

**Date :** June 13, 2022

**CERTIFICATE OF ANALYSIS – GC PROFILING**

*SAMPLE IDENTIFICATION*

**Internal code :** 22F09-PTH06

**Customer identification :** Buddha Wood- BO0105R

**Type :** Essential oil

**Source :** *Eremophila mitchellii*

**Customer :** Plant Therapy

*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 2014-005

**Analysis date :** June 13, 2022

Checked and approved by :

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Alexis St-Gelais, Ph. D., 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*Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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:** Brown viscous liquid

**Refractive index:**  $1.5380 \pm 0.0003$  (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	0.14	Furan
5-Methylfurfural	0.08	Furan
4-Vinylguaiaicol	0.03	Simple phenolic
Unknown	0.04	Unknown
<i>cis</i> - $\beta$ -Elemene	0.01	Sesquiterpene
$\beta$ -Elemene	0.02	Sesquiterpene
Selina-5,11-diene	0.02	Sesquiterpene
Unknown	0.20	Unknown
4,5-diepi-Aristolochene	0.37	Sesquiterpene
Unknown	0.11	Sesquiterpene
$\beta$ -Selinene	0.42	Sesquiterpene
Eremophilene	1.00	Sesquiterpene
Eudesmatriene analog	0.01	Sesquiterpene
$\alpha$ -Selinene	0.31	Sesquiterpene
Eremophila-1(10),8,11-triene	0.17	Sesquiterpene
Nootkatene	0.09	Sesquiterpene
$\gamma$ -Vetivenene	0.01	Sesquiterpene
Unknown	0.11	Oxygenated sesquiterpene
$\beta$ -Vetivenene	0.02	Sesquiterpene
Eremophila ketone	0.03	Sesquiterpenic ketone
Eremophila-1(10),11-dien-9 $\beta$ -ol	0.04	Sesquiterpenic alcohol
Unknown	0.12	Unknown
Unknown	0.10	Unknown
Unknown	0.02	Unknown
Unknown	0.09	Oxygenated sesquiterpene
Unknown	0.22	Unknown
Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.01	Unknown
Unknown	1.07	Oxygenated sesquiterpene
$\gamma$ -Eudesmol	0.04	Sesquiterpenic alcohol
Unknown	0.33	Unknown
Unknown	1.16	Oxygenated sesquiterpene
Neointermedeol	0.20	Sesquiterpenic alcohol
Unknown	0.57	Unknown
Unknown	0.19	Sesquiterpene
Eremophila-1,11-dien-9-one	2.63	Sesquiterpenic ketone
Unknown	0.13	Unknown
Unknown	0.08	Oxygenated sesquiterpene
Unknown	0.18	Unknown
Unknown	0.20	Unknown
Eremophilone	28.51	Sesquiterpenic ketone
8-Hydroxydihydroeremophilone	11.93	Sesquiterpenic alcohol
8 $\alpha$ -Hydroxyeremophila-1,11-dien-9-one	1.26	Sesquiterpenic alcohol
Unknown	1.66	Unknown
Unknown	0.17	Unknown

Unknown	0.71	Unknown
Dehydrofukinone	0.36	Sesquiterpenic ketone
Unknown	0.36	Unknown
Unknown	0.47	Unknown
Unknown	0.14	Unknown
Hydroxyeremophilone	32.32	Sesquiterpenic ketone
Unknown	0.33	Unknown
Unknown	0.07	Unknown
9-Hydroxy-1,7(11),9-eremophilatrien-8-one	8.01	Unknown
Cembrene?	0.01	Diterpene
Unknown	0.06	Unknown
Unknown	0.09	Unknown
<b>Consolidated total</b>	<b>97.05%</b>	

