

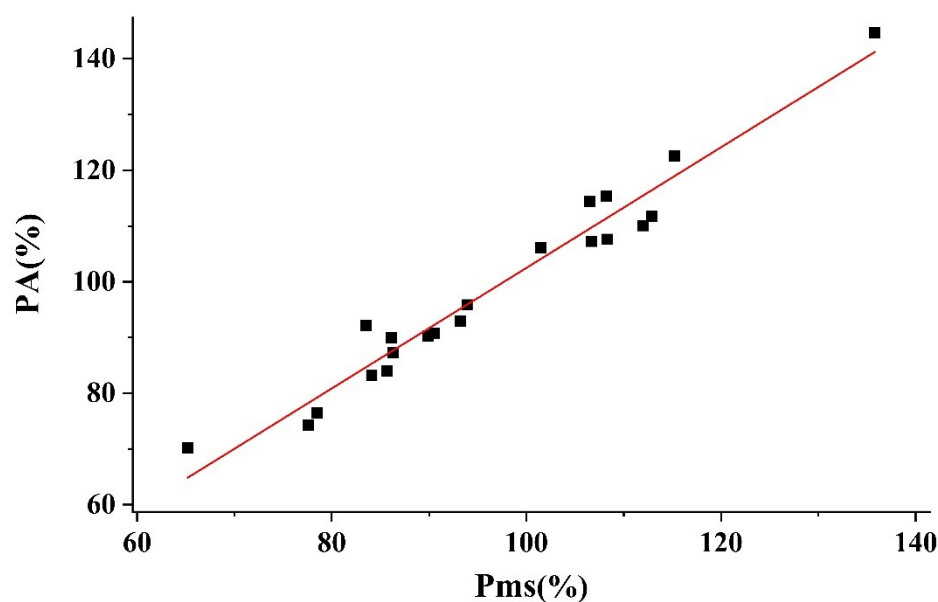
**The supporting information contains the following contents:**

**Figure S1** The correlation of  $P_A\%$  with  $P_{ms}\%$ .

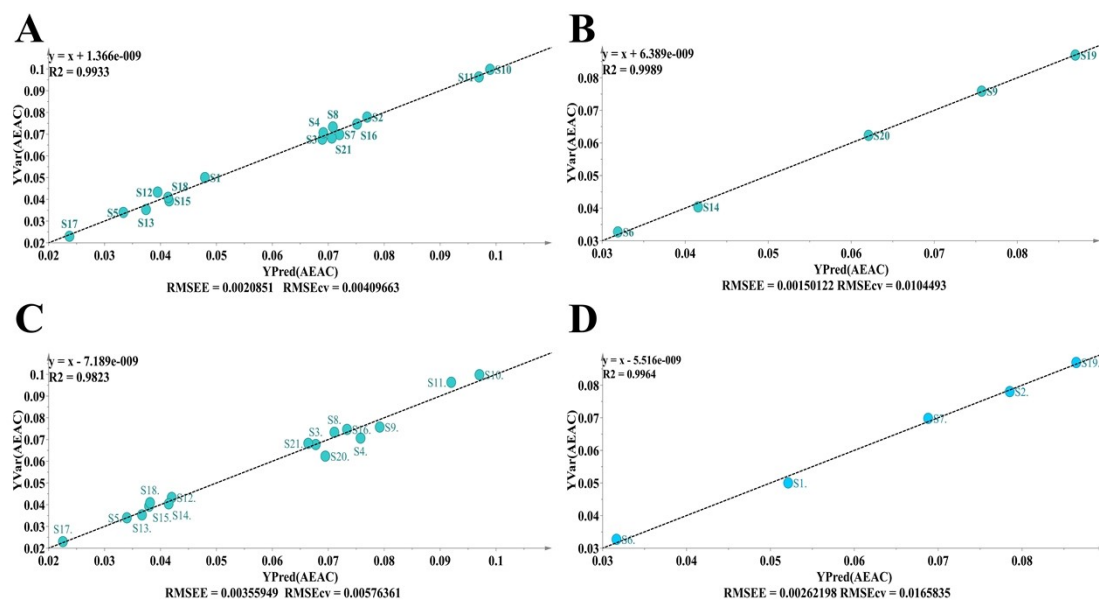
**Figure S2** Partial least squares model applied to the research of the relationship between fingerprint and antioxidant activity. Y observed versus Y predicted plot for the calibration model of HPLC (A) and prediction mode of HPLC (B), Y observed versus Y predicted plot for the calibration model of UV quantum fingerprint (C) and prediction mode of UV quantum fingerprint (D).

