

Supporting information for

The characteristic fragrant sesquiterpenes and 2-(2-phenylethyl)chromones in wild and cultivated “Qi-Nan” agarwood

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CQN11

Figure 1. The cultivated Qi-Nan agarwood.

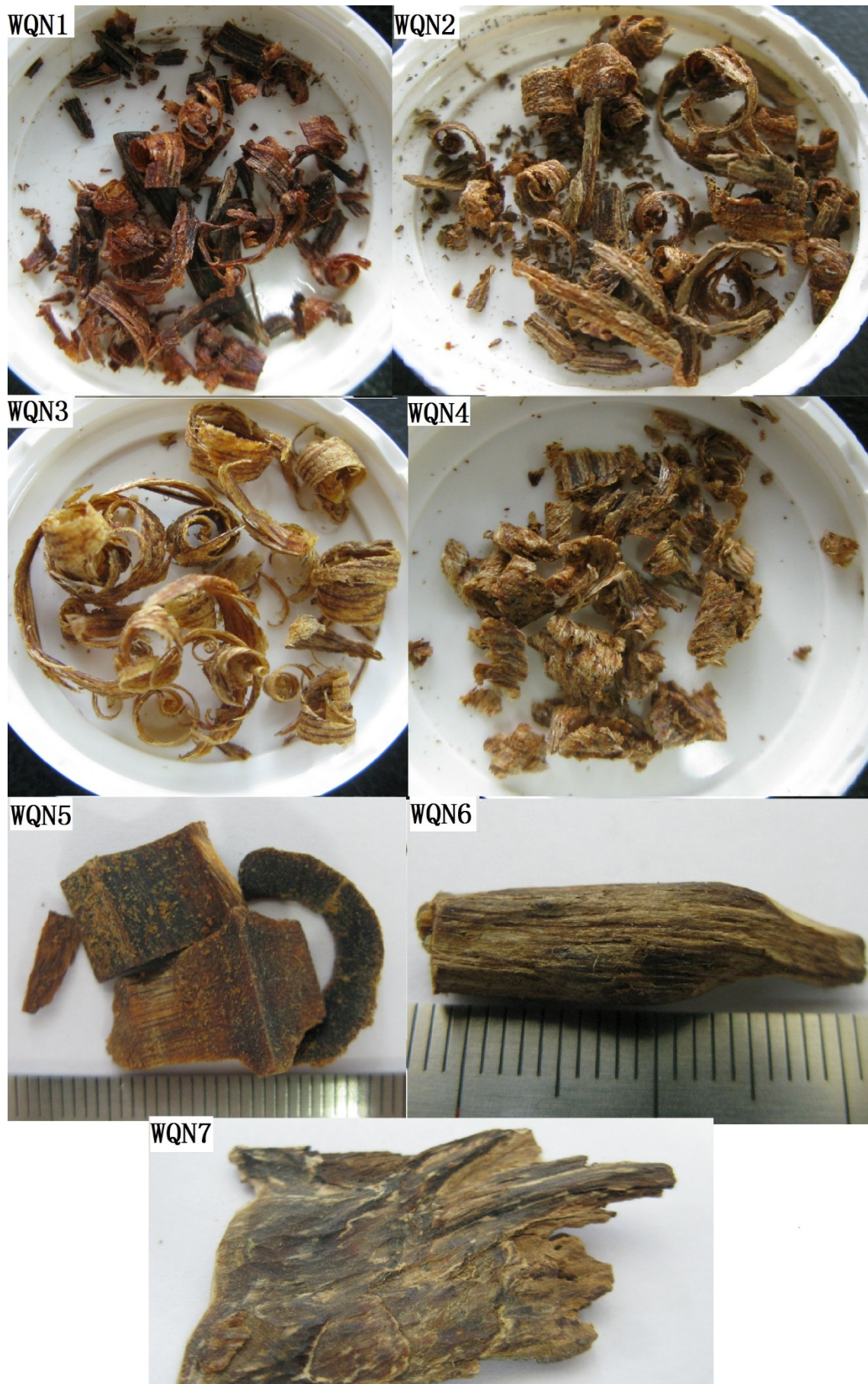


Figure 2. The wild harvested Qi-Nan agarwood.

CQN1	CQN2	CQN3	CQN4	CQN5	CQN6	CQN7	CQN8	CQN9	CQN10
64.73	66.71	49.60	57.39	47.61	56.62	47.73	52.57	35.78	48.05
CQN11	CQN12	CQN13	CQN14	CQN15	CQN16	CQN17	CQN18	CQN19	CQN20
50.01	41.03	47.69	60.25	47.73	45.24	45.88	36.75	28.68	44.19
CQN21	CQN22	WQN1	WQN2	WQN3	WQN4	WQN5	WQN6	WQN7	
29.11	20.09	-	-	36.40	60.13	-	-	53.01	

Table 2. Chemical constituents detected in cultivated Qi-Nan agarwood (CQN1-CQN11) by GC-MS.

