Date : December 06, 2019

Certificate of Analysis – GC Profiling

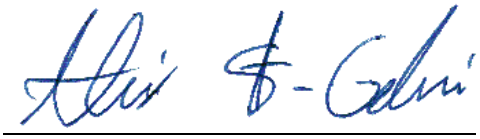
Sample identification

Internal code : 19L04-PTH01-1-CC
Customer identification : Woodland - BV010095R
Type : Essential oil
Source : Blend of oils
Customer : Plant Therapy

Analysis

Method: PC-MAT-007 - Analysis of the composition of an essential oil or other volatile liquide by FAST GC-FID (in French); identifications validated by GC-MS.
Analyst : Sylvain Mercier, M. Sc., Chimiste
Analysis date : December 05, 2019

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174

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PHYSICOCHEMICAL DATA

Physical aspect: Light yellow liquid
Refractive index: 1.5052 ± 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

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Analysis summary – Consolidated contents

New readers of similar reports are encouraged to read table footnotes at least once.

Identification	%	Classe
Tricyclene	0.01	Monoterpene
α-Thujene	tr	Monoterpene
α-Pinene	0.50	Monoterpene
Camphene	0.03	Monoterpene
α-Fenchene	0.01	Monoterpene
Thuja-2,4(10)-diene	0.02	Monoterpene
β-Pinene	0.19	Monoterpene
Myrcene	0.05	Monoterpene
α-Phellandrene	tr	Monoterpene
Δ3-Carene	0.02	Monoterpene
α-Terpinene	tr	Monoterpene
para-Cymene	tr	Monoterpene
Limonene	0.08	Monoterpene
1,8-Cineole	0.02	Monoterpenic ether
(*E*)-β-Ocimene	0.01	Monoterpene
γ-Terpinene	0.01	Monoterpene
Unknown	0.01	Oxygenated monoterpene
cis-Linalool oxide (fur.)	0.01	Monoterpenic alcohol
Terpinolene	0.01	Monoterpene
para-Cymenene	0.01	Monoterpene
Phenylethyl alcohol	0.04	Simple phenolic
trans-Pinocarveol	0.02	Monoterpenic alcohol
Camphor	0.01	Monoterpenic ketone
Camphene hydrate	0.01	Monoterpenic alcohol
Pinocamphone	0.02	Monoterpenic ketone
Borneol	0.05	Monoterpenic alcohol
cis-Linalool oxide (pyr.)	0.01	Monoterpenic alcohol
Terpinen-4-ol	0.03	Monoterpenic alcohol
para-Cymen-8-ol	0.06	Monoterpenic alcohol
Unknown	0.02	Unknown
α-Terpineol	0.10	Monoterpenic alcohol
Unknown	tr	Unknown
Myrtenol	0.03	Monoterpenic alcohol
Unknown	0.01	Unknown
Verbenone	0.04	Monoterpenic ketone
trans-Carveol	0.01	Monoterpenic alcohol
exo-2-Hydroxycineole	0.03	Monoterpenic alcohol
Coumaran	0.08	Simple phenolic
exo-3-Hydroxycineole	0.02	Monoterpenic alcohol
Carvacrol methyl ether	0.01	Monoterpenic ether
Phenylethyl acetate	0.03	Phenolic ester
cis-Myrtanol	0.02	Monoterpenic alcohol
Bornyl acetate	0.02	Monoterpenic ester
Thymol	0.01	Monoterpenic alcohol
Brasila-1,10-diene	0.03	Sesquiterpene
Carvacrol	0.02	Monoterpenic alcohol
4-Vinylguaiacol	0.09	Simple phenolic

