

Supplementary Material

Supplementary Tables

Supplementary Table S1. Bacteria strain standard codes.

Latin names	bacteria codes
<i>Staphylococcus aureus</i>	BNCC 310011
<i>Streptococcus hemolytis-β</i>	BNCC 102660
<i>Propionibacterium acnes</i>	BNCC 336649
<i>Listeria monocytogenes</i>	BNCC 185986
<i>Pseudomonas aeruginosa</i>	BNCC 337940
<i>Escherichia coli</i>	BNCC 269342
<i>Salmonella enterica</i> subsp. <i>enterica</i>	BNCC 333565
<i>Proteus vulgaris</i>	BNCC 337267

Supplementary Table S2. The TPC and TFC of the newly grown leaves of nine wild tree peony species.

	TPC(g GE/100 g DW)	TFC(g RE/100 g DW)
<i>P. jishanensis</i>	15.83±0.79 ^c	10.85±0.78 ^b
<i>P. qiui</i>	11.39±0.53 ^d	13.73±1.17 ^a
<i>P. decomposita</i>	9.68±0.52 ^e	8.51±0.22 ^c
<i>P. ostii</i>	19.71±0.21 ^b	15.16±1.29 ^a
<i>P. rockii</i>	15.56±1.78 ^c	14.28±0.66 ^a
<i>P. lutea</i>	31.18±1.30 ^a	9.08±0.03 ^c
<i>P. delavayi</i>	15.987±0.21 ^c	6.63±0.32 ^d
<i>P. ludlowii</i>	12.82±0.20 ^d	5.70±1.05 ^d
<i>P. potaninii</i>	20.14±0.31 ^b	12.02±0.76 ^b

Data are presented as mean ± SD ($n = 3$). Different superscript letters in each column indicate significant differences ($P < 0.05$).

Supplementary Table S3. Identified metabolites of newly grown leaves of nine wild tree peony species.

NO.	RT	Compound	Formula	Relative content%								
				<i>P.</i> <i>jishanensis</i>	<i>P.</i> <i>qiui</i>	<i>P.</i> <i>decomposita</i>	<i>P.osti</i> <i>i</i>	<i>P.rocki</i> <i>i</i>	<i>P.lutea</i>	<i>P.</i> <i>delavayi</i> <i>i</i>	<i>P.</i> <i>ludlowii</i>	<i>P.</i> <i>potaninii</i>
		Flavonoids (27)		33.68	23.30	49.53	82.64	31.92	38.10	42.37	22.20	25.28
1	7.4	Luteolin-7-O-β-D-glucoside	C ₂₁ H ₂₀ O ₁₁	5.23	6.38	13.68	25.98	15.08	2.71	13.66	7.84	10.48
2	8.1	Apigenin-7-glucoside	C ₂₁ H ₂₀ O ₁₀	16.04	11.00	13.64	24.01	0.31	8.39	0.06	0.08	8.02
3	7.5	Hyperin	C ₂₁ H ₂₀ O ₁₂	1.51	0.69	3.63	11.70	11.97	3.51	10.25	7.87	1.53
4	8.1	Rhoifolin	C ₂₇ H ₃₀ O ₁₄	6.15	2.36	9.85	6.76	0.11	14.34	0.08	0.04	1.59
5	10	Apigenin	C ₁₅ H ₁₀ O ₅	0.10	0.07	0.11	0.60	tr	1.41	tr	tr	0.37
6	7.3	naringenin	C ₁₅ H ₁₂ O ₅	0.04	0.03	0.02	0.05	0.01	0.09	0.07	0.04	0.01
7	9.6	Luteolin	C ₁₅ H ₁₀ O ₆	0.14	0.15	0.49	1.70	0.79	0.84	2.17	0.60	0.94

8	8.2	Daidzin	C ₂₁ H ₂₀ O ₉	0.91	1.15	2.82	4.29	0.05	0.07	0.08	0.02	0.26
9	5.9	Kaempferol-3-gentiobioside	C ₂₇ H ₃₀ O ₁₆	0.52	0.16	1.26	2.38	2.04	1.19	nd	1.17	nd
10	10	Isorhamnetin	C ₁₆ H ₁₂ O ₇	0.03	0.04	0.09	0.44	0.62	0.13	0.71	0.37	0.06
11	7.4	Glucosylvitexin	C ₂₇ H ₃₀ O ₁₅	1.97	0.56	0.96	1.21	nd	1.09	0.05	nd	0.68
12	7.9	Isoschaftoside	C ₂₆ H ₂₈ O ₁₄	0.56	0.21	0.97	0.46	nd	1.25	1.86	nd	0.16
13	9.1	Quercetin dihydrate	C ₁₅ H ₁₀ O ₇	0.03	0.05	0.08	0.49	0.91	0.40	2.27	0.56	0.12
14	9.6	cantharidin	C ₁₀ H ₁₂ O ₄	nd	nd	0.02	0.13	nd	2.49	7.54	3.56	0.88
15	8.2	spinosin	C ₂₈ H ₃₂ O ₁₅	0.34	0.45	1.82	1.75	nd	0.14	nd	nd	0.10
16	8	eriodictyol	C ₁₅ H ₁₂ O ₆	nd	tr	tr	0.48	0.01	0.01	nd	0.01	nd
17	9.2	dihydroquercetin	C ₁₅ H ₁₂ O ₇	nd	nd	0.07	0.08	nd	0.02	nd	nd	0.04

18	11	Hydroxygen kwanin	C16H12O6	tr	0.01	0.03	0.10	tr	0.01	nd	nd	tr
19	8.2	Dihydromyri cetin	C15H12O8	tr	tr	nd	0.03	tr	nd	tr	tr	tr
20	6.8	Rutin	C27H30O1 6	nd	nd	nd	nd	nd	nd	3.55	nd	nd
21	5	Plantagoside	C21H22O1 2	0.10	nd	nd	nd	nd	nd	nd	nd	0.07
22	13	Tiliroside	C30H26O1 3	nd	nd	nd	nd	nd	nd	nd	0.03	nd
23	11	Diosmetin	C16H12O6	nd	nd	nd	nd	nd	0.01	nd	nd	nd
24	7.4	Naringin	C27H32O1 4	nd	nd	nd	nd	tr	nd	nd	nd	nd
25	7.6	Myricetin	C15H10O8	nd	nd	nd	nd	nd	nd	tr	nd	nd
26	17	Pectolinarin	C29H34O1 5	nd	nd	nd	nd	nd	nd	tr	nd	nd
27	8.8	Chrysin	C15H10O4	nd	tr	nd	nd	nd	nd	nd	nd	nd
Terpenoids (49)				63.80	73.62	46.66	11.21	64.65	55.88	37.96	69.93	70.01

28	6.2	Paeoniflorin	C ₂₃ H ₂₈ O ₁₁	62.91	73.10	46.51	10.74	64.43	55.76	37.73	69.37	69.86
29	16	Sclareol Glycol	C ₁₆ H ₃₀ O ₂	0.05	0.04	0.05	0.09	0.05	0.04	0.12	0.05	0.04
30	9.9	Benzoylpaeoniflorin	C ₃₀ H ₃₂ O ₁₂	0.61	0.41	nd	nd	nd	nd	nd	nd	nd
31	5.5	Loganin	C ₁₇ H ₂₆ O ₁₀	nd	tr	nd	0.01	0.02	0.03	0.06	0.25	nd
32	5.4	Bilobalide	C ₁₅ H ₁₈ O ₈	0.03	0.02	0.01	0.06	0.02	nd	nd	0.12	0.03
33	5	Loganin	C ₁₇ H ₂₆ O ₁₀	0.17	nd	tr	0.07	0.02	nd	nd	nd	nd
34	15	Sclareolide	C ₁₆ H ₂₆ O ₂	nd	tr	tr	0.03	0.03	nd	nd	0.05	tr
35	17	Curcumol	C ₁₅ H ₂₄ O ₂	0.01	tr	tr	0.01	0.01	tr	0.02	nd	nd
36	7.2	Toosendanin	C ₃₀ H ₃₈ O ₁₁	tr	0.01	nd	0.03	0.02	nd	nd	nd	nd
37	15	Hederagenin	C ₃₀ H ₄₈ O ₄	tr	nd	tr	tr	0.02	tr	tr	nd	tr
38	16	Betulinic acid	C ₃₀ H ₄₈ O ₃	tr	tr	0.01	nd	tr	nd	nd	nd	nd

39	0	Genipin	C11H14O5	nd	tr	tr	tr	tr	nd	0.02	nd	nd
40	7.2	Toosendanin	C30H38O1 1	nd	nd	nd	nd	nd	tr	0.01	nd	tr
41	7	Dihydroarte misinin	C15H24O5	tr	tr	tr	tr	tr	nd	nd	tr	nd
42	18	Notoginseno side Fe	C47H80O1 7	tr	tr	nd	nd	nd	nd	nd	nd	tr
43	16	Kaurenoic acid	C20H30O2	nd	tr	nd	nd	nd	tr	nd	tr	nd
44	13	Carvacrol	C10H14O	tr	tr	tr	tr	nd	nd	nd	nd	tr
45	16	Tussilagone	C23H34O5	tr	nd	nd	tr	nd	nd	nd	tr	nd
46	9.3	Lappaconite Hydrobromi de	C32H44N2 O8	nd	tr	nd	tr	nd	nd	nd	nd	nd
47	12	Linderane	C15H16O4	nd	tr	nd	tr	tr	nd	nd	nd	nd
48	9.3	Saikosaponi n C	C48H78O1 7	tr	tr	nd	tr	nd	nd	nd	tr	nd
49	15	Costunolide	C15H20O2	tr	tr	tr	tr	nd	nd	nd	nd	tr

