Date : October 20, 2020

Certificate of Analysis – GC Profiling

Sample identification

Internal code : 20J13-PTH14
Customer identification : Blue Tansy organic - Morocco - BH010494R
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 : Fanny Charlier, B. Sc., chimiste à l'entraînement
Analysis date : October 16, 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

Méthode certifiée ISO 17025:2017 Certified method

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PHYSICOCHEMICAL DATA

Physical aspect: Dark blue liquid
Refractive index: 1.5046 ± 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
Isobutyral	tr	Aliphatic aldehyde
2-Methyl-3-buten-2-ol	tr	Aliphatic alcohol
Isovaleral	0.02	Aliphatic aldehyde
2-Methylbutyral	0.02	Aliphatic aldehyde
2-Ethylfuran	0.01	Furan
Isoamyl alcohol	tr	Aliphatic alcohol
2-Methylbutanol	0.01	Aliphatic alcohol
Toluene	tr	Simple phenolic
Unknown	0.01	Unknown
Methyl 2-methylbutyrate	0.01	Aliphatic ester
Unknown	0.02	Unknown
Hexanal	0.01	Aliphatic aldehyde
Unknown	tr	Alkene
Ethyl 2-methylbutyrate	0.07	Aliphatic ester
Ethyl isovalerate	0.02	Aliphatic ester
Propyl isobutyrate	0.01	Aliphatic ester
Hexanol	0.01	Aliphatic alcohol
Nonane	tr	Alkane
Hashishene	tr	Monoterpene
Tricyclene	0.10	Monoterpene
α-Thujene	0.28	Monoterpene
Ethyl tiglate?	0.02	Aliphatic ester
α-Pinene	2.60	Monoterpene
α-Fenchene	tr	Monoterpene
Thujadiene isomer	0.02	Monoterpene
Camphene	1.57	Monoterpene
Propyl 2-methylbutyrate	0.07	Aliphatic ester
Thuja-2,4(10)-diene	0.02	Monoterpene
β-Pinene	3.38	Monoterpene
Sabinene	14.65	Monoterpene
6-Methyl-5-hepten-2-one	0.06	Aliphatic ketone
2-Pentylfuran	0.02	Furan
Myrcene	4.39	Monoterpene
α-Phellandrene	4.45	Monoterpene
Octanal	0.01	Aliphatic aldehyde
Δ3-Carene	0.02	Monoterpene
α-Terpinene	0.56	Monoterpene
Isoamyl isobutyrate	0.01	Aliphatic ester
para-Cymene	5.46	Monoterpene
Limonene	2.50	Monoterpene
β-Phellandrene	0.23	Monoterpene
1,8-Cineole	1.31	Monoterpenic ether
(*Z*)-β-Ocimene	0.03	Monoterpene
Butyl 2-methylbutyrate	0.03	Aliphatic ester