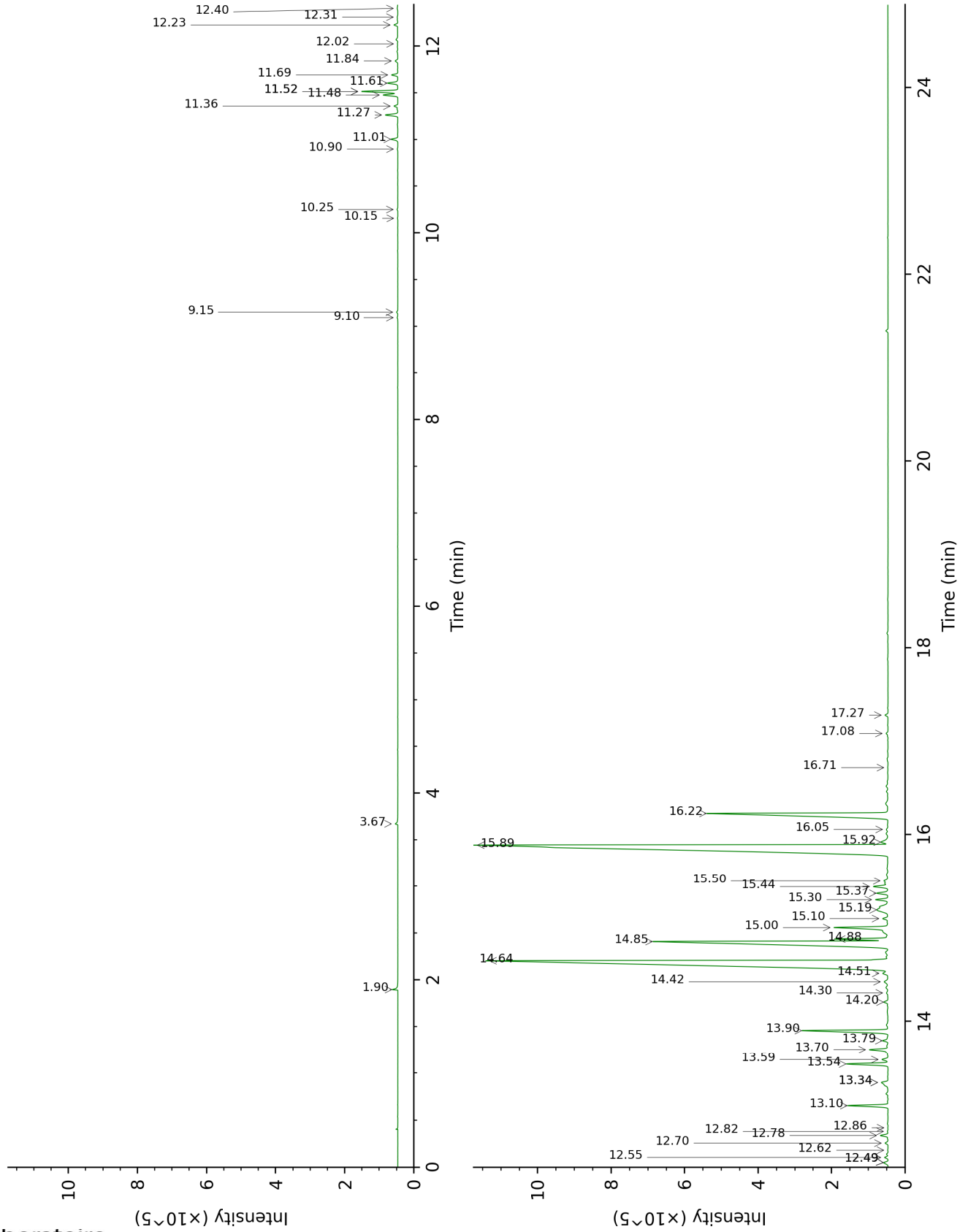
Note: no correction factor was applied

**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.

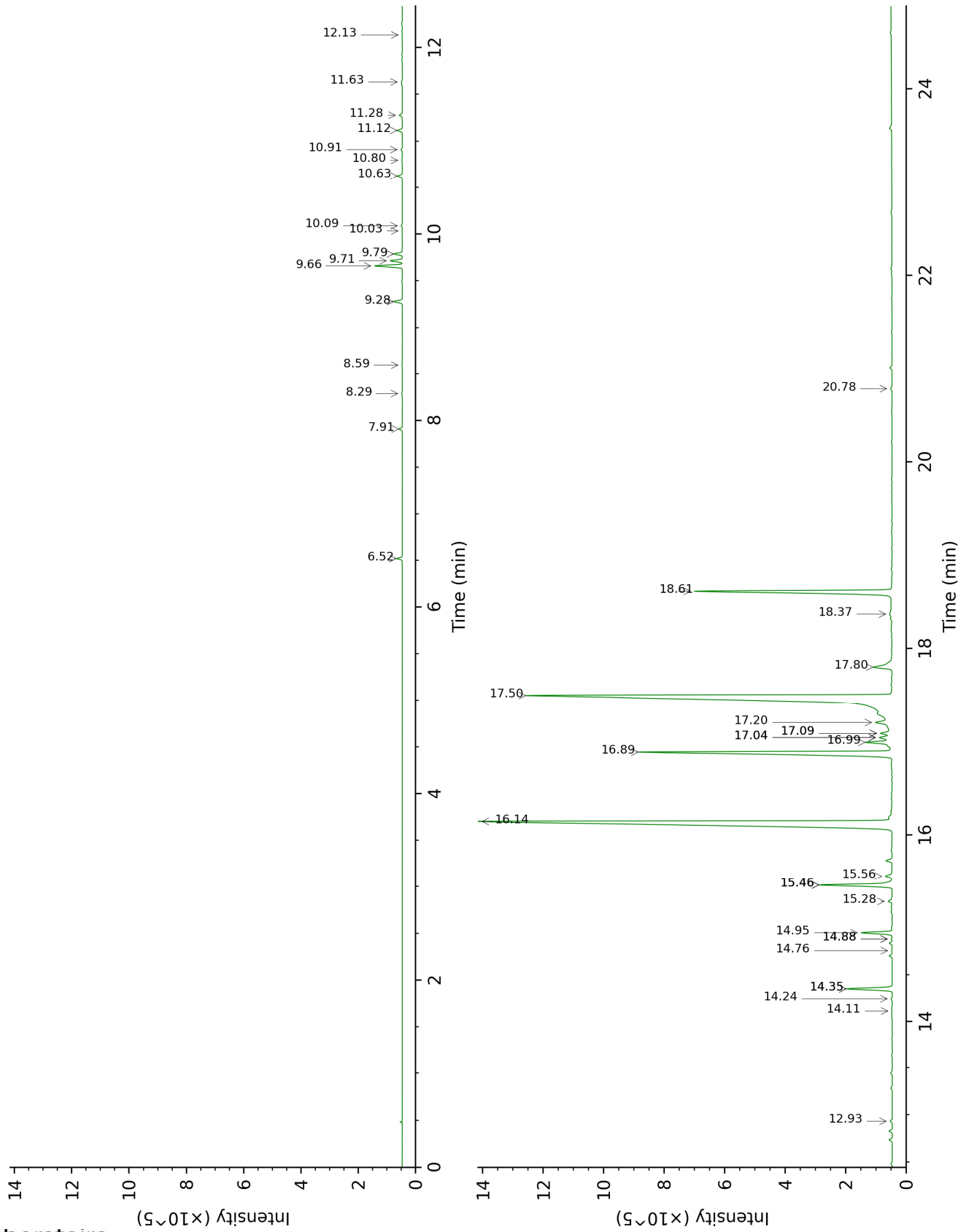
**Unknowns:** Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

This page was intentionally left blank. The following pages present the complete data of the analysis.

DB-5



DB-WAX



FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Furfural	1.90	827	0.14	6.52	1409	0.17
5-Methylfurfural	3.67	958	0.08	7.91	1514	0.11
4-Vinylguaiacol	9.10	1308	0.03	14.88*	2123	0.03
Unknown [m/z 97, 109 (29), 81 (18), 95 (17), 166 (16), 67 (14)...]	9.15	1312	0.04	10.09	1688	0.04
cis-β-Elemene	10.16	1382	0.01			
β-Elemene	10.25	1389	0.02	8.29	1544	0.03
Selina-5,11-diene	10.90	1437	0.02	8.59	1567	0.02
Unknown [m/z 111, 126 (68), 69 (51), 41 (40), 55 (29), 179 (21)...]	11.01	1445	0.20	11.12	1775	0.18
4,5-diepi-Aristolochene	11.27	1464	0.37	9.28	1622	0.33
Unknown [m/z 111, 189 (70), 126 (52), 133 (50), 105 (40), 91 (34)...204 (28)]	11.36	1471	0.11			
β-Selinene	11.48	1480	0.42	9.72	1657	0.42
Eremophilene	11.52*	1483	1.02	9.66	1653	1.00
