Date : March 22, 2022

Certificate of Analysis – GC Profiling

Sample identification

Internal code : 22C15-PTH13
Customer identification : Blue Tansy - Morocco - B501102110R
Type : Essential oil
Source : *Tanacetum annuum*
Customer : Plant Therapy

Analysis

Method: PC-MAT-014 ISO - Analysis of the composition of an essential oil or other volatile liquid by FAST GC-FID (in French); identifications validated by GC-MS.
Analyst : Pamela Lavoie, M.Sc., Chimiste
Analysis date : March 21, 2022

Checked and approved by :

Alexis St-Gelais, Ph. D., Chimiste 2013-174

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Méthode certifiée ISO 17025:2017 Certified method

Laboratoire PhytoChemia

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PHYSICOCHEMICAL DATA

Physical aspect: Dark blue liquid
Refractive index: 1.5058 ± 0.0003 (20 °C; method PC-MAT-016)

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	%	Class
Isoprene	tr	Alkene
1,3-Cyclohexadiene	tr	Alkene
Isovaleral	0.01	Aliphatic aldehyde
2-Methylbutyral	0.01	Aliphatic aldehyde
2-Ethylfuran	tr	Furan
Isoamyl alcohol	0.02	Aliphatic alcohol
Ethyl isobutyrate	tr	Aliphatic ester
Unknown	tr	Unknown
Unknown	0.01	Unknown
Octene	tr	Alkene
Hexanal	0.01	Aliphatic aldehyde
Ethyl 2-methylbutyrate	0.04	Aliphatic ester
Ethyl isovalerate	0.02	Aliphatic ester
Propyl isobutyrate	tr	Aliphatic ester
Hexanol	0.03	Aliphatic alcohol
Nonane	0.01	Alkane
Hashishene	0.01	Monoterpene
Tricyclene	0.06	Monoterpene
α-Thujene	0.31	Monoterpene
Ethyl tiglate?	0.01	Aliphatic ester
α-Pinene	2.85	Monoterpene
Thujadiene isomer	0.01	Monoterpene
α-Fenchene	0.01	Monoterpene
Camphene	0.96	Monoterpene
Propyl 2-methylbutyrate	0.05	Aliphatic ester
Thuja-2,4(10)-diene	0.01	Monoterpene
Propyl isovalerate	0.02	Aliphatic ester
β-Pinene	6.31	Monoterpene
Sabinene	15.20	Monoterpene
6-Methyl-5-hepten-2-one	0.05	Aliphatic ketone
2-Pentylfuran	0.02	Furan
Myrcene	5.26	Monoterpene
α-Phellandrene	4.70	Monoterpene
Pseudolimonene	0.01	Monoterpene
Menthatriene isomer I	0.04	Monoterpene
Octanal	0.05	Aliphatic aldehyde
Δ3-Carene	0.03	Monoterpene
α-Terpinene	0.62	Monoterpene
Isoamyl isobutyrate	0.01	Aliphatic ester
para-Cymene	4.75	Monoterpene
Limonene	2.18	Monoterpene
1,8-Cineole	0.40	Monoterpenic ether
β-Phellandrene	0.32	Monoterpene
(*Z*)-β-Ocimene	0.02	Monoterpene
Butyl 2-methylbutyrate	0.02	Aliphatic ester