[illegible]

20	26.65	Selina-4,11-dien-14-oic acid◇	C ₁₅ H ₂₂ O ₂	234				0.86	0.77	1.08	0.86	1.83	1.40	1.37	2.45
21	26.96	(-)-2α-Hydroxyguaia-1(10),11-dien-15-oic acid□	C ₁₅ H ₂₂ O ₃	250	0.15	0.10	0.18								
22	26.99	2-((2R,4aR,8aS)-4a-Methyl-8-methylenedecahydronaphthalen-2-yl)prop-2-en-1-ol◇	C ₁₅ H ₂₄ O	220											
23	27.63	[4aR-(4aα,6α,8aβ)]-4a,5,6,7,8,8a-Hexahydro-6-[1-(hydroxymethyl)ethenyl]-4,8a-dimethyl-2(1H)-naphthalenone◇	C ₁₅ H ₂₂ O ₂	234								0.49			0.90
24	27.77	(3aR,4aS,5R,9aS)-5,8-Dimethyl-3-methylene-3a,4,4a,5,6,7,9,9a-octahydroazuleno[6,5-b]furan-2(3H)-one □	C ₁₅ H ₂₀ O ₂	232											
25	28.26	Karanone■	C ₁₅ H ₂₀ O	216	1.95	1.98	0.68	2.16	2.01	0.79	1.28	1.48	1.59		1.55
26	28.27	12,15-Dioxo-α-selinen◇	C ₁₅ H ₂₀ O ₂	232										1.29	0.44
27	28.48	7α-H-9(10)-ene-11,12-Epoxy-8-oxoeremophilane■	C ₁₅ H ₂₂ O ₂	234			0.21	0.80	1.09	0.66	0.81	1.05	0.83	1.86	
28	28.73	11-Hydroxy-valenc-1(10)-en-2-one■	C ₁₅ H ₂₄ O ₂	236				0.59	0.73						
29	28.75	(-)-9-Hydroxy-selina-3,11-dien-14-al◇	C ₁₅ H ₂₂ O ₂	234	1.18	1.38						0.62			0.46
30	28.89	Eudesma-5,11(13)-dien-8,12-olide◇	C ₁₅ H ₂₀ O ₂	232	0.29				1.25		0.76	1.20	1.32		1.24
31	29.97	(+)-9-Hydroxy-selina-4,11-dien-14-al◇	C ₁₅ H ₂₂ O ₂	234											
32	31.65	9a-Octahydro-4-hydroxy-4a,5-dimethyl-3-methylene-3a,4,4a,5,6,7,9,3H-naphtho[2,3-b]furan-2-one■	C ₁₅ H ₂₀ O ₃	248	0.31			0.53	0.72	0.56	0.41	1.03	0.77	0.73	1.80
33	33.14	2-[2-(2-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266	0.70	0.75					0.44				
34	35.06	2-(2-Phenylethyl)chromone	C ₁₇ H ₁₄ O ₂	250	23.42	21.93	33.49	28.46	32.81	23.49	27.88	28.06	37.35	30.89	37.85
35	38.62	2-[2-(4-Methoxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₃	280	54.11	50.50	56.43	51.52	46.47	53.44	50.57	44.88	44.64	46.58	39.90
36	39.51	2-[2-(3-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266	0.50			0.05	0.60		0.35		0.25		0.54
37	40.29	2-[2-(4-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266	0.51	0.63		0.64	0.67	0.66	0.64	0.47	0.49	0.46	0.40
38	41.24	2-[2-(3-Methoxy-4-hydroxyphenyl)ethyl] chromone	C ₁₈ H ₁₆ O ₄	296	3.15	3.85	5.28	1.32	1.29	2.68	2.08	0.80	1.39	1.03	1.03
39	41.53	New chromone※	C ₁₈ H ₁₈ O ₄	310	0.56			0.10	0.35	0.48	0.51		0.35	0.05	0.43
40	41.96	2-[2-(3-Hydroxy-4-methoxyphenyl)ethyl] chromone	C ₁₈ H ₁₆ O ₄	296	9.43	11.56	0.96	7.30	3.95	12.49	9.23	7.51	5.14	5.86	5.18
■: the relative content of eremophilane sesquiterpenes					4.67	4.61	2.61	6.77	6.35	3.61	4.05	7.25	4.98	6.20	5.31
The number of eremophilane sesquiterpenes					6	5	4	7	7	5	5	7	6	5	4
□: the relative content of guaiane sesquiterpenes					0.15	0.10	0.18	0	0	0	0	0	0	0	0.42
The number of guaiane sesquiterpenes					1	1	1	0	0	0	0	0	0	0	1
◇: the relative content of eudesmane sesquiterpenes					1.47	1.38	0	0.86	2.02	1.08	1.62	4.14	2.72	3.60	5.49