Myrtenyl acetate	0.02	Monoterpenic ester
exo-2-Hydroxycineole acetate	0.02	Monoterpenic ester
Unknown	0.01	Unknown
α-Terpinyl acetate	0.09	Monoterpenic ester
African-1-ene	0.07	Sesquiterpene
α-Ylangene	0.03	Sesquiterpene
α-Copaene	0.05	Sesquiterpene
2-epi-α-Funebrene	0.85	Sesquiterpene
α-Duprezianene	0.67	Sesquiterpene
Isolongifolene	0.08	Sesquiterpene
7-epi-Sesquithujene	0.09	Sesquiterpene
β-Elemene	0.56	Sesquiterpene
α-Funebrene	0.09	Sesquiterpene
α-Chamipinene	0.10	Sesquiterpene
Longifolene	0.19	Sesquiterpene
α-Cedrene	22.81	Sesquiterpene
β-Caryophyllene	0.03	Sesquiterpene
β-Funebrene	0.12	Sesquiterpene
β-Cedrene	6.09	Sesquiterpene
β-Duprezianene	0.74	Sesquiterpene
cis-Thujopsene	16.34	Sesquiterpene
Aromadendrene	0.07*	Sesquiterpene
Isobazzanene	0.22	Sesquiterpene
trans-α-Bergamotene	[0.07]*	Sesquiterpene
Prezizaene	0.20	Sesquiterpene
α-Himachalene	0.14	Sesquiterpene
9-epi-Isocaryophyllene	0.15	Sesquiterpene
7,8-Dehydro-α-acoradiene?	0.07	Sesquiterpene
α-Humulene	0.26	Sesquiterpene
Thujopsadiene?	0.04	Sesquiterpene
α-Acoradiene	0.13	Sesquiterpene
9-epi-β-Caryophyllene	0.46	Sesquiterpene
β-Acoradiene	0.46	Sesquiterpene
Thujopsene isomer	0.67	Sesquiterpene
β-Chamigrene	1.34	Sesquiterpene
Unknown	0.06	Sesquiterpene
γ-Himachalene	0.12	Sesquiterpene
Unknown	0.21	Sesquiterpene
Widdra-2,4(14)-diene?	0.09	Sesquiterpene
Unknown	0.30	Sesquiterpene
ar-Curcumene	0.19	Sesquiterpene
Valencene	0.06	Sesquiterpene
Pseudowiddrene	1.33	Sesquiterpene
Unknown	0.12	Unknown
β-Himachalene	0.39	Sesquiterpene
α-Chamigrene	2.66*	Sesquiterpene
α-Cuprenene	[2.66]*	Sesquiterpene
Cuparene	1.13	Sesquiterpene
1,2-Dihydrocuparene	0.14	Sesquiterpene
α-Alaskene	0.32	Sesquiterpene
α-Dehydro-ar-himachalene	0.02	Sesquiterpene
Unknown	0.42	Sesquiterpene

γ-Cadinene	0.42	Sesquiterpene
β-Curcumene	0.18	Sesquiterpene
γ-Dehydro-ar-himachalene	0.07	Sesquiterpene
β-Sesquiphellandrene	0.12	Sesquiterpene
δ-Cadinene	0.91	Sesquiterpene
γ-Cuprenene	1.07	Sesquiterpene
ar-Himachalene	0.02	Sesquiterpene
(*E*)-γ-Bisabolene	0.09	Sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
α-Cadinene	0.14	Sesquiterpene
Unknown	0.19	Oxygenated sesquiterpene
δ-Cuprenene epimer I	0.08	Sesquiterpene
Unknown	0.10	Oxygenated sesquiterpene
α-Calacorene	0.11	Sesquiterpene
δ-Cuprenene epimer II	0.09	Sesquiterpene
β-Calacorene	0.04	Sesquiterpene
Caryophyllenyl alcohol	0.10	Sesquiterpenic alcohol
Unknown	0.10	Oxygenated sesquiterpene
Caryophyllene oxide	0.05	Sesquiterpenic ether
Caryophyllene oxide isomer	0.02	Sesquiterpenic ether
allo-Cedrol	0.40	Sesquiterpenic alcohol
α-Cedrol	21.38	Sesquiterpenic alcohol
Widdrol	1.88	Sesquiterpenic alcohol
β-Himachalene oxide	0.06	Sesquiterpenic ether
epi-Cedrol	0.41	Sesquiterpenic alcohol
10-epi-Cubenol	0.11	Sesquiterpenic alcohol
Unknown	0.02	Oxygenated sesquiterpene
2-epi-α-Cedren-3-one	0.05	Sesquiterpenic ketone
Unknown	0.13	Oxygenated sesquiterpene
α-Acorenol	0.32	Sesquiterpenic alcohol
β-Acorenol	0.18	Sesquiterpenic alcohol
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.32	Oxygenated sesquiterpene
Unknown	0.70	Oxygenated sesquiterpene
Unknown	0.17	Oxygenated sesquiterpene
Himachalol	0.12	Sesquiterpenic alcohol
Unknown	0.17	Oxygenated sesquiterpene
α-Cadinol	0.28	Sesquiterpenic alcohol
Unknown	0.26	Oxygenated sesquiterpene
Cedrenol analog	0.06	Sesquiterpenic alcohol
14-Hydroxy-9-epi-(*E*)-caryophyllene	0.04	Sesquiterpenic alcohol
α-Bisabolol	0.30	Sesquiterpenic alcohol
α-Cedrenol	0.03	Sesquiterpenic alcohol
Cedr-8-en-13-ol	0.03	Sesquiterpenic alcohol
Unknown	0.04	Oxygenated sesquiterpene
Mayurone?	0.14	Norsesquiterpenic ketone
Thujopsenal	0.03	Sesquiterpenic aldehyde
Oplopanone	0.09	Sesquiterpenic alcohol
Unknown	0.02	Oxygenated sesquiterpene
Cedryl acetate	0.03	Sesquiterpenic ester
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.16	Phenylpropanoid