(*E*)-β-Ocimene	0.02	Monoterpene
Butyl isovalerate	0.01	Aliphatic ester
γ-Terpinene	0.95	Monoterpene
Prenyl isobutyrate	0.02	Aliphatic ester
cis-Sabinene hydrate	0.10	Monoterpenic alcohol
Octanol	0.09	Aliphatic alcohol
Terpinolene	0.33	Monoterpene
para-Cymenene	0.05	Monoterpene
6,7-Epoxymyrcene	0.10	Monoterpenic ether
trans-Sabinene hydrate	0.07	Monoterpenic alcohol
Nonanal	0.01	Aliphatic aldehyde
Linalool	0.08	Monoterpenic alcohol
2-Methylbutyl 2-methylbutyrate	0.12	Aliphatic ester
Isoamyl isovalerate	0.05	Aliphatic ester
Unknown	0.06	Unknown
cis-para-Menth-2-en-1-ol	0.08	Monoterpenic alcohol
α-Campholenal	0.11	Monoterpenic aldehyde
Limona ketone	0.15	Normonoterpenic ketone
Camphor	15.32	Monoterpenic ketone
trans-Pinocarveol	0.13	Monoterpenic alcohol
α,4-Dimethyl-3-cyclohexene-1-methanol	0.06	Normonoterpenic alcohol
Sabinaketone	0.08	Normonoterpenic ketone
Citronellal	0.04	Monoterpenic aldehyde
Pinocarvone	0.02	Monoterpenic ketone
Borneol	1.79	Monoterpenic alcohol
Unknown	0.09	Oxygenated monoterpene
Unknown	0.13	Oxygenated monoterpene
Terpinen-4-ol	1.37	Monoterpenic alcohol
para-Cymen-8-ol	0.11	Monoterpenic alcohol
Myrtenal	0.08	Monoterpenic aldehyde
α-Terpineol	0.20	Monoterpenic alcohol
Myrtenol	0.13	Monoterpenic alcohol
cis-α-Phellandrene epoxide (IPP vs Me)	0.13	Monoterpenic ether
Decanal	0.05	Aliphatic aldehyde
trans-Carveol	0.04	Monoterpenic alcohol
Unknown	0.04	Oxygenated monoterpene
(3*Z*)-Hexenyl 2-methylbutyrate	0.01	Aliphatic ester
Hexyl 2-methylbutyrate	0.07	Aliphatic ester
Cuminal	0.13	Monoterpenic aldehyde
Pulegone	0.04	Monoterpenic ketone
Neral	0.03	Monoterpenic aldehyde
Carvotanacetone	0.04	Monoterpenic ketone
Piperitone	0.04	Monoterpenic ketone
Phellandral	0.07	Monoterpenic aldehyde
Geranial	0.02	Monoterpenic aldehyde
α-Terpinen-7-al	0.10	Monoterpenic aldehyde
Bornyl acetate	0.05	Monoterpenic ester
Cuminol	0.07	Monoterpenic alcohol
Thymol	0.93	Monoterpenic alcohol
4-Methylhexyl 2-methylbutyrate	0.12	Aliphatic ester
Carvacrol	0.05	Monoterpenic alcohol
6-Hydroxycarvotanacetone	0.02	Monoterpenic alcohol

1,4-para-Menthadien-7-ol	0.08	Monoterpenic alcohol
Bicycloelemene	0.01	Sesquiterpene
α-Cubebene	0.01	Sesquiterpene
γ-Terpinyl acetate	0.03	Monoterpenic ester
α-Copaene	0.05	Sesquiterpene
Modhephene	0.01	Sesquiterpene
(*E*)-β-Damascenone	0.05	Ionone or analog
7-epi-Sesquithujene?	0.04	Sesquiterpene
β-Elemene	0.20	Sesquiterpene
α-Cedrene	0.02	Sesquiterpene
β-Caryophyllene	1.36	Sesquiterpene
β-Copaene	0.01	Sesquiterpene
Octyl 2-methylbutyrate	0.05	Aliphatic ester
trans-α-Bergamotene	0.07	Sesquiterpene
Sesquisabinene A	1.35	Sesquiterpene
α-Humulene	0.14	Sesquiterpene
(*E*)-β-Farnesene	0.09	Sesquiterpene
4,5-diepi-Aristolochene	0.07	Sesquiterpene
Dehydrosesquicineole	0.03	Sesquiterpenic ether
γ-Muurolene	0.04	Sesquiterpene
Germacrene D	0.63	Sesquiterpene
γ-Curcumene	0.08	Sesquiterpene
β-Selinene	0.28	Sesquiterpene
ar-Curcumene	0.03	Sesquiterpene
Phenylethyl isovalerate	0.01	Phenolic ester
Eremophilene	0.04	Sesquiterpene
Phenylethyl 2-methylbutyrate	0.05	Phenolic ester
Bicyclogermacrene	0.07	Sesquiterpene
δ-Guaiene	0.13	Sesquiterpene
γ-Cadinene	0.15	Sesquiterpene
3,6-Dihydrochamazulene	2.63	Azulene
β-Curcumene	0.05	Sesquiterpene
Dihydrochamazulene isomer I	0.61	Azulene
δ-Cadinene	0.20	Sesquiterpene
β-Sesquiphellandrene	0.39	Sesquiterpene
Dihydrochamazulene isomer II	0.07	Azulene
Dihydrochamazulene isomer III	0.03	Azulene
Phenylethyl angelate?	0.03	Phenolic ester
α-Elemol	0.02	Sesquiterpenic alcohol
Isocaryophyllene epoxide B	0.07	Sesquiterpenic ether
(*E*)-Nerolidol	0.04	Sesquiterpenic alcohol
Spathulenol	0.05	Sesquiterpenic alcohol
Caryophyllene oxide isomer	0.03	Sesquiterpenic ether
Caryophyllene oxide	0.42	Sesquiterpenic ether
Humulene epoxide II	0.04	Sesquiterpenic ether
Junenol	0.01	Sesquiterpenic alcohol
5,6-Dihydrochamazulene	0.92	Azulene
Unknown	0.25	Sesquiterpene
7,12-Dehydro-5,6,7,8-tetrahydrochamazulene	1.83	Azulene
γ-Eudesmol	0.04	Sesquiterpenic alcohol
Eremoligenol	0.09	Sesquiterpenic alcohol
τ-Cadinol	0.03	Sesquiterpenic alcohol