The number of eudesmane sesquiterpenes	2	1	0	1	2	1	2	4	2	3	5
★: The relative content of agarofurans sesquiterpenes	0	0	0	0	0	0	0	0	0	0.47	0
The number of agarofurans sesquiterpenes	0	0	0	0	0	0	0	0	0	1	0
☆: the relative content of agarospirane sesquiterpenes	0.38	0.58	0.65	2.12	2.80	1.61	2.18	2.26	1.21	0.65	1.17
The number of agarospirane sesquiterpenes	1	1	1	1	1	1	1	1	1	1	1
the relative content of all sesquiterpenes	6.97	6.67	3.44	9.75	11.17	6.30	7.85	13.65	9.86	10.92	13.69
The number of all sesquiterpenes	11	8	6	9	10	7	8	12	10	10	12
the relative content of chromones	92.38	89.22	96.16	89.39	86.14	93.24	91.70	81.72	89.61	84.87	85.33
the number of chromones	8	6	4	7	7	6	8	5	7	6	7
the relative content of No.34 and No.35	77.53	72.43	89.92	79.98	79.28	76.93	78.45	72.94	81.99	77.47	77.75
the relative content of other chromones	14.85	16.79	6.24	9.41	6.86	16.31	13.25	8.78	7.62	7.40	7.58
the number of other chromones	6	4	2	5	5	4	6	3	5	4	5
Total	99.35	96.27	99.60	99.14	97.31	99.54	99.55	95.82	99.97	97.25	99.02

Note: ◇: eudesmane sesquiterpene; □: guaiane sesquiterpene; ☆: agarospirane sesquiterpene ; ■: eremophilane sesquiterpene; ★: agarofurans sesquiterpenes.※: a new chromone which two methoxy were observed on benzyl moiety.

Table 3. Chemical constituents detected in cultivated Qi-Nan agarwood (CQN12-CQN22) by GC-MS.

No.	RT	Compound	Formula	<i>m/z</i>	CQ N12	CQ N13	CQ N14	CQ N15	CQ N16	CQ N17	CQN 18	CQ N19	CQ N20	CQ N21	CQ N22
1	12.04	Benzylacetone	C ₁₀ H ₁₂ O	148					0.50	0.61		0.62			
2	12.29	4-Methoxy-benzaldehyde	C ₈ H ₈ O ₂	136											
3	18.83	2,4-di- <i>tert</i> -Butylphenol	C ₁₄ H ₂₂ O	206			0.52								
4	18.97	2-Methylchromone	C ₁₀ H ₈ O ₂	160											
5	20.40	α-Santalol	C ₁₅ H ₂₄ O	220	1.89				0.68	0.51		1.15	1.53	1.28	0.74
6	21.92	(-)-Guaia-1(10),11-dien-15-ol□	C ₁₅ H ₂₄ O	220											
7	21.96	β-Eudesmol◇	C ₁₅ H ₂₆ O	222											0.67
8	22.04	α-Eudesmol◇	C ₁₅ H ₂₆ O	222											0.90
9	22.06	Selin-6-en-4α-ol◇	C ₁₅ H ₂₆ O	222								0.66			
10	23.43	(<i>S</i>)-4a-Methyl-2-(1-methylethyl)- 3,4,4a,5,6,7- hexahydronaphthalene◇	C ₁₄ H ₂₂	190				1.03		1.11		0.55			
11	24.02	Kusunol (Valerianol)■	C ₁₅ H ₂₆ O	222			0.86	0.61							
12	24.16	Neopetasane■	C ₁₅ H ₂₂ O	218		0.53	1.46	0.88	0.84		0.90	0.60			