Butyl isovalerate	0.02	Aliphatic ester
(*E*)-β-Ocimene	0.02	Monoterpene
γ-Terpinene	1.07	Monoterpene
Prenyl isobutyrate	0.01	Aliphatic ester
cis-Sabinene hydrate	0.09	Monoterpenic alcohol
cis-Linalool oxide (fur.)	0.04	Monoterpenic alcohol
Octanol	0.05	Aliphatic alcohol
Terpinolene	0.43	Monoterpene
para-Cymenene	0.04	Monoterpene
6,7-Epoxymyrcene	0.28	Monoterpenic ether
trans-Sabinene hydrate	0.07	Monoterpenic alcohol
Perillene	0.03	Monoterpenic ether
Linalool	0.14	Monoterpenic alcohol
Nonanal	0.02	Aliphatic aldehyde
2-Methylbutyl 2-methylbutyrate	0.08	Aliphatic ester
para-Mentha-1,3,8-triene	0.01	Monoterpene
Isoamyl isovalerate	0.02	Aliphatic ester
(*E*)-4,8-Dimethylnona-1,3,7-triene	0.03	Terpene derivative
Unknown	0.19	Unknown
cis-para-Menth-2-en-1-ol	0.08	Monoterpenic alcohol
α-Campholenal	0.06	Monoterpenic aldehyde
Limona ketone	0.32	Normonoterpenic ketone
trans-Pinocarveol	0.05	Monoterpenic alcohol
Camphor	11.07	Monoterpenic ketone
α,4-Dimethyl-3-cyclohexene-1-methanol	0.19	Normonoterpenic alcohol
Pinocarvone	0.03	Monoterpenic ketone
Borneol	2.37	Monoterpenic alcohol
Unknown	0.05	Oxygenated monoterpene
Unknown	0.03	Oxygenated monoterpene
Terpinen-4-ol	1.59	Monoterpenic alcohol
Unknown	0.08	Unknown
para-Cymen-8-ol	0.04	Monoterpenic alcohol
α-Terpineol	0.27	Monoterpenic alcohol
Myrtenal	0.04	Monoterpenic aldehyde
Myrtenol	0.08	Monoterpenic alcohol
Unknown	0.01	Unknown
cis-α-Phellandrene epoxide (iPr vs Me)	0.12	Monoterpenic ether
Decanal	0.09	Aliphatic aldehyde
trans-Carveol	0.06	Monoterpenic alcohol
Unknown	0.03	Oxygenated monoterpene
(3*Z*)-Hexenyl 2-methylbutyrate	0.01	Aliphatic ester
Cuminal	0.03	Monoterpenic aldehyde
Hexyl 2-methylbutyrate	0.01	Aliphatic ester
Pulegone	0.02	Monoterpenic ketone
Neral	0.04	Monoterpenic aldehyde
Carvotanacetone	0.07	Monoterpenic ketone
Piperitone	0.04	Monoterpenic ketone
Phellandral	0.04	Monoterpenic aldehyde
Geranial	0.02	Monoterpenic aldehyde
α-Terpinen-7-al	0.04	Monoterpenic aldehyde
Bornyl acetate	0.01	Monoterpenic ester
Cuminol	0.01	Monoterpenic alcohol

Perilla alcohol	0.02	Monoterpenic alcohol
Thymol	0.76	Monoterpenic alcohol
4-Methylhexyl 2-methylbutyrate	0.04	Aliphatic ester
Carvacrol	0.03	Monoterpenic alcohol
6-Hydroxycarvotanacetone	0.08	Monoterpenic alcohol
para-Menth-5-en-1,2-diol isomer III	0.03	Monoterpenic alcohol
1,4-para-Menthadien-7-ol	0.04	Monoterpenic alcohol
α-Cubebene	0.02	Sesquiterpene
α-Terpinyl acetate	0.02	Monoterpenic ester
α-Copaene	0.09	Sesquiterpene
Modhephene	0.01	Sesquiterpene
(*E*)-β-Damascenone	0.05	Apocarotenoid
7-epi-Sesquithujene?	0.03	Sesquiterpene
β-Elemene	0.27	Sesquiterpene
Benzyl isovalerate	0.01	Phenolic ester
α-Cedrene	0.03	Sesquiterpene
β-Caryophyllene	1.59	Sesquiterpene
β-Copaene	0.03	Sesquiterpene
Octyl 2-methylbutyrate	0.10	Aliphatic ester
trans-α-Bergamotene	0.09	Sesquiterpene
Sesquisabinene A	0.91	Sesquiterpene
α-Humulene	0.17	Sesquiterpene
(*E*)-β-Farnesene	0.13	Sesquiterpene
4,5-diepi-Aristolochene	0.09	Sesquiterpene
Dehydrosesquicineole	0.08	Sesquiterpenic ether
γ-Muurolene	0.05	Sesquiterpene
Germacrene D	1.34	Sesquiterpene
γ-Curcumene	0.06	Sesquiterpene
β-Selinene	0.36	Sesquiterpene
ar-Curcumene	0.30	Sesquiterpene
Phenylethyl isovalerate	0.07	Phenolic ester
Bicyclogermacrene	0.05	Sesquiterpene
Phenylethyl 2-methylbutyrate	0.33	Phenolic ester
α-Muurolene	0.17	Sesquiterpene
δ-Guaiene	0.01	Sesquiterpene
β-Curcumene	0.03	Sesquiterpene
γ-Cadinene	0.20	Sesquiterpene
3,6-Dihydrochamazulene	3.97	Azulene
Dihydrochamazulene isomer I	0.84	Azulene
δ-Cadinene	0.14	Sesquiterpene
β-Sesquiphellandrene	0.93	Sesquiterpene
Dihydrochamazulene isomer II	0.07	Azulene
Dihydrochamazulene isomer III	0.06	Azulene
Phenylethyl angelate?	0.01	Phenolic ester
Isocaryophyllene epoxide B	0.03	Sesquiterpenic ether
α-Elemol	0.07	Sesquiterpenic alcohol
(*E*)-Nerolidol	0.02	Sesquiterpenic alcohol
Spathulenol	0.09	Sesquiterpenic alcohol
Caryophyllene oxide	0.31	Sesquiterpenic ether
Caryophyllene oxide isomer	0.04	Sesquiterpenic ether
Humulene epoxide I	0.02	Sesquiterpenic ether
Humulene epoxide II	0.06	Sesquiterpenic ether

