

Supplementary material

Table S1 Definition of taste attributes and reference standards used during the sensory evaluation of the *Brassica* whole extracts and their fractions.

Taste Attribute	Definition	Anchor	Reference Standards
Sweet	The perceived intensity of the sweet taste - defined by basic taste solution	Low to high	Sucrose (2% and 16%)
Salty	The perceived intensity of the salty taste - defined by basic taste solution	Low to high	Salt (0.2% and 0.7%)
Sour	The perceived intensity of the sour taste - defined by basic taste solution	Low to high	Citric acid (0.05% and 0.2%)
Bitter	The perceived intensity of the bitter taste - defined by basic taste solution	Low to high	Caffeine (0.05% and 0.2%)
Umami	The perceived intensity of the umami taste - defined by basic taste solution	Low to high	Monosodium glutamate (0.18% and 0.45%)

Table S2 LC-MS/MS parameters used during the detection of glucosinolates by negative electrospray.

Glucosinolate	Precursor ion [M-H]⁻	Product ion [SO₃H]⁻	Collision energy (eV)	Retention time (min)^a
Glucoiberin	422	97	27	3.30
Progoitrin	388	97	30	3.31
Sinigrin	358	97	32	3.32
Glucoraphanin	436	97	32	3.32
Gluconapin	372	97	26	6.31
Glucotrapeolin (ISTD)	408	97	27	7.71
Glucoerucin	420	97	27	7.12
Glucobrassicin	447	97	27	8.01
Glucosylsin	450	97	27	8.04
4-methoxyglucobrassicin	477	97	27	8.82
Neoglucobrassicin	477	97	27	9.61

^a Separation conditions as described under Materials and Methods.

Table S3 Phenolic components detected in the *B. olearacea* whole extracts by diode array detection (DAD) and electrospray mass spectrometry (ESI-MS). Component numbers refer to those found in Fig. S1.

Tentative identity	No.	DAD (nm)	ESI-MS: [M-H] ⁻ (frag. MS ² m/z)
Unknown	1	320	261
Neochlorogenic acid	2	332,295sh	353 (191)
Chlorogenic acid	3	332,295sh	353 (191)
Sinapic acid	4	324	223
1,2-disinapoylgentiobiose	5	328	753 (529,223)
1-sinapoyl-2-feruloylgentiobiose	6	328,295sh	723 (499,223)
1,2-diferuloylgentiobiose	7	328,290sh	693 (499,193)
1,2,2-trisinapoylgentiobiose	8	328	959 (735,223)
1,2-disinapoyl-2-feroylgentiobiose	9	328,295sh	929 (705,223)
1-sinapoyl-2,2-diferoylgentiobiose	10	320,290sh	899 (705,223)

Table S4 Anthocyanins detected in the red cabbage whole extract by electrospray mass spectrometry (ESI-MS). Component numbers refer to those found in Fig. S2.

Tentative identity	No.	ESI-MS: [M+H] ⁺ (frag. MS ² m/z)
Cyanidin-3-diglucoside-5-glucoside	-	773 (611,449,287)
Cyanidin-3-(sinapoyl)-diglucoside-5-glucoside	1	979 (817,449,287)
Cyanidin-3-(feruloyl)-diglucoside-5-glucoside	-	949 (787,449,287)
Pelargonidin glucoside	-	433 (271)
Cyanidin-3-(caffeoyl-coumaroyl)-diglucoside-5-glucoside	2	1081 (919,449,287)
Cyanidin-3-(glucopyranosyl-feruloyl)-diglucoside-5-glucoside	3	1111 (949,703,449)
Cyanidin-3-(glucopyranosyl-sinapoyl)-diglucoside-5-glucoside	4	1141 (979,817,449)
Cyanidin-3-(sinapoyl)-diglucoside-5-glucoside	-	979 (817,449,287)
Cyanidin-3-(feruloyl)-(feruloyl)-triglucoside-5-glucoside	5	1287 (1125,963,449)
Cyanidin-3-(sinapoyl)-(sinapoyl)-triglucoside-5-glucoside	6	1347 (1185,1023,449)
Cyanidin-3-(sinapoyl)-(feruloyl)-triglucoside-5-glucoside	7	1317 (1155,993,449)
Cyanidin-3-(coumaroyl)-diglucoside-5-glucoside	8	919 (757,449,287)
Cyanidin-3-(sinapoyl)-diglucoside-5-glucoside	9	979 (817,449,287)
Cyanidin-3-(feruloyl)-diglucoside-5-glucoside	10	949 (787,449,287)
Cyanidin-3-(feruloyl)-(feruloyl)-diglucoside-5-glucoside	11	1125 (963,449,287)
Cyanidin-3-(sinapoyl)-(feruloyl)-diglucoside-5-glucoside	12	1155 (993,449,287)
Cyanidin-3-(sinapoyl)-(sinapoyl)-diglucoside-5-glucoside	13	1185 (1023,449,287)

Table S5 Concentration of free sugars in fractions from whole *Brassica* extracts as determined by HPLC with refractive index detection. Only fractions with detectable concentration of sugars are shown (Fr1 = fraction 1, Fr2 = fraction 2, Fr3 = fraction 3).