Eudesmatriene analog	11.52*	1483	[1.02]	10.03	1683	0.01
α-Selinene	11.60	1489	0.31	9.79	1663	0.29
Eremophila-1(10),8,11-triene	11.69	1496	0.17	10.63	1733	0.17
Nootkatene	11.84	1507	0.09	10.80	1748	0.02
γ-Vetivenene	12.02	1522	0.01	10.91	1757	0.05
Unknown [m/z 145, 202 (90), 131 (80), 91 (71), 105 (68), 82 (54), 187 (53), 117 (47)... 220 (24)]	12.23	1537	0.11			
β-Vetivenene	12.31	1544	0.02	11.28	1789	0.11
Eremophila ketone	12.40	1551	0.03	12.14	1864	0.01
Eremophila-1(10),11-dien-9β-ol	12.49*	1558	0.16	11.63	1820	0.04
Unknown [m/z 148, 105 (72), 189 (58), 119 (53), 91 (48), 133 (46)...]	12.49*	1558	[0.16]			
Unknown [m/z 96, 68 (89), 206 (73), 109 (55), 137 (37), 67 (36)...]	12.55	1563	0.10	12.93	1937	0.08
Unknown [m/z 109, 95 (71), 81 (70), 110 (58), 68 (53)...]	12.62	1569	0.02			
Unknown [m/z 93, 107 (55), 91 (37), 41 (34), 55 (34)... 220 (1)]	12.70	1575	0.09	14.24	2061	0.05
Unknown [m/z 151, 194 (63), 152 (62), 113 (55), 109 (53)...]	12.78	1581	0.22	15.46*	2182	2.91
Unknown [m/z 111, 126 (82), 109 (60), 162 (54), 81 (54), 55 (53), 121 (52)... 220 (12)]	12.82	1584	0.02	14.11	2048	0.01