5,6-Dihydrochamazulene	0.50	Azulene
Junenol	0.03	Sesquiterpenic alcohol
Unknown	0.01	Sesquiterpene
γ-Eudesmol	0.23	Sesquiterpenic alcohol
7,12-Dehydro-5,6,7,8-tetrahydrochamazulene	1.60	Azulene
Eremoligenol	0.03	Sesquiterpenic alcohol
τ-Cadinol	0.02	Sesquiterpenic alcohol
τ-Muurolol	0.02	Sesquiterpenic alcohol
β-Eudesmol	0.68	Sesquiterpenic alcohol
α-Eudesmol	0.11	Sesquiterpenic alcohol
Dihydrochamazulene isomer IV	1.06	Azulene
(3*E*,5*E*)-7-Hydroxyfarnesene	0.05	Sesquiterpenic alcohol
Unknown	0.16	Azulene
Chamazulene	9.56	Azulene
α-Phellandrene dimer II	0.06	Diterpene
Dehydrochamazulene	0.02	Azulene
Phytone	0.09	Terpenic ketone
meta-Camphorene	0.09	Diterpene
9-(15,16-Dihydro-15-methyleneneryl)-para-cymene?	0.04	Homoditerpene
9-(15,16-Dihydro-15-methyleneneryl)-α-terpinene?	0.17	Homoditerpene
9-(15,16-Dihydro-15-methylenegeranyl)-para-cymene	0.32	Homoditerpene
9-(15,16-Dihydro-15-methylenegeranyl)-α-terpinene	0.95	Homoditerpene
Unknown	0.27	Unknown
Unknown	0.98	Unknown
Unknown	0.08	Unknown
Unknown	0.05	Unknown
Consolidated total	**95.68%**	

