

Supplementary Table S1. Certification of analysis of Oligo Proanthocyanidin (OPC), purchased from TianJin JianFeng Natural Product R&D Co., Ltd, TianJin, P. R. China.

Identifications	Standards	Results
Appearance		Red brown powder
Taste	Astringent	Conforms
OPCs (HPLC)	≥85.0%	85.21%
Catechin(HPLC)	≥6.0%	6.99%
Epicatechin(HPLC)	≥4.0%	4.16%
Total Polyphenol (UV)	≥95.0%	98.19%
Powder Size	98% through 100 mesh	Conforms
Ash	≤5.0%	0.28%
Loss on Drying	≤5.0%	4.90%
Bulk Density	0.25~0.40g/ml	0.368g/ml
Tapped Density	0.35~0.50g/ml	0.480g/ml
PH(4%sol.in water)	2.5~4.5	4.38
Heavy Metals	≤10mg/kg	Conforms
Iron	≤10mg/kg	Conforms
Arsenic	≤2mg/kg	Conforms
Solvents Residue		
Methanol	Non-detective	Non-detective
Ethanol	≤1000mg/kg	Conforms

Supplementary Table S2. Certification of analysis of Tea Polyphenol, purchased from TianJin JianFeng Natural Product R&D Co., Ltd, TianJin, P. R. China.

Identifications	Standards	Methods
Appearance	Light yellow or brown powder	Sense
Polyphenol(UV)	>98.0%	soP-QC-1
Loss on drying	<5.0	GB 5009.3
Heavy Metals	< 1.0mg/kg	CHP2010
Lead	< 1.0mg/kg	GB 5009.11
Arsenic	< 1.0mg/kg	GB/T 5009.11

Supplementary Table S3. Certification of analysis of Grape skin extract purchased from TianJin JianFeng Natural Product R&D Co., Ltd, TianJin, P. R. China.

	Results	Specifications
Colour(E3)-OD λ max (520nm), 1%, pH3.0	4.11	4.00-4.20
Brown Index (IB)-OD430nm/OD λ max	0.43	0.40-0.60
Blue Index (IV)-OD580nm/Od λ max	0.36	0.35-0.60
Density	1.142	1.120-1.220
Dry Motter (%)	31	≤ 45
pH	2.8	2.80-3.00
Total SO ₂ (ppm)	490	≤ 1000

Microbiology:		
Total viable aerobic organisms (cfu/g)	7	≤1000
Yeasts and moulds (cfu/g)	0	≤100
Total coliforms	Absence-None	Absence-None