Unknown	0.03	Oxygenated sesquiterpene
Biformene?	0.05	Diterpene
Pimaradiene	0.01	Diterpene
Unknown	0.02	Unknown
Manoyl oxide	0.04	Diterpenic ether
Unknown	0.05	Oxygenated diterpene
Unknown	0.01	Diterpene
13-epi-Manoyl oxide	0.05	Diterpenic ether
Unknown	0.02	Diterpene
Unknown	0.02	Unknown
7,13-Abietadiene	0.04	Diterpene
Unknown	0.07	Unknown
Unknown	0.09	Oxygenated diterpene
Sandaracopimarinal?	0.17	Diterpenic aldehyde
2-Oxomanoyl oxide?	0.02	Diterpenic ketone
Isopimaral	0.06	Diterpenic aldehyde
Palustral	0.02	Diterpenic aldehyde
Sandaracopimarinol?	0.01	Diterpenic alcohol
(*E*?)-3,5-Dimethoxystilbene	0.01	Stilbene
Dehydroabietal	0.02	Diterpenic aldehyde
Methyl isopimarate?	0.01	Diterpenic ester
Abietal	0.05	Diterpenic aldehyde
Methyl dehydroabietate	0.03	Diterpenic ester
Neoabietal	0.01	Diterpenic aldehyde
Abietol?	0.02	Diterpenic alcohol
Methyl abietate	0.02	Diterpenic ester
Consolidated total	**95.50%**	

*: Individual compounds concentration could not be found due to overlapping coelutions on columns considered
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total
tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report to access the full untreated data and perform their own calculations if needed.

Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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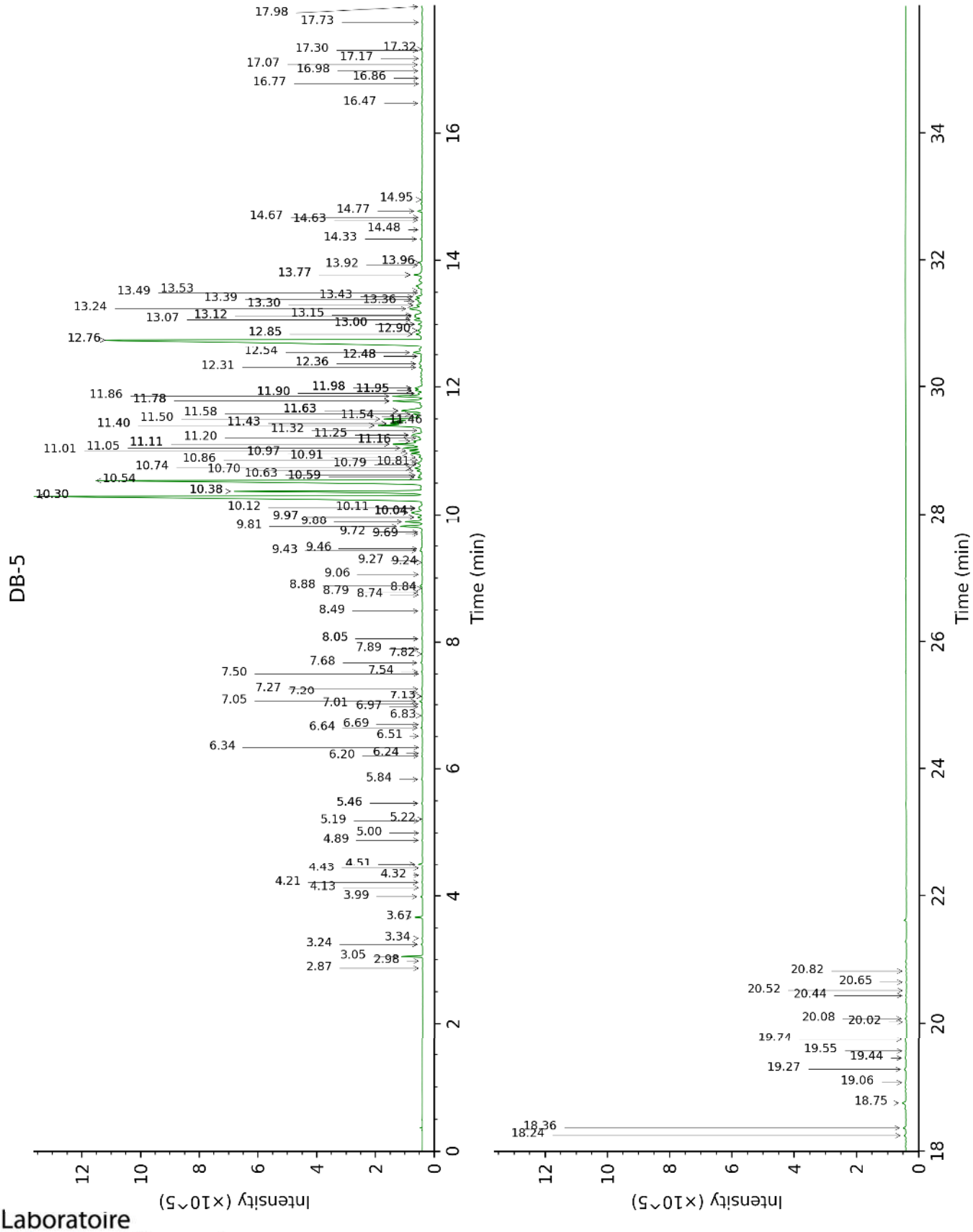
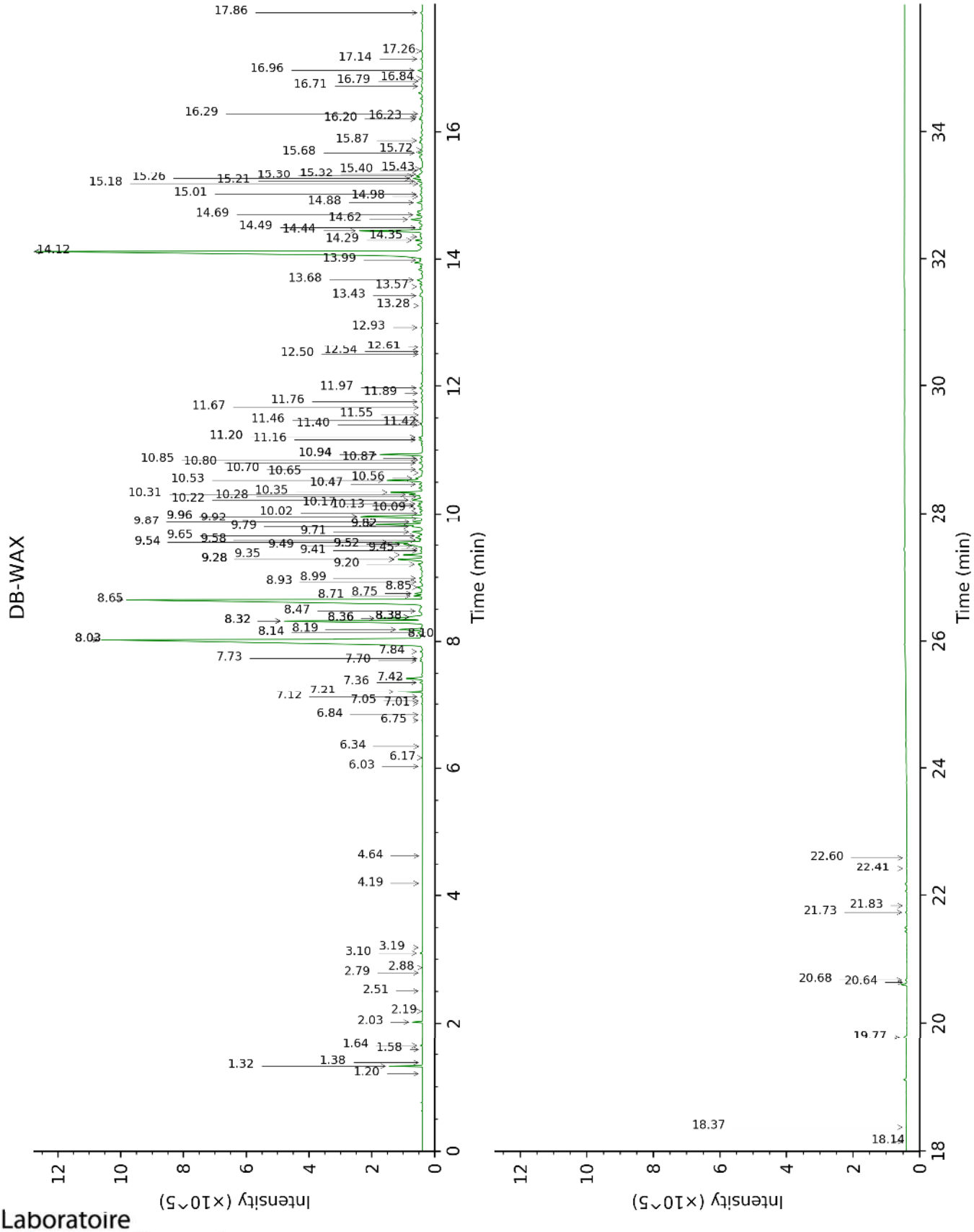