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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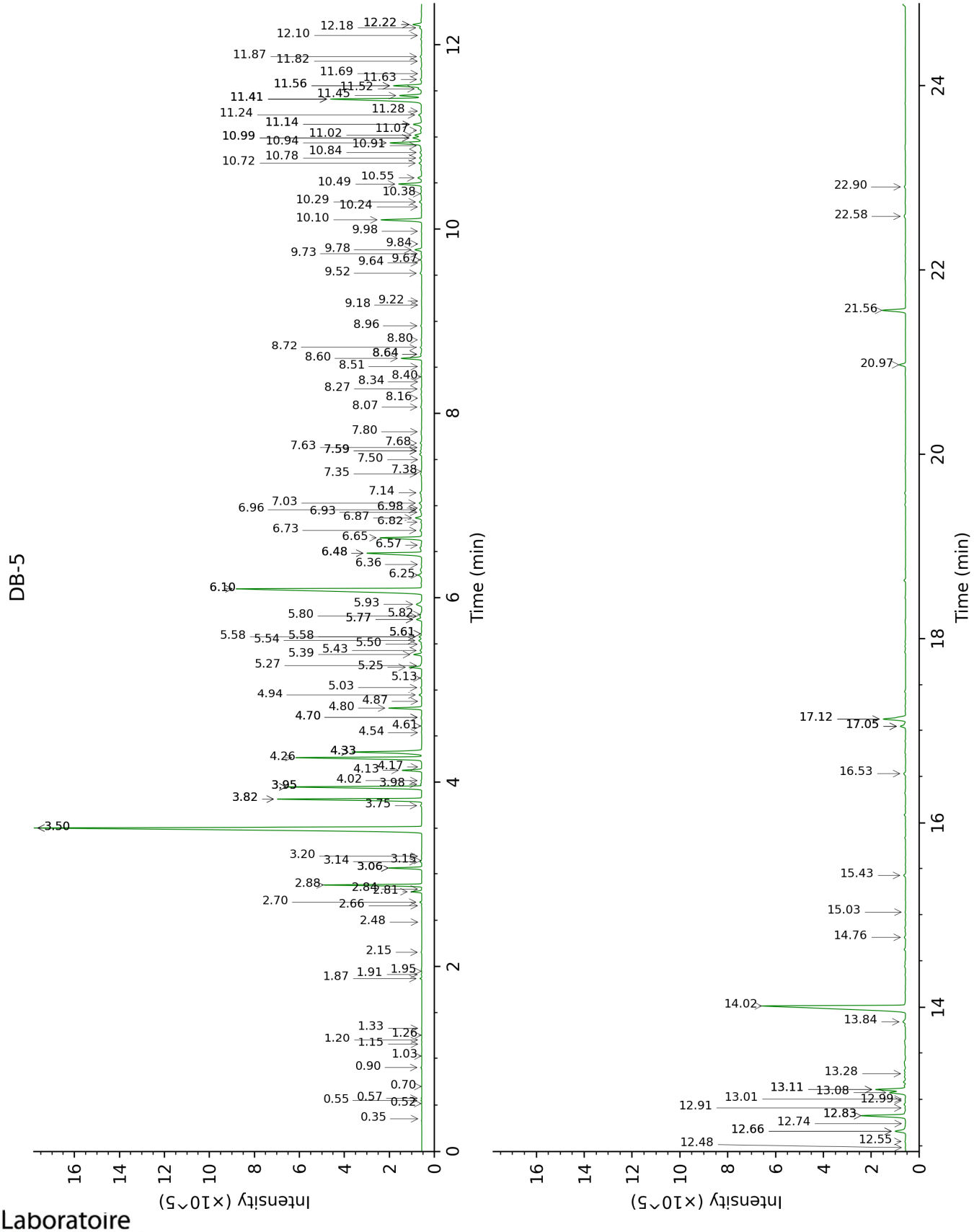
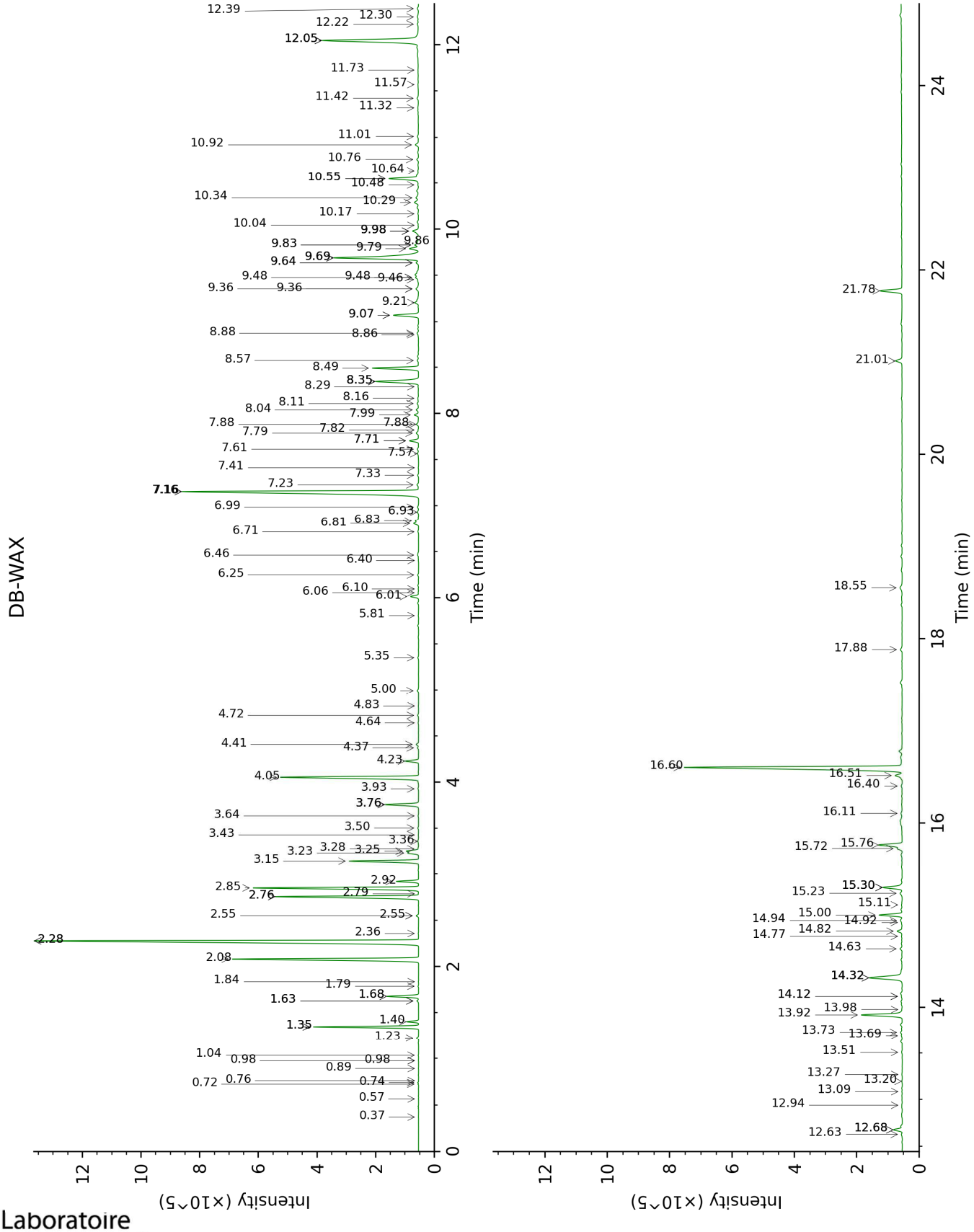