13	24.27	(1 β ,4 $\alpha\beta$,7 β ,8 $\alpha\beta$)-Octahydro-7-[1-(hydroxymethyl)ethenyl]-1,8a-dimethylnaphthalen-4a(2H)-ol■	C ₁₅ H ₂₆ O ₂	238	0.61										
14	24.58	(-)-7 β H-Eudesmane-4 α ,11-diol◇	C ₁₅ H ₂₈ O ₂	240	0.67										
15	25.25	Dihydrokaranone■	C ₁₅ H ₂₂ O	218	0.80										
16	25.36	Valenca-1(10),8-dien-11-ol■	C ₁₅ H ₂₄ O	220	0.42	1.30	0.71	0.58	0.63	0.64	0.71	0.63	1.03		
17	25.74	2,t-3-Dimethyl-r-2-(3-methyl-2-butenyl)-1-cyclohexanone■	C ₁₃ H ₂₂ O	194	0.50	0.71	2.59	1.04	1.06	1.42	0.88	0.69	0.67		
18	25.88	Baimuxinal☆	C ₁₅ H ₂₄ O ₂	236	0.60	0.55	3.65	1.92	1.74	1.13	1.93	0.74			
19	26.26	Isobaimuxinol★	C ₁₅ H ₂₆ O ₂	238	1.00										
20	26.65	Selina-4,11-dien-14-oic acid◇	C ₁₅ H ₂₂ O ₂	234	4.00	0.79	0.93	0.79	1.66	0.95	3.29	2.83	0.95		
21	26.96	(-)-2 α -Hydroxyguaia-1(10),11-dien-15-oic acid□	C ₁₅ H ₂₂ O ₃	250	0.42 0.69 0.60 1.30										
22	26.99	2-((2R,4aR,8aS)-4a-Methyl-8-methylenedecahydronaphthalen-2-yl)prop-2-en-1-ol◇	C ₁₅ H ₂₄ O	220	1.15 0.60 1.29										
23	27.63	[4aR-(4 $\alpha\alpha$,6 α ,8 $\alpha\beta$)]-4a,5,6,7,8,8a-Hexahydro-6-[1-(hydroxymethyl)ethenyl]-4,8a-dimethyl-2(1H)-Naphthalenone◇	C ₁₅ H ₂₂ O ₂	234	0.87	0.67									
24	27.77	(3aR,4aS,5R,9aS)-5,8-Dimethyl-3-methylene-3a,4,4a,5,6,7,9,9a-octahydroazuleno[6,5-b]furan-2(3H)-one□	C ₁₅ H ₂₀ O ₂	232	0.63										
25	28.26	Karanone■	C ₁₅ H ₂₀ O	216	4.46	0.57	0.53	1.81	0.91	0.95	0.89	0.66	1.21		
26	28.27	12,15-Dioxo- α -selinen◇	C ₁₅ H ₂₀ O ₂	232	0.42	0.56 1.05									
27	28.48	7 α -H-9(10)-ene-11,12-Epoxy-8-oxoeremophilane■	C ₁₅ H ₂₂ O ₂	234	0.77 1.84 0.95 1.28 0.29										
28	28.73	11-Hydroxy-valenc-1(10)-en-2-one■	C ₁₅ H ₂₄ O ₂	236	0.43 0.50										
29	28.75	(-)-9-Hydroxy-selina-3,11-dien-14-al◇	C ₁₅ H ₂₂ O ₂	234											
30	28.89	Eudesma-5,11(13)-dien-8,12-olide◇	C ₁₅ H ₂₀ O ₂	232	0.75 0.84 1.26 1.53										
31	29.97	(+)-9-Hydroxy-selina-4,11-dien-14-al◇	C ₁₅ H ₂₂ O ₂	234											

32	31.65	9a-Octahydro-4-hydroxy-4a,5-dimethyl-3-methylene-3a,4,4a,5,6,7,9,3H-naphtho[2,3-b]furan-2-one■	C ₁₅ H ₂₀ O ₃	248	1.14	0.42	0.87								
33	33.14	2-[2-(2-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266	0.50		0.50	0.56							
34	35.06	2-(2-Phenylethyl)chromone	C ₁₇ H ₁₄ O ₂	250	39.1 1	41.50	40.4 7	45.5 0	46.97	50.4 9	57.29	54.6 3	59.19	58.55	66.4 5
35	38.62	2-[2-(4-Methoxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₃	280	39.2 4	50.29	40.8 5	41.3 9	38.50	39.4 7	31.24	31.6 1	36.42	29.07	20.4 5
36	39.51	2-[2-(3-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266											
37	40.29	2-[2-(4-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266	0.50	0.51									
38	41.24	2-[2-(3-Methoxy-4-hydroxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₄	296	0.77	0.35									
39	41.53	New chromone※	C ₁₈ H ₁₈ O ₄	310											
40	41.96	2-[2-(3-Hydroxy-4-methoxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₄	296	4.23	3.55	0.69	0.79	0.57						
■: The relative content of eremophilane sesquiterpenes					6.52	1.81	9.77	6.89	5.71	1.91	3.56	3.01	1.40	1.96	2.24
The number of eremophilane sesquiterpenes					4	3	10	6	7	2	4	4	2	3	2
□: The relative content of guaiane sesquiterpenes					0	0	0.42	0	0.69	0	0	0.60	0	1.93	0
The number of guaiane sesquiterpenes					0	0	1	0	1	0	0	1	0	2	0
◇: The relative content of eudesmane sesquiterpenes					5.29	0.79	0.93	1.82	2.41	2.62	1.99	5.76	0.60	4.55	6.01
The number of eudesmane sesquiterpenes					3	1	1	2	2	3	2	4	1	3	6
★: The relative content of agarofurans sesquiterpenes					0	0	1.00	0	0	0	0	0	0	0	0
The number of agarofurans sesquiterpenes					0	0	1	0	0	0	0	0	0	0	0
☆: The relative content of agarospirane sesquiterpenes					0.60	0.55	3.65	1.92	1.74	1.13	1.93	0.74	0	0	0
The number of agarospirane sesquiterpenes					1	1	1	1	1	1	1	1	0	0	0
The relative content of all sesquiterpenes					14.3 0	3.15	15.7 7	10.6 3	11.23	6.17	7.48	11.2 6	3.53	9.72	8.99

