

Supplementary Material

The optimization of extraction process, antioxidant, whitening and antibacterial effects of Fengdan peony flavonoids

Jie Lu[†], Zhiqiang Huang[†], Yusheng Liu, Huimin Wang, Min Qiu, Yinghui Qu, Wenpeng Yuan^{*}

Heze Branch, Qilu University of Technology (Shandong Academy of Sciences), Biological
Engineering Technology Innovation Center of Shandong Province, Heze, 274000, China;
lujiesunshine@163.com (J.L.); hzqlucky@163.com (Z.H.); liuyusheng666@126.com (Y.L.);
whm_hy@sina.com (H.W.); qmqh2018@163.com (M.Q.); QYH9020@163.com (Y.Q.);

^{*}Correspondence: sdashz@163.com;

[†] These authors contributed equally to this work.

Table S1. The design and results of RSM experiment.

NO.	A	B	C	Total flavonoidss yield (%)
1	-1	0	1	1.150
2	0	0	0	1.191
3	0	1	-1	1.110
4	1	1	0	1.126
5	0	0	0	1.184
6	-1	0	-1	1.114
7	1	-1	0	1.153
8	0	-1	-1	1.160
9	0	-1	1	1.136
10	-1	1	0	1.046
11	0	0	0	1.197
12	0	1	1	1.112
13	1	0	-1	1.167
14	-1	-1	0	1.145
15	1	0	1	1.119
16	0	0	0	1.178
17	0	0	0	1.197

Table S2. The MIC of flavonoids to 4 kinds of Gram-positive bacteria

Antibacterial concentration (mg/ml)	<i>S.aureus</i>	<i>B.anthraxis</i>	<i>B.subtilis</i>	<i>C.perfringens</i>
0.0037	+	+	+	+
0.0073	+	+	+	+
0.0146	+	+	+	+
0.0293	-	+	+	+
0.0586	-	+	+	+
0.1172	-	-	+	+
0.2344	-	-	-	+
0.4688	-	-	-	+
0.9375	-	-	-	+
1.8750	-	-	-	+
3.7500	-	-	-	+
7.500	-	-	-	-
15.000	-	-	-	-
Positive control	-	-	-	-
Negative control	+	+	+	+

Note: “-” means aseptic growth, “+” means bacterial growth.

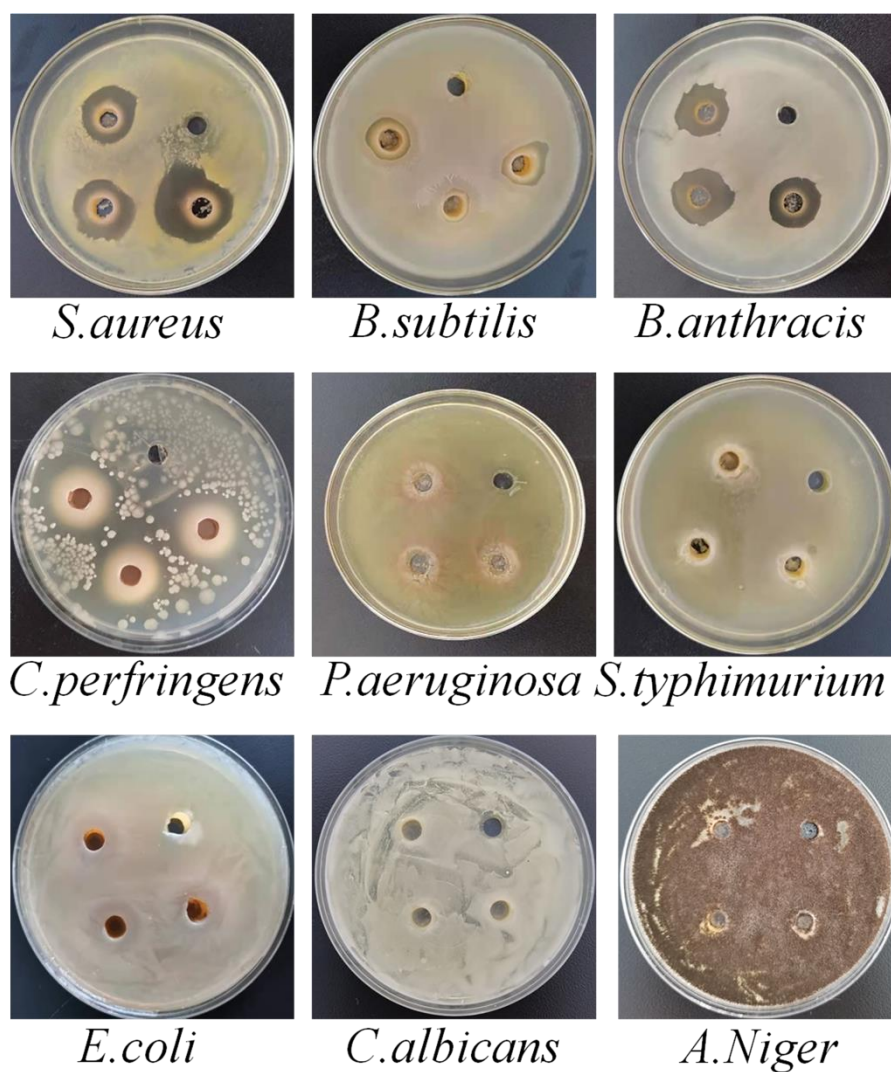


Figure S1. The results of inhibition zone experiment for 30 mg/mL peony. total flavonoids to 9 kinds of bacteria.