

Discovery of small-molecule antagonists of orexin 1/2 receptors from traditional Chinese medicinal plants with a hypnotic effect

Jia He ^{a,b,1}, Jing Fang ^{a,b,1}, Yuxin Wang ^c, Chengyu Ge ^{a,b}, Shao Liu ^{a,b*}, Yueping Jiang ^{a,b*}

^a *Department of Pharmacy, Xiangya Hospital, Central South University, Changsha, 410008, China*

^b *Institute for Rational and Safe Medication Practices, National Clinical Research Center for Geriatric Disorders, Xiangya Hospital, Central South University, Changsha, 410008, China*

^c *College of Pharmacy, Dali University, Dali, 671000, China*

¹These authors contributed equally to this work

Correspondence to:

Shao Liu, PhD. Department of pharmacy, Xiangya Hospital, Central South University. No. 87 Xiang Ya Road Changsha 410008, People's Republic of China. E-mail: liushao999@csu.edu.cn

Or Yueping Jiang, PhD. Department of pharmacy, Xiangya Hospital, Central South University. No. 87 Xiang Ya Road Changsha 410008, People's Republic of China. E-mail: jiangyueping@csu.edu.cn

Supporting Materials

Table S1. Fifteen medicinal plants were screened for the treatment of insomnia by searching in Chinese Pharmacopoeia

TCM Name	Key small molecule types	References
<i>Lilium lancifolium</i> thumb	Steroidal saponins, Phenolic acids, Phenylpropanoids, Alkaloids, Flavonoids	40-42
<i>Panax ginseng</i> C.A mey	Saponins, Phytosterols, Flavonoids, Polyacetylenes, Fatty acids, Coumarins, Polyphenols, Phenolic acids, Cyclic dipeptides	43-44
<i>Ziziphus jujuba</i> mill. Var	Saponins, Alkaloids, Flavonoids	45-47
<i>Bambusa tuldoidea</i> munro	Saponins, Lignans	48-49
<i>Physoclaina infundibularis</i> kuang	Alkaloids, Coumarins, Flavonoids, Phenolic acids	50-51
<i>Albizia julibrissin</i> durazz bark	Flavonoids, Triterpenoid saponins, Lignans, Phytosterols	52-53
<i>Albizia julibrissin</i> durazz flower	Flavonoids, Triterpenoid saponins	54
<i>Polygala tenuifolia</i> willd	Triterpenoid saponins, Xanthones	55-57
<i>Ganoderma lucidum</i>	Triterpenoid saponins, Alkaloids	59-62
<i>Acanthopanax senticosus</i> harms	Flavonoids, Triterpenoid saponins, Lignans, Coumarins	63-64
<i>Apocynum venetum</i>	Flavonoids, Organic acids, Phoroglucinols, Phytosterols, Other glycosides	65-67

Platyclusus orientalis franco Fatty acids, Triterpenoid saponins, Terpenes, 68-70
Polyphenols, Flavonoids

Polygonum multiflorum Anthraquinones, Flavonoids, Phytosterols, 71-73
thumb Stilbenes、Anthocyanins

Nelumbo nucifera gaertn Alkaloids, Phenolic acids, Flavonoids 74-75
seeds

Plumula Nelumbinis Alkaloids, Flavonoids, Phytosterols 76-77

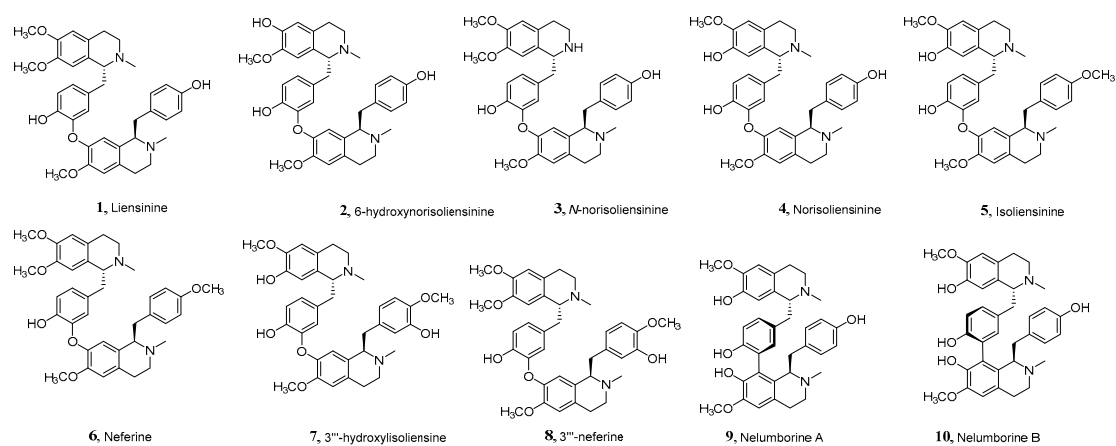


Figure S1. The structure of ten bisbenzylisoquinoline alkaloids

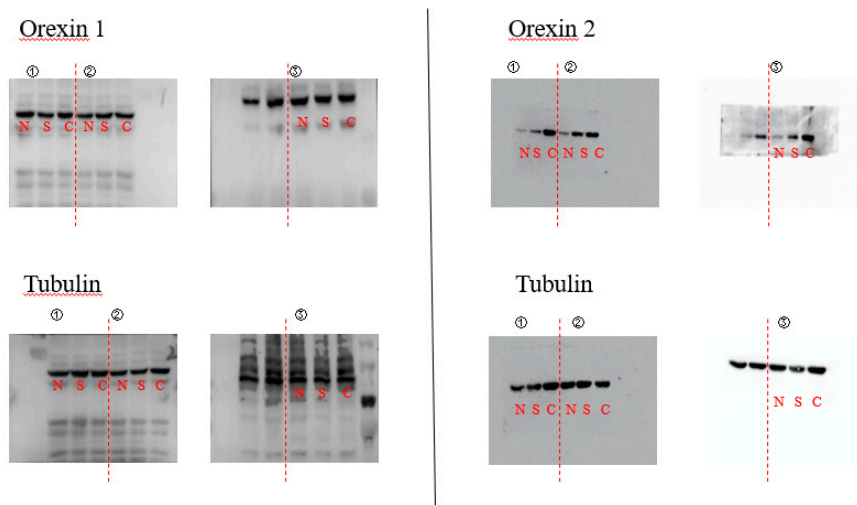


Figure S2. The original image of western bolts (C:Control; S:Suvorexant; N:Neferine)

Table S2 Chemical compositions in *Lilium lancifolium* Thumb

No.	Compound	Type	R
1	(25S) -spirost-5-ene- β 27-diol 3-O- β -D-glucoside (lilioglycoside B)	S ₁	R ₁ = G ₁ , R ₂ = R ₃ = H
2	(25S) -spirost-5-en- β 27-diol 3-O-[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside (deacylbrownioside /lilioglycoside E)	S ₁	R ₁ = G ₂ , R ₂ = R ₃ = H
3	27-O-(3-hydroxy-3-methylglutaroyl) isonarthogenin 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁	R ₁ = G ₃ , R ₂ = H , R ₃ = HMG
4	(25S) -27-hydroxyspirost-5-en- β -yl 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₁	R ₁ = G ₄ , R ₂ = R ₃ = H
5	(25S) -spirost-5-ene- β 27-diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside	S ₁	R ₁ = G ₅ , R ₂ = R ₃ = H
6	(25S) -spirost-5-ene- β 27-diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁	R ₁ = G ₃ , R ₂ = R ₃ = H
7	(25S) -spirost-5-ene- β 27-diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 3)]- β -D-glucoside (lilioglycoside H)	S ₁	R ₁ = G ₆ , R ₂ = R ₃ = H
8	(25S) -spirost-5-ene- β 27-diol 3-O- β -D-glu-(1 \rightarrow 3)-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁	R ₁ = G ₇ , R ₂ = R ₃ = H
9	27-O-[(3S) -3-O- β -D-glu-3-methylglutaroyl] isonarthogenin 3-O-[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside	S ₁	R ₁ = G ₂ , R ₂ = H , R ₃ = 3-O-glu-HMG
10	(25S) -spirost-5-ene- β ,17 α 27-triol 3-O- β -D-glu-(1 \rightarrow 2)-O- β -D-glu-(1 \rightarrow 4)- β -D-glucoside	S ₁	R ₁ = G ₈ , R ₂ = OH , R ₃ = H
11	(25S) -spirost-5-ene- β ,17 α 27-triol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 2)-O- β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁	R ₁ = G ₉ , R ₂ = OH , R ₃ = H
12	(25S) -5 α -spirostane- β ,17 α 27-triol 3-O- β -D-glu-(1 \rightarrow 2)-O- β -D-glu-(1 \rightarrow 4)- β -D-glucoside	S ₂	R = G ₈
13	(24S ,25S) - β ,17 α ,24-trihydroxy-5 α -spirostan-6-one 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₃	R = G ₂
14	(25R) -spirost-5-en- β -ol 3-O- β -D-glucoside (lilioglycoside A/trillin)	S ₄	R = G ₁

Table S2(continued)

No.	Compound	Type	R
14	(25R)-spirost-5-en-3 β -ol 3-O- β -D-glucoside (lilioglycoside A/trillin)	S ₄	R = G ₁
15	(25R)-spirost-5-en-3 β -ol 3-O-L-rha-(1 \rightarrow 2)-D-glucoside (lilioglycoside D/prosapogenin A of dioscin)	S ₄	R = G ₂
16	(25R)-spirost-5-en-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 3)]- β -D-glucoside (lilioglycoside G/gracillin)	S ₄	R = G ₆
17	(25R)-spirost-5-en-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₄	R = G ₄
18	(25R)-spirost-5-en-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)-O-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside (lililancifolside A)	S ₄	R = G ₅
19	dioscin	S ₄	R = G ₁₀
20	(25R)-spirost-5-ene-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-xyl-(1 \rightarrow 3)]- β -D-glucoside (ophiopogonin D')	S ₄	R = G ₁₁
21	diosgenin 3-O- β -D-glu-(1 \rightarrow 2)- β -D-glu-(1 \rightarrow 4)- β -D-galactoside (fukioside D)	S ₄	R = G ₁₂
22	diosgenin 3-O-[β -D-glu-(1 \rightarrow 2)]-[β -D-xyl-(1 \rightarrow 3)]- β -D-glu-(1 \rightarrow 4)- β -D-galactoside (aspidistrin)	S ₄	R = G ₁₃
23	(25R)-2 α ,3 β -dihydroxy-spirost-5-en-4 β -O- α -L-rha-(1 \rightarrow 2)- β -D-xyloside (atropuroside A)	S ₅	R = G ₁₄
24	(25R)-2 α ,3 β ,17 α -trihydroxy-spirost-5-en-4 β -O- β -D-xyloside (atropuroside C)	S ₅	R = G ₁₅
25	(25R)-spirost-5-en-3 β ,27-diol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₆	R ₁ = G ₂ , R ₂ = H
26	(25R)-27-(3-hydroxy-3-methylglutarate)-spirost-5-ene-3 β ,27-diol 3-O- β -D-glucoside (lilioglycoside C)	S ₆	R ₁ = G ₁ , R ₂ = HMG
27	(25R)-27-O-(3-hydroxy-3-methylglutaryl)-spirost-5-en-3 β ,27-diol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside (brownioside/lilioglycoside F)	S ₆	R ₁ = G ₂ , R ₂ = HMG
28	(25R)-27-[[S]-3-hydroxy-3-methylglutarate]-spirost-5-ene-3 β ,27-diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 3)]- β -D-glucoside (lilioglycoside I)	S ₆	R ₁ = G ₆ , R ₂ = HMG
29	(25R)-27-O-[[S]-3-hydroxy-3-methylglutaryl]-spirost-5-ene-3 β ,27-diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₆	R ₁ = G ₃ , R ₂ = HMG
30	(25R)-27-O-[[S]-3-hydroxy-3-methylglutaryl]-spirost-5-ene-3 β ,27-diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside	S ₆	R ₁ = G ₅ , R ₂ = HMG
31	(25R)-27-O-[[S]-3-hydroxy-3-methylglutaryl]-spirost-5 α -3 β ,27-diol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₇	R ₁ = G ₂ , R ₂ = HMG
32	(23S,25R)-23-hydroxyspirost-5-en-3 β -O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₈	R ₁ = G ₄ , R ₂ = R ₄ = H, R ₃ = OH
33	(25R,26R)-17 α -hydroxy-26-methoxyspirost-5-en-3 β -O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₈	R ₁ = G ₄ , R ₂ = OH, R ₃ = H, R ₄ = OMe
34	(25R,26R)-26-methoxyspirost-5-en-3 β -O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₈	R ₁ = G ₄ , R ₂ = R ₃ = H, R ₄ = OMe
35	(25R,26R)-26-methoxyspirost-5-en-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)-O-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside	S ₈	R ₁ = G ₅ , R ₂ = R ₃ = H, R ₄ = OMe
36	(25R,26R)-26-methoxyspirost-5-en-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₈	R ₁ = G ₃ , R ₂ = R ₃ = H, R ₄ = OMe
37	(25R,26R)-26-methoxyspirost-5-en-3 β -ol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₈	R ₁ = G ₂ , R ₂ = R ₃ = H, R ₄ = OMe
38	(25R,26R)-26-methoxyspirost-5-ene-3 β ,17 α -diol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₈	R ₁ = G ₂ , R ₂ = OH, R ₃ = H, R ₄ = OMe
39	(25R,26R)-26-methoxyspirost-5-ene-3 β ,17 α -diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₈	R ₁ = G ₃ , R ₂ = OH, R ₃ = H, R ₄ = OMe

Table S2(continued)

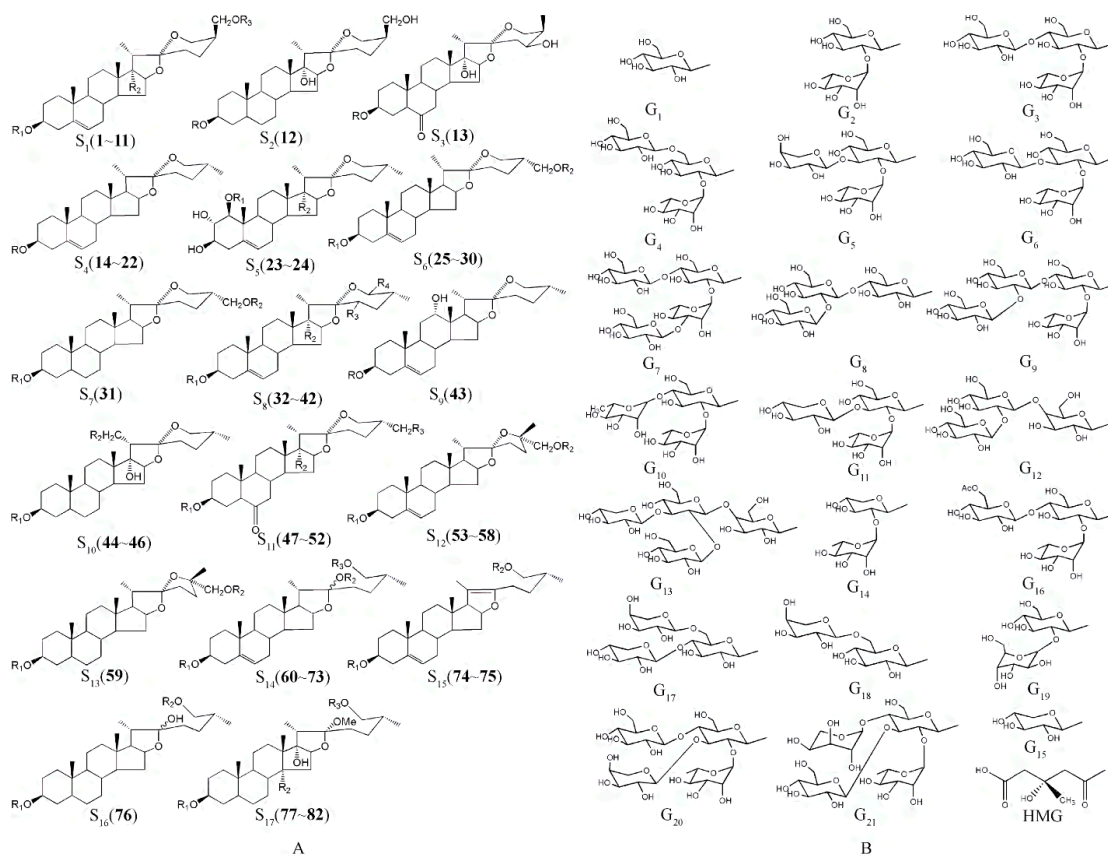
No.	Compound	Type	R
40	(25 <i>R</i> , 26 <i>R</i>)-26-methoxyspirost-5-ene-3 β , 17 α -diol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[6- <i>O</i> -acetyl- β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₈	R ₁ = G ₁₆ , R ₂ = OH, R ₃ = H, R ₄ = OMe
41	(25 <i>R</i> , 26 <i>R</i>)-26-ethoxyspirost-5-ene-3 β -ol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₈	R ₁ = G ₃ , R ₂ = R ₃ = H, R ₄ = OEt
42	(25 <i>R</i> , 26 <i>R</i>)-26-methoxyspirost-5-ene-3 β -ol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[6- <i>O</i> -acetyl- β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₈	R ₁ = G ₁₆ , R ₂ = R ₃ = H, R ₄ = OMe
43	(25 <i>R</i>)-spirost-5-en-3 β , 12 α -diol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₉	R = G ₃
44	(25 <i>R</i>)-3 β , 17 α -diol-5 α -spirostan 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁₀	R ₁ = G ₃ , R ₂ = H
45	(25 <i>R</i>)-5 α -spirostan-3 β , 17 α -diol 3- <i>O</i> - β -D-xy-(1 \rightarrow 4)-[α -L-ara-(1 \rightarrow 6)]- β -D-glucoside	S ₁₀	R ₁ = G ₁₇ , R ₂ = H
46	(25 <i>R</i>)-spirost-3 β , 17 α , 21-triol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside (pardarioside E)	S ₁₀	R ₁ = G ₅ , R ₂ = OH
47	(25 <i>R</i>)-3 β , 17 α -dihydroxy-5 α -spirostan-6-one 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₁₁	R ₁ = G ₂ , R ₂ = OH, R ₃ = H
48	(25 <i>R</i>)-3 β , 17 α -dihydroxy-5 α -spirostan-6-one 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside	S ₁₁	R ₁ = G ₅ , R ₂ = OH, R ₃ = H
49	(25 <i>R</i>)-3 β -hydroxy-5 α -spirost-6-one 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₁₁	R ₁ = G ₂ , R ₂ = R ₃ = H
50	(25 <i>R</i>)-3 β -hydroxy-5 α -spirostan-6-one 3- <i>O</i> - α -L-ara-(1 \rightarrow 6)- β -D-glucoside	S ₁₁	R ₁ = G ₁₈ , R ₂ = R ₃ = H
51	(25 <i>R</i>)-3 β , 17 α , 27-triol-spirostan-6-one 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- β -D-glucoside (pumilum A)	S ₁₁	R ₁ = G ₂ , R ₂ = R ₃ = OH
52	(25 <i>R</i>)-3 β , 17 α , 27-triol-spirostan-6-one 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside (callosum A)	S ₁₁	R ₁ = G ₄ , R ₂ = R ₃ = OH
53	26- <i>O</i> - β -D-glu-nuatigenin 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₁₂	R ₁ = G ₂ , R ₂ = G ₁
54	26- <i>O</i> - β -D-glu-nuatigenin 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁₂	R ₁ = G ₃ , R ₂ = G ₁
55	26- <i>O</i> - β -D-glu-nuatigenin	S ₁₂	R ₁ = H, R ₂ = G ₁
56	26- <i>O</i> - β -D-glu-nuatigenin 3- <i>O</i> - β -D-glucoside	S ₁₂	R ₁ = R ₂ = G ₁
57	26- <i>O</i> - β -D-glu-nuatigenin 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₁₂	R ₁ = G ₄ , R ₂ = G ₁
58	26- <i>O</i> -[β -D-glu-(1 \rightarrow 2)]- β -D-glu-nuatigenin 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₁₂	R ₁ = G ₂ , R ₂ = G ₁₉
59	(25 <i>S</i>)-26- <i>O</i> - β -D-glu-22, 25-epoxyfurost-5 α -3 β , 26-diol 3- <i>O</i> -[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside	S ₁₃	R ₁ = G ₂ , R ₂ = G ₁
60	(25 <i>R</i>)-furost-5-en-3 β , 22 α , 26-triol 3, 26-di- <i>O</i> - β -D-glucoside (lilioglycoside K)	S ₁₄	R ₁ = R ₃ = G ₁ , R ₂ = H
61	(25 <i>R</i>)-26- <i>O</i> - β -D-glu-furost-5-en-3 β , 22 α , 26-triol 3- <i>O</i> -L-rha-(1 \rightarrow 2)-D-glucoside (lilioglycoside N)	S ₁₄	R ₁ = G ₂ , R ₂ = H, R ₃ = G ₁
62	(25 <i>R</i>)-26- <i>O</i> - β -D-glu-furost-5-en-3 β , 22 α , 26-triol 3- <i>O</i> -[<i>O</i> -L-rha-(1 \rightarrow 2)]-[<i>O</i> -D-glu-(1 \rightarrow 3)]- β -D-glucoside (lilioglycoside R)	S ₁₄	R ₁ = G ₆ , R ₂ = H, R ₃ = G ₁
63	(25 <i>R</i>)-22- <i>O</i> -methyl-26- <i>O</i> - β -D-glu-furost-5-ene-3 β , 22 ξ , 26-triol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- β -D-glucoside	S ₁₄	R ₁ = G ₂ , R ₂ = H, R ₃ = G ₁
64	(25 <i>R</i>)-22- <i>O</i> -methyl-26- <i>O</i> - β -D-glu-furost-5-ene-3 β , 22 ξ , 26-triol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[β -D-glu-(1 \rightarrow 3)]- β -D-glucoside (trigofoenoside D)	S ₁₄	R ₁ = G ₆ , R ₂ = Me, R ₃ = G ₁
65	(25 <i>R</i>)-22- <i>O</i> -methyl-26- <i>O</i> - β -D-glu-furost-5-ene-3 β , 22 ξ , 26-triol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁₄	R ₁ = G ₃ , R ₂ = Me, R ₃ = G ₁
66	(25 <i>R</i>)-22- <i>O</i> -methyl-26- <i>O</i> - β -D-glu-furost-5-ene-3 β , 22 ξ , 26-triol 3- <i>O</i> - α -L-rha-(1 \rightarrow 2)- <i>O</i> -[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside	S ₁₄	R ₁ = G ₅ , R ₂ = Me, R ₃ = G ₁

Table S2(continued)

No.	Compound	Type	R
67	(25R)-22-O-methyl-26-O-(β -D-glu)-furost-5-ene-3 β ,22 ξ ,26-triol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-xyl-(1 \rightarrow 3)]- β -D-glucoside	S ₁₄	R ₁ = G ₁₁ , R ₂ = Me, R ₃ = G ₁
68	(25R)-26-O-(β -D-glu)-22-methoxyfurost-5-en-3 β -yl O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 6)]- β -D-glucoside	S ₁₄	R ₁ = G ₄ , R ₂ = Me, R ₃ = G ₁
69	(25R)-26-O-(β -D-glu)-furost-5-en-3 β ,22 α ,26-triol 3-O- α -L-rha-(1 \rightarrow 2)-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside	S ₁₄	R ₁ = G ₅ , R ₂ = H, R ₃ = G ₁
70	(25R)-26-O-(β -D-glu)-furost-5-en-3 β ,22 α ,26-triol 3-O- α -L-rha-(1 \rightarrow 2)-[α -L-xyl-(1 \rightarrow 3)]- β -D-glucoside	S ₁₄	R ₁ = G ₁₁ , R ₂ = H, R ₃ = G ₁
71	(25R)-26-O-(β -D-glu)-furost-5-en-3 β ,22 ξ ,26-triol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁₄	R ₁ = G ₃ , R ₂ = H, R ₃ = G ₁
72	(25R)-26-O-(β -D-glu)-22 α -hydroxyfurost-5-en-3 β -yl O- α -L-ara-(1 \rightarrow 3)-O-[β -D-glu-(1 \rightarrow 4)]-O-[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside	S ₁₄	R ₁ = G ₂₀ , R ₂ = H, R ₃ = G ₁
73	(25R)-26-O-(β -D-glu)-22 α -hydroxyfurost-5-en-3 β -yl O- α -L-ara-(1 \rightarrow 4)-O-[β -D-glu-(1 \rightarrow 3)]-O-[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside	S ₁₄	R ₁ = G ₂₁ , R ₂ = H, R ₃ = G ₁
74	(25R)-26-O-(β -D-glu)-furosta-5,20(22)-dien-3 β -yl O- α -L-ara-(1 \rightarrow 3)-O-[β -D-glu-(1 \rightarrow 4)]-O-[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside	S ₁₅	R ₁ = G ₂₀ , R ₂ = G ₁
75	(25R)-26-O-(β -D-glu)-furosta-5,20(22)-dien-3 β -yl O- α -L-ara-(1 \rightarrow 4)-O-[β -D-glu-(1 \rightarrow 3)]-O-[α -L-rha-(1 \rightarrow 2)]- β -D-glucoside	S ₁₅	R ₁ = G ₂₁ , R ₂ = G ₁
76	(25R)-26-O-(β -D-glu)-5 α -furostan-3 β ,22 ξ -diol 3-O- α -L-rha-(1 \rightarrow 2)-O-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside	S ₁₆	R ₁ = G ₃ , R ₂ = G ₁
77	(25R)-22-O-methyl-26-O-acetyl-5 α -furost-3 β ,14 α ,17 α ,22 α ,26-pentaol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside (pardarinoside A)	S ₁₇	R ₁ = G ₂ , R ₂ = OH, R ₃ = Ac
78	(25R)-22-O-methyl-26-O-acetyl-5 α -furost-3 β ,17 α ,22 α ,26-tetraol 3-O- α -L-rha-(1 \rightarrow 2)- β -D-glucoside (pardarinoside B)	S ₁₇	R ₁ = G ₂ , R ₂ = H, R ₃ = Ac
79	(25R)-22-O-methyl-26-O-acetyl-5 α -furost-3 β ,14 α ,17 α ,22 α ,26-pentaol 3-O- α -L-rha-(1 \rightarrow 2)-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside (pardarinoside C)	S ₁₇	R ₁ = G ₃ , R ₂ = OH, R ₃ = Ac
80	(25R)-22-O-methyl-26-O-acetyl-5 α -furost-3 β ,17 α ,22 α ,26-tetraol 3-O- α -L-rha-(1 \rightarrow 2)-[β -D-glu-(1 \rightarrow 4)]- β -D-glucoside (pardarinoside D)	S ₁₇	R ₁ = G ₃ , R ₂ = H, R ₃ = Ac
81	(25R)-22-O-methyl-26-O-acetyl-5 α -furost-3 β ,14 α ,17 α ,22 α ,26-pentaol 3-O- α -L-rha-(1 \rightarrow 2)-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside (pardarinoside F)	S ₁₇	R ₁ = G ₅ , R ₂ = OH, R ₃ = Ac
82	(25R)-22-O-methyl-26-O-acetyl-5 α -furost-3 β ,17 α ,22 α ,26-tetraol 3-O- α -L-rha-(1 \rightarrow 2)-[α -L-ara-(1 \rightarrow 3)]- β -D-glucoside (pardarinoside G)	S ₁₇	R ₁ = G ₅ , R ₂ = H, R ₃ = Ac
83	Regaloside F	S ₁₈	R ₁ =OCH ₃ , R ₂ =3-O- β -D-Glu-glycerol
84	6'-O-feruloylsucrose	S ₁₈	R ₁ =OCH ₃ , R ₂ =sucrose
85	3,6'-diferuloylsucrose	S ₁₈	R ₁ =OCH ₃ , R ₂ =sucrose-6'-feruloyl
86	1-O-feruloylglycerol	S ₁₈	R ₁ =OCH ₃ , R ₂ =CH ₂ -CH(OH)-CH ₂ (OH)
87	1-O-p-coumaroylglycerol	S ₁₈	R ₁ =H, R ₂ =CH ₂ -CH(OH)-CH ₂ (OH)
88	1-O-caffeoylglycerol	S ₁₈	R ₁ =OH, R ₂ =CH ₂ -CH(OH)-CH ₂ (OH)
89	1-O-caffeoyl-3-O-p-coumaroylglycerol	S ₁₉	R ₁ =OH, R ₂ =H
90	1,3-O-diferuloylglycerol	S ₁₉	R ₁ =OCH ₃ , R ₂ =OCH ₃
91	1-O-feruloyl-3-O-p-coumaroylglycerol	S ₁₉	R ₁ =OCH ₃ , R ₂ =H
92	1,3-O-di-p-coumaroylglycerol	S ₁₉	R ₁ =H, R ₂ =H
93	1,2-O-diferuloylglycerol	S ₂₀	R ₁ =OCH ₃ , R ₂ =OCH ₃
94	1-O-feruloyl-2-O-p-coumaroylglycerol	S ₂₀	R ₁ =OCH ₃ , R ₂ =H
95	1-O-p-coumaroyl-2-O-feruloylglycerol	S ₂₀	R ₁ =H, R ₂ =OCH ₃
96	Regaloside A	S ₂₁	R ₁ =H, R ₂ =H, R ₃ = β -D-Glu
97	Regaloside B	S ₂₁	R ₁ =H, R ₂ = β -D-Glu, R ₃ =OCH ₃
98	Regaloside D	S ₂₁	R ₁ =H, R ₂ = β -D-Glu, R ₃ =H
99	Regaloside H	S ₂₁	R ₁ =H, R ₂ =H, R ₃ = β -D-Glu
100	Regaloside C	S ₂₁	R ₁ =OH, R ₂ =H, R ₃ = β -D-Glu
101	Regaloside E	S ₂₁	R ₁ =OH, R ₂ = β -D-Glu, R ₃ =acetyl

Table S2(continued)

No.	Compound	Type	R
102	Solamargine	S ₂₂	R = α -L-Rha-(1 \rightarrow 2)- β -D-Glu
103	Khasianine	S ₂₂	R = α -L-Rha-(1 \rightarrow 2)-O-[β -D-Glu-(1 \rightarrow 4)]- β -D-Glu
104	(22R,25R)-spirosol-5-en-3 β -yl-O- α -L-Rha-(1 \rightarrow 2)-6-O-acetyl- β -D-Glc-(1 \rightarrow 4)- β -D-Glu	S ₂₂	R = α -L-Rha-(1 \rightarrow 2)-O-[6-O-acetyl- β -D-Glu-(1 \rightarrow 4)]- β -D-Glu
105	Jatropham	S ₂₃	R=H
106	Jatropham-5-O- β -D-Glu	S ₂₃	R= β -D-Glu
107	Jatropham-5-O-[O- β -D-Glu-(1 \rightarrow 3)]- β -D-Glu	S ₂₃	R= β -D-Glu-(1 \rightarrow 3)- β -D-Glu
108	Jatropham-5-O-(6-O-p-coumaroyl- β -D-Glu)	S ₂₃	R=6-O-p-coumaroyl- β -D-Glu
109	Adenosine	S ₂₄	R=OH
110	2'-deoxyadenosine	S ₂₄	R=H
111	Colchicine	-	-
112	Berberine	-	-
113	Lilaline	-	-
114	Etioline	-	-
115	Rutin	S ₂₅	R ₁ =rhap-(1 \rightarrow 6)-glup, R ₂ =H, R ₃ =OH
116	Quercetin	S ₂₅	R ₁ =H, R ₂ =H, R ₃ =OH
117	Dihydroquercetin	S ₂₆	R ₁ =H, R ₂ =H, R ₃ =H
118	Kaempferol	S ₂₅	R ₁ =H, R ₂ =OH, R ₃ =OH
119	Myricetin	S ₂₅	R ₁ =OH, R ₂ =H
120	Dihydromyricetin	S ₂₆	R ₁ =OH, R ₂ =OH
121	Eriodictyol	S ₂₆	R ₁ =H, R ₂ =H
122	Catechin	-	-
123	Epi-catechin	-	-
124	Cyanidin 3- rutinoside	-	-
125	Phloridzin	-	-

Figure S3. The structure of compounds in *Lilium lancifolium* Thunb

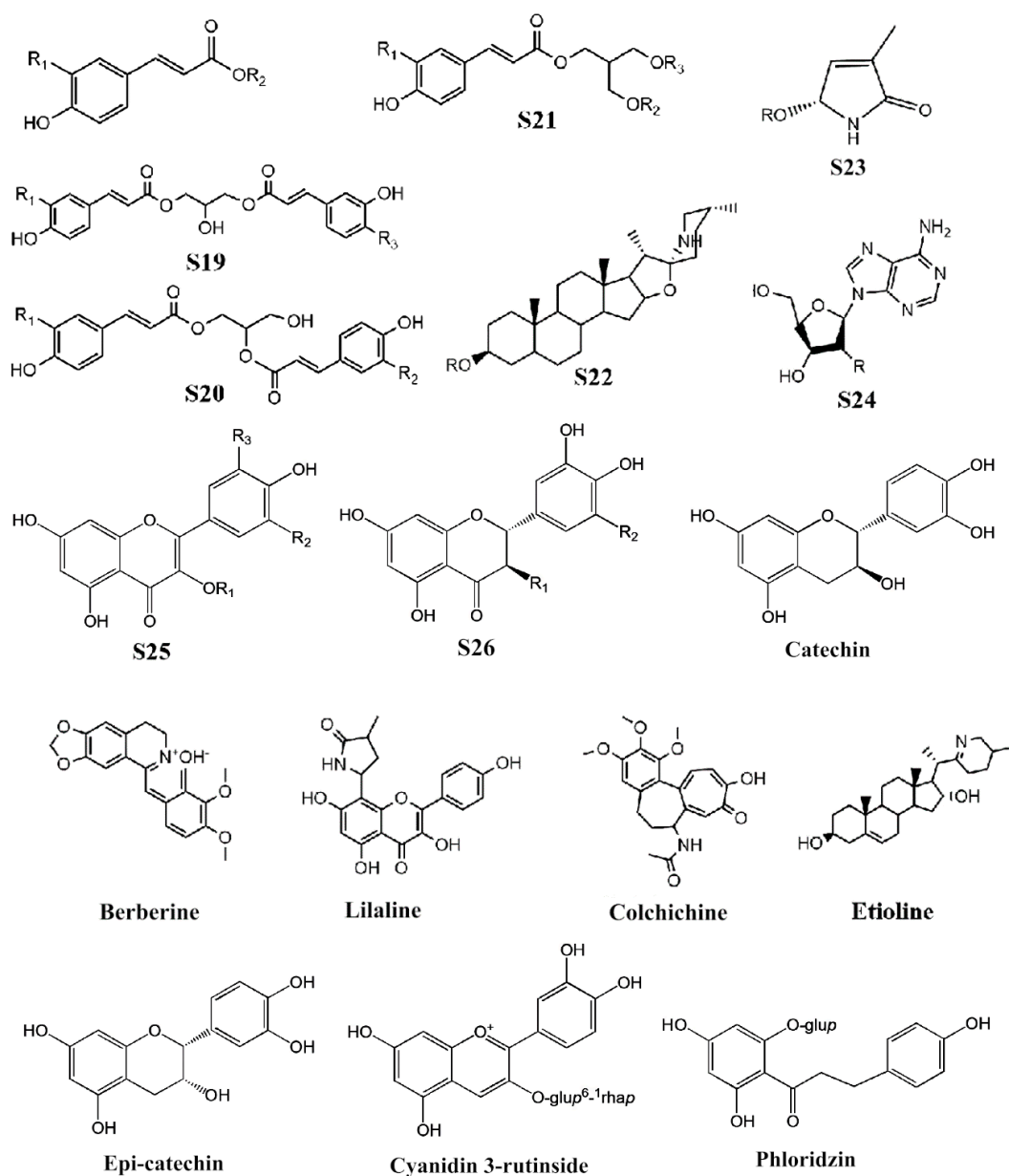


Figure S3. (continued)

Table S3 Chemical compositions in *Panax ginseng* C.A mey (Part.1)

NO.	Compound	R ₁	R ₂	R ₃	R ₄	C ₂₀
1	20(S)-25-OCH ₃ -PPD	H	OH	OH	OCH ₃	S
2	20(R)-Protopanaxadiol	H	OH	OH	CH ₃	S
3	20(S)- Protopanaxadiol	H	OH	CH ₃	OH	R
4	Ginsenoside Ra ₁	Glc ² -Glc	OH	O-Glc ⁶ -Ara(p) ⁴ -Xyl	CH ₃	S
5	Ginsenoside Ra ₂	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f) ² -Xyl	CH ₃	S
6	Ginsenoside Ra ₃	Glc ² -Glc	OH	O-Glc ⁶ -Glc ³ -Xyl	CH ₃	S
7	Ginsenosides Ra ₄	S5	OH	O-Glc ⁶ -Ara(p) ⁴ -Xyl	CH ₃	S
8	Ginsenosides Ra ₅	S6	OH	O-Glc ⁶ -Ara(p) ⁴ -Xyl	CH ₃	S
9	Ginsenosides Ra ₆	S5	OH	O-Glc ⁶ -Glc	CH ₃	S
10	Ginsenosides Ra ₇	S5	OH	OGlc ⁶ -Ara(f)	CH ₃	S
11	Ginsenosides Ra ₈	S7	OH	OGlc ⁶ -Ara(f)	CH ₃	S
12	Ginsenosides Ra ₉	S5	OH	OGlc ⁶ -Ara(f)	CH ₃	S
13	Ginsenoside Rb ₁	Glc ² -Glc	OH	O-Glc ⁶ -Glc	CH ₃	S
14	Ginsenoside Rb ₂	Glc ² -Glc	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
15	Ginsenoside Rb ₃	Glc ² -Glc	OH	O-Glc ⁶ -Xyl	CH ₃	S
16	Ginsenoside Rc	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	CH ₃	S
17	Ginsenoside Rd	Glc ² -Glc	OH	O-Glc	CH ₃	S
18	20(S)-Ginsenoside Rg ₃	Glc ² -Glc	OH	OH	CH ₃	S
19	20(R)-Ginsenoside Rg ₃	Glc ² -Glc	OH	CH ₃	OH	R
20	20(S)-ginsenoside Rh ₂	Glc	OH	OH	CH ₃	S
21	20(R)-ginsenoside Rh ₂	Glc	OH	CH ₃	OH	R
22	Ginsenoside F ₂	Glc	OH	O-Glc	CH ₃	S
23	Ginsenoside Mc	H	OH	O-Glc ⁶ -Ara(f)	CH ₃	S

Table S3(continued)

