Supplymentary Data

Methods of HPLC

Chromatographic analysis was performed on an Agilent Zorbax SB-C18 3.5μm 150×4.6 mm, column from Agilent (Agilent, Palo Alto, CA), using a Primaide HPLC (Prima, Hitachi, Japan). Mobile phases consisted of methanol and phosphoric acid (0.3%). The HPLC flow was directed into the UV detector and set up at 210nm wavelength. The standards were selected as rutin, kaempferol and quercetin to quantify SO extract. First, the standard solutions (rutin, kaempferol, quercetin) were prepared by accurately weighing to draw the standard curve. SO extract (100 mg) was dissolved in methanol (chromatographic grade), centrifugated and filtered through 0.45 μm microporous membrane. The contents of rutin, quercetin and kaempferol in the samples were determined for 6 consecutive times. The contents of rutin, quercetin and kaempferol from SO extract were calculated according to the standard curve,

Results

From the chromatograms of HPLC for SO extract and the standards, SO extract contained rutin, quercetin, and kaempferol (Fig.1A, 1B). With the HPLC analysis, rutin, quercetin, and kaempferol standard curves were linear over the concentration ranges of 1.56 to 100.00 μg/mL, 0.16 to 10.00 μg/mL, 0.32 to 20.00 μg/mL, respectively, with the correlation coefficient $R^2 \geqslant 0.999$ (Fig. 2A, 2B, 2C). Based on the liner responses of standards, the concentrations of rutin, quercetin, and kaempferol were 7.798 μg/100mg, 0.766 μg/100 mg, 1.891 μg/100 mg in SO extract.

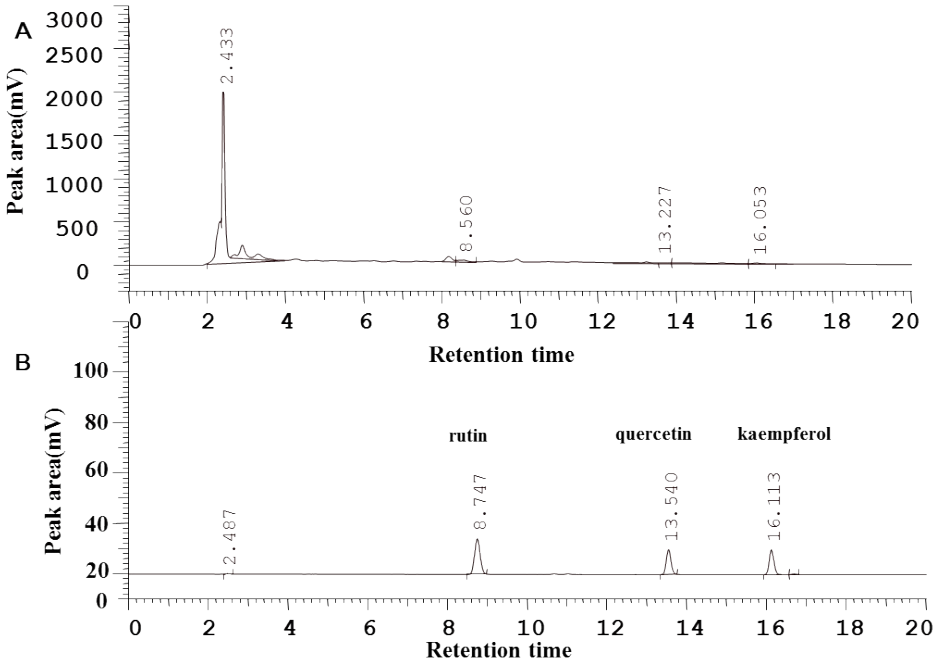

Fig.1. The chromatograms of HPLC for SO extract and the standards. (A) The HPLC chromatogram for SO extract; (B) The HPLC chromatogram for standards.

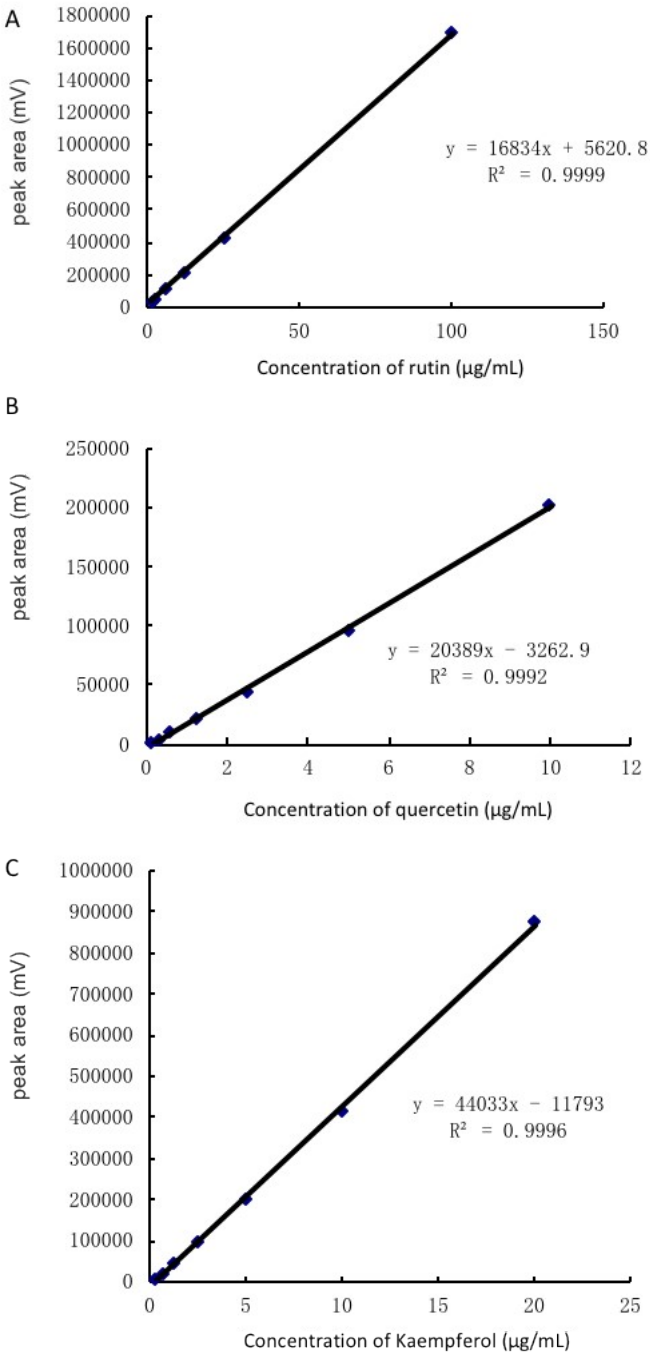

Fig.2. Liner response of rutin, quercetin, kaempferol standards in HPLC. (A) Rutin; (B) Quercetin; (C) Kaempferol.