

**Table S1.** HPLC conditions for phytochemical analysis of metabolites.

Compounds	Operating system	Operating conditions	Program	Quantification
Phenolic acids	The system comprised an OptimaPak C <sub>18</sub> column (250 × 4.6 mm, 5 µm; RStech Co., Daejeon, Republic of Korea), an NS-4000 HPLC system, an NS-6000 auto-sampler (Futecs Co., Daejeon, Republic of Korea), a degasser, and a UV-Vis detector.	The HPLC operating conditions were set as follows: detection wavelength, 280 nm; oven temperature, 30 °C; flow rate, 1 mL/min; running time; 98 min; and injection volume, 100 µL.	The gradient program was set as follows: solvent A, ultrapure water containing 0.2% acetic acid; solvent B, methanol; 0 min, 95% A; 4 min, 95–85% A; 9 min, 85% A; 14 min, 85–80% A; 24 min, 80% A; 54 min, 80–70% A; 55 min, 70–55% A; 65 min, 55% A; 75 min, 55–44% A; 77.0 min, 44–40% A; 79 min, 40% A; 80 min, 40–20% A; 90 min, 20% A; 91.0 min, 20–95% A; and 98.0 min, 95% A (Total 98 min).	Phenolic compounds were identified based on the retention time and results of spiking tests. The phenolic content of each sample was quantified with reference to a corresponding calibration curve.
Glucosinolate	The system consisted of a reversed-phase Inertsil ODS-3 column (150 × 3.0 mm, 3 µm) with an E-type cartridge guard column (10 × 2.0 mm, 5 µm) at using an Agilent Technologies 1200 series HPLC system (Palo Alto, CA, USA) equipped with a UV-Vis detector.	The HPLC operating conditions were set as follows: detection wavelength, 227 nm; oven temperature, 40 °C; flow rate, 1.0 mL/min; running time; 60 min; and injection volume, 20 µL.	The mobile phase consisted of MeOH/water/acetic acid (5:92.5:2.5, v/v/v) (solvent A) and MeOH/water/acetic acid (95:2.5:2.5, v/v/v) (solvent B). The gradient program is as follows; 0% solvent B; 0–80% solvent B, 48 min; 0% solvent B, 10 min.	Glucosinolate was identified based on their HPLC peak area ratios and quantified based on the retention time, peak areas, and response factor with reference to a desulfo-sinigrin (Sigma-Aldrich Co., Ltd., St. Louis, MO, USA) external standard.