β-Eudesmol	1.13	Sesquiterpenic alcohol
α-Eudesmol	0.09	Sesquiterpenic alcohol
Dihydrochamazulene isomer IV	1.36	Azulene
(3*E*,5*E*)-7-Hydroxyfarnesene	0.03	Sesquiterpenic alcohol
Unknown	0.08	Azulene
Chamazulene	11.43	Azulene
α-Phellandrene dimer II	0.05	Diterpene
Dehydrochamazulene	0.04	Azulene
Phytone	0.07	Terpenic ketone
9-(15,16-Dihydro-15-methyleneneryl)-para-cymene?	0.21	Homoditerpene
9-(15,16-Dihydro-15-methylenegeranyl)-α-terpinene	0.55	Homoditerpene
9-(15,16-Dihydro-15-methylenegeranyl)-para-cymene	0.27	Homoditerpene
Unknown	0.18	Unknown
Unknown	0.68	Unknown
Unknown	0.02	Unknown
Unknown	0.01	Unknown
Consolidated total	**95.29%**	

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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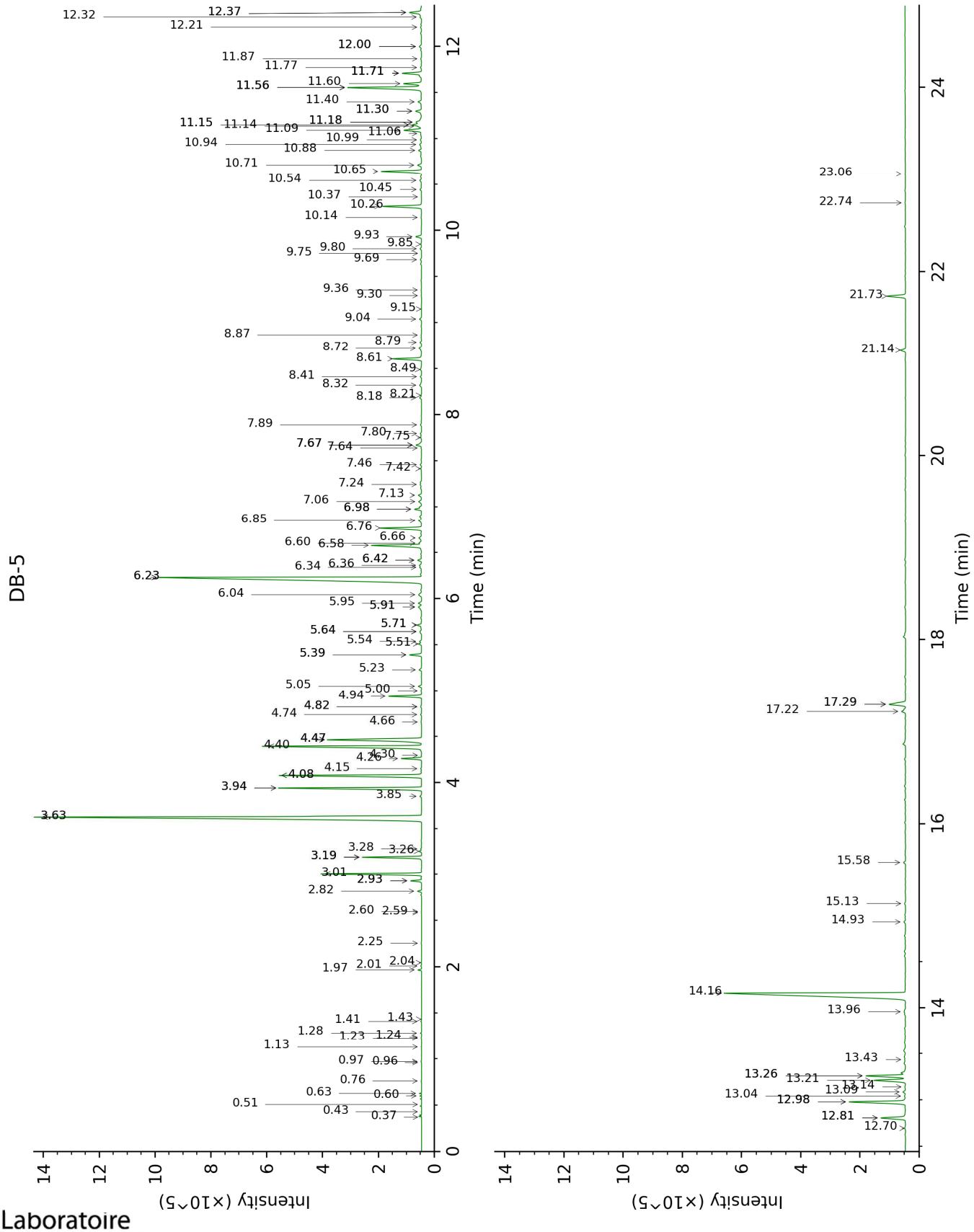
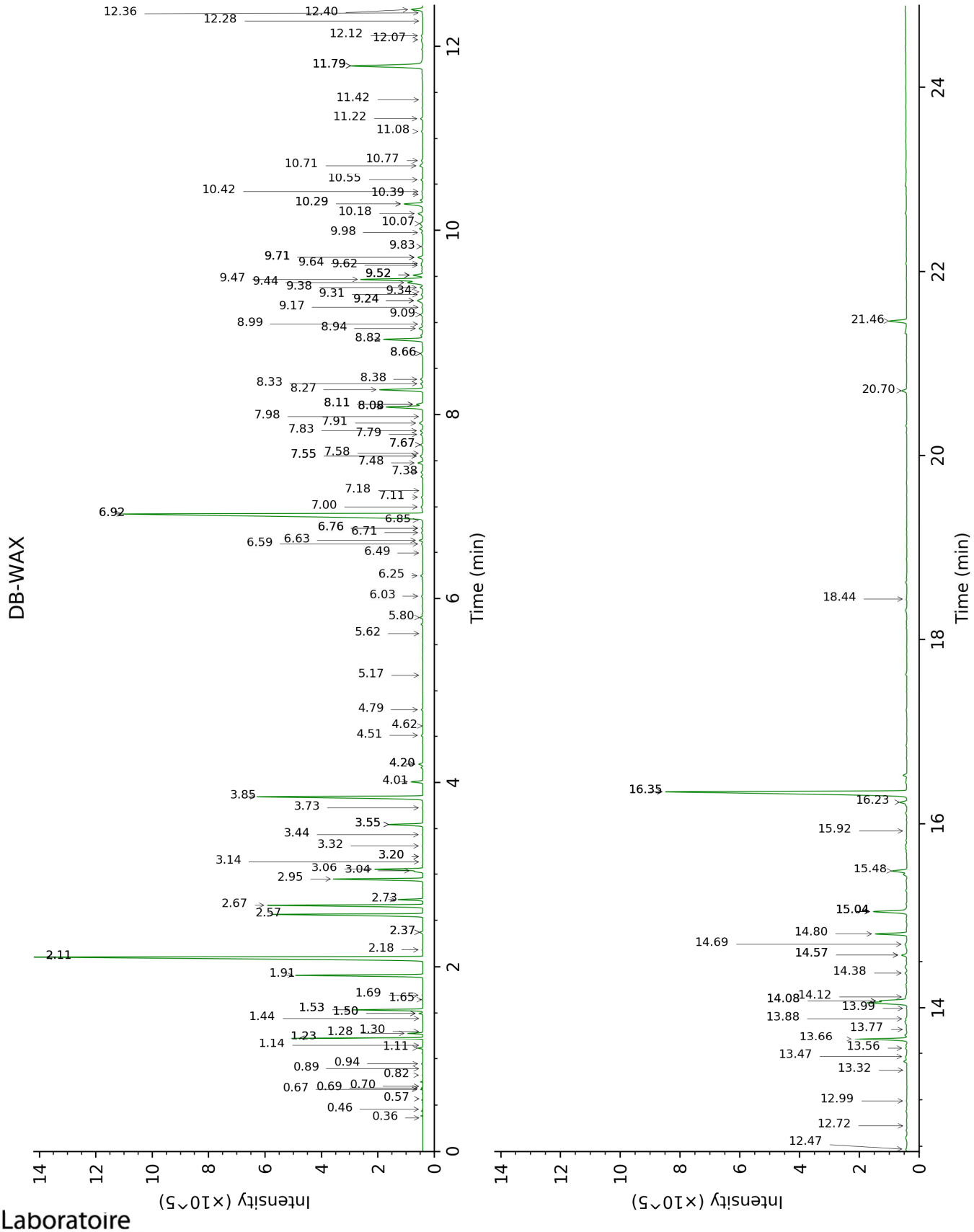