DB-5
Intensity (×10^5)
Time (min)
12.10
12.18
12.22
11.87
11.82
11.69
11.63
11.56
11.52
11.41
11.45
11.28
11.24
11.14
11.07
10.99
10.94
11.02
10.91
10.84
10.72
10.78
10.49
10.55
10.38
10.29
10.24
10.10
9.98
9.73
9.78
9.84
9.64
9.67
9.52
9.18
9.22
8.96
8.80
8.72
8.60
8.64
8.51
8.34
8.40
8.27
8.16
8.07
7.80
7.63
7.59
7.68
7.50
7.35
7.38
7.14
6.96
7.03
6.93
6.98
6.87
6.82
6.73
6.65
6.57
6.48
6.36
6.25
6.10
5.93
5.80
5.77
5.82
5.58
5.54
5.58
5.61
5.50
5.39
5.43
5.27
5.25
5.13
5.03
4.94
4.87
4.80
4.70
4.61
4.54
4.33
4.26
4.13
4.17
4.02
3.98
3.95
3.82
3.75
3.50
3.20
3.14
3.15
3.06
2.88
2.84
2.81
2.70
2.66
2.48
2.15
1.87
1.91
1.95
1.33
1.26
1.20
1.15
1.03
0.90
0.70
0.55
0.57
0.52
0.35
22.90
22.58
21.56
20.97
17.12
17.05
16.53
15.43
15.03
14.76
14.02
13.84
13.28
13.11
13.08
13.01
12.99
12.91
12.83
12.74
12.66
12.55
12.48


DB-WAX
Time (min)
Intensity (×10^5)
12.39
12.30
12.22
12.05
11.73
11.57
11.42
11.32
11.01
10.92
10.76
10.64
10.55
10.48
10.34
10.29
10.17
10.04
9.98
9.83
9.86
9.79
9.64
9.69
9.48
9.48
9.46
9.36
9.36
9.21
9.07
8.88
8.86
8.57
8.49
8.35
8.29
8.16
8.11
8.04
7.99
7.88
7.88
7.79
7.82
7.71
7.61
7.57
7.41
7.33
7.23
7.16
6.99
6.93
6.81
6.83
6.71
6.46
6.40
6.25
6.06
6.10
6.01
5.81
5.35
5.00
4.83
4.72
4.64
4.41
4.37
4.23
4.05
3.93
3.76
3.64
3.50
3.43
3.36
3.23
3.28
3.25
3.15
2.92
2.85
2.79
2.76
2.55
2.55
2.36
2.28
2.08
1.84
1.79
1.63
1.68
1.40
1.35
1.23
1.04
0.98
0.98
0.89
0.72
0.76
0.74
0.57
0.37
21.78
21.01
18.55
17.88
16.60
16.51
16.40
16.11
15.72
15.76
15.30
15.23
15.11
14.94
15.00
14.92
14.77
14.82
14.63
14.32
14.12
13.98
13.92
13.73
13.69
13.51
13.27
13.20
13.09
12.94
12.63
12.68

