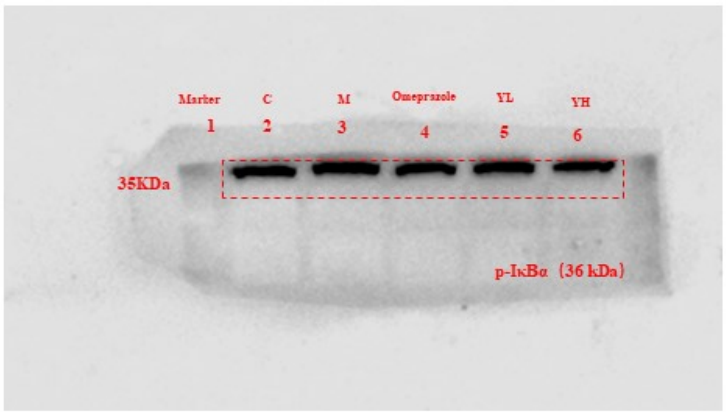


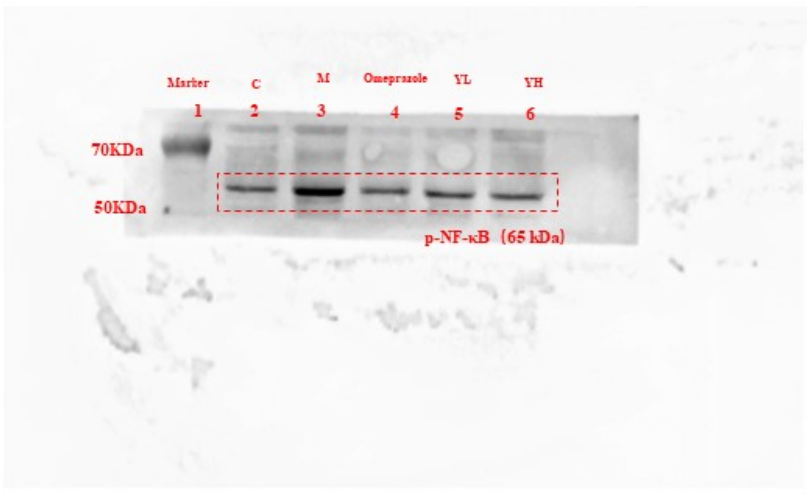


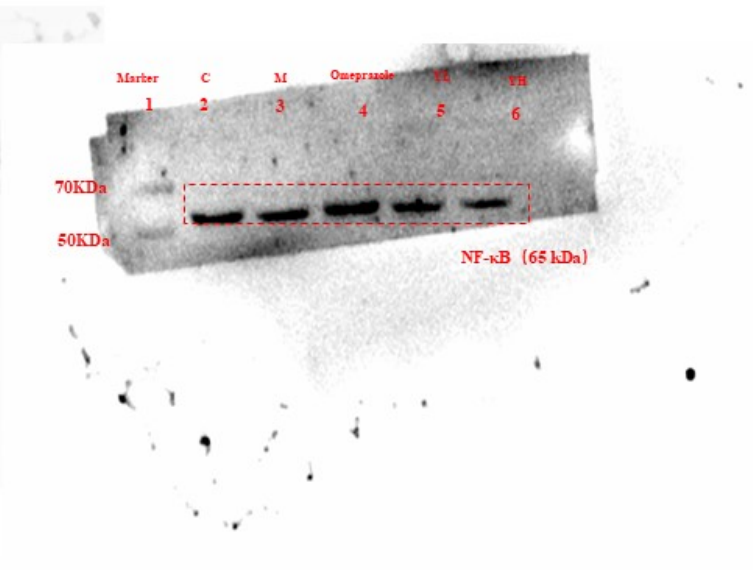


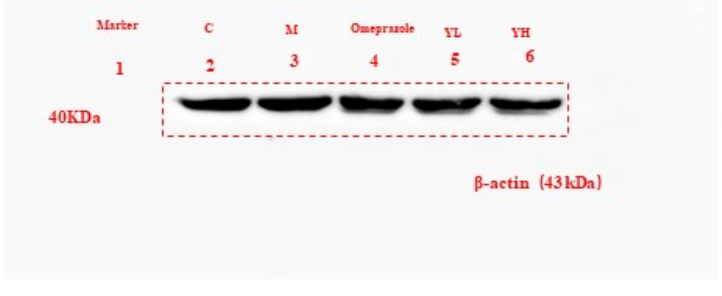


Raw images of western blot in Figure 7









Raw images of western blot in Figure 8 (continued)