DB-5
Time (min)
Intensity (×10^5)
17.98
17.73
17.30
17.32
17.17
17.07
16.98
16.86
16.77
16.47
14.95
14.67
14.63
14.77
14.48
14.33
13.92
13.96
13.77
13.49
13.53
13.39
13.30
13.43
13.36
13.24
13.07
13.12
13.15
13.00
12.90
12.85
12.76
12.54
12.48
12.31
12.36
11.86
11.78
11.90
11.98
11.95
11.63
11.40
11.50
11.58
11.43
11.54
11.32
11.25
11.16
11.01
11.05
11.11
11.20
10.97
10.91
10.74
10.86
10.70
10.63
10.59
10.79
10.81
10.54
10.30
10.38
10.12
10.11
10.04
9.81
9.97
9.88
9.72
9.69
9.43
9.46
9.27
9.24
9.06
8.88
8.79
8.74
8.84
8.49
8.05
7.89
7.82
7.68
7.50
7.54
7.27
7.20
7.13
7.05
7.01
6.97
6.83
6.64
6.69
6.51
6.34
6.20
6.24
5.84
5.46
5.19
5.22
4.89
5.00
4.43
4.51
4.32
4.21
4.13
3.99
3.67
3.24
3.34
3.05
2.98
2.87
20.82
20.65
20.52
20.44
20.08
20.02
19.74
19.55
19.44
19.27
19.06
18.75
18.36
18.24


DB-WAX
Time (min)
Intensity (×10^5)
17.86
17.26
17.14
16.96
16.84
16.79
16.71
16.29
16.23
16.20
15.87
15.72
15.68
15.43
15.40
15.32
15.30
15.26
15.21
15.18
15.01
14.98
14.88
14.69
14.62
14.49
14.44
14.35
14.29
14.12
13.99
13.68
13.57
13.43
13.28
12.93
12.61
12.54
12.50
11.97
11.89
11.76
11.67
11.55
11.46
11.42
11.40
11.20
11.16
10.94
10.87
10.85
10.80
10.70
10.65
10.56
10.53
10.47
10.35
10.31
10.28
10.22
10.17
10.13
10.09
10.02
9.96
9.92
9.87
9.82
9.79
9.71
9.65
9.58
9.54
9.52
9.49
9.45
9.41
9.35
9.28
9.20
8.99
8.93
8.85
8.75
8.71
8.65
8.47
8.38
8.36
8.32
8.19
8.14
8.10
8.03
7.84
7.77
7.70
7.42
7.36
7.21
7.12
7.05
7.01
6.84
6.75
6.34
6.17
6.03
4.64
4.19
3.19
3.10
2.88
2.79
2.51
2.19
2.03
1.64
1.58
1.38
1.32
1.20
22.60
22.41
21.83
21.73
20.68
20.64
19.77
18.37
18.14

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Tricyclene	2.87	917	0.01	1.20	977	tr
α-Thujene	2.98	924	tr	1.38	1005	0.01
α-Pinene	3.05	929	0.50	1.32	997	0.51
Camphene	3.24*	942	0.04	1.64	1031	0.03
α-Fenchene	3.24*	942	[0.04]	1.58	1025	0.01
Thuja-2,4(10)-diene	3.34	948	0.02	2.19	1085	0.01
β-Pinene	3.67	970	0.19	2.03	1069	0.19
Myrcene	3.99	991	0.05	2.79	1137	0.03
α-Phellandrene	4.13	1000	tr			
Δ3-Carene	4.21	1006	0.02	2.51	1114	0.02
α-Terpinene	4.32	1013	tr	2.88	1144	0.01
para-Cymene	4.44	1020	tr			
Limonene	4.51*	1025	0.12	3.10	1162	0.08
1,8-Cineole	4.51*	1025	[0.12]	3.19	1169	0.02
(*E*)-β-Ocimene	4.89	1049	0.01			
γ-Terpinene	5.00	1056	0.01			
Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)]	5.19	1068	0.01	4.64	1281	0.01
cis-Linalool oxide (fur.)	5.22	1070	0.01	6.34	1398	tr
Terpinolene	5.46*	1086	0.03	4.19	1247	0.01
para-Cymenene	5.46*	1086	[0.03]	6.17	1386	0.01
Phenylethyl alcohol	5.84	1110	0.04	11.89	1845	0.08
trans-Pinocarveol	6.20	1134	0.02	8.99	1600	0.13
Camphor	6.24	1137	0.01	7.05	1451	0.02
Camphene hydrate	6.34	1143	0.01	8.32*†	1548	6.83
Pinocamphone	6.51	1155	0.02	7.12	1456	0.06
Borneol	6.64	1163	0.05	9.54*†	1645	[1.61]
cis-Linalool oxide (pyr.)	6.69	1166	0.01	10.09	1690	0.12
Terpinen-4-ol	6.83	1176	0.03	8.38*†	1552	[6.83]
para-Cymen-8-ol	6.97	1185	0.06	11.40	1802	0.06
Unknown [m/z 43, 135 (73), 59 (46), 93 (39), 91 (35), 81 (32)...]	7.01	1188	0.02			
α-Terpineol	7.06	1191	0.10	9.54*†	1645	[1.61]
Unknown [m/z 79, 107 (72), 41 (58), 55 (47), 77 (41), 67 (41)...]	7.14*	1196	0.03			
Myrtenol	7.14*	1196	[0.03]	10.65	1737	0.03
Unknown [m/z 95, 93 (32), 121 (24), 79 (22), 91 (21), 105	7.20	1201	0.01	10.80	1750	0.13