DB-5
Time (min)
Intensity (×10^5)
12.32
12.37
12.21
12.00
11.87
11.77
11.71
11.56
11.60
11.40
11.30
11.15
11.14
11.09
11.18
11.06
10.94
10.99
10.88
10.71
10.65
10.54
10.45
10.37
10.26
10.14
9.93
9.85
9.75
9.80
9.69
9.36
9.30
9.15
9.04
8.87
8.79
8.72
8.61
8.49
8.41
8.32
8.21
8.18
7.89
7.80
7.75
7.67
7.64
7.46
7.42
7.24
7.13
7.06
6.98
6.85
6.76
6.60
6.58
6.66
6.34
6.36
6.42
6.23
6.04
5.95
5.91
5.71
5.64
5.54
5.51
5.39
5.23
5.05
5.00
4.94
4.82
4.74
4.66
4.47
4.40
4.30
4.26
4.15
4.08
3.94
3.85
3.63
3.28
3.26
3.19
3.01
2.93
2.82
2.60
2.59
2.25
2.04
2.01
1.97
1.41
1.43
1.28
1.23
1.24
1.13
0.97
0.96
0.76
0.63
0.60
0.51
0.43
0.37
23.06
22.74
21.73
21.14
17.29
17.22
15.58
15.13
14.93
14.16
13.96
13.43
13.26
13.21
13.14
13.09
13.04
12.98
12.81
12.70


DB-WAX
Time (min)
Intensity (×10^5)
12.36
12.28
12.40
12.12
12.07
11.79
11.42
11.22
11.08
10.71
10.77
10.55
10.42
10.39
10.29
10.18
10.07
9.98
9.83
9.71
9.64
9.62
9.52
9.47
9.44
9.38
9.31
9.34
9.24
9.17
9.09
8.99
8.94
8.82
8.66
8.38
8.33
8.27
8.11
8.08
7.98
7.91
7.83
7.79
7.67
7.55
7.58
7.48
7.38
7.18
7.11
7.00
6.92
6.85
6.76
6.71
6.59
6.63
6.49
6.25
6.03
5.80
5.62
5.17
4.79
4.62
4.51
4.20
4.01
3.85
3.73
3.55
3.44
3.32
3.20
3.14
3.06
3.04
2.95
2.73
2.67
2.57
2.37
2.18
2.11
1.91
1.69
1.65
1.53
1.50
1.44
1.30
1.28
1.23
1.14
1.11
0.94
0.89
0.82
0.70
0.69
0.67
0.57
0.46
0.36
21.46
20.70
18.44
16.35
16.23
15.92
15.48
15.04
14.80
14.69
14.57
14.38
14.12
14.08
13.99
13.88
13.77
13.66
13.56
13.47
13.32
12.99
12.72
12.47

