

Supplementary materials

Phytochemicals and *In vitro* Bioactivities of Aqueous Ethanolic Extracts from Common Vegetables in Thai Food

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Supplementary Table S1:

The cultivation area, voucher specimen, harvesting time and physical appearance of the edible part of the samples.

Scientific name and cultivation area	Voucher specimen and harvesting time	Physical appearance of the edible part
<i>Allium cepa</i> Aggregatum Group from Nong Phai subdistrict, Mueang Si Sa Ket district, Si Sa Ket, Thailand	BK069175-7/ 80 days after planting	 <p>— 1 cm.</p> <p>Edible part: bulbs</p>
<i>Allium fistulosum</i> L. from Chai Chumphon subdistrict, Laplae district, Uttaradit, Thailand	BK069094/ 45 days after seeding	 <p>— 1 cm.</p> <p>Edible part: leaves</p>
<i>Allium sativum</i> L. from Khayung subdistrict, Uthumphon Phisai district, Si Sa Ket, Thailand	BK069066/ 90 days after planting	 <p>— 1 cm.</p> <p>Edible parts: bulbs</p>



Supplementary Table S1 (Cont.):

The cultivation area, voucher specimen, harvesting time and physical appearance of the edible part of the samples.

Scientific name and cultivation area	Voucher specimen and harvesting time	Physical appearance and edible part
<i>Citrus hystrix</i> DC. from Chorakhe Phueak subdistrict, Dan Makham Tia district, Kanchanaburi, Thailand	BK069139-42/ 150 days after flowering	  Edible part: fruit peel
<i>Coriandrum sativum</i> L. from Ban Hong subdistrict, Ban Hong district, Lamphun, Thailand	BK069108-10/ 45 days after seeding	 Edible part: leaves




Supplementary Table S1 (Cont.):

The cultivation area, voucher specimen, harvesting time and physical appearance of the edible part of the samples.

Scientific name and cultivation area	Voucher specimen and harvesting time	Physical appearance of the edible part
<i>Cymbopogon citratus</i> (DC.) Stapf from Thoet Thai subdistrict, Mae Fa Luang district, Chiang Rai, Thailand	BK069099-101/ 180 days after planting	 <p>– 1 cm.</p> <p>Edible part: stalk</p>
<i>Eryngium foetidum</i> L. from Ban Hong subdistrict, Ban Hong district, Lamphun, Thailand	BK069114-6/ 120 days after seeding	 <p>– 1 cm.</p> <p>Edible part: leaves</p>

Supplementary Table S1 (Cont.):

The cultivation area, voucher specimen, harvesting time and physical appearance of the edible part of the samples.

Scientific name and cultivation area	Voucher specimen and harvesting time	Physical appearance of the edible part
<i>Psophocarpus tetragonolobus</i> (L.) DC. From Nong Ya Lat subdistrict, Kan- tharalak district, Si Sa Ket, Thailand	BK069105-7/ 10-14 days after flowering	 <p>— 1 cm.</p> <p>Edible part: whole fruits</p>
<i>Senegalia pennata</i> subsp. <i>insuavis</i> (Lace) Maslin, Seigler & Ebinger from Phai Luang subdistrict, Taphan Hin district, Phichit, Thailand	BK069089-91/ 10-15 days after shooting	 <p>— 1 cm.</p> <p>Edible part: young leaves</p>
<i>Solanum melongena</i> 'Kermit' from Thung Thong subdistrict, Tha Muang district, Kanchanaburi, Thailand	BK069148-50/ 15-20 days after flowering	 <p>— 1 cm.</p> <p>Edible part: whole fruits</p>

Supplementary Table S2:

The percentage of edible part and color value of fresh samples. The color value was determined using a ColorFlex EZ spectrophotometer and expressed as CIELAB units (L* represents dark (0) to white (100) colors, a* represents green (-) to red (+) colors, and b* represents blue (-) to yellow (+) colors).