	Broccoli			Cauliflower			Red cabbage			Brussels sprouts		
	Fr1	Fr2	Fr3	Fr1	Fr2	Fr3	Fr1	Fr2	Fr3	Fr1	Fr2	Fr3
	Concentration (mean±std, mg/mL)											
Fructose	36.2±1.9	0.2±0.0	0.1±0.0	24.3±0.8	0.8±0.2	0.2±0.0	22.9±0.9	0.6±0.0	0.4±0.0	15.5±0.3	0.7±0.1	0.2±0.1
Glucose	26.6±0.8	0.2±0.1	0.1±0.0	23.5±0.7	0.9±0.2	0.1±0.1	30.9±0.2	1.0±0.1	0.7±0.0	18.8±0.2	0.3±0.1	0.2±0.0
Sucrose	8.8±0.5	1.0±0.2	0.1±0.0	4.5±0.1	0.5±0.0	0.2±0.0	7.3±0.3	0.4±0.1	0.4±0.1	8.6±0.1	0.8±0.2	0.2±0.0

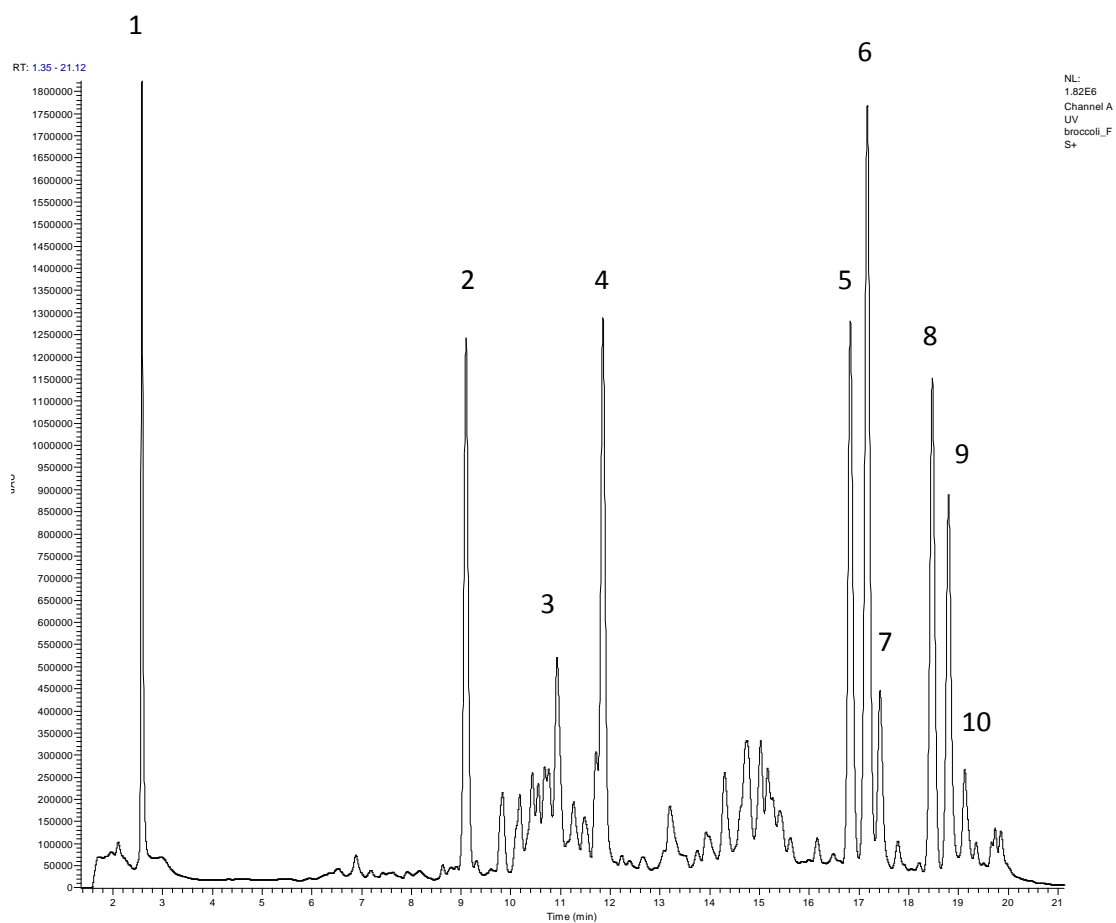


Figure S1