50	6.3	6-deoxycatalp ol	C15H22O9	nd	nd	nd	nd	nd	nd	nd	0.09	nd
51	7.9	pseudolaric acid B	C23H28O8	nd	nd	nd	nd	nd	nd	nd	nd	0.06
52	16	Benzoylhyp acoitine	C31H43NO 9	nd	nd	nd	0.11	nd	nd	nd	nd	nd
53	17	Andrograph olide	C20H30O5	nd	nd	0.03	nd	nd	nd	nd	nd	nd
54	7.3	Ginkgolide C	C20H24O1 1	nd	nd	nd	nd	0.01	nd	nd	nd	nd
55	18	Nardosinone	C15H22O3	nd	nd	nd	nd	nd	nd	nd	nd	0.01
56	14	Asiatic acid	C30H48O5	nd	nd	nd	nd	nd	tr	nd	nd	tr
57	11	Andrograph olide	C20H30O5	nd	nd	nd	tr	tr	nd	nd	nd	nd
58	16	Glycyrrhetin ic acid	C30H46O4	nd	tr	nd	nd	nd	nd	nd	nd	nd
59	11	Tenuifolin	C36H56O1 2	nd	nd	nd	nd	tr	nd	nd	tr	nd

60	6.1	Neonuezhen ide	C31H42O1 8	nd	nd	nd	nd	nd	tr	nd	nd	nd
61	7.7	Ginkgolide A	C20H24O9	nd	nd	nd	nd	nd	tr	nd	nd	nd
62	5.7	Artemisinin	C15H22O5	nd	nd	tr	nd	nd	tr	nd	nd	nd
63	5.4	Geniposide	C17H24O1 0	nd	tr	nd	tr	nd	nd	nd	nd	nd
64	15	Atractylenol ide III	C15H20O3	nd	nd	tr	nd	nd	nd	nd	tr	tr
65	9.4	Paclitaxel	C47H51NO 14	nd	nd	nd	nd	nd	tr	nd	nd	nd
66	16	Betulinic acid	C30H48O3	nd	nd	nd	nd	nd	tr	nd	nd	nd
67	14	Picfeltarraen in IB	C42H64O1 4	nd	nd	tr	nd	nd	nd	nd	nd	nd
68	15	Raddeanin A	C47H76O1 6	nd	nd	tr	nd	nd	nd	nd	nd	nd
69	6.1	Atractylenol ide I	C15H18O2	nd	nd	nd	tr	nd	nd	nd	nd	nd

70	11	Pedunculosi de	C36H58O1 0	nd	nd	nd	nd	tr	nd	nd	nd	nd
71	5.9	Solanesol	C45H74O	nd	tr	nd	nd	nd	nd	nd	nd	nd
72	16	Tenacissosi de H	C42H66O1 4	nd	nd	nd	nd	nd	nd	nd	nd	tr
73	18	Shionone	C30H50O	nd	tr	nd	nd	nd	nd	nd	nd	nd
74	14	Phytolaccag enin	C31H48O7	nd	tr	nd	nd	nd	nd	nd	nd	nd
75	7.8	Pulegone	C10H16O	nd	tr	nd	nd	nd	nd	nd	nd	nd
76	8.9	Limonin	C26H30O8	nd	nd	nd	tr	nd	nd	nd	nd	nd
		Quinones (7)		tr	tr	tr	tr	0.01	0.01	0.02	tr	tr
77	9.9	Aurantio- obtusin	C17H14O7	nd	nd	nd	nd	tr	tr	nd	nd	tr
78	8.2	Purpurin	C14H8O5	nd	nd	nd	nd	tr	tr	0.01	tr	nd
79	5.2	Plumbagin	C11H8O3	nd	tr	tr	nd	tr	tr	tr	nd	tr
80	7.4	Rhein	C15H8O6	nd	nd	tr	nd	nd	nd	nd	nd	nd

81	18	Shikonin	C16H16O5	nd	nd	nd	nd	tr	nd	nd	nd	tr
82	10	1,8-Dihydroxynthraquinone	C14H8O4	nd	tr	nd	nd	nd	nd	nd	nd	nd
83	18	Dictamnine	C12H9NO2	nd	nd	nd	nd	nd	nd	nd	nd	tr
		Lipids (11)		0.23	0.61	0.93	1.60	1.04	1.45	3.69	1.90	0.64
84	16	Linoleic acid	C18H32O2	0.22	0.32	0.54	1.07	0.64	1.29	3.66	1.43	0.63
85	8	Polygalic acid	C29H44O6	nd	0.28	0.34	0.52	0.37	nd	nd	nd	nd
86	5.5	10-Hydroxy-2-decenoic acid	C10H18O3	tr	tr	0.01	nd	0.03	0.10	nd	nd	nd
87	7	Pogostone	C12H16O4	nd	tr	tr	nd	tr	nd	0.01	nd	tr
88	17	Methyl linoleate	C19H34O2	nd	nd	nd	tr	nd	tr	tr	tr	nd
89	16	Ganoderic acid H	C32H44O9	nd	nd	nd	nd	nd	nd	nd	0.36	nd
90	18	Tigogenin	C27H44O3	nd	nd	0.05	nd	nd	nd	nd	nd	nd

91	15	Gracillin	C ₄₅ H ₇₂ O ₁₇	tr	nd	nd	nd	nd	nd	nd	nd	nd
92	18	Sodium glycodeoxyc holate	C ₂₆ H ₄₂ NN aO ₅	tr	nd	nd	nd	nd	nd	nd	nd	nd
93	17	10-Gingerol	C ₂₁ H ₃₄ O ₄	nd	nd	nd	tr	nd	nd	nd	nd	nd
94	18	Anise oil	C ₁₀ H ₁₂ O	tr	nd	tr	tr	nd	0.05	0.01	0.11	tr
Hydrocarbons (10)				0.39	0.51	0.68	0.12	0.34	0.99	6.82	0.42	2.12
95	6.2	Paeonol	C ₉ H ₁₀ O ₃	nd	0.03	nd	0.10	0.12	0.70	0.16	0.05	1.21
96	10	Heteroclitin D	C ₂₇ H ₃₀ O ₈	0.39	0.45	0.67	nd	0.22	0.29	nd	0.35	0.89
97	6	Pinoresinol Diglucoside	C ₃₂ H ₄₂ O ₁₆	nd	nd	nd	nd	tr	nd	0.06	0.02	0.02
98	8.5	Lobetyolin	C ₂₀ H ₂₈ O ₈	tr	tr	0.01	0.02	nd	nd	nd	nd	nd
99	5.6	Schisandrin C	C ₂₂ H ₂₄ O ₆	nd	0.01	nd	nd	nd	nd	nd	nd	nd
100	7.3	Kaempferol- 3-o- rutinoside	C ₂₇ H ₃₀ O ₁₅	nd	nd	nd	nd	nd	nd	6.58	nd	nd

101	13	Erianin	C18H22O5	nd	nd	nd	nd	nd	nd	0.01	nd	nd
102	9.6	Curcumin	C21H20O6	nd	nd	nd	nd	nd	nd	tr	nd	nd
103	1.2	Cryptotanshinone	C19H20O3	nd	nd	nd	nd	nd	nd	nd	nd	nd
104	7.7	Resveratrol	C14H12O3	nd	0.02	nd	tr	nd	tr	nd	tr	nd
		Glycosides (48)		0.24	0.53	0.98	1.51	0.26	1.09	3.32	3.66	0.55
105	6.2	Curculigoside	C22H26O11	0.10	0.22	0.40	0.58	0.10	0.17	0.08	0.14	0.28
106	5.9	Complanatoside	C28H32O16	nd	0.02	0.39	0.05	0.02	0.17	0.97	nd	0.03
107	5.5	Sesamoside	C17H24O12	nd	nd	nd	nd	nd	0.20	0.28	0.49	0.08
108	5.3	sweroside	C16H22O9	nd	nd	nd	nd	nd	0.21	nd	0.18	tr
109	9.5	Harpagoside	C24H30O11	nd	0.05	0.04	nd	0.03	0.08	0.08	0.10	0.03
110	7.7	Phloridzin	C21H24O10	0.03	0.13	nd	0.08	0.03	nd	nd	nd	nd
111	5.7	Gentiopicrin	C16H20O9	nd	nd	nd	nd	nd	0.06	0.16	0.10	0.03