NO.	Compound	R ₁	R ₂	R ₃	R ₄	C ₂₀
22	Ginsenoside F ₂	Glc	OH	O-Glc	CH ₃	S
23	Ginsenoside Mc	H	OH	O-Glc ⁶ -Ara(f)	CH ₃	S
24	Ginsenoside R _{S2}	Glc ² -Glc ⁶ -AC	OH	O-Glc ² -Ara(f)	CH ₃	S
25	Ginsenoside R _{S3}	Glc ² -Glc ⁶ -(6-O-AC)	OH	OH	CH ₃	S
26	6 ^o -Acetyl-ginsenoside-Rd	Glc ² -Glc ⁶ -COCH ₃	OH	O-Glc	CH ₃	S
27	Malonyl ginsenoside R _{A3}	Glc ² -Glc-COCOCH ₂ O	OH	O-Glc ⁶ -Glc ³ -Xyl	CH ₃	S
28	Malonyl ginsenoside R _{B1}	Glc ² -Glc ⁶ -(6-O-Mal)	OH	O-Glc ⁶ -Glc	CH ₃	S
29	Malonyl ginsenoside R _{B2}	Glc ² -Glc ⁶ -(6-O-Mal)	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
30	Malonyl ginsenoside Rc	Glc ² -Glc ⁶ -(6-O-Mal)	OH	O-Glc ⁶ -Ara(f)	CH ₃	S
31	Malonyl ginsenoside Rd	Glc ² -Glc ⁶ -(6-O-Mal)	OH	O-Glc	CH ₃	S
32	Malonyl notoginsenoside R ₄	Glc ² -(6-Mal)Glc	OH	O-Glc ⁶ -Glc ⁶ -Xyl	CH ₃	S
33	Notoginsenoside Fa	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Glc	CH ₃	S
34	Notoginsenoside Fc	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Xyl	CH ₃	S
35	Notoginsenoside Fe	Glc	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
36	Notoginsenoside Ft ₁	Glc ² -Glc ² -Xyl	OH	OH	CH ₃	S
37	Notoginsenoside FP ₂	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
38	Notoginsenoside D	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Glc ⁶ -Xyl	CH ₃	S
39	Notoginsenoside K	Glc ⁶ -Glc	OH	O-Glc	CH ₃	S
40	Notoginsenoside L	Glc ² -Xyl	OH	O-Glc ⁶ -Glc	CH ₃	S
41	Notoginsenoside O	Glc	OH	O-Glc ⁶ -Xyl ³ -Xyl	CH ₃	S
42	Notoginsenoside P	Glc	OH	O-Glc ⁶ -Xyl ⁴ -Xyl	CH ₃	S
43	Notoginsenoside Q	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Xyl ⁴ -Xyl	CH ₃	S
44	Notoginsenoside S	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Ara(f) ⁵ -Xyl	CH ₃	S
45	Notoginsenoside T	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Glc ³ -Xyl	CH ₃	S
46	Notoginsenoside R ₄	Glc ² -Glc	OH	O-Glc ⁶ -Glc ⁶ -Xyl	CH ₃	S
47	Notoginsenoside ST ₄	Glc ² -Glc ² -Xyl	OH	OH	CH ₃	S
48	Notoginsenoside FZ	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
49	Notoginsenoside Fh ₁	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Ara(p) ⁴ -Xyl	CH ₃	S
50	Notoginsenoside L ₅	S4	OH	O-Glc ⁶ -Ara(f)	CH ₃	S
51	Notoginsenoside L ₆	S4	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
52	Notoginsenoside L ₇	S4	OH	O-Glc ⁶ -Xyl	CH ₃	S
53	Notoginsenoside L ₈	S4	OH	O-Glc ⁶ -Glc	CH ₃	S
54	Gypenoside IX	Glc	OH	O-Glc ⁶ -Xyl	CH ₃	S
55	Gypenoside V	Glc ² -Glc	OH	O-Glc ⁶ -Rha	CH ₃	S
56	Gypenoside XVII	Glc	OH	O-Glc ⁶ -Glc	CH ₃	S
57	Gypenoside XIII	H	OH	O-Glc ⁶ -Xyl	CH ₃	S
58	Chikusetsusaponin VI	Glc-Xyl ⁶ -Xyl	OH	O-Glc-Glc ⁶	CH ₃	S
59	Chikusetsusaponin III	Glc-Glc ⁶ -Xyl	OH	OH	CH ₃	S
60	Chikusetsusaponin VII	Glc ⁶ -Xyl	OH	O-Glc ⁶ -Glc	CH ₃	S
61	Chikusetsusaponin FK ₄	Xyl ¹⁻⁶ Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	CH ₃	S
62	Chikusetsusaponin FK ₅	Xyl ¹⁻⁶ Glc ² -Glc	OH	O-Glc ⁶ -Xyl	CH ₃	S
63	Chikusetsusaponin FK ₆	Xyl ¹⁻⁶ Glc ² -Glc	OH	O-Glc	CH ₃	S
64	Chikusetsusaponin FK ₇	Glc ² -Glc	O-Glc	OH	CH ₃	S
65	Quinquenoside I	S1	OH	O-Glc	CH ₃	S
66	Quinquenoside II	S2	OH	O-Glc ⁶ -Glc	CH ₃	S
67	Quinquenoside III	S3	OH	O-Glc	CH ₃	S
68	Quinquenoside V	Glc ² -Glc	OH	O-Glc ⁶ -Glc ⁴ -Glc	CH ₃	S
69	Quinquenoside L ₂	Glc ² -Glc	OH	O-Glc	CH ₃	S
70	Quinquenosides L ₁₀	Glc	OH	O-Glc ⁶ -Ara(p)	CH ₃	S
71	Quinquenosides L ₁₄	Glc ² -Glc	OH	O-Ara(p)	CH ₃	S
72	Quinquenosides L ₁₆	Glc ² -Glc	OH	O-Glc ⁶ -Glc	CH ₃	S
73	Compound O	Glc	OH	O-Glc ² -Ara(p)	CH ₃	S
74	Compound K	H	OH	O-Glc	CH ₃	S
75	Compound Y	H	OH	OH	CH ₃	S
76	Pseu-ginsenoside Rc ₁	Glc ² -Glc ⁶ -AC	OH	O-Glc	CH ₃	S
77	Yesanchnoside J	Glc ² -Glc ⁶ -AC	OH	O-Glc ⁶ -Glc ⁶ -Xyl	CH ₃	S
78	Vinaginsenoside R ₁₆	Glc ² -Xyl	O-Glc	OH	CH ₃	S
79	Vinaginsenoside R ₃	Glc ² -Glc	H	O-Glc	CH ₃	S
80	Quinquenoside Jb	Glc ² -Glc	OH	O-Glc ⁶ -Glc ⁶ -Ara(f)	CH ₃	S
81	20(R)methoxyl-ginsenoside R ₈₃	Glc ² -Glc	OH	OCH ₃	CH ₃	R
82	20(S)methoxyl-ginsenoside R ₈₃	Glc ² -Glc	OH	OCH ₃	CH ₃	S
83	Malonyl-floralginsenosides R _{B1}	Glc ² -Glc	H	O-Glc ⁶ -(4-Mal)Glc	CH ₃	S
84	Malonyl-floralginsenosides R _{B2}	Glc ² -(3-Mal)Glc	H	O-Glc ⁶ -Glc	CH ₃	S
85	Malonyl-floralginsenosides R _{D1}	Glc ² -(2-Mal)Glc	H	O-Glc	CH ₃	S
86	Malonyl-floralginsenosides R _{D2}	Glc ² -(3-Mal)Glc	H	O-Glc	CH ₃	S
87	Malonyl-floralginsenosides R _{D3}	Glc ² -(4-Mal)Glc	H	O-Glc	CH ₃	S
88	Malonyl-floralginsenosides R _{D4}	Glc ² -Glc	H	O-(3-Mal)Glc	CH ₃	S
89	Malonyl-floralginsenosides R _{D5}	Glc ² -Glc	H	O-(6-Mal)Glc	CH ₃	S
90	Malonyl-floralginsenosides R _{D6}	Glc ² -(6-Mal)Glc	H	O-(6-Mal)Glc	CH ₃	S
91	Malonyl-floralginsenosides Rc ₁	Glc ² -(6-Mal)Glc	H	O-Glc ⁶ -Xyl	CH ₃	S
92	Malonyl-floralginsenosides Rc ₂	Glc ² -(4-Mal)Glc	H	O-Glc ⁶ -Ara(p)	CH ₃	S
93	Malonyl-floralginsenosides Rc ₃	Glc ² -(3-Mal)Glc	H	O-Glc ⁶ -Ara(p)	CH ₃	S
94	Malonyl-floralginsenosides Rc ₄	Glc ² -(3-Mal)Glc	H	O-Glc ⁶ -Ara(f)	CH ₃	S

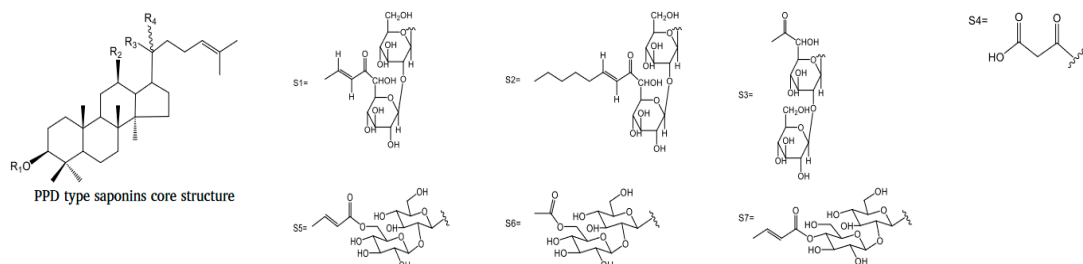
Figure S4. The structure of compounds in *Panax ginseng* C.A mey(Part.1)

Table S4 Chemical compositions in *Panax ginseng* C.A mey (Part.2)

NO.	Compound	R ₁	R ₂	R ₃	R ₄	R ₅
95	20(S)- protopanaxatriol	H	H	H	OH	CH ₃
96	20(R)-protopanaxatriol	H	H	H	CH ₃	OH
97	Ginsenoside Rg ₁	H	Glc	H	O-Glc	CH ₃
98	20(S)-ginsenoside Rg ₂	H	Glc ⁶ -Rha	H	OH	CH ₃
99	20(R)-ginsenoside Rg ₂	H	Glc ⁶ -Rha	H	CH ₃	OH
100	20(S)-ginsenoside Rh ₁	H	Glc	H	OH	CH ₃
101	20(R)-ginsenoside Rh ₁	H	Glc	H	CH ₃	OH
102	Ginsenoside Rf	H	Glc ² -Glc	H	OH	CH ₃
103	Ginsenoside F ₁	H	H	H	O-Glc	CH ₃
104	Ginsenoside Re	H	Glc ² -Rha	H	O-Glc	CH ₃
105	Ginsenoside Re ₁	H	Glc	H	O-Glc ² -Glc	CH ₃
106	Ginsenoside Re ₂	H	Glc ² -Glc	H	O-Glc	CH ₃
107	Ginsenoside Re ₃	H	Glc	H	O-Glc ⁴ -Glc	CH ₃
108	Ginsenoside Re ₄	H	Glc	H	O-Glc ⁶ -Ara(f)	CH ₃
109	Ginsenoside F ₃	H	H	H	O-Glc ⁶ -Ara(p)	CH ₃
110	Ginsenoside F ₅	H	H	H	O-Glc ⁶ -Ara(f)	CH ₃
111	Ginsenoside Rh ₂₄	H	Ara(p) ⁶ -Rha	H	O-Glc	CH ₃
112	Ginsenoside Rg ₁₆	H	Glc	H	O-Glc ² -Rha	CH ₃
113	Ginsenoside Rs ₁₁	H	Glc ² -OGlc ⁶ -AC	H	O-Glc ⁶ -Ara(f)	CH ₃
114	Ginsenoside Rh ₂₅	O-Xyl-Glc ²	H	H	O-Ara-Glc ⁶	CH ₃
115	Ginsenoside Rh ₂₆	O-(E)-but-2-enoyl-Glc-Glc ²	H	H	O-Glc	CH ₃
116	Ginsenoside Re ₅	H	Glc ² -Glc	H	OH	CH ₃
117	Ginsenoside Mb	Glc	H	H	O-Glc ⁶ -Ara(p)	CH ₃
118	20(R)-ginsenoside Rh ₁₀	Glc	H	H	CH ₃	OH
119	Notoginsenoside R ₁	H	Glc ² -Xyl	H	O-Glc	CH ₃
120	20(R)-Notoginsenoside R ₂	H	Glc ² -Xyl	H	CH ₃	OH
121	Notoginsenoside R ₃	H	Glc	H	O-Glc ⁶ -Glc	CH ₃
122	Notoginsenoside R ₆	H	Glc	H	O-Glc ⁶ -Glc*	CH ₃
123	Notoginsenoside N	H	Glc ⁴ -Glc*	H	O-Glc	CH ₃
124	Notoginsenoside Rt	H	Glc ⁶ -OAC	H	O-Glc	CH ₃
125	Notoginsenoside FP ₁	H	Glc	H	O-Glc ⁶ -Ara(p)	CH ₃
126	Notoginsenoside RW ₁	H	Xyl	H	O-Glc ⁶ -Xyl	CH ₃
127	Notoginsenoside Fh ₇	H	Glc ² -Glc	H	O-Glc ⁶ -Glc	CH ₃
128	Notoginsenoside M	H	Glc ⁶ -Glc*	H	O-Glc	CH ₃
129	Notoginsenoside L ₄	SI'	H	H	O-Glc	OH
130	Notoginsenoside L ₉	S4	H	H	O-Glc ⁶ -Ara(f)	CH ₃
131	Notoginsenoside L ₁₀	S4	H	H	O-Glc ⁶ -Ara(p)	CH ₃
132	Notoginsenoside L ₁₁	S4	H	H	O-Glc ⁶ -Xyl	CH ₃
133	Notoginsenoside L ₁₂	S4	H	H	O-Glc ⁶ -Glc	CH ₃
134	Chikusetsusaponin LM ₁	H	H	H	O-Glc ⁶ -Xyl	CH ₃
135	Chikusetsusaponin LM ₂	H	H	H	O-Glc ⁶ -Xyl ² -Xyl	CH ₃
136	Chikusetsusaponin LM ₃	H	H	H	O-Glc ⁶ -Ara(p) ⁴ -Xyl	CH ₃
137	Chikusetsusaponin LM ₄	Glc ² -Glc	H	Glc	OH	CH ₃
138	Chikusetsusaponin LM ₅	Glc ² -Glc	H	H	O-Glc ⁶ -Ara(f)	CH ₃
139	Chikusetsusaponin LM ₆	Glc ² -Glc	H	H	O-Glc ⁶ -Ara(p) ⁴ -Ara(f)	CH ₃
140	Chikusetsusaponin FK ₁	Glc ² -Rha	Glc	H	CH ₃	CH ₃
141	Chikusetsusaponin L ₁₀	H	H	Glc	OH	CH ₃
142	Chikusetsusaponin L ₅	H	H	H	O-Glc ⁶ -Ara(p) ⁴ -Xyl	CH ₃
143	3-acetyl ginsenoside F ₁	AC	H	H	O-Glc	CH ₃
144	6'-acetyl-ginsenoside F ₁	H	H	H	O-Glc ⁶ -AC	CH ₃
145	3β-acetoxyl ginsenoside F ₁	COO	H	H	O-Glc	CH ₃
146	6'-acetyl ginsenoside Rg ₃	H	Glc ² -Glc ²	H	O-Glc ⁶ -AC	CH ₃
147	20-O-Gluco-ginsenoside R ₃	H	Glc ² -Glc	H	O-Glc	CH ₃
148	6'-malonyl formyl-ginsenoside F ₁	H	H	H	O-Glc	CH ₃
149	6'-emalonyl formyl ginsenoside F ₁	H	H	H	SZ'	CH ₃
150	Pseudoginsenoside RT ₃	H	Xvl	H	O-Glc	CH ₃
151	Pseudo-ginsenosides F ₈	AC ⁶ Glc ² -Glc	H	H	O-Glc ⁶ -Xyl	CH ₃
152	Pseudoginsenoside Rs ₁	AC ⁶ Glc ² -Rha	H	H	O-CH ₃	CH ₃
153	Floralginsenosides E	H	Glc ² -Rha	H	O-Glc ⁶ -Xyl	CH ₃
154	Floralginsenoside M	H	Glc ² -Rha	H	O-Glc ⁶ -Ara(f)	CH ₃
155	Floralginsenoside N	H	Glc ² -Rha	H	O-Glc ⁶ -Ara(p)	CH ₃
156	Floralginsenoside P	Glc ² -Glc	H	H	O-Glc ⁶ -Ara(p)	CH ₃
157	Quinquenoside L ₁₇	H	Glc	H	O-Glc ⁶ -Xyl	CH ₃
158	Quinquenoside R ₁	Glc ² -Glc ⁶ -AC	H	H	O-Glc ⁶ -Glc	CH ₃
159	Koryoginsenoside R ₁	H	Glc ⁶ -Bu	H	O-Glc	CH ₃
160	20(S)-sanchirrhinosides A ₁	H	S3'	H	OH	CH ₃
161	20(S)-sanchirrhinosides A ₂	H	S4'	H	OH	CH ₃
162	20(S)-sanchirrhinosides A ₃	H	Glc	H	O-Ara(p)	CH ₃
163	20(S)-sanchirrhinosides A ₄	H	Ara(p)	H	O-Glc	CH ₃
164	20(S)-sanchirrhinosides A ₅	H	Glc ² -Ara(f)	H	O-Glc	CH ₃
165	20(S)-sanchirrhinosides A ₆	II	Glc ² -Xyl	II	O-Glc ⁶ -Glc	CH ₃
166	6α-acetoxy-3β,12β,20R-trihydroxydammar-24-ene	H	OAC	H	CH ₃	OH
167	3-O-β-D-glucopyranosyl-20(S)-protopanaxatriol	Glc	H	H	OH	CH ₃
168	3-formyloxy-20-O-β-D-glucopyranosyl-20(S)-protopanaxatriol	SS'	H	H	O-Glc	CH ₃
169	Vina-ginsenosides R ₄	Glc ⁶ -Glc	H	H	O-Glc	CH ₃
170	Vina-ginsenosides R ₇	Glc ² -Glc-Xyl	H	H	O-Glc	CH ₃
171	Yesaninoside D	H	Glc ⁶ -AC	H	O-Glc	CH ₃
172	Yesaninoside E	Glc ² -Rha	H	H	CH ₃	O-Glc ⁶ -Xyl
173	20(R)-ginsenoside Rh ₅	OH	O-Glc	H	CH ₃	O-CH ₃
174	6-O-[β-D-glucopyranosyl-(1 → 2)-β-D-glucopyranosyl]-20-O-[β-D-glucopyranosyl-(1 → 4)-β-D-glucopyranosyl]-20(S)-protopanaxatriol	H	Glc ² -Glc	H	O-Glc ⁴ -Glc	CH ₃
175	20(S)-6-O-[β-D-xylopyranosyl-(1 → 2)-β-D-xylopyranosyl]dammar-24-ene-3β,6α,12β,20-tetrol	Xyl-Xyl ²	H	H	OH	CH ₃
176	Malonyl-ginsenoside Rg ₁	H	Glc ⁶ -Mal	H	O-Glc	CH ₃
177	Malonyl-ginsenoside Re	H	Glc ² -Rha-Mal	H	O-Glc	CH ₃
178	Malonyl-floralginsenosides Re ₁	II	(6-Mal)Glc ² -Rha	H	O-Glc	CH ₃
179	Malonyl-floralginsenosides Re ₂	H	Glc ² -Rha	H	O-(2-Mal)Glc	CH ₃
180	Malonyl-floralginsenosides Re ₃	H	Glc ² -Rha	H	O-(4-Mal)Glc	CH ₃
181	20(R)-ginsenoside Rh ₁ 6'-acetate	H	Glc ⁶ -Ac	H	CH ₃	OH
182	20(S)-ginsenoside Rh ₁ 6'-acetate	H	Glc ⁶ -Ac	H	OH	CH ₃
183	(20S)-20-O-[β-D-xylopyranosyl-(1 → 6)-β-D-glucopyranosyl-(1 → 6)-β-D-glucopyranosyl] dammar-24-ene-3β,6α,12β,20-tetrol	H	H	H	O-Xyl-Glc ⁶ -Glc ⁶	CH ₃
184	(20S)-6-O-[(E)-but-2-enoyl-(1 → 6)-β-D-glucopyranosyl] dammar-24-ene-3β,6α,12β,20-tetrol	H	S3'	H	OH	CH ₃
185	Ginsenoside Ia	Glc	H	H	O-Glc	CH ₃
186	Pseudo-ginsenoside RT ₈	Glc ² -Glc	H	H	CH ₃	CH ₃
187	Quinquenoside Ja	II	Glc ² -Glc	II	O-Glc ⁴ -Glc	CH ₃

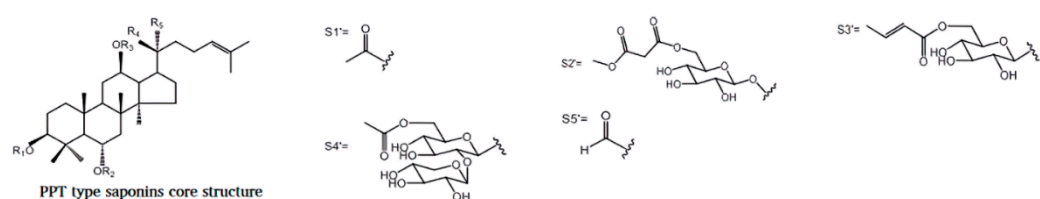


Figure S5. The structure of compounds in *Panax ginseng* C.A mey (Part.2)

Table S5 Chemical compositions in *Panax ginseng* C.A mey (Part.3)

NO.	Compound	R ₁	R ₂	R ₃
188	Talbalenoside IV	Glc-UA ² -Glc	CH ₃	H
189	Calenduloside E	Glc-UA	CH ₃	H
190	Oleanolic acid 3-O-[β-D-glucopyranosyl-(1 → 2)-β-D-glucuronopyranosyl-6'-O-n-butyl ester]	I2	CH ₃	H
191	Calenduloside B	Glc ⁴ -Gal	CH ₃	Glc
192	Pjs-1 (oleanolic acid 28-O-β-D-glucopyranoside)	H	CH ₃	Glc
193	Pseudo-ginsenoside-Rl ₃	I3	Xyl	H
194	Pseudoginsenoside Rp ₁	GlcUA ² -Xyl	CH ₃	H
195	Polyacetyleneginsenoside Ro	I1	CH ₃	Glc
196	28-desglucosyl chikusetsusaponin IV	GlcUA ⁴ -Ara(p)	CH ₃	H
197	Oleanolic acid	H	CH ₃	H

NO.	Compound	R ₁ = I4				R ₂	R ₃
		r ₁	r ₂	r ₃	r ₄		
198	Bifinoside A	Ara(p)	H	H	COOCH ₃	CH ₃	H
199	Bifinoside B	H	Xyl ⁶ -Glc	H	COOCH ₃	CH ₃	H
200	Bifinoside C	Xyl	Ara(p)	H	COOCH ₃	CH ₃	Glc
201	Talbalenoside I	H	H	Ara(f)	n-Bu	CH ₃	Glc
202	Chikusetsusaponin IV	H	H	Ara(f)	COOH	CH ₃	Glc
203	Chikusetsusaponin IV methyl ester	H	H	Ara(f)	COOCH ₃	CH ₃	Glc
204	Chikusetsusaponin IVα	H	H	H	COOH	CH ₃	Glc
205	Chikusetsusaponin IVa methyl ester	H	H	H	COOCH ₃	CH ₃	Glc
206	Chikusetsusaponin IVa butyl ester	H	H	H	n-Bu	CH ₃	Glc
207	Chikusetsusaponin V	H	H	Glc	COOH	CH ₃	Glc
208	Chikusetsusaponin Ib	Ara(f)	H	H	COOH	CH ₃	Glc
209	Stipuleanoside R ₁	H	Glc	Ara(f)	COOH	CH ₃	H
210	Stipuleanoside R ₂	H	Glc	Ara(f)	COOH	CH ₃	Glc
211	Stipuleanoside R ₂ methyl ester	H	Glc	Ara(f)	COOCH ₃	CH ₃	Glc
212	Pseudoginsenoside RT ₁	Xyl	H	H	COOH	CH ₃	Glc
213	Pseudoginsenoside RT ₁ methyl ester	Xyl	H	H	COOCH ₃	CH ₃	Glc
214	Pseudoginsenoside Rp ₁ methyl ester	Xyl	H	H	COOCH ₃	CH ₃	H
215	Ginsenoside Ro	Glc	H	H	COOH	CH ₃	H
216	Ginsenoside Ro methyl ester	Glc	H	H	COOCH ₃	CH ₃	Glc
217	Spinasaponin A 28-O-glucoside	H	Glc	H	COOH	CH ₃	H
218	Araloside A methyl ester	H	H	Ara(f)	COOCH ₃	CH ₃	Glc
219	3-O-β-D-glucopyranosyl (1 → 3)-β-D-glucuronopyranoside-28-O-β-D-glucopyranosyl oleanolic acid methyl ester	H	Glc	H	COOCH ₃	CH ₃	Glc
220	3-O-β-D-xylopyranosyl (1 → 2)-β-D-glucopyranosyl-28-O-β-D-glucopyranosyl oleanolic acid	Xyl	H	H	CH ₂ OH	CH ₃	Glc

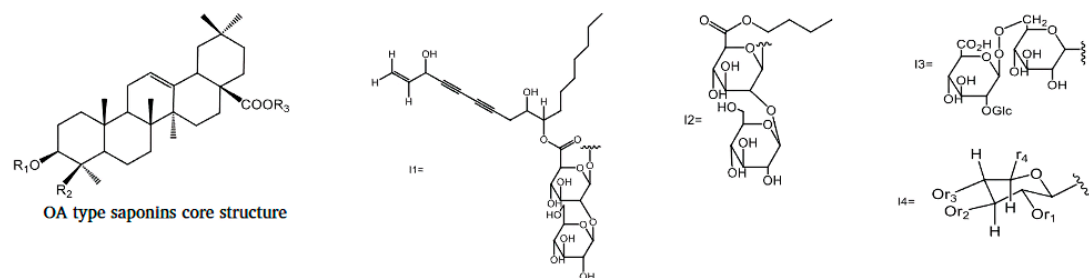
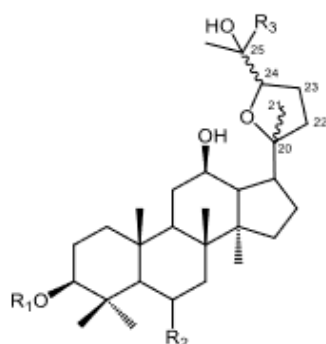


Figure S6. The structure of compounds in *Panax ginseng* C.A mey (Part.3)

Table S6 Chemical compositions in *Panax ginseng* C.A mey (Part.4)

NO.	Compound	R ₁	R ₂	R ₃	C ₂₀	C ₂₄
221	Gypenoside F ₁₁	H	O-Glc-Rha	CH ₃	R	S
222	(20R,24R)-dammarane-20,24-epoxy-3 β ,6 α ,12 β ,25-tetraol	H	H	CH ₃	R	R
223	Vina-ginsenosides R ₁₄	H	O-Glc ² -Xyl	CH ₃	S	R
224	24(R)-Ocotillol	H	OH	CH ₃	S	R
225	Pseudoginsenoside F ₁₁	H	O-Glc ² -Rha	CH ₃	S	R
226	24(R)-majoroside R ₁	H	OH	CH ₃	S	R
227	(20S,24R,25R)-6-O-[β -D-glucopyranosyl-(1 \rightarrow 2)- β -D-glucopyranosyl]-dammar-20,24-epoxy-3 β ,6 α ,12 β ,25,26-pentaol	H	O-Glc ² -Glc	CH ₂ OH	S	R
228	(20S,24R)-dammarane-20,24-epoxy-3 β ,6 α ,12 β ,25-tetraol	H	OH	CH ₃	S	R
229	Pseudoginsenoside RT ₅	H	O-Glc	CH ₃	S	R
230	Pseudoginsenoside RT ₂	H	O-Glc ² -Xyl	CH ₃	S	R
231	(20S,24R)-Pseudoginsenoside F ₁₁	H	O-Glc ² -Rha	CH ₃	S	R
232	Vina-ginsenosides R ₁	H	AC-Glc ² -Rha	CH ₃	S	S
233	Vina-ginsenosides R ₂	H	AC-Glc ² -Xyl	CH ₃	S	S
234	Vina-ginsenosides R ₅	H	Glc ² -Xyl ⁴ -Glc	CH ₃	S	S
235	Vina-ginsenosides R ₆	H	Glc ⁶ -Glc ² -Xyl	CH ₃	S	S
236	Vina-ginsenosides R ₁₃	H	Glc ² -Xyl	CH ₃	S	S
237	(20S,24S,25R*)-6-O-[β -D-glucopyranosyl-(1 \rightarrow 2)- β -D-glucopyranosyl]-dammar-20,24-epoxy-3 β ,6 α ,12 β ,25,26-pentaol	H	Glc ² -Glc	CH ₂ OH	S	S
238	Pseudo-ginsenoside RT ₄	H	Glc	CH ₃	S	S
239	24(S)-majoroside R ₁	H	Glc ² -Glc	CH ₃	S	S
240	24(S)-6-O-[β -D-glucopyranosyl-(1 \rightarrow 2)- β -D-glucopyranosyl]-dammar-20,25-epoxy-3 β ,6 α ,12 β ,24 α -tetraol	H	Glc ² -Glc	CH ₃	S	S
241	24(S)-Majoroside R ₂	H	Glc ² -Xyl	CH ₃	S	S
242	(20S,24S)-dammarane-20,24-epoxy-3 β ,6 α ,12 β ,25-tetraol	H	H	CH ₃	S	S
243	Yesanchinoside A (24S)	H	AC- ⁶ Glc ² -Glc	CH ₃	S	S
244	Yesanchinoside B (24S)	H	Glc- ⁶ Glc ² -Glc	CH ₃	S	S
245	Yesanchinoside C (24S)	H	Glc ² -Glc ² -Xyl	CH ₃	S	S



OC type saponins core structure

Figure S7 The structure of compounds in *Panax ginseng* C.A mey(Part.4)Table S7 Chemical compositions in *Panax ginseng* C.A mey(Part.5)

NO.	Type	Compound	R ₁	R ₂	R ₃	R ₄	Chiral Carbon
246	V1	25-hydroxy-23-ene-20(S)-protopanaxadiol	H	OH	OH	—	C24:S
247	V1	Ginsenoside-M6a	Glc ² -Glc	OH	O-Glc	—	C25:S
248	V1	Floranotoginsenoside A	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	—	C25:S
249	V1	Gypenoside XLIX	Glc ² -Glc	OH	O-Glc ⁶ -Xyl	—	C25:S
250	V1	Notoginsenoside L ₁₆	Glc	OH	O-Glc ⁶ -Ara(f)	—	C25:S
251	V1	Vina-ginsenosides R ₈	Glc ² -Glc	OH	O-Glc	—	C25:R
252	V1	Dammar-23 (24)-ene-3 β ,12 β , 20(S), 25-tetraol-20-O- β -D-glucopyranosyl-3-O- β -D-glucopyranoside	Glc	OH	Glc	—	C25:R
253	V1	Majoroside F ₄	Glc	OH	O-Glc	—	C25:R
254	V1	dammar-23 (24)-ene-3 β , 12 β , 20(S), 25-tetraol-20-O- β -D-glucopyranoside	H	OH	O-Glc	—	C25:R
255	V2	Notoginsenoside Fh ₆	Glc ² -Gen	OH	O-Glc	—	—
256	V3	Notoginsenoside SF ₁₂	Glc	OH	OH	—	—
257	V3	dammar-3 β ,12 β ,20(S),24(ζ),25-pentaol-20-O- β -D-glucopyranoside	H	OH	O-Glc	—	—
258	V3	Chikusetsusaponin FM ₁	Glc ² -Glc	OH	O-Glc ² -Xyl	—	—
259	V4	Notoginsenoside R ₇	Glc	OH	—	—	—

Table S7(continued)

NO.	Type	Compound	R ₁	R ₂	R ₃	R ₄	Chiral Carbon
260	V4	3 β -acetoxy-12 β -hydroxy-20 (R), 25-epoxy dammarane	AC	OH	—	—	—
261	V5	Notoginsenoside SFT ₁	Glc	OH	OH	—	C24:R
262	V5	Notoginsenoside Fh ₃	Glc ² -Glc ² -Xyl	OH	O-Glc ² -Xyl	—	C24:R
263	V5	Notoginsenoside Fh ₄	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Glc	—	C24:R
264	V5	Floranotoginsenoside D	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	—	C24:R
265	V5	Notoginsenosides LK ₆	Glc ² -Glc	OH	O-Xyl	—	C24:R
266	V5	Notoginsenosides LK ₇	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	—	C24:R
267	V5	Notoginsenosides LK ₈	Glc ² -Glc ² -Xyl	OH	OH	—	C24:R
268	V5	Vinaginsenosides R ₉	Glc ² -Glc	OH	O-Glc	—	C24:S
269	V5	Bipinnatifidusoside F ₁	Glc ² -Glc	OH	O-Glc	—	C24:R
270	V5	Majoroside F ₁	Glc ² -Glc	OH	O-Glc	—	C24:R
271	V6	Notoginsenoside Ft ₂	Glc ² -Glc ² -Xyl	OH	OH	—	—
272	V7	Ginsenoside II	Glc ² -Glc	OH	O-Glc	OH	—
273	V7	Floranotoginsenoside B	Glc ² -Glc	OH	O-Glc ² -Xyl	OH	—
274	V7	Floranotoginsenoside C	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	OH	—
275	V7	Floralquinquenoside D	Glc	OH	O-Glc	OH	—
276	V8	Ginsenoside III	Glc ² -Glc	OH	O-Glc	—	—
277	V8	Notoginsenoside L ₁₇	Glc	OH	O-Glc ⁶ -Xyl	—	—
278	V8	Notoginsenoside L ₁₈	Glc	OH	O-Glc ⁶ -Ara(f)	—	—
279	V8	Notoginsenoside L ₁₉	Glc	OH	O-Glc ⁶ -Ara(f)	—	—
280	V9	Ginsenoside Rg ₁₂	Glc-Glc ²	OH	OH	OH	—
281	V10	Ginsenoside L ₁	Glc	OH	OH	—	—
282	V11	Ginsenoside L ₂	Glc ² -Glc	OH	OH	—	—
283	V12	Notoginsenosides Ng ₂	Glc ² -Glc	OH	O-Glc ⁶ -Ara(f)	—	—
284	V12	Notoginsenosides LK ₁	Glc ² -Glc	OH	O-Glc ⁶ -Xyl	—	—
285	V12	Notoginsenosides LK ₄	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Xyl	—	—
286	V12	Notoginsenosides LK ₅	Glc ² -Glc ² -Xyl	OH	O-Glc ⁶ -Ara(p)	—	—
287	V12	Vinaginsenoside R ₂₀	Glc ² -Glc	OH	O-Glc	—	—
288	V13	Notoginsenosides LK ₂	Glc ² -Glc ² -Xyl	OH	O-Glc-Ara(f)	—	—
289	V13	Notoginsenosides LK ₃	Glc ² -Glc ² -Xyl	OH	O-Glc	—	—
290	V13	Notoginsenosides LK ₁₅	Glc	OH	O-Glc ⁶ -Xyl	—	—
291	V14	Notoginsenoside L ₁	H	OH	—	—	—
292	V15	Notoginsenoside L ₂	Glc ² -Glc	OH	OH	—	—
293	V16	Notoginsenoside L ₃	Glc	OH	—	—	—
294	V17	Sanchirrhinoside D	Glc ² -Glc	OH	OH	—	—
295	V18	Koryoginsenoside R ₂	Glc ² -Glc	OH	O-Glc ⁶ -Glc	—	—
296	V19	3 β ,6 β ,12 β ,20(S)-trihydroxy dammar 24-methyl 1-23-ene-24-carbonyl	H	OH	OH	—	—
297	V20	3 β ,12 β ,20(S),25-tetrahydroxy dammar 23-ene	H	OH	OH	—	—
298	V20	Quinquenoside L ₃	Glc	OH	O-Glc ⁶ -Xyl	—	—
299	V21	27-demethyl-(E,E)-20 (22),23-dien-3 β ,12 β -dihydroxydammar-25-one	H	OH	—	—	—
300	V22	20(S)-25-ethoxyl-dammarane-3 β ,12 β ,20-triol	H	OH	OH	CH ₃	—
301	V22	20(R)-25-ethoxyl-dammarane-3 β ,12 β ,20-triol	H	OH	CH ₃	OH	—
302	V23	Quinquenoside L ₁	Glc ² -Glc	OH	O-Glc	—	—
303	V24	Isoginsenoside Rh ₃	Glc	OH	—	—	—
304	V25	Floralginsenoside E	Glc ² -Glc	OH	OH	OH	—
305	V25	Floralginsenoside F	Glc	OH	O-Glc	OH	—
306	V26	Floralginsenoside Kb	Glc ² -Glc	OH	O-Glc	H	—
307	V26	Floralginsenoside Kc	Glc ² -Glc	OH	O-Glc	OH	—
308	V27	Bipinnatifidusoside F ₂	Glc ² -Glc	OH	O-Glc	—	—
309	V28	Ginsenoside Rz ₁	Glc ² -Glc	OH	—	—	—
310	V29	Vinaginsenoside R ₂₄	Glc ² -Glc	OH	Glc	CH ₃	—
311	V30	Ginsenoside RT ₅	Glc	OH	CH ₃	—	—

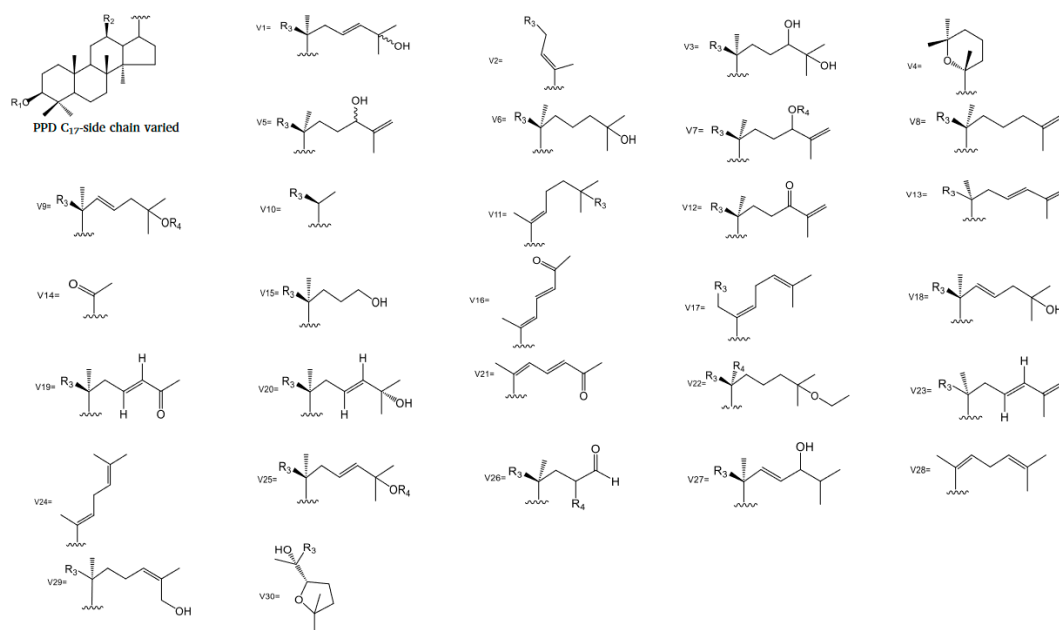
Figure S8. The structure of compounds in *Panax ginseng* C.A. Mey (Part.5)

Table S8 Chemical compositions in *Panax ginseng* C.A mey(Part.6)