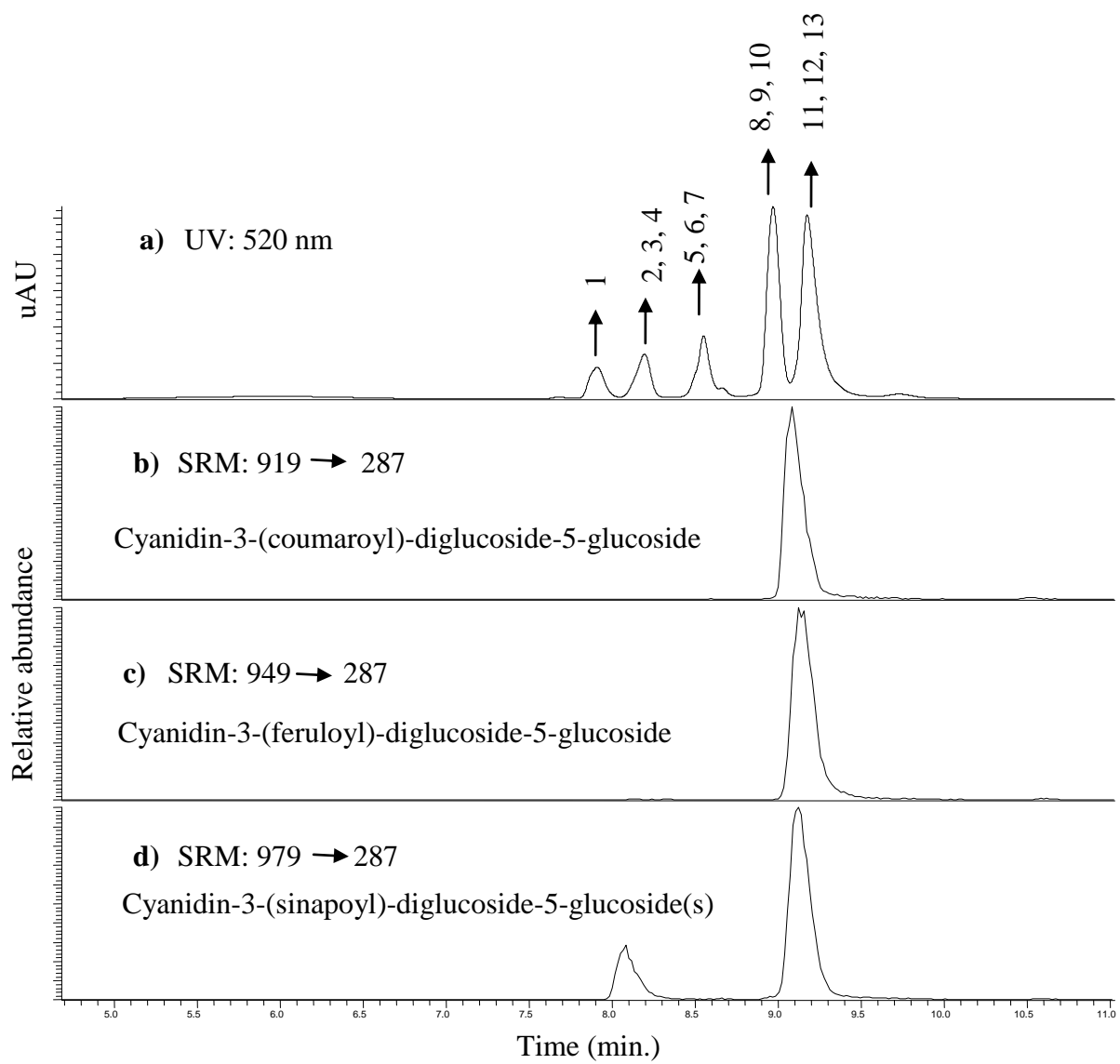


Figure S2

Figure legends

Fig. S1. Reverse-phase HPLC chromatogram of a whole extract from broccoli detected at 320 nm. Major peaks are numbered according to Table S3.

Fig. S2. Reverse-phase HPLC chromatogram of a whole extract from red cabbage detected at 520 nm a) and illustration of co-elution between anthocyanins acylated with various phenolic acids resolved by selected reaction monitoring (SRM) mass spectrometry (b-d). Major peaks are numbered according to Table S4.