



Supplementary Information

Application of a Quantitative HPLC-ESI-MS/MS Method for Flavonoids in Different Vegetables Matrices

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Table S1. ANOVA output from analytical results, which were applied for calibration curves

		DF	SS	MS	F	P-value			
Daidzin	Regression	1	3.96×10^{10}	3.96×10^{10}	5257.43	1.11×10^{-27}			
	Residual	22	1.66×10^8	7525951					
	Total	23	3.97×10^{10}						
		Coeff.		SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	880.071	838.507	1.050	0.305	-858.886	2619.028	-858.886	
	Slope	2313.253	31.903	72.508	1.11×10^{-27}	2247.09	2379.417	2247.09	
Rutin	Regression	1	1.95×10^{12}	1.95×10^{12}	28737.12	8.83×10^{-36}			
	Residual	22	1.49×10^9	67909592					
	Total	23	1.95×10^{12}						
		Coeff.		SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	6073.179	2518.787	2.411	0.0547	849.533	11296.82	849.533	
	Slope	16245.87	95.834	169.5203	8.83×10^{-36}	16047.12	16444.61	16047.12	
Isoquercitrin	Regression	1	2.45×10^{13}	2.45×10^{13}	36921.6	5.62×10^{-37}			
	Residual	22	1.46×10^{10}	6.63×10^8					
	Total	23	2.45×10^{13}						
		Coeff.		SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	1528.682	7870.13	0.194	0.848	-14793	17850.33	-14793	
	Slope	57537.62	299.441	192.150	5.62×10^{-37}	56916.61	58158.62	56916.61	
Naringin	Regression	1	1.49×10^{12}	1.49×10^{12}	21720.88	1.91×10^{-34}			
	Residual	22	1.5×10^9	68372775					
	Total	23	1.49×10^{12}						
		Coeff.		SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	7501.736	2527.363	2.968	0.0710	2260.307	12743.17	2260.307	
	Slope	14172.16	96.161	147.3801	1.91×10^{-34}	13972.73	14371.58	13972.73	

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Table S1. ANOVA output from analytical results, which were applied for calibration curves (cont.)

		DF	SS	MS	F	P-value		
Hesperidin	Regression	1	3.04×10^{11}	3.04×10^{11}	15167.62	9.9×10^{-33}		
	Residual	22	4.41×10^8	20032471				
	Total	23	3.04×10^{11}					
		Coeff.	SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	1803.37	1368.022	1.318	0.201	-1033.73	4640.475	-1033.73
	Slope	6410.35	52.050	123.157	9.9×10^{-33}	6302.404	6518.295	6302.404
Umbelliferone	Regression	1	1.32×10^9	1.32×10^9	3443.194	1.14×10^{-25}		
	Residual	22	8426612	383027.8				
	Total	23	1.33×10^9					
		Coeff.	SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	322.176	189.165	1.703	0.103	-70.128	714.4805	-70.128
	Slope	422.329	7.197	58.679	1.14×10^{-25}	407.403	437.256	407.403
Daidzein	Regression	1	4.890×10^{11}	4.89×10^{11}	20646.1	3.345×10^{-34}		
	Residual	22	5.21×10^8	23677717				
	Total	23	4.89×10^{11}					
		Coeff.	SE	t Stat	P-value	Lower 95%	Upper 95%	
	Intercept	7449.556	1487.291	5.009	0.0516	4365.104	10534.009	
	Slope	8131.013	56.589	143.687	3.34×10^{-34}	8013.656	8248.370	
Quercetin	Regression	1	1.02×10^{12}	1.02×10^{12}	15118.88	1.03×10^{-32}		
	Residual	22	1.49×10^9	67705680				
	Total	23	1.03×10^{12}					
		Coeff.	SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	3171.793	2515.003	1.261	0.220	-2044	8387.59	-2044
	Slope	11765.98	95.690	122.959	1.03×10^{-32}	11567.53	11964.43	11567.53
Naringenin	Regression	1	4.65×10^{11}	4.65×10^{11}	36679.16	6.04×10^{-37}		
	Residual	22	2.79×10^8	12664316				
	Total	23	4.65×10^{11}					
		Coeff.	SE	t Stat	P-value	Lower 95%	Upper 95%	Coeff.
	Intercept	6721.426	1087.719	6.179	0.0621	4465.634	8977.218	4465.634
	Slope	7926.04	41.385	191.518	6.04×10^{-37}	7840.212	8011.868	7840.212

DF = Degrees of freedom; SS = sum of squares; MS = mean squared; F = F-value; SE = standard error.

