

Supporting Information

Interaction effects on gold nanoparticle-based colorimetric assay for antioxidant capacity

evaluation of polyphenols

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Table

Table S1. The antioxidant capacities of 12 polyphenols determined by DPPH, ABTS, FRAP and AuNPs assays.

Table S2. Correlation coefficient (r) among different assays for antioxidant capacity estimation of 12 polyphenols

Table S3. The antioxidant capacities of 12 equimolar binary and ternary polyphenol combinations determined by DPPH, ABTS, FRAP and AuNPs assays.

Table S4. Correlation coefficient (r) among different assays for antioxidant capacity estimation of 12 equimolar binary and ternary polyphenol combinations determined by DPPH, ABTS, FRAP and AuNPs assays.

Table S5. The total phenolic contents (TPC), total flavonoid contents (TFC) and antioxidant capacities of polyphenolic extracts from 6 food samples.

Table S6. Correlation coefficient (r) among different assays for antioxidant capacity estimation of polyphenolic extracts from 6 food samples.

Table S1

No.	Compounds	Antioxidant capacities (mM TE/g)			
		DPPH	ABTS	FRAP	AuNP
1	gallic acid	24.84±0.01	17.08±0.02	25.55±0.03	2.52±0.01
2	protocatechuic acid	7.44±0.03	6.54±0.01	11.28±0.00	1.48±0.00
3	caffeic acid	5.00±0.00	6.24±0.01	7.68±0.01	2.07±0.02
4	vanillic acid	0.57±0.00	6.34±0.01	2.92±0.00	1.52±0.05
5	ferulic acid	3.15±0.00	12.50±0.02	6.74±0.01	1.73±0.03
6	<i>p</i> -coumaric acid	0.27±0.00	5.42±0.02	1.63±0.01	1.37±0.01
7	apigenin	0.03±0.01	1.08±0.01	1.31±0.00	0.45±0.01
8	luteolin	10.30±0.01	2.02±0.00	6.29±0.01	7.84±0.18
9	rutin	3.36±0.02	2.35±0.05	2.80±0.01	1.21±0.01
10	quercetin	9.23±0.01	11.43±0.02	7.99±0.01	8.01±0.01
11	EGC	7.64±0.01	18.20±0.01	7.42±0.01	11.68±0.01
12	EGCG	9.55±0.02	14.69±0.02	4.20±0.02	9.15±0.05

Table S2

	DPPH	ABTS	FRAP	AuNPs
DPPH	1	0.580*	0.909**	0.321
ABTS		1	0.553	0.540
FRAP			1	0.025
AuNPs				1

*, $p < 0.05$; **, $p < 0.01$

Table S3.

NO.	Combination	Antioxidant capacities (mM TE/g)			
		DPPH	ABTS	FRAP	AuNP
1	Gallic acid+ Protocatechuic acid	8.10±0.02	12.37±0.01	16.31±0.02	3.74±0.00
2	Gallic acid+ Caffeic acid	8.86±0.01	11.31±0.02	13.02±0.01	3.13±0.02
3	Caffeic acid+ Ferulic acid	3.49±0.02	10.11±0.03	5.64±0.00	5.07±0.01
4	Rutin+ Quercetin	6.73±0.03	4.29±0.02	4.85±0.00	5.46±0.05
5	Gallic acid+ Rutin	6.01±0.02	6.15±0.03	7.09±0.02	2.34±0.08
6	Luteolin+ Rutin	7.40±0.02	3.52±0.00	5.40±0.00	5.27±0.09
7	Gallic acid+ EGC	8.43±0.04	16.61±0.02	11.68±0.02	12.89±0.01
8	Luteolin+ Rutin+ EGC	5.45±0.03	9.85±0.01	5.90±0.00	5.82±0.05
9	Gallic acid+ Rutin+EGC	7.33±0.06	15.26±0.00	11.50±0.00	5.17±0.03
10	Gallic acid+ Vanillic acid+ Ferulic acid	6.66±0.11	8.18±0.00	13.50±0.00	6.38±0.02
11	Gallic acid+ Quercetin+ Rutin	7.59±0.05	12.17±0.00	16.10±0.00	5.20±0.00
12	EGC+ Ferulic acid+Luteolin	4.30±0.06	12.11±0.00	9.10±0.00	8.73±0.09

Table S4.

	DPPH	ABTS	FRAP	AuNPs
DPPH	1	0.215	0.585*	-0.001
ABTS		1	0.603*	0.468
FRAP			1	0.023
AuNPs				1

*, $p < 0.05$; **, $p < 0.01$

Table S5.

Samples	TPC mg GAE/100g	TF mg RE/100g	Antioxidant capacities mM TE/ 100 g			
			DPPH	ABTS	FRAP	AuNPs
Raspberry	209.33±0.02	176.48±0.01	1.57±0.01	8.48±0.03	2.41±0.00	0.67±0.01
Apple	107.70±0.01	161.84±0.01	0.81±0.01	3.5±0.00	0.94±0.00	0.34±0.03
Grape	174.29±0.01	220.40±0.02	1.33±0.01	5.40±0.03	1.57±0.00	0.52±0.03
Tangerine	168.04±0.01	45.40±0.00	0.37±0.00	4.14±0.02	1.34±0.00	0.19±0.08
bell pepper	97.43±0.00	26.08±0.00	0.81±0.03	3.13±0.01	0.99±0.00	0.25±0.03
Tomato	31.69±0.00	10.57±0.00	0.09±0.01	0.17±0.02	0.60±0.00	0.10±0.00

Table S6.

	TPC	TF	DPPH	ABTS	FRAP	AuNPs
TPC	1.0	0.662	0.760	0.944**	0.916*	0.839*
TF		1.0	0.836*	0.716	0.632	0.866*
DPPH			1.0	0.890*	0.828*	0.983**
ABTS				1.0	0.972**	0.944**
FRAP					1.0	0.887*
AuNPs						1.0

*, $p < 0.05$; **, $p < 0.01$