SUPPORTING INFORMATION

Figure S1. Typical HPLC-PDA Chromatogram (shown at 320 nm) From Methanol Extracts of Potato Pie-Cuts Stored for 120 h and Treated with Amylolytic Enzymes at 96 h of Storage (E96h).

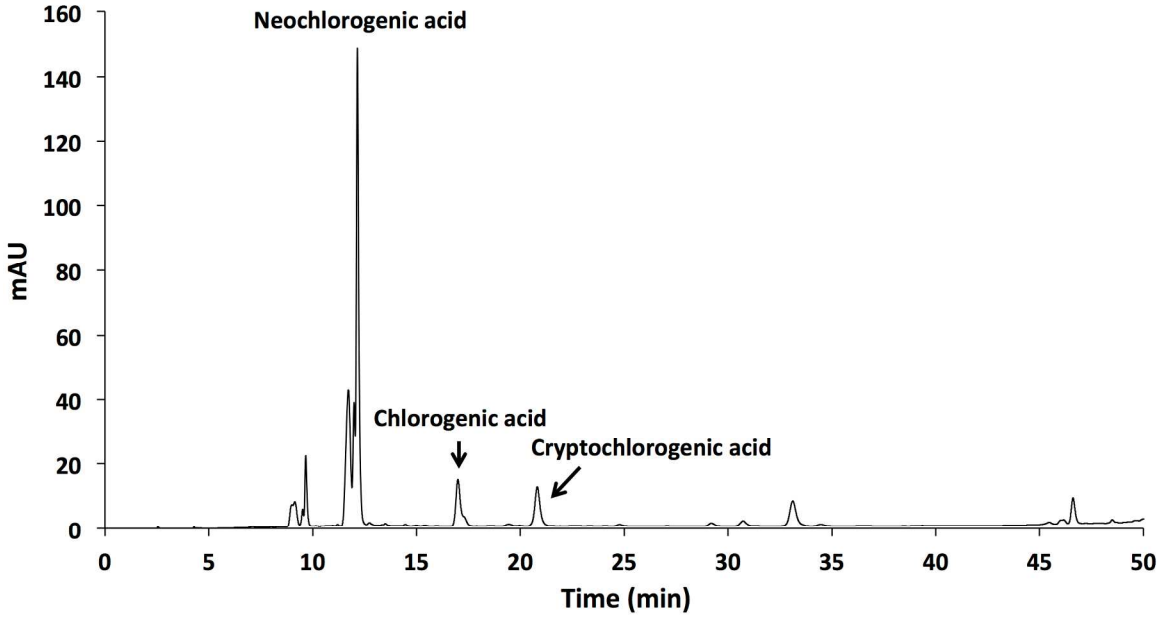

Table S1. Tentative Identification of Chlorogenic Acid Isomers in Potato Tissue. Identification was Obtained by HPLC-DAD and HPLC-ESI-MS^n

Peak number (retention time)	λmax (nm)	Tentative identification	MS [M-H]- (m/z)	MS^2 (m/z)
1 (11.3)	230, 300, 316	Neochlorogenic acid	353	Weak MS^2 191
2 (16.3)	230, 325	Chlorogenic acid	353	192, 180, 174, 143
3 (20.2)	230, 305, 325	Cryptochlorogenic acid	353	Weak MS^2

Identification and Quantification of Chlorogenic Acid Isomers by High-Performance Liquid Chromatography-Diode Array Detector (HPLC-DAD) and HPLC-Electrospray Ionization (ESI)-MS^n

For the extraction of phenolic compounds (PC), freeze-dried potato (~ 200 mg) was homogenized with methanol (5 mL) using a tissuemizer (Advanced homogenizing system, VWR, Radnor, PA, USA), and then centrifuged (10000*g*, 15 min, 4 °C). The clear supernatant (further referred as methanol extract) was microfiltered using nylon membranes (0.45 µm, VWR, Radnor, PA, USA) prior to injection to the chromatographic system.

For the analysis of individual chlorogenic acids, 10 µL of the methanol extract were injected in the HPLC system, which was composed of a quaternary pump, an autosampler, and a diode array detector (1260 Infinity, Agilent Technologies, Santa Clara, CA). Compounds were separated on a 4.6 mm x 250 mm, 5 µm, C18 reverse phase column (Luna, Phenomenex, Torrance, CA). . The mobile phases consisted of water (phase A) and methanol:water (60:40, v:v, phase B) adjusted to pH 2.4 with orthophosphoric acid. The gradient solvent system was 0/100, 3/70, 8/50, 35/30, 40/20, 45/0, 50/0, and 60/100 (min/% phase A) at a constant flow rate of 0.8 mL/min. Chromatographic data was processed with the OpenLAB CDS ChemStation software (Agilent Technologies, Santa Clara, CA, USA).

The identification of individual PC was based on their DAD spectra and ESI-MS fragmentation patterns. Mass spectra were obtained on a MS Finnigan LCQ Deca XP Max, Ion trap mass spectrometer coupled at the exit of the DAD and equipped with a *Z*-spray ESI source, and run by Xcalibur version 1.3 software (Thermo Finnigan-Surveyor,

San José, CA). Separations were conducted using the Phenomenex (Torrance, CA) Synergi 4 µ Hydro-RP 80A (2 mm x 150 mm) with a C18 ward column, and a flow of 200 µL/min from the DAD eluent was directed to the ESI interface using a flow-splitter. Mobile phases consisted of water (phase A) and methanol:water (60:40, v:v, phase B) adjusted to pH 2.4 with formic acid. The gradient solvent system was 0/100, 3/70, 8/50, 35/30, 40/20, 45/0, 50/0, and 60/100 (min/% phase A). Nitrogen was used as desolvation gas, at 275 °C and a flow rate of 60 L/h, and no cone gas was used. ESI was performed in the negative ion mode using the following conditions: sheath gas (N_2), 50 arbitrary units; auxiliary gas (N_2), 0 arbitrary units; spray voltage, 1.5 kV; capillary temperature, 250 C; capillary voltage, 21 V; and tube lens offset, 60 V.

To quantify the chlorogenic acid isomers a standard curve of chlorogenic acid at a range of 5-250 ppm were obtained. The concentration of the phytochemicals was expressed as mg of each individual compound per kg of potatoes dry weight (DW). Results were expressed as chlorogenic acid equivalents.