Table S2. Robustness parameters for selected analytes

Analyte		Factor					
		Acetic acid / %		Oven temperature		Flow rate	
		Mean ^a	RSD ^b / %	Mean ^a	RSD ^b / %	Mean ^a	RSD ^b / %
Daidzein	area	257555.6	22.6	230222.2	25.1	227740.7	25.7
	Rt ^c	10.5	1.21	10.3	4.28	10.3	6.43
Daidzin	area	68366.7	29.3	60922.2	27.6	58774.1	32.0
	Rt ^c	2.77	1.58	2.74	2.64	2.73	7.11
Hesperidin	area	114288.9	10.7	115733.3	9.49	113474.1	9.6
	Rt ^c	4.28	1.32	4.21	2.84	4.20	6.15
Isoquercitrin	area	165444.4	11.2	161888.9	10.8	159963.0	11.4
	Rt ^c	3.71	2.20	3.64	4.27	3.62	7.18
Naringin	area	344333.3	11.0	342777.8	5.06	45722.2	7.22
	Rt ^c	4.03	1.40	3.96	3.41	3.96	6.38
Naringinin	area	47544.4	5.65	45033.3	2.70	45722.2	7.22
	Rt ^c	11.6	0.00	11.6	0.00	11.6	3.36
Quercetin	area	205666.7	4.23	187333.3	4.94	198555.6	7.57
	Rt ^c	11.6	0.46	11.6	0.43	11.6	3.38
Rutin	area	114288.9	10.7	115733.3	9.49	113474.1	9.58
	Rt ^c	4.28	1.32	4.21	2.84	4.20	6.15
Umbelliferone	area	65444.4	10.2	61888.9	8.79	59963.0	9.43
	Rt ^c	5.10	2.20	5.00	4.27	5.00	6.18

^aMean (n = 9); ^bRSD = relative standard deviation (n = 9); ^cRt = retention time.

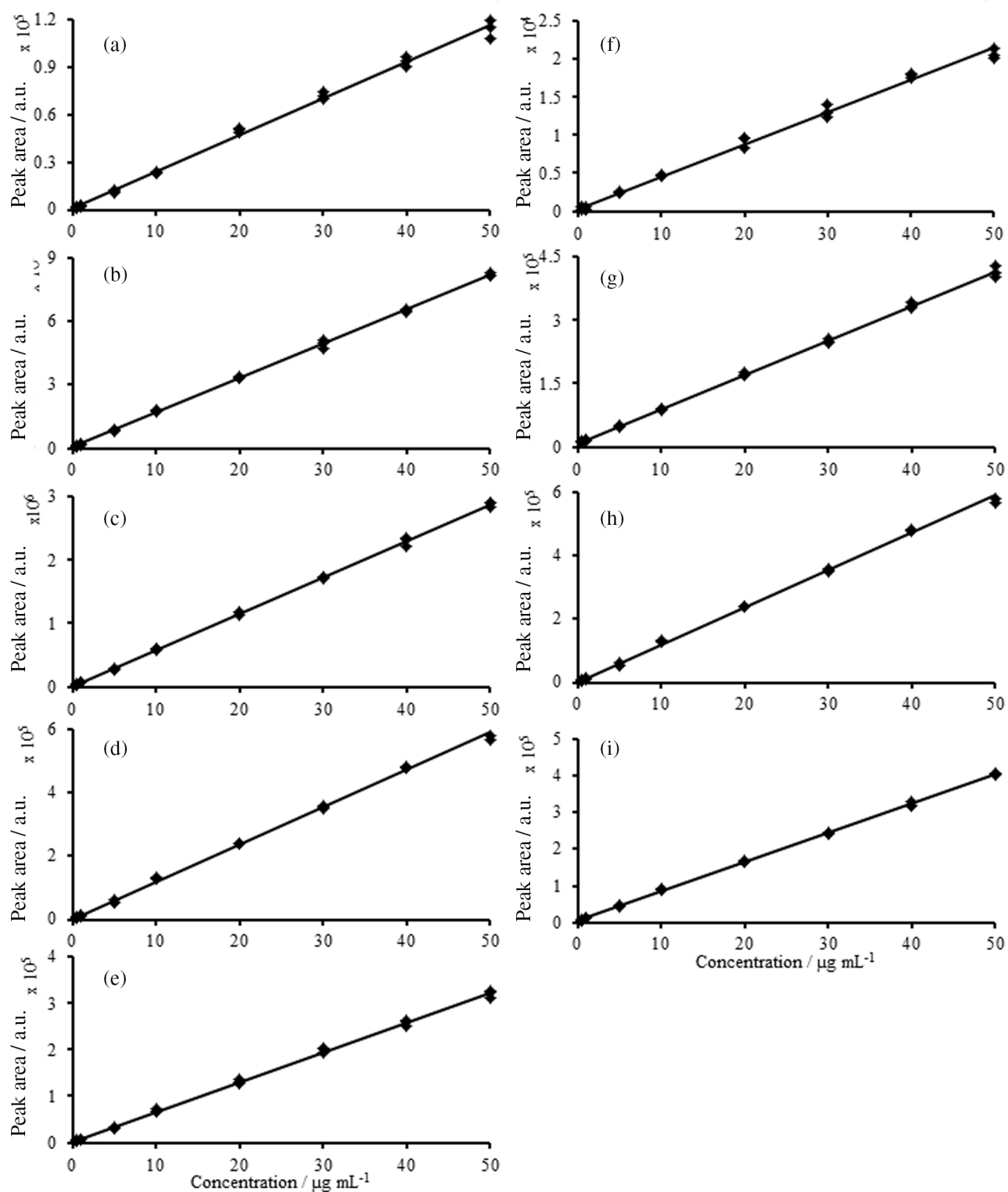


Figure S1. External calibration curves for each analyte used in the polyphenolic profile. (a) Daidzin; (b) rutin; (c) isoquercitrin; (d) naringin; (e) hesperidin; (f) umbelliferone; (g) daidzein; (h) quercetin; (i) naringenin.