

Date : September 03, 2020

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 20H24-BKB03

Customer identification : Buddha Wood - Australia - EM2002

Type : Essential oil

Source : *Eremophila mitchellii*

Customer : Be Kind Botanicals, Inc.

ANALYSIS

Method: PC-MAT-014  - Analysis of the composition of an essential oil or other volatile liquid by FAST GC-FID (in French); identifications validated by GC-MS.

Analyst : Sylvain Mercier, M. Sc., Chimiste

Analysis date : August 27, 2020

Checked and approved by :

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

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia. This report is digitally signed, it is only considered valid if the digital signature is intact. The results only describe the samples that were submitted to the assays.

PHYSICOCHEMICAL DATA

Physical aspect: Orange liquid

Refractive index: 1.5387 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

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

ANALYSIS SUMMARY – CONSOLIDATED CONTENTS

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

Identification	%	Class
Furfural	0.02	Furan
α -Pinene	0.01	Monoterpene
Myrcene	tr	Monoterpene
Unknown	0.02	Unknown
4-Vinylguaiaicol	0.04	Simple phenolic
Unknown	0.02	Unknown
Unknown	0.06	Unknown
4,5-diepi-Aristolochene	0.21	Sesquiterpene
Unknown	0.03	Unknown
Unknown	0.09	Sesquiterpene
β -Selinene	0.35	Sesquiterpene
Eremophilene	0.96	Sesquiterpene
α -Selinene	0.27	Sesquiterpene
Eremophila-1(10),8,11-triene	0.15	Sesquiterpene
Nootkatene	0.02	Sesquiterpene
γ -Vetivenene	0.04	Sesquiterpene
Unknown	0.11	Oxygenated sesquiterpene
β -Vetivenene	0.03	Sesquiterpene
Eremophila ketone	0.03	Sesquiterpenic ketone
Unknown	0.08	Unknown
Eremophila-1(10),11-dien-9 β -ol	0.04	Sesquiterpenic alcohol
Unknown	0.06	Unknown
Unknown	0.04	Unknown
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.11	Unknown
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.04	Unknown
Unknown	1.01	Oxygenated sesquiterpene
Unknown	0.20	Unknown
γ -Eudesmol	0.08	Sesquiterpenic alcohol
Unknown	1.03	Oxygenated sesquiterpene
Neointermedeol	0.19	Sesquiterpenic alcohol
Unknown	0.54	Unknown
Unknown	0.12	Sesquiterpene
Eremophila-1,11-dien-9-one	2.93	Sesquiterpenic ketone
Unknown	0.12	Unknown
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.17	Unknown
Unknown	0.07	Unknown
Eremophilone	29.35	Sesquiterpenic ketone
8-Hydroxydihydroeremophilone	12.89	Sesquiterpenic alcohol
8 α -Hydroxyeremophila-1,11-dien-9-one	1.56	Sesquiterpenic alcohol
Unknown	1.41	Unknown
Unknown	0.17	Unknown
Unknown	1.38	Unknown

Dehydrofukinone	0.33	Sesquiterpenic ketone
Unknown	0.30	Unknown
Unknown	0.12	Unknown
Unknown	0.18	Unknown
Hydroxyeremophilone	31.37	Sesquiterpenic ketone
Unknown	0.63	Unknown
Unknown	0.11	Unknown
9-Hydroxy-1,7(11),9-eremophilatrien-8-one	7.60	Unknown
Cembrene?	0.07	Diterpene
Unknown	0.09	Unknown
Unknown	0.17	Unknown
Unknown	0.01	Oxygenated sesquiterpene
Consolidated total	97.16%	