Unknown [m/z 109, 208 (90), 140 (54), 41 (52), 69 (49), 55 (46)...]	12.86	1587	0.01			
Unknown [m/z 43, 81 (97), 135 (71), 95 (62), 204 (61), 71 (59), 207 (56)... 222 (3)]	13.10	1606	1.07	14.35*	2071	1.74
$\gamma$ -Eudesmol	13.34*	1626	0.37	14.76	2111	0.04
Unknown [m/z 133, 105 (87), 91 (84), 218 (68), 93 (60), 119 (60)...]	13.34*	1626	[0.37]			
Unknown [m/z 109, 55 (95), 111 (93), 108 (92), 107 (73), 81 (72)...]	13.54	1642	1.16	14.95	2130	1.10
Neointermedeol	13.58	1646	0.20	15.46*	2182	[2.91]
Unknown [m/z 151, 109 (30), 137 (18), 67 (17), 95 (17), 41 (12)...]	13.70	1656	0.57	14.35*	2071	[1.74]
Unknown [m/z 204, 147 (56), 189 (39), 91 (35), 119 (32), 107 (30)...]	13.79	1664	0.19	15.28	2164	0.16
Eremophila-1,11-dien-9-one	13.90	1672	2.63	15.46*	2182	[2.91]
Unknown [m/z 105, 133 (39), 201 (35), 119 (35), 91 (26), 120 (19)...]	14.20	1698	0.13			
Unknown [m/z 93, 81 (90), 95 (86), 91 (83), 41 (83), 107 (81)... 220 (29), 238? (4)]	14.30	1706	0.08	17.09*	2353	0.53
Unknown [m/z 109, 119 (39), 154 (32), 67 (22), 95 (21), 96 (21)...]	14.42	1716	0.18			
Unknown [m/z 123, 236 (86), 109 (72), 193 (67), 207 (55), 41 (52)...]	14.51	1724	0.20	15.56	2192	0.30
Eremophilone	14.64	1736	28.51	16.14	2253	28.55
8-Hydroxydihydroeremophilone	14.85	1753	11.93	16.89	2332	12.20
8 $\alpha$ -Hydroxyeremophila-1,11-dien-9-one	14.88	1756	1.26	17.80	2432	1.22
Unknown [m/z 137, 234 (78), 109 (67), 41 (66), 69 (59), 43 (52), 191 (49)...]	15.00	1766	1.66	16.99	2343	1.12
Unknown [m/z 137, 191 (58), 109 (41), 41 (52), 234 (49), 152 (44)...]	15.10	1775	0.17	17.09*	2353	[0.53]
Unknown [m/z 234, 217 (50), 81 (30), 41 (28), 67 (27), 109 (26)...]	15.19	1783	0.71	17.20	2366	1.26
Dehydrofukinone	15.30	1792	0.36	17.04*	2348	0.64
Unknown [m/z 234, 191 (71), 149 (31), 163 (30), 41 (30), 219 (29)...]	15.37	1798	0.36	17.04*	2348	[0.64]

Unknown [m/z 133, 175 (81), 161 (58), 91 (51), 105 (50), 41 (47)...]	15.44	1804	0.47			
Unknown [m/z 109, 108 (52), 93 (41), 95 (36), 151 (33), 67 (33)...]	15.50	1810	0.14			
Hydroxyeremophilone	15.89	1845	32.32	17.50	2398	30.84
Unknown [m/z 232, 217 (22), 91 (21), 215 (20), 231 (19)...]	15.92	1848	0.33	18.37	2495	0.18
Unknown [m/z 137, 179 (64), 123 (57), 194 (42), 43 (41)...]	16.05	1860	0.07			
9-Hydroxy-1,7(11),9-eremophilatrien-8-one	16.22	1876	8.01	18.61	2523	8.84
Cembrene?	16.71	1921	0.01	14.88*	2123	[0.03]
Unknown [m/z 109, 163 (80), 232 (45), 175 (27), 161 (26)...]	17.08	1956	0.06	20.78	2784	0.06
Unknown [m/z 217, 122 (83), 232 (66), 161 (61), 109 (50)...]	17.27	1975	0.09			
<b>Total identified</b>		<b>88.50%</b>			<b>90.31%</b>	
<b>Total reported</b>		<b>97.05%</b>			<b>94.83%</b>	

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total

Note: no correction factor was applied

R.T.: Retention time (minutes)

R.I.: Retention index