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Isoprene	0.37	501	tr	0.36	667	tr
Isobutyral	0.43	532	tr	0.46	775	0.01
2-Methyl-3-buten-2-ol	0.51	601	tr	1.44	1015	tr
Isovaleral	0.60	639	0.02	0.68	884	0.02
2-Methylbutyral	0.63	650	0.02	0.67	877	0.03
2-Ethylfuran	0.76	702	0.01	0.82	916	0.01
Isoamyl alcohol	0.96	733	tr	3.20*	1177	0.01
2-Methylbutanol	0.97	735	0.01	3.20*	1177	[0.01]
Toluene	1.13	758	tr	1.30	1000	tr
Unknown [m/z 73, 41 (54), 87 (50), 56 (47), 54 (29), 55 (25), 100 (23)... 115? (6)]	1.22	773	0.01	0.89	928	0.01
Methyl 2-methylbutyrate	1.24	775	0.01	1.14	975	0.01
Unknown [m/z 73, 87 (52), 41 (45), 56 (42), 100 (29)...]	1.28	781	0.02	0.94	938	0.03
Hexanal	1.41	800	0.01	1.69	1042	0.01
Unknown [m/z 109, 67 (33), 41 (16), 81 (13)... 124 (8)]	1.43	804	tr	0.57	834	tr
Ethyl 2-methylbutyrate	1.97	850	0.07	1.50*	1021	0.08
Ethyl isovalerate	2.01	854	0.02	1.64	1037	0.01
Propyl isobutyrate	2.04	857	0.01	1.54*	1025	1.57
Hexanol	2.26	875	0.01	5.17	1322	0.01
Nonane	2.59	903	tr	0.70	892	tr
Hashishene	2.60	904	tr	1.23*	990	2.65
Tricyclene	2.82	919	0.10	1.11	969	0.10
α-Thujene	2.93*	927	0.29	1.28	998	0.28
Ethyl tiglate?	2.93*	927	[0.29]	3.32	1186	0.02
α-Pinene	3.01	932	2.60	1.23*	990	[2.65]
α-Fenchene	3.19*	944	1.57	1.50*	1021	[0.08]
Thujadiene isomer	3.19*	944	[1.57]	2.18	1094	0.02
Camphene	3.19*	944	[1.57]	1.54*	1025	[1.57]
Propyl 2-methylbutyrate	3.26	949	0.07	2.37*	1110	0.09
Thuja-2,4(10)-diene	3.28	950	0.02	2.11*	1086	14.91
β-Pinene	3.63*†	974	18.03	1.91	1065	3.38
Sabinene	3.63*†	974	[18.03]	2.11*	1086	[14.91]
6-Methyl-5-hepten-2-one	3.85	989	0.06	4.79	1296	0.05
2-Pentylfuran	3.94*	995	4.35	3.44	1196	0.02
Myrcene	3.94*	995	[4.35]	2.67	1134	4.39
α-Phellandrene	4.08*	1004	4.46	2.57	1126	4.45
Octanal	4.08*	1004	[4.46]	4.20*	1253	0.12
Δ3-Carene	4.15	1008	0.02	2.37*	1110	[0.09]
α-Terpinene	4.26	1015	0.56	2.73	1138	0.56
Isoamyl isobutyrate	4.30	1018	0.01	3.14	1172	0.01
para-Cymene	4.40	1024	5.46	3.85	1226	5.52