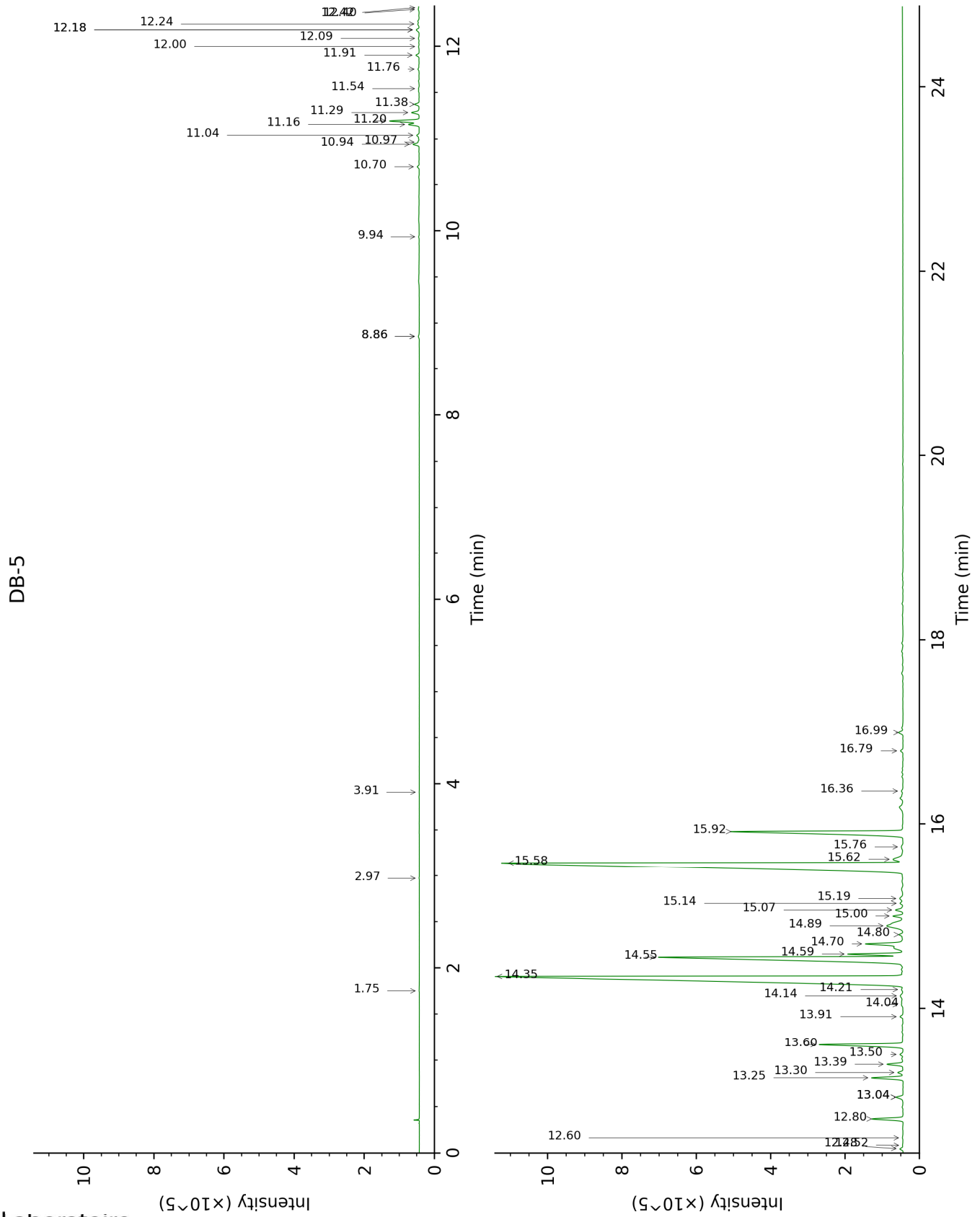
tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

