Supplementary Materials

Evaluation of Polyphenol Anthocyanin-Enriched Extracts of Blackberry, Black Raspberry, Blueberry, Cranberry, Red Raspberry, and Strawberry for Free Radical Scavenging, Reactive Carbonyl Species Trapping, Anti-Glycation, Anti-β-Amyloid Aggregation, and Microglial Neuroprotective Effects

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HPLC-DAD analyses of phenolics in the berry ACEs

Each berry ACE was analyzed by HPLC-DAD as previously reported by our laboratory for the presence of phenolics (at 280 nm) and anthocyanins (at 520 nm) (Figures S1-S6). Briefly, each berry ACEs (dissolved in DMSO; all at equivalent concentrations of 10 mg/mL) were analyzed on a Luna C18 column (250 × 4.6 mm i.d., 5 μM; Phenomenex) with a flow rate of 0.75 mL/min and injection volume of 20 μL for each sample. A linear gradient solvent system consisting of solvent A (0.1% aqueous trifluoroacetic acid) and solvent B (methanol) at room temperature was used as follows: 0–30 min, 10% to 60% B; 30–35 min, 60% to 100% B; 35–40 min, 100% B; 40–41 min, 100% to 10% B; 41–51 min, 10% B.

Figure S1

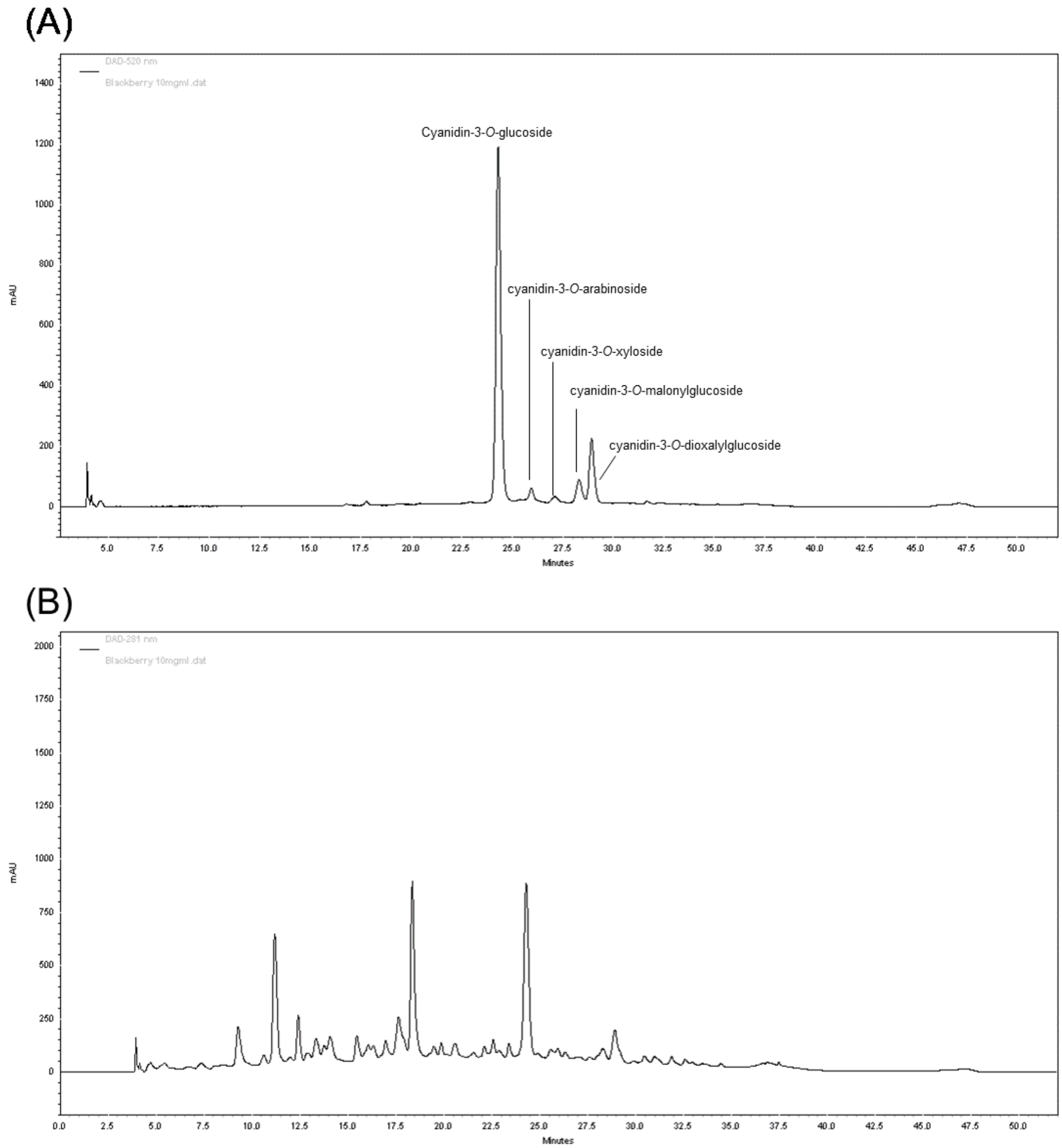

Figure S1. HPLC-DAD chromatogram of blackberry ACE monitored at (A) wavelength of 520 nm showing its major anthocyanins as cyanidin-3-*O*-glucoside, cyanidin-3-*O*-arabinoside, cyanidin-3-*O*-xyloside, cyanidin-3-*O*-malonylglucoside, and cyanidin-3-*O*-dioxalylglucoside; and (B) wavelength of 280 nm showing the presence of phenolics.