The number of all sesquiterpenes	9	5	14	9	12	7	7	11	4	9	9
The relative content of chromones	84.3	96.20	82.0	87.6	86.54	89.9	88.53	87.3	95.61	87.62	86.9
The number of chromones	5		1	8		6		6			0
	6	5	3	3	4	2	2	4	2	2	2
The relative content of No.34 and No.35	78.3	91.79	81.3	86.8	85.47	89.9	88.53	86.2	95.61	87.62	86.9
	5		2	9		6		4			0
The relative content of other chromones	6.00	4.41	0.69	0.79	1.07	0	0	1.12	0	0	0
The number of other chromones	4	3	1	1	2	0	0	2	0	0	0
Total	98.6	99.35	98.3	98.3	98.27	96.7	96.01	99.2	99.14	97.34	95.8
	5		0	1		4		4			9

Note: ◇: eudesmane sesquiterpene; □: guaiane sesquiterpene; ☆: agarospirane sesquiterpene ; ■: eremophilane sesquiterpene; ★: agarofurans sesquiterpenes. ※: a new chromone which two methoxy were observed on benzyl moiety

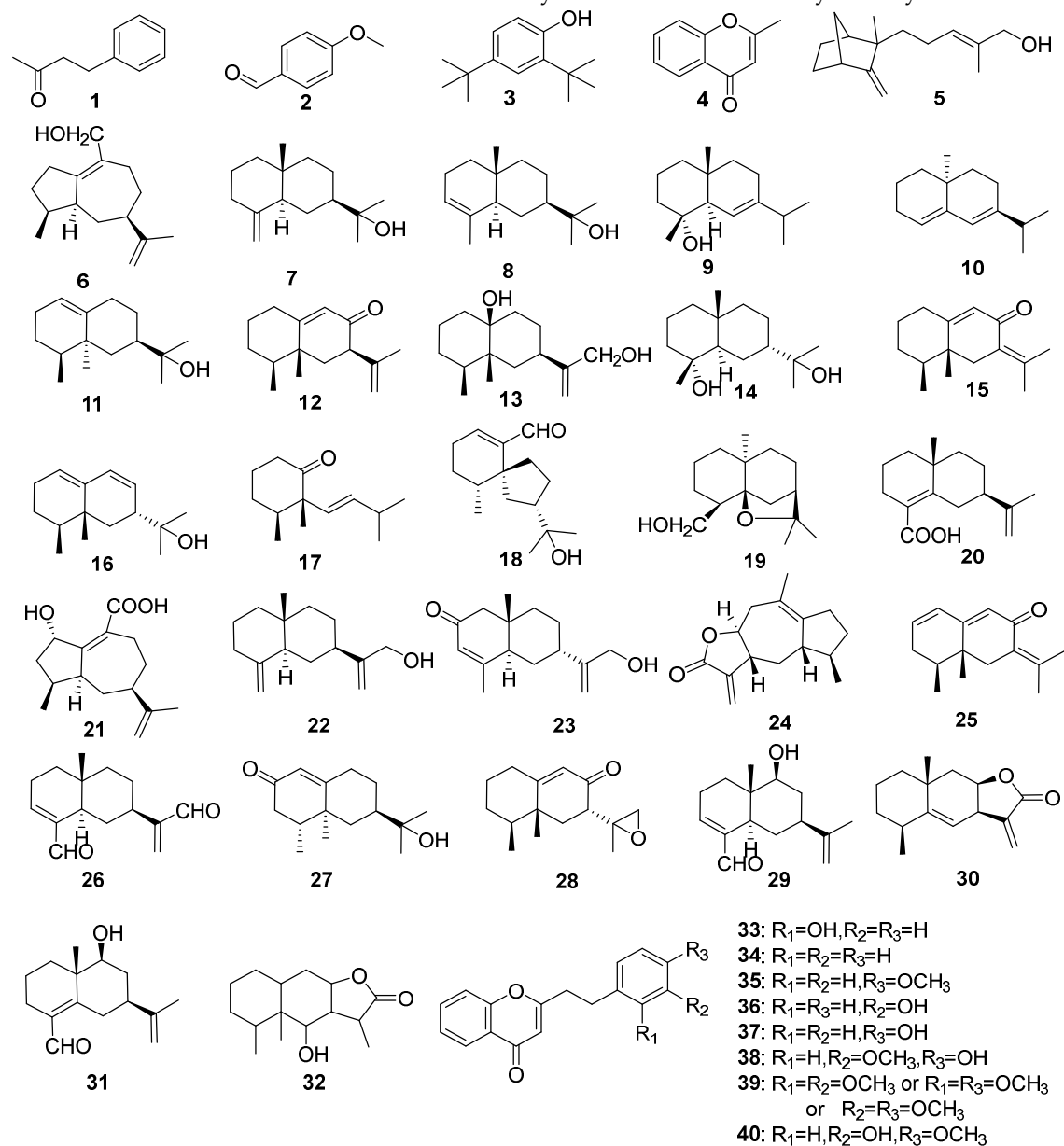


Figure 4. Structures of compounds identified in cultivated Qi-Nan agarwood (CQN12-CQN22) by GC-MS.

Table 4. Chemical constituents detected in wild harveated Qi-Nan agarwood by GC-MS.

No.	RT	Compound	Formula	m/z	WQN 1	WQN 2	WQN3	WQ N4	WQ N5	WQ N6	WQ N7