112	5.4	Syringin	C17H24O9	tr	0.02	tr	0.24	tr	tr	0.04	0.03	0.04
113	1.1	Dipsacoside B	C17H26O1 1	0.04	nd	0.06	0.07	0.04	nd	nd	nd	nd
114	7.1	(-)- Pinoresinol glucoside	C26H32O1 1	0.02	0.01	0.01	0.04	0.03	nd	0.03	2.34	0.01
115	16	Astragalosid e IV	C41H68O1 4	0.02	0.02	0.01	0.03	tr	nd	nd	tr	tr
116	5	10- deacetylaspe rulosidic acid	C16H22O1 1	nd	nd	nd	0.02	nd	0.03	nd	0.04	nd
117	6.4	Polydatin	C20H22O8	nd	0.03	0.01	nd	nd	nd	nd	nd	nd
118	6.8	Wogonin 7- O- glucuronide	C22H20O1 1	nd	tr	tr	nd	tr	nd	tr	tr	0.01
119	7.6	Tracheloside	C27H34O1 2	nd	nd	tr	nd	nd	nd	nd	nd	0.02
120	16	Harpagide	C15H24O1 0	nd	nd	tr	tr	tr	nd	tr	tr	tr
121	1.1	Salicin	C13H18O7	tr	tr	tr	nd	tr	nd	nd	nd	nd

122	17	Bufotaline	C ₂₆ H ₃₆ O ₆	nd	nd	tr	nd	nd	nd	tr	tr	nd
123	7.1	Mulberrosid e A	C ₂₆ H ₃₂ O ₁₄	nd	nd	0.01	0.33	nd	nd	1.59	nd	nd
124	7.5	neoeriocitrin	C ₂₇ H ₃₂ O ₁₅	nd	nd	nd	nd	nd	0.13	nd	0.02	nd
125	9.8	Etoposide	C ₂₉ H ₃₂ O ₁₃	nd	nd	nd	nd	nd	nd	nd	0.10	nd
126	6.3	Glucosylvite xin	C ₂₇ H ₃₀ O ₁₅	nd	nd	nd	nd	nd	nd	nd	0.08	nd
127	6.2	Prim-O- glucosylcimi fugin	C ₂₂ H ₂₈ O ₁₁	0.02	nd	nd	0.03	nd	nd	nd	nd	nd
128	6.1	Arbutin	C ₁₂ H ₁₆ O ₇	nd	0.02	nd	nd	nd	nd	nd	nd	nd
129	8.7	calycosin-7- o-glucoside	C ₂₂ H ₂₂ O ₁₀	tr	nd	nd	nd	nd	tr	0.02	nd	tr
130	6.1	Vaccarin	C ₃₂ H ₃₈ O ₁₉	nd	nd	nd	nd	nd	0.02	nd	nd	nd
131	5.8	Catalpol	C ₁₅ H ₂₂ O ₁₀	nd	nd	nd	nd	nd	nd	0.02	tr	nd

132	6.2	Methylhesperidin	C ₂₉ H ₃₆ O ₁₅	tr	nd	nd	0.02	nd	nd	nd	nd	nd
133	6.3	Geniposidic acid	C ₁₆ H ₂₂ O ₁₀	nd	nd	nd	nd	nd	nd	0.02	nd	nd
134	9.9	Icarrin	C ₃₃ H ₄₀ O ₁₅	nd	tr	nd	nd	nd	nd	nd	tr	nd
135	5.5	Aucubin	C ₁₅ H ₂₂ O ₉	nd	nd	nd	nd	nd	nd	0.02	nd	nd
136	16	Ziyuglycoside I	C ₄₁ H ₆₆ O ₁₃	tr	tr	nd	nd	nd	nd	nd	nd	nd
137	15	Liriope muscari baily saponins C	C ₄₄ H ₇₀ O ₁₇	nd	nd	tr	nd	nd	nd	nd	tr	nd
138	5	Nodakenin	C ₂₀ H ₂₄ O ₉	nd	tr	tr	nd	nd	nd	nd	nd	nd
139	6.3	Asperuloside	C ₁₈ H ₂₂ O ₁₁	nd	nd	nd	0.02	nd	nd	nd	nd	nd
140	17	Pseuoginsenoside F11	C ₄₂ H ₇₂ O ₁₄	nd	tr	nd	nd	nd	tr	nd	nd	tr
141	19	Pseudoginsenoside-RT5	C ₃₆ H ₆₂ O ₁₀	nd	nd	nd	nd	nd	tr	nd	nd	nd

142	6.2	Swertimarin	C ₁₆ H ₂₂ O ₁₀	nd	nd	nd	tr	nd	nd	nd	nd	nd
143	17	Notoginsenoside Ft1	C ₄₇ H ₈₀ O ₁₇	nd	nd	nd	nd	nd	nd	tr	nd	nd
144	8.3	Secoisolariciresinol diglucoside	C ₃₂ H ₄₆ O ₁₆	nd	nd	nd	nd	nd	nd	tr	nd	nd
145	18	Ophiogenin 3-O- α -L-rhamnopyranosyl-(1 \rightarrow 2)- β -D-glucopyranoside	C ₃₉ H ₆₂ O ₁₄	nd	nd	nd	nd	tr	nd	nd	nd	nd
146	6.3	Orcinol glucosid	C ₁₃ H ₁₈ O ₇	nd	nd	nd	tr	nd	nd	nd	nd	nd
147	14	Neoandrographolide	C ₂₆ H ₄₀ O ₈	nd	tr	nd	nd	nd	nd	nd	nd	nd
148	15	Asperosaponin VI	C ₄₇ H ₇₆ O ₁₈	tr	nd	nd	nd	nd	nd	nd	nd	nd
149	8.4	Phillyrin\For sythin	C ₂₇ H ₃₄ O ₁₁	nd	nd	nd	nd	tr	nd	nd	nd	nd

150	18	Saikosaponin B2	C ₄₂ H ₆₈ O ₁₃	nd	nd	nd	nd	nd	nd	nd	tr	nd
151	19	α -hederin	C ₄₁ H ₆₆ O ₁₂	nd	nd	nd	nd	nd	nd	nd	tr	nd
152	0.1	Salidroside	C ₁₄ H ₂₀ O ₇	nd	nd	nd	nd	nd	nd	tr	nd	nd
		Carboxylic Acids (21)		1.43	0.93	0.73	1.82	1.11	1.72	3.26	1.10	0.62
153	1.1	quinic acid	C ₇ H ₁₂ O ₆	1.26	0.59	0.47	1.38	0.54	0.78	1.16	0.12	0.30
154	1.1	Gallic acid	C ₇ H ₆ O ₅	0.07	0.03	0.03	0.11	0.09	0.19	0.49	0.14	0.07
155	1.2	Citric acid	C ₆ H ₈ O ₇	nd	0.11	0.14	0.26	0.26	0.38	0.25	0.36	0.09
156	1.2	malic acid	C ₄ H ₆ O ₅	nd	0.10	nd	nd	0.13	0.32	0.56	0.43	0.12
157	5.2	protocatechuic acid	C ₇ H ₆ O ₄	0.03	0.04	0.05	nd	0.08	0.01	0.09	0.03	nd
158	18	Ethyl ferulate	C ₁₂ H ₁₄ O ₄	tr	tr	0.01	0.02	tr	tr	0.01	tr	nd
159	0.1	Hydroxycitric acid	C ₆ H ₈ O ₈	0.01	nd	nd	nd	0.01	tr	tr	nd	tr
160	6.5	Danshensu	C ₉ H ₁₀ O ₅	nd	nd	nd	tr	tr	0.01	nd	nd	nd

161	17	Euphorbiast eroid	C32H40O8	tr	nd	nd	nd	nd	nd	tr	tr	nd
162	6.7	p-Coumaric acid	C9H8O3	nd	nd	nd	nd	nd	0.01	0.37	nd	nd
163	9.6	Vanillic acid	C8H8O4	nd	nd	nd	nd	nd	nd	0.26	nd	nd
164	7.8	salicylic acid	C7H6O3	nd	nd	nd	nd	nd	nd	nd	nd	0.04
165	8.4	3,4- Dimethoxyb enzoic acid	C9H10O4	nd	nd	nd	nd	nd	nd	0.06	nd	nd
166	7.7	p-Anisic acid	C8H8O3	0.02	nd	nd	nd	nd	nd	nd	nd	nd
167	9.6	2- Methoxycin amic acid	C10H10O3	nd	nd	nd	0.04	nd	nd	nd	nd	nd
168	8.6	Cichoric acid	C22H18O1 2	tr	nd	nd	nd	nd	nd	nd	tr	nd
169	6.1	3,6'— Disinapoyl sucrose	C34H42O1 9	nd	nd	nd	nd	nd	nd	nd	tr	nd
170	0	Ferulic Acid	C10H10O4	tr	nd	tr	nd	nd	nd	nd	nd	nd

171	12	Chlorogenic acid	C ₁₆ H ₁₈ O ₉	nd	tr	tr	nd	nd	nd	nd	nd	nd
172	6.3	Phenprobamate	C ₉ H ₁₁ NO ₂	nd	tr	nd	nd	nd	nd	nd	nd	tr
173	6.1	Epicatechin gallate	C ₂₂ H ₁₈ O ₁₀	0.02	0.05	0.02	nd	nd	nd	nd	nd	nd
		Benzopyrans (27)		0.03	0.12	0.02	0.09	0.11	0.14	0.14	0.14	0.05
174	7.8	Ellagic Acid	C ₁₄ H ₆ O ₈	nd	0.10	nd	0.04	0.06	nd	nd	nd	0.04
175	9.4	Hamaudol Glycoside	C ₂₁ H ₂₆ O ₁₀	tr	nd	nd	nd	nd	0.08	0.11	0.09	nd
176	5.4	Isopimpinellin	C ₁₃ H ₁₀ O ₅	nd	nd	nd	nd	nd	0.02	0.01	0.02	nd
177	19	Liquiritigenin	C ₁₅ H ₁₂ O ₄	nd	nd	tr	nd	0.01	tr	0.01	0.03	nd
178	5.1	3-N-butyl-4,5-dihydrophthalide	C ₁₂ H ₁₆ O ₂	nd	tr	tr	tr	tr	tr	nd	nd	nd
179	7	Cimifugin	C ₁₆ H ₁₈ O ₆	tr	nd	tr	0.03	nd	nd	nd	nd	nd