Figure S2

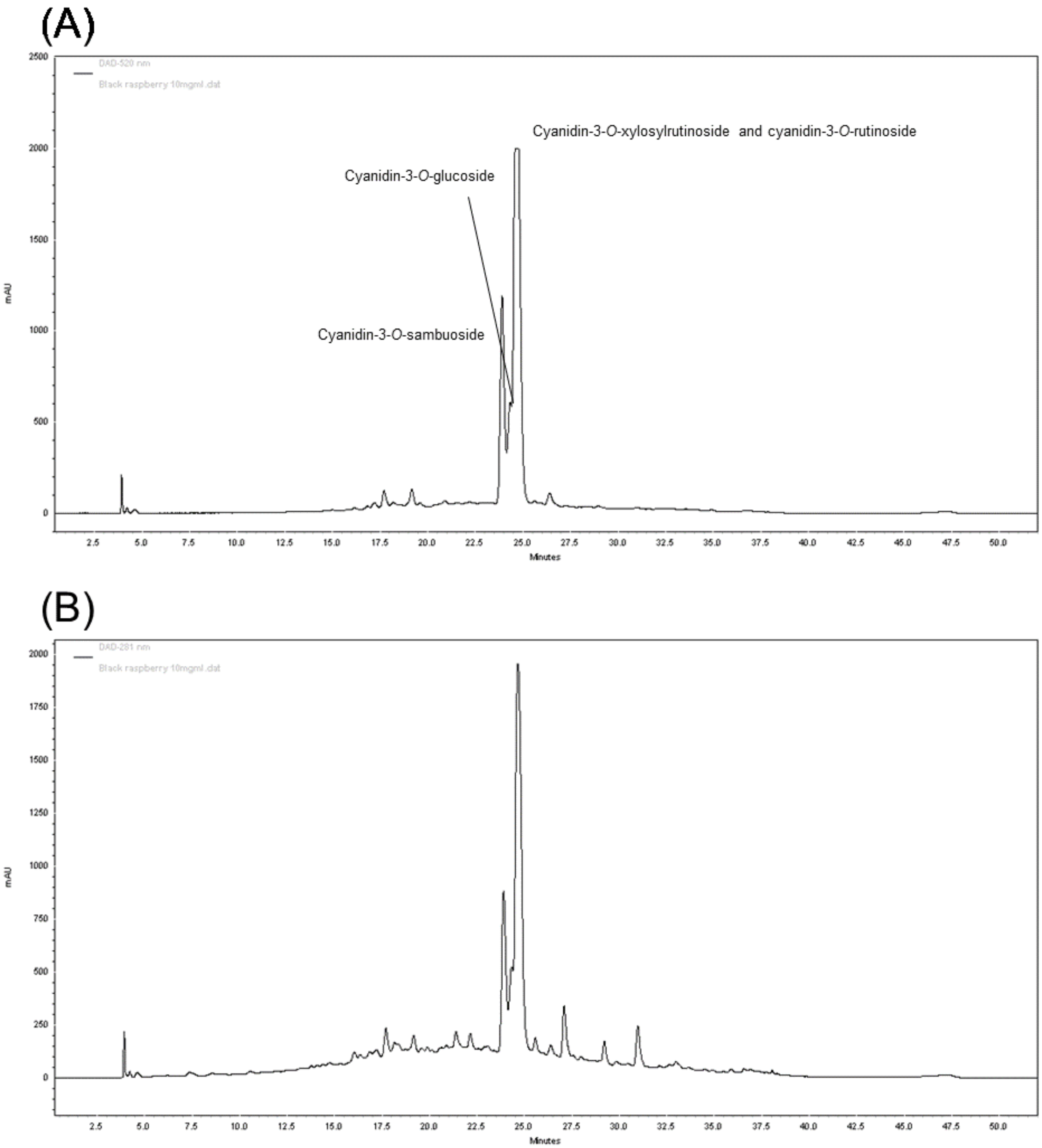

Figure S2. HPLC-DAD chromatogram of black raspberry ACE monitored at (A) wavelength of 520 nm showing its major anthocyanins as cyanidin-3-*O*-sambuoside, cyanidin-3-*O*-glucoside, cyanidin-3-*O*-xylosylrutinoside, and cyanidin-3-*O*-rutinoside; and (B) wavelength of 280 nm showing the presence of phenolics.