NO.	Type	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	Chiral Carbon
312	W1	OH	OH	H	—	—	—	—
313	W1	OH	H	H	—	—	—	—
314	W1	OH	OH	H	—	—	—	—
315	W1	O-Glc	H	H	—	—	—	—
316	W1	OH	O-Glc	H	—	—	—	—
317	W2	OH	O-Glc	H	H	—	—	—
318	W2	OH	O-Glc ² -Xyl	H	H	—	—	—
319	W3	OH	O-Glc	H	H	—	—	—
320	W3	OH	O-Glc ² -Rha	H	Glc	—	—	—
321	W3	OH	O-Glc ² -Rha	H	H	—	—	—
322	W4	OH	O-Glc	H	Glc	—	—	—
323	W4	OH	O-Glc	H	H	—	—	—
324	W4	OH	O-Glc	H	H	—	—	—
325	W4	OH	O-Glc ² -Glc	H	H	—	—	—
326	W4	O-Glc ² -Glc	H	H	Glc	—	—	—
327	W4	OH	O-Glc	H	Glc	—	—	—
328	W5	OH	OH	H	OH	CH ₃	—	C25:S
329	W5	OH	O-Glc ² -Rha	H	OH	CH ₃	—	C25:S
330	W5	OH	OH	H	CH ₃	OH	—	C25:S
331	W5	OH	O-Glc ² -Rha	H	CH ₃	OH	—	C25:S
332	W5	OH	H	H	OH	CH ₃	—	C25:R
333	W5	OH	H	H	CH ₃	OH	—	C25:R
334	W5	OH	OH	H	OH	CH ₃	—	C25:R
335	W5	OH	OH	H	CH ₃	OH	—	C25:R
336	W5	OH	O-Glc ² -Rha	H	CH ₃	OH	—	C25:R
337	W5	OH	O-Glc ² -Rha	H	OH	CH ₃	—	C25:R
338	W6	OH	O-Glc ² -Xyl	H	OH	O-Glc	—	—
339	W6	O-Glc ² -Glc	OH	H	OH	O-Glc	—	—
340	W6	OH	OH	H	OH	O-Glc ² -Xyl	—	—
341	W6	O-Glc ² -Glc ² -Xyl	H	H	OH	O-Glc ⁶ -Glc	—	—
342	W6	OH	H	H	OH	OH	—	—
343	W6	OH	Glc	H	OH	O-Glc	—	—
344	W6	OH	O-Glc ² -Rha	H	OH	O-Glc	—	—
345	W6	OH	O-Glc	H	OH	OH	—	—
346	W6	OH	OH	H	CH ₃	O-Glc	—	—
347	W6	OH	OH	H	OH	O-Glc	—	—
348	W6	OH	OH	H	OH	O-Glc	—	—
349	W6	O-Glc ² -Glc	OH	H	OCH ₃	O-Glc ⁶ -Xyl	—	—
350	W6	OH	O-Glc	H	OOH	OH	—	—
351	W6	O-Glc ² -Glc ² -Xyl	OH	H	OOH	O-Glc ⁶ -Glc	—	—
352	W6	= O	OH	H	OOH	OH	—	—
353	W6	H	OH	= O	OOH	OH	—	—
354	W6	= O	H	H	OOH	OH	—	—
355	W6	OH	O-Glc	H	OOH	O-Glc	—	—
356	W6	OH	OH	H	OOH	O-Glc ⁶ -Ara(f)	—	—
357	W6	OH	O-Glc	H	OOH	OH	—	—
358	W6	OH	O-Glc ² -Rha	H	OOH	OH	—	—
359	W6	OH	OH	H	OOH	O-Glc	—	—
360	W6	OH	O-Glc	H	OOH	OH	—	—
361	W7	O-Glc ² -Glc ² -Xyl	H	H	Glc ⁶ -Glc	—	—	—
362	W7	OH	O-Glc ² -Rha	H	Glc	—	—	—
363	W7	OH	Glc	H	Glc	—	—	—
364	W7	OH	OH	H	Glc	—	—	—
365	W8	O-Glc ² -Glc	OH	H	Glc ⁶ -Glc	OH	—	C24:R
366	W8	OH	O-Glc	H	H	OH	—	C24:R
367	W12	OH	O-Glc ² -Glc	H	H	—	—	C24:S
368	W8	OH	OH	H	Glc ⁶ -Ara(p)	OH	—	C24:R
369	W8	OH	O-Glc	H	Glc	OH	—	C24:R
370	W8	O-AC ⁶ Glc ² -Glc	H	H	Glc	OH	—	C24:R
371	W8	O-Glc ² -Glc	H	H	Glc ⁶ -Ara(p)	OH	—	C24:R
372	W8	O-Glc ² -Glc	H	H	Glc ⁶ -Ara(p)	OH	—	C24:R
373	W8	OH	O-Glc ² -Rha	H	Glc	OH	—	C24:R
374	W8	OH	OH	H	Glc	OH	—	C24:R
375	W8	OH	O-Glc ² -Rha	H	H	OH	—	C24:R
376	W8	OH	OH	H	Glc	OH	—	C24:S
377	W9	OH	O-Glc	H	—	—	—	—
378	W10	OH	O-Glc	H	H	—	—	—
379	W10	OH	OH	H	H	—	—	—
380	W11	OH	O-Glc	H	H	—	—	—
381	W11	OH	O-Glc	H	CH ₃	—	—	—
382	W11	O-Glc ² -Rha	OH	H	H	—	—	—
383	W12	OH	O-Glc ³ -Xyl	H	—	—	—	—
384	W12	OH	O-Glc ² -Rha	H	—	—	—	—
385	W12	OH	OH	H	—	—	—	—
386	W12	O-Glc ² -Glc ² -Xyl	H	H	—	—	—	—
387	W13	OH	O-Glc	H	H	—	—	—
388	W13	O-Glc ² -Glc	H	H	OCH ₃	—	—	—
389	W14	O-Glc ² -Glc	H	H	OCH ₃	—	—	—
390	W15	OH	O-Glc	H	—	—	—	—
391	W15	OH	OH	H	—	—	—	—
392	W16	OH	Glc ² -Rha	H	—	—	—	—
393	W16	O-Glc ² -Glc ² -Xyl	H	H	—	—	—	—

Table S8(continued)

NO.	Type	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	Chiral Carbon
394	W16	OH	OH	H	—	—	—	—
395	W16	O-Glc ² -Glc ⁶ -AC	H	H	—	—	—	—
396	W16	OH	O-Glc ² -Rha	H	—	—	—	—
397	W17	OH	O-Glc	H	—	—	—	—
398	W18	OH	O-Glc	H	—	—	—	—
399	W19	OH	O-Glc	H	—	—	—	—
400	W19	O-Glc	OH	H	—	—	—	—
401	W20	OH	O-Glc ² -Glc	H	—	—	—	—
402	W21	O-Glc ² -Xyl	OH	H	—	—	—	—
403	W21	O-Glc	OH	H	—	—	—	—
404	W21	OH	OH	H	—	—	—	—
405	W21	OH	O-Glc ² -Rha	H	—	—	—	—
406	W21	OH	O-Glc	Glc	—	—	—	—
407	W22	OH	O-Glc	H	—	—	—	—
408	W23	OH	O-Glc	H	OH	—	—	C24:R
409	W23	OH	O-Glc ² -Glc	H	OH	—	—	C24:R
410	W23	OH	O-Glc ² -Rha	H	O-Glc	—	—	C24:R
411	W23	OH	O-Glc ² -Rha	H	O-Glc	—	—	C24:R
412	W23	OH	OH	H	O-Glc	—	—	C24:S
413	W23	OH	OH	H	O-Glc	—	—	C24:S
414	W23	OH	Glc	H	OH	—	—	C24:R
415	W24	OH	OH	H	O-Glc	CH ₃	—	—
416	W25	OH	O-Glc	H	O-Glc ⁶ -Ara(f)	CH ₃	—	—
417	W26	O-Glc ² -Glc	OH	H	—	—	—	—
418	W27	OH	OH	H	O-CH ₂ CH ₃	—	—	—
419	W27	OH	OH	H	OH	—	—	—
420	W27	O-Glc	H	H	OH	—	—	—
421	W27	OH	H	H	OH	—	—	—
422	W27	O-AC	OH	H	OH	—	—	—
423	W27	OH	OH	AC	OH	—	—	—
424	W28	OH	OH	H	O-Glc	—	—	—
425	W29	OH	OH	H	—	—	—	—
426	W30	OH	O-Glc	H	CH ₃	—	—	—
427	W30	O-Glc	H	H	CH ₃	—	—	—
428	W30	O-Glc ² -Glc	OH	H	CH ₃	—	—	—
429	W30	OH	O-Glc	H	OH	—	—	—
430	W30	OH	O-Glc	H	OOH	—	—	—
431	W30	OH	O-Glc ² -Rha	H	OOH	—	—	—
432	W31	OH	O-Glc	H	CH ₃	CH ₃	—	C24:S
433	W31	OH	O-Glc ² -Rha	H	—	O-Glc	—	C24:R
434	W32	OH	O-Glc	H	OH	—	—	C22:S
435	W33	OH	O-Glc	H	OH	—	—	—
436	W34	OH	O-Glc	H	—	—	—	—
437	W34	OH	O-Glc ² -Xyl	H	—	—	—	—
438	W35	OH	OH	H	CH ₃	OH	—	—
439	W35	OH	O-Glc	H	OH	CH ₃	—	—
440	W35	OH	O-Glc ² -Xyl	H	OH	CH ₃	—	—
441	W35	OH	O-Glc ² -Glc	H	OH	CH ₃	—	—
442	W35	OH	OH	H	O-Glc	CH ₃	—	—
443	W36	OH	OH	H	—	—	—	C24:S
444	W36	OH	OH	H	—	—	—	C24:R
445	W37	OH	OCOCH ₃	H	—	—	—	—
446	W38	OH	OH	H	OH	CH ₃	—	—
447	W38	OH	O-Glc	H	CH ₃	OH	—	—
448	W38	O-Glc	H	H	OH	CH ₃	—	—
449	W39	OH	H	H	CH ₃	OH	CH ₃	—
450	W39	OH	H	H	H	OCH ₃	H	—
451	W39	OH	OH	H	H	OH	CH ₃	—
452	W39	OH	O-Glc ² -Rha	H	H	OH	CH ₃	—
453	W40	OH	OH	H	—	—	—	—
454	W40	OH	O-Glc	H	—	—	—	—
455	W41	OH	OH	H	—	—	—	—
456	W42	OH	OAC	H	—	—	—	—
457	W42	AC	OH	H	—	—	—	—
458	W43	O-AC- ⁵ Glc ² -Glc	H	H	Glc	OH	—	—
459	W43	OH	O-Glc ² -Rha	H	Glc	OH	—	—
460	W43	O-Glc ² -Glc	H	H	Glc	OH	—	—
461	W43	O-Glc ² -Glc	H	H	Glc ⁶ -Ara(f)	OH	—	—
462	W44	OH	OH	H	O-Glc	—	—	—
463	W45	OH	O-Glc	H	—	—	—	—
464	W45	OH	O-Glc ² -Rha	H	—	—	—	—

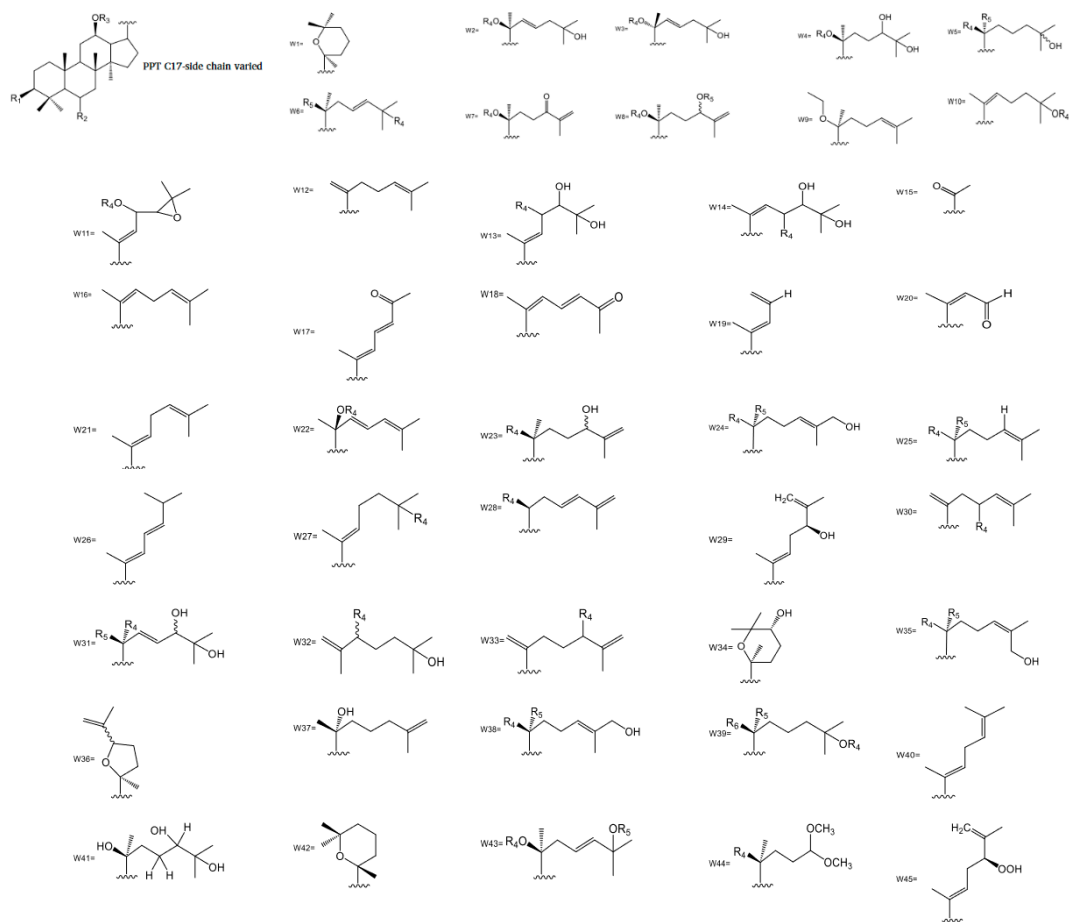


Figure S9. The structure of compounds in *Panax ginseng* C.A. Mey (Part.6)

Table S9 Chemical compositions in *Panax ginseng* C.A. Mey (Part.7)

NO.	Type	Compound	R ₁	R ₂	R ₃	R ₄
465	A	Baisanqisaponin A	H	H	X	Glc
466	A	Baisanqisaponin B	H	Ara(f)	X	Glc
467	A	Baisanqisaponin C	Glc	H	X	H
468	B	Pseudo-ginsenoside RT ₆	O-Glc	—	—	—
469	B	Pseudoginsenosin R ₁	OH	—	—	—
470	C	Gypenoside L	Glc ² -Glc	H	—	—
471	C	Gypenoside L ₁	Glc ² -Glc	H	—	—
472	D	24(R)-Pseudoginsenoside G ₁	Glc ² -Glc	—	—	—
473	D	24(S)-Pseudoginsenoside G ₂	Glc ² -Glc	—	—	—
474	E	3β,4α,12β-trihydroxystigmast-5-en-21-yl octadecan-9',12'-dienoate	R = CO(CH ₂) ₇ CH=CHCH ₂ CH=CH(CH ₂) ₄ CH ₃			
475	E	stigmast-5-en-3β,4α,12β, 21-tetraol-21-octadec-9',12'-dienoate	R = CO(CH ₂) ₇ CH=CHCH ₂ (CH ₂) ₃ CH ₃			
476	F	3β-cis-feruloyloxy-16β-hydroxylup-20 (29)-ene	S1 ^a	—	—	—
477	F	3β-trans-feruloyloxy-16β-hydroxylup-20 (29)-ene	S2 ^a	—	—	—
478	G	Notoginsenoside G	Glc ² -Glc	Glc	—	—
479	G	Yesanqinsaponin G	Glc ² -Glc	Glc ⁶ -Xyl	—	—
480	G	Quinqueoside IV	Glc ² -Glc	Glc ⁶ -Glc	—	—
481	H	Notoginsenoside I	Glc ² -Glc	O-Glc ⁶ -Glc	—	—
482	H	Yesanqinsenoside I	Glc ² -Glc	O-Glc ⁶ -Glc-Xyl	—	—
483	H	Lanost-24-en-3β-ol-3-O-β-D-arabinopyranosyl-(2'→1'')-O-β-D-arabinoside	Glc ² -Ara(p)	CH ₃	—	—
484	I	Vina-ginsenoside R ₃	Glc ² -Glc	H	Glc	—
485	J	Chikusetsusaponins LT ₅	Glc	H	Glc ⁶ -Glc	—
486	J	Chikusetsusaponins LT ₈	Glc	H	Glc	—
487	J	Chikusetsusaponin LN ₄	Glc ⁶ -Xyl	H	Glc ⁶ -Ara	—
488	J	3β,6α-20(S)-6,20-bis(β-D-glucopyranosyloxy)-3-hydroxy dammar-24-en-12-one	H	Glc	Glc	—
489	J	Chikusetsusaponin FK ₂	Glc ² -Glc	Glc	—	—
490	J	Chikusetsusaponin FK ₃	Xyl- ⁶ Glc ² -Glc	Glc	—	—
491	K	7β-hydroxyl ginsenoside Rd	O-Glc-Glc ²	Glc	—	—
492	L	5,6-didehydroginsenoside Rg ₃	O-Glc-Glc ²	OH	—	—
493	L	5,6-didehydroginsenoside Rd	Glc ² -Glc	Glc	—	—
494	L	5,6-didehydroginsenoside Rb ₁	Glc ² -Glc	Glc ⁶ -Glc	—	—
495	M	Notoginsenoside LX	Glc	Glc ⁶ -Ara(f)	—	—
496	M	Notoginsenoside LY	H	Glc ⁶ -Ara(f)	—	—
497	M	Notoginsenosides Ng ₁	Glc	Glc ⁶ -Xyl	—	—
498	M	Notoginsenoside Fh ₄	Glc-Glc	Glc-Ara(f)	—	—
499	M	Notoginsenoside Fh ₉	Glc-Glc	Glc-Ara(p)	—	—
500	M	Notoginsenoside L14	Glc	Glc ⁶ -Xyl	C23:S	—
501	M	Notoginsenoside L13	Glc	Glc ⁶ -Xyl	C23:R	—

Table S9(continued)

NO.	Type	Compound	R ₁	R ₂	R ₃	R ₄
502	M	3 β ,20S-dihydroxy-12 β , 23R-epoxydammar-24-ene 3-O-[β -D-glucopyranosyl (1 \rightarrow 2)- β -D-glucopyranosyl]-20-O- β -D-glucopyranoside	Glc ^c -Glc	O-Glc	—	—
503	M	Ginsenosides Ia	Glc	Glc	—	—
504	N	Ginsenosides Rh ₁₈	OH	O-Glc ² -Rha	O-Glc	—
505	N	12 β ,23(R)-epoxydammar-24-ene-3 β ,6 α ,20(S)-triol	OH	OH	OH	—
506	N	3 β ,6 α , 20S-trihydroxy-12 β , 23R-epoxydammar-24-ene 6-O-[α -L-rhamnosyl (1 \rightarrow 2)- β -D-glucopyranosyl]-20-O- β -D-glucopyranoside	H	O-Glc ² -Rha	O-Glc	—
507	P	Notoginsenoside P ₁	Glc	OH	—	—
508	Q	6-O- β -D-glucopyranosyl-20R-protopanaxadiol-3-one	Glc	H	—	—
509	R	6-O- β -D-glucopyranosyl-20-O- β -D-glucopyranosyl-20(S)-protopanaxadiol-3-one	Glc	Glc	—	—
510	T	6 α -hydroxy-22,23,24,25,26,27-hexanordammar-3,12,20-trione	Ara(p)	Ara(p)	—	—
511	S	Dammar-12,24-dien-3 α ,6 β ,15 α -triol-3 α -D-arabinopyranosyl-6 β -L-arabinopyranoside	—	—	—	—
512	U	Dammar-24-en-3 α ,6 β ,16 α ,20 β -tetraol-3 α -D-arabinopyranosyl-6 β -D-arabinopyranoside	Xyl	Xyl	—	—
513	V	(20S,22S)-dammar-22,25-epoxy-3 β ,12 β ,20-triol	—	—	—	—
514	W	Pseudoginsenoside-RU ₂	—	—	—	—
515	X	12-one-pseudoginsenoside F ₁₁	Glc ² -Rha	—	—	—
516	Y	(12R,20S,24S)-20,24-;12,24-diepoxy-dammarane-3 β -ol	—	—	—	—

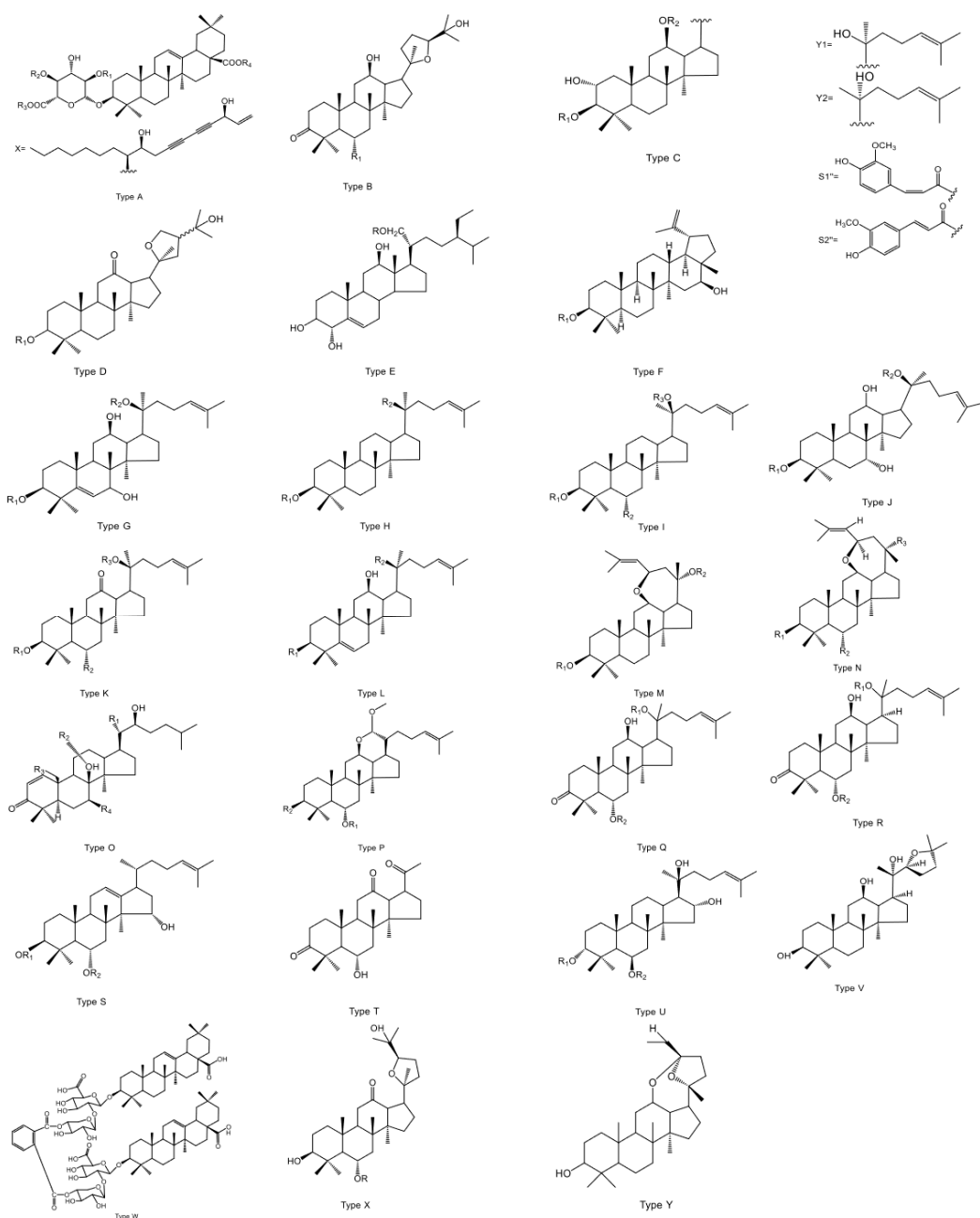
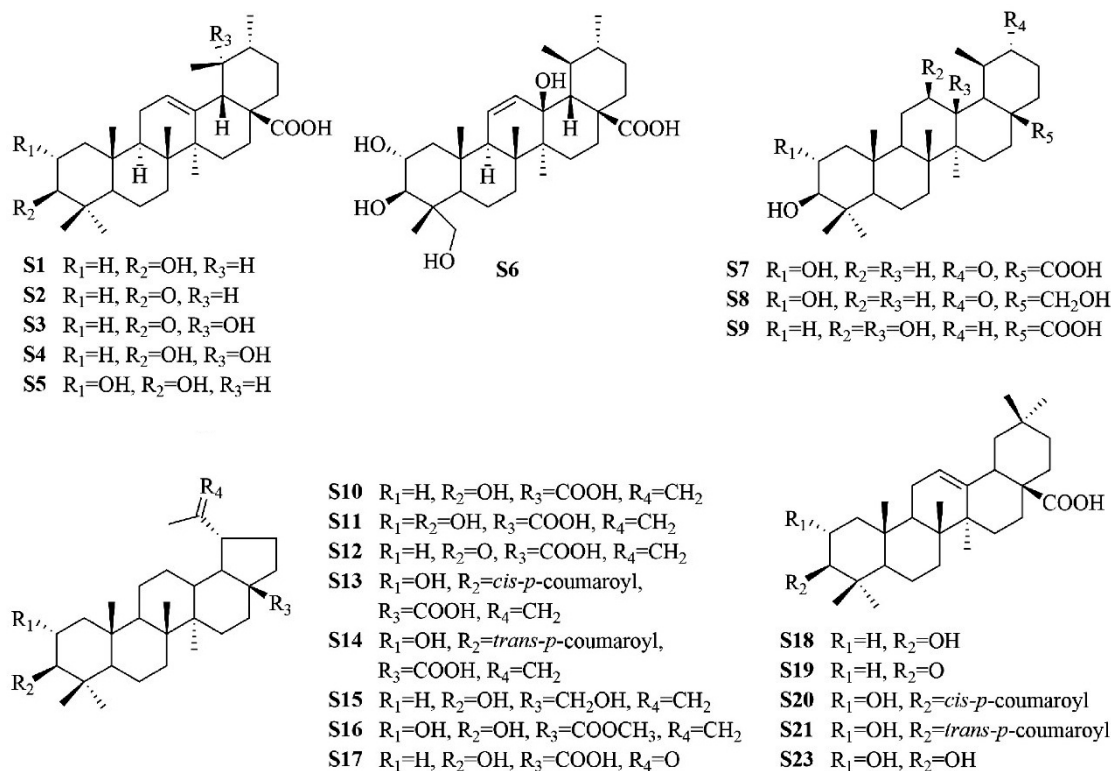
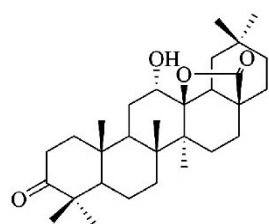
Figure S10. The structure of compounds in *Panax ginseng* C.A meyer (Part.7)

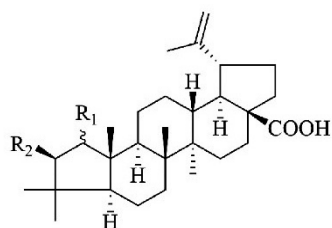
Table S10 Chemical compositions in *Ziziphus jujuba* mill. Var

NO.	Compound	NO.	Compound
S1	Ursolic acid	F5	Epiafzelechin
S2	3-Oxours-12-en-28-oic acid	F6	Afzelechin
S3	Pomonic acid	F7	Rutoside
S4	Pomolic acid	F8	Isospinosin
S5	Corosolic Acid	F9	Spinosin
S6	2 α ,3 β ,13 β ,23-Tetrahydroxurs-11-en-28-oic acid	F10	6'''-sinapoyl spinosin
S7	2 α ,3 β -Dihydroxurs-20-en-28-oic acid	F11	6'''-feruloyl spinosin
S8	2 α ,3 β ,28-Trihydroxurs-20-en	F12	6'''-coumaroyl spinosin
S9	3 β ,12 β ,13 β -Trihydroxurs-28-oic acid	A-1	6-(2',3'-dihydroxy-4'-hydroxymethyl-tetrahydro-furan-1'-yl) cyclopentadiene[c]pyrrole-1,3-diol
S10	Betulnic acid	A-2	3S-1-N- β -D-glucopyranosyl-2-oxo-3-hydroxy-indole-3-acetic acid
S11	Alphitollic acid	A-3	3R-1-N- β -D-glucopyranosyl-2-oxo-3-hydroxy-indole-3-acetic acid
S12	Betulonic acid	A-4	Coclaurine
S13	3-O-trans-p-Coumaroylalthitolic acid	A-5	Juzirine
S14	3-O-cis-p-Coumaroylalthitolic acid	A-6	Norisocorynoline
S15	Betulin	A-7	Caaverine
S16	2 α , 3 β -dihydroxy-lup-20(29)-en-28-oic acid methyl ester	A-8	Asimilobine
S17	3 β -Hydroxy-30-norlupan-20-one-28-oic acid	A-9	Nornuciferine
S18	Oleanic acid	A-10	N-Methylasimilobine
S19	Oleanonic acid	A-11	Nuciferine
S20	3-O-Trans-p-coumaroyl maslinic acid	A-12	4H-Dibenzo[de,g]quinolinium
S21	3-O-cis-p-coumaroyl maslinic acid	A-13	(+)-magnoflorine iodide
S22	Hydroxyoleanonic acid lacton	A-14	Lysicamine
S23	Maslinic acid	A-15	6-glc-coclaurine
S24	Epiceanothic acid	A-16	Sanjoinine A
S25	Ceanothic acid	A-17	Sanjoinine F
S26	Zizyberenic acid	A-18	Sanjoinine B
S27	Colubrinic acid	A-19	Sanjoinine D
S28	Ceanothenic acid	A-20	Sanjoinine G1
S29	Cecropiacic acid	A-21	Lotusine B
S30	Zizyphus saponin I	A-22	Ramosine A
S31	Zizyphus saponin II	A-23	Sanjoinine G2
F1	Pinocembrin	A-24	Amphibine D
F2	7, 4'-dihydroxy-5-methoxy flavanon	A-25	Sanjoinenine
F3	5,7,3',4'-tetramethoxycatechin	A-26	Mucronine J
F4	Catechin		

Figure S11. The structure of compounds in *Ziziphus jujuba* mill. Var



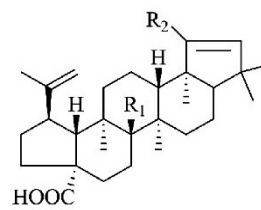
S22



S24 $R_1=\alpha\text{COOH}$, $R_2=\alpha\text{OH}$

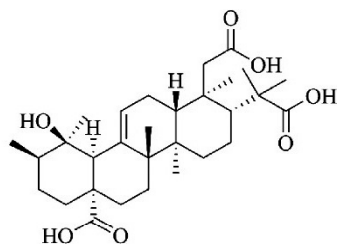
S25 $R_1=\beta\text{COOH}$, $R_2=\alpha\text{OH}$

S27 $R_1=\alpha\text{CHO}$, $R_2=\beta\text{OH}$

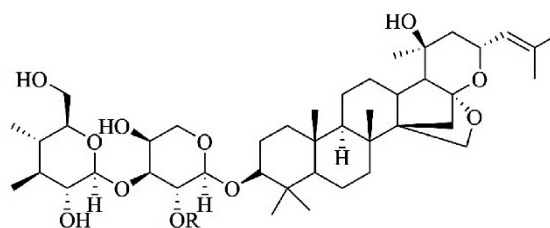


S26 $R_1=\text{CH}_3$, $R_2=\text{CHO}$

S28 $R_1=\text{COOH}$, $R_2=\text{H}$

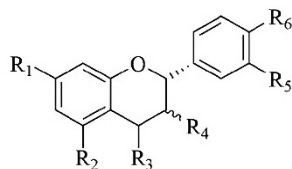


S29



S30 $R=O\text{-}6\text{-deoxy-}\alpha\text{-L-Tal}$

S31 $R=O\text{-}6\text{-deoxy-}\alpha\text{-L-Man}$



F1 $R_1=R_2=\text{OH}$, $R_3=\text{O}$, $R_4=R_5=R_6=\text{H}$

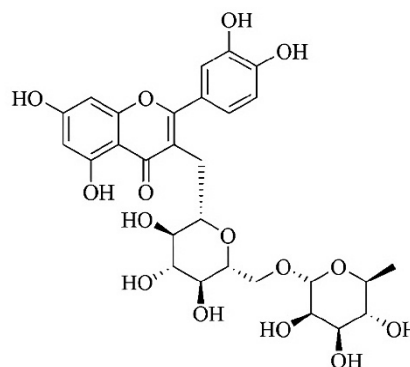
F2 $R_1=R_6=\text{OH}$, $R_2=\text{OCH}_3$, $R_3=\text{O}$, $R_4=R_5=\text{H}$

F3 $R_1=R_2=R_5=R_6=\text{OCH}_3$, $R_3=\text{H}$, $R_4=\beta\text{OH}$

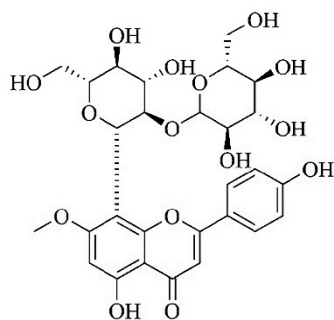
F4 $R_1=R_2=R_5=R_6=\text{OH}$, $R_3=\text{H}$, $R_4=\beta\text{OH}$

F5 $R_1=R_2=R_6=\text{OH}$, $R_3=R_5=\text{H}$, $R_4=\alpha\text{OH}$

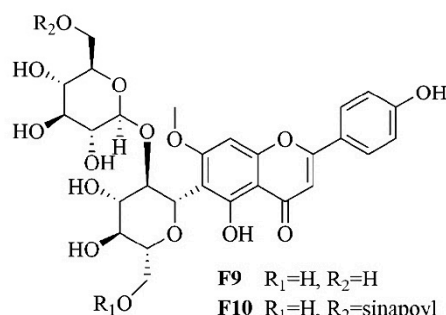
F6 $R_1=R_2=R_6=\text{OH}$, $R_3=R_5=\text{H}$, $R_4=\beta\text{OH}$



F7



F8

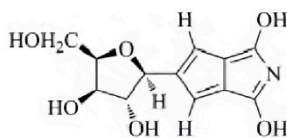


F9 $R_1=\text{H}$, $R_2=\text{H}$

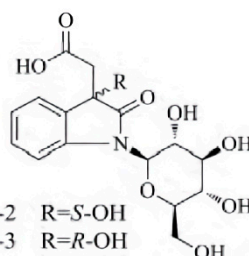
F10 $R_1=\text{H}$, $R_2=\text{sinapoyl}$

F11 $R_1=\text{H}$, $R_2=\text{feruloyl}$

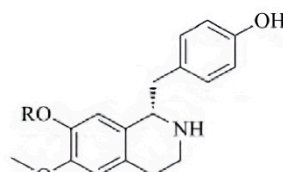
F12 $R_1=\text{H}$, $R_2=p\text{-coumaroyl}$



A-1



A-2 $R=\text{S-OH}$
A-3 $R=R\text{-OH}$



A-4 $R=\text{H}$
A-15 $R=\text{Glu}$

Figure S11 (continued)

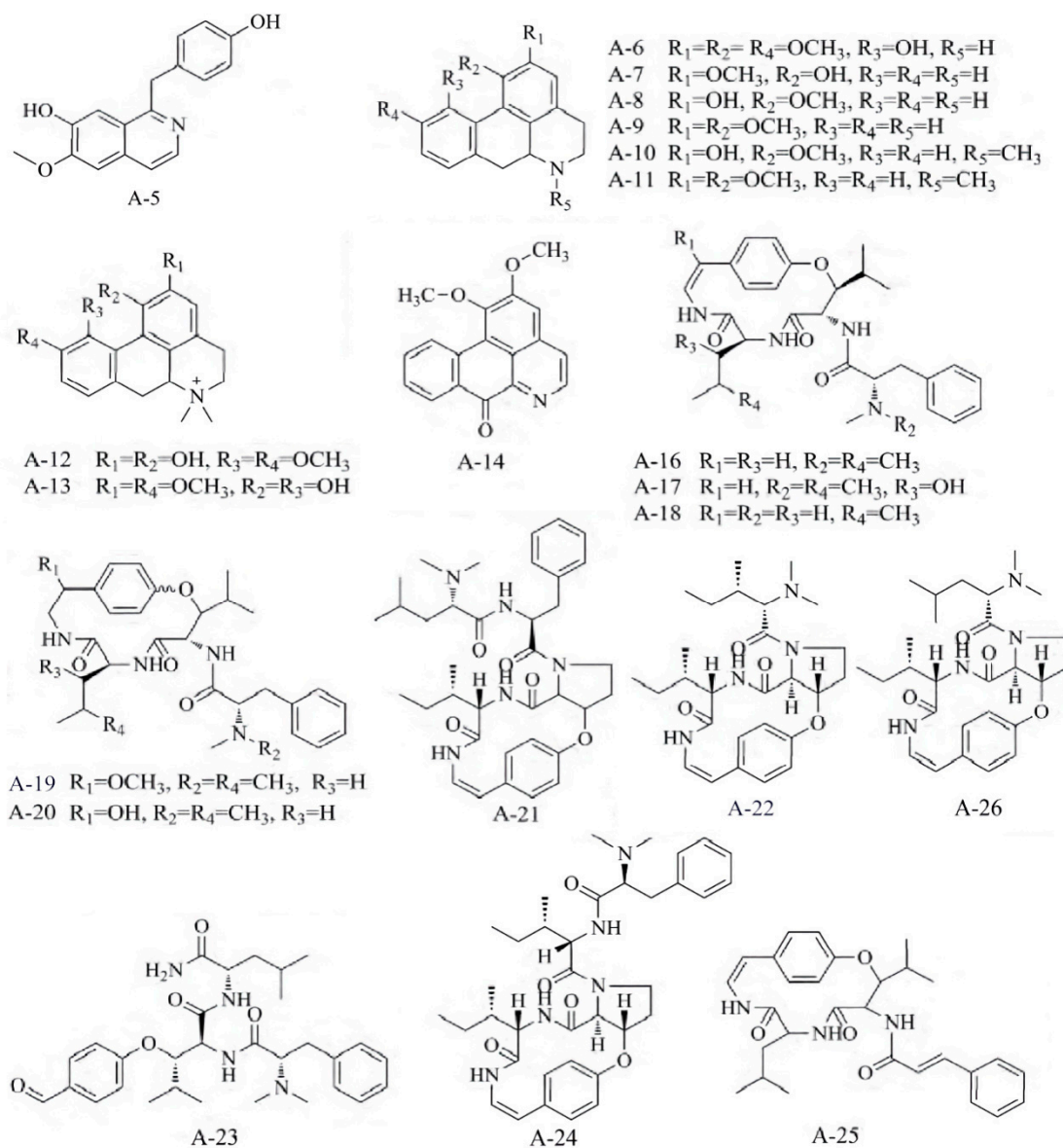


Figure S11 (continued)

Table S11 Chemical compositions in *Bambusa tuldois* munro

No.	Compound	No.	Compound
1	(1S,2R)-1,2-bis(4-hydroxy-3-methoxyphenyl)-1,3-propanediol	9	(+)-lyoniresinol
2	2-Propenal, 3-[4-[(1S,2R)-2-hydroxy-2-(4-hydroxy-3-methoxyphenyl)-1-(hydroxymethyl)ethoxy]-3-methoxyphenyl]-, (2E)-	10	Isolariciresinol 9,9'-acetone
3	erythro-Guaiacylglycerol β -dihydroconiferyl ether	11	2,6-Dimethyl-4H-pyran-4-one
4	5'-Methoxylariciresinol	12	Friedelin
5	5,5'-Dimethoxylariciresinol	13	Friedelanol
6	(+)-glaberridin I	14	Lupenone
7	(-)-Syringaresinol	15	Lupeol
8	(-)-medioresinol	16	alpha-Amyrin

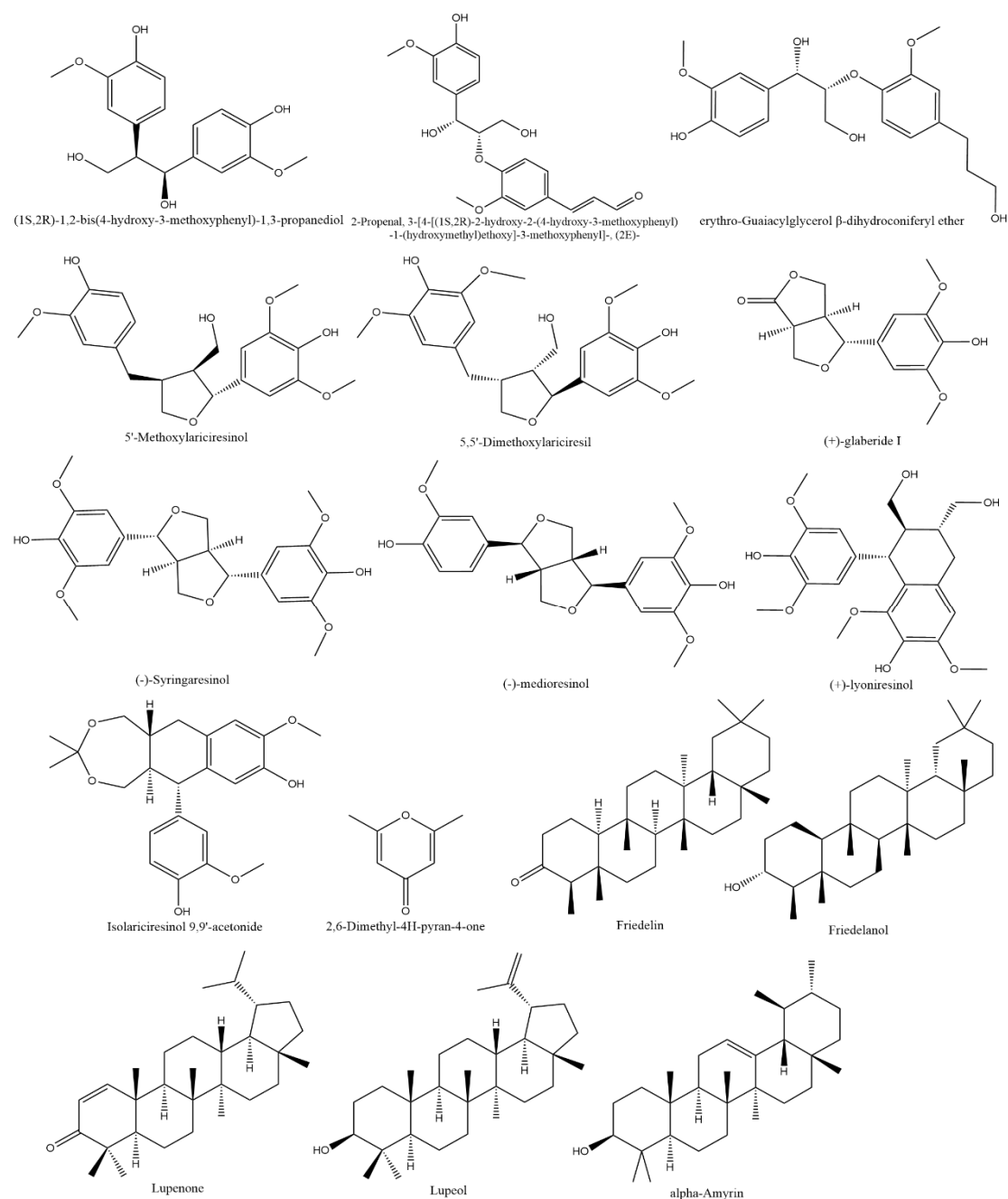


Figure S12. The structure of compounds in *Bambusa tuldois* munro

Table S12 Chemical compositions in *Physochlaina infundibularis* kuang

No.	Compound	No.	Compound
S1	Scopolamine	S11	6, 7-dimethoxycoumarin
S2	Anisodamine	S12	3-O-Methylquercetin
S3	Hyoscyamine	S13	Isoquercitrin
S4	Atropine	S14	Kaempferol 7-O-glucoside
S5	Scopoline	S15	Syringarenol
S6	choline	S16	Protocatechuic acid
S7	Scopoletin	S17	Methyl 4-hydroxymethylbenzoate
S8	Scopolin	S18	2-hydroxybenzoic acid
S9	Fabiatrin	S19	4-hydroxy-benzoic acid
S10	Umbellifero		