1	7.99	D-Limonene	C ₁₀ H ₁₆	136						4.18	1.06
2	11.0 5	Citronellal	C ₁₀ H ₁₈ O	154						3.00	0.90
3	11.5 8	(R)3,7-Dimethyl-6-Octenal	C ₁₀ H ₁₈ O	154						1.65	0.67
4	21.3 7	Globulol□	C ₁₅ H ₂₆ O	222							1.45
5	22.2 3	Dihydro-β-agarofuran★	C ₁₅ H ₂₆ O	222							0.44
6	23.1 2	3-Methyl-4-(1,3,3-trimethyl-7-oxabicyclo [4.1.0]heptan-1-yl)-3-buten-2-one	C ₁₄ H ₂₂ O ₂	222							0.50
7	23.4 3	(S)-4a-Methyl-2-(1-methylethyl)-3,4,4a,5,6,7- hexahydronaphthalene◇	C ₁₄ H ₂₂	190					0.93		
8	23.8 7	Agarospinol☆	C ₁₅ H ₂₆ O	222							2.01
9	24.0 2	Kusunol (Valerianol) ■	C ₁₅ H ₂₆ O	222		0.49		0.77	0.62		
10	24.0 6	(-)-Aristolene■	C ₁₅ H ₂₄	204							0.85
11	24.1 6	Neopetasane■	C ₁₅ H ₂₂ O	218			0.81	0.99			
12	24.2 3	Eremophila-9,11(13)-dien-12-ol■	C ₁₅ H ₂₄ O	220		0.54		1.10	0.71		
13	24.2 4	Guaiol□	C ₁₅ H ₂₆ O	222							1.34
14	24.2 7	(1β,4aβ,7β,8aβ)-Octahydro-7-[1- (hydroxymethyl)ethenyl]-1,8a- dimethylnaphthalen-4a(2H)-ol ■	C ₁₅ H ₂₆ O ₂	238				0.89	0.61		
15	24.3 1	Elemol	C ₁₅ H ₂₆ O	222							1.71
16	24.5 8	(-)-7βH-Eudesmane-4α,11-diol◇	C ₁₅ H ₂₈ O ₂	240			0.62				0.85