Figure S3

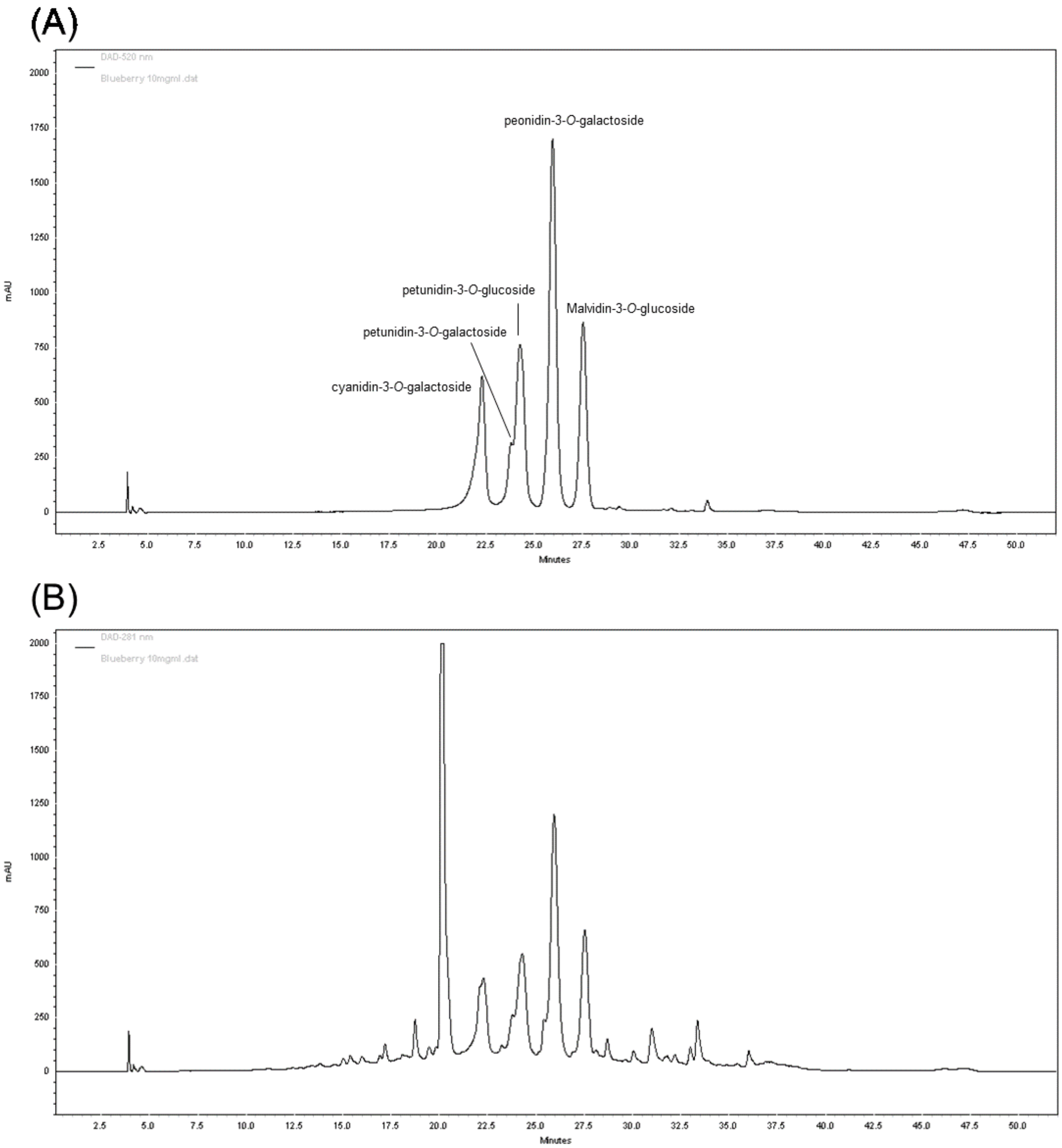

Figure S3. HPLC-DAD chromatogram of blueberry ACE monitored at (A) wavelength of 520 nm showing its major anthocyanins as cyanidin-3-*O*-galactoside, petunidin-3-*O*-galactoside, petunidin-3-*O*-glucoside, peonidin-3-*O*-galactoside, and malvidin-3-*O*-glucoside; and (B) wavelength of 280 nm showing the presence of phenolics.