Samples	Color value			% of edible part
	L*	a*	b*	
<i>Allium cepa</i> Aggregatum Group	38.13 ± 4.38	6.10 ± 1.75	(-1.19) ± 1.26	78.70 ± 5.47
<i>Allium fistulosum</i> L.	30.99 ± 0.61	(-4.38) ± 0.14	7.57 ± 0.30	94.94 ± 0.42
<i>Allium sativum</i> L.	46.36 ± 0.64	(-0.62) ± 0.15	10.23 ± 0.46	83.41 ± 1.21
<i>Citrus hystrix</i> DC.	29.62 ± 0.96	(-4.14) ± 0.60	10.99 ± 1.60	27.63 ± 0.08
<i>Coriandrum sativum</i> L.	30.04 ± 1.25	(-4.95) ± 0.24	11.35 ± 0.53	82.11 ± 3.26
<i>Cymbopogon citratus</i> (DC.) Stapf	24.90 ± 0.52	0.90 ± 0.11	9.88 ± 0.08	43.58 ± 4.95
<i>Eryngium foetidum</i> L.	30.63 ± 0.36	(-5.02) ± 0.07	11.15 ± 0.67	58.29 ± 7.94
<i>Psophocarpus tetragonolobus</i> (L.) DC.	34.15 ± 0.76	(-4.80) ± 0.14	15.45 ± 0.28	94.28 ± 0.10
<i>Senegalia pennata</i> subsp. <i>insuavis</i> (Lace) Maslin, Seigler & Ebinger	31.28 ± 0.01	(-11.4) ± 0.01	31.05 ± 0.05	35.69 ± 1.56
<i>Solanum melongena</i> 'Kermit'	32.80 ± 3.03	(-4.45) ± 0.18	10.01 ± 1.96	92.06 ± 0.49

Supplementary Table S3:

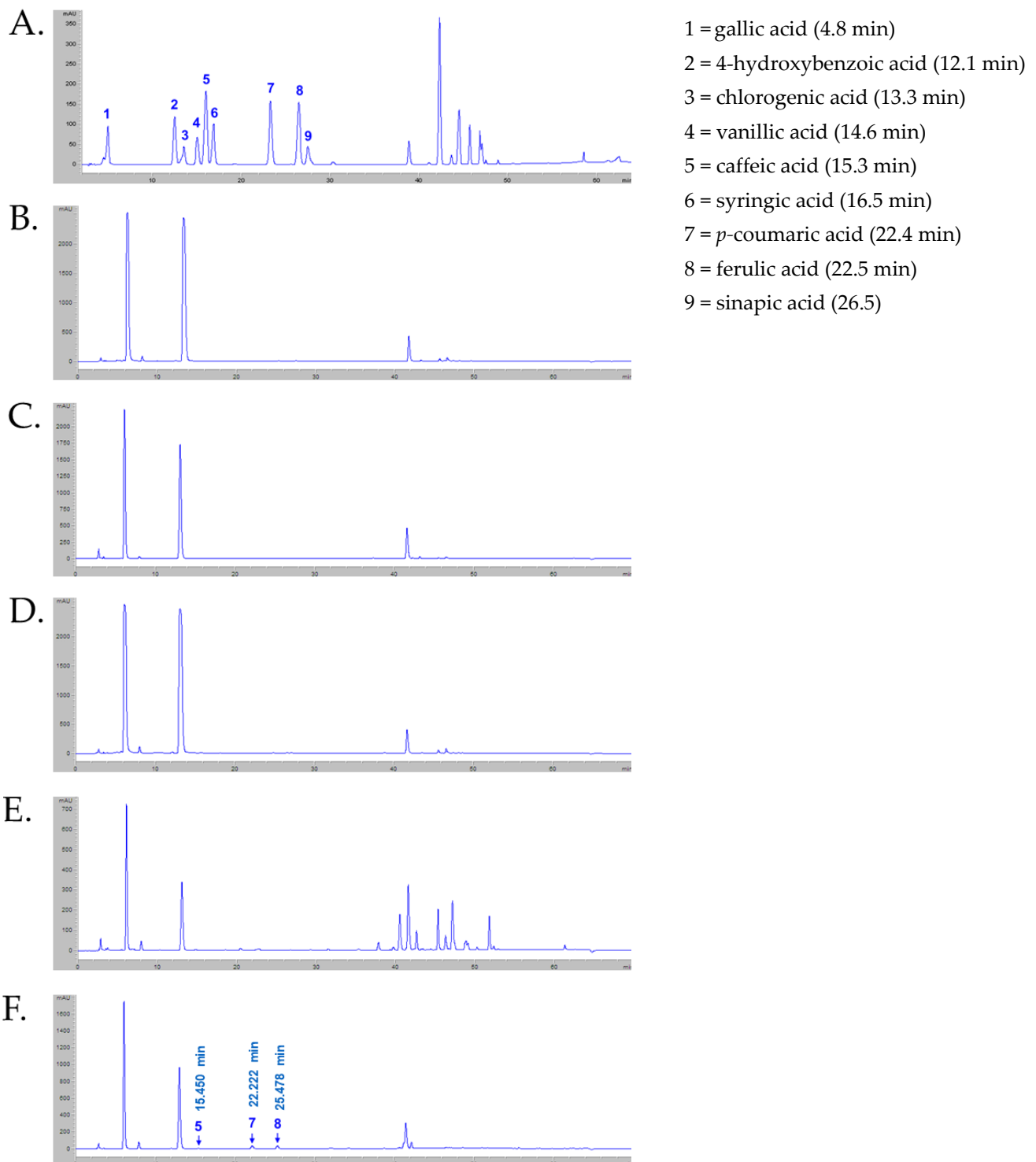
The validation parameters of phenolics detection using HPLC analysis.