17	24.5 9	[3S-(3a,3β,5a)]-1,2,3,3a,4,5,6,7-Octahydro-.a.,a,3,8-tetramethyl-5-azulenemethanol□	C ₁₅ H ₂₆ O	222							0.64
18	25.2 5	Dihydrokaranone ■	C ₁₅ H ₂₂ O	218			0.82	1.04	1.95	0.54	
19	25.3 6	Valenca-1(10),8-dien-11-ol■	C ₁₅ H ₂₄ O	220	1.35		0.94	0.94	4.98	1.08	1.04
20	25.6 5	α-Kessyl alcohol□	C ₁₅ H ₂₆ O ₂	238							1.40
21	25.7 4	2,t-3-Dimethyl-r-2-(3-methyl-2-butenyl)-1-cyclohexanone■	C ₁₃ H ₂₂ O	194	0.61		1.63	4.65	1.05	0.94	
22	25.8 0	4-Hydroxyl-baimuxinol★	C ₁₅ H ₂₆ O ₃	254					0.88		1.45
23	25.8 8	Baimuxinal ☆	C ₁₅ H ₂₄ O ₂	236	0.64		3.02	2.50	4.09	2.80	0.89
24	26.2 6	Isobaimuxinol★	C ₁₅ H ₂₆ O ₂	238						1.19	2.87
25	26.9 6	(-)-2α-Hydroxyguaia-1(10),11-dien-15-oic acid□	C ₁₅ H ₂₂ O ₃	250	0.40	0.98	0.28	0.51		0.57	
26	27.3 5	Baimuxinol★	C ₁₅ H ₂₆ O ₂	238					1.66		1.61
27	27.4 3	Qinanol D□	C ₁₅ H ₂₆ O ₃	254							2.94
28	27.5 0	Qinanol A□	C ₁₅ H ₂₆ O ₂	238							1.40
29	27.6 9	Qinanol C□	C ₁₅ H ₂₆ O ₃	254							1.11
30	28.0 3	ent-4(15)-Eudesmen-11-ol-1-one◇	C ₁₅ H ₂₆ O ₂	238	0.47						
31	28.4 8	7α-H-9(10)-ene-11,12-Epoxy-8-oxoeremophilane ■	C ₁₅ H ₂₂ O ₂	234	0.50			0.85	0.75		
32	28.7 3	11-Hydroxy-valenc-1(10)-en-2-one■	C ₁₅ H ₂₄ O ₂	236			0.63		0.59	0.77	0.83
33	28.7 5	(-)-9-Hydroxy-selina-3,11-dien-14-al◇	C ₁₅ H ₂₂ O ₂	234	0.68			1.22			
34	28.9 6	(-)-Guaia-1(10),11-dien-15-al□	C ₁₅ H ₂₂ O	218			0.47	1.01	1.38	0.29	

35	29.8 1	4-epi-15-Hydroxy- acorenone	C ₁₅ H ₂₄ O ₂	236	0.60							
36	29.9 7	(+)-9-Hydroxy-selina-4,11-dien-14-al◇	C ₁₅ H ₂₂ O ₂	234	0.52				3.24		0.62	
37	32.4 9	(-)-Guaia-1(10),11-diene-15,2-olide□	C ₁₅ H ₂₀ O ₂	232		6.89	0.45	2.42	1.56		0.77	
38	33.5 8	(+)-8,12-Dihydroxy-selina-4,11-dien-14-al◇	C ₁₅ H ₂₂ O ₃	250						0.38		
39	33.7 9	Valerenol	C ₁₅ H ₂₄ O	220		0.80			0.77		0.45	
40	33.9 2	2-[2-(2-Hydroxyphenyl)ethyl]chromone	C ₁₇ H ₁₄ O ₃	266		0.84	0.72	0.92				
41	35.0 6	2-(2-Phenylethyl)chromone	C ₁₇ H ₁₄ O ₂	250	19.45	25.69	42.64	34.61	40.86	32.33	24.69	
42	38.6 2	2-[2-(4-Methoxyphenyl)ethyl] chromone	C ₁₈ H ₁₆ O ₃	280	44.47	45.72	23.08	9.28	27.51	40.71	37.06	
43	40.3 7	2-[2-(3-Methoxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₃	280	6.56	3.27	4.3	0.89				
44	41.2 4	2-[2-(3-Methoxy-4-hydroxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₄	296	2.21	0.79	1.67	0.77		0.41	1.26	
45	41.2 8	2-[2-(2-Methoxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₃	280	2.93	2.77		1.54				
46	41.3 3	6-Methoxy-2-(2-phenylethyl)chromone	C ₁₈ H ₁₆ O ₃	280			3.38					
47	41.9 6	2-[2-(3-Hydroxy-4-methoxyphenyl)ethyl]chromone	C ₁₈ H ₁₆ O ₄	296	6.26	4.74	2.12	0.48				
48	42.3 0	5,8-Dihydroxy-2-(2-phenylethyl)chromone	C ₁₇ H ₁₄ O ₄	282				0.77				
49	43.2 4	8-Hydroxy-2-(2-phenylethyl)chromone	C ₁₇ H ₁₄ O ₃	266	1.33	0.76		0.76				
50	43.2 9	6-Hydroxy-2-(2-phenylethyl)chromone	C ₁₇ H ₁₄ O ₃	266				6.89				
51	45.0 3	6-Methoxy-2-[2-(3-methoxyphenyl)ethyl]chromone	C ₁₉ H ₁₈ O ₄	310	0.88							
52	45.5 0	6-Methoxy-2-[2-(4-methoxyphenyl)ethyl]chromone	C ₁₉ H ₁₈ O ₄	310	4.03	0.68		0.90				

Note: eudesmane sesquiterpene; □: guaiane sesquiterpene; ☆: agarospirane sesquiterpene; ■: eremophilane sesquiterpene; ★: agarofurans sesquiterpene.