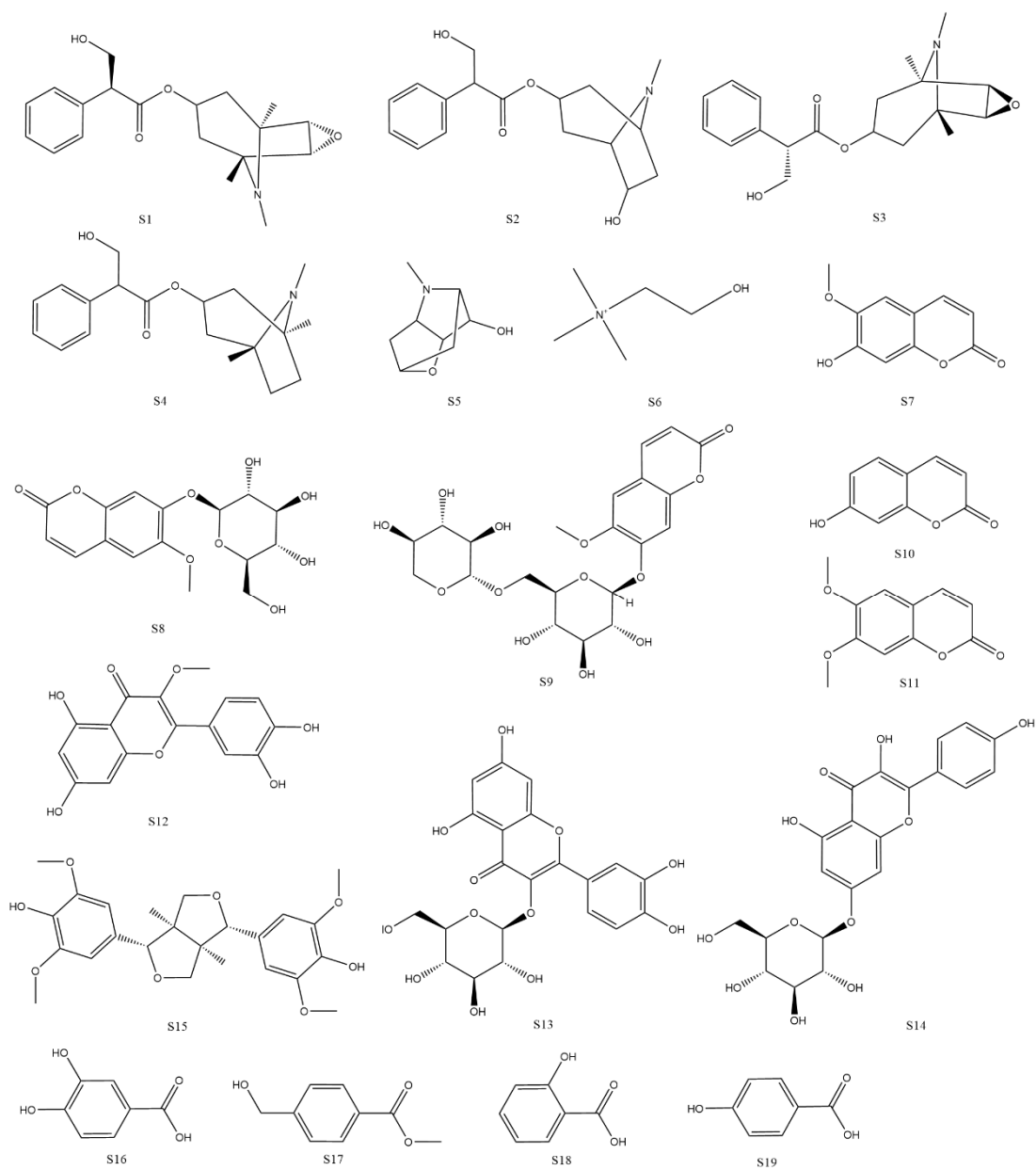


Figure S13. The structure of compounds in *Physochlaina infundibularis* kuang

Table S13 The main compound in *Ganoderma lucidum*

Cpd	Name
1	n-Butyl ganoderate H (n-butyl 12 β -acetoxy-3 β -hydroxy-7,11,15, tetraoxo-5 α -lanost-8-en-Cheng et al. 2010-oate)
2	Butyl ganoderate A
3	Butyl ganoderate B
4	Ganoderic acid α (12 β -acetoxy-3 β , 15 β -dihydroxy-7,11,23-trioxo-5 α -lanosta-8-en-26-oic acid)
5	Ganolucidic acid A
6	Methyl ganolucide A (methyl 15 α -hydroxy-3,11,23-trioxo-5 α -lanost-8-en-26-oate)
7	Ganolucidic acid B
8	Methyl ganolucide B
9	Ganoderic acid A (7 β , 15 α -dihydroxy-3,11,23-trioxo-5 α -lanost-8-en-26-oic acid)
10	Methyl ganoderate A (methyl 7 β , 15 α -dihydroxy-3,11,23-trioxo-5 α -lanost-8-en-26-oate)
11	Methyl ganoderate A (methyl 7 β , 15 α -dihydroxy-3,11,23-trioxo-5 α -lanost-8-en-26-oate)
12	Methyl ganoderate B (methyl 3 β , 7 β -dihydroxy-11,15,23-trioxo-5 α -lanost-8-en-26-oate)
13	Ganoderic acid C (3 β , 7 β , 15 α -trihydroxy-11,23-dioxo-5 α -lanost-8-en-26-oic acid)
14	Methyl ganoderate C
15	Ganoderic acid D (7 β -hydroxy-3,11,15,23-tetraoxo-5 α -lanost-8-en-26-oic acid)
16	Methyl ganoderate D
17	Methyl ganoderate C 2 (methyl 3 β , 7 β , 15 α -trihydroxy-11,23-dioxo-5 α -lanost-8-en-26-oate)
18	Methyl ganoderate K
19	Compound B ₈
20	Compound B ₉
21	3 β -Oxo-formyl-7 β , 12 β -dihydroxy-5 α -lanost-11,15,23-trioxo-8-en(E)-26-oic acid
22	Ganoderic acid B ₈
23	Ganoderic acid C ₁
24	12 β -Acetoxy-3,7,11,15,23-pentaoxo-5 α -lanosta-8-en-26-oic acid ethyl ester
25	3 β , 7 β -Dihydroxy-12 β -acetoxy-11,15,23-trioxo-5 α -lanosta-8-en-26-oic acid methyl ester
26	3 β -Hydroxy-7,11,12,15,23-pentaoxolanost-8-en-26-oic acid
27	Ganoderic acid Df (7 β , 11 β -dihydroxy-3,15,23-trioxo-5 α -lanosta-8-

	en-26-oic acid)
28	Ganoderic acid H
29	Ganoderic acid F (12 β -acetoxy-3,7,11,15-pentaoxo-5 α -lanost-8-en-26-oic acid)
30	Ganoderic acid E (3,7,11,15,23-pentaoxo-5 α -lanost-8-en-26-oic acid)
31	Ganoderic acid K
32	Ganoderic acid AM ₁
33	Ganoderic acid J
34	Ganoderic acid C2 (3 β , 7 β , 15 α -trihydroxy-11,23-dioxo-5 α -lanosta-8-en-26-oic acid)
35	Ganoderic acid G (3 β , 7 β , 15 β -trihydroxy-11,15,23-trioxo-5 α -lanosta-8-en-26-oic acid)
36	7 β , 12 β -Dihydroxy-3,11,15,23-tetraoxo-5 α -lanosta-8-en-26-oic acid
37	12 β -Hydroxy-3,7,11,15,23-pentaoxo-5 α -lanosta-8-en-26-oic acid
38	Methyl ganoderate D (methyl 3 β , 7 β , 15 α -trihydroxy-11,23-dioxo-5 α -lanost-8-en-26-oate)
39	Methyl ganoderate E (methyl 3 β , 7 β , 15 α -trihydroxy-11,23-dioxo-5 α -lanost-8-en-26-oate)
40	Methyl ganoderate F (methyl 12 β -acetoxy-3,7,11,15,23-pentaoxo-5 α -lanost-8-en-26-oate)
41	Methyl ganoderate H (methyl 3 β -hydroxy-12 β -acetoxy-7,11,15,23-tetraoxo-5 α -lanost-8-en-26-oate)
42	Methyl ganoderate G (methyl 3 β , 7 β , 12 β -trihydroxy-11,15,23-trioxo-5 α -lanost-8-en-26-oate)
43	Compound C ₅
44	Compound C ₆
45	Ganoderic acid AP3 (15 α , 20 ξ -dihydroxy-3,7,11,23-tetraoxolanost-8-en-26-oic acid)
46	23-Dihydroganoderic acid I (3 β , 7 β , 20,23 ξ -tetrahydroxy-11,15-dioxolanosta-8-en-26-oic acid)
47	23-Dihydroganoderic acid N (7 β , 20,23 ξ -trihydroxy-3,11,15-trioxolanosta-8-en-26-oic acid)
48	20-Hydroxylganoderic acid G
49	Ganoderic acid I
50	Methyl ganoderate I
51	Methyl ganoderate AP (methyl 12 β , 15 α , 20-trihydroxy-3,7,11,23-tetraoxo-5 α -lanost-8-en-26-oate)
52	Methyl ganoderate N (Methyl 7 β , 20-dihydroxy-3,11,15,23-tetraoxo-5 α -lanost-8-en-26-oate)
53	Methyl ganoderate M (methyl 7 β , 12 α -dihydroxy-3,11,15,23-tetraoxo-5 α -lanost-8-en-26-oate)
54	3-O-Acetyl ganoderic acid B (3 β -acetoxy-7 β -hydroxy-11,15,23-trioxolanost-8-en-26-oic acid)

55	3-O-Acetylganoderic acid K (3 β -acetyloxy-15 α -hydroxy-7,11,23-trioxolanost-8-en-26-oic acid)
56	Ethyl 3-O-acetylganoderate B
57	Ethyl ganoderate J
58	Leucocontextin S
59	Leucocontextin T
60	Leucocontextin U
61	3 α -Carboxyacetoxy-24-methylene-23-oxolanost-8-en-26-oic acid
62	3 α -Carboxyacetoxy-24-methyl-23-oxolanost-8-en-26-oic acid
63	Ganoderoid E
64	Ganoderoid G
65	3 β ,7 β ,15 α ,24-Tetrahydroxy-11,23-dioxo-lanost-8-en-26-oic Acid
66	24S,25R-dihydroxy-3,7-dioxo-8-en-5 α -lanosta-26-ol
67	(24S)-3-oxo-7 α ,15 α ,24,25-tetrahydroxylanosta-8-ene
68	Ganodaustralic acid A
69	Ganoderense H
70	Ganoderense I
71	Ganoderiol D
72	7 β ,15 β ,28-Trihydroxy-3,11,23-trioxolanost-8-en-26-oate
73	3 β ,7 β ,15 β -Trihydroxy-11,23-dioxolanost-8-en-26-oate
74	15 β ,20-Dihydroxy-3,7,11,23-tetraoxolanost-8-en-26-oate
75	Ganohainanic acid A
76	Acetyl ganohainanic acid A
77	Ganohainanic acid B
78	Ganohainanic acid C
79	Ganohainanic acid D
80	Acetyl ganohainanic acid C
81	Lucidumol A ((24S)-24,25-dihydroxylanost-8-ene-3,7-dione)
82	Ganoderiol C (7 α -ethoxy-24,25,26-trihydroxy-5 α -lanost-8-en-3-one)
83	Ganoderiol D (24,25,26-trihydroxy-5 α -lanost-8-en-3,7-dione)
84	Ganoderiol G (24,25,26-trihydroxy-7 α -methoxy-5 α -lanost-8-en-3-one)
85	Applanic acids A
86	(20E)-3 β ,7 β ,15 β -Trihydroxy-11,23-dioxolanost-8,20(22)-dien-26-oate
87	(20E)-3 β ,15 β -Dihydroxy-7,11,23-trioxolanost-8,20(22)-dien-26-oate
88	(20E)-3 β ,7 β -Dihydroxy-11,23-dioxolanost-8,20(22)-dien-26-oic acid
89	(20E)-15 β -Hydroxy-3,7,11,23-tetraoxolanost-8,20(22)-dien-26-oic acid
90	(20E)-7 β ,15 β ,28-Trihydroxy-3,11,23-trioxolanost-8,20(22)-dien-26-oate
91	3 β -hydroxy-12 β -acetoxy-7,11,15,23-tetraoxolanosta-8,20E(22)-dien-26-oic acid methyl ester
92	15 α -hydroxy-3,11,23-trioxolanosta-8,20E(22)-dien-26-oic acid methyl ester

93	12 β -Acetoxy-3 β -hydroxy-7,11,15,23-tetraoxo-lanost-8,20 E -diene-26-oic acid
94	23-Dihydroganoderenic acid D (7 β , 23 ξ -dihydroxy-3,11,15-trioxolanosta-8,20 E (22)-dien-26-oic acid)
95	Methyl ganoderenate D (7 β -hydroxy-3,11,15,23-tetraoxolanosta-8,20 E (22)-dien-26-oic acid methyl ester)
96	Ganoderenic acid A ((20 E)-7 β , 15 α -dihydroxy-3,11,23-trioxo-5 α -lanost-8,20-dien-26-oic acid)
97	Ganoderenic acid B ((20 E)-3 β , 7 β -dihydroxy-11,15,23-trioxo-5 α -lanost-8,20-dien-26-oic acid)
98	Ganoderenic acid C ((20 E)-3 β , 7 β , 15 α -trihydroxy-11,23-dioxo-5 α -lanost-8,20-dien-26-oic acid)
99	Ganoderenic acid D ((20 E)-7 β -hydroxy-3,11,15,23-tetraoxo-5 α -lanost-8,20-dien-26-oic acid)
100	12 β -Acetoxy-7 β -hydroxy-3,11,15,23-tetraoxo-5 α -lanosta-8,20-dien-26-oic acid
101	Ganoderenic acid F (3,7,11,15,23-pentaoxo-5 α -lanosta-8,20 E -dien-26-oic acid)
102	Ganoderenic acid G (15 α -hydroxy-3,7,11,23-tetraoxo-5 α -lanosta-8,20 E -dien-26-oic acid)
103	Methyl ganoderenate H (methyl 3 β -hydroxy-7,11,15,23-tetraoxo-5 α -lanosta-8,20 E -dien-26-oate)
104	Methyl ganoderenate I (3 β , 15 α -dihydroxy-7,11,23-trioxo-5 α -lanosta-8,20 E -dien-26-oate)
105	Ganoderenic acid H
106	12 β -Acetoxy-3 β , 7 β -dihydroxy-11,15,23-trioxo-5 α -lanosta-8,20-dien-26-oic acid
107	Gibbosic acid I
108	Gibbosic acid J
109	Gibbosic acid K
110	Methyl ganoderenate E (7 β , 12 β -dihydroxy-3,11,15,23-tetraoxo-5 α -lanosta-8,20 E -dien-26-oate)
111	12 β -acetoxy-3,7,11,15,23-pentaoxo-lanost-8,20 E -dien-26-oic acid
112	Ganoderic acid GS-1 (7 β -hydroxy-3,11,15-trioxolanosta-8,24(E)-dien-26-oic acid)
113	Ganoderic acid GS-2 (7 β ,15 α -dihydroxy-3,11-dioxolanosta-8,24(E)-dien-26-oic acid)
114	Ganoderic acid GS-3 (12 β -acetoxy-3 β , 7 β -dihydroxy-11,15-dioxo-lanosta-8,24(E)-dien-26-oic acid)
115	Ganoderic acid AP 2 (12 β , 15 α -diacetoxy-3 β -hydroxy-11-oxolanost-8,24(E)-dien-26-oic acid)
116	23 S -Hydroxy-3,7,11,15-tetraoxolanost-8,24 E -diene-26-oic acid
117	7-Oxoganoderic acid Z (3 β -hydroxy-7-oxo-5 α -lanosta-8,24(E)-dien-26-oic acid)
118	Ganoderic acid LM2 ((23 S) 7 β ,dihydroxy-3,11,15-trioxo-5 α -lanosta-8,24-dien-26-oic acid)

119	Lucialdehyde B ((24E)-3,7-dioxo-5 α -lanosta-8,24-dien-26-al)
120	Lucialdehyde C ((24E)-3 β -hydroxy-7-oxo-5 α -lanosta-8,24-dien-26-al)
121	Ganoderic acid γ ((23S)-7 β , 15 α , 23-trihydroxy-3,11-dioxolanosta-8,24(E)-diene-26-oic acid)
122	Ganoderic acid δ ((23S)-7 α , 15 α , 23-trihydroxy-3,11-dioxolanosta-8,24(E)-diene-26-oic acid)
123	Ganoderic acid ϵ ((23S)-3 β , 7 β , 23-trihydroxy-11,15-dioxolanosta-8,24(E)-diene-26-oic acid)
124	Ganoderic acid ζ ((23S)-3 β , 23-dihydroxy-7,11,15-trioxolanosta-8,24(E)-diene-26-oic acid)
125	Ganoderic acid η ((23S)-3 β , 7 β , 12 β , 23-tetrahydroxy-11,15-dioxolanosta-8,24(E)-diene-26-oic acid)
126	Ganoderic acid θ ((23S)-3 β , 12 β , 23-trihydroxy-7,11,15-trioxolanosta-8,24(E)-diene-26-oic acid)
127	Ganoderic acid β (3 β , 7 β -dihydroxy-11,15-dioxolanosta-8,24(E)-dien-26-oic acid)
128	Ganolucidic acid E (15 α -hydroxy-3,11-dioxo-5 α -lanosta-8,24E-dien-26-oic acid)
129	Ganoderal B (7 α -hydroxy-3-oxo-5 α -lanosta-8,24E-dien-26-al)
130	Ganoderic acid Ma (3 α , 7 α -diacetoxy-15 α -hydroxy-5 α -lanost-8,24E-dien-26-oic acid)
131	Lucialdehyde D (3,7,11-trioxo-5 α -lanosta-8,24-diene-26-al)
132	Ganoderone A (5 α -lanosta-8,24-diene-26-hydroxy-3,7-dione)
133	ganoderic acid Mi (3 α -acetoxy-15 α -hydroxy-7 α -methoxy-5 α -lanost-8,24E-dien-26-oic acid)
134	11 α -Hydroxy-3,7-dioxo-5 α -lanosta-8,24(E)-dien-26-oic acid
135	11 β -Hydroxy-3,7-dioxo-5 α -lanosta-8,24(E)-dien-26-oic acid
136	Lucidiol (5 α -lanosta-8,24-dien-3 β , 26-dihydroxy-7-one)
137	Lucidal (5 α -lanosta-8,24E-dien-3 β -hydroxy-7-on-26-al)
138	Ganoderic acid DM (3,7-dioxo-8,24(E)-dien-lanosta-26-oic acid)
139	Ganoderic acid V
140	Ganolucidic acid γ a (3 β , 7 β , 15 α , 23-tetrahydroxy-11-oxo-5 α -lanosta-8,24-dien-26-oic acid)
141	Ganolucidic acid F (3 β , 15 α , 23-trihydroxy-11-oxo-5 α -lanosta-8,24-dien-26-oic acid)
142	Lucialdehyde E (7 β , 15 α -dihydroxy-3,11-dioxo-5 α -lanosta-8,24-dien-26-al)
143	Ganolucidic acid D
144	Ganoderic acid W
145	Ganoderic acid Mb (3 α , 15 α , 22-triacetoxy-7 α -hydroxy-5 α -lanost-8,24E-dien-26-oic acid)
146	Ganoderic acid Mc (3 α , 7 α , 22-triacetoxy-15 α -hydroxy-5 α -lanost-8,24E-dien-26-oic acid)
147	Ganoderic acid Md (3 α , 22-diacetoxy-7 α -methoxy-5 α -lanost-8,24E-dien-26-oic acid)

148	Ganoderic acid Mg (3 α , 22-diacetoxy-15 α -hydroxy-7 α -methoxy-5 α -lanost-8,24 E -dien-26-oic acid)
149	Ganoderic acid Mh (3 α , 22-diacetoxy-7 α , 15 α -dihydroxy-5 α -lanost-8,24 E -dien-26-oic acid)
150	Ganoderic acid Mj (22-acetoxy-3 α -hydroxy-7 α -methoxy-5 α -lanost-8,24 E -dien-26-oic acid)
151	3 α , 22 β -Diacetoxy-7 α -hydroxyl-5 α -lanost-8,24 E -dien-26-oic acid
152	Ganorbiformin B
153	Ganorbiformin C
154	Ganorbiformin D
155	Ganorbiformin E
156	Ganorbiformin F
157	Ganoderic acid O ((22 S , 24 E)-3 α , 15 α , 22-triacetoxy-7 α -hydroxy-5 α -lanosta-7,24-dien-26-oic acid)
158	7-O-Methylganoderic acid O ((22 S , 24 E)-3 α , 15 α , 22-triacetoxy-7 α -methoxy-5 α -lanosta-8,24-dien-26-oic acid)
159	(22 S ,24 E)-15 α ,22-Diacetoxy-3-oxolanosta-8,24-dien-26-oic acid
160	(22 S ,24 E)-3 β ,15 α ,22-Triacetoxylanosta-8,24-dien-26-oic acid
161	(22 S ,24 E)-15 α ,22-Diacetoxy-3 β -hydroxylanosta-8,24-dien-26-oic acid
162	(24 E)-15 α -hydroxy-3-oxolanosta-8,24-dien-26-oic acid.
163	(24 E)-7 α ,15 α -dihydroxy-3-oxolanosta-8,24-dien-26-oic acid.
164	(24 E)-3 β -Acetoxy-7 α -hydroxylanosta-8,24-dien-26-oic acid
165	(24 E)-3 β ,15 α -Diacetoxy-7 α -hydroxylanosta-8,24-dien-26-oic acid
166	(22 S ,24 E)-7 α -Hydroxy-3 β ,15 α ,22-triacetoxylanosta-8,24-dien-26-oic acid
167	Leucocontextin W
168	Ganoleucoin Y
169	Ganoleucoin Z
170	Hainanaldehyde A
171	Sinensoic acid (3,26-dihydroxy-5 α -lanosta-8,24 E -dien-21-oic acid)
172	Tsugaroside B (3 α -acetoxy-5 α -lanosta-8,24-diene-21-O- β -D-xyloside)
173	Tsugaric acid A (3 α -acetoxy-5 α -lanosta-8,24-dien-21-oic acid)
174	Ganosinoside A (3-oxo-5 α -lanosta-8,24-dien-21-oic acid ester β -D-glucoside)
175	Tsugaroside A (3 α -acetoxy-5 α -lanosta-8,24-dien-21-oic acid ester β -D-glucoside)
176	3-Oxo-5 α -lanosta-8,24-dien-21-oic acid
177	3 β -Hydroxy-5 α -lanosta-8,24-dien-21-oic acid
178	Leucocontextins A
179	Leucocontextins B
180	Leucocontextins C
181	Leucocontextins D
182	Leucocontextins J

183	Leucocontextins K
184	Leucocontextins L
185	Leucocontextins M
186	Leucocontextins N
187	Leucocontextins R
188	Leucocontextins E
189	Leucocontextins H
190	Leucocontextins F
191	Leucocontextins G
192	Leucocontextins I
193	Leucocontextins Q
194	(24Z)-3-oxo-7 α ,15 α ,27-trihydroxylanosta-8,24-diene.
195	3-oxo-7 α ,15 α ,26,27-tetrahydroxylanosta-8,24-diene.
196	Hainanic acid A
197	Hainanic acid B
198	Ganodrol A
199	21-hydroxy-3,7-dioxo-8,24E-dien-5 α -lanosta-26-ol
200	(20S,24E)-21-chloro-15 β ,20,29-trihydroxy-3,7,11-trioxolanosta-8,24-dien-26-oic acid.
201	(20S,24E)-15 β ,20,29-trihydroxy-3,7,11-trioxolanosta-8,24-dien-26-oic acid.
202	(20S,24E)-15 β ,20-dihydroxy-3,7,11-trioxolanosta-8,24-dien-26-oic acid
203	(20S,24E)-7,11-dioxo-3 β ,15 β ,20,29-tetrahydroxylanosta-8,24-dien-26-oic acid
204	Ganoderiol E (3 β ,26,27-trihydroxy-5 α -lanosta-8,24-dien-7-one)
205	Ganoderiol I (15 α ,26,27-trihydroxy-5 α -lanosta-8,24-dien-3-one)
206	Ganoderiol J (26,27-dihydroxy-5 α -lanosta-8,24-dien-3,7-dione)
207	3 β ,15 α -Diacetoxylanosta-8,24-dien-26-oic acid
208	Ganoderic acid U5
209	Ganoderic acid U6
210	(22S,24E)-22-acetoxy-3,7-dioxolanosta-8,24-dien-26-oic acid
211	(22S,24E)-3 α ,22-diacetoxy-7-oxolanosta-8,24-dien-26-oic acid
212	3 α -acetoxy-5 α -lanosta-8,24(24')-dien-21-oic acid
213	(24E)-7 α -acetoxy-15 α -hydroxy-3-oxolanosta-8,24-dien-26-oic acid
214	Colossolactone A
215	Ganocolossusins H
216	Ganoderic acid U4
217	3b,7b-dihydroxy-11-oxo-8,24E-dien-5 α -lanosta-26-ol
218	(24Z)-7 α -hydroxy-3-oxo-lanosta-8,24-dien-26-oic acid
219	(24E)-7 α -Methoxy-3-oxolanosta-8,24-dien-26-oic acid
220	(22S,24E)-3 β ,22-Diacetoxy-7 α -methoxylanosta-8,24-dien-26-oic acid
221	(22S,24E)-7 α -Methoxy-3 β ,15 α ,22-triacetoxylanosta-8,24-dien-26-oic acid

222	(24 <i>E</i>)-3 β -Acetoxy-15 α -hydroxy-7 α -methoxylanosta-8,24-dien-26-oic acid
223	(24 <i>S</i>)-7 α ,24-dihydroxy-3-oxo-lanosta-8,25-diene,
224	(24 <i>S</i>)-3,7-dioxo-24-hydroxylanosta-8,25-diene
225	(24 <i>S</i>)-24-hydroxy-3-oxo-lanosta-7,9(11),25-triene
226	(24 <i>S</i>)-3 β ,24-dihydroxylanosta-7,9(11),25-triene
227	Tsugaric acid C ((24 <i>R,S</i>)-3 α -acetoxy-24-hydroxy-5 α -lanosta-8,25-dien-21-oic acid)
228	3 β -hydroxy-7,22-dioxo-5 α -lanosta-8,24-dien-21-oic acid
229	Applanaic acid B
230	(17 <i>Z</i>)-3 β ,7 β ,15 β -Trihydroxy-11,23-dioxolanost-8,17(20)-dien-26-oate
231	Ganoderoid D
232	Tsugaric acid B (3 α -acetoxy-16 α -hydroxy-24 ξ -methyl-5 α -lanosta-8,25-dien-21-oic acid)
233	3-Epipachymic acid (3 α -acetoxy-16 α -hydroxy-24-methylene-5 α -lanost-8-en-21-oic acid)
235	Epoxyganoderiol A (24 <i>S</i> , 25 <i>S</i> -epoxy-7 α , 26-dihydroxy-5 α -lanost-8-en-3-one)
236	Ganoderone C (5 α -lanosta-8-ene-24,25-epoxy-26-hydroxy-3,7-dione)
237	Colossolactone B
238	Ganodermalactones X
239	Colossolactone I ((22 <i>S</i>)-3 β -hydroxylanosta-8,24-dien-26,22-olide)
240	Colossolactone II ((22 <i>S</i>)-1,3- β -dihydroxylanosta-8,24-dien-26,22-olide)
241	Offiffifficimalonic acid L
242	Offiffifficimalonic acid M
243	Offiffifficimalonic acid N
244	Offiffifficimalonic acid O
245	Spiroganocalitone A
246	Spiroganocalitone B
247	Spiroganocalitone C
248	Spiroganocalitone D
249	Ganotropic Acid
250	(24 <i>E</i>)-20,21-epoxy-15 β -hydroxy-3,7,11-trioxolanosta-8,24-dien-26-oic acid.
251	Applanaic acids C
252	Furanoganoderic acid (21,23-epoxy-15 α -hydroxy-3,7,11-trioxo-5 α -lanosta-8,20(21),22-trien-26-oic acid)
253	Ganodermacetal (methyl 7 β , 15 α -isopropylidenedioxy-3 β -hydroxy-11,23-dioxo-5 α -lanost-8-en-26-oate)
254	Methyl ganoderate A acetamide (methyl 7 β , 15 α -isopropylidenedioxy-3,11,23-trioxo-5 α -lanost-8-en-26-oate)
255	Leucocontextin V
256	Austrolactone (I)

257	Ganodermalactones W
258	Colossolactone III ((22S)-3 β , 19-epoxy-lanosta-8,24-dien-26,22-olide)
259	Butyl lucidenate N
260	Butyl lucidenate A
	20(21)-Dehydro lucidenic acid N
261	(3 β , 7 β -dihydroxy-11,15-dioxo-25,26,27-trinorlanosta-8,20-dien-24-oic acid)
	20-Hydroxylucidenic acid A
262	(7 β , 20 ξ -dihydroxy-3,11,15-trioxo-25,26,27-trinorlanost-8-en-24-oic acid)
	Methyl lucidenate D
263	(methyl 12 β -acetoxy-3,7,11,15-tetraoxo-5 α -lanost-8-en-24-oate)
	20(21)-Dehydro lucidenic acid A
264	(7 β -Hydroxy-3,11,15-trioxo-25,26,27-trisnorlanosta-8,20(21)-dien-24-oic acid)
	Methyl 20(21)-dehydro lucidenate A
265	(methyl 7 β -hydroxy-3,11,15-trioxo-25,26,27-trisnorlanosta-8,20(21)-dien-24-oate)
	Lucidenic acid N
266	(3,7-dihydroxy-4,4,14-trimethyl-11,15-dioxo-5 α -chol-8-en-24-oic acid)
	Lucidenic acid D
267	(12 β -acetoxy-4,4,14 α -trimethyl-3,7,11,15-tetraoxo-5 α -chol-8-en-24-oic acid)
268	Methyl lucidenate E
269	Methyl lucidenate F
	Ethyl lucidenates A
270	(ethyl 7 β -hydroxy-4,4,14 α -trimethyl-3,11,15-trioxo-5 α -chol-8-en-24-oate)
	3 β -Oxo-formyl-7 β , 12 β -dihydroxy-4,4,14 α -trimethyl-5 α -chol-11,15-dioxo-8-en(E)-24-oic acid
271	Lucidenic acid A
272	273(7 β -hydroxy-4,4,14 α -trimethyl-3,11,15-trioxo-5 α -chol-8-en-24-oic acid)
	Lucidenic acid B
273	(7 β , 12-dihydroxy-4,4,14 α -trimethyl-3,11,15-trioxo-5 α -chol-8-en-24-oic acid)
	Lucidenic acid C
274	(3 β , 7 β , 12-trihydroxy-4,4,14 α -trimethyl-11,15-dioxo-5 α -chol-8-en-24-oic acid)
275	4,4,14 α -Trimethyl-3,7-dioxo-5 α -chol-8-en-24-oic acid
	(3 β , 7 β -dihydroxy-12 β -acetoxy-25,26,27-trinor-11,15-dioxo dioxolanost-8-en-24-oic acid)
276	
277	Methyl lucidenate P
	Methyl lucidenate Q (methyl-7 β ,
278	15 α -dihydroxy-25,26,27-trinor-3,11-dioxolanost-8-en-24-oate)
279	3 β -Hydroxy-4,4,14-trimethyl-7,11,15-trioxochol-8-en-24-oic acid
280	Methyl lucidenate D2
281	Methyl lucidenate E2
	Methyl lucidenate N (methyl 3 β , 7 β -dihydroxy-4,4,14 α -trimethyl-11,15-dioxo-5 α -chol-8-en-24-oate)
282	

283	t-Butyl lucidenate B (t-butyl 7 β , 12 β -dihydroxy-4,4,14 α -trimethyl-3,11,15-trioxo-5 α -chol-8-en-24-oate)
284	Methyl lucidenate A
285	Lucidenic acid D2
286	20-Hydroxylucidenic acid D 2 ((20 ξ)-12 β -acetoxy-20-hydroxy-3,7,11,15-tetraoxo-25,26,27-trisnorlanost-8-en-24-oic acid)
287	20-Hydroxylucidenic acid F ((20 ξ)-20-hydroxy-3,7,11,15-tetraoxo-25,26,27-trisnorlanost-8-en-24-oic acid)
288	20-Hydroxylucidenic acid E 2 (12 β -acetoxy-3 β -hydroxy-7,11,15-trioxo-25,26,27-trisnorlanost-8-en-24-oic acid)
289	20-Hydroxylucidenic acid N ((20 ξ)-3 β , 7 β , 20-trihydroxy-11,15-dioxo-25,26,27-trisnorlanost-8-en-24-oic acid)
290	20-Hydroxylucidenic acid P ((20 ξ)-12 β -acetoxy-3 β , 7 β , 20-trihydroxy-11,15-dioxo-25,26,27-trisnorlanost-8-en-24-oic acid)
291	Lucidenic acid F
292	Methyl lucidenate C
293	Lucidenic acid E2
294	Lucideric acid A
295	Methyl lucidenate H (methyl 3 β , 7 β -dihydroxy-4 α -hydroxymethyl-4 β , 14 α -dimethyl-11,15-dioxo-5 α -chol-8-en-24-oate)
296	Methyl lucidenate I (3 β -hydroxy-4 α -hydroxymethyl-4 β , 14 α -dimethyl-7,11,15-trioxo-5 α -chol-8-en-24-oate)
297	Methyl lucidenate J (3 β , 12 β -dihydroxy-4 α -hydroxymethyl-4 β , 14 α -dimethyl-7,11,15-trioxo-5 α -chol-8-en-24-oate)
298	Methyl lucidenate Ha
299	Ganoderoid C
300	Lucidone A
301	Lucidenol
302	Ganosineniol A
303	Ganolucidoid A.
304	Ganolucidoid B
305	3 β -acetyloxy-lucidone H
306	Ganoluciduone A
307	Ganosporelactone A
308	Ganosporelactone B
309	Ganolactone (7 β -hydroxy-3,11,15-trioxo-lanosta-8-en-24 \rightarrow 20 α -lactone)
310	Ganoderlactone B
311	Ganoderlactone C
312	Ganoderlactone D
313	Ganoderlactone E

314	Ganolactone B (3 β , 7 β -dihydroxy-11, 15-dioxolanosta-8-en-24 \rightarrow 20 lactone)
315	8 α , 9 α -Epoxy-4,4,14 α -trimethyl-3,7,11,15,20-pentaoxo-5 α -pregnane
316	3 β , 7 β -Dihydroxy-11,15,23-trioxolanost-8,16-dien-26-oic acid
317	3 β , 7 β -Dihydroxy-11,15,23-trioxolanost-8,16-dien-26-oic acid methyl ester
318	12 β -Acetoxy-3 β , 7 β -dihydroxy-11, 15,23-trioxolanost-8,16-dien-26-oic acid
319	20-carbinol-7 β ,15 α -dihydroxy-4,4,14 α -trimethyl-3,11-dioxo-5 α -pregn-8,16-dien
320	Ganoderol A
321	Ganoderol A
322	15-Hydroxy-ganoderic acid S (15 α -hydroxy-3-oxo-5 α -lanosta-7,9(11),24(E)-trien-26-oic acid)
323	3 α , 16 α -Dihydroxylanosta-7,9(11),24-trien-21-oic acid
324	3 α , 16 α , 26-Trihydroxylanosta-7,9(11),24-trien-21-oic acid
325	Ganoderic acid S1
326	Ganoderic acid SZ (3-oxo-lanosta-7,9(11),24(Z)-trien-26-oic acid)
327	5 α -Lanosta-7,9(11),24-triene-15 α -26-dihydroxy-3-one
328	Ganoderic acid Me (3 α , 15 α -diacetoxy-5 α -lanost-7,9(11),24E-trien-26-oic acid)
329	Ganoderic acid Mf (3 α -acetoxy-15 α -hydroxy-5 α -lanost-7,9(11),24E-trien-26-oic acid)
330	Ganodermenonol (26-hydroxy-5 α -lanosta-7,9(11),24-trien-3-one)
331	Ganodermediol (5 α -lanosta-7,9(11),24-triene-3 β , 26-diol)
332	Ganoderetriol (5 α -lanosta-7,9(11),24-triene-3 β , 26,27-triol)
333	Ganodermic acid S (lanosta-7,9(11),24-trien-3 β , 15 α -diacetoxy-26-oic acid)
334	Carnosodione (26,27-dihydroxylanosta-7,9(11),24-trien-3,16-dione)
335	Canoderol B ((24E)-5 α -lanosta-7,9(11),24-trien-3,26-diol)
336	Ganoderic acid Mk (3 α , 22-diacetoxy-15 α -hydroxy-5 α -lanost-7,9(11),24E-trien-26-oic acid)
337	Ganoderiol B (15 α , 26,27-trihydroxy-5 α -lanosta-7,9(11),24-trien-3-one)
338	Ganoderic acid T ((22S, 24E)-3 α , 15 α , 22-triacetoxy-5 α -lanosta-7,9(11),24-trien-26-oic acid)
339	Ganoderic acid S ((22S, 24E)-22-acetoxy-3 α -hydroxy-5 α -lanosta-7,9(11),24-trien-26-oic acid)
340	Ganoderic acid R ((22S, 24E)-3 α , 22-diacetoxy-5 α -lanosta-7,9(11),24-trien-26-oic acid)
341	Ganorbiformin G
342	Lanosta-7,9(11),24-trien-3 β , 15 α , 22 β -triacetoxy-26-oic acid
343	Lanosta-7,9(11),24-trien-15 α -acetoxy-3 α -hydroxy-23-oxo-26-oic acid
344	Lanosta-7,9(11),24-trien-3 α , 15 α -diacetoxy-23-oxo-26-oic acid
345	Lanosta-7,9(11),24-trien-3 α , 15 α -hydroxy-23-oxo-26-oic acid
346	Lanosta-7,9(11),24-trien-3 α -acetoxy-15 α , 22 β -dihydroxy-26-oic acid
347	Ganodermic acid T-N (3 β -hydroxy-15 α -acetoxy-lanosta-7,9(11),24-trien-26-oic acid)

