

Supplementary materials

1. Raw data of total phenolic contents

Total phenolic contents of all KG extracts were determined using a Folin-Ciocalteu colorimetric method. Gallic acid solution at different final concentrations (2–30 µg/mL) was used as a calibration standard.

Table S1. Raw data of absorbance vs gallic acid concentration

Gallic acid Concentration (µg/mL)	1	2	3	Mean
2.00	0.121	0.115	0.116	0.117
4.00	0.212	0.222	0.231	0.222
6.00	0.335	0.323	0.325	0.328
8.00	0.412	0.421	0.434	0.422
10.00	0.524	0.510	0.521	0.518
20.00	1.111	1.128	1.123	1.121
30.00	1.655	1.510	1.548	1.571

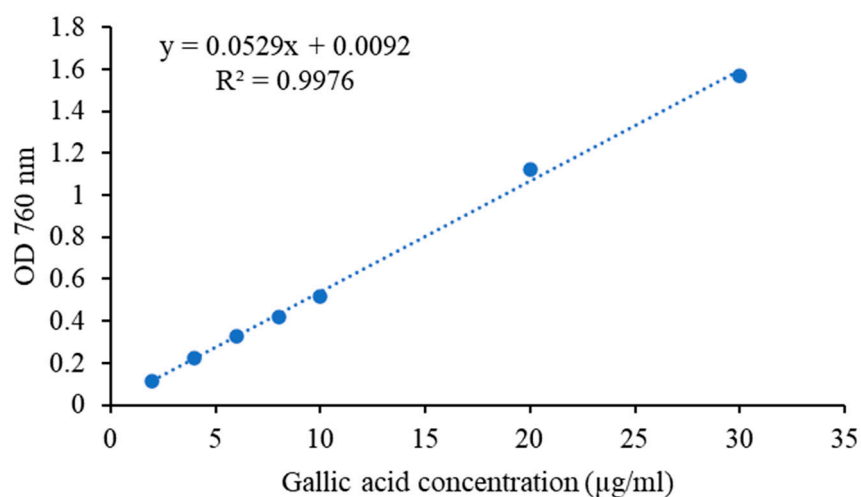


Figure S1. Linearity relationship between absorbance vs concentration of gallic acid

2. Raw data of total flavonoid contents

Total flavonoid contents of all KG extracts were determined using an aluminum chloride complexation colorimetric method. Quercetin solution with different final concentrations (0.75–12.5 µg/mL) was used as a calibration standard.

Table S2. Raw data of absorbance vs quercetin concentration

Quercetin Concentration (µg/mL)	1	2	3	Mean
0.75	0.070	0.101	0.100	0.090
1.50	0.121	0.141	0.099	0.120
3.00	0.221	0.219	0.218	0.219
6.25	0.438	0.477	0.484	0.466
12.50	0.990	0.840	0.910	0.913

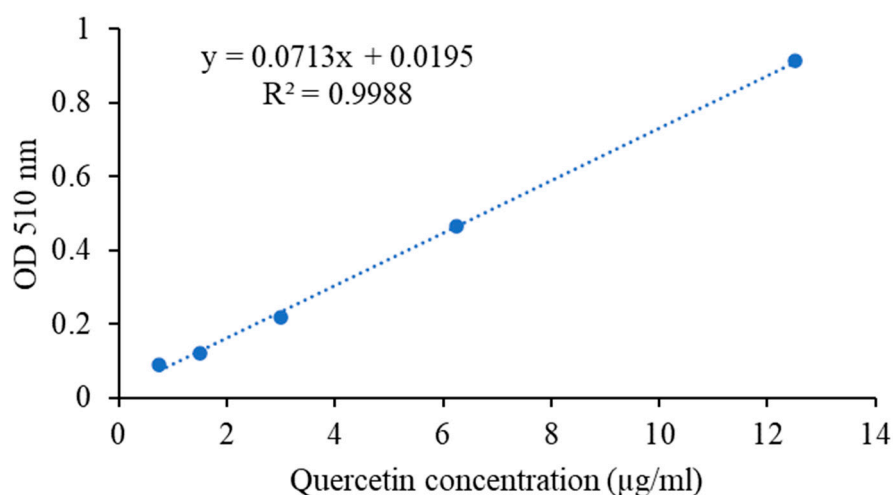


Figure S2. Linearity relationship between absorbance vs concentration of Quercetin

2. Raw data of antioxidant activity (DPPH[•], FRAP, ABTS ^{•+} assay)

2.1 DPPH[•] assay

The free radical scavenging ability of all KG extracts were determined using the 1,1-diphenyl-2-picrylhydrazyl (DPPH[•]) method. Each KG extract solution (70 µL) at various concentrations (final concentration 0.5–5 mg/mL) and Trolox was used as positive control.

Table S3. Raw data of % DPPH[•] radical scavenging activity VS sample test (Trolox and KG extract)

Trolox concentration (µg/mL)	% DPPH [•] radical scavenging activity			
	1	2	3	Mean
0.78	10.776	11.587	12.051	11.47
1.5625	15.875	16.338	17.034	16.42
3.125	26.767	26.883	27.346	27.00
6.25	46.698	42.642	46.929	45.42
12.5	74.739	75.550	76.246	75.51
Deionized water (mg/mL)	1	2	3	Mean
2.5	17.265	18.424	18.424	18.04
3.0	23.059	26.535	23.638	24.41