Standards	Linear range (µg/mL)	Linear regression equation	Correlation coefficient (R ²)	LOD (µg/mL)	LOQ (µg/mL)	RSD (%)
Phenolic acids						
Gallic acid	0.78-200.00	$y = 38.814x + 43.836$	0.9998	2.66	8.07	1.37
4-Hydroxybenzoic acid	0.39-100.00	$y = 54.999x - 11.469$	0.9994	0.32	0.98	1.86
Caffeic acid	0.39-100.00	$y = 76.614x + 15.797$	0.9998	0.59	1.78	1.70
Chlorogenic acid	0.39-100.00	$y = 45.107x - 8.1659$	1.0000	0.03	0.10	1.59
Ferulic acid	0.56-142.86	$y = 42.477x - 16.212$	0.9990	0.49	1.48	1.58
<i>p</i> -Coumaric acid	0.56-142.86	$y = 44.809x - 22.611$	0.9991	0.57	1.73	1.97
Sinapic acid	0.39-100.00	$y = 63.807x + 10.841$	1.0000	0.22	0.68	1.01
Syringic acid	0.65-166.67	$y = 37.286x - 24.557$	0.9990	1.12	3.41	1.63
Vanillic acid	0.65-333.33	$y = 29.028x + 30.817$	0.9999	2.19	6.64	1.99
Flavonoids						
Apigenin	0.39-200.00	$y = 40.778x + 34.994$	0.9999	2.22	6.73	0.44
Hesperidin	0.65-333.33	$y = 24.424x + 76.057$	0.9990	2.56	7.77	0.64
Kaempferol	0.65-166.67	$y = 47.952x + 43.855$	0.9999	0.14	0.42	0.12
Luteolin	0.65-166.67	$y = 44.717x + 28.899$	0.9999	1.19	3.62	0.52
Myricetin	0.65-166.67	$y = 43.048x + 16.879$	0.9999	0.37	1.12	0.32
Naringenin	0.65-333.33	$y = 30.205x + 46.292$	0.9999	0.46	1.38	0.45
Quercetin	0.65-166.67	$y = 46.975x + 38.753$	0.9999	0.19	0.58	0.10
Isorhamnetin	1.30-333.33	$y = 16.302x + 46.483$	0.9992	0.45	1.37	0.39

LOD : limit of quantitation; LOD : limit of detection; RSD : and relative standard deviation