**Table S1** Absorption coefficient spectrum results of 21 batches of samples.

**Table S2** The calibration curves, linear range, LOD, LOQ for FA, RT and PR.



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**Figure S2** Partial least squares model applied to the research of the relationship between fingerprint and antioxidant activity. Y observed versus Y predicted plot for the calibration model of HPLC (A) and prediction mode of HPLC (B), Y observed versus Y predicted plot for the calibration model of UV quantum fingerprint (C) and prediction mode of UV quantum fingerprint (D).

**Table S1** Absorption coefficient spectrum results of 21 batches of samples

Gr.No.	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	$S_{ms}$	$P_{ms}\%$	Grade
S1	1.005	1.009	0.997	0.982	0.991	1.001	1.098	0.923	0.852	0.958	0.998	98.100	1.000
S2	0.980	0.996	1.026	0.968	0.994	1.001	0.872	1.157	0.825	0.978	0.996	96.200	1.000
S3	0.980	0.996	1.009	0.965	1.007	1.000	0.946	1.135	0.797	0.990	0.997	97.800	1.000
S4	0.987	1.008	0.959	0.969	1.008	1.000	1.071	1.025	0.738	0.980	0.997	97.500	1.000
S5	1.018	1.011	0.999	1.062	0.961	1.003	0.837	0.950	0.851	1.008	0.998	96.600	1.000
S6	1.020	0.983	0.981	1.067	0.957	1.003	1.084	0.944	0.859	1.008	0.998	99.100	1.000
S7	0.981	0.998	0.926	0.961	1.003	0.998	0.905	1.075	0.963	0.984	0.999	98.100	1.000
S8	0.981	0.997	1.022	0.962	1.014	0.998	0.925	1.078	2.792	1.150	0.957	113.400	3.000
S9	0.981	0.997	0.957	0.962	1.014	0.998	0.882	1.079	2.537	1.113	0.964	110.600	3.000
S10	0.982	1.011	0.991	0.958	1.021	0.999	1.068	1.108	0.841	0.998	0.998	99.700	1.000
S11	0.982	1.010	1.004	0.958	1.020	0.999	1.066	1.115	0.837	0.981	0.998	99.400	1.000
S12	1.017	0.988	1.005	1.125	0.963	1.002	1.084	0.807	0.823	1.004	0.995	97.700	1.000
S13	1.011	0.984	1.005	0.906	0.956	1.001	1.109	1.046	0.815	0.998	0.997	98.000	1.000
S14	0.980	1.002	1.012	1.003	0.972	1.000	0.947	1.084	0.750	0.963	0.996	96.600	1.000
S15	1.012	1.011	0.992	1.127	0.962	1.002	1.138	0.953	0.827	0.981	0.997	100.100	1.000
S16	0.977	0.994	1.027	0.969	1.154	1.000	1.008	1.107	0.898	0.968	0.998	101.200	1.000
S17	1.138	0.997	1.013	1.008	1.016	1.001	0.748	0.578	0.293	0.795	0.965	82.000	4.000
S18	0.989	0.998	1.006	0.979	0.980	0.999	1.084	0.935	0.881	1.074	0.998	99.100	1.000
S19	0.991	1.007	0.998	0.954	0.992	1.000	1.084	0.830	0.867	1.024	0.997	97.200	1.000

S20	0.985	1.010	1.068	0.958	1.013	1.000	1.088	0.951	0.904	1.035	0.999	100.100	1.000
S21	0.979	1.009	1.034	0.967	1.047	0.999	0.877	1.089	1.166	0.998	0.998	101.500	1.000

**Table S2** The calibration curves, linear range, LOD, LOQ for FA, RT and PR.

Analyte	Calibration curve	r	Linear range ( $\mu\text{g/mL}$ )	LOD <sup>a</sup> ( $\mu\text{g ml}^{-1}$ )	LOQ <sup>b</sup> ( $\mu\text{g ml}^{-1}$ )
FA	$y = 1084.6x - 91.302$	0.9991	69.21 ~ 209.72	69.207	209.72
RT	$y = 104.43x + 10.646$	0.9999	2.12 ~ 6.42	2.118	6.418
PR	$y = 34.873x + 4.4195$	0.9991	3.64 ~ 11.02	3.637	11.021

a LOD: limit of detection.

b LOQ: limit of quantification.