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Isoprene	0.35	505	tr	0.37	657	tr
1,3-Cyclohexadiene	0.52	628	tr			
Isovaleral	0.55	640	0.01	0.74	885	0.01
2-Methylbutyral	0.57	650	0.01	0.72	879	0.01
2-Ethylfuran	0.70	700	tr	0.89	919	tr
Isoamyl alcohol	0.90	734	0.02	3.43	1180	0.01
Ethyl isobutyrate	1.03	753	tr	0.98*	932	0.01
Unknown [m/z 73, 41 (54), 87 (50), 56 (47), 54 (29), 55 (25), 100 (23)... 115? (6)]	1.15	773	tr	0.98*	932	[0.01]
Unknown [m/z 73, 87 (52), 41 (45), 56 (42), 100 (29)...]	1.20	780	0.01	1.04	941	0.01
Octene	1.26	789	tr	0.57	824	tr
Hexanal	1.33	801	0.01	1.84	1043	0.01
Ethyl 2-methylbutyrate	1.87	849	0.04	1.63*	1022	0.06
Ethyl isovalerate	1.91	853	0.02	1.79	1038	0.01
Propyl isobutyrate	1.95	856	tr	1.68*	1027	0.96
Hexanol	2.15	874	0.03	5.35	1322	0.03
Nonane	2.48	902	0.01	0.76	892	tr
Hashishene	2.66	914	0.01	1.35*	991	2.86
Tricyclene	2.70	917	0.06	1.22	972	0.06
α-Thujene	2.81	925	0.31	1.40	1000	0.30
Ethyl tiglate?	2.84	927	0.01	3.50	1186	0.03
α-Pinene	2.88	930	2.85	1.35*	991	[2.86]
Thujadiene isomer	3.06*	942	0.97	2.36	1094	0.01
α-Fenchene	3.06*	942	[0.97]	1.63*	1022	[0.06]
Camphene	3.06*	942	[0.97]	1.68*	1027	[0.96]
Propyl 2-methylbutyrate	3.14	947	0.05	2.55*	1111	0.07
Thuja-2,4(10)-diene	3.15	948	0.01	2.28*	1086	15.28
Propyl isovalerate	3.20	951	0.02	2.76*	1127	4.77
β-Pinene	3.50*	972	21.51	2.08	1067	6.31
Sabinene	3.50*	972	[21.51]	2.28*	1086	[15.28]
6-Methyl-5-hepten-2-one	3.75	988	0.05	5.00	1298	0.05
2-Pentylfuran	3.82*	993	5.25	3.64	1196	0.02
Myrcene	3.82*	993	[5.25]	2.85	1134	5.26
α-Phellandrene	3.95*	1002	4.75	2.76*	1127	[4.77]
Pseudolimonene	3.95*	1002	[4.75]	2.79	1129	0.01
Menthatriene isomer I	3.95*	1002	[4.75]	3.36	1174	0.04
Octanal	3.98	1004	0.05	4.37	1251	0.04
Δ3-Carene	4.02	1006	0.03	2.55*	1111	[0.07]
α-Terpinene	4.13	1014	0.62	2.92	1140	0.63
Isoamyl isobutyrate	4.16	1016	0.01	3.28	1168	0.02
para-Cymene	4.26	1022	4.75	4.05	1228	4.78
Limonene	4.33*	1026	2.87	3.15	1158	2.18
1,8-Cineole	4.33*	1026	[2.87]	3.26	1166	0.40

β-Phellandrene	4.33*	1026	[2.87]	3.24	1164	0.32
(*Z*)-β-Ocimene	4.54	1039	0.02	3.76*	1206	1.12
Butyl 2-methylbutyrate	4.61	1044	0.02	3.76*	1206	[1.12]
Butyl isovalerate	4.70*	1050	0.04			
(*E*)-β-Ocimene	4.70*	1050	[0.04]	3.93	1218	0.02
γ-Terpinene	4.80	1056	1.07	3.76*	1206	[1.12]
Prenyl isobutyrate	4.87	1061	0.01	4.82	1285	0.01
cis-Sabinene hydrate	4.94	1065	0.09	6.84†	1429	[0.30]
cis-Linalool oxide (fur.)	5.03	1071	0.04	6.46	1401	0.06
Octanol	5.13	1077	0.05	8.11	1524	0.07
Terpinolene	5.25†	1085	0.47	4.23	1240	0.43
para-Cymenene	5.27†	1086	[0.47]	6.25	1386	0.04
6,7-Epoxymyrcene	5.39	1093	0.28	6.02	1369	0.28
trans-Sabinene hydrate	5.43	1096	0.07	7.88*	1507	0.11
Perillene	5.50	1100	0.03	6.06	1372	0.02
Linalool	5.54	1103	0.14	7.98	1515	0.16
Nonanal	5.58*	1106	0.11	5.81	1354	0.02
2-Methylbutyl 2-methylbutyrate	5.58*	1106	[0.11]	4.41	1254	0.08
para-Mentha-1,3,8-triene	5.61*	1108	0.03	6.10	1375	0.01
Isoamyl isovalerate	5.61*	1108	[0.03]	4.64	1271	0.02
(*E*)-4,8-Dimethylnona-1,3,7-triene	5.77*	1118	0.22	4.72	1277	0.03
Unknown [m/z 71, 43 (95), 81 (82), 79 (73), 67 (67), 41 (49), 109 (14)...]	5.77*	1118	[0.22]	6.81†	1427	0.30
cis-para-Menth-2-en-1-ol	5.80	1120	0.08	8.04	1519	0.10
α-Campholenal	5.82	1121	0.06	6.93	1436	0.05
Limona ketone	5.93	1128	0.32	7.71*	1494	0.33
trans-Pinocarveol	6.10*	1139	11.13	9.07*	1599	0.96
Camphor	6.10*	1139	[11.13]	7.16*	1453	11.16
α,4-Dimethyl-3-cyclohexene-1-methanol	6.25	1148	0.19			
Pinocarvone	6.36	1156	0.03	7.82	1502	0.01
Borneol	6.48*	1164	2.42	9.69*	1649	4.08
Unknown [m/z 95, 110 (38), 81 (21), 79 (16)... 152 (7)]	6.48*	1164	[2.42]	7.57	1483	0.05
Unknown [m/z 95, 110 (43), 81 (28), 41 (15)... 152 (8)]	6.57	1169	0.03	7.61	1487	0.05
Terpinen-4-ol	6.65	1174	1.59	8.49	1554	1.61
Unknown [m/z 69, 68 (65), 110 (51), 67 (39), 41 (27), 83 (26)...]	6.73	1179	0.08	7.79	1500	0.10
para-Cymen-8-ol	6.82	1185	0.04	11.42	1794	0.05
α-Terpineol	6.87	1188	0.27	9.69*	1649	[4.08]
Myrtenal	6.93	1192	0.04	8.57	1560	0.05
Myrtenol	6.96	1194	0.08	10.76	1738	0.07
Unknown [m/z 79, 107 (72), 41 (58), 55 (47), 77 (41), 67 (41)...]	6.98	1195	0.01			