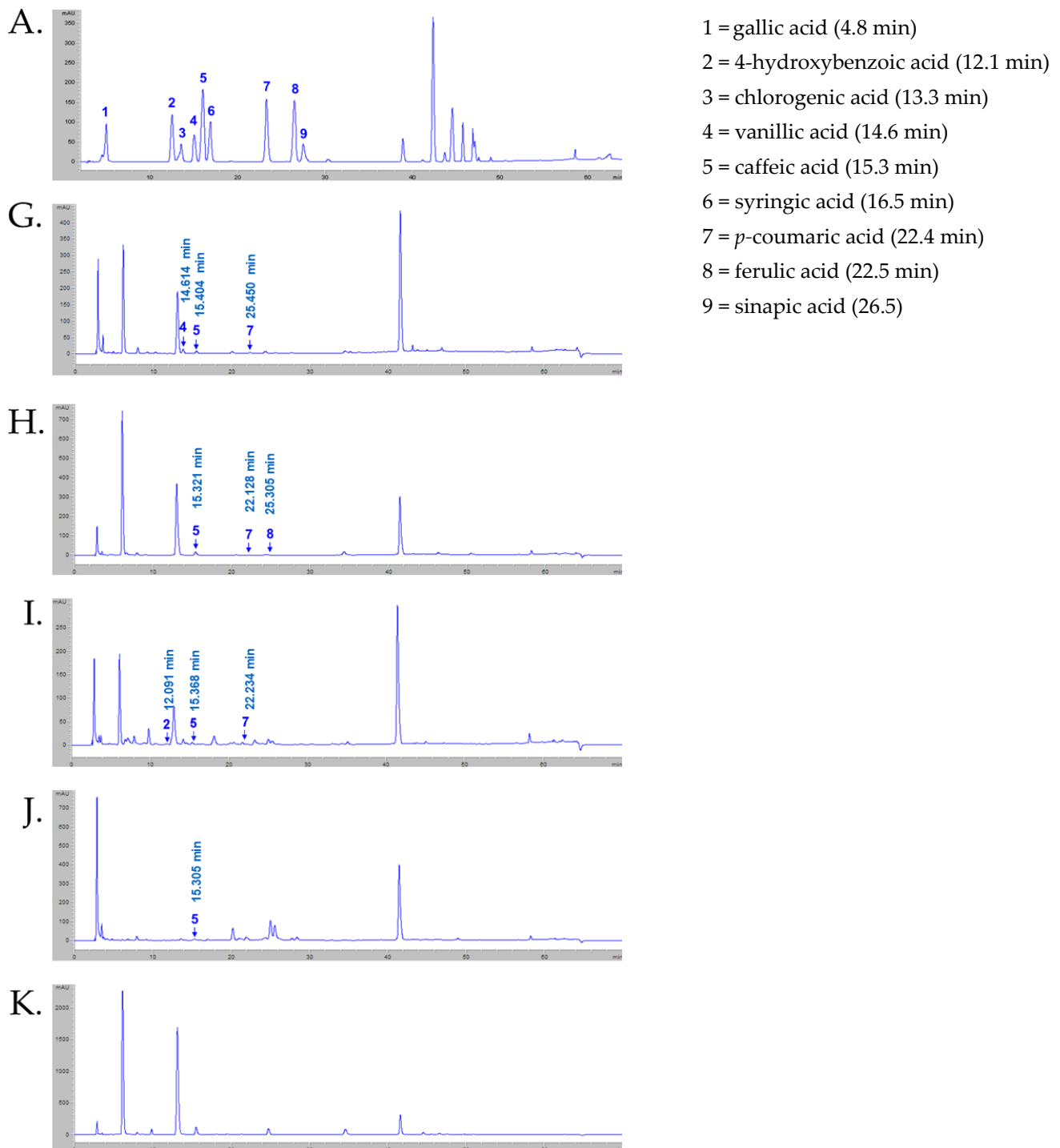
Supplementary Figure S1:

High-performance liquid chromatograms showing retention time (R_t) of (A) authentic standards including gallic acid (4.8 min), 4-hydroxybenzoic acid (12.1 min), chlorogenic acid (13.3 min), vanillic acid (14.6 min), caffeic acid (15.3 min), syringic acid (16.5 min), *p*-coumaric acid (22.4 min), ferulic acid (22.5 min) and sinapic acid (26.5 min), (B.) *A. cepa*, (C.) *A. fistulosum*, (D.) *A. sativum*, (E.) *Ci. hystrix*, (F.) *Co. sativum*, (G.) *Cy. citratus*, (H.) *E. foetidum*, (I.) *P. tetragonolobus*, (J.) *Se. pennata*, and (K.) *So. melongena* detected at 280 nm.



