

Pear peel and pulp polyphenol extraction

0.1 % hydrochloric acid was added to avoid polyphenol oxidation when the freeze-dried powder of pear peel and pulp (10 g) was extracted with 60% ethanol at a ratio of 1:10 (w/v) for 30 min at 50 °C. After centrifugation, the supernatant was recovered, and using the technique described above, the bottom layer of the residue was extracted three times. After centrifugation, the supernatants were combined and freeze-dried after rotary evaporation to remove ethanol to obtain pear polyphenol extracts (PPEs). The PPEs included: “Yali” Pear peel polyphenol extract-ARPPE, “Yali” Pear pulp-aRPPE; “Huangguan” Pear peel polyphenol extract-BRPPE, “Huangguan” Pear pulp-bRPPE; “Xuehua” Pear peel polyphenol extract-CRPPE, “Xuehua” Pear pulp-cRPPE.

UPLC-MS analysis of pear polyphenol extracts (PPEs)

Preparation of the sample to be tested: 2 g of PPEs lyophilized powder was taken, 5.0 mL of 0.1 % hydrochloric acid-methanol (v/v) solvent was added, and the air bubbles were removed by sonication and then stored over 0.22 µm for reserve. ACQUITY UPLC I Class ultra performance liquid chromatography (UPLC Water TM, USA) and tandem Thermo Q Exactive Focus high resolution mass spectrometer (Thermo Scientific, Waltham, MA, USA) were used for the identification and quantification of pear polyphenols. The major polyphenols in PPEs were identified and quantified by comparing the retention times and peak areas with those of the corresponding standards. Xcalibur software (Thermo Scientific) was used for data acquisition and analysis of the liquid chromatography tandem mass spectrometry system. Specific methods are described in the Supplementary Material.