348	Ganodermic acid T-O (3 β -acetoxy-15 α -hydroxy-lanosta-7,9(11),24-trien-26-oic acid)
349	Ganodermic acid T-Q (3 β -oxo-15 α -acetoxy-lanosta-7,9(11),24-trien-26-oic acid)
350	Compound 10
351	Ganoderic acid P ((22 <i>S</i> , 24 <i>E</i>)-15 α , 22-diacetoxy-3 α -hydroxy-5 α -lanosta-7,9(11),24-trien-26-oic acid)
352	Ganoderic acid Q ((22 <i>S</i> , 24 <i>E</i>)-3 α , 22-diacetoxy-15 α -hydroxy-5 α -lanosta-7,9(11),24-trien-26-oic acid)
353	Ganoderic acid Jc (15 α , 23-dihydroxy-3-oxo-5 α -lanosta-7,9(11),24-trien-26-oic acid)
354	Ganodermatetraol (3 β , 15 α , 26,27-tetrahydroxy-5 α -lanosta-7,9(11),24-triene)
355	Lucialdehyde A ((24 <i>E</i>)-3 β -hydroxy-5 α -lanosta-7,9(11),24-trien-26-al)
356	Ganoderiol F (26,27-dihydroxy-5 α -lanosta-7,9(11),24-trien-3-one)
357	26,27-Dihydroxy-5 α -lanosta-7,9(11),24-triene-3,22-dione
358	26-Hydroxy-5 α -lanosta-7,9(11),24-triene-3,22-dione
359	Ganodermic acid P1 (lanosta-7,9(11),24-trien-3 α , 22 β -diacetoxy-15 α -hydroxy-26-oic acid)
360	Ganodermic acid P 2 (lanosta-7,9(11),24-trien-15 α , 22 β -diacetoxy-3 β -hydroxy-26-oic acid)
361	Lanosta-7,9(11),24-trien-3 β , 15 α , 22-triacetoxy-26-oic acid
362	16 α -Hydroxy-3-oxolanosta-7,9(11),24-trien-21-oic acid
363	(20 <i>S</i> ,24 <i>E</i>)-15 β ,20-dihydroxy-3-oxolanosta-7,9(11),24-trien-26-oic acid.
364	Ganodaustalic acid D
365	15 α -acetoxy-5 α -lanosta-7,9(11),24-trien-3 β ,26-dio
366	3 β -hydroxy-15 α -acetoxy-5 α -lanosta-7,9(11),24-trien-26-al
367	3 α , 15 α , 22 α -Trihydroxylanosta-7,9(11),24-trien-26-oic acid
368	3 β , 15 α , 22 β -Trihydroxylanosta-7,9(11),24-trien-26-oic acid
369	3 α , 15 α -Diacetoxy-22 α -hydroxylanosta-7,9(11),24-trien-26-oic acid
370	3 β , 15 α -Diacetoxy-22 α -hydroxylanosta-7,9(11),24-trien-26-oic acid
371	22 β -Acetoxy-3 α , 15 α -dihydroxylanosta-7,9(11),24-trien-26-oic acid
372	22 β -Acetoxy-3 β , 15 α -dihydroxylanosta-7,9(11),24-trien-26-oic acid
373	Ganoderic acid TR
374	Ganodermic acid Ja (lanosta-7,9(11),24-trien-3 α , 15 α -dihydroxy-26-oic acid)
375	Ganodermic acid Jb (lanosta-7,9(11),24-trien-3 β , 15 α -dihydroxy-26-oic acid)
376	Ganodermic acid R (lanosta-7,9(11),24-trien-3 α , 15 α -diacetoxy-26-oic acid)
377	Ganoderic acid U1
378	15 α , 26-Dihydroxy-5 α -lanosta-7,9,24(<i>E</i>)-trien-3-one
379	3 β -Hydroxy-5 α -lanosta-7,9,24(<i>E</i>)-trien-26-oic acid
380	(24 <i>E</i>)-3 β -Acetoxylanosta-7,9(11),24-trien-26-oic acid

381	(22 <i>S</i> ,24 <i>E</i>)-3 β ,22-Diacetoxylanosta-7,9(11),24-trien-26-oic acid (15)
382	(22 <i>S</i> ,24 <i>E</i>)-22-Acetoxy-3 β -hydroxylanosta-7,9(11),24-trien-26-oic acid
383	Ganodaustalic acid G
384	Ganodaustalic acid F
385	Ganodrol B
386	3-oxo-25-methoxy-24,26-dihydroxy-lanosta-7,9(11)-diene
387	Ganowebrianones B
388	(24 <i>S</i> ,25 <i>R</i>)-25-methoxylanosta-7,9(11)-dien-3 β ,24,26-triol
389	Ganoderiol A triacetate (3 β ,24,26-triacetoxy-5 α -lanosta-7,9(11)-dien-25-ol)
390	Lucidumol B ((24 <i>S</i>)-lanosta-7,9(11)-diene-3 β ,24,25-triol)
391	Ganodermanontriol (24,25,26-trihydroxy-5 α -lanosta-7,9(11)-dien-3-one)
392	Ganoderiol A (5 α -lanosta-7,9(11)-dien-3 β ,24,25,26-tetraol)
393	Ganodermanondiol
394	Ganoderic acid X (3 α -hydroxy-15 α -acetoxy-lanosta-7,9(11),24-trien-26-oic acid)
395	Ganosinensin A (ganodermanontriol 26-O-((2 <i>Z</i> ,5 <i>E</i> ,9 <i>E</i>)-2-[2-(2,5-dihydroxyphenyl)-2-oxo-ethylidene]-11-hydroxy-6,10-dimethylundeca-5,9-dienate))
396	Ganosinensin B (ganodermanontriol 24-O-((2 <i>Z</i> ,5 <i>E</i> ,9 <i>E</i>)-2-[2-(2,5-dihydroxyphenyl)-2-oxo-ethylidene]-11-hydroxy-6,10-dimethylundeca-5,9-dienate))
397	Ganosinensin C (ganodermanontriol 24-O-((2 <i>Z</i> ,5 <i>E</i> ,9 <i>E</i>)-2-[2-(2,5-dihydroxyphenyl)ethylidene]-11-hydroxy-6,10-dimethylundeca-5,9-dienate))
398	Epoxyganoderiol B (24 <i>S</i> ,25 <i>S</i> -epoxy-26-hydroxy-5 α -lanosta-7,9(11)-diene-3-one)
399	Epoxyganoderiol C (24 <i>S</i> ,25 <i>S</i> -epoxy-5 α -lanosta-7,9(11)-diene-3 β ,26-diol)
400	26,27-dihydroxy-24,25-epoxylanosta-7,9(11)-dien-3-one
401	Gibbosicolids C
402	Applanoxidic acid A (15 α -hydroxy-7 α ,8 α -epoxy-3,12,23-trioxo-5 α -lanosta-9(11),20 <i>E</i> -dien-26-oic acid)
403	Applanoxidic acid B (3 β -hydroxy-7 α ,8 α -epoxy-12,15,23-trioxo-5 α -lanosta-9(11),20 <i>E</i> -dien-26-oic acid)
404	Applanoxidic acid F (7 α ,8 α -epoxy-3,12,15,23-tetraoxo-5 α -lanosta-9(11),20 <i>E</i> -dien-26-oic acid)
405	Applanoxidic acid C (20-hydroxy-7 α ,8 α -epoxy-3,12,15,23-tetraoxo-5 α -lanosta-9(11),16-dien-26-oic acid)
406	Applanoxidic acid D (3 β ,20-dihydroxy-7 α ,8 α -epoxy-12,15,23-trioxo-5 α -lanosta-9(11),16-dien-26-oic acid)
407	Applanolactone A
408	Applanolic acid F
409	Applanolic acid E

410	Lucialdehyde A ((24 <i>E</i>)-3 <i>β</i> -hydroxy-5 <i>α</i> -lanosta-7,9(11),24-trien-26-ol)
411	Ganoderol A
412	Ganoderol A
413	Ganoderic acid TR
414	Ganodermic acid Ja (lanosta-7,9(11),24-trien-3 <i>α</i> , 15 <i>α</i> -dihydroxy-26-oic acid)
415	Ganodermic acid Jb (lanosta-7,9(11),24-trien-3 <i>β</i> , 15 <i>α</i> -dihydroxy-26-oic acid)
416	Ganodermic acid R (lanosta-7,9(11),24-trien-3 <i>α</i> , 15 <i>α</i> -diacetoxy-26-oic acid)
417	15 <i>α</i> -Hydroxy-3-oxo-5 <i>α</i> -lanosta-7,9,24(<i>E</i>)-triene-26-oic acid
418	15 <i>α</i> , 26-Dihydroxy-5 <i>α</i> -lanosta-7,9,24(<i>E</i>)-trien-3-one
419	3 <i>β</i> -Hydroxy-5 <i>α</i> -lanosta-7,9,24(<i>E</i>)-trien-26-oic acid
420	Ganodermenonol (26-hydroxy-5 <i>α</i> -lanosta-7,9(11),24-trien-3-one)
421	Ganoluciduone B
422	Lanosta-7,9(11),24-trien-3-one 15,26-dihydroxy
423	Lanosta-7,9(11),24-trien-26-oic,3-hydroxy
424	Ganoderic acid Y ((24 <i>E</i>)-3-ol-5 <i>α</i> -lanosta-7,9(11),24-trien-26-oic acid)
425	4,4,14 <i>α</i> -Trimethyl-5 <i>α</i> -chole-7,9(11)-dien-3-oxo-24-oic acid
426	Ganoderic acid Jd (15 <i>α</i> -hydroxy-3-oxo-5 <i>α</i> -lanosta-7,9(11)-dien-24-oic acid)
427	Applanone A
428	Applanone B
429	16,17-dehydroapplanone E
430	Applanone D
431	Applanone E
432	Fornicatin C ((3 <i>β</i>)-3-hydroxy-18(13→12 <i>β</i>)-abeo-lanosta-13(17),24-dien-18-oic acid)
433	Applanoxidic acid G (15 <i>β</i> , 20-dihydroxy-7 <i>α</i> , 8 <i>α</i> -epoxy-3,12,23-trioxo-5 <i>α</i> -lanosta-9(11),16-dien-26-oic acid)
434	Applanoxidic acid H (3 <i>β</i> , 12 <i>α</i> , 20-trihydroxy-7 <i>α</i> , 8 <i>α</i> -epoxydioxo-5 <i>α</i> -lanosta-9(11),16-dien-26-oic acid)
435	Methyl applanate B
436	8 <i>β</i> , 9 <i>α</i> -Dihydroganoderic acid J
437	Methyl 8 <i>β</i> , 9 <i>α</i> -dihydroganoderate J
438	Ganosporic acid A (3,7,11,12,15,23-hexaoxo-5 <i>α</i> -lanosta-8-en-26-oic acid)
439	24 <i>ξ</i> -Methyl-5 <i>α</i> -lanosta-25-one
440	16 <i>α</i> ,20-dihydroxy-3,23-dioxo-5 <i>α</i> -lanosta-6,8-dien-26-oic acid
441	Piptolinic acids F
442	Piptolinic acids I
443	Piptolinic acids G
444	Fornicatin C ((3 <i>β</i>)-3-hydroxy-18(13→12 <i>β</i>)-abeo-lanosta-13(17),24-dien-18-oic acid)
445	Ganorbiformin A
446	Gibbosic acid M

447	Ganoderol X.
448	8 β , 9 α -Dihydroganoderic acid J
449	Methyl 8 β , 9 α -dihydroganoderate J
450	Ganosporeric acid A (3,7,11,12,15,23-hexa-oxo-5 α -lanosta-8-en-26-oic acid)
451	24 ξ -Methyl-5 α -lanosta-25-one
452	(20 <i>E</i>)-15 β -Hydroxy-3,7,11,23-tetraoxolanost-20(22)-en-26-oate
453	(20 <i>E</i>)-15 β -Hydroxy-3,7,11,23-tetraoxolanost-20(22)-en-26-oate
454	Fornicatins D
455	Fornicatins E
456	Fornicatins F
457	Fornicatin B (7 β -hydroxy-11-oxo-3,4-seco-25,26,27-trinorlanosta-4(28),8-dien-3,24-dioic acid)
458	Fornicatin G (7 β -hydroxy-11-oxo-3,4-seco-25,26,27-trinorlanosta-4(28),8-dien-24-oic-3-acetyl ester)
459	Fornicatin A (4,7 β -epoxy-28-hydroxy-11-oxo-3,4-seco-25,26,27-trinorlanosta-8-en-3,24-dioic acid)
460	Fornicatin H (4,7 β -epoxy-28-hydroxy-11-oxo-3,4-seco-25,26,27-trinorlanosta-8-en-3,24-diest er)
461	Australic acid ((20 <i>Z</i> , 23 <i>R</i> , 25 <i>R</i>)-15 α -acetyl-7 α , 8 α -epoxy-12-oxo-3,4-seco-5 α -lanosta-4(28),9,20(22)-trien-23,26-olid-3-oic acid)
462	Gibbosicolid E
463	Gibbosicolid F
464	Gibbosicolid G
465	Cochlates A
466	Cochlates B
467	Colossolactone E
468	Colossolactone F
469	Colossolactone G
470	Colossolactone G
471	Colossolactone VIII ((22 <i>S</i> , 23 <i>R</i>)-A,B-dihomo-19-nor-15- β -acetoxy-23-hydroxy-4-oxa-3-oxolanosta-1,8,19,24-tetraen-26,22-olide)
472	Ganosinemic acid A
473	Methyl ganosinensate A
475	Ganocolossusins E
476	Ganocolossusins F
477	Gganorbifate H
478	Ganorbifate F

479	Ganorbifate G
480	Colossolactone VI ((22 <i>R</i>)-3,4- <i>seco</i> -19,22-diacetoxy-4-hydroxy lanosta-7,9(11),24(<i>Z</i>)-trien-3,26-dioic acid 3-methyl ester)
481	Colossolactone V ((22 <i>R</i>)-3,4- <i>seco</i> -19,22-diacetoxy-4-hydroxy lanosta-8,24(<i>Z</i>)-dien-3,26-dioic acid 3-methyl ester)
482	Colossolactone VII ((22 <i>S</i>)-3,4- <i>seco</i> -19-acetoxy-4-hydroxy lanosta-8,24-3dien-26,22-olide 3-methyl ester)
483	Ganodermalactones U
484	Ganocolossusins D
485	Ganorbifates A
486	Ganorbifate C
487	Ganorbifate D
488	Ganorbifate E
489	Ganorbifates B
490	Ganorbifate I
491	Colossolactone IV ((22 <i>S</i>)-A,B-dihomo-19-nor-4-oxalanosta-8,24-dien-26,22-olide)
492	Colossolactone C
493	Ganocolossusins B
494	Ganocolossusins C
495	Ganodermalactones V
496	Ganocolossusins A
497	Ganosidone A
498	Ganosineamic acid B

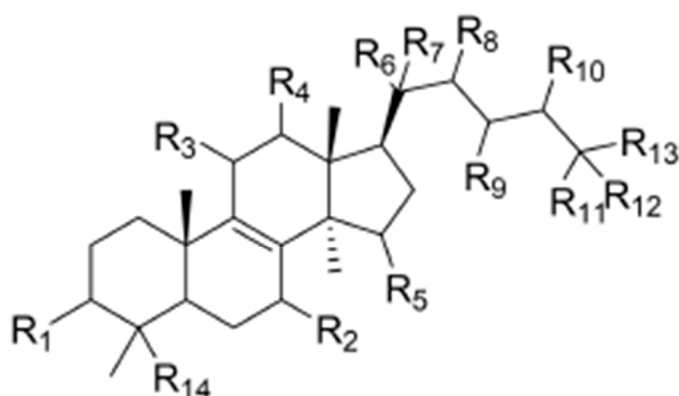




Figure S14 Chemical structure of compound 1-231

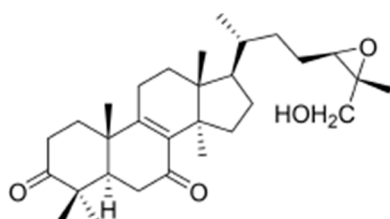
Table S14 Chemical Structures of compounds 1-231

Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
1	β -OH	=O	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H	COOBu	H	CH ₃	β -CH ₃
2	=O	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOBu	H	CH ₃	β -CH ₃
3	β -OH	β -OH	=O	H	=O	α -CH ₃	H	H	H	H	COOBu	H	CH ₃	β -CH ₃
4	β -OH	=O	=O	β -O-Ac	α -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
5	=O	H	=O	H	α -OH	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
6	=O	H	=O	H	α -OH	β -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
7	β -OH	H	=O	H	α -OH	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
8	β -OH	H	=O	H	α -OH	β -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
9	=O	β -OH	=O	H	α -OH	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
10	=O	β -OH	=O	H	α -OH	β -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
11	β -OH	β -OH	=O	H	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
12	β -OH	β -OH	=O	H	=O	β -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
13	β -OH	β -OH	=O	H	α -OH	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
14	β -OH	β -OH	=O	H	α -OH	β -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
15	=O	β -OH	=O	H	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
16	=O	β -OH	=O	H	=O	β -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
17	β -OH	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
18	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
19	=O	α -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
20	β -OH	α -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
21	O-CHO	β -OH	=O	β -OH	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
22	=O	α -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
23	=O	β -OH	=O	H	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
24	=O	=O	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H	COOEt	H	CH ₃	β -CH ₃
25	β -OH	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
26	β -OH	=O	=O	=O	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
27	=O	β -OH	β -OH	H	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
28	β -OH	=O	=O	β -O-Ac	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
29	=O	=O	=O	β -O-Ac	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
30	=O	=O	=O	H	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
31	β -OH	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
32	β -OH	=O	=O	H	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
33	=O	=O	=O	H	α -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
34	β -OH	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
35	β -OH	β -OH	=O	β -OH	=O	β -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
36	=O	β -OH	=O	β -OH	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
37	=O	=O	=O	β -OH	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
38	β -OH	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
39	=O	=O	=O	H	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
40	=O	=O	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
41	β -OH	=O	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
42	β -OH	β -OH	=O	β -OH	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
43	=O	β -OH	=O	OH	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
44	β -OH	=O	=O	OH	=O	α -CH ₃	H	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
45	=O	=O	=O	H	α -OH	β -CH ₃	ξ -OH	H	=O	H	COOH	H	CH ₃	β -CH ₃
46	β -OH	β -OH	=O	H	=O	α -CH ₃	β -OH	H	ξ -OH	H	ξ -COOH	H	CH ₃	β -CH ₃
47	=O	β -OH	=O	H	=O	α -CH ₃	β -OH	H	ξ -OH	H	ξ -COOH	H	CH ₃	β -CH ₃
48	β -OH	β -OH	=O	β -OH	=O	β -CH ₃	β -OH	H	=O	H	COOH	H	CH ₃	β -CH ₃
49	β -OH	β -OH	=O	=O	=O	α -CH ₃	ξ -OH	H	=O	H	COOH	H	CH ₃	β -CH ₃
50	β -OH	β -OH	=O	H	=O	α -CH ₃	β -OH	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
51	=O	=O	=O	β -OH	α -OH	α -CH ₃	β -OH	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
52	=O	β -OH	=O	H	=O	α -CH ₃	β -OH	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
53	=O	β -OH	=O	α -OH	=O	α -CH ₃	β -OH	H	H	H	COOCH ₃	H	CH ₃	β -CH ₃
54	β -O-Ac	β -OH	=O	H	=O	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃
55	β -O-Ac	=O	=O	H	α -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	β -CH ₃

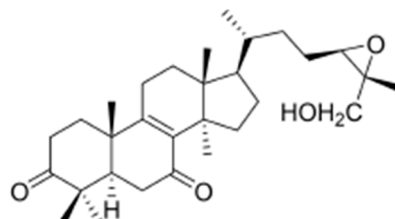
Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
56	β -O-Ac	β -OH	=O	H	=O	α -CH ₃	H	H	H	H	COOEt	H	CH ₃	β -CH ₃
57	=O	=O	=O	H	α -OH	α -CH ₃	H	H	H	H	COOEt	H	CH ₃	β -CH ₃
58	=O	=O	α -OH	H	H	α -CH ₃	H	H	H	α -OH	CH ₂ OH	β -OH	CH ₃	β -CH ₃
59	=O	β -OH	=O	H	H	α -CH ₃	H	H	H	α -OH	CH ₂ OH	β -OH	CH ₃	β -CH ₃
60	β -OH	=O	α -OH	H	H	α -CH ₃	H	H	H	α -OH	CH ₂ OH	β -OH	CH ₃	β -CH ₃
61		H	H	H	H	α -CH ₃	H	H	=O	=CH ₂	COOH	H	CH ₃	β -CH ₃
62	β -OH	β -OH	=O	α -OH	=O	α -CH ₃	H	H	=O	α -CH ₃	COOH	H	CH ₃	β -CH ₃
63	β -OH	β -OH	=O	α -OH	=O	α -CH ₃	H	H	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
64	β -OH	β -OH	=O	α -OH	=O	α -CH ₃	H	H	=O	H	COOH	H	CH ₃	β -CH ₃
65	β -OH	β -OH	=O	H	α -OH	α -CH ₃	H	H	=O	α -OH	COOH	H	CH ₃	α -CH ₃
66	=O	=O	=O	H	H	α -CH ₃	H	H	H	α -OH	CH ₂ OH	α -OH	CH ₃	α -CH ₃
67	=O	α -OH	H	H	β -OH	α -CH ₃	H	H	H	α -OH	CH ₃	H	CH ₃	α -CH ₃
68	β -OH	=O	=O	β -OH	α -CH ₃	β -OH	H	H	=O	H	COOH	H	CH ₃	α -CH ₃
69	β -OH	H	=O	H	H	α -CH ₃	H	H	H	α -OH	CH ₂ OH	OH	CH ₃	α -CH ₃
70	β -OH	=O	α -OH	=O	H	α -CH ₃	H	H	H	α -OH	CH ₃	OH	CH ₃	α -CH ₃
71	=O	=O	=O	H	H	α -CH ₃	H	H	H	OH	CH ₂ OH	OCH ₃	CH ₃	α -CH ₃
72	=O	β -OH	=O	H	β -OH	α -CH ₃	H	H	=O	H	COOCH ₃	H	CH ₃	α -CH ₂ OH
73	β -OH	β -OH	=O	H	β -OH	α -CH ₃	H	H	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
74	=O	=O	=O	H	β -OH	α -CH ₃	OH	H	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
75	=O	=O	H	H	β -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	α -CH ₂ OH
76	=O	=O	H	H	β -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	α -CH ₂ OAc
77	=O	=O	=O	H	β -OH	α -CH ₃	H	H	H	H	COOH	H	CH ₃	H
78	=O	=O	H	H	H	α -CH ₃	H	H	H	α -OH	CH ₃	OH	CH ₃	β -CH ₃
78	=O	α -O-Et	H	H	H	β -CH ₃	H	H	H	ξ -OH	CH ₂ OH	OH	CH ₃	β -CH ₃
80	=O	=O	H	H	H	β -CH ₃	H	H	H	ξ -OH	CH ₂ OH	OH	CH ₃	β -CH ₃
81	=O	α -O-CH ₃	H	H	H	β -CH ₃	H	H	H	ξ -OH	CH ₂ OH	OH	CH ₃	β -CH ₃
82	β -OH	=O	H	H	H	β -CH ₃	H	H	H	ξ -OH	CH ₂ OH	OH	CH ₃	β -CH ₃
83	β -OH	=O	H	H	H	α -CH ₃	H	H	H	α -OH	CH ₃	OH	CH ₃	β -CH ₃
84	=O	=O	=O	H	H	α -CH ₃	H	H	H	α -OH	CH ₃	OH	CH ₃	β -CH ₃
85	=O	=O	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
85	β -OH	β -OH	=O	H	β -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
86	β -OH	=O	=O	H	β -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
87	β -OH	β -OH	=O	H	H	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
88	=O	=O	=O	H	H	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
89	=O	β -OH	=O	H	β -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOCH ₃	H	CH ₃	α -CH ₂ OH
90	β -OH	=O	=O	β -O-Ac	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
91	=O	H	=O	H	α -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
92	β -OH	=O	=O	β -O-Ac	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
93	=O	β -OH	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	ξ -OH	H	ξ -COOH	H	CH ₃	β -CH ₃
94	=O	β -OH	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	ξ -COOCH ₃	H	CH ₃	β -CH ₃
95	=O	β -OH	=O	H	α -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
96	β -OH	β -OH	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
97	β -OH	β -OH	=O	H	α -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
98	=O	β -OH	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
99	=O	β -OH	=O	β -O-Ac	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
100	=O	=O	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
101	=O	=O	=O	H	α -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
102	β -OH	=O	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COCH ₃	H	CH ₃	β -CH ₃
103	β -OH	=O	=O	H	α -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COCH ₃	H	CH ₃	β -CH ₃
104	β -OH	=O	=O	H	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
105	β -OH	β -OH	=O	β -O-Ac	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
106	=O	=O	=O	α -OH	β -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
107	=O	=O	OH	α -OH	β -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
108	=O	=O	H	α -OH	β -OH	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃
109	=O	OH	=O	OH	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOCH ₃	H	CH ₃	β -CH ₃
110	=O	=O	=O	β -O-Ac	=O	CH ₃	-	H, $\Delta^{20,22}$	=O	H	COOH	H	CH ₃	β -CH ₃

Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
111	=O	β -OH	=O	H	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
112	=O	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
113	β -OH	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
114	β -OH	H	=O	β -O-Ac	α -O-Ac	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
115	=O	=O	=O	H	=O	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
116	β -OH	=O	H	H	H	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
117	=O	OH	=O	H	=O	α -CH ₃	H	H	OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
118	=O	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
119	β -OH	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
120	=O	β -OH	=O	H	α -OH	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
121	=O	α -OH	=O	H	α -OH	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
122	β -OH	β -OH	=O	H	=O	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
123	β -OH	=O	=O	H	=O	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
124	β -OH	β -OH	=O	β -OH	=O	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
125	β -OH	=O	=O	β -OH	=O	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
126	β -OH	β -OH	=O	H	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
127	=O	H	=O	H	α -OH	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
128	=O	α -OH	H	H	H	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
129	α -O-Ac	α -O-Ac	H	H	α -OH	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
130	=O	=O	=O	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
131	=O	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
132	α -O-Ac	α -O-CH ₃	H	H	α -OH	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
133	=O	=O	α -OH	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
134	=O	=O	β -OH	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
135	β -OH	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
136	β -OH	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
137	=O	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
138	=O	α -OH	H	H	α -O-Ac	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
139	β -OH	β -OH	=O	H	α -OH	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
140	β -OH	H	=O	H	α -OH	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
141	=O	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
142	=O	H	=O	H	α -OH	α -CH ₃	H	H	β -OH	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
143	α -O-Ac	α -OH	H	H	α -O-Ac	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
144	α -O-Ac	α -OH	H	H	α -O-Ac	β -CH ₃	H	ξ -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
145	α -O-Ac	α -O-Ac	H	H	α -OH	β -CH ₃	H	ξ -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
146	α -O-Ac	α -O-CH ₃	H	H	H	β -CH ₃	H	ξ -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
147	α -O-Ac	α -O-CH ₃	H	H	α -OH	β -CH ₃	H	ξ -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
148	α -O-Ac	α -OH	H	H	α -OH	β -CH ₃	H	ξ -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
149	α -OH	α -O-CH ₃	H	H	H	β -CH ₃	H	ξ -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
150	α -O-Ac	α -OH	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
151	β -O-Ac	=O	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
152	β -OH	=O	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
153	=O	α -OH	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
154	=O	α -OH	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
155	=O	α -O-CH ₃	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
156	α -O-Ac	α -OH	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
157	α -O-Ac	α -O-CH ₃	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
158	=O	H	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
159	β -O-Ac	H	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
160	β -OH	H	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
161	=O	H	H	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
162	=O	α -OH	H	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
163	β -O-Ac	α -OH	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
164	β -O-Ac	α -OH	H	H	α -O-Ac	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
165	β -O-Ac	α -OH	H	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
166	β -OH	=O	α -OH	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₂ OH	β -CH ₃

Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
167	β -OH	=O	H	β -OH	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	
168	β -OH	=O	H	β -O-Ac	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
169	=O	=O	α -OH	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CHO	-	CH ₃	β -CH ₃
170	β -OH	H	H	H	H	α -COOH	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
171	α -O-Ac	H	H	H	H	CH ₂ O- β -D-xylosyl	H	H	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
172	α -O-Ac	H	H	H	H	α -COOH	H	H	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
173	=O	H	H	H	H	α -COO- β -D-glucopyranosyl	H	H	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
174	α -O-Ac	H	H	H	H	α -COOH	H	H	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
175	=O	H	H	H	H	α -COOH	H	H	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
176	β -OH	H	H	H	H	α -COOH	H	H	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
177	=O	β -OH	=O	β -OH	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
178	=O	β -OH	=O	β -OH	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
179	=O	α -OH	=O	β -OH	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
180	=O	=O	=O	β -OH	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
181	=O	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
182	=O	α -OH	=O	β -O-Ac	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
183	=O	=O	=O	β -O-Ac	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
184	=O	=O	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
185	=O	H	=O	β -O-Ac	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
186	=O	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOCH ₃	-	CH ₃	β -CH ₂ OH
187	=O	=O	=O	β -OH	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
188	=O	H	=O	β -OH	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
189	=O	β -OH	=O	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
190	=O	=O	=O	H	=O	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
191	=O	H	=O	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
192	=O	H	=O	β -OH	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
193	=O	α -OH	H	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
194	=O	α -OH	H	H	α -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₂ OH	β -CH ₃
195	=O	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
196	=O	=O	=O	H	β -OH	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
197	=O	=O	α -OH	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
198	=O	=O	H	H	H	α -CH ₂ OH	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
199	=O	=O	=O	H	β -OH	CH ₂ Cl	ξ -OH	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	CH ₂ OH
200	=O	=O	=O	H	β -OH	CH ₃	ξ -OH	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
201	=O	=O	=O	H	β -OH	CH ₃	ξ -OH	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
202	β -OH	=O	=O	H	β -OH	CH ₃	ξ -OH	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₂ OH
203	=O	=O	=O	H	=O	CH ₃	ξ -OH	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	CH ₃
204	β -OH	=O	H	H	H	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₂ OH	β -CH ₃
205	=O	β -CH ₃	H	H	α -OH	β -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₂ OH	β -CH ₃
206	=O	=O	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₂ OH	β -CH ₃
207	β -O-Ac	H	H	H	α -O-Ac	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
208	α -O-Ac	=O	=O	H	α -O-Ac	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
209	α -O-Ac	=O	=O	H	α -OH	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
210	=O	=O	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
211	β -O-Ac	=O	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
212	β -OH	=O	H	H	H	α -COOH	H	=O	H	H, $\Delta^{24,25}$	CH ₃	-	CH ₃	β -CH ₃
213	=O	α -O-Ac	H	H	H	α -OH	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
214	β -OH	H	H	H	H	α -CH ₃	H	OH	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
215	β -OH	H	H	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
216	α -OH	=O	=O	H	H	α -CH ₃	H	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
217	β -OH	=O	α -OH	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	CH ₂ OH	-	CH ₃	β -CH ₃
218	=O	α -OH	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
219	=O	α -O-CH ₃	H	H	H	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
220	β -O-Ac	α -O-CH ₃	H	H	H	α -CH ₃	H	H	β -O-Ac	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
221	β -O-Ac	α -O-CH ₃	H	H	α -O-Ac	α -CH ₃	H	H	β -O-Ac	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
222	β -O-Ac	α -O-CH ₃	H	H	α -O-Ac	α -CH ₃	H	H	H	H, $\Delta^{24,25}$	COOH	-	CH ₃	β -CH ₃
223	=O	β -OH	H	H	H	α -CH ₃	H	H	H	α -OH	H ₂ , $\Delta^{25,26}$	-	CH ₃	β -CH ₃
224	=O	=O	H	H	H	α -CH ₃	H	H	H	α -OH	H ₂ , $\Delta^{25,26}$	-	CH ₃	β -CH ₃
225	=O	H	H	H	H	α -CH ₃	H	H	H	CH ₃	H ₂ , $\Delta^{25,26}$	-	CH ₃	β -CH ₃
226	α -O-Ac	H	H	H	H	α -COOH	H	H	H	CH ₃	H ₂ , $\Delta^{25,26}$	-	CH ₃	β -CH ₃
227	α -O-Ac	H	H	H	H	α -COO- β -D-xylosyl	H	H	H, $\Delta^{23,24}$	CH ₃	H ₂ , $\Delta^{25,26}$	-	CH ₃	β -CH ₃
228	α -O-Ac	=O	H	H	H	α -COOH	H	H	H	=CH ₂	CH ₃	H	CH ₃	β -CH ₃
229	=O	=O	=O	H	=O	CH ₃ , $\Delta^{17,20}$	-	H	=O	H	COOH	H	CH ₃	β -CH ₃
230	β -OH	β -OH	=O	H	β -OH	CH ₃ , $\Delta^{17,20}$	-	H	=O	H	CH ₃	H	COOCH ₃	β -CH ₃
231	=O	=O	=O	β -O-Ac	=O	CH ₃ , $\Delta^{17,20}$	-	H	=O	H	CH ₃	H	COOH	β -CH ₃

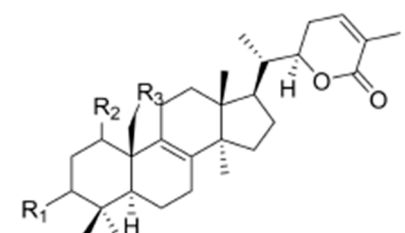


Cpd	R1	R2
235	α -OH	β -CH ₃
236	=O	α -CH ₃

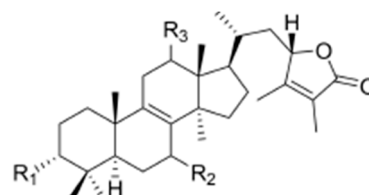


Cpd	R1	R2
235	α -OH	β -CH ₃
236	=O	α -CH ₃

Figure S15 Structures of compounds 232-234 Figure S16 Structures of compounds 235-236

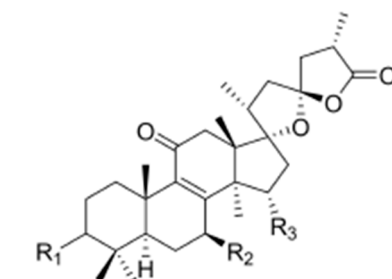


Cpd	R1	R2	R3
237	β -OH	H	OAc
238	=O	H	H
239	β -OH	H	CH ₃
240	β -OH	β -OH	CH ₃



Cpd	R1	R2	R3
241		H	β -OH
242		=O	β -OH
243	H	H	β -OH
244	OH	H	H

Figure S16 Structures of compounds 237-240 Figure S17 Structures of compounds 241-244



Cpd	R1	R2	R3
245	=O	H	H
246	=O	OH	OH
247	=O	H	OAc
248	=O	OAc	OH
249	β -OH	β -OH	α -OH

Figure S18 Structures of compounds 245-249

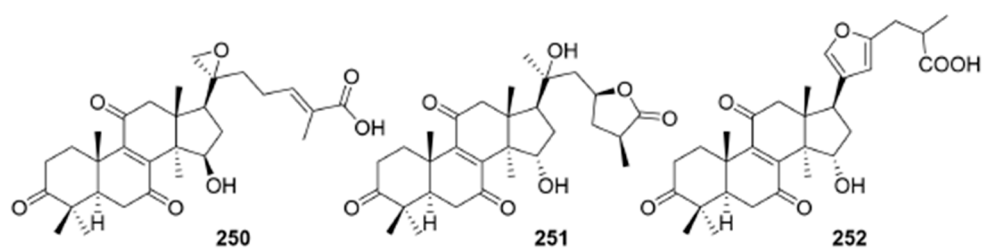
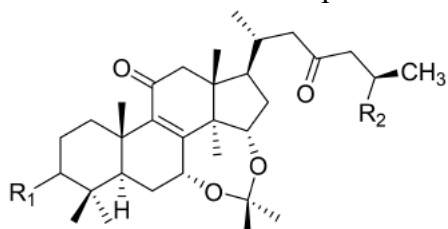
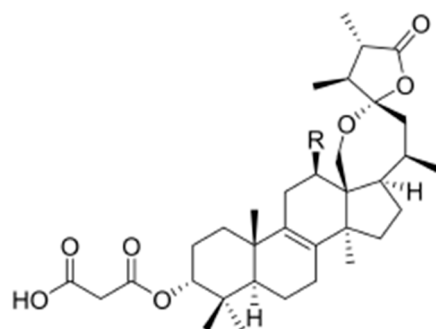


Figure S19 Structures of compounds 250-252



Cpd	R1	R2
253	β -OH	COOH
254	=O	COOCH ₃

Figure S20 Structures of compounds 253-254



Cpd	R
255	OH
256	H

Figure S21 Structures of compounds 255-256

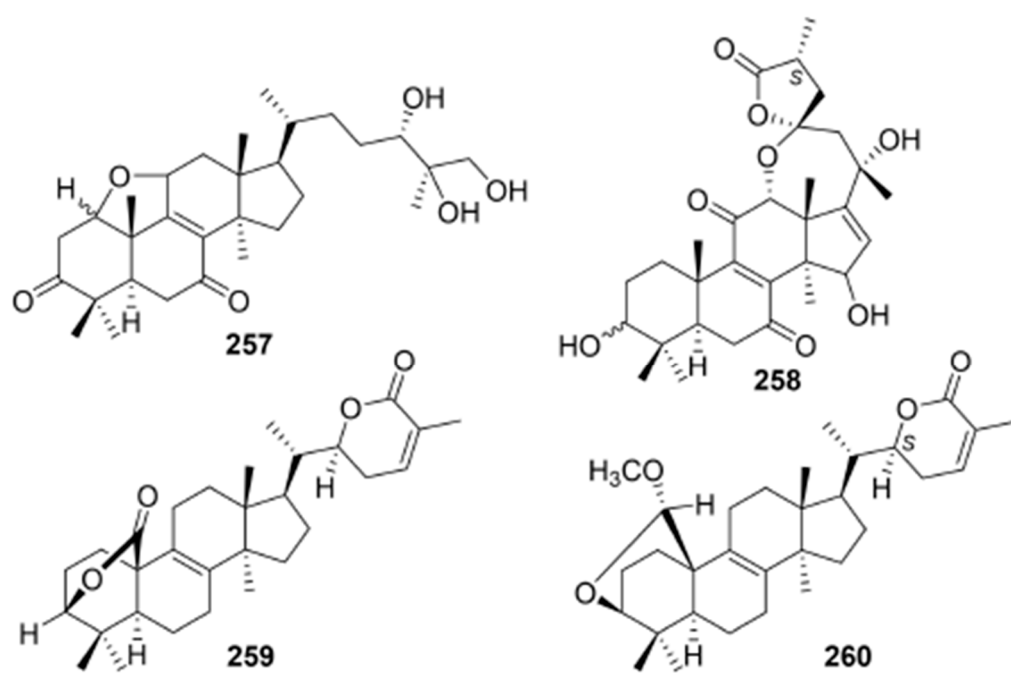


Figure S22 Structures of compounds 257-260

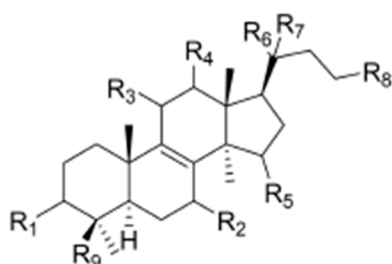
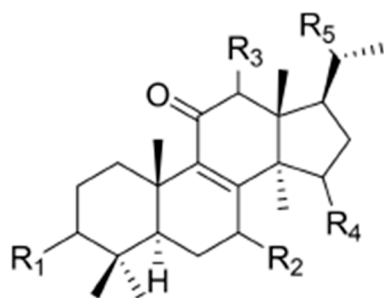


Figure S23 Chemical structure of compound 261-301
Table S15 Chemical Structures of compounds 261-301

Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9
261	β -OH	β -OH	=O	H	=O	α -CH ₃	H	COOBu	CH ₃
262	=O	β -OH	=O	H	=O	α -CH ₃	H	COOBu	CH ₃
263	β -OH	β -OH	=O	H	=O	=CH ₂	$\Delta^{20,21}$	COOH	CH ₃
264	=O	β -OH	=O	H	=O	β -CH ₃	ξ -OH	COOH	CH ₃
265	=O	=O	=O	β -O-Ac	=O	β -CH ₃	H	COOCH ₃	CH ₃
266	=O	β -OH	=O	H	=O	=CH ₂	$\Delta^{20,21}$	COOH	CH ₃
267	=O	β -OH	=O	H	=O	=CH ₂	$\Delta^{20,21}$	COOCH ₃	CH ₃
268	β -OH	β -OH	=O	H	=O	α -CH ₃	H	COOH	CH ₃
269	=O	=O	=O	β -O-Ac	=O	β -CH ₃	H	COOH	CH ₃
270	β -OH	=O	=O	β -O-Ac	=O	β -CH ₃	H	COOCH ₃	CH ₃
271	=O	=O	=O	H	=O	β -CH ₃	H	COOCH ₃	CH ₃
272	=O	OH	=O	H	=O	α -CH ₃	H	COOEt	CH ₃
273	β -O-CHO	β -OH	=O	OH	=O	β -CH ₃	H	COOH	CH ₃
274	=O	β -OH	=O	H	=O	β -CH ₃	H	COOH	CH ₃
275	=O	β -OH	=O	β -OH	=O	β -CH ₃	H	COOH	CH ₃
276	β -OH	β -OH	=O	β -OH	=O	β -CH ₃	H	COOH	CH ₃
277	=O	=O	H	H	H	α -CH ₃	H	COOH	CH ₃
278	β -OH	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	COOH	CH ₃
279	β -OH	β -OH	=O	β -O-Ac	=O	α -CH ₃	H	COOCH ₃	CH ₃
280	=O	β -OH	=O	H	α -OH	α -CH ₃	H	COOCH ₃	CH ₃
281	β -OH	=O	=O	H	=O	α -CH ₃	H	COOH	CH ₃
282	=O	=O	=O	β -O-Ac	=O	β -CH ₃	H	COOCH ₃	CH ₃
283	β -OH	=O	=O	β -O-Ac	=O	β -CH ₃	H	COOCH ₃	CH ₃
284	β -OH	β -OH	=O	H	=O	α -CH ₃	H	COOCH ₃	CH ₃
285	=O	β -OH	=O	β -OH	=O	α -CH ₃	H	COOBu	CH ₃
286	=O	β -OH	=O	H	=O	α -CH ₃	H	COOCH ₃	CH ₃
287	=O	=O	=O	β -O-Ac	=O	α -CH ₃	H	COOH	CH ₃
288	=O	=O	=O	β -O-Ac	=O	β -CH ₃	ξ -OH	COOH	CH ₃
289	=O	=O	=O	H	=O	β -CH ₃	ξ -OH	COOH	CH ₃
290	β -OH	=O	=O	β -O-Ac	=O	β -CH ₃	ξ -OH	COOH	CH ₃
291	β -OH	β -OH	=O	H	=O	β -CH ₃	ξ -OH	COOH	CH ₃
292	β -OH	β -OH	=O	β -O-Ac	=O	β -CH ₃	ξ -OH	COOH	CH ₃
293	=O	=O	=O	H	=O	α -CH ₃	H	COOH	CH ₃
294	β -OH	β -OH	=O	H	=O	α -CH ₃	H	COOCH ₃	CH ₃
295	β -OH	=O	=O	β -O-Ac	=O	α -CH ₃	H	COOH	CH ₃
296	=O	β -OH	=O	H	=O	α -CH ₃	H	COOH	CH ₃
297	β -OH	β -OH	=O	H	=O	β -CH ₃	H	CH ₃	CH ₂ OH
298	β -OH	=O	=O	H	=O	β -CH ₃	H	CH ₃	CH ₂ OH
299	β -OH	=O	=O	H	=O	β -CH ₃	H	CH ₃	CH ₂ OH
300	β -OH	β -OH	=O	H	=O	α -CH ₃	H	CH ₃	CH ₂ OH
301	=O	=O	=O	H	=O	=CH ₂	$\Delta^{20,21}$	COOCH ₃	CH ₃



Cpd	R1	R2	R3	R4	R5
302	OH	OH	H	=O	=O
303	OH	OH	H	=O	OH
304	β -OH	β -OH	H	α -OH	CH ₂ OH
305	OH	β -OH	COOCH ₃	=O	=O
306	OH	=O	COOCH ₃	=O	=O
307	OAc	=O	H	α -OH	=O

Figure S24 Structures of compounds 302-307

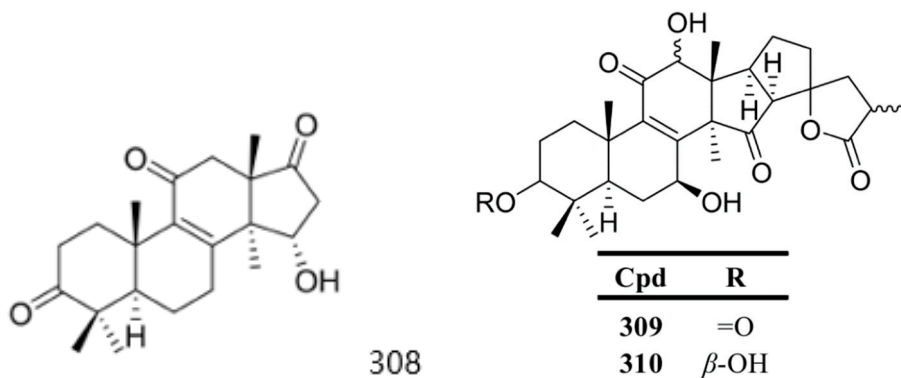
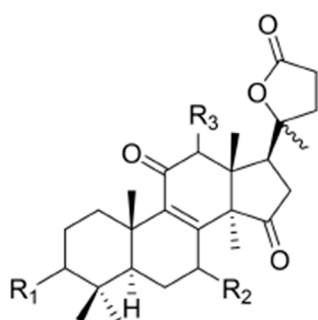


Figure S25 Structures of compounds 309-310



Cpd	R1	R2	R3
311	=O	β -OH	α -OH
312	=O	β -OH	H
313	=O	=O	H
314	=O	=O	β -O-Ac
315	β -OH	β -OH	β -OH
316	β -OH	β -OH	=O
317	β -OH	β -OH	H

Figure S26 Structures of compounds 311-317

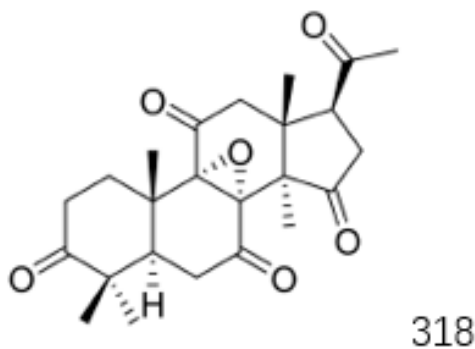


Figure S27 Structures of compound 318

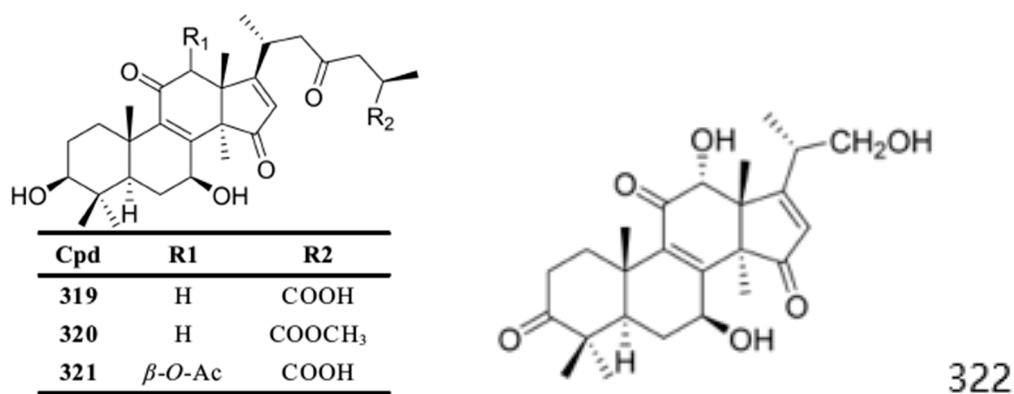
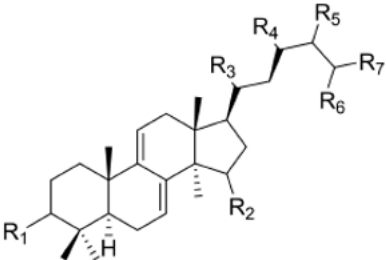


Figure S28 Structures of compounds 319-322

Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
323	=O	H	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	CHO	CH ₃	-
324	=O	H	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
325	=O	α -OH	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
326	α -OH	H	α -OH	α -COOH	H	H	H, $\Delta^{24,25}$	CH ₃	CH ₃	-
327	α -OH	H	α -OH	α -COOH	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
328	=O	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
329	=O	H	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
330	=O	α -OH	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
331	α -O-Ac	α -O-Ac	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
332	β -O-Ac	α -OH	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
333	=O	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
334	β -OH	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
335	β -OH	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₂ OH	-
336	β -O-Ac	α -O-Ac	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
337	=O	H	=O	β -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₂ OH	-
338	β -OH	H	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
339	α -O-Ac	α -OH	H	β -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
340	=O	α -OH	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₂ OH	-
341	α -O-Ac	α -O-Ac	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-

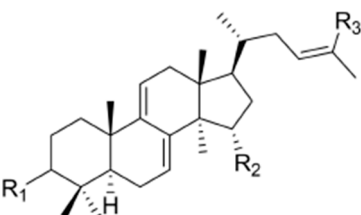
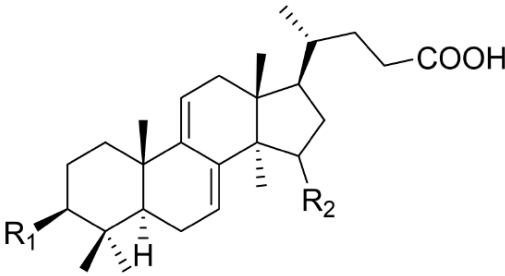
Cpd	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
342	α -OH	H	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
343	α -O-Ac	H	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
344	=O	H	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
345	β -O-Ac	α -O-Ac	H	β -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
346	α -OH	α -O-Ac	H	β -CH ₃	H	=O	H, $\Delta^{24,25}$	COOH	CH ₃	-
347	α -O-Ac	α -O-Ac	H	β -CH ₃	H	=O	H, $\Delta^{24,25}$	COOH	CH ₃	-
348	α -O-Ac	α -OH	H	β -CH ₃	H	=O	H, $\Delta^{24,25}$	COOH	CH ₃	-
349	α -O-Ac	α -OH	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
350	β -OH	α -O-Ac	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
351	β -O-Ac	α -OH	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
352	=O	α -O-Ac	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
353	=O	α -O-Ac	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
354	α -OH	α -O-Ac	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
355	α -O-Ac	α -OH	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
356	=O	α -OH	H	α -CH ₃	H	OH	H, $\Delta^{24,25}$	COOH	CH ₃	-
357	β -OH	α -OH	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₂ OH	-
358	β -OH	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CHO	CH ₃	-
359	=O	H	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₂ OH	-
360	=O	H	H	α -CH ₃	=O	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₂ OH	-
361	=O	H	H	α -CH ₃	=O	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
362	α -O-Ac	α -OH	H	β -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
363	β -OH	α -O-Ac	H	β -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
364	β -O-Ac	α -O-Ac	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
365	=O	H	α -OH	α -COOH	H	H	H, $\Delta^{24,25}$	CH ₃	CH ₃	-
366	=O	α -OH	H	α -CH ₃ (β -OH)	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
367	β -OH	H	H	α -OH(β -CH ₃)	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
368	α -OH	α -OH	H	CH ₃	α -OH	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
369	β -OH	α -OH	H	α -CH ₃ (β -OH)	β -OH	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
370	α -O-Ac	α -O-Ac	H	CH ₃	α -OH	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
371	β -O-Ac	α -O-Ac	H	CH ₃	α -OH	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
372	α -OH	α -OH	H	CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
373	β -OH	α -OH	H	CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
374	=O	α -OH	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
375	α -OH	α -OH	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
376	β -OH	α -OH	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
377	α -O-Ac	α -O-Ac	H	β -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
378	=O	H	H	α -CH ₃	β -OH	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
379	=O	α -OH	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃	-
380	β -OH	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
381	β -O-Ac	H	H	α -CH ₃	H	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
382	β -O-Ac	H	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
383	β -O-Ac	H	H	α -CH ₃	β -O-Ac	H	H, $\Delta^{24,25}$	COOH	CH ₃	-
384	=O	α -O-Ac	H	α -CH ₃	H	H	α -OH	β -OH	CH ₃	CH ₂ OH
385	=O	H	H	α -CH ₃	H	H	α -OH	β -O-CH ₃	CH ₃	CH ₂ OH
386	β -OH	α -OH	H	α -CH ₃	H, $\Delta^{22,23}$	H, $\Delta^{22,23}$	H, $\Delta^{24,25}$	COOH	CH ₃	-
387	β -OH	α -OH	H	α -CH ₃	H, $\Delta^{20,22}$	=O	H	COOH	CH ₃	-
388	=O	H	H	α -CH ₃	H	H	α -OH	CH ₃	CH ₂ OH	OH
389	β -OH	H	H	α -CH ₃	H	H	α -OH	CH ₃	CH ₂ OH	β -O-CH ₃
390	β -O-Ac	H	H	α -CH ₃	H	H	OAc	CH ₃	CH ₂ -O-Ac	OH
391	β -OH	H	H	α -CH ₃	H	H	α -OH	CH ₃	CH ₃	OH
392	=O	H	H	β -CH ₃	H	H	α -OH	CH ₃	CH ₂ OH	H
393	β -OH	H	H	α -CH ₃	H	H	OH	CH ₃	CH ₂ OH	OH
394	=O	H	H	α -CH ₃	H	H	OH	CH ₃	CH ₃	OH
395	β -OH	α -O-Ac	H	β -CH ₃	H	H	H	CH ₃	COOH	H

Figure S29 Structures of compound 261-301
Table S16 Structures of compounds 261-301



Cpd	R1	R2	R3	R4	R5	R6	R7
411	β -OH	H	α -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	CHO
412	=O	H	β -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	CHO
413	=O	H	β -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	CH ₂ OH
414	=O	α -OH	α -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	COOH
415	α -OH	α -OH	β -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	COOH
416	β -OH	α -OH	β -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	COOH
417	α -O-Ac	α -O-Ac	β -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	COOH
418	=O	α -OH	α -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	COOH
419	=O	α -OH	α -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	CH ₂ OH
420	β -OH	H	α -CH ₃	H	H, $\Delta^{24,25}$	H, $\Delta^{24,25}$	COOH
421	=O	H	α -CH ₃	H	H, $\Delta^{24,25}$	CH ₂ OH	CH ₃
422	β -OH	H	α -CH ₃	H, $\Delta^{23,24}$	H, $\Delta^{24,25}$	=O	CH ₃

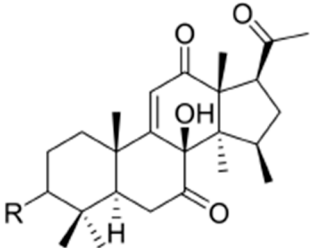
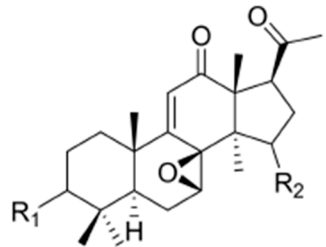
Figure S34 Structures of compounds 411-422

Cpd	R1	R2	R3
423	α -OH	H	COOH
424	=O	H	CH ₂ OH
425	β -OH	H	COOH

Cpd	R1	R2
426	=O	H
427	=O	α -OH

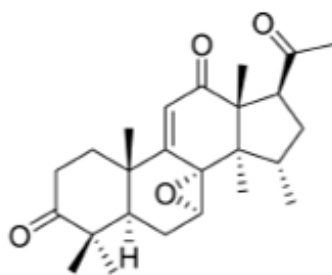
Figure S35 Structures of compounds 423-427

Cpd	R
428	β -OH
429	=O

Cpd	R1	R2
430	=O	=O
431	β -OH	β -OH

Figure S36 Structures of compounds 428-431



432

Figure S37 Structures of compound 432

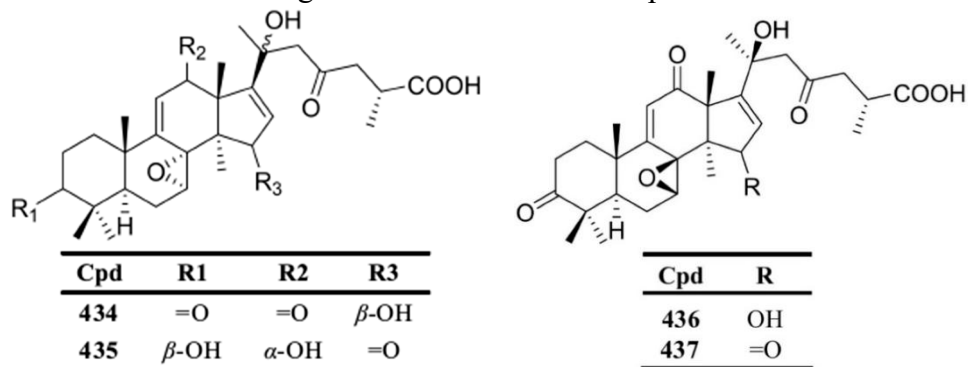


Figure S38 Structures of compounds 434-437

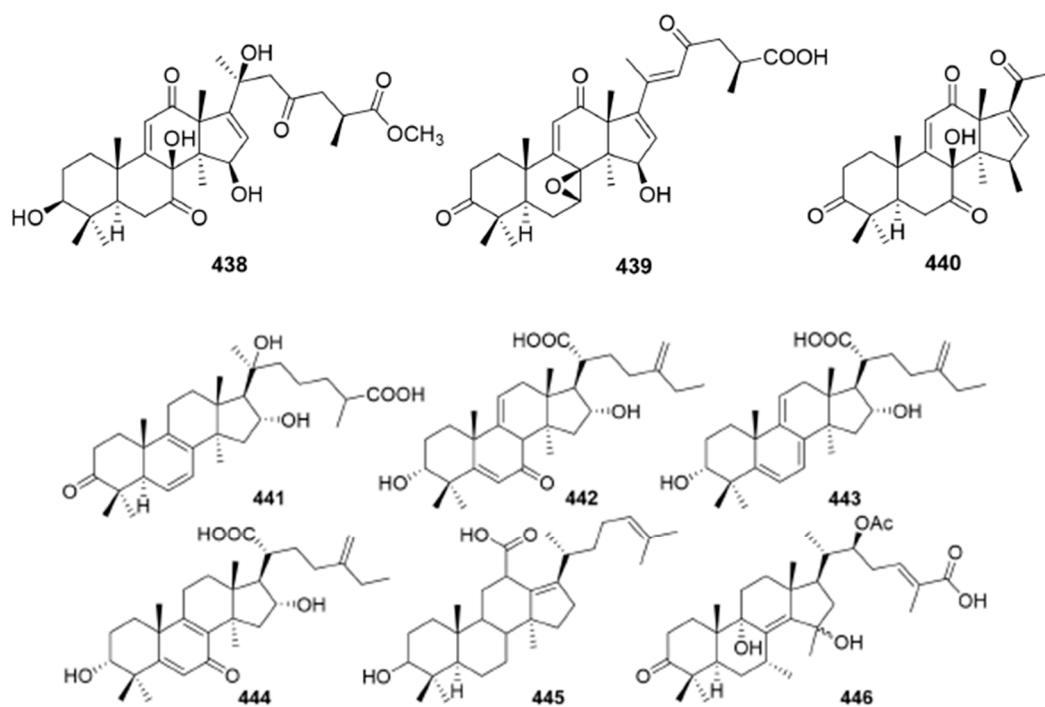


Figure S39 Structures of compounds 438-446

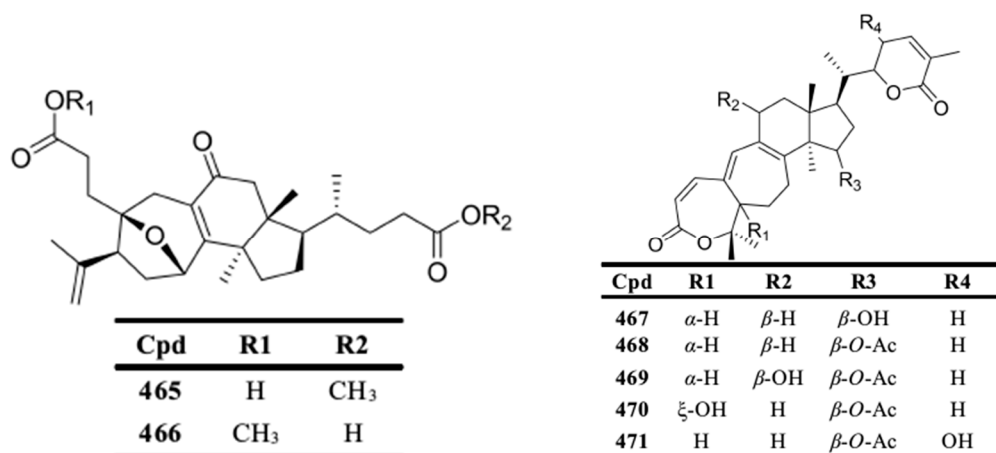


Figure S44 Structures of compounds 465-471

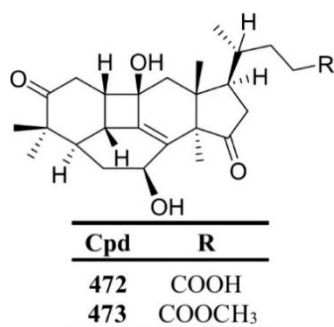


Figure S45 Structures of compounds 472-473

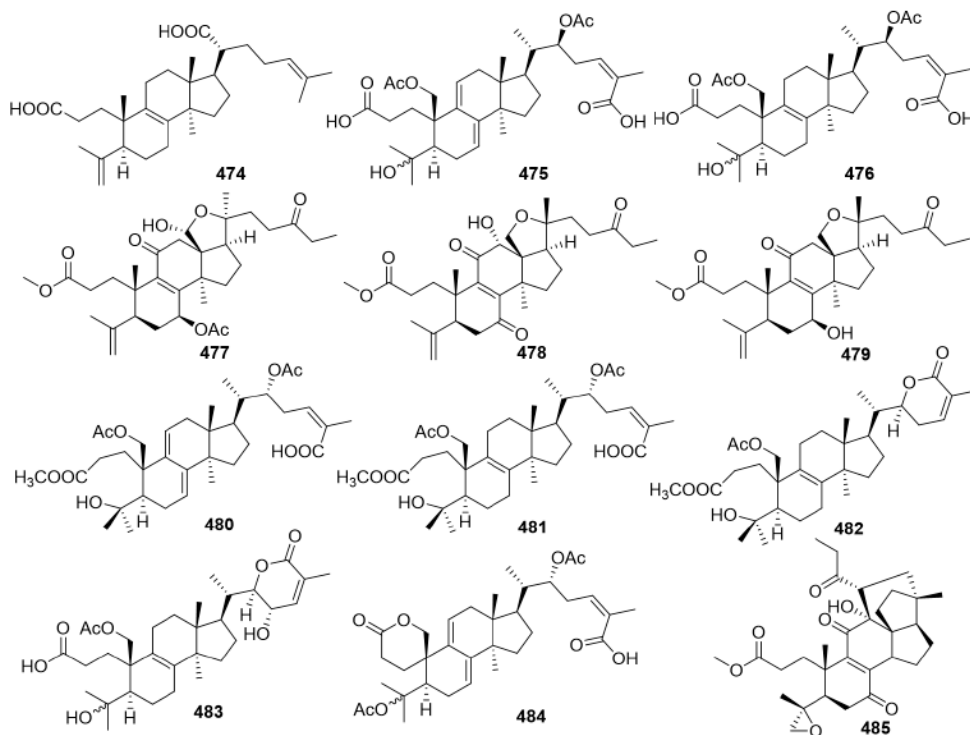


Figure S46 Structures of compounds 474-485

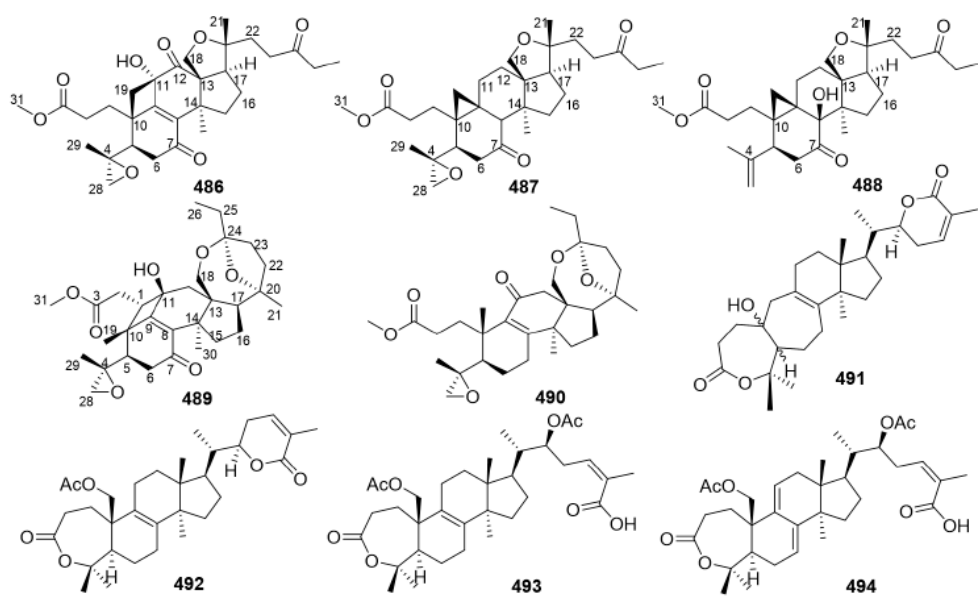


Figure S47 Structures of compounds 486-494

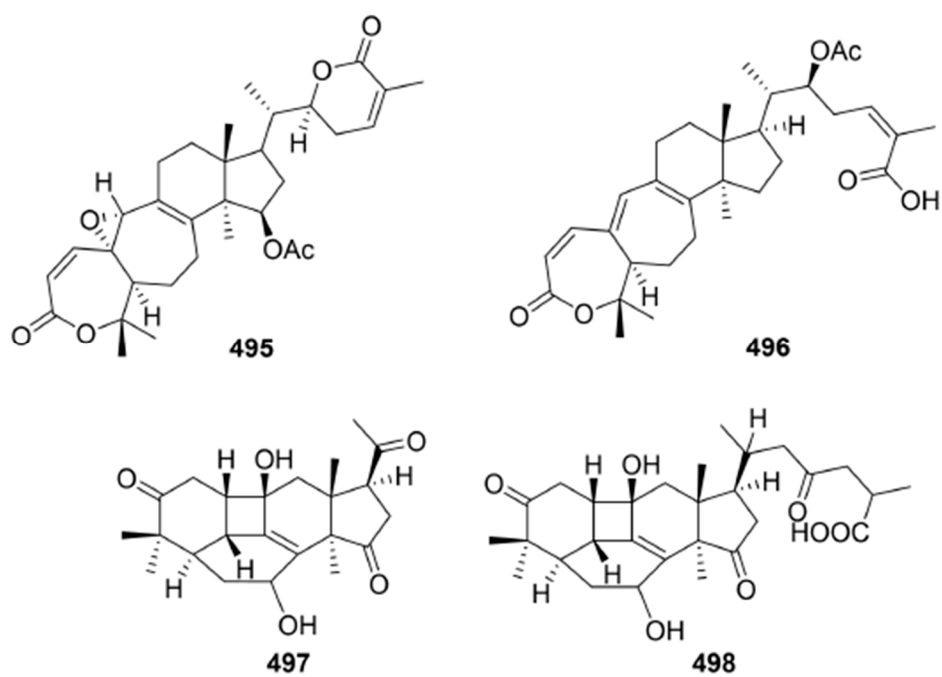
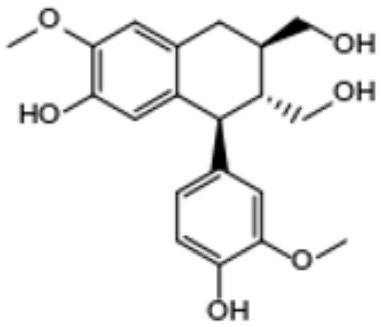
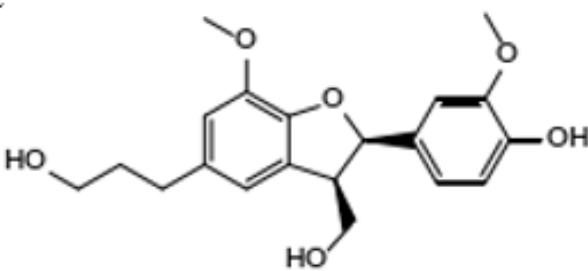
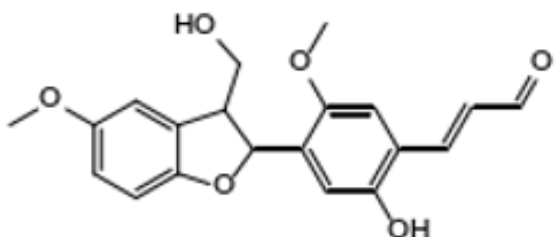
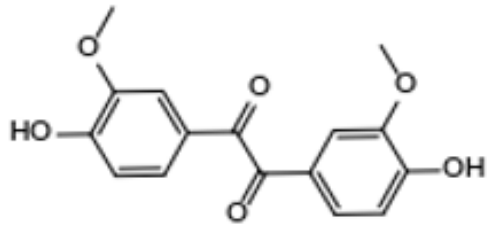
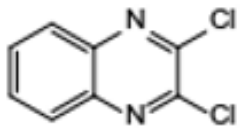
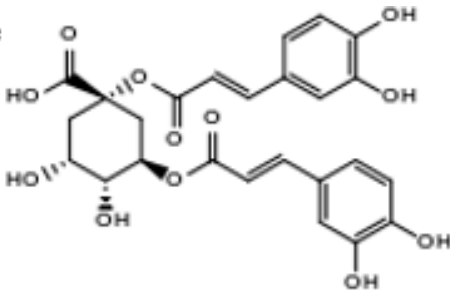
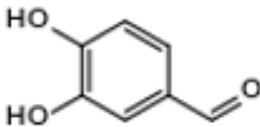
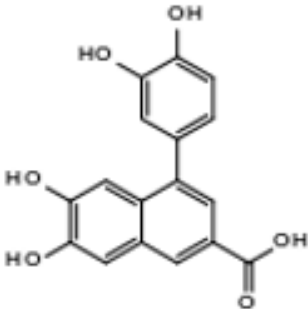
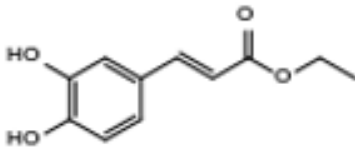
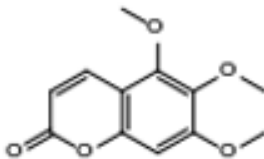
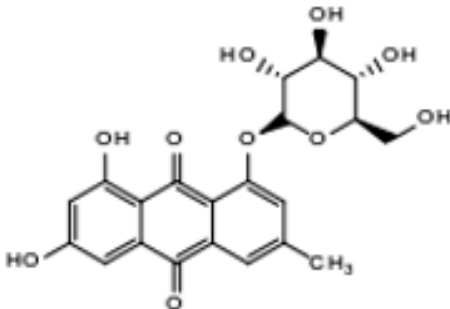
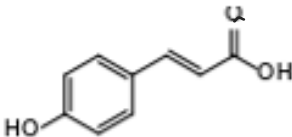
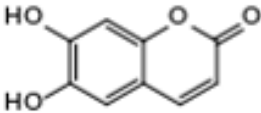
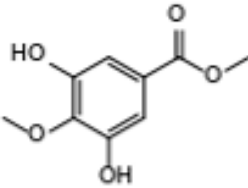
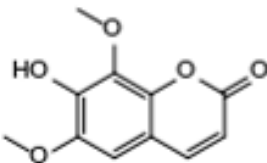
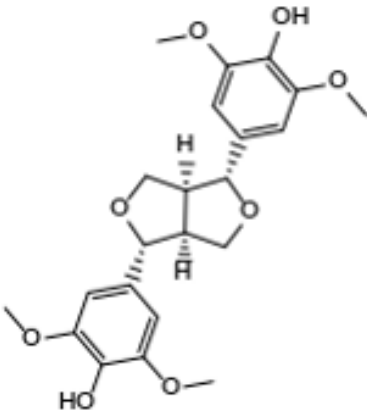
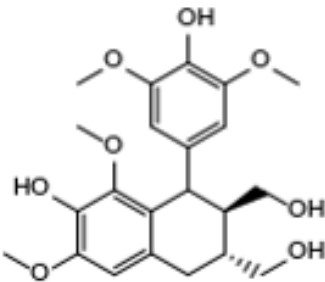


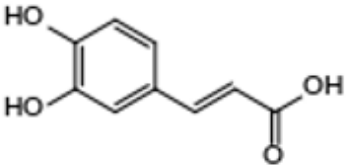
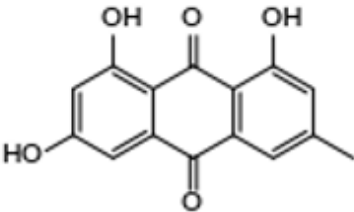
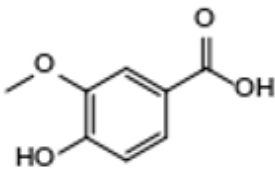
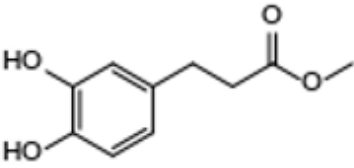
Figure S48 Structures of compounds 495-498

Table S17 Chemical Structures of compounds 1-21

cpd	name	structure
1	Isolarch alcohol	
2	Dihydrodehydrodic Onifery alcohol	
3	Bitter neool	
4	Vanillil	
5	2,3-Dichloroquinoxaline	

cpd	name	structure
6	1,5-Dicaffeoylquinine sour	
7	Protocatechin	
8	3-carboxy-6,7-dihydroxy- 1-(3',4'- dihydroxyphenyl)- naphthalene	
9	Ethyl caffeate	
10	5,6,7- Trimethoxyincense Legumin	
11	Emodin-1-O-grapes glycoside	

cpd	name	structure
12	p-Coumaric acid	
13*	Dipterin	
14*	methyl 3,5-dihydroxy-4-methoxybenzoate	
15	Isazinepidine	
16	(-)-Syringol resin	
17	(+)-Syringin	

cpd	name	structure
18	Trans-caffeic acid	
19	Emodin	
20	vanillic acid	
21	Methyl caffeate	

Albizia julibrissin durazz bark

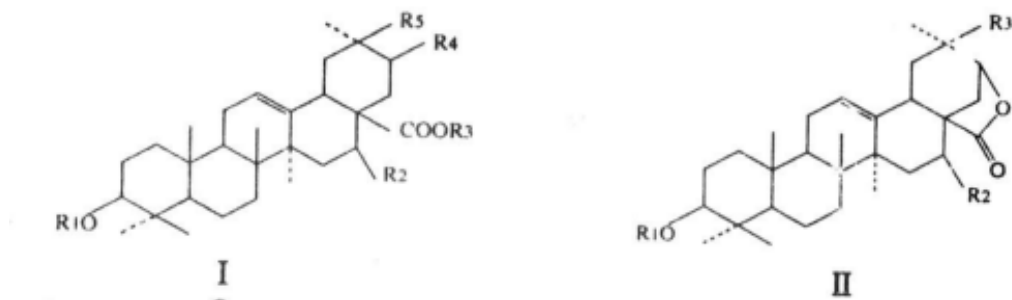


Figure S49 Chemical structure of compounds 1-41

Table S18 Chemical Structures of compounds 1-41

cpd	Name	Mother nucleus	Substituents
1	Julibroside J ₁	I	$R_1 : \text{xyl} \xrightarrow{2} \text{ara} \xrightarrow{6} \text{gle} : R_2 : \text{OH} : R_3 : \text{gle} \xrightarrow{3} (\text{araf} \xrightarrow{4}) \text{-tha} \xrightarrow{2} \text{gle} : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S}) : R_5 : \text{CH}_3$
2	Julibroside J ₂	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{A}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
3	Julibroside J ₃	I	$R_1 : \text{xyl} \xrightarrow{2} \text{ara} \xrightarrow{6} 2\text{-acetamido-2-deoxy-gle} : R_2, R_3, R_4, R_5 \text{ 同 } J_1$
4	Julibroside J ₄	I	$R_1 : \text{xyl} \xrightarrow{2} \text{fuc} \xrightarrow{6} \text{gle} : R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{B}(\text{6S})$
5	Julibroside J ₅	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6R}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
6	Julibroside J ₆	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_3 : R_4 \text{ 同 } J_2$
7	Julibroside J ₇	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{A}(\text{6S}) \xrightarrow{3} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
8	Julibroside J ₈	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
9	Julibroside J ₉	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6R})$
10	Julibroside J ₁₀	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6R}) \xrightarrow{2} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
11	Julibroside J ₁₁	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{2} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
12	Julibroside J ₁₂	I	$R_1 : \text{xyl} \xrightarrow{2} \text{fuc} \xrightarrow{6} 2\text{-acetamido-2-deoxy-gle} : R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6R}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
13	Julibroside J ₁₃	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_{12} : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
14	Julibroside J ₁₄	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6R}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{B}(\text{6S})$
15	Julibroside J ₁₅	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 : R_4 : \text{qui} \xrightarrow{6} \text{B}(\text{6S}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{B}(\text{6S})$
16	Julibroside J ₂₀	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{xyl} \xrightarrow{6} \text{A}(\text{6S})$
17	Julibroside J ₂₂	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
18	Julibroside J ₂₃	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 : R_4 : \text{xyl} \xrightarrow{6} \text{B}(\text{6R}) \xrightarrow{4} \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
19	Julibroside J ₂₄	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{A}(\text{6S}) \xrightarrow{3} \text{xyl} \xrightarrow{6} \text{A}(\text{6S})$
20	Julibroside J ₂₅	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_3 : R_4 : \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
21	Julibroside J ₂₆	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{qui} \xrightarrow{6} \text{A}(\text{6S})$
22	Julibroside J ₂₇	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_1 : R_4 : \text{同 } J_2$
23	Julibroside J ₂₈	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_{12} : R_4 : \text{同 } J_{14}$

cpd	Name	Mother nucleus	Substituents
24	Julibroside J I	I	$R_1 : \text{xyl} \xrightarrow{2} \text{fuc} \xrightarrow{6} (\text{gle} \xrightarrow{2})\text{-gle} ; R_2, R_3, R_5 \text{ 同 } J_1 ; R_4 : \text{qui} \xrightarrow{6} \text{B} \xrightarrow{4} \text{qui} \xrightarrow{6} \text{B}$
25	Julibroside J II	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 ; R_4 : \text{同 } J \text{ I}$
26	Julibroside J III	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_{12} ; R_4 : \text{同 } J \text{ I}$
27	Prosapogenin1	I	$R_1, R_2, R_5 \text{ 同 } J_4 ; R_3 : \text{H} ; R_4 : \text{OH}$
28	Prosapogenin2	I	$R_1, R_2, R_5 \text{ 同 } J_3 ; R_3 : \text{H} ; R_4 : \text{OH}$
29	Prosapogenin3	II	$R_1 : \text{xyl} \xrightarrow{2} \text{ara} \xrightarrow{6} \text{gle} ; R_2 : \text{OH} ; R_3 : \text{CH}_3$
30	Prosapogenin4	II	$R_1 : \text{xyl} \xrightarrow{2} \text{ara} \xrightarrow{6} 2\text{-acetamido-2-deoxy-gle} ; R_2 : \text{OH} ; R_3 : \text{CH}_3$
31	Prosapogenin5 (Julibroside A ₁)	II	$R_1 : \text{xyl} \xrightarrow{2} \text{fuc} \xrightarrow{6} (\text{gle} \xrightarrow{2})\text{-gle} ; R_2 : \text{OH} ; R_3 : \text{CH}_3$
32	Prosapogenin6 (Julibroside A ₂)	II	$R_1 : \text{xyl} \xrightarrow{6} \text{fuc} \xrightarrow{6} \text{gle} ; R_2 : \text{OH} ; R_3 : \text{CH}_3$
33	Prosapogenin7 (Julibroside A ₃)	II	$R_1 : \text{xyl} \xrightarrow{2} \text{fuc} \xrightarrow{6} 2\text{-acetamido-2-deoxy-gle} ; R_2 : \text{OH} ; R_3 : \text{CH}_3$
34	Prosapogenin8	I	$R_1, R_2, R_3, R_5 \text{ 同 } J \text{ I} ; R_4 : \text{qui} \xrightarrow{6} \text{B}$
35	Prosapogenin9	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 ; R_4 : \text{qui} \xrightarrow{6} \text{B}$
36	Prosapogenin10	I	$R_1, R_2, R_3, R_5 \text{ 同 } J_4 ; R_4 : \text{qui} \xrightarrow{6} \text{A}$
37	Prosapogenin11	I	$R_1, R_3, R_5 \text{ 同 } J_4 ; R_2 : \text{H} ; R_4 : \text{qui} \xrightarrow{6} \text{B}$
38	Prosapogenin12	I	$R_1, R_3, R_5 \text{ 同 } J_1 ; R_2 : \text{H} ; R_4 : \text{qui} \xrightarrow{6} \text{B}$
39	Julibroside A ₄	II	$R_1 : \text{gle} \xrightarrow{4} \text{gle} ; R_2 : \text{-O-gle} ; R_3 : \text{CH}_3$
40	Julibroside B ₁	II	$R_1 : \text{gle} \xrightarrow{4} \text{gle} ; R_2 : \text{-O-gle} ; R_3 : \text{CH}_2 \text{ OH}$
41	Julibroside C ₁	II	$R_1 : \text{xyl} \xrightarrow{2} \text{fuc} \xrightarrow{6} (\text{gle} \xrightarrow{2})\text{-gle} ; R_2 : \text{OH} ; R_3 : \text{COOH}$