Figure S4

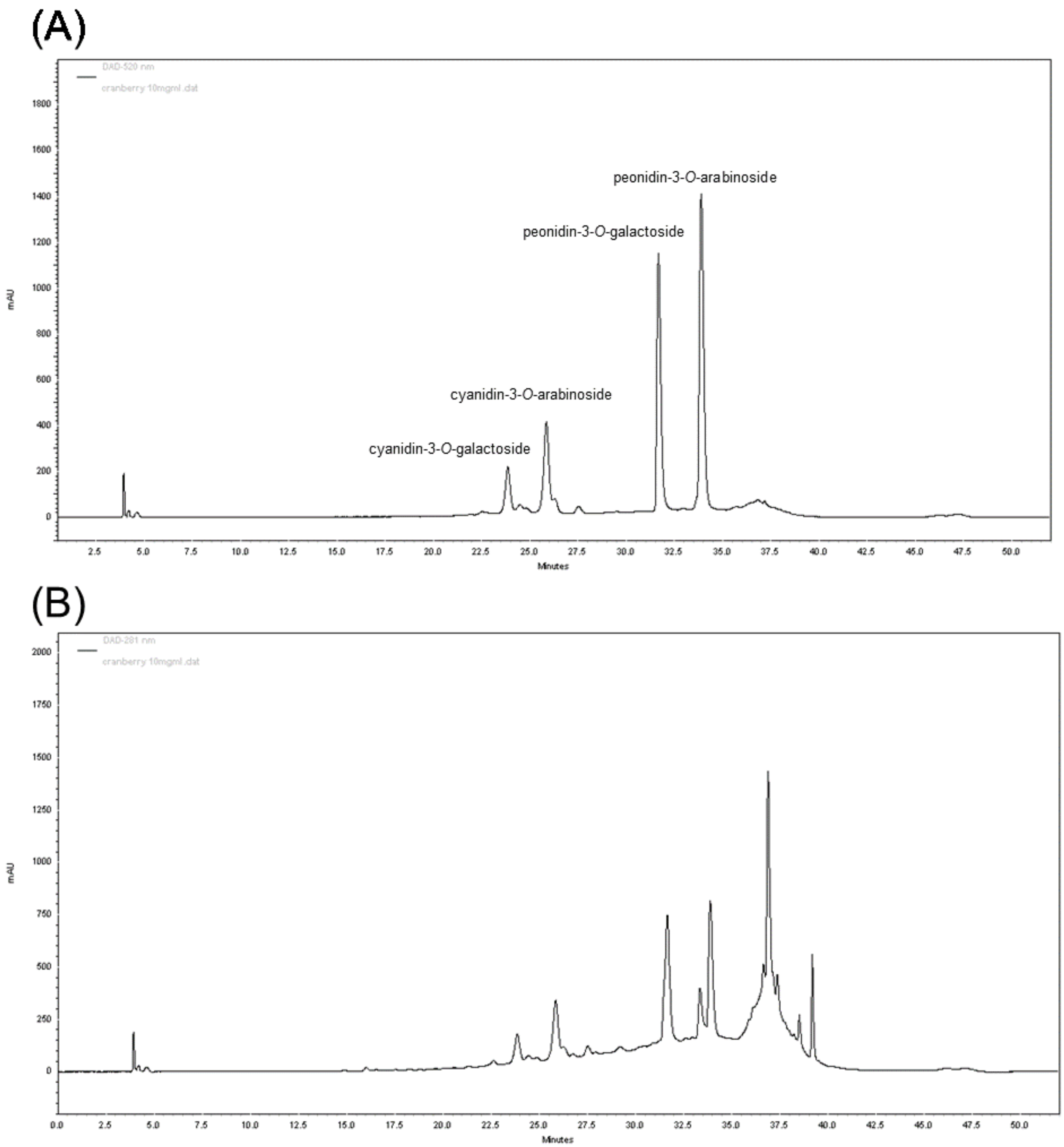

Figure S4. HPLC-DAD chromatogram of cranberry ACE monitored at (A) wavelength of 520 nm showing the identity of its major anthocyanins as cyanidin-3-*O*-galactoside, cyanidin-3-*O*-arabinoside, peonidin-3-*O*-galactoside, and peonidin-3-*O*-arabinoside; and (B) wavelength of 280 nm showing the presence of phenolics.