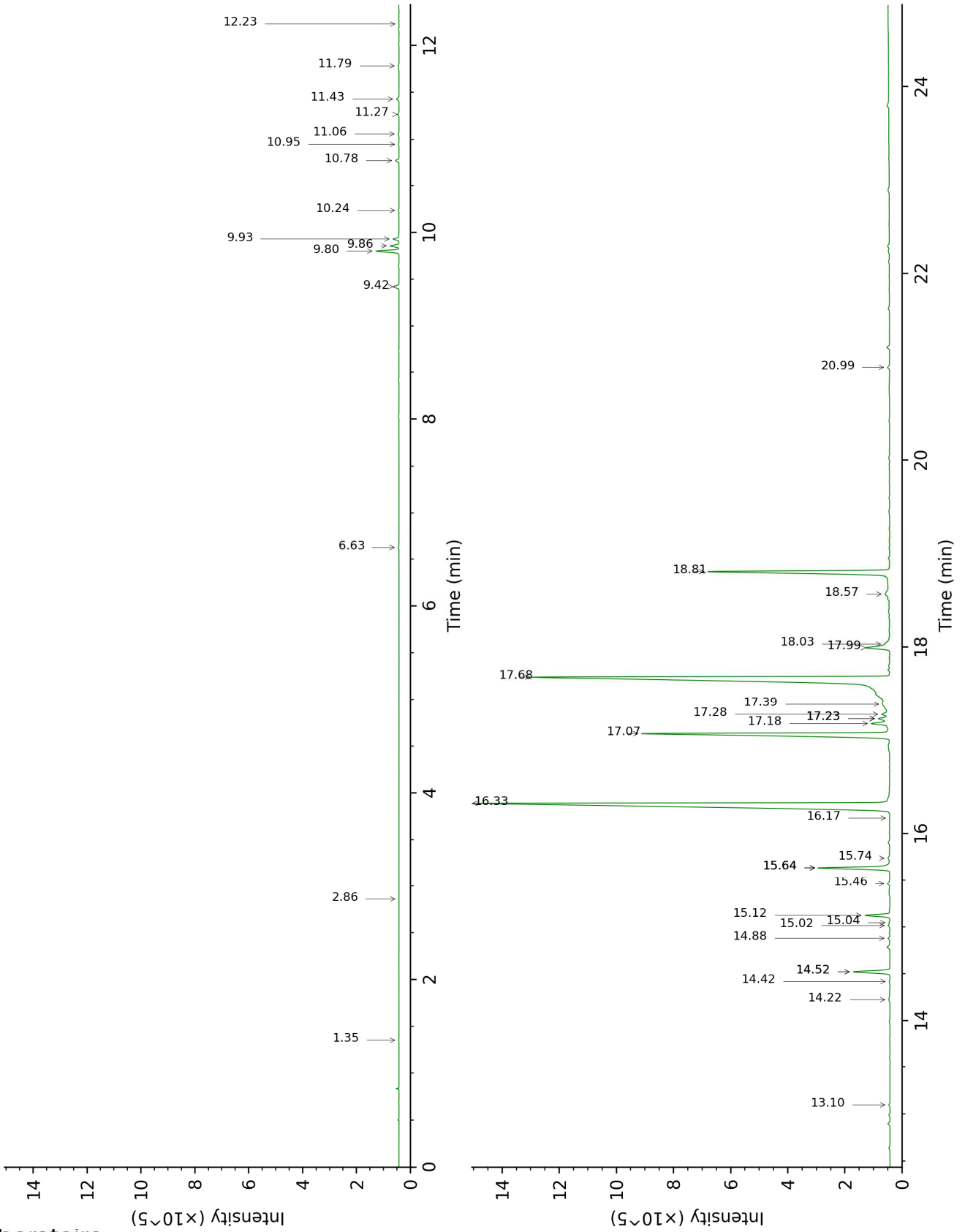
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm 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-WAX



FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Furfural	1.75	832	0.02	6.63	1408	0.02
α -Pinene	2.97	929	0.01	1.36	991	tr
Myrcene	3.91	991	tr	2.86	1133	tr
Unknown [m/z 97, 109 (29), 81 (18), 95 (17), 166 (16), 67 (14)...]	8.86*	1310	0.04	10.24	1689	0.02
4-Vinylguaiacol	8.86*	1310	[0.04]	15.04	2125	0.04
Unknown [m/z 122, 79 (33), 107 (30), 164 (25), 93 (24), 91 (15)...]	9.94	1386	0.02			
Unknown [m/z 111, 126 (68), 69 (51), 41 (40), 55 (29), 179 (21)...]	10.70	1442	0.06	11.27	1776	0.06
4,5-diepi-Aristolochene	10.94	1460	0.21	9.42	1623	0.26
Unknown [m/z 109, (152 (49), 124 (41), 67 (34), 81 (34), 180 (33)...]	10.97	1462	0.03			
Unknown [m/z 111, 189 (70), 126 (52), 133 (50), 105 (40), 91 (34)...204 (28)]	11.04	1467	0.09			
β -Selinene	11.16	1476	0.35	9.86	1658	0.36
Eremophilene	11.20	1479	0.96	9.80	1654	0.94
α -Selinene	11.29	1485	0.27	9.93	1664	0.24
Eremophila-1(10),8,11-triene	11.38	1492	0.15	10.78	1734	0.14
Nootkatene	11.54	1505	0.02	10.95	1749	0.02
γ -Vetivenene	11.76	1521	0.04	11.06	1759	0.04
Unknown [m/z 145, 202 (90), 131 (80), 91 (71), 105 (68), 82 (54), 187 (53), 117 (47)... 220 (24)]	11.91	1533	0.11			
β -Vetivenene	12.00	1541	0.03	11.43	1790	0.11
Eremophila ketone	12.09	1548	0.03	12.23	1861	0.01
Unknown [m/z 148, 105 (72), 189 (58), 119 (53), 91 (48), 133 (46)...]	12.18*	1555	0.12			
Eremophila-1(10),11-dien-9 β -ol	12.18*	1555	[0.12]	11.78	1821	0.04
Unknown [m/z 96, 68 (89), 206 (73), 109 (55), 137 (37), 67 (36)...]	12.24	1560	0.06	13.10	1939	0.05
Unknown [m/z 109, 95 (71), 81 (70), 110 (58), 68 (53)...]	12.40	1572	0.04			
Unknown [m/z 93, 107 (55), 91 (37), 41 (34), 55 (34)... 220 (1)]	12.42	1574	0.01	14.42	2064	0.03
Unknown [m/z 151, 194 (63), 152 (62), 113 (55), 109 (53)...]	12.48	1578	0.11	15.64*	2184	3.10
Unknown [m/z 111, 126 (82), 109 (60), 162 (54), 81 (54), 55	12.52	1582	0.04	14.22	2045	0.10

