

**Extraction and separation of anthocyanins from Kushui rose by  
ethanol-(NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> aqueous two-phase system**

**Supplementary Information**

**Table S1**

Result of response surface methodology experiment.

Run	Factor 1 <i>A</i> g/g	Factor 2 <i>B</i> g/g	Factor 3 <i>C</i> °C	Response 1 <i>Y</i> %	Response 2 <i>K</i>
1	0.22	0.21	35	62.60	3.13
2	0.19	0.21	35	39.11	1.87
3	0.22	0.25	35	81.28	5.82
4	0.22	0.23	15	70.80	3.92
5	0.205	0.23	35	72.57	3.56
6	0.205	0.21	55	41.55	1.90
7	0.205	0.25	15	78.16	4.03
8	0.205	0.25	55	75.08	3.58
9	0.205	0.23	35	70.02	3.45
10	0.22	0.23	55	66.13	3.36
11	0.205	0.21	15	60.94	2.23
12	0.19	0.23	15	71.16	2.47
13	0.19	0.23	55	57.84	1.96
14	0.205	0.23	35	71.57	3.58
15	0.205	0.23	35	75.63	3.77
16	0.19	0.25	35	79.57	3.66
17	0.205	0.23	35	74.39	3.61

**Table S2**

ANOVA results of response surface quadratic model for the yield of anthocyanins.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	2266.44	9	251.83	25.76	0.0001	significant
<i>A</i>	137.26	1	137.26	14.04	0.0072	
<i>B</i>	1509.46	1	1509.46	154.38	< 0.0001	
<i>C</i>	204.71	1	204.71	20.94	0.0026	
<i>AB</i>	118.52	1	118.52	12.12	0.0102	
<i>AC</i>	18.71	1	18.71	1.91	0.2091	
<i>BC</i>	66.58	1	66.58	6.81	0.0349	
<i>A</i> <sup>2</sup>	22.71	1	22.71	2.32	0.1713	
<i>B</i> <sup>2</sup>	99.99	1	99.99	10.23	0.0151	
<i>C</i> <sup>2</sup>	68.40	1	68.40	7.00	0.0332	
Residual	68.44	7	9.78			
Lack of Fit	48.62	3	16.21	3.27	0.1412	not significant
Pure Error	19.83	4	4.96			
Cor Total	2334.88	16				

**Table S3**

ANOVA results of response surface quadratic model for the partition coefficient of anthocyanins.

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Model	15.3905357	9	1.710059523	52.24370839	< 0.0001	significant
<i>A</i>	4.896991139	1	4.896991139	149.6070597	< 0.0001	
<i>B</i>	7.922953234	1	7.922953234	242.0526613	< 0.0001	
<i>C</i>	0.426898942	1	0.426898942	13.04210967	0.0086	
<i>AB</i>	0.199269826	1	0.199269826	6.08785517	0.0430	
<i>AC</i>	0.00065073	1	0.00065073	0.019880341	0.8918	
<i>BC</i>	0.003250007	1	0.003250007	0.099290359	0.7619	
<i>A</i> <sup>2</sup>	0.000434304	1	0.000434304	0.013268353	0.9115	
<i>B</i> <sup>2</sup>	0.001155665	1	0.001155665	0.03530649	0.8563	
<i>C</i> <sup>2</sup>	1.935982529	1	1.935982529	59.14583986	0.0001	
Residual	0.229126473	7	0.032732353			
Lack of Fit	0.175622609	3	0.05854087	4.376571306	0.0939	not significant
Pure Error	0.053503865	4	0.013375966			
Cor Total	15.61966218	16				
<i>R</i> <sup>2</sup>	0.9853					