3.5	38.239	40.093	46.118	41.48
4.5	54.925	54.114	57.474	55.50
4.5	62.920	60.255	63.499	62.22
5.0	79.258	78.331	80.997	79.53
Absolute ethanol (mg/mL)	1	2	3	Mean
0.5	28.621	29.664	29.896	29.39
1.0	46.118	46.466	46.582	46.39
1.5	57.706	58.633	60.023	58.79
2.0	65.122	62.688	66.744	64.85
2.5	66.512	70.220	71.147	69.29
Ethyl acetate (mg/mL)	1	2	3	Mean
2.5	31.518	32.561	31.518	31.87
3.0	33.024	36.037	36.732	35.26
3.5	47.045	45.307	44.496	45.62
4.0	50.174	58.053	57.358	55.20
4.5	57.937	58.980	59.212	58.71
Hexane (mg/mL)	1	2	3	Mean
2.5	22.711	21.784	23.986	22.83
3.0	24.681	26.651	28.273	26.54
3.5	35.458	36.616	34.647	35.57
4.0	42.063	41.020	37.080	40.05
4.5	50.290	50.406	49.826	50.17
5.0	56.315	60.023	55.852	57.40

2.2 FRAP assay

The total reducing power of all KG extracts were measured using ferric reducing antioxidant power (FRAP) assay. Ferrous sulfate solution (FeSO_4) at various concentrations (final concentration 0.008–0.125 mM) served as a calibration standard.

Table S4. Raw data of absorbance vs FeSO_4 concentration

FeSO_4 concentration (mM)	1	2	3	Mean
0.125	1.459	1.458	1.482	1.466
0.062	0.792	0.784	0.789	0.788
0.031	0.395	0.389	0.412	0.399
0.016	0.215	0.19	0.204	0.203
0.008	0.103	0.112	0.104	0.106

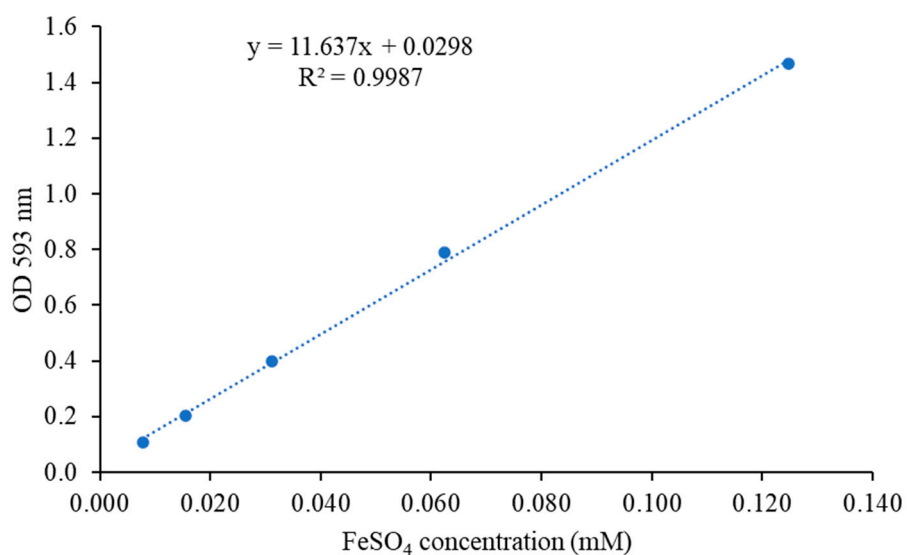


Figure S3 Linearity relationship between absorbance vs concentration of FeSO₄

2.3 ABTS^{•+} assay

The results of ABTS^{•+} radical assays were presented as Trolox equivalent antioxidant capacity (TEAC) using Trolox (final concentration 0.195–12.5 µg/mL) as reference standard.

Table S5. Raw data of absorbance vs Trolox concentration

Trolox concentration (µg/mL)	1	2	3	Mean
0.195	0.737	0.710	0.739	0.728
0.390	0.732	0.676	0.730	0.713
0.780	0.703	0.661	0.704	0.689
1.560	0.649	0.618	0.651	0.640
3.125	0.551	0.512	0.555	0.539
6.250	0.361	0.334	0.363	0.353
12.500	0.042	0.041	0.042	0.042

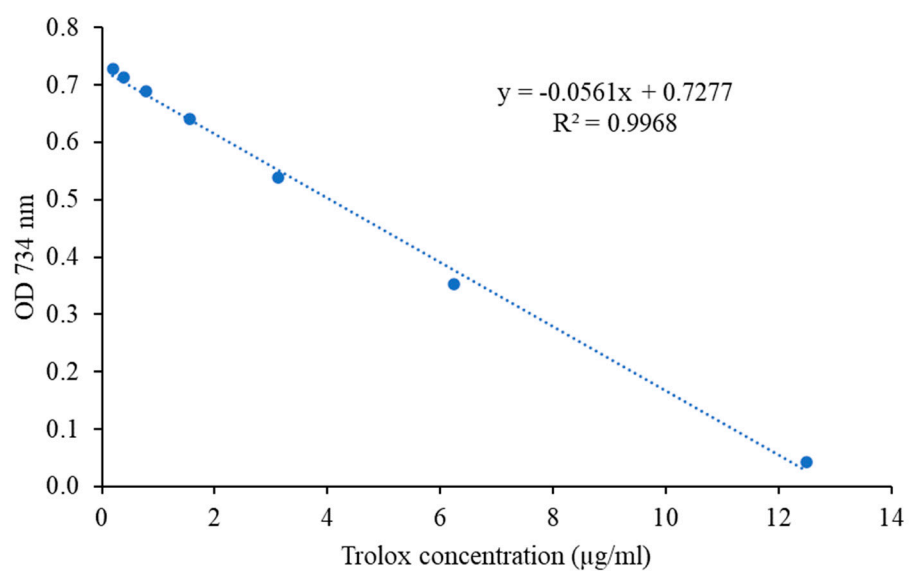


Figure S4. Linearity relationship between absorbance vs concentration of Trolox