Figure S5

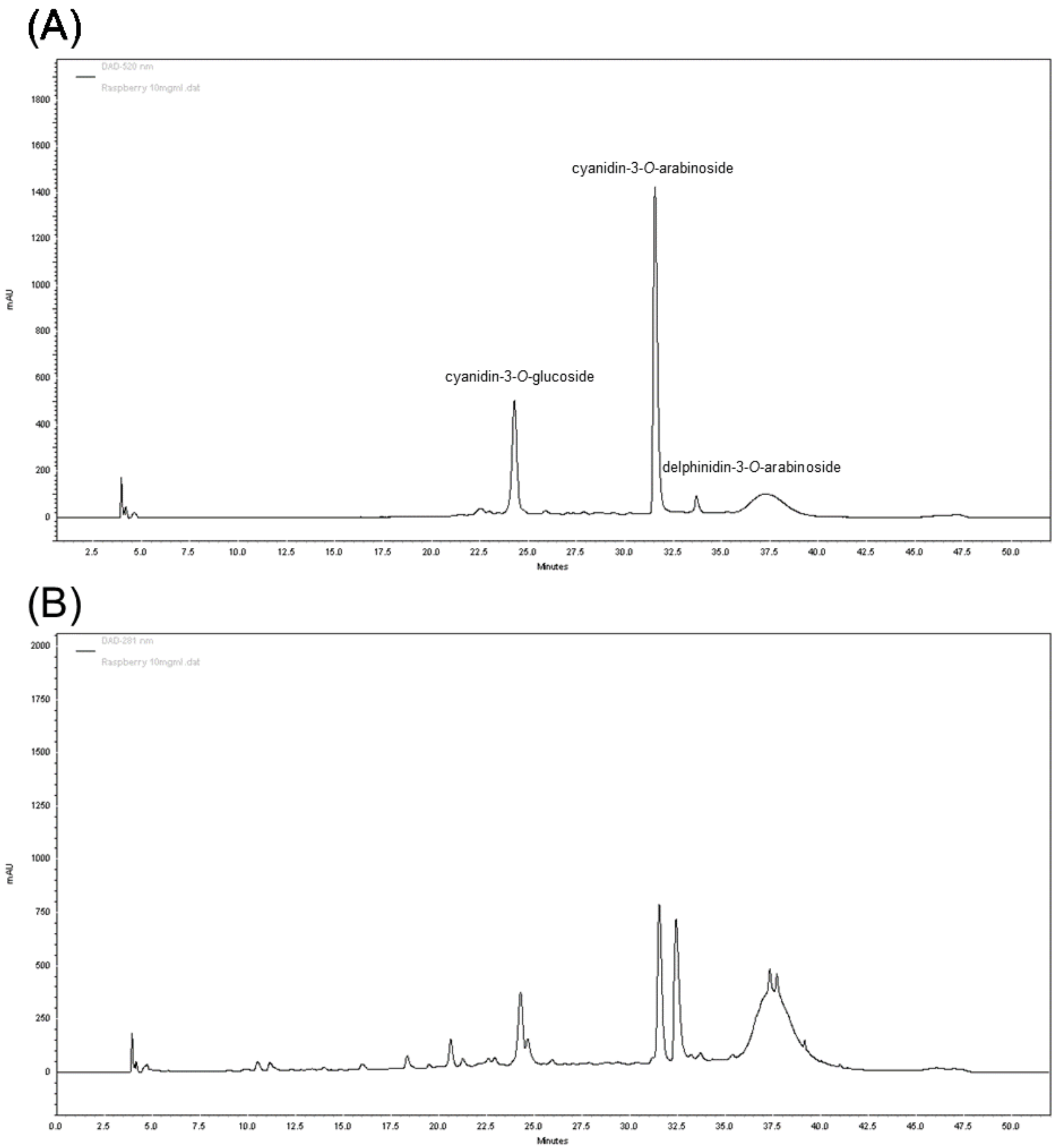

Figure S5. HPLC-DAD chromatogram of red raspberry ACE monitored at (A) wavelength of 520 nm showing its major anthocyanins as cyanidin-3-*O*-glucoside, cyanidin-3-*O*-arabinoside, delphinidin-3-*O*-arabinoside; and (B) wavelength of 280 nm showing the presence of phenolics.