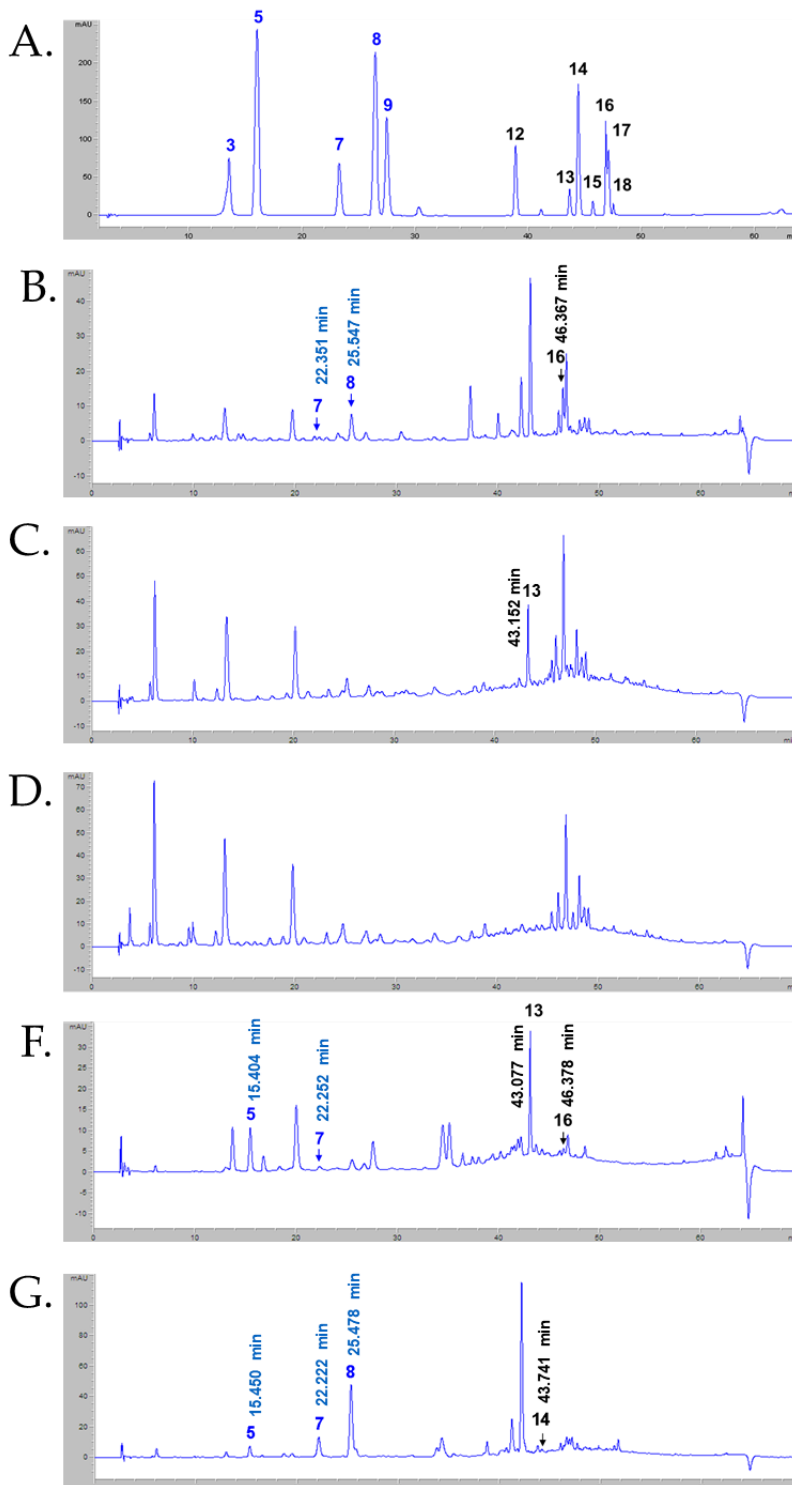
Supplementary Figure S1 (Cont.):