cis-α-Phellandrene epoxide (iPr vs Me)	7.03	1199	0.12	10.92	1751	0.13
Decanal	7.14	1206	0.09	7.23	1458	0.07
trans-Carveol	7.35	1220	0.06	11.32	1786	0.03
Unknown [m/z 93, 41 (68), 79 (67), 91 (66), 92 (57), 67 (42), 77 (41)... 150 (12)]	7.38	1222	0.03			
(3*Z*)-Hexenyl 2-methylbutyrate	7.50	1230	0.01	6.99	1440	0.05
Cuminal	7.60*†	1236	0.16	10.48	1714	0.03
Hexyl 2-methylbutyrate	7.60*†	1236	[0.16]	6.40	1397	0.01
Pulegone	7.60*†	1236	[0.16]	8.86	1583	0.02
Neral	7.63	1239	0.04	9.46	1630	0.04
Carvotanacetone	7.68	1242	0.07	9.36*	1622	0.14
Piperitone	7.80	1250	0.04	9.83*	1661	0.14
Phellandral	8.07	1268	0.04	9.86	1663	0.05
Geranial	8.16	1275	0.02	10.04	1678	0.02
α-Terpinen-7-al	8.26	1281	0.04	10.64	1727	0.03
Bornyl acetate	8.34	1286	0.01	8.16	1529	0.05
Cuminol	8.40	1290	0.01	14.12*	2042	0.03
Perilla alcohol	8.51	1298	0.02	13.20	1954	0.02
Thymol	8.60	1304	0.76	15.00	2128	0.80
4-Methylhexyl 2-methylbutyrate	8.64*	1307	0.07	7.33	1466	0.04
Carvacrol	8.64*	1307	[0.07]	15.30*	2159	0.80
6-Hydroxycarvotanacetone	8.72	1312	0.08	11.57	1807	0.01
para-Menth-5-en-1,2-diol isomer III	8.80	1318	0.03	15.11	2140	0.03
1,4-para-Menthadien-7-ol	8.96	1329	0.04	13.69	2001	0.04
α-Cubebene	9.18	1345	0.02	6.72	1420	0.03
α-Terpinyl acetate	9.22	1348	0.02	9.64*	1645	0.10
α-Copaene	9.52	1369	0.09	7.16*	1453	[11.16]
Modhephene	9.64	1377	0.01	7.41	1472	0.01
(*E*)-β-Damascenone	9.67	1379	0.05	11.01	1759	0.04
7-epi-Sesquithujene?	9.73	1384	0.03	7.71*	1494	[0.33]
β-Elemene	9.78	1387	0.27	8.35*	1543	1.83
Benzyl isovalerate	9.84	1392	0.01	11.73	1821	0.02
α-Cedrene	9.98	1401	0.03	7.88*	1507	[0.11]
β-Caryophyllene	10.10	1410	1.59	8.35*	1543	[1.83]
β-Copaene	10.24	1421	0.03	8.29	1538	0.02
Octyl 2-methylbutyrate	10.29	1425	0.10	8.88	1584	0.06
trans-α-Bergamotene	10.38	1431	0.09	8.35*	1543	[1.83]
Sesquisabinene A	10.49	1439	0.91	9.07*	1599	[0.96]
α-Humulene	10.55	1444	0.17	9.21	1610	0.16
(*E*)-β-Farnesene	10.72	1457	0.13	9.48*†	1632	0.26
4,5-diepi-Aristolochene	10.78	1461	0.09	9.36*	1622	[0.14]
Dehydrosesquicineole	10.84	1465	0.08	9.98*	1673	0.30
γ-Muurolene	10.91	1471	0.05	9.48*†	1632	[0.26]
Germacrene D	10.94	1473	1.34	9.69*	1649	[4.08]