180	5.5	Baicalin	<chem>C21H18O11</chem>	0.01	nd	nd	nd	nd	nd	nd	nd	nd
181	7	6-hydroxy-7,8-dimethoxycoumarin	<chem>C11H10O5</chem>	nd	nd	nd	tr	tr	tr	tr	nd	tr
182	5	Epicatechin	<chem>C15H14O6</chem>	nd	tr	nd	tr	nd	tr	nd	nd	nd
183	6.8	Marmesin	<chem>C14H14O4</chem>	nd	nd	nd	tr	tr	tr	nd	tr	nd
184	9.4	Wedelolactone	<chem>C16H10O7</chem>	tr	tr	nd	nd	tr	tr	nd	nd	nd
185	0	6,7-Dimethoxycoumarin	<chem>C11H10O4</chem>	tr	tr	tr	tr	tr	nd	nd	nd	nd
186	5.8	Fraxin	<chem>C16H18O10</chem>	nd	tr	tr	tr	nd	nd	nd	nd	nd
187	5.7	4-Hydroxycoumarin	<chem>C9H6O3</chem>	tr	tr	nd	nd	tr	nd	nd	nd	nd
188	12	Pectolinarigenin	<chem>C17H14O6</chem>	nd	tr	nd	nd	tr	nd	nd	nd	nd
189	5.3	Bergenium	<chem>C14H16O9</chem>	nd	nd	nd	nd	0.01	tr	nd	nd	nd

190	6	Fraxin	C ₁₆ H ₁₈ O ₁₀	nd	nd	nd	nd	nd	nd	nd	nd	0.01
191	11	Oxypeucedanin	C ₁₆ H ₁₄ O ₅	nd	nd	nd	nd	nd	0.01	nd	nd	nd
192	12	6-Methylcoumarin	C ₁₀ H ₈ O ₂	nd	nd	nd	nd	tr	tr	nd	nd	nd
193	1.1	Catechin	C ₁₅ H ₁₄ O ₆	tr	nd	nd	nd	tr	nd	nd	nd	nd
194	5.2	Fraxetin	C ₁₀ H ₈ O ₅	nd	nd	tr	nd	tr	nd	nd	nd	tr
195	6.4	Osthole	C ₁₅ H ₁₆ O ₃	nd	nd	tr	tr	tr	nd	tr	tr	nd
196	6.4	Esculetin	C ₉ H ₆ O ₄	nd	tr	nd	nd	nd	nd	nd	nd	tr
197	5.5	Cistanoside D	C ₃₁ H ₄₀ O ₁₅	nd	nd	nd	nd	nd	nd	nd	nd	tr
198	7.6	fraxinellone	C ₁₄ H ₁₆ O ₃	nd	nd	nd	tr	nd	tr	nd	nd	nd
199	11	Brazilin	C ₁₆ H ₁₄ O ₅	nd	tr	nd	nd	nd	nd	nd	nd	nd
200	7.6	Imperatorin	C ₁₆ H ₁₄ O ₄	nd	nd	nd	nd	nd	nd	nd	tr	nd
Amino Acids (10)				tr	0.02	0.04	0.03	0.06	0.03	0.10	0.07	0.38

201	1	Aspartic acid	C4H7NO4	tr	nd	tr	tr	tr	tr	0.01	tr	0.26
202	1.2	Proline	C5H9NO2	nd	nd	nd	nd	nd	nd	tr	tr	0.10
203	1.1	Amber Acid	C4H6O4	nd	nd	tr	0.02	0.02	0.01	0.03	0.03	tr
204	1	Glutamic acid	C5H9NO4	nd	0.02	0.02	nd	0.02	tr	0.02	0.02	tr
205	4.8	L-Tryptophan	C11H12N2O2	tr	nd	tr	nd	tr	tr	0.01	0.01	tr
206	1	Serine	C3H7NO3	nd	tr	tr	tr	tr	tr	tr	tr	tr
207	1.2	Leucine	C6H13NO2	nd	tr	nd	tr	tr	nd	tr	nd	tr
208	6.7	L(+)-Arginine	C6H14N4O2	nd	nd	nd	tr	tr	nd	tr	nd	nd
209	16	Histidine	C6H9N3O2	tr	nd	tr	nd	nd	nd	nd	nd	nd
210	18	Citrulline	C6H13N3O3	nd	nd	nd	nd	nd	nd	nd	nd	tr
		Alkaloids (15)		0.01	0.02	0.03	tr	0.03	0.03	0.02	0.01	0.02
211	9.1	Irinotecan	C33H38N4O6	tr	tr	nd	nd	0.03	nd	nd	nd	nd

212	17	(+)- Tetrandrine	C ₃₈ H ₄₂ N ₂ O ₆	nd	tr	nd	nd	nd	nd	0.01	tr	tr
213	16	Catharanthin e	C ₂₁ H ₂₄ N ₂ O ₂	nd	tr	nd	tr	tr	nd	nd	nd	tr
214	11	Canadine	C ₂₀ H ₂₁ NO 4	nd	nd	nd	nd	nd	tr	tr	nd	nd
215	5.6	Topotecan	C ₂₃ H ₂₃ N ₃ O ₅	tr	nd	nd	nd	nd	nd	nd	nd	0.01
216	16	Caffeine	C ₈ H ₁₀ N ₄ O 2	nd	nd	nd	nd	nd	0.02	nd	nd	tr
217	9.3	Reserpine	C ₃₃ H ₄₀ N ₂ O ₉	nd	tr	0.02	nd	nd	nd	nd	nd	nd
218	0.1	Trigonelline	C ₇ H ₇ NO ₂	nd	nd	tr	nd	nd	tr	nd	nd	nd
219	8	Colchicine	C ₂₂ H ₂₅ NO 6	nd	nd	nd	nd	nd	tr	nd	tr	nd
220	8	Gramine	C ₁₁ H ₁₄ N ₂	tr	nd	nd	nd	tr	tr	nd	nd	nd
221	10	Sophoridine	C ₁₅ H ₂₄ N ₂ O	nd	nd	nd	tr	nd	nd	nd	nd	nd
222	7.8	Abrine	C ₁₂ H ₁₄ O ₂ N ₂	nd	nd	nd	nd	nd	nd	nd	tr	nd

223	8.2	Lycorine	C ₁₆ H ₁₇ NO ₄	nd	nd	nd	nd	tr	nd	nd	nd	nd
224	10	Peimisine	C ₂₇ H ₄₁ NO ₃	nd	nd	nd	nd	nd	nd	nd	nd	tr
225	5.3	Higenamine	C ₁₆ H ₁₇ NO ₃	nd	nd	tr	nd	nd	nd	nd	nd	nd
		Vitamins (7)		tr	0.02	0.23	0.49	0.25	0.19	tr	0.15	tr
226	5.1	Vitamin C	C ₆ H ₈ O ₆	nd	nd	0.22	0.48	0.25	0.19	nd	0.03	nd
227	7.6	Vitamin B5	C ₁₈ H ₃₂ Ca N ₂ O ₁₀	nd	0.02	nd	0.01	tr	nd	nd	0.12	nd
228	16	Vitamin A acid	C ₂₀ H ₂₈ O ₂	tr	tr	tr	nd	tr	tr	nd	nd	nd
229	0.1	Arecoline hydrobromid e	C ₈ H ₁₃ NO ₂	nd	tr	nd	tr	nd	nd	nd	tr	nd
230	0	Nicotinic acid	C ₆ H ₅ NO ₂	tr	nd	tr	nd	nd	nd	nd	nd	nd
231	11	Menadione (Vitamin K3)	C ₁₁ H ₁₀ O ₅ S	nd	nd	nd	nd	tr	nd	nd	nd	nd

			Bisulfurous Acid										
232	5.1	Vitamin B6	C8H11NO3	nd	nd	nd	nd	nd	tr	nd	nd	nd	nd
		Phenolic acids (2)		tr	tr	tr	tr	tr	tr	tr	tr	tr	tr
233	6.7	Benzoic acid	C10H12O5	nd	tr	tr	tr	tr	nd	nd	nd	nd	nd
234	6.8	Caffeic acid	C9H8O4	tr	nd	nd	nd	tr	nd	nd	nd	nd	nd
		Heterocycli c Compounds (6)		tr	tr	tr	0.07	0.03	tr	2.25	tr	tr	tr
235	15	Levistilide A	C24H28O4	tr	tr	tr	0.01	tr	nd	nd	nd	tr	tr
236	8.2	Agarotetrol	C17H18O6	nd	nd	nd	0.06	0.02	nd	2.25	nd	nd	nd
237	15	Gambogic acid	C38H44O8	nd	tr	nd	nd	nd	nd	nd	nd	nd	nd
238	1.1	Pipecolinic acid	C6H11NO2	nd	nd	nd	tr	nd	nd	nd	nd	nd	nd
239	6.8	Phellodendri ne	C20H23NO 4	nd	nd	nd	nd	tr	nd	nd	nd	nd	nd