High-performance liquid chromatograms showing retention time (R_t) of (A) authentic standards including gallic acid (4.8 min), 4-hydroxybenzoic acid (12.1 min), chlorogenic acid (13.3 min), vanillic acid (14.6 min), caffeic acid (15.3 min), syringic acid (16.5 min), *p*-coumaric acid (22.4 min), ferulic acid (22.5 min) and sinapic acid (26.5 min), (B.) *A. cepa*, (C.) *A. fistulosum*, (D.) *A. sativum*, (E.) *Ci. hystrix*, (F.) *Co. sativum*, (G.) *Cy. citratus*, (H.) *E. foetidum*, (I.) *P. tetragonolobus*, (J.) *Se. pennata*, and (K.) *So. melongena* detected at 280 nm.



Supplementary Figure S2:

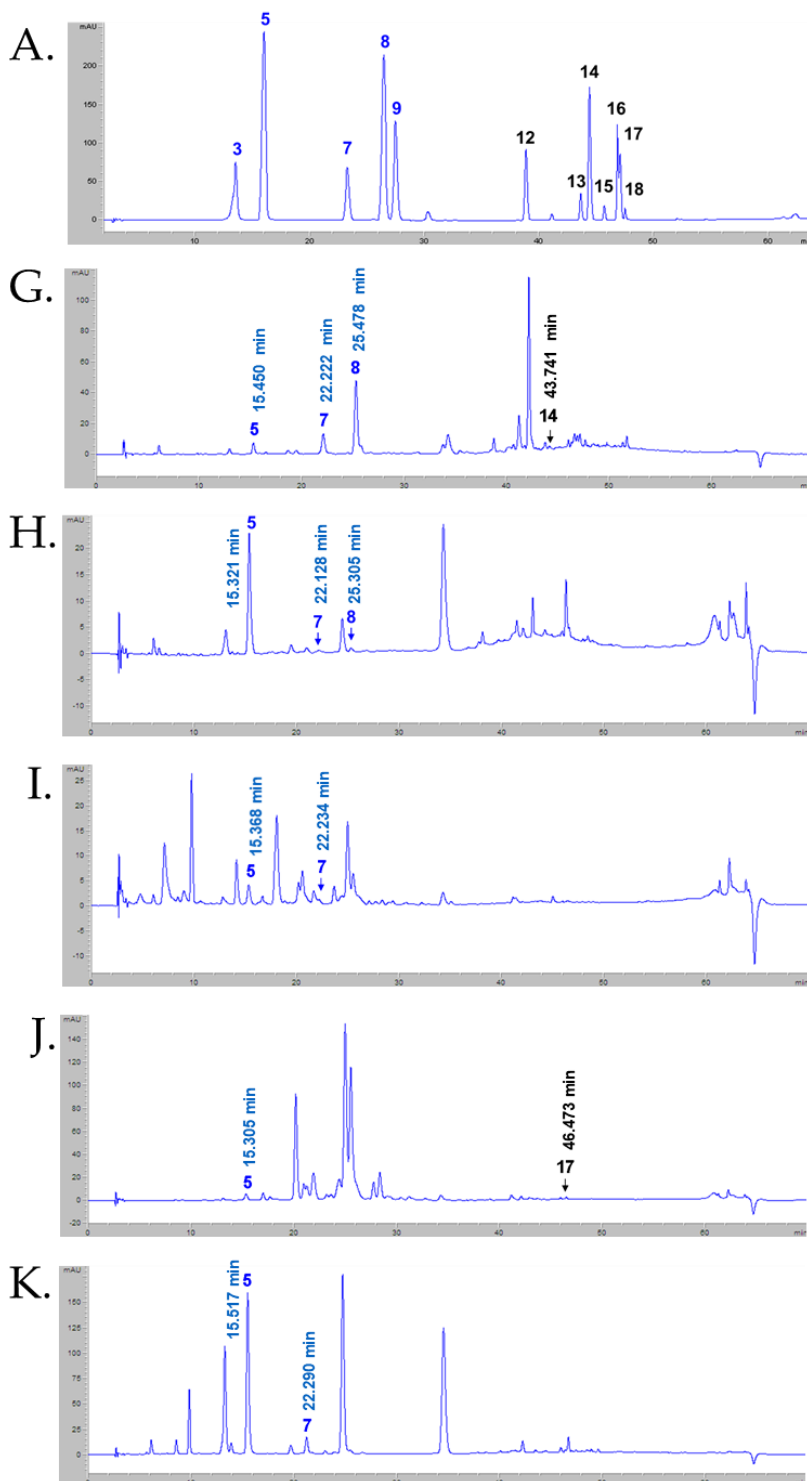
High-performance liquid chromatograms showing retention time (R_t) of (A) authentic standards including chlorogenic acid (13.3 min), caffeic acid (15.3 min), *p*-coumaric acid (22.2 min), ferulic acid (25.4 min), sinapic acid (26.5 min), myricetin (37.9 min), quercetin (43.1 min), luteolin (43.7 min), hesperitin (45.2 min), kaempferol (46.2 min), apigenin (46.5 min) and isorhamnetin (47.1 min), (B.) *A. cepa*, (C.) *A. fistulosum*, (D.) *A. sativum*, (E.) *Ci. hystrix*, (F.) *Co. sativum*, (G.) *Cy. citratus*, (H.) *E. foetidum*, (I.) *P. tetragonolobus*, (J.) *Se. pennata*, and (K.) *So. melongena* detected at 338 nm.