γ-Curcumene	10.99*	1477	0.42	9.64*	1645	[0.10]
β-Selinene	10.99*	1477	[0.42]	9.79	1657	0.36
ar-Curcumene	11.02	1479	0.30	10.55*†	1720	1.23
Phenylethyl isovalerate	11.08	1483	0.07	12.94	1930	0.02
Bicyclogermacrene	11.14*	1488	0.38	9.98*	1673	[0.30]
Phenylethyl 2-methylbutyrate	11.14*	1488	[0.38]	12.68*	1906	0.34
α-Muurolene	11.24	1496	0.17	9.98*	1673	[0.30]
δ-Guaiene	11.28	1499	0.01	9.83*	1661	[0.14]
β-Curcumene	11.41*	1509	4.27	10.17	1688	0.03
γ-Cadinene	11.41*	1509	[4.27]	10.29	1698	0.20
3,6-Dihydrochamazulene	11.41*	1509	[4.27]	12.05*	1850	4.84
Dihydrochamazulene isomer I	11.45	1512	0.84	12.05*	1850	[4.84]
δ-Cadinene	11.52	1517	0.14	10.34	1702	0.15
β-Sesquiphellandrene	11.56*	1520	1.13	10.55*†	1720	[1.23]
Dihydrochamazulene isomer II	11.56*	1520	[1.13]	12.30	1872	0.07
Dihydrochamazulene isomer III	11.63	1525	0.06	12.22	1866	0.06
Phenylethyl angelate?	11.69	1530	0.01	14.12*	2042	[0.03]
Isocaryophyllene epoxide B	11.82	1541	0.03	12.05*	1850	[4.84]
α-Elemol	11.87	1545	0.07	13.98	2028	0.02
(*E*)-Nerolidol	12.10	1563	0.02	13.73	2004	0.07
Spathulenol	12.18	1569	0.09	14.32*	2062	1.72
Caryophyllene oxide	12.22*	1572	0.35	12.68*	1906	[0.34]
Caryophyllene oxide isomer	12.22*	1572	[0.35]	12.63	1902	0.04
Humulene epoxide I	12.48	1593	0.02	13.09	1944	0.02
Humulene epoxide II	12.55	1598	0.06	13.27	1961	0.02
5,6-Dihydrochamazulene	12.66*	1607	0.53	14.32*	2062	[1.72]
Junenol	12.66*	1607	[0.53]	13.51	1983	0.03
Unknown [m/z 145, 173 (83), 159 (57), 174 (47), 129 (47), 115 (44), 128 (43), 91 (43), 157 (36), 202 (30)]	12.74	1614	0.01			
γ-Eudesmol	12.83*	1621	1.82	14.82	2111	0.23
7,12-Dehydro-5,6,7,8-tetrahydrochamazulene	12.83*	1621	[1.82]	13.92	2022	1.60
Eremoligenol	12.91	1628	0.03	14.92	2120	0.03
τ-Cadinol	12.99	1634	0.02	14.77	2105	0.03
τ-Muurolol	13.01	1636	0.02	14.94	2123	0.09
β-Eudesmol	13.08	1641	0.68	15.30*	2159	[0.80]
α-Eudesmol	13.11*	1644	1.17	15.23	2152	0.11
Dihydrochamazulene isomer IV	13.11*	1644	[1.17]	14.32*	2062	[1.72]
(3*E*,5*E*)-7-Hydroxyfarnesene	13.28	1658	0.05	16.10	2242	0.07
Unknown [m/z 143, 142 (92), 157 (79), 158 (61),	13.84	1705	0.16	18.55	2512	0.16

141 (59), 128 (57), 159 (43), 115 (41), 202 (41)]						
Chamazulene	14.02	1720	9.56	16.60	2295	9.74
α-Phellandrene dimer II	14.76	1784	0.06	12.39	1880	0.05
Dehydrochamazulene	15.03	1808	0.02	17.88	2436	0.09
Phytone	15.43	1844	0.09	14.63	2092	0.09
meta-Camphorene	16.53	1947	0.09	15.30*	2159	[0.80]
9-(15,16-Dihydro-15-methyleneneryl)-para-cymene?	17.04*	1996	0.22	16.40	2273	0.04
9-(15,16-Dihydro-15-methyleneneryl)-α-terpinene?	17.04*	1996	[0.22]	15.72	2202	0.17
9-(15,16-Dihydro-15-methylenegeranyl)-para-cymene	17.12*	2003	1.17	16.51	2285	0.32
9-(15,16-Dihydro-15-methylenegeranyl)-α-terpinene	17.12*	2003	[1.17]	15.76	2206	0.95
Unknown analog I	20.97	2410	0.27	21.01	2813	0.29
Unknown [m/z 186, 157 (37), 171 (18), 322 (15)]	21.56	2479	0.98	21.78	2913	0.92
Unknown analog II	22.58	2601	0.08			
Unknown analog III	22.90	2641	0.05			
Total identified		**94.06%**			**93.74%**	
Total reported		**95.80%**			**95.64%**	

*: 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