240	7	Thymine	C ₅ H ₆ N ₂ O ₂	nd	nd	nd	nd	nd	nd	nd	nd	tr
		Aldehydes (5)		0.02	0.03	0.08	0.03	0.05	tr	0.02	0.02	tr
241	7.7	Isovanillin	C ₈ H ₈ O ₃	nd	0.02	0.08	nd	0.05	nd	nd	nd	nd
242	1.1	5-Hydroxymethylfurfural	C ₆ H ₆ O ₃	0.02	tr	nd	0.03	nd	nd	nd	nd	nd
243	8.4	Syringaldehyde	C ₉ H ₁₀ O ₄	nd	nd	nd	nd	nd	nd	nd	0.02	nd
244	7.8	Helicid	C ₁₃ H ₁₆ O ₇	nd	nd	nd	nd	nd	nd	0.02	nd	nd
245	0.1	Anisaldehyde	C ₈ H ₈ O ₂	nd	tr	nd	nd	tr	nd	nd	nd	nd
		Ketones (3)		0.09	0.27	0.06	0.26	0.12	0.31	tr	0.34	0.25
246	8.2	(tb-B3) 7-O-methylmangiferin	C ₂₀ H ₂₀ O ₁₁	0.09	0.25	0.06	0.24	0.12	0.31	nd	0.33	0.25
247	9.5	Agrimol B	C ₃₇ H ₄₆ O ₁₂	nd	0.02	nd	0.02	nd	nd	nd	nd	nd

248	12	Raspberry ketone	C10H12O2	nd	tr	tr	tr	tr	nd	nd	0.01	nd
		Phytosterols (2)		nd	tr	nd	nd	tr	nd	nd	nd	nd
249	6.1	Epibrassinolide	C28H48O6	nd	tr	nd	nd	nd	nd	nd	nd	nd
250	16	Hydroxyecdysone	C27H44O7	nd	nd	nd	nd	tr	nd	nd	nd	nd
		Others (26)		0.05	tr	0.02	0.09	0.03	0.06	0.04	0.05	0.06
251	6.2	Hydroxytyrosol	C8H10O3	tr	nd	tr	tr	tr	nd	nd	nd	0.02
252	5.9	Tyrosol	C8H10O2	tr	nd	tr	tr	tr	nd	nd	tr	nd
253	4.8	bomyl acetate	C12H20O2	tr	tr	tr	nd	tr	tr	tr	nd	tr
254	9.3	Ligustilide	C12H14O2	nd	tr	nd	nd	nd	nd	nd	nd	nd
255	12	Isomucronulato	C17H18O5	nd	nd	tr	0.02	nd	nd	nd	nd	nd
256	16	Liriopesides B	C39H62O12	tr	nd	tr	tr	tr	tr	nd	nd	nd

257	15	Nobiletin	C ₂₁ H ₂₂ O ₈	tr	nd	tr	nd	tr	nd	nd	nd	nd
258	9.7	Cistanoside C	C ₃₀ H ₃₈ O ₁₅	nd	nd	nd	nd	nd	0.04	nd	nd	0.03
259	1.1	(tb-C1) PolygalaxanthoneVI	C ₂₃ H ₂₆ O ₁₂	0.03	nd	nd	nd	nd	nd	nd	nd	nd
260	8.3	epimeredinoside A	C ₃₁ H ₄₀ O ₁₅	nd	nd	nd	nd	nd	0.02	nd	0.02	nd
261	17	8-Gingerol	C ₁₉ H ₃₀ O ₄	nd	nd	nd	0.05	nd	nd	nd	nd	nd
262	4.7	α-Mangostin	C ₂₄ H ₂₆ O ₆	nd	nd	nd	nd	nd	nd	0.03	nd	nd
263	9.4	Sodium Taurocholate	C ₂₆ H ₄₄ NNaO ₇ S	nd	nd	nd	0.01	tr	nd	nd	nd	nd
264	20	D-Sorbitol	C ₆ H ₁₄ O ₆	tr	tr	nd	nd	nd	nd	tr	nd	nd
265	9	(-)- Syringaresnol-4-O-β-D- apiofuranosyl-(1→2)-β-D- glucopyran	C ₃₃ H ₄₄ O ₁₇	nd	nd	nd	nd	nd	nd	nd	tr	nd

266	5.4	Drcorhodin perchlorate	C17H14O3	nd	nd	nd	nd	nd	nd	nd	tr	nd
267	7.6	Levodopa	C9H11NO4	nd	nd	nd	tr	nd	nd	nd	nd	nd
268	13	Scopolamine Hydrobromi de	C17H21NO 4	nd	nd	nd	nd	nd	nd	nd	tr	nd
269	14	Tauroursode oxycholic acid	C26H45NO 6S	nd	nd	nd	nd	nd	nd	nd	nd	tr
270	10	Phenobarbit al	C12H12N2 O3	nd	nd	nd	nd	nd	nd	nd	tr	nd
271	6.6	Atropine sulfate	C17H23NO 3	tr	nd	nd	nd	nd	nd	nd	nd	nd
272	9.7	4- Hydroxytolb utamide	C12H18N2 O4S	nd	nd	tr	nd	nd	nd	nd	nd	nd
273	5.3	Esculin hydrate	C15H16O9	nd	nd	nd	nd	nd	nd	nd	0.02	nd
274	11	Butylparabe n	C11H14O3	nd	nd	nd	nd	0.02	nd	nd	nd	0.01

275	6.2	Oxyresveratrol	C ₁₄ H ₁₂ O ₄	nd	tr	nd	nd	nd	nd	nd	nd	nd
276	8.4	(-)-gallo catechin	C ₁₅ H ₁₄ O ₇	nd	nd	nd	nd	nd	nd	tr	nd	nd

“nd” indicates that the substance was not detected under analytical conditions used; “tr”, trace (<0.01%)

Supplementary Table S4. Relative content (%) of bioactive compounds belonging to different biochemical classes in the newly grown leaves of nine wild tree peony species.

	<i>P. jishanensis</i>	<i>P. qiui</i>	<i>P. decomposita</i>	<i>P.ostii</i>	<i>P.rockii</i>	<i>P.lutea</i>	<i>P. delavayi</i>	<i>P. ludlowii</i>	<i>P. potaninii</i>
Terpenoids	63.80	73.62	46.66	11.21	64.65	55.88	37.96	69.93	70.01
Flavonoids	33.68	23.30	49.53	82.64	31.92	38.10	42.37	22.20	25.28
Lipids	0.23	0.61	0.93	1.60	1.04	1.45	3.69	1.90	0.64
Hydrocarbons	0.39	0.51	0.68	0.12	0.34	0.99	6.82	0.42	2.12
Glycosides	0.24	0.53	0.98	1.51	0.26	1.09	3.32	3.66	0.55
Carboxylic Acids	1.43	0.93	0.73	1.82	1.11	1.72	3.26	1.10	0.62
Amino acids	0.01	0.02	0.04	0.03	0.06	0.03	0.10	0.07	0.38
Phenolic acids	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Benzopyrans	0.03	0.12	0.02	0.09	0.11	0.14	0.14	0.14	0.05
Quinones	0.00	0.00	0.01	0.00	0.01	0.01	0.02	0.00	0.01

Alkaloids	0.01	0.02	0.03	0.01	0.03	0.03	0.02	0.01	0.02
Vitamins	0.00	0.02	0.23	0.49	0.25	0.19	0.00	0.15	0.00
Heterocyclic Compounds	0.00	0.01	0.01	0.07	0.03	0.00	2.25	0.00	0.00
Aldehydes	0.02	0.03	0.08	0.03	0.05	0.00	0.02	0.02	0.00
Ketones	0.09	0.27	0.06	0.26	0.12	0.31	0.00	0.34	0.25
Others	0.05	0.01	0.02	0.09	0.03	0.06	0.04	0.05	0.06

Supplementary Table S5. Absolute content (mg/ml) of 42 differential metabolites in newly grown leaves of nine wild tree peony species.