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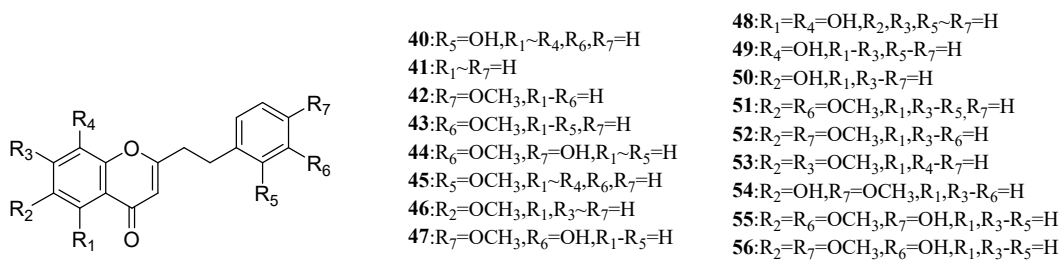
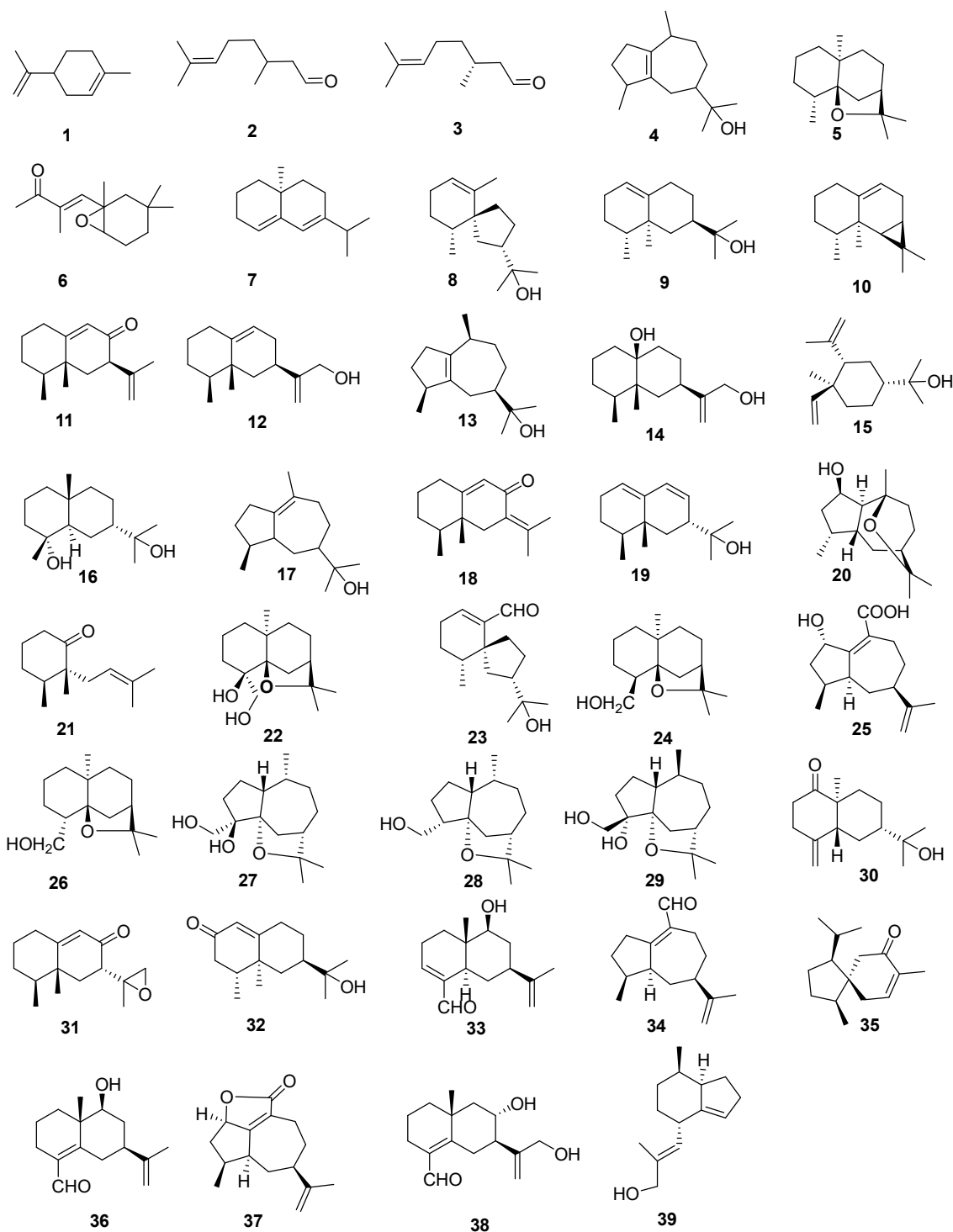


Figure 4. Structures of compounds identified in wild harvested Qi-Nan agarwood by GC-MS.