(16)... 154 (2)]						
Verbenone	7.27	1205	0.04	9.45	1638	0.05
trans-Carveol	7.50	1222	0.01	11.20*	1785	0.13
exo-2-Hydroxycineole	7.54	1224	0.03	11.46	1807	0.03
Coumaran	7.68	1234	0.08	16.79	2326	0.03
exo-3-Hydroxycineole	7.82	1239	0.02			
Carvacrol methyl ether	7.89	1244	0.01	8.38*†	1552	[6.83]
Phenylethyl acetate	8.05*	1255	0.04	10.85	1754	0.03
cis-Myrtanol	8.05*	1255	[0.04]	11.67	1825	0.02
Bornyl acetate	8.49	1284	0.02	8.14	1533	0.21
Thymol	8.74	1300	0.01	14.98	2137	0.02
Brasila-1,10-diene	8.78	1304	0.03	6.03	1376	0.02
Carvacrol	8.84	1307	0.02	15.18	2158	0.01
4-Vinylguaiacol	8.88	1310	0.09	14.88	2127	0.18
Myrtenyl acetate	9.06	1322	0.02	9.41	1634	0.08
exo-2-Hydroxycineole acetate	9.24	1336	0.02	9.92	1676	0.05
Unknown [m/z 150, 71 (67), 107 (54), 43 (44), 109 (42)...]	9.27	1338	0.01			
α-Terpinyl acetate	9.43	1348	0.09	9.58	1648	0.10
African-1-ene	9.46	1351	0.07	6.75	1428	0.03
α-Ylangene	9.69	1367	0.03	6.84	1435	0.03
α-Copaene	9.72	1369	0.05	7.01	1448	0.04
2-epi-α-Funebrene	9.81	1375	0.85	7.21	1462	0.73
α-Duprezianene	9.88	1380	0.67	7.42	1479	0.53
Isolongifolene	9.97*	1386	0.21	7.36	1474	0.08
7-epi-Sesquithujene	9.97*	1386	[0.21]	7.70	1499	0.09
β-Elemene	10.04*	1392	0.66	8.36*†	1551	[6.83]
α-Funebrene	10.04*	1392	[0.66]	7.73	1502	0.09
α-Chamipinene	10.10	1396	0.10	7.84	1510	0.07
Longifolene	10.12	1397	0.19	8.03*†	1524	23.00
α-Cedrene	10.30*	1410	22.96	8.03*†	1524	[23.00]
β-Caryophyllene	10.30*	1410	[22.96]	8.32*†	1548	[6.83]
β-Funebrene	10.30*	1410	[22.96]	8.10	1530	0.12
β-Cedrene	10.38*	1416	6.83	8.32*†	1548	[6.83]
β-Duprezianene	10.38*	1416	[6.83]	8.19	1537	0.74
cis-Thujopsene	10.54	1428	16.34	8.65	1573	16.43
Aromadendrene	10.59*†	1432	0.29	8.38*†	1552	[6.83]
Isobazzanene	10.59*†	1432	[0.29]	8.47	1560	0.22
trans-α-Bergamotene	10.63†	1434	[0.29]	8.36*†	1551	[6.83]
Prezizaene	10.70	1439	0.20	8.71	1578	0.23
α-Himachalene	10.74*	1442	0.36	8.84	1589	0.14
9-epi-Isocaryophyllene	10.74*	1442	[0.36]	8.93	1595	0.15
7,8-Dehydro-α-acoradiene?	10.79	1446	0.07	9.49	1641	0.16