Polygala tenuifolia willd

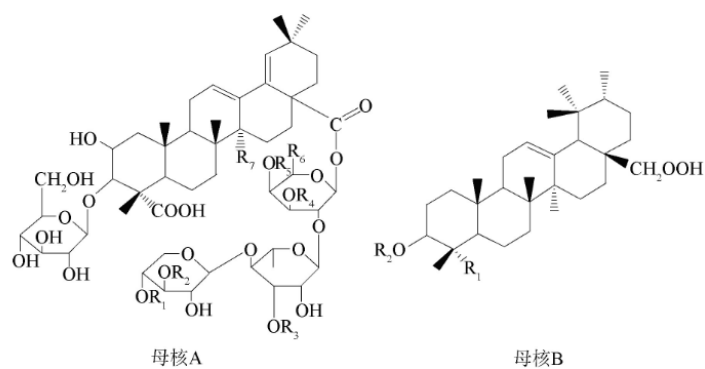


Figure S50 Chemical structure of compounds 1-38

Table S19 Chemical Structures of compounds 1-38

cpd	name	Substituents							
		Mother nucleus	R1	R2	R3	R4	R5	R6	R7
1	Onjisaponin A	A	Gal	H	Api	Rha	a	CH ₃	CH ₂ OH
2	Onjisaponin B	A	Gal	H	H	Rha	a	CH ₃	CH ₂ OH
3	Onjisaponin E	A	Gal	H	H	H	b	CH ₃	CH ₂ OH
4	Onjisaponin F	A	H	Ara	Api	H	b	CH ₃	CH ₂ OH
5	Onjisaponin G	A	H	H	Api	H	b	CH ₃	CH ₂ OH
6	Onjisaponin J	A	H	Ara	e	Rha	a	COOH	CH ₃
7	Onjisaponin L	A	Gal	H	e	Rha	a	COOH	CH ₃
8	Onjisaponin O	A	Gal	H	H	Rha	b	COOH	CH ₃
9	Onjisaponin R	A	Gal	H	Api	H	b	COOH	CH ₃
10	Onjisaponin S	A	H	Ara	Api	Rha	b	COOH	CH ₃
11	Onjisaponin T	A	H	Ara	Api	Glc6Od	b	COOH	CH ₃
12	Onjisaponin V	A	Gal	H	e	b	H	COOH	CH ₃
13	Onjisaponin W	A	H	Ara	e	b	H	COOH	CH ₃
14	Onjisaponin X	A	H	Ara	e	Gal	b	COOH	CH ₃
15	Onjisaponin Y	A	H	H	H	Rha	a	COOH	CH ₃
16	Onjisaponin Z	A	H	H	H	Rha	a	COOH	CH ₃
17	Onjisaponin Vg	A	Gal	H	e	H	b	COOH	CH ₃
18	Onjisaponin Pg	A	Gal	H	e	H	H	COOH	CH ₃
19	Onjisaponin Gg	A	H	H	e	H	b	COOH	CH ₃
20	Onjisaponin Fg	A	H	Ara	e	H	b	COOH	CH ₃
21	Onjisaponin Qg	A	Gal	H	e	Rha	H	COOH	CH ₃
22	Onjisaponin Ng	A	H	H	e	Rha	a	COOH	CH ₃
23	Onjisaponin Sg	A	H	Ara	e	Rha	b	COOH	CH ₃
24	Onjisaponin Ug	A	H	Ara	e	Glc	b	COOH	CH ₃
25	Onjisaponin Tg	A	H	Ara	e	Glc6Od	b	COOH	CH ₃
26	Onjisaponin Wg	A	Gal	Ara	Api	b	H	COOH	CH ₃
27	<i>E</i> -onjisaponin H	A	H	H	Api	Rha	a	CH ₃	CH ₂ OH
28	<i>Z</i> -onjisaponin H	A	H	H	Api	Rha	k	CH ₃	CH ₂ OH
29	Sibricasaponins A	B	COOH	g	-	-	-	-	-
30	Sibricasaponins B	B	H	m	-	-	-	-	-
31	Sibricasaponins C	B	H	n	-	-	-	-	-
32	Sibricasaponins E	A	Gal	H	H	x	COCH ₃	CH ₃	-
33	Tenuioflisaponin A	A	Gal6Oy	H	Api	Api	MC	CH ₃	CH ₂ OH
34	Tenuioflisaponin B	A	Gal6Oh	H	Api	Api	MC	CH ₃	CH ₂ OH
35	Polygalasaponin X XVIII	A	H	H	H	H	H	CH ₃	CH ₂ OH
36	Polygalasaponin X XII	A	H	H	H	H	H	CH ₃	CH ₂ OH
37	Senegin III	A	Gal	H	H	Rha	MC	CH ₃	CH ₂ OH
38	Senegin IV	A	Gal	H	Api	Rha	MC	CH ₃	CH ₂ OH

注: a-(*E*)-4-methoxy cinanamoyl; b-(*E*)-3,4,5-trimethoxy cinnamoyl; e-3-hydroxy-3-methyl-5-pentanoic acid ester-5-β-D-apiofur-anosyl; g-D-glucopyranuronic acid; k-(*Z*)-4-methoxy cinnamoyl; m-α-D-xyl4SO₃H; n-β-D-xyl-5SO₃H; x-D-api ose; y-4-oxide-2-hydroxy-pentanoic acid ester-6-β-D-gal; h-2-hydroxy-4-methyl-pentanoic acid ester-6-β-D-gal; MC-p-methoxycinnamoyl; Api-β-D-apiofuranosyl

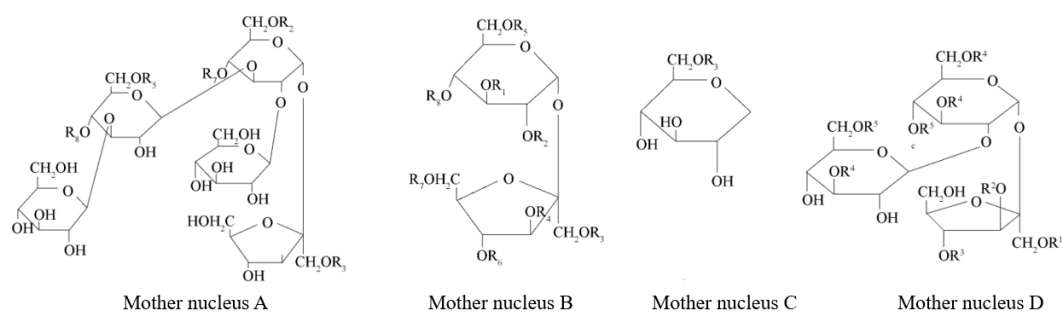
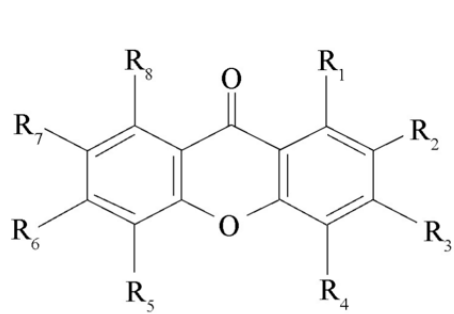


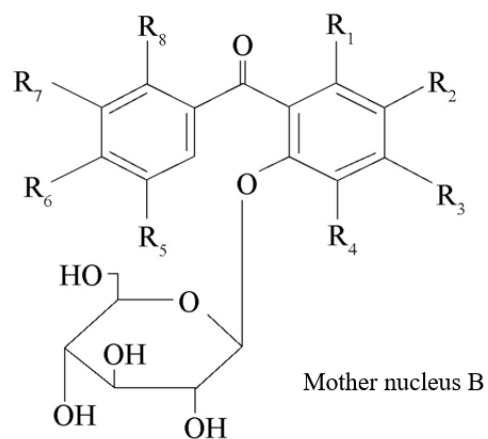
Figure S51 Chemical structure of compounds 39-69
 Table S20 Chemical Structures of compounds 39-69

cpd	name	Mother nucleus	Substituents							
			R1	R2	R	R4	R5	R6	R7	R8
39	Tenuifolioses A	A	-	a	e	b	a	-	i	a
40	Tenuifolioses B	A	-	H	e	b	a	-	i	a
41	Tenuifolioses C	A	-	H	e	b	a	-	i	H
42	Tenuifolioses D	A	-	a	e	b	a	-	i	H
43	Tenuifolioses E	A	-	a	e	b	a	-	i	H
44	Tenuifolioses F	A	-	a	e	b	a	-	m	a
45	Tenuifolioses G	A	-	a	e	b	a	-	m	H
46	Tenuifolioses H	A	-	a	e	b	a	-	e	a
47	Tenuifolioses I	A	-	a	e	b	a	-	e	H
48	Tenuifolioses J	A	-	H	e	b	a	-	e	a
49	Tenuifolioses K	A	-	H	e	b	a	-	e	H
50	Tenuifolioses L	A	-	a	e	b	a	-	n	a
51	Tenuifolioses M	A	-	a	e	b	a	-	n	H
52	Tenuifolioses N	A	-	a	i	b	a	-	i	a
53	Tenuifolioses O	A	-	H	i	b	a	-	i	a
54	Tenuifolioses P	A	-	H	i	b	a	-	i	H
55	Tenuifolioses Q	A	-	H	e	b	a	-	n	a
56	Tenuifoliside A	B	H	H	H	l	g	H	H	H
57	Tenuifoliside B	B	H	H	H	j	g	H	H	H
58	Tenuifoliside C	B	H	H	H	j	j	H	H	H
59	Tenuifoliside D	C	-	-	l	-	-	-	-	-
60	Tenuifoliside E	B	H	a	H	h	a	H	H	a
61	Sibiricose A1	B	H	H	H	H	j	H	H	H
62	Sibiricose A2	B	H	H	H	H	l	H	H	H
63	Sibiricose A3	B	H	H	H	g	H	H	H	H
64	Sibiricose A4	B	H	H	H	j	H	H	H	j
65	Sibiricose A5	B	H	H	H	i	H	H	H	H
66	Sibiricose A6	B	H	H	H	j	H	H	H	H
67	Sibiricose A7	C	-	-	x	-	-	-	-	-
68	3,6'-Disinapoylsucrose	B	H	H	H	j	j	H	H	H
69	Polygalatenosides B	D	b	-	-	-	-	-	-	-

注: a-acetyl; b-benzoyl; d-p-methylbenzoyl; e-(E)-p-coumaroyl; g-p-hydroxybenzoyl; j-(E)-sinapoy; i-(E)-feruloyl; f-benzoyl; k-3,4-dimethoxycinnamoyl; l-(E)-3,4,5-trimethoxycinnamoyl; m-4-O- α -L-rhamnopyranosyl-(E)-feruloyl; n-4-O- α -L-rhamnopyranosyl-(E)-p-coumaroyl; p-3,4-dimethoxycinnamoyl; q-cinnamoyl; x-4-hydroxy-3,5-dimethoxycinnamoyl



Mother nucleus A



Mother nucleus B

Figure S52 Chemical structure of compounds 70-107

Table S21 Chemical Structures of compounds 70-107

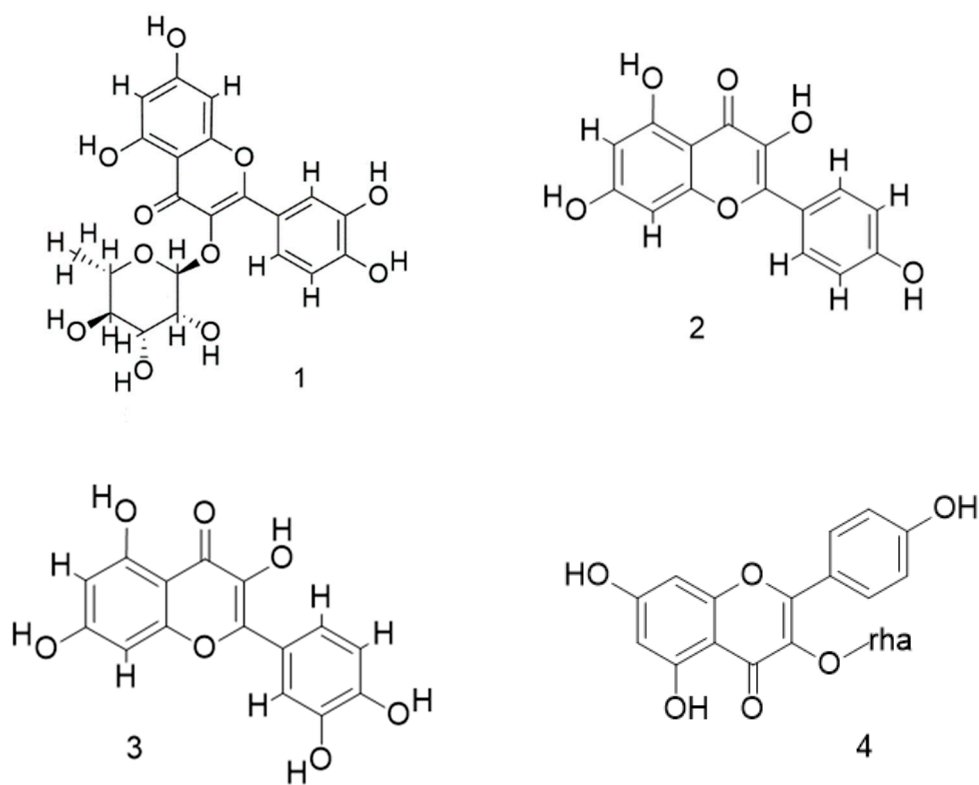
cpd	name	Mother nucleus	Substituents							
			R1	R2	R	R4	R5	R6	R7	R8
70	lancerin	A	H	H	OH	H	H	OH	Glc	H
71	onjixanthone I	A	OMe	OMe	OMe	H	H	H	OH	H
72	onjixanthone II	A	OH	OMe	OH	H	H	OH	OMe	H
73	polygalaxanthone III	A	OH	Glc6-1Api	OH	H	H	OH	OMe	H
74	polygalaxanthone IV	A	OH	H	OMe	-	-	OGlc2-1Rha	OMe	H
75	polygalaxanthone V	A	OH	H	OH	-	-	OGlc2-1Rha	OMe	H
76	Polygalaxanthone VI	A	OMe	OMe	OMe	-	-	OGlc	OMe	H
77	polygalaxanthone VII	A	OH	OMe	Glc2-1	OH	OMe	H	H	H
78	sibiriphenone A	B	OH	H	OH	H	H	OH	OMe	H
79	sibiricaxanthone A	A	OH	Glc6-1Api	OH	H	H	H	OH	H
80	sibiricaxanthone B	A	OH	Glc2-1Rha	OH	H	H	H	OH	H
81	1,2,3-trimethoxy-7-hydrA		OMe	OMe	OMe	H	H	H	OH	H
82	1,3,6-trihydroxy-2,7-dirA		OH	OMe	OH	H	H	OH	OMe	H
83	1,2,7-trimethoxy-3-hydrA		OMe	OMe	OH	H	H	H	OMe	H
84	1,2,3,7-tetramethoxyxanA		OMe	OMe	OMe	H	H	H	OMe	H
85	1,7-dihydroxy-3-methoxyA		OH	H	OMe	H	H	H	OH	H
86	1,7-dihydroxy-2,3-dimeA		OH	OMe	OMe	H	H	H	OH	H
87	1,7-dihydroxy-2,3-methA		OMe	OCH ₂ O	OCH ₂ CH		H	H	H	OMe
88	1,7-dihydroxy-2,3-di-mA		OH	OCH ₂ O	OCH ₂ CH		H	H	OH	H
89	6-hydroxy-2,3,6,7-tetrarA		H	OMe	OMe	H	H	OMe	OMe	H
90	6-hydroxy-1,2,3,7-tetrarA		OMe	OMe	OMe	H	H	OGlc	OMe	H
91	1,7-dihydroxyxanthone A		OH	H	H	H	H	H	OH	H
92	1,7-dimethoxyxanthone A		OMe	H	H	H	H	H	OMe	H
93	1-hydroxy-3,7-dimethoxyA		OH	H	OMe	H	H	H	OMe	H
94	1-hydroxy-3,6,7-trimethA		OH	H	OMe	H	H	OMe	OMe	H
95	6,8-dihydroxy-1,2,4-trinA		OMe	OMe	H	OH	H	H	H	OH
96	6,8-dihydroxy-1,2,3-trinA		OMe	OMe	OMe	H	H	H	H	OH
97	1,2,3,6,7-pentamethoxyxanA		OMe	OMe	OMe	H	H	OMe	OMe	H
98	1,3,7-trihydroxyxanthoneA		OH	H	OH	H	H	H	OH	H
99	1,6,7-trihydroxy-2,3-dirA		OH	OMe	OMe	H	H	OH	OH	H
100	3-hydroxy-2,8-dimethoxyA		H	OMe	OH	H	H	H	H	OMe
101	7-hydroxy-1,2,3-trimethA		OMe	OMe	OMe	H	H	H	OH	H
102	3-hydroxy-1,2,7-trimethA		OMe	OMe	OH	H	H	H	OMe	H
103	2,3,8-trimethoxyxanthoneA		H	OMe	OMe	H	H	H	H	OMe
104	1,3,6,7-tetramethoxyxanA		OMe	H	OMe	H	H	OMe	OMe	H
105	1,3,7-trimethoxyxanthoneA		OMe	H	OMe	H	H	H	OMe	H
106	7- <i>O</i> -methylmangiferin A	A	OH	Glc	OH	H	H	OH	OMe	H
107	euxanthone	A	OH	H	H	H	H	H	OH	H

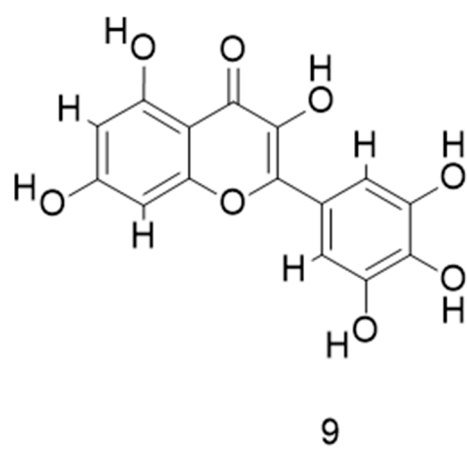
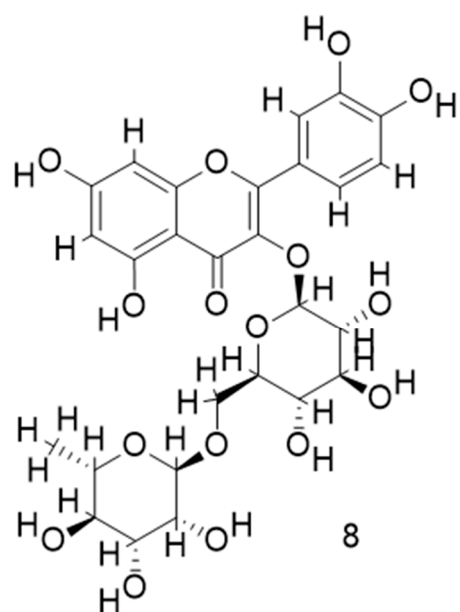
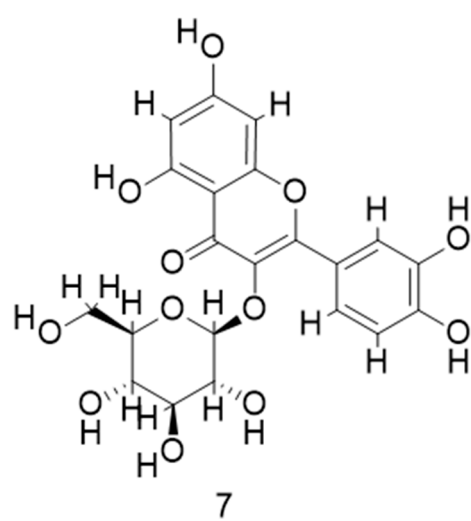
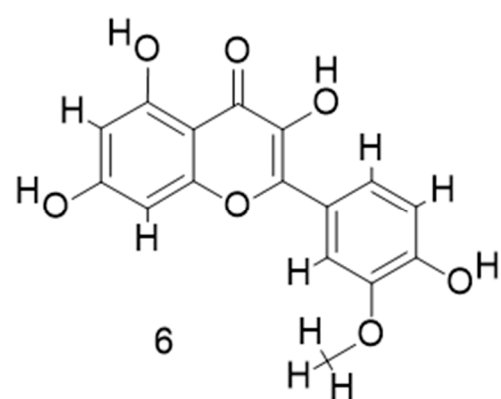
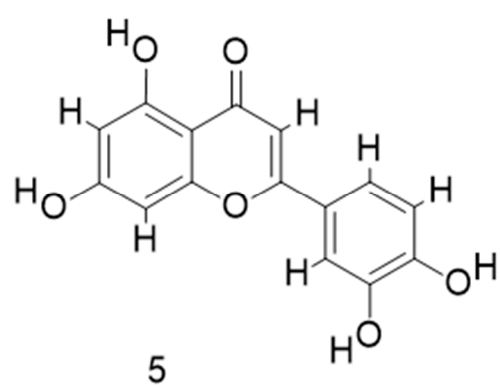
Albizia julibrissin durazz bark

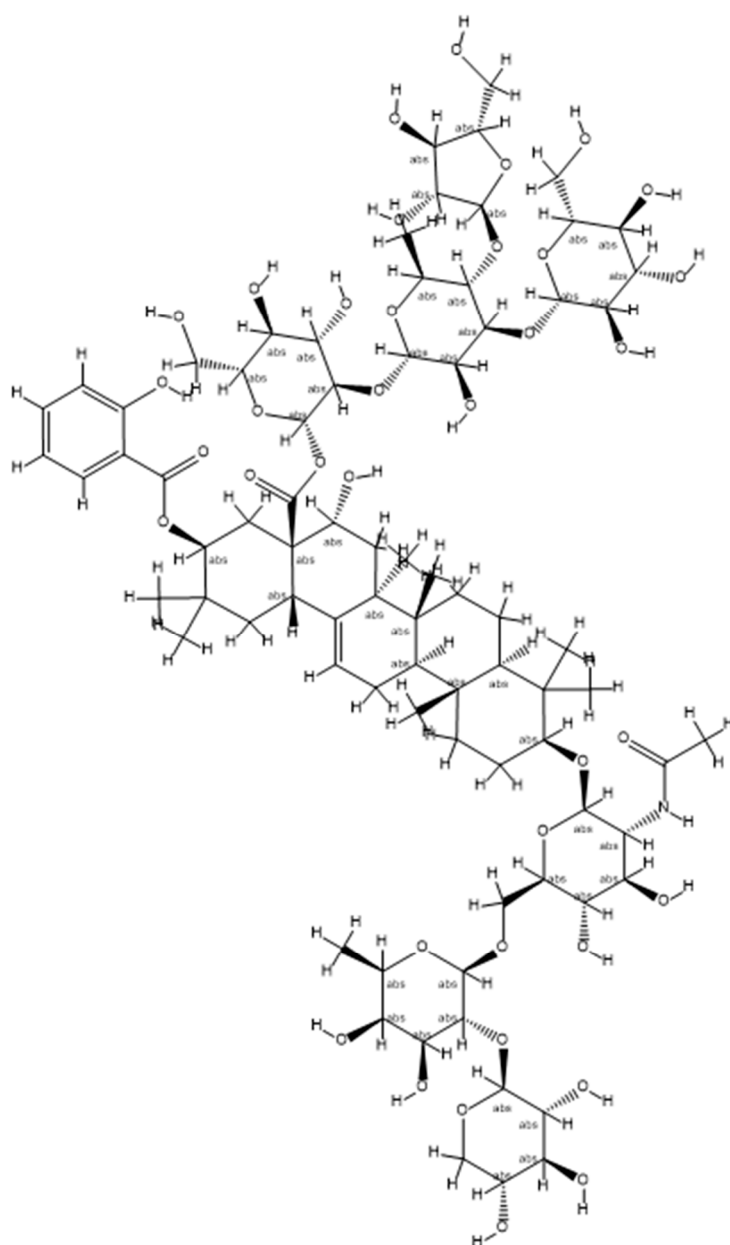
Table S22 Chemical Structures of compounds 1-10

Cpd	Name
1	Quercitrin
2	Kaempferol
3	Quercetin
4	Kaempferol-3-O- α -L-rhamnoside
5	Luteolin
6	Isorhamnetin
7	Isoquercetin
8	Rutin
9	Myricetin
10	adanthifolioside A

Figure S53 Chemical structure of compounds 1-10







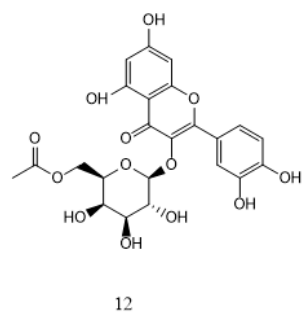
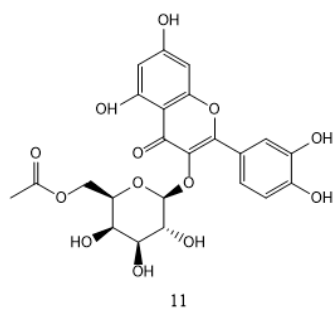
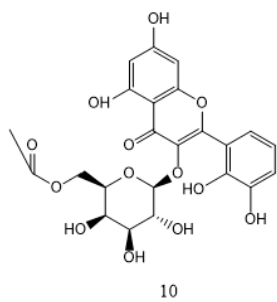
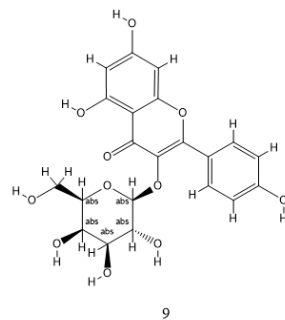
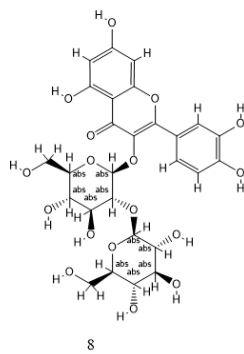
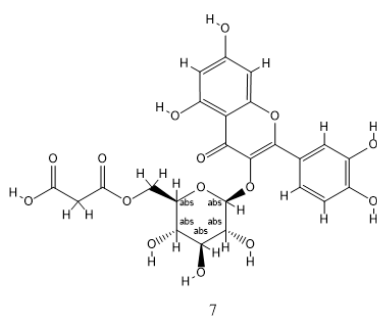
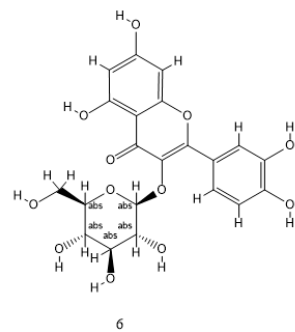
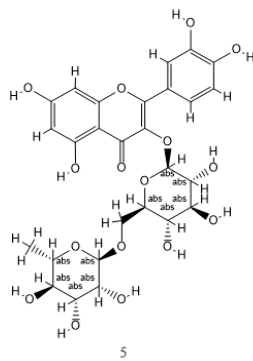
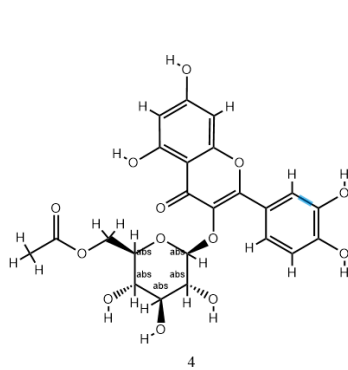
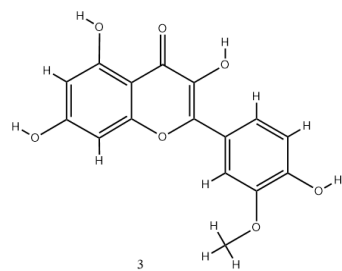
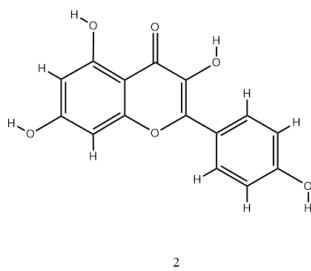
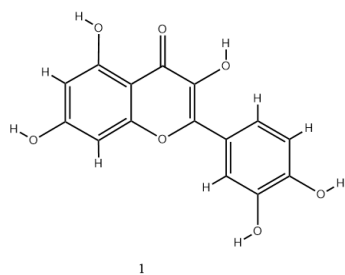
10

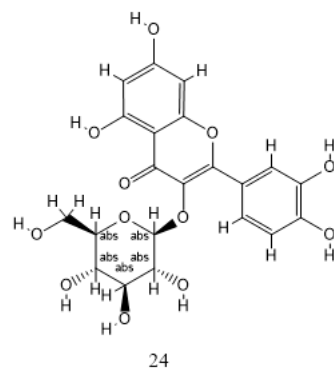
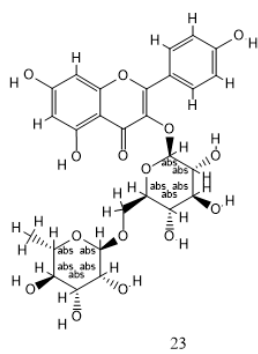
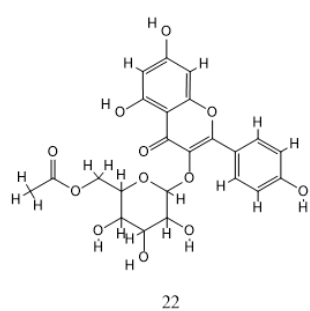
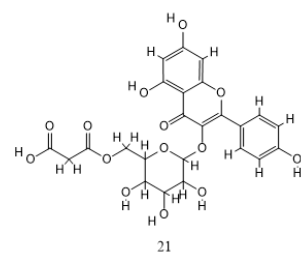
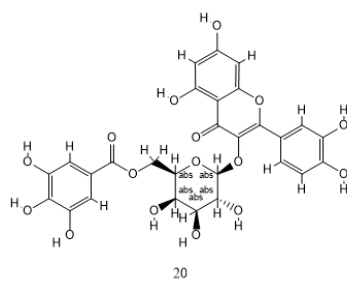
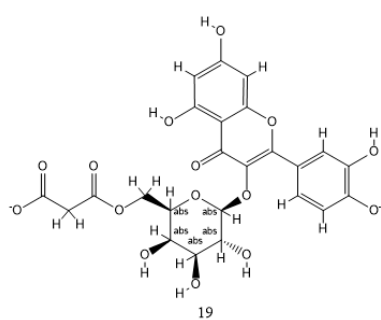
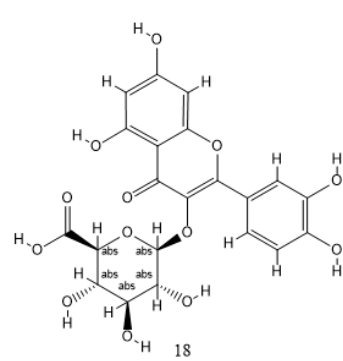
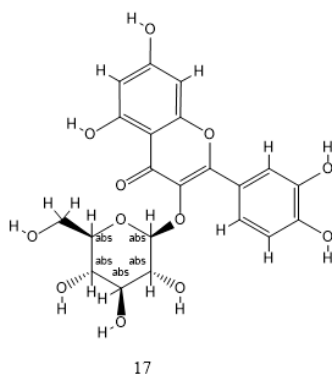
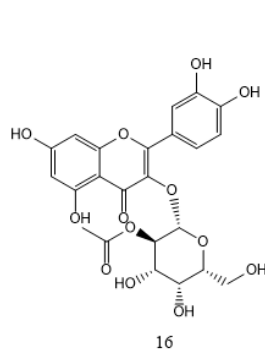
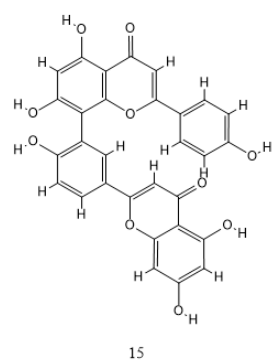
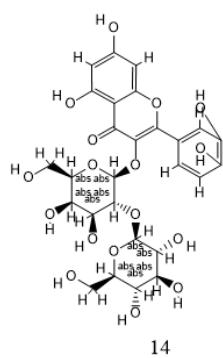
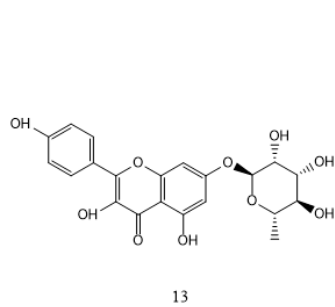
Apocynum Venetum

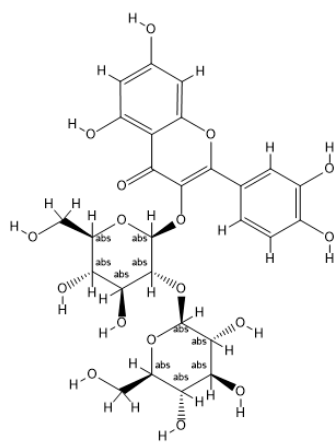
Table S23 Chemical composition of *Apocynum Venetum*

NO	compound	NO	compound
1	Quercetin	27	Acetylated hypericin
2	Kaempferol	28	Neoisorutin
3	Isorhamnetin	29	4'-o-methylquercetin
4	Quercetin 3-O-(6"-acetyl-glucoside)	30	Quercetin-3-O-β-D-glucoside
5	Rutin	31	kaempferol-3-O-β-D-glucoside

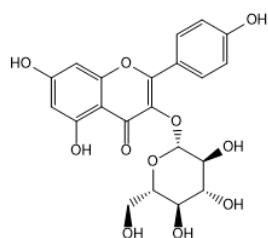
6	Isoquercetin	32	Quercetin-3-O- β -D-glucopyranyl(2 \rightarrow 1)-O- β -D-grapea pyranoside
7	Quercetin 3-O-malonylglucoside	33	(+)-Catechin
8	Quercetin-3-O-Sophoroside	34	(-)-Epicatechin
9	Trifolin	35	(-)-Epigallocatechin
10	kaempferol-3-O-(6''-O-acetyl)- β -D-glucopyranoside	36	apocyninA
11	quercetin-3-O- (6''-O acetyl) - β -D-glucopyranoside	37	apocynin B
12	quercetin-3-O- (6''-O-acetyl) - β -D-galactopyranosid	38	apocynin D
13	kaempferol-7-O- α -L-rhamnopyranoside	39	Trans-2-Penten-1-Ol
14	2''-Acetylhyperin	40	4,4-Dimethyl-2-cyclopenten-1-one
15	Quercetin-3-O-beta-D-glucosylgalactoside	41	Methylcyclohexane
16	Amentoflavone	42	2-Methyldihydro-3(2H)-furanone
17	Quercetin 3-glucoside	43	1,2,5,5-Tetramethyl-1,3-cyclopentadiene
18	Quercetin-3-O-glucuronic acid	44	n-3-Hexenol
19	Quercetin-3-O-(6''-O-malonyl)-galactoside	45	p-Xylene
20	Quercetin 3-O-(6''-O-malonyl)- β -D-glucoside	46	1,3,5-Octatriene
21	kaempferol-3-O-(6''-O-malonyl)-glucoside	47	2-Furanmethanol
22	kaempferol-3-O-(6''-O-acetyl)-glucoside	48	1,3,5,7-Cyclotetraoctene
23	kaempferol-3-rutinoside	49	2-Acetylfuran
24	Quercetin-3- β -D-glucopyranoside	50	4-Ethylphenol
25	Baimaside	51	3,5-Dimethylphenol
26	Astragalin		



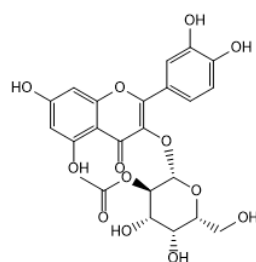




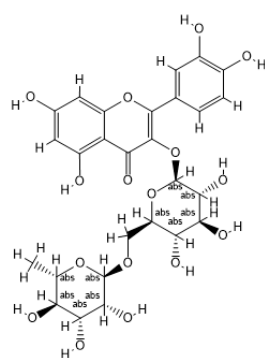
25



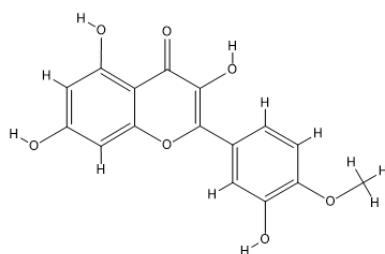
26



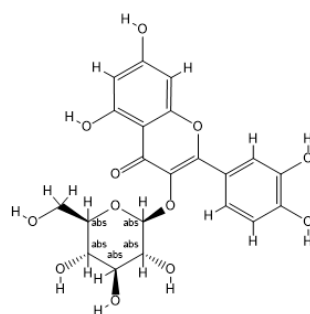
27



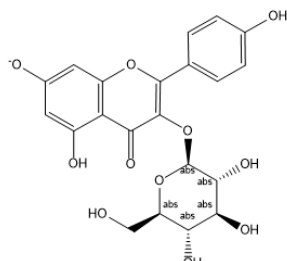
28



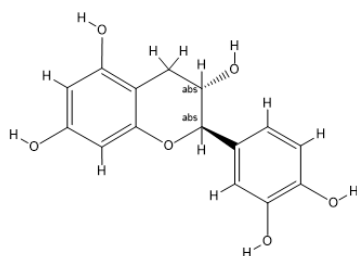
29



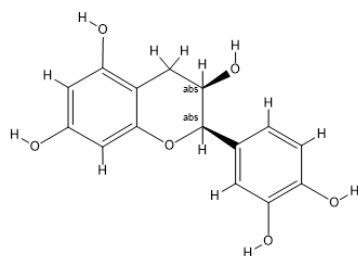
30



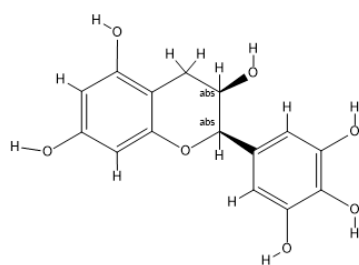
31



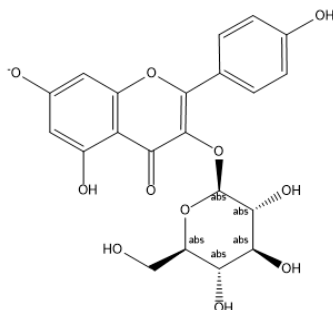
32



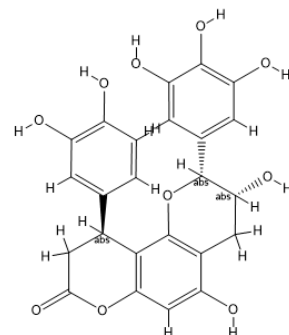
33



34



35



36

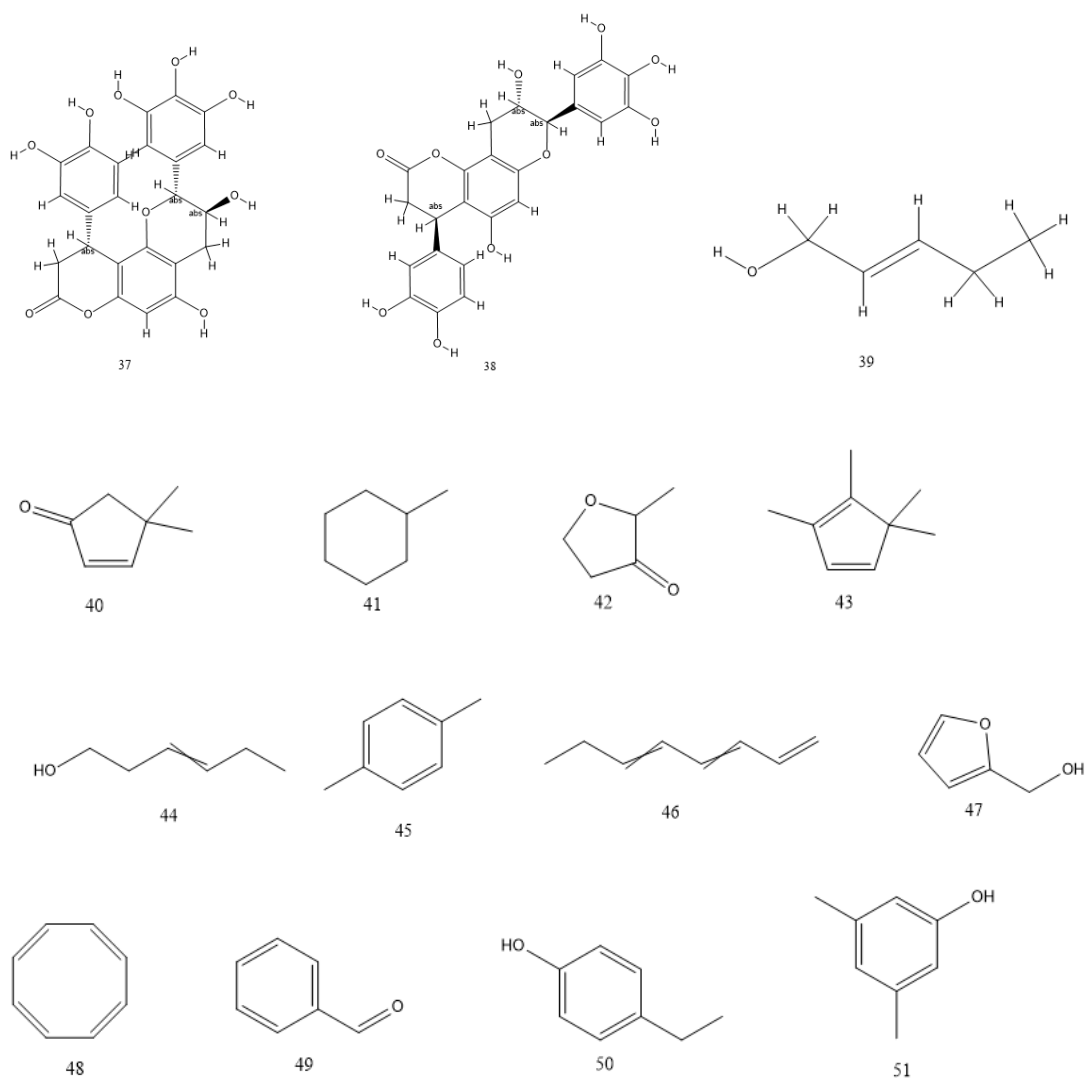
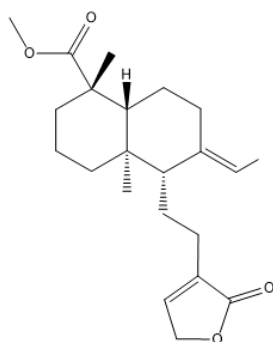