Figure S6

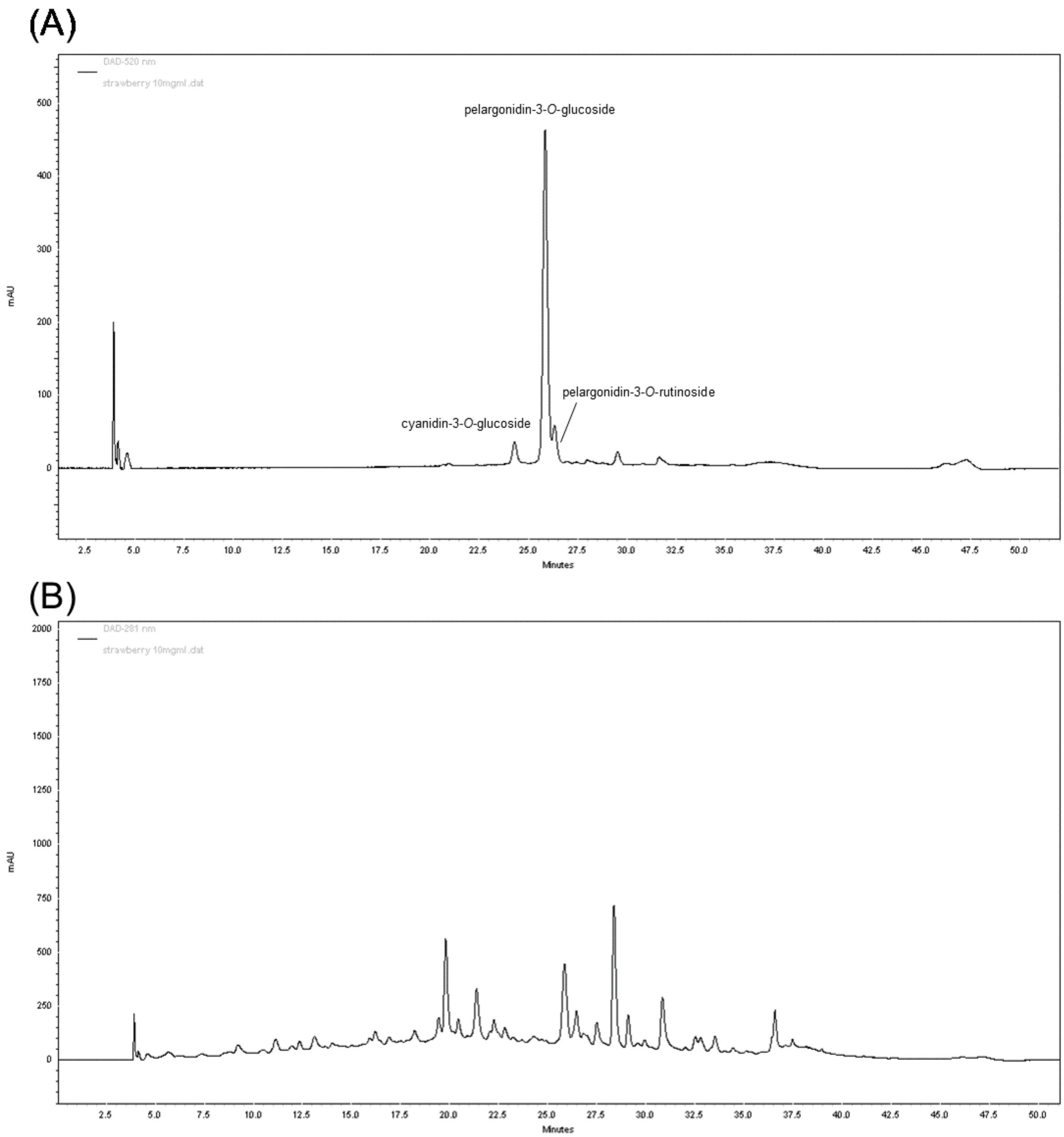

Figure S6. HPLC-DAD chromatogram of red raspberry ACE monitored at (A) wavelength of 520 nm showing its major anthocyanins as cyanidin-3-*O*-glucoside, pelargonidin-3-*O*-glucoside, and pelargonidin-3-*O*-rutinoside; and (B) wavelength of 280 nm showing the presence of phenolics.

Table S1. Chemical constituents including non-phenolic and phenolic 'non-anthocyanin' compounds of blackberry, black raspberry, blueberry, cranberry, red raspberry, and strawberry.

Berry	Non-phenolic compounds	Phenolic compounds (non-anthocyanins)	Reference
Blackberry	Carbohydrates, organic acids, vitamins, minerals, etc.	Ellagitannins, flavonols, phenolic acids and procyanidins, lignans etc.	[1-4]
Black raspberry	Carbohydrates, organic acids, minerals, folic acid, and β-sitosterol, etc.	Ellagitannins, ellagic acid, flavonols, ferulic acid, etc.	[1, 3-5]
Blueberry	Carbohydrates, organic acids, minerals, vitamins, etc.	Proanthocyanidins, flavonols, catechins, stilbenes, etc.	[1, 3, 4, 6-8]
Cranberry	Carbohydrates, organic acids, vitamins, minerals, etc.	Proanthocyanidins, flavonols, stilbenes, etc.	[1, 3, 4, 9-11]
Red raspberry	Carbohydrates, organic acids, vitamins, minerals, etc.	Ellagitannins, gallotannins, ellagic acid, flavonols, catechins, etc.	[1, 3, 4, 12]
Strawberry	Carbohydrates, organic acids, vitamins, minerals, etc.	Ellagitannins, ellagic acid, flavonols, phenolic acids, etc.	[1, 3, 4]

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