- 3 = chlorogenic acid (13.3 min)
- 5 = caffeic acid (15.3 min)
- 7 = *p*-coumaric acid (22.2 min)
- 8 = ferulic acid (25.4 min)
- 9 = sinapic acid (26.5 min)
- 12 = myricetin (37.9 min)
- 13 = quercetin (43.1 min)
- 14 = luteolin (43.7 min)
- 15 = hesperitin (45.2 min)
- 16 = kaempferol (46.2 min)
- 17 = apigenin (46.5 min)
- 18 = isorhamnetin (47.1 min)

Supplementary Figure S2 (Cont.):

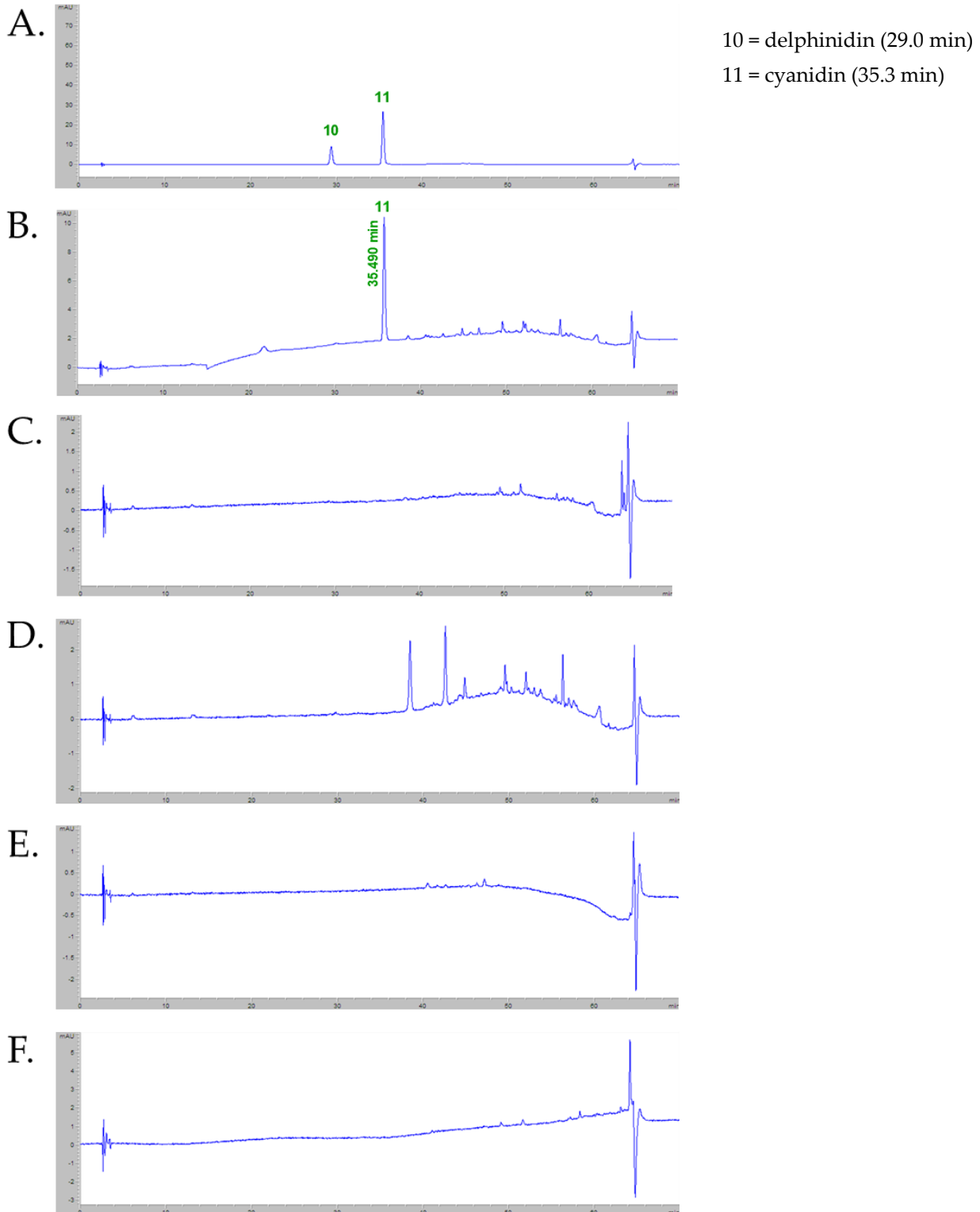
High-performance liquid chromatograms showing retention time (R_t) of (A) authentic standards including chlorogenic acid (13.3 min), caffeic acid (15.3 min), *p*-coumaric acid (22.2 min), ferulic acid (25.4 min), sinapic acid (26.5 min), myricetin (37.9 min), quercetin (43.1 min), luteolin (43.7 min), hesperitin (45.2 min), kaempferol (46.2 min), apigenin (46.5 min) and isorhamnetin (47.1 min), (B.) *A. cepa*, (C.) *A. fistulosum*, (D.) *A. sativum*, (E.) *Ci. hystrix*, (F.) *Co. sativum*, (G.) *Cy. citratus*, (H.) *E. foetidum*, (I.) *P. tetragonolobus*, (J.) *Se. pennata*, and (K.) *So. melongena* detected at 338 nm.



- 3 = chlorogenic acid (13.3 min)
- 5 = caffeic acid (15.3 min)