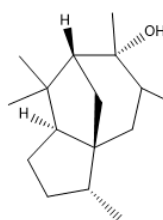
Figure S54. The structures of *Apocynum Venetum*

Table S24 Chemical composition of *Platycladus orientalis* franco

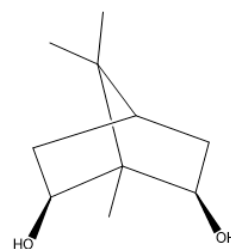
NO.	compound	NO.	compound
1	pimisolid	11	Methyl 10-undecylenate
2	a-cedrol	12	Methyl 9-oxonanoate
3	platydiol	13	Methyl 10-oxodecanoate
4	(+)-catechin	14	Methyl 11-oxoundecanoate
5	(-)-Epicatechin	15	Methyl tetradecanoate
6	Methyl heptanoate	16	Methyl 2-eicosenoate
7	Methyl 4-octenoate	17	Methyl eicosanate
8	Methyl octanoate	18	linoleic acid
9	Methyl nonanoate	19	linolenic acid
10	Methyl 8-oxooctanoate	20	arachidonic acid



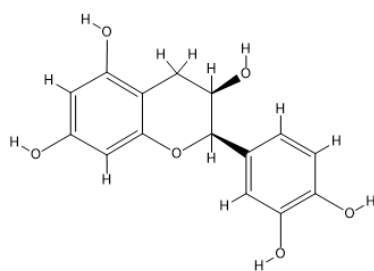
1



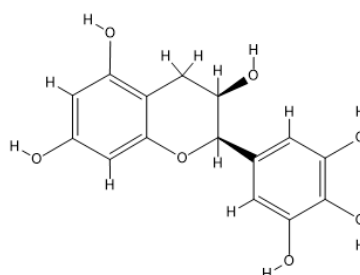
2



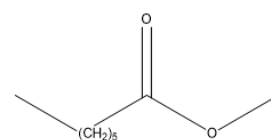
3



4



5



6

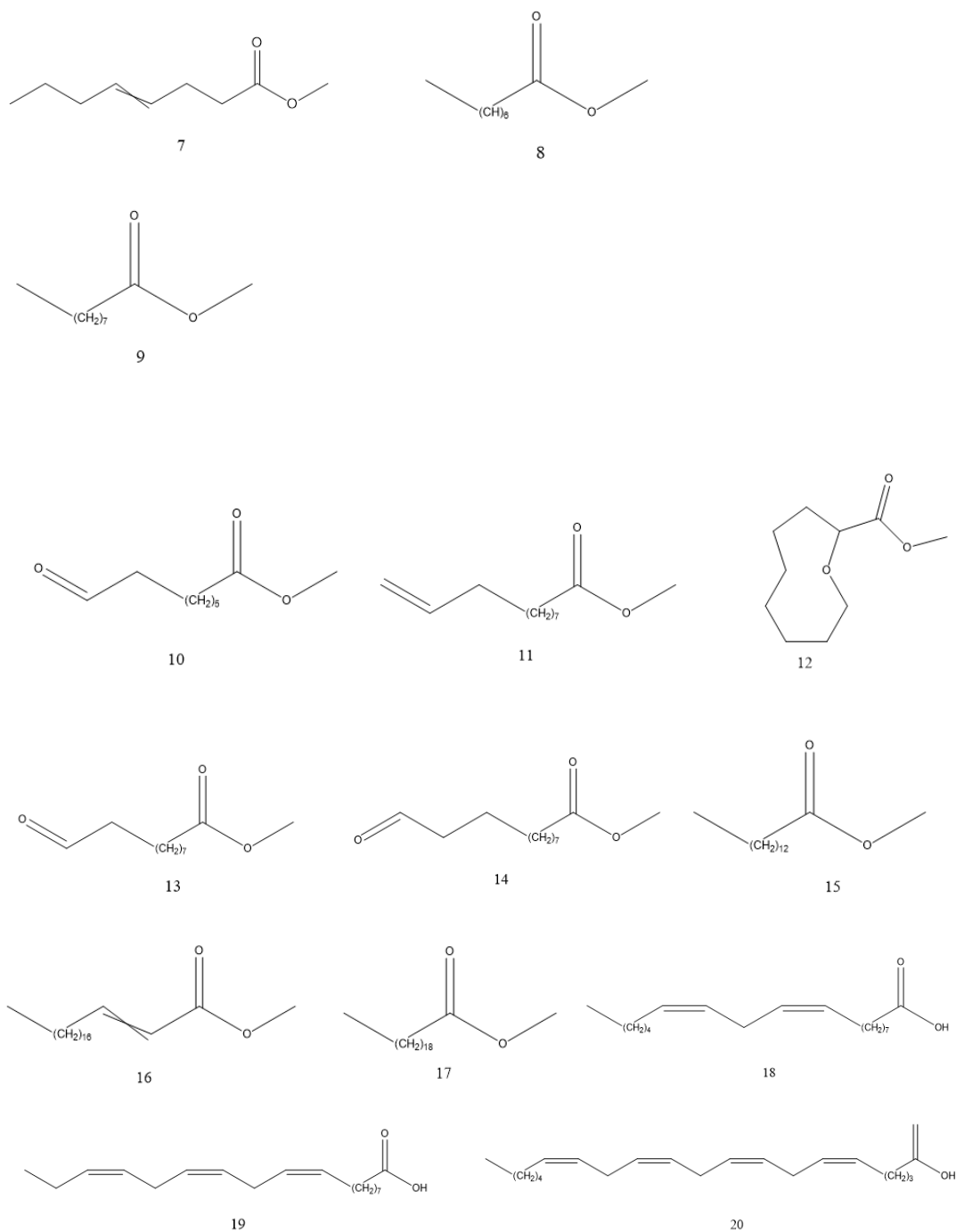


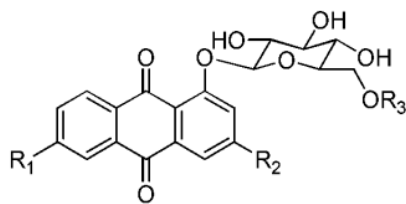
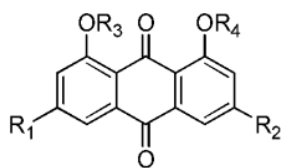
Figure S55. The structures of *Platycladus orientalis* franco

Polygonum multiflorum thumb

Table S25 Chemical composition of *Polygonum multiflorum* thumb

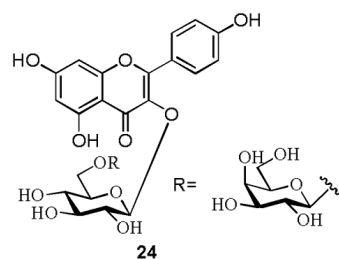
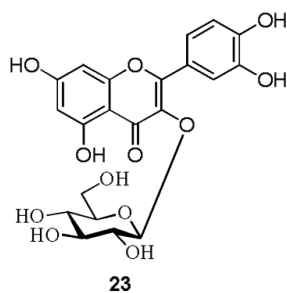
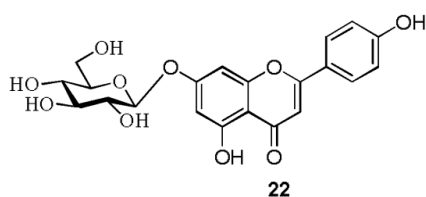
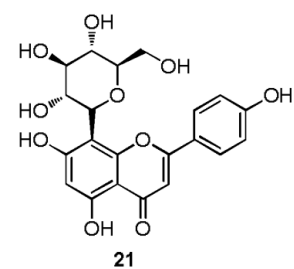
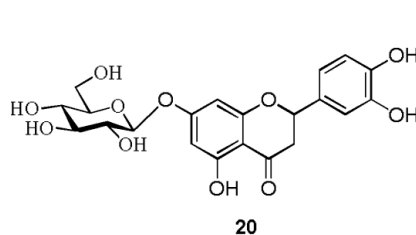
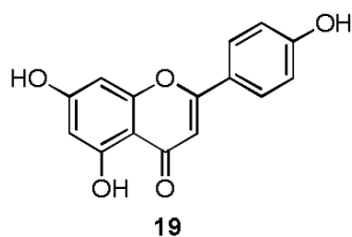
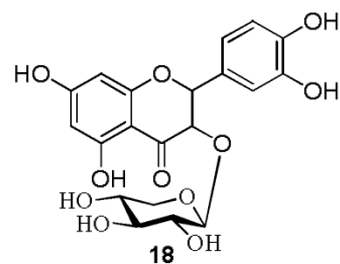
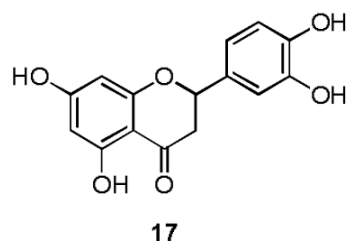
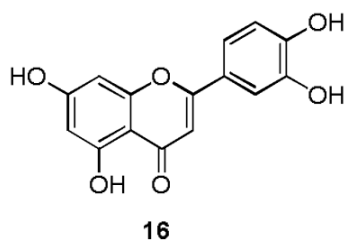
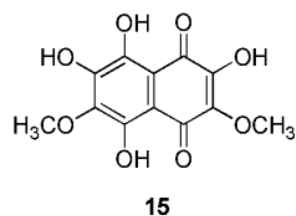
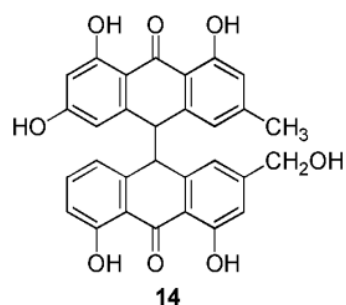
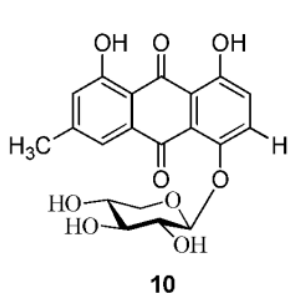
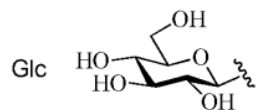
NO.	compound	NO.	compound
1	2,5-dimethyl-7-hydroxychromone	30	2,5-dimethyl-7-hydroxychromone-7-O- β -D-glucopyranoside
2	emodin	31	noreugenin

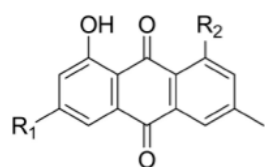
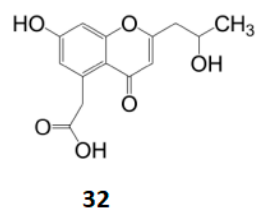
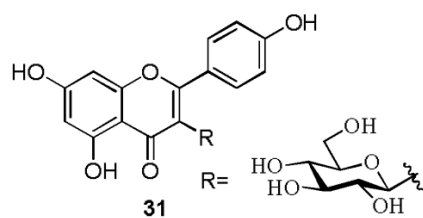
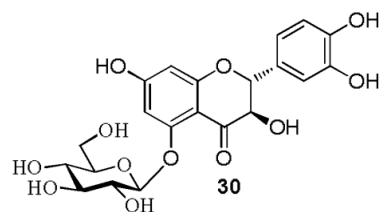
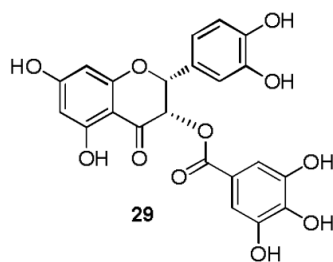
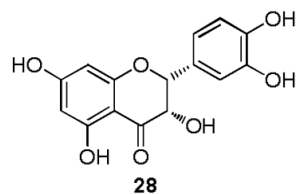
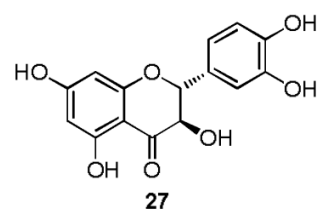
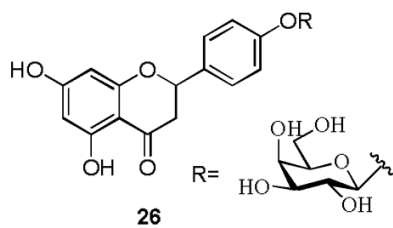
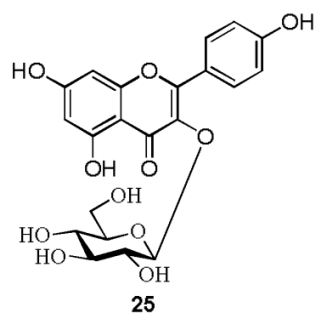
3	catechin	32	protocatechuicacid
4	physcion-8-O- β -D-glucopyranoside	33	methylgallate
5	torachrysone-8-O- β -D-glucopyranoside	34	quercetin-3-O- β -D-glucopyranoside
6	emodin-8-O- β -D-glucopyranoside	35	noreugenin-7-O- β -D-glucopyranoside
7	2,3,5,4-tetrahydroxystilbene-2-O- β -D-glucopyranoside	36	2,5-dimethyl-7-hydroxychromone
8	W-Hydroxyemodin	37	kaempferol
9	Aloe emodin	38	genistin
10	Emodin-5-O-xyloside	39	hyperin
11	Emodin-1-O- β -D-glucose	40	caffeicacid
12	Emodin-8-O- (6'-O-malonyl)- β -D-glucoside	41	dodecane
13	Emodin methyl ether-8-O- β -D-gentiandiglycoside	42	tridecane
14	Palmarula anthrone A	43	tetradecane
15	3,6-Dimethoxy-2,5,7,8-tetrahydroxynaphthoquinone	44	daucosterol
16	Quercetin	45	β -sitosterol
17	Luteolin-3-O-xyloside	46	Stilbene glycosides
18	Apigenin	47	Stilbene-O-dihexanoside
19	Luteolin	48	Stilbene glucoside
20	Vitex	49	coumaric acids
21	Apigenin-7-glucoside	50	Galic acid-3-O-glucoside
22	Rutin	51	Protocornflower B5
23	Viosterin	52	Diisobutyl phthalate
24	Piperin	53	Dibutyl phthalate
25	Epicatechins	54	hexanal
26	Epicatechin-3-O-gallate	55	6,10,14-Trimethyl-2-pentadecanone
27	Catechin-5-O- β -D-glucoside	56	Butyl butyrate
28	Kaempferol-3- β -D-glucoside	57	Nonanaldehyde
29	2-(2'-hydroxypropyl)-5-carboxymethyl-7-hydroxychromone		



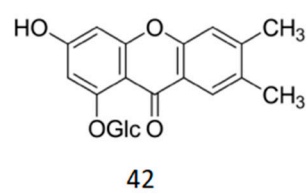
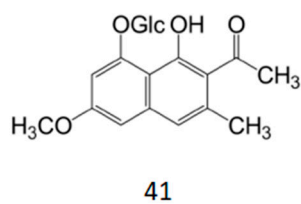
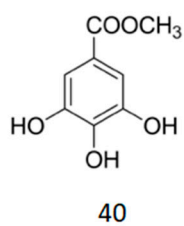
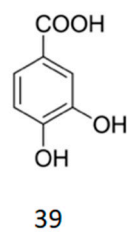
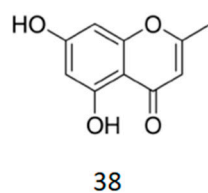
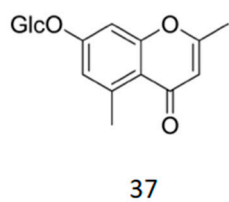
- 1** $R_1=CH_3$ $R_2=OH$ $R_3=H$ $R_4=H$
2 $R_1=CH_3$ $R_2=OCH_3$ $R_3=H$ $R_4=H$
3 $R_1=CH_2OH$ $R_2=OH$ $R_3=H$ $R_4=H$
4 $R_1=CH_3$ $R_2=H$ $R_3=H$ $R_4=H$
5 $R_1=CH_2OH$ $R_2=H$ $R_3=H$ $R_4=H$
6 $R_1=COOH$ $R_2=H$ $R_3=H$ $R_4=H$
7 $R_1=CH_3$ $R_2=H$ $R_3=H$ $R_4=Glc$
8 $R_1=CH_3$ $R_2=OH$ $R_3=Glc$ $R_4=H$
11 $R_1=CH_3$ $R_2=OH$ $R_3=H$ $R_4=CH_3$

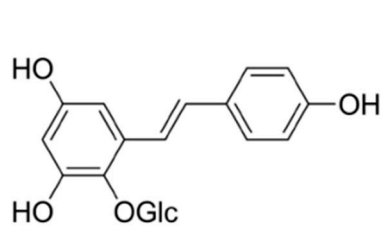
- 9** $R_1=H$ $R_2=OCH_3$ $R_3=H$
12 $R_1=CH_3$ $R_2=OH$ $R_3=malonyl$
13 $R_1=CH_3$ $R_2=OH$ $R_3=Glc$



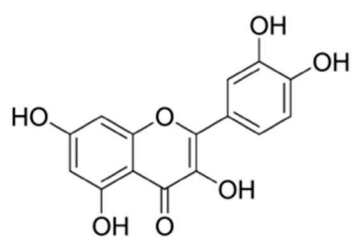


compound	R ₁	R ₂
33	OH	OH
34	OCH ₃	H
35	OCH ₃	OGlc
36	OH	OGlc

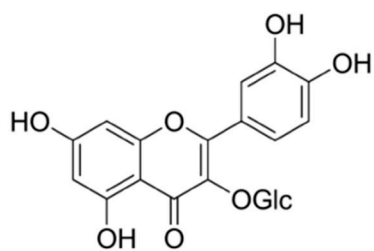




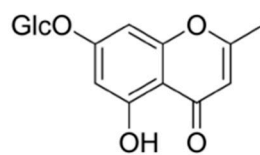
43



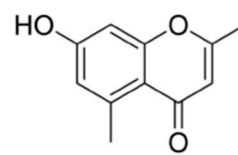
44



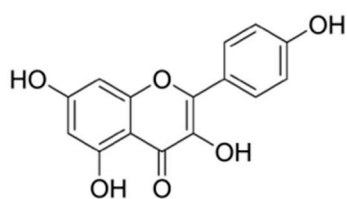
45



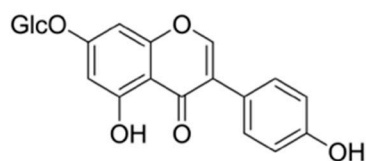
46



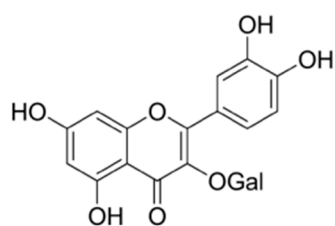
47



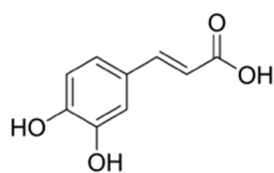
48



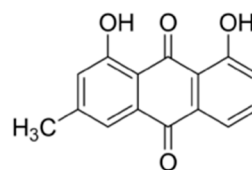
49



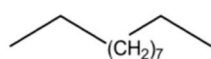
50



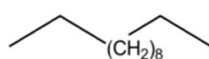
51



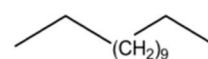
52



53



54



55

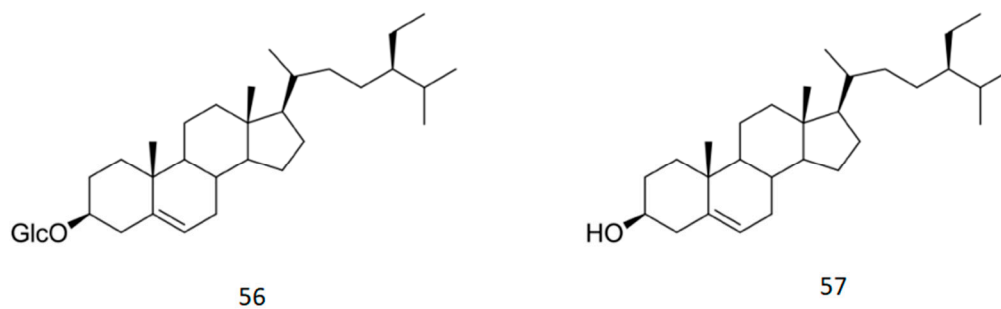


Figure S56.The structures of *Polygonum multiflorum* thumb

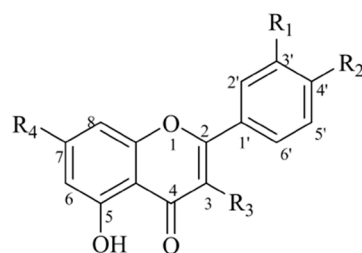
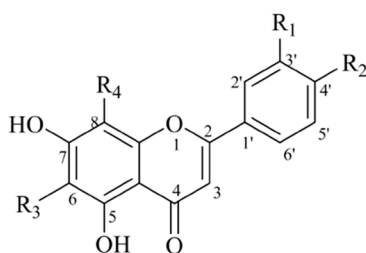
Nelumbo nucifera gaertn

Table S26 Chemical composition of *Nelumbo nucifera* gaertn

NO.	compound	NO	compound
1	Luteolin 6-C-glucoside-8-C-glucoside	63	O-Nornuciferine
2	Apigenin 6-C-glucoside-8-C-glucoside	64	Roemerine
3	Luteolin 6-C-pentoside-8-C-glucoside	65	Nuciferine
4	Chrysoeriol (Diosmetin) 6-C-pentoside (hexoside)-8-C-hexoside (pentoside)	66	Anonaine
5	Luteolin 6-C-pentoside-8-C-glucoside	67	Coclaurine-5'-O-pentoside
6	Apigenin 6-C-glucoside-8-C-polyxylosidase	68	Oxidation-Nuciferine
7	Luteolin 6-C-glucoside-8-C-pentoside	69	Lotusine 4' -O-glucoside
8	Schaftoside	70	Norcocalurine 4' -O-glucoside
9	Isoorientin	71	N-methylnorcoclaurine 7-O-glucoside
10	Apigenin 6-C-polyxylosidase-8-C-glucoside	72	N-methylnorcoclaurine 4' -O-glucoside
11	Luteolin 6-C- rhamnoside-8-C-pentoside	73	Isolotusine 4'-O-glucoside
12	Orientin	74	Norcocalurine 6-O-glucoside

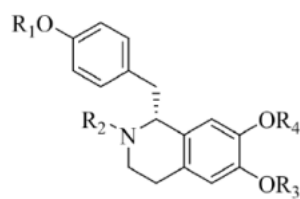
13	Isoschaftoside	75	N-methylcoclaurine 7-O-glucoside or N-methylcoclaurine 4' -O-glucoside
14	Luteolin 6-C-pentoside-8-C-rhamnoside	76	Norcoclaurine
15	Chrysoeriol (Diosmetin) 6-C-pentoside (hexoside)-8-C-hexoside (pentoside)	77	N-methylnorcoclaurine
16	Quercetin 3-O-rhamnoside-glucoside	78	Lotusine
17	Chrysoeriol (Diosmetin) 6-C-pentoside (hexoside)-8-C-hexoside (pentoside)	79	Isolotusine 4'-O-glucoside
18	Quercetin 3-O-rhamnopyranosyl- (1→6)- glucopyranoside (rutin)	80	Nornuciferidine
19	Isovitexin	81	Norisoliensinine
20	Quercetin 3-O-galactoside	82	N-methylisococlaurine
21	Quercetin 3-O-glucuronide	83	Coclaurine
22	Quercetin 3-O-glucoside	84	6-hydroxylnorisoliensinine
23	Kaempferol 7-O-galactoside	85	N-methylcoclaurine
24	Diosmetin 6-C-glucoside	86	N-norisoliensinine
25	Luteolin 7-O-rutinoside	87	Liensinine
26	Kaempferol 3-O- robinobiosideC27H30O15	88	4-methyl-N-methylcoclaurine
27	Isorhamnetin 3-O-neohesperidoside	89	Isoliensinine
28	Isorhamnetin 3-O-rutinoside	90	3-hydroxylisoliensine
29	Isorhamnetin 3-O-galatoside	91	6-demethyl-4' -methyl-N- methylcoclaurine
30	Isorhamnetin 3-O-glucoside	92	Neferine
31	Kaempferol 7-O-glucoside	93	Armepavine
32	Diosmetin (Chrysoeriol) 6,8-di-C- glucoside	94	3-hydroxylneferine
33	Diosmetin 8-C-glucoside	95	Nuciferine
34	Diosmetin 7-O-rutinoside	96	Quercetin 3-O-glucosyl -(1 → 2) - glucoside
35	Chrysoeriol 7-O-glucoside	97	Luteolin 6, 8-di-C-glucosides
36	Kaempferol	98	Luteolin 6-C-pentoside-8-C-glucoside
37	Quercetin	99	Apigenin 6, 8-di-C-glucoside (Vicenin-2)
38	Diosmetin	100	Kaempferol 3-O-neohesperidosides 7- O glucoside
39	Norcoclaurine-4'-O-glucoside	101	Luteolin 6-C-glucoside (Isoorientin)
40	N-methylhigenamine	102	Luteolin 8-C-glucoside (Orientin)
41	Norcoclaurine-6-O-glucoside	103	Apigenin 6-C-glucoside-8-C- rhamnoside (Violanthin)
42	Norcoclaurine	104	Quercetin 3-O-galactoside (Hyperoside)

43	Argemexirine	105	Hesperitin 7-O-rutinoside (Hesperidine)
44	Lotusine	106	Apigenin-6-C-glucoside (Isovitexin)
45	Nornuciferidine	107	Apigenin 6-C-rhamnoside-8-C- glucoside
46	Norisoliensinine	108	5,7,3',4',5'-pentahydroxyflavone (Tricetin)
47	N-methylisococlaurine	109	Quercetin 3-O-glucoside (Isoquercitrin)
48	Isococlaurine	110	Apigenin-8-C-glucoside (Vitexin)
49	N-methylcoclaurine	111	Luteolin
50	6-Hydroxynorisoliensinine	112	Quercetin 3-O-glucuronide (Querciturone)
51	Pronuciferine	113	Kaempferol-3-O-rutinoside (Nicotiflorin)
52	Thalifoline	114	Quercetin
53	Armepavine	115	Kaempferol
54	Liensinine	116	Kaempferol 7-O-neohesperidoside
55	6-demethy-4'-methyl-N- methylcoclaurine	117	Isorhamnetin
56	Coclaurine	118	Isorhamnetin 3-O-neohesperidoside
57	Isoliensinine	119	Apigenin-7-O-neohesperidoside (Rhoifolin)
58	N-Nornuciferine	120	Naringenin
59	N-nor-O-methylarmepavine	121	Diosmetin
60	Neferine	122	Diosmetin 7-O-neohesperidoside (Neodiosmin)
61	Nornuciferidine	123	Kaempferol 3-O-galactoside (Trifolin)
62	Isococlaurine-5'-O-pentoside	124	Kaempferol 3-O-glucoside (Astragalin)

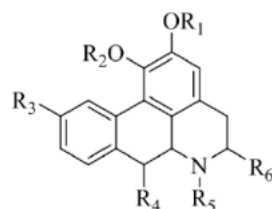


- 1 $R_1=R_2=OH$, $R_3=R_4=Glc$
- 2 $R_1=H$, $R_2=OH$, $R_3=R_4=Glc$
- 3 $R_1=R_2=OH$, $R_3=Glc$, $R_4=Pen$
- 4 $R_1=O-CH_3$, $R_2=OH$, $R_3=Pen$, $R_4=Hex$
- 5 $R_1=R_2=OH$, $R_3=Glc$, $R_4=Pen$
- 6 $R_1=H$, $R_2=OH$, $R_3=Glc$, $R_4=Xyl$
- 7 $R_1=R_2=OH$, $R_3=Pen$, $R_4=Glc$
- 8 $R_1=H$, $R_2=OH$, $R_3=Glc$, $R_4=Ara$
- 9 $R_1=R_2=OH$, $R_3=Glc$, $R_4=H$
- 10 $R_1=R_2=OH$, $R_3=Xyl$, $R_4=Glc$
- 11 $R_1=R_2=OH$, $R_3=Rhm$, $R_4=Pen$
- 12 $R_1=R_2=OH$, $R_3=H$, $R_4=Glc$
- 13 $R_1=H$, $R_2=OH$, $R_3=Ara$, $R_4=Ara$
- 14 $R_1=R_2=OH$, $R_3=Pen$, $R_4=Rhm$
- 15 $R_1=O-CH_3$, $R_2=OH$, $R_3=Hex$, $R_4=Pen$
- 17 $R_1=O-CH_3$, $R_2=OH$, $R_3=Hex$, $R_4=Pen$
- 19 $R_1=H$, $R_2=OH$, $R_3=Glc$, $R_4=H$
- 24 $R_1=OH$, $R_2=OCH_3$, $R_3=O-Glc$, $R_4=H$
- 32 $R_1/R_2=O-CH_3$, $R_1/R_2=OH$, $R_3=R_4=Glc$
- 33 $R_1=OH$, $R_2=OCH_3$, $R_3=H$, $R_4=Glc$

- 16 $R_1=R_2=OH$, $R_3=O-Rhm-Glc$, $R_4=OH$
- 18 $R_1=R_2=OH$, $R_3=O-Rhm-(1 \rightarrow 6)-Glc$, $R_4=OH$
- 20 $R_1=R_2=OH$, $R_3=O-Gal$, $R_4=OH$
- 21 $R_1=R_2=OH$, $R_3=O-Gln$, $R_4=OH$
- 22 $R_1=R_2=OH$, $R_3=O-Glc$, $R_4=OH$
- 23 $R_1=H$, $R_2=OH$, $R_3=OH$, $R_4=O-Gal$
- 25 $R_1=R_2=OH$, $R_3=H$, $R_4=O-Rut$
- 26 $R_1=H$, $R_2=OH$, $R_3=O-Rob$, $R_4=OH$
- 27 $R_1=OCH_3$, $R_2=OH$, $R_3=O-Neo$, $R_4=OH$
- 28 $R_1=OCH_3$, $R_2=OH$, $R_3=O-Rut$, $R_4=OH$
- 29 $R_1=OCH_3$, $R_2=OH$, $R_3=O-Gal$, $R_4=OH$
- 30 $R_1=OCH_3$, $R_2=OH$, $R_3=O-Glc$, $R_4=OH$
- 31 $R_1=H$, $R_2=OH$, $R_3=OH$, $R_4=O-Glc$
- 34 $R_1=OH$, $R_2=OCH_3$, $R_3=H$, $R_4=O-Rut$
- 35 $R_1=OCH_3$, $R_2=OH$, $R_3=H$, $R_4=O-Glc$
- 36 $R_1=H$, $R_2=OH$, $R_3=OH$, $R_4=OH$
- 37 $R_1=OH$, $R_2=OH$, $R_3=OH$, $R_4=OH$
- 38 $R_1=OH$, $R_2=O-CH_3$, $R_3=H$, $R_4=OH$

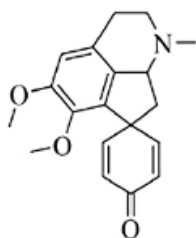


S1

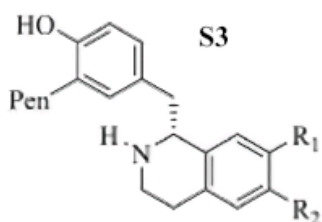


S2

S1	R ₁	R ₂	R ₃	R ₄	S2	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆
39	Glc	H	H	H	45	CH ₃	CH ₃	H	OH	H	H
40	H	CH ₃	H	H	58	CH ₃	CH ₃	H	H	H	H
41	H	H	Glc	H	61	H	CH ₃	O-CH ₃	H	H	H
42	H	H	H	H	63	H	CH ₃	H	H	CH ₃	H
43	CH ₃	H	H	H	64	R ₁ +R ₂ =CH ₂		H	H	CH ₃	H
47	H	CH ₃	CH ₃	H	65	CH ₃	CH ₃	H	H	CH ₃	H
48	H	H	H	CH ₃	66	R ₁ +R ₂ =CH ₂		H	H	H	H
49	H	CH ₃	H	CH ₃	68	CH ₃	CH ₃	H	H	CH ₃	OH
53	H	CH ₃	CH ₃	CH ₃							
55	CH ₃	CH ₃	H	H							
56	H	H	CH ₃	H							
59	CH ₃	H	CH ₃	CH ₃							

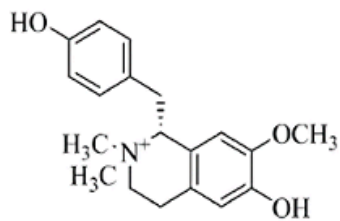


51

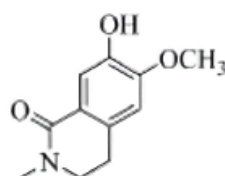


S3
62 OH OCH₃

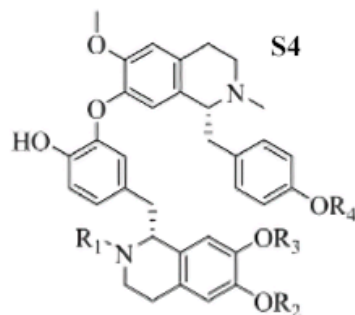
67 OCH₃ OH



44



52



S4
46 CH₃ CH₃ H H
50 H H CH₃ CH₃
54 CH₃ CH₃ CH₃ H
57 CH₃ CH₃ H CH₃
60 CH₃ CH₃ CH₃ CH₃

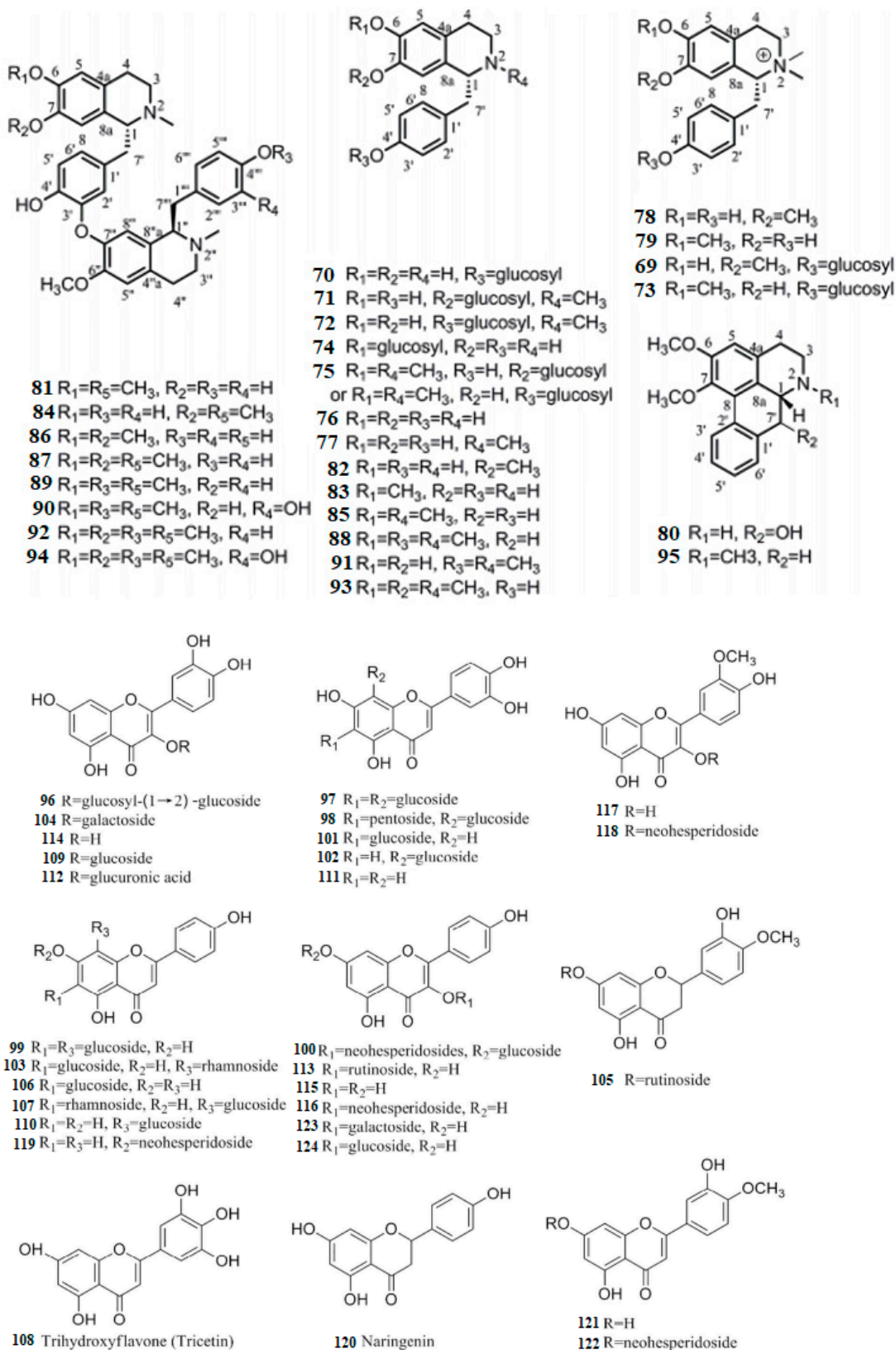


Figure S57. The chemical structures of *Nelumbo nucifera* Gaertn