α-Humulene	10.81	1448	0.26	9.28*	1624	0.93
Thujopsadiene?	10.86	1452	0.04	10.02	1684	0.03
α-Acoradiene	10.91	1455	0.13	9.20	1617	0.13
9-epi-β-Caryophyllene	10.97	1459	0.46	9.28*	1624	[0.93]
β-Acoradiene	11.01	1463	0.46	9.28*	1624	[0.93]
Thujopsene isomer	11.05	1466	0.67	9.35	1629	0.61
β-Chamigrene	11.11*†	1470	1.40	9.52*†	1643	1.61
Unknown [m/z 91, 105 (93), 161 (77), 93 (73), 119 (71), 133 (69)... 204 (31)]	11.11*†	1470	[1.40]			
γ-Himachalene	11.16*	1474	0.34	9.52*†	1643	[1.61]
Unknown [m/z 118, 69 (82), 91 (51), 117 (40)... 202 (25)]	11.16*	1474	[0.34]	8.75	1581	0.21
Widdra-2,4(14)-diene?	11.20	1477	0.09	9.65	1654	0.13
Unknown [m/z 189, 91 (95), 105 (93), 133 (84), 119 (75), 41 (59), 93 (46)... 204 (33)]	11.25*†	1481	0.68	9.79	1666	0.30
ar-Curcumene	11.25*†	1481	[0.68]	10.56	1730	0.19
Valencene	11.32	1486	0.06	9.82*	1668	1.39
Pseudowiddrene	11.40*†	1492	5.62	9.82*	1668	[1.39]
Unknown [m/z 203, 119 (83), 145 (51), 135 (51)]	11.40*†	1492	[5.62]	11.20*	1785	[0.13]
β-Himachalene	11.43*†	1494	[5.62]	9.71	1659	0.39
α-Chamigrene	11.43*†	1494	[5.62]	9.96*	1680	2.45
α-Cuprenene	11.46†	1496	[5.62]	9.96*	1680	[2.45]
Cuparene	11.50†	1499	[5.62]	10.94*	1762	1.23
1,2-Dihydrocuparene	11.54	1502	0.14	10.17	1696	0.14
α-Alaskene	11.58	1505	0.32	9.87	1672	0.32
α-Dehydro-ar-himachalene	11.63*	1509	1.31	11.42	1803	0.02
Unknown [m/z 121, 123 (45), 91 (24), 107 (24), 122 (24), 95 (23)... 204 (11)]	11.63*	1509	[1.31]	10.22	1701	0.42
γ-Cadinene	11.63*	1509	[1.31]	10.31	1708	0.42
β-Curcumene	11.63*	1509	[1.31]	10.13	1694	0.18
γ-Dehydro-ar-himachalene	11.78*	1521	1.15	11.76	1834	0.07
β-Sesquiphellandrene	11.78*	1521	[1.15]	10.47	1722	0.12
δ-Cadinene	11.78*	1521	[1.15]	10.35	1711	0.91
γ-Cuprenene	11.86	1527	1.07	10.53	1727	1.05
ar-Himachalene	11.90*	1530	0.15	11.55	1815	0.02
(*E*)-γ-Bisabolene	11.90*	1530	[0.15]	10.28	1705	0.09

Unknown [m/z 91, 107 (97), 105 (93), 41 (92), 109 (78), 43 (78), 121 (76), 135 (75)... 220 (21)]	11.90*	1530	[0.15]			
α-Cadinene	11.95*	1534	0.29	10.70	1742	0.14
Unknown [m/z 43, 95 (81), 207 (61), 41 (55), 55 (50)... 222 (3)]	11.95*	1534	[0.29]	13.68	2010	0.19
δ-Cuprenene epimer I	11.95*	1534	[0.29]	10.87	1756	0.08
Unknown [m/z 106, 41 (86), 43 (84), 149 (75), 69 (75), 91 (63), 93 (61)... 220 (1)]	11.98*	1537	0.30	11.16	1781	0.10
α-Calacorene	11.98*	1537	[0.30]	11.97	1853	0.11
δ-Cuprenene epimer II	11.98*	1537	[0.30]	10.94*	1762	[1.23]
β-Calacorene	12.31†	1562	0.27	12.50	1900	0.04
Caryophyllenyl alcohol	12.36*†	1566	[0.27]	13.43	1986	0.10
Unknown [m/z 95, 191 (52), 107 (50), 121 (32), 81 (31)...]	12.36*†	1566	[0.27]	13.99	2040	0.10
Caryophyllene oxide	12.48*	1576	0.10	12.61	1910	0.05
Caryophyllene oxide isomer	12.48*	1576	[0.10]	12.54	1903	0.02
allo-Cedrol	12.54	1580	0.40	14.12*	2053	21.90
α-Cedrol	12.76*	1597	23.26	14.12*	2053	[21.90]
Widdrol	12.76*	1597	[23.26]	14.44	2084	1.88
β-Himachalene oxide	12.85*†	1604	0.63	12.93	1940	0.06
epi-Cedrol	12.85*†	1604	[0.63]	14.62	2101	0.41
10-epi-Cubenol	12.90*†	1609	[0.63]	13.57	2000	0.11
Unknown [m/z 138, 110 (77), 137 (75), 107 (62), 91 (61), 93 (60), 109 (57)... 220 (34)]	12.90*†	1609	[0.63]	13.28	1972	0.02
2-epi-α-Cedren-3-one	13.00*	1617	0.18			
Unknown [m/z 107, 41 (86), 123 (85), 82 (79), 95 (77), 93 (76), 91 (73), 69 (71)... 220 (13)]	13.00*	1617	[0.18]	14.49	2089	0.13
α-Acorenol	13.07	1623	0.32	14.30	2070	0.24
β-Acorenol	13.12*	1627	0.37	14.69	2108	0.18
Unknown [m/z 132, 175 (22), 119 (18), 91 (18), 157 (18)... 219 (10)]	13.12*	1627	[0.37]	15.43	2183	0.08