NO.	RT	Compound	Formula	Class	Absolute content (mg/ml)								
					<i>P. jishanensis</i>	<i>P. qiui</i>	<i>P. decomposita</i>	<i>P. ostii</i>	<i>P. rockii</i>	<i>P. lutea</i>	<i>P. delavayi</i>	<i>P. ludlowii</i>	<i>P. potaninii</i>
1	6.24	Paeoniflorin	C ₂₃ H ₂₈ O ₁₁	Terpenoids	93.330 ±2.419 ^e	101.230 ±4.616 ^{de}	214.293 ±18.983 ^a	118.639 ±7.026 ^{cd}	152.795 ±2.539 ^b	219.396 ±1.967 ^a	138.909 ±3.575 ^{bc}	233.969 ±5.723 ^a	24.415 ±3.249 ^f
2	7.37	Luteoloside	C ₂₁ H ₂₀ O ₁₁	Flavonoids	20.279 ±1.219 ^d _e	219.940 ±7.422 ^a	57.737± 14.025 ^c	12.037± 1.646 ^e	12.348 ±0.971 ^e	32.506 ±0.752 ^d	16.523± 0.701 ^{de}	148.662 ±9.186 ^b	2.939± 0.246 ^e
3	7.53	Hyperin	C ₂₁ H ₂₀ O ₁₂	Flavonoids	16.905 ±0.435 ^c	61.136± 5.971 ^b	18.977± 1.014 ^c	1.341±0 .394 ^d	3.340± 0.457 ^d	4.725± 0.128 ^d	16.322± 0.813 ^c	103.124 ±13.084 ^a	3.314± 0.372 ^d
4	5.88	Kaempferol-3-gentio bioside	C ₂₇ H ₃₀ O ₁₆	Flavonoids	2.924± 0.253 ^{bc}	11.325± 0.918 ^a	3.987±2 .146 ^b	0.315±0 .069 ^e	1.241± 0.041 ^{de}	0 ^e	2.342±0 .260 ^{cd}	0 ^e	1.141± 0.076 ^{de}
5	9.1	Quercetin dihydrate	C ₁₅ H ₁₀ O ₇	Flavonoids	1.167± 0.163 ^b	1.712±0 .784 ^b	0.397±0 .182 ^b	0.053±0 .005 ^b	0.060± 0.002 ^b	0.379± 0.020 ^b	1.153±0 .101 ^b	23.287± 3.749 ^a	0.383± 0.116 ^b
6	9.6	Luteolin	C ₁₅ H ₁₀ O ₆	Flavonoids	1.042± 0.109 ^c	7.781±0 .447 ^b	2.326±0 .151 ^c	0.283±0 .037 ^c	0.332± 0.013 ^c	2.868± 0.112 ^c	1.222±0 .021 ^c	22.451± 3.409 ^a	0.870± 0.094 ^c
7	10	Isorhamnetin	C ₈ H ₈ O ₃	Flavonoids	0.820± 0.091 ^{bc}	1.601±0 .666 ^b	0.618±0 .787 ^{bc}	0.059±0 .031 ^c	0.063± 0.001 ^c	0.176± 0.017 ^c	0.751±0 .012 ^{bc}	6.964±1 .209 ^a	0.125± 0.045 ^c
8	8.07	Apigenin-7-glucoside	C ₂₁ H ₂₀ O ₁₀	Flavonoids	0.437± 0.047 ^e	103.290 ±9.263 ^a	73.676± 4.831 ^b	18.031± 3.224 ^d	37.842 ±2.760 ^c	26.300 ±1.726 ^d	0.160±0 .025 ^e	0.518±0 .148 ^e	8.019± 0.887 ^e

9	8.21	7-O-methylmangiferin	C20H20O11	Ketones	0.167±0.005 ^{bc}	0.813±0.686 ^b	0.306±0.006 ^{abc}	0.391±0.056 ^{abc}	0.180±0.065 ^{bc}	0.836±0.107 ^a	0.656±0.009 ^{ab}	0 ^c	0.154±0.017 ^{bc}
10	8.1	Rhoifolin	C27H30O14	Flavonoids	0.133±0.042 ^e	40.571±7.332 ^b	57.736±6.212 ^a	4.755±0.486 ^{de}	13.468±1.889 ^c	4.858±0.718 ^{de}	0.083±0.004 ^e	0.819±0.084 ^e	11.082±1.389 ^{cd}
11	9.57	Cantharidin	C10H12O4	Flavonoids	0.149±0.015 ^c	2.271±0.938 ^a	1.187±0.144 ^b	0.585±0.014 ^{bc}	0.254±0.014 ^c	0.980±0.082 ^{bc}	0.300±0.017 ^c	0.844±0.125 ^{bc}	0.122±0.007 ^c
12	6.15	Curcigolide	C22H26O11	Glycosides	0.119±0.004 ^b	0.362±0.181 ^b	0.159±0.005 ^b	0.055±0.010 ^b	0.153±0.013 ^b	0.198±0.014 ^b	0.266±0.041 ^b	4.349±1.136 ^a	0.128±0.039 ^b
13	1.13	Gallic acid	C7H6O5	Carboxylic Acids	0.067±0.006 ^b	0 ^d	0.401±0.012 ^a	0.041±0.002 ^c	0 ^d	0 ^d	0 ^d	0 ^d	0 ^d
14	7.65	Isovanillin	C8H8O3	Aldehydes	0.038±0.002 ^b	0.300±0.138 ^a	0 ^b	0.365±0.052 ^a	0.079±0.01 ³	0 ^b	0 ^b	0 ^b	0 ^b
15	7.69	Phloridzin	C21H24O10	Glycosides	0.028±0.002 ^c	0.401±0.295 ^b	0.022±0.019 ^c	0 ^c	0.414±0.011 ^b	0 ^c	0.151±0.004 ^c	0.778±0.050 ^a	0.005±0.009 ^c
16	4.96	Loganin	C17H26O10	Terpenoids	0.033±0.006 ^{cd}	0.256±0.041 ^a	0.018±0.031 ^{cd}	0.009±0.016 ^{cd}	0.061±0.005 ^{bc}	0.106±0.009 ^b	0.266±0.026 ^a	0 ^d	0 ^d
17	5.36	Bilobalide	C15H18O8	Terpenoids	0.026±0.006 ^b	0.219±0.111 ^b	0.659±0.973 ^b	0.046±0.005 ^b	0 ^b	0.091±0.023 ^b	0 ^b	9.206±1.558 ^a	0.151±0.033 ^b
18	5.92	Complanatolide	C28H32O16	Glycosides	0.014±0.006 ^{bc}	0.014±0.024 ^{bc}	0.030±0.004 ^b	0.004±0.004 ^c	0.0273±0.002 ^b	0 ^c	0 ^c	0.156±0.007 ^a	0.001±0.002 ^c
19	17.48	Curcumin	C15H20O4	Terpenoids	0.002±0.001 ^c	2.656±0.414 ^a	0.498±0.049 ^c	0.113±0.013 ^c	0.233±0.010 ^c	1.168±0.034 ^b	0.002±0.004 ^c	0.006±0.011 ^c	1.349±0.359 ^b
20	10.44	Apigenin	C15H10O5	Flavonoids	0 ^c	0 ^c	0.089±0.023 ^a	0.082±0.007 ^a	0.040±0.012 ^b	0 ^c	0 ^c	0 ^c	0 ^c
21	6.11	Epicatechin gallate	C22H18O10	Carboxylic Acids	0 ^b	7.336±2.325 ^a	7.978±1.404 ^a	0.698±0.139 ^b	0.751±0.111 ^b	0.291±0.018 ^b	0 ^b	0 ^b	0.129±0.031 ^b
22	8.24	Spinosin	C28H32O15	Flavonoids	0 ^b	1.006±0.052 ^b	0.034±0.059 ^b	0 ^b	0 ^b	0.099±0.023 ^b	7.35±0.336 ^b	76.139±12.144 ^a	0.916±1.499 ^b

23	10.05	HeteroclitinD	C27H30O8	Hydrocarbons	0 ^c	0 ^c	2.912±0.699 ^a	0.904±0.262 ^b	0.915±0.042 ^b	3.140±0.471 ^a	0.779±0.025 ^{bc}	0 ^c	0.263±0.068 ^{bc}
24	15.6	Harpagide	C15H24O10	Glycosides	0.003±0.001 ^b	0.015±0.005 ^b	0.012±0.004 ^b	0 ^b	0 ^b	0.003±0.005 ^b	0.003±0.006 ^b	0.096±0.017 ^a	0 ^b
25	0.01	Ferulic Acid	C10H10O4	Carboxylic Acids	0 ^b	0 ^b	0.001±0.002 ^b	0 ^b	0.005±0.000 ^a	0 ^b	0 ^b	0 ^b	0 ^b
26	1.09	Malic acid 5-Hydroxymethylfurfural	C4H6O5	Carboxylic Acids	0.213±0.035 ^b	0 ^b	0 ^b	0.176±0.018 ^b	0 ^b	0.371±0.020 ^b	0.907±0.059 ^b	5.533±1.069 ^a	0.191±0.033 ^b
27	1.12	Bomyl acetate	C6H6O3	Aldehydes	0 ^c	0.132±0.036 ^a	0 ^c	0.004±0.006 ^c	0.047±0.006 ^b	0 ^c	0 ^c	0 ^c	0 ^c
28	4.76	Gentioic acid	C12H20O2	Carboxylic Acids	0 ^a	0 ^a	0.003±0.005 ^a	0.001±0.002 ^a	0.007±0.001 ^a	0.002±0.004 ^a	0.004±0.001 ^a	0.007±0.012 ^a	0 ^a
29	5.69	4-Naringenin	C16H20O9	Glycosides	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0.125±0.029 ^b	0.193±0.113 ^b	1.321±0.443 ^a	0.02±0.035 ^b
30	5.71	Hydroxycoumarin	C9H6O3	Benzopyrans	0 ^b	0 ^b	0 ^b	0.001±0.002 ^b	0.004±0.000 ^a	0 ^b	0 ^b	0 ^b	0 ^b
31	6.69	Benzoic acid	C10H12O5	Phenolic acids	0.001±0.002 ^c	0.043±0.011 ^a	0.013±0.003 ^b	0.001±0.001 ^c	0 ^c	0 ^c	0 ^c	0 ^c	0 ^c
32	7.34	Naringenin	C15H12O5	Flavonoids	0.023±0.001 ^d	0.203±0.030 ^b	0.114±0.009 ^{bcd}	0.056±0.012 ^{cd}	0.146±0.038 ^{bc}	0.013±0.023 ^d	0.077±0.006 ^{cd}	0.681±0.101 ^a	0.054±0.012 ^{cd}
33	7.83	Ellagic Acid	C14H6O8	Benzopyrans	0.095±0.031 ^b	0.206±0.045 ^a	0 ^c	0.163±0.221 ^a	0 ^c	0.164±0.047 ^a	0 ^c	0 ^c	0 ^c
34	8.29	Epimeredioside A	C31H40O15	Others	0 ^c	0 ^c	0 ^c	0 ^c	0 ^c	0 ^c	0.040±0.03 ^a	0 ^c	0.014±0.002 ^b
35	8.49	Lobetyolin	C20H28O8	Hydrocarbons	0 ^a	0.043±0.074 ^a	0.017±0.030 ^a	0.005±0.003 ^a	0.009±0.002 ^a	0 ^a	0 ^a	0 ^a	0 ^a
36	8.58	Cichoric acid	C22H18O12	Carboxylic Acids	0 ^a	0 ^a	0 ^a	0 ^a	0.008±0.013 ^a	0 ^a	0.003±0.001 ^a	0 ^a	0 ^a