- 7 = *p*-coumaric acid (22.2 min)
- 8 = ferulic acid (25.4 min)
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- 12 = myricetin (37.9 min)
- 13 = quercetin (43.1 min)
- 14 = luteolin (43.7 min)
- 15 = hesperitin (45.2 min)
- 16 = kaempferol (46.2 min)
- 17 = apigenin (46.5 min)
- 18 = isorhamnetin (47.1 min)

Supplementary Figure S3:

High-performance liquid chromatograms showing retention time (R_t) of (A) authentic standards including delphinidin (29.0 min) and cyanidin (35.3 min), (B.) *A. cepa*, (C.) *A. fistulosum*, (D.) *A. sativum*, (E.) *Ci. hystrix*, (F.) *Co. sativum*, (G.) *Cy. citratus*, (H.) *E. foetidum*, (I.) *P. tetragonolobus*, (J.) *Se. pennata*, and (K.) *So. melongena* detected at 524 nm.



Supplementary Figure S3 (Cont.):

High-performance liquid chromatograms showing retention time (R_t) of (A) authentic standards including delphinidin (29.0 min) and cyanidin (35.3 min), (B.) *A. cepa*, (C.) *A. fistulosum*, (D.) *A. sativum*, (E.) *Ci. hystrix*, (F.) *Co. sativum*, (G.) *Cy. citratus*, (H.) *E. foetidum*, (I.) *P. tetragonolobus*, (J.) *Se. pennata*, and (K.) *So. melongena* detected at 524 nm.