(53), 121 (52)... 220 (12)] Unknown [m/z 109, 208 (90), 140 (54), 41 (52), 69 (49), 55 (46)...]	12.60	1588	0.04			
Unknown [m/z 43, 81 (97), 135 (71), 95 (62), 204 (61), 71 (59), 207 (56)... 222 (3)]	12.80	1604	1.01	14.52*	2073	1.64
Unknown [m/z 133, 105 (87), 91 (84), 218 (68), 93 (60), 119 (60)...]	13.04*	1623	0.28			
γ-Eudesmol	13.04*	1623	[0.28]	14.88	2108	0.08
Unknown [m/z 109, 55 (95), 111 (93), 108 (92), 107 (73), 81 (72)...]	13.25	1641	1.03	15.12	2133	0.99
Neointermedeol	13.30	1645	0.19	15.64*	2184	[3.10]
Unknown [m/z 151, 109 (30), 137 (18), 67 (17), 95 (17), 41 (12)...]	13.39	1653	0.54	14.52*	2073	[1.64]
Unknown [m/z 204, 147 (56), 189 (39), 91 (35), 119 (32), 107 (30)...]	13.50	1661	0.12	15.46	2166	0.09
Eremophila-1,11-dien-9-one	13.60	1670	2.93	15.64*	2184	[3.10]
Unknown [m/z 105, 133 (39), 201 (35), 119 (35), 91 (26), 120 (19)...]	13.91	1696	0.12			
Unknown [m/z 93, 81 (90), 95 (86), 91 (83), 41 (83), 107 (81)... 220 (29), 238? (4)]	14.04	1707	0.08	17.23*	2350	0.63
Unknown [m/z 109, 119 (39), 154 (32), 67 (22), 95 (21), 96 (21)...]	14.14	1715	0.17			
Unknown [m/z 123, 236 (86), 109 (72), 193 (67), 207 (55), 41 (52)...]	14.21	1721	0.07	15.74	2194	0.10
Eremophilone	14.35	1733	29.35	16.33	2255	29.81
8- Hydroxydihydroeremophilone	14.56	1751	12.89	17.07	2333	13.11
8α-Hydroxyeremophila-1,11- dien-9-one	14.59	1754	1.56	17.99†	2434	1.60
Unknown [m/z 137, 234 (78), 109 (67), 41 (66), 69 (59), 43 (52), 191 (49)...]	14.70	1764	1.41	17.18	2345	0.91
Unknown [m/z 137, 191 (58), 109 (41), 41 (52), 234 (49), 152 (44)...]	14.80	1773	0.17	17.28	2356	0.48
Unknown [m/z 234, 217 (50), 81 (30), 41 (28), 67 (27), 109 (26)...]	14.89	1781	1.38	17.38†	2367	31.60
Dehydrofukinone	15.00	1790	0.33	17.23*	2350	[0.63]
Unknown [m/z 234, 191 (71), 149 (31), 163 (30), 41 (30), 219 (29)...]	15.07	1796	0.30	17.23*	2350	[0.63]

Unknown [m/z 133, 175 (81), 161 (58), 91 (51), 105 (50), 41 (47)...]	15.14	1802	0.12			
Unknown [m/z 109, 108 (52), 93 (41), 95 (36), 151 (33), 67 (33)...]	15.19	1807	0.18	18.03†	2438	[1.60]
Hydroxyeremophilone	15.58	1842	31.37	17.68†	2399	[31.60]
Unknown [m/z 232, 217 (22), 91 (21), 215 (20), 231 (19)...]	15.62	1846	0.63	18.57†	2498	9.89
Unknown [m/z 137, 179 (64), 123 (57), 194 (42), 43 (41)...]	15.76	1858	0.11			
9-Hydroxy-1,7(11),9-eremophilatrien-8-one	15.92	1874	7.60	18.81†	2525	[9.89]
Cembrene?	16.36	1914	0.07	15.02	2122	0.07
Unknown [m/z 109, 163 (80), 232 (45), 175 (27), 161 (26)...]	16.79	1956	0.09	20.99	2786	0.09
Unknown [m/z 217, 122 (83), 232 (66), 161 (61), 109 (50)...]	16.99	1975	0.17			
Unknown [m/z 159, 93 (89), 205 (88), 91 (81), 107 (75), 105 (74), 119 (70)... 220 (16)]				16.17	2238	0.01
Total identified		88.81%			52.26%	
Total reported		97.13%			96.69%	

*: 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