37	9.15	Dihydroquercetin	C ₁₅ H ₁₂ O ₇	Flavonoids	0 ^b	0.427±0.171 ^a	0.295±0.106 ^a	0 ^b	0 ^b	0.039±0.068 ^b	0 ^b	0 ^b	0.0147±0.003 ^b
38	9.9	Benzoylepiflorin	C ₃₀ H ₃₂ O ₁₂	Terpenoids	0 ^c	0 ^c	0 ^c	0.756±0.017 ^b	1.464±0.028 ^a	0 ^c	0 ^c	0 ^c	0 ^c
39	10.59	Diosmetin	C ₁₆ H ₁₂ O ₆	Flavonoids	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0 ^b	0.014±0.002 ^a
40	11.92	Raspberry ketone	C ₁₀ H ₁₂ O ₂	Ketones	0.001±0.001 ^a	0.001±0.001 ^a	0.002±0.004 ^a	0 ^a	0 ^a	0 ^a	0.008±0.014 ^a	0 ^a	0 ^a
41	16.01	Catharine	C ₂₁ H ₂₄ N ₂ O ₂	Alkaloids	0.002±0.003 ^a	0.008±0.014 ^a	0 ^a	0.004±0.001 ^a	0 ^a	0.004±0.006 ^a	0 ^a	0 ^a	0 ^a
42	16.23	Kaurenoic acid	C ₂₀ H ₃₀ O ₂	Terpenoids	0 ^c	0 ^c	0 ^c	0.003±0.001 ^b	0.001±0.002 ^{bc}	0 ^c	0.007±0.001 ^a	0 ^c	0.001±0.001 ^{bc}

Supplementary Table S6. Antioxidant properties of the extracts from the newly grown leaves of WTPS ($n = 3 \pm \text{SD}$).

	ABTS (gTE/100g DW)	DPPH (gTE/100g DW)	FRAP (gTE/100g DW)	ORAC (gTE/100g DW)
<i>P. jishanensis</i>	38.158±0.66 ^b	48.68±0.62 ^a	20.89±0.72 ^b	21.14±0.11 ^a
<i>P. qiui</i>	29.00±0.77 ^c	17.90±0.16 ^e	17.79±1.44 ^c	15.24±0.27 ^d
<i>P. decomposita</i>	27.54±0.26 ^{de}	17.59±0.15 ^e	13.60±1.20 ^d	13.25±0.32 ^{ef}
<i>P. ostii</i>	27.96±0.74 ^d	37.19±0.73 ^c	26.51±0.21 ^a	19.47±0.39 ^b
<i>P. rockii</i>	29.69±0.27 ^c	38.42±0.16 ^c	17.67±1.04 ^c	16.34±0.33 ^c
<i>P. lutea</i>	49.62±0.13 ^a	42.39±1.06 ^b	26.23±0.10 ^a	20.32±0.51 ^{ab}
<i>P. delavayi</i>	27.05±0.17 ^{de}	30.77±0.40 ^d	16.05±0.30 ^c	12.34±0.33 ^f
<i>P. ludlowii</i>	27.00±0.13 ^{de}	21.88±1.78 ^d	13.14±0.40 ^d	6.70±0.20 ^g
<i>P. potaninii</i>	26.72±0.07 ^e	36.66±0.57 ^c	21.40±0.73 ^b	13.38±0.33 ^e

Different superscript letters in each column indicate significant differences ($P < 0.05$).

Supplementary Table S7. Minimum inhibitory concentrations of the newly grown leaves of nine wild tree peony species against the bacteria tested ($n = 3$).

Nine WTPS	Minimum inhibitory concentration (mg/mL)							
	<i>S. aureus</i>	<i>S.hemolytis-β</i>	<i>P. acnes</i>	<i>L. monocytogenes</i>	<i>P. aeruginosa</i>	<i>E. coli</i>	<i>S. enterica</i>	<i>P. vulgaris</i>
<i>P. jishanensis</i>	1.56	12.5	3.13	3.13	3.13	3.13	1.56	6.25
<i>P. qiui</i>	3.13	6.25	6.25	3.13	3.13	6.25	1.56	6.25
<i>P. decomposita</i>	1.56	6.25	3.13	3.13	6.25	6.25	6.25	6.25
<i>P. ostii</i>	0.78	12.5	3.13	1.56	6.25	3.13	6.25	6.25
<i>P. rockii</i>	0.78	12.5	3.13	0.78	12.5	6.25	1.56	3.13
<i>P. lutea</i>	1.56	12.5	6.25	0.78	12.5	12.5	3.13	3.13
<i>P. delavayi</i>	1.56	25	6.25	6.25	12.5	12.5	3.13	6.25
<i>P. ludlowii</i>	3.13	12.5	12.5	6.25	6.25	12.5	3.13	12.5
<i>P. potaninii</i>	1.56	12.5	3.13	3.13	6.25	12.5	6.25	6.25
Kanamycin	0.16	0.08	2.5	0.31	2.5	1.25	1.25	0.16

Supplementary Table S8. Absorbance values of different concentrations of gallic acid standard solutions at 765 nm.

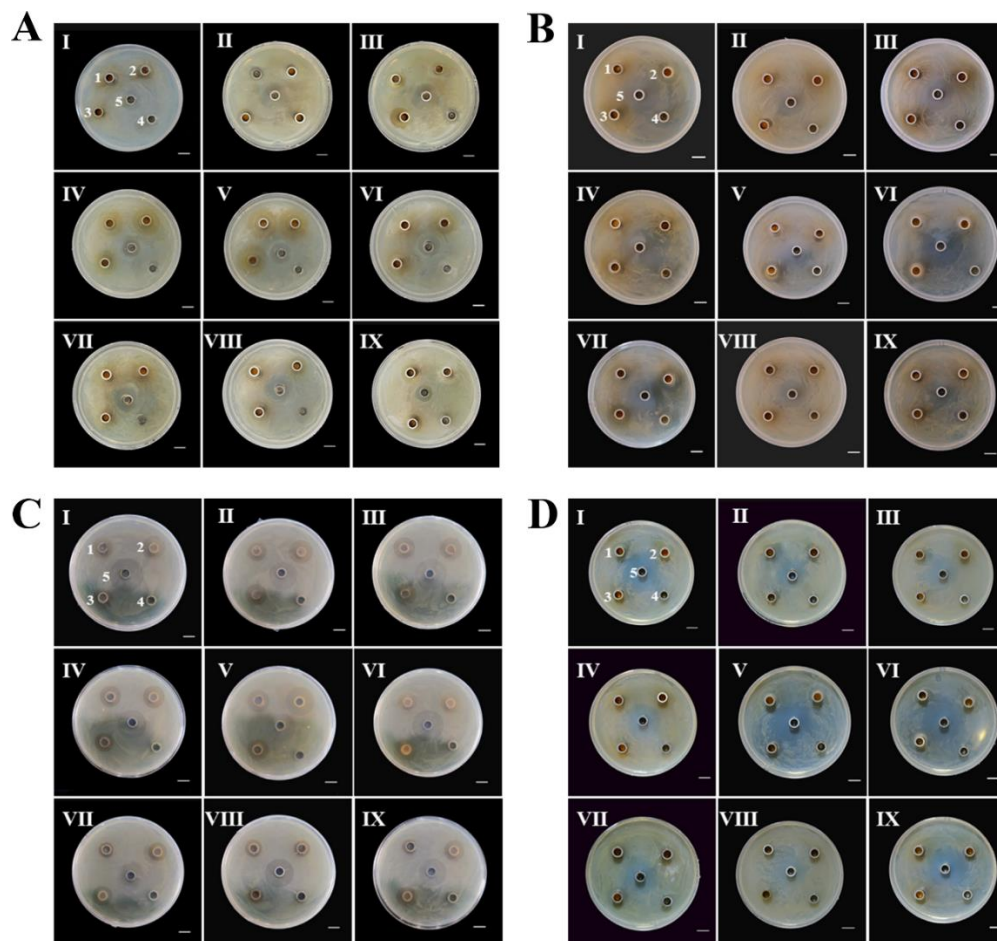
Absorbance values of different concentrations of gallic acid standard solutions at 765 nm										
Concentrations of gallic acid standard solutions (mg/ml)	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
Absorbance values	0	0.167	0.2457	0.3463	0.4034	0.572	0.6661	0.77	0.8764	0.9663

Supplementary Table S9. Absorbance values of different concentrations of rutin standard solutions at 506 nm.