Unknown [m/z 105, 93 (78), 95 (75), 131 (72), 119 (71), 132 (70), 91 (67), 120 (49)... 202 (39), 220 (9)]	13.15	1629	0.32	15.68	2208	0.13
Unknown [m/z 132, 91 (24), 119 (22), 105 (21), 133 (17), 117 (16)... 219 (3)]	13.24	1637	0.70			
Unknown [m/z 123, 81 (77), 95 (77), 107 (72), 41 (72), 93 (66), 55 (64)... 220? (13)]	13.30*	1641	0.29			
Himachalol	13.30*	1641	[0.29]	15.01	2140	0.12
Unknown [m/z 41, 91 (96), 79 (88), 69 (82), 123 (80), 93 (80)... 220 (8)]	13.36	1646	0.17	17.14	2364	0.06
α-Cadinol	13.39	1649	0.28	15.30	2170	0.22
Unknown [m/z 43, 81 (84), 41 (64), 67 (62), 95 (58), 79 (58)... 204 (48), 220 (2)]	13.43	1652	0.26	15.21	2161	0.15
Cedrenol analog	13.49	1657	0.06	16.24	2267	0.07
14-Hydroxy-9-epi-(*E*)-caryophyllene	13.53	1660	0.04	16.20*	2264	0.10
α-Bisabolol	13.77*	1681	0.34	15.26	2166	0.30
α-Cedrenol	13.77*	1681	[0.34]	16.84	2331	0.03
Cedr-8-en-13-ol	13.77*	1681	[0.34]	16.71	2317	0.03
Unknown [m/z 91, 105 (87), 123 (74), 135 (70), 107 (60), 79 (59)... 220 (13)]	13.92	1693	0.04			
Mayurone?	13.96*	1696	0.15	16.96	2344	0.14
Thujopsenal	13.96*	1696	[0.15]	15.72	2213	0.03
Oplopanone	14.33	1728	0.09	17.86	2444	0.08
Unknown [m/z 105, 91 (83), 79 (78), 135 (67), 107 (56), 67 (53)... 220 (9)]	14.48	1740	0.02			
Cedryl acetate	14.63	1754	0.03	14.35	2075	0.06
Unknown [m/z 91, 105 (74), 93 (67), 79 (59), 133 (54), 41 (47), 107 (46)...]	14.67	1757	0.02	18.14	2476	0.01
Unknown [m/z 137, 164 (59), 224 (42), 149 (33)]	14.77	1766	0.16			
Unknown [m/z 189, 91 (48), 133 (40), 105 (40), 41 (34), 187	14.95	1781	0.03	18.37	2502	0.01

(34)... 220 (5)]						
Biformene?	16.47	1920	0.05	15.32	2172	0.10
Pimaradiene	16.77	1949	0.01			
Unknown [m/z 148, 133 (92), 119 (41), 105 (32), 91 (23)...]	16.86	1957	0.02	15.40	2180	0.05
Manoyl oxide	16.98	1968	0.04	16.29	2272	0.04
Unknown [m/z 105, 91 (100), 81 (89), 79 (86), 109 (86), 257 (83)... 275 (12)...]	17.07	1977	0.05	15.87	2228	0.05
Unknown [m/z 197, 239 (66), 254 (35)]	17.17	1986	0.01			
13-epi-Manoyl oxide	17.30	1999	0.05	16.20*	2264	[0.10]
Unknown [m/z 159, 241 (87), 69 (60), 185 (34), 81 (31), 256 (26)...]	17.32	2000	0.02			
Unknown [m/z 255, 159 (71), 173 (71), 69 (42), 185 (39), 270 (31)...]	17.73	2042	0.02			
7,13-Abietadiene	17.98	2067	0.04	17.26	2378	0.06
Unknown [m/z 191, 81 (47), 95 (41), 69 (39), 109 (32), 93 (32)...]	18.24	2093	0.07	19.77*	2668	0.18
Unknown [m/z 177, 95 (36), 43 (35), 69 (34), 71 (32), 121 (26)...290 (13)]	18.36	2104	0.09			
Sandaracopimarinal?	18.75	2145	0.17	19.77*	2668	[0.18]
2-Oxomanoyl oxide?	19.06	2178	0.02			
Isopimaral	19.27	2199	0.06	20.68	2779	0.06
Palustral	19.44*	2218	0.03	20.64	2774	0.02
Sandaracopimarinol?	19.44*	2218	[0.03]	22.41	3005	0.01
(*E*?)-3,5-Dimethoxystilbene	19.55	2230	0.01			
Dehydroabietal	19.74	2250	0.02	21.83	2928	0.04
Methyl isopimarate?	20.02	2281	0.01			
Abietal	20.08	2287	0.05	21.73	2914	0.05
Methyl dehydroabietate	20.44	2327	0.03	22.60	3030	0.01
Neoabietal	20.52	2336	0.01			
Abietol?	20.65	2350	0.02			
Methyl abietate	20.82	2370	0.02			
Total identified		**94.17%**			**91.60%**	
Total reported		**96.22%**			**93.76%**	

*: Two or more compounds are coeluting on this column
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total
†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied
R.T.: Retention time (minutes)
R.I.: Retention index

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