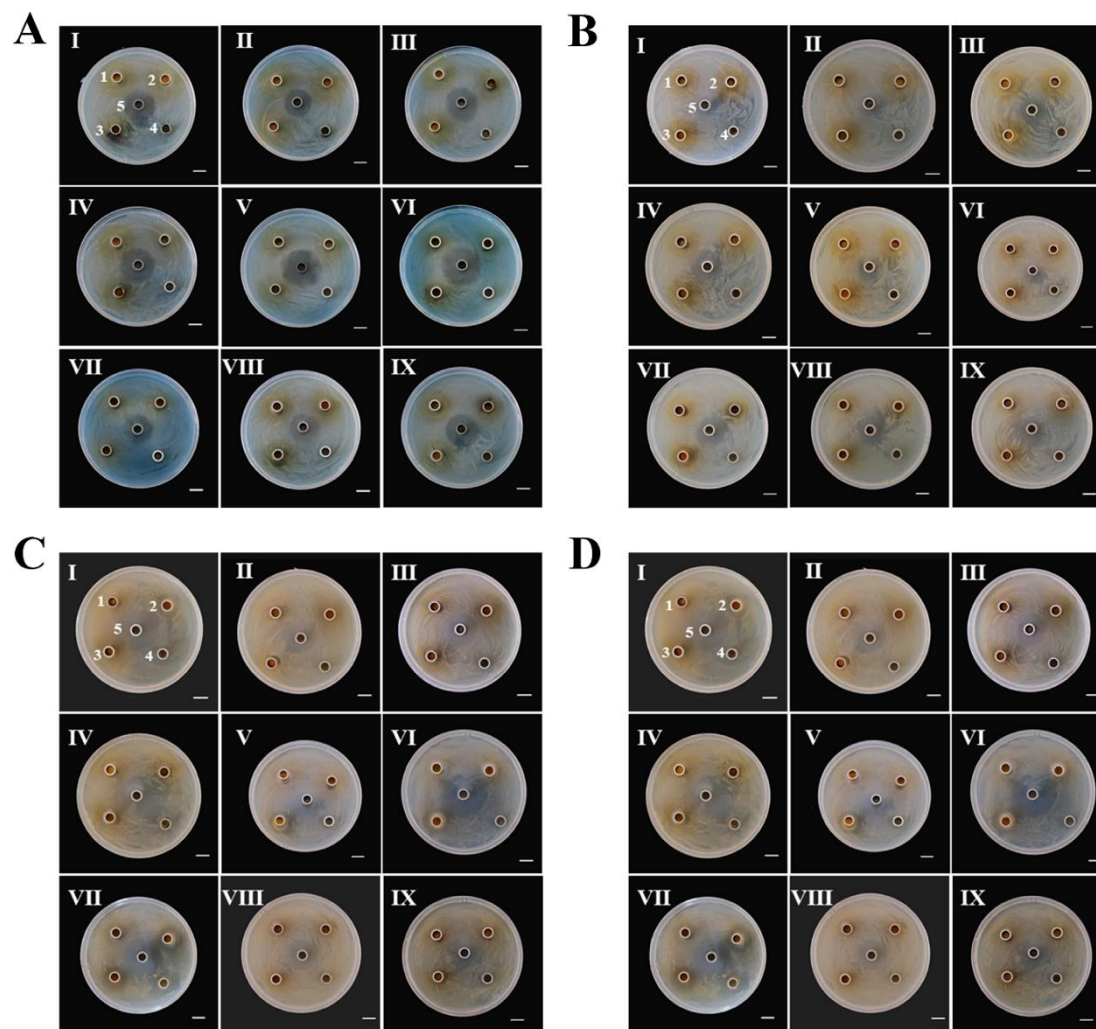
Absorbance values of different concentrations of rutin standard solutions at 506 nm										
Concentrations of rutin standard solutions (mg/ml)	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
Absorbance values	0	0.1109	0.1645	0.205	0.2513	0.3004	0.3594	0.4035	0.4297	0.48

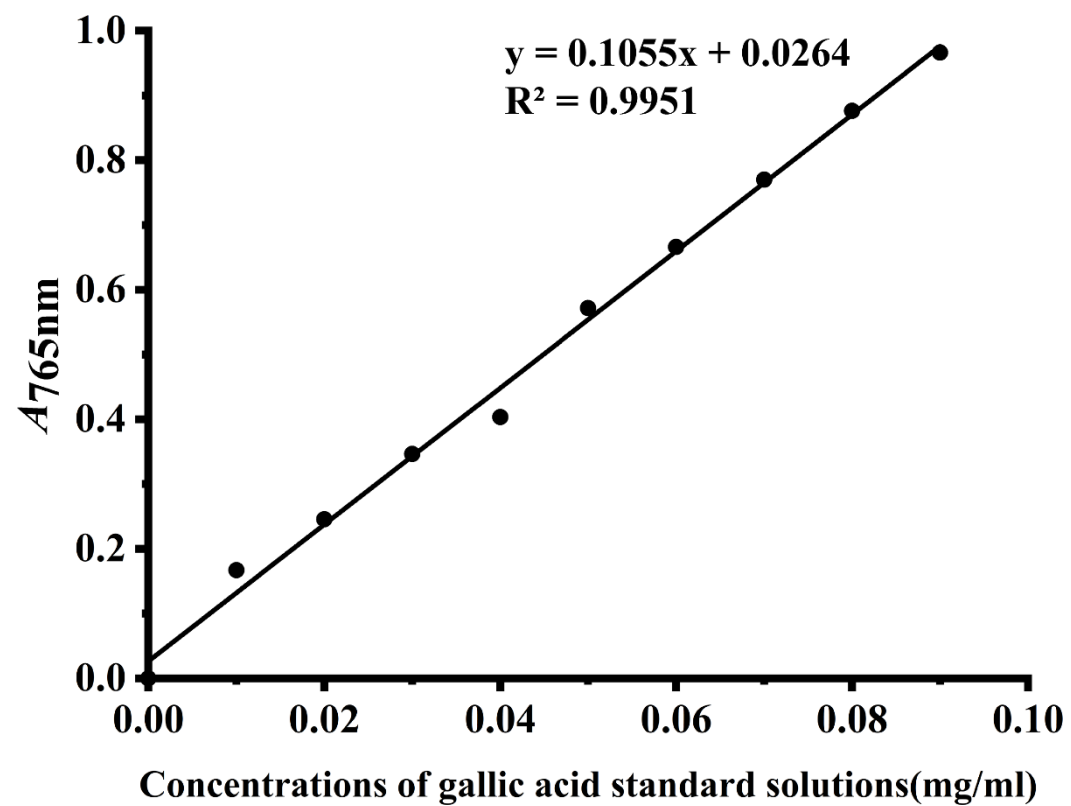
Supplementary Figures

Supplementary Figure S1. DIZ of four Gram-positive bacteria after the application of peony leaf extracts at a concentration of 0.2 mL/cup. Bars = 10 mm. (A) *S. aureus*. (B) *S. hemolytis-β*. (C) *P. acnes*. (D) *L. monocytogenes*. (I) *P. jishanensis*. (II) *P. qiui*. (III) *P. decomposita*. (IV) *P. ostii*. (V) *P. rockii*. (VI) *P. lutea*. (VII) *P. delavayi*. (VIII) *P. ludlowii*. (IX) *P. potaninii*. (1) Replicate 1. (2) Replicate 2. (3) Replicate 3. (4) Negative controls (Methanol). (5) Positive controls (Kanamycin).



Supplementary Figure S2. DIZ of four Gram-negative bacteria after the application of peony leaf extracts at a concentration of 0.2 mL/cup. Bars = 10 mm. (A) *P. aeruginosa*. (B) *E. coli*. (C) *P. vulgaris*. (D) *S. enterica*. (I) *P. jishanensis*. (II) *P. qiui*. (III) *P. decomposita*. (IV) *P. ostii*. (V) *P. rockii*. (VI) *P. lutea*. (VII) *P. delavayi*. (VIII) *P. ludlowii*. (IX) *P. potaninii*. (1) Replicate 1. (2) Replicate 2. (3) Replicate 3. (4) Negative controls (Methanol). (5) Positive controls (Kanamycin).



Supplementary Figure S3. The regression curves with different concentrations of gallic acid standard solutions

Supplementary Figure S4. The regression curves with different concentrations of rutin standard solutions