Limonene	4.47*	1028	3.99	2.95	1156	2.50
β-Phellandrene	4.47*	1028	[3.99]	3.04	1164	0.23
1,8-Cineole	4.47*	1028	[3.99]	3.06	1165	1.31
(*Z*)-β-Ocimene	4.66	1040	0.03	3.55*	1204	1.00
Butyl 2-methylbutyrate	4.74	1045	0.03	3.55*	1204	[1.00]
(*E*)-β-Ocimene	4.82*	1051	0.04	3.73	1218	0.02
Butyl isovalerate	4.82*	1051	[0.04]			
γ-Terpinene	4.94	1058	0.95	3.55*	1204	[1.00]
Prenyl isobutyrate	5.00	1062	0.02	4.62	1283	0.01
cis-Sabinene hydrate	5.05	1065	0.10	6.63	1429	0.11
Octanol	5.23	1076	0.09	7.91	1526	0.14
Terpinolene	5.39*	1087	0.37	4.01	1238	0.33
para-Cymenene	5.39*	1087	[0.37]	6.03	1384	0.05
6,7-Epoxymyrcene	5.51	1094	0.10	5.80	1367	0.10
trans-Sabinene hydrate	5.54	1096	0.07	7.67*	1507	0.08
Nonanal	5.64*	1103	0.09	5.62	1355	0.01
Linalool	5.64*	1103	[0.09]	7.78	1516	0.08
2-Methylbutyl 2-methylbutyrate	5.72*	1107	0.17	4.20*	1253	[0.12]
Isoamyl isovalerate	5.72*	1107	[0.17]	4.51	1276	0.05
Unknown [m/z 71, 43 (95), 81 (82), 79 (73), 67 (67), 41 (49), 109 (14)...]	5.91*	1120	0.18	6.59	1426	0.06
cis-para-Menth-2-en-1-ol	5.91*	1120	[0.18]	7.83	1519	0.08
α-Campholenal	5.95	1122	0.11	6.72	1435	0.06
Limona ketone	6.04	1128	0.15	7.55*†	1498	[0.27]
Camphor	6.23*	1140	15.45	6.92*	1451	15.52
trans-Pinocarveol	6.23*	1140	[15.45]	8.94	1606	0.13
α,4-Dimethyl-3-cyclohexene-1-methanol	6.34	1147	0.06			
Sabinaketone	6.36	1149	0.08	8.38	1562	0.09
Citronellal	6.42*	1152	0.12	6.76*	1439	0.05
Pinocarvone	6.42*	1152	[0.12]	7.58	1500	0.02
Borneol	6.58	1162	1.79	9.47†	1649	2.40
Unknown [m/z 95, 110 (38), 81 (21), 79 (16)... 152 (7)]	6.60	1164	0.09	7.38	1484	0.07
Unknown [m/z 95, 110 (43), 81 (28), 41 (15)... 152 (8)]	6.66	1168	0.13	7.48†	1492	0.27
Terpinen-4-ol	6.76	1174	1.37	8.27	1554	1.36
para-Cymen-8-ol	6.85	1180	0.11	11.22	1796	0.07
Myrtenal	6.98*†	1188	0.29	8.33	1559	0.08
α-Terpineol	6.98*†	1188	[0.29]	9.52*†	1653	[2.40]
Myrtenol	7.06	1193	0.13	10.55	1739	0.06
cis-α-Phellandrene epoxide (IPP vs Me)	7.13	1198	0.13	10.71	1752	0.14
Decanal	7.24	1205	0.05	7.00	1456	0.09
trans-Carveol	7.42	1217	0.04	11.08	1784	0.05
Unknown [m/z 93, 41 (68), 79 (67), 91 (66), 92	7.46	1220	0.04			

(57), 67 (42), 77 (41)... 150 (12)]						
(3*Z*)-Hexenyl 2-methylbutyrate	7.64	1232	0.01	6.85	1445	0.03
Hexyl 2-methylbutyrate	7.67*	1234	0.24	6.25	1400	0.07
Cuminal	7.67*	1234	[0.24]	10.29*	1717	0.71
Pulegone	7.67*	1234	[0.24]	8.66*	1584	0.09
Neral	7.75	1239	0.03	9.17	1625	0.03
Carvotanacetone	7.80	1242	0.04	9.24*	1631	0.27
Piperitone	7.89	1248	0.04	9.62	1662	0.04
Phellandral	8.18	1268	0.07	9.71*	1669	0.17
Geranial	8.21	1270	0.02	9.83	1678	0.04
α-Terpinen-7-al	8.32	1277	0.10	10.42	1728	0.04
Bornyl acetate	8.41	1283	0.05	7.98	1531	0.01
Cuminol	8.49	1289	0.07	13.88	2040	0.05
Thymol	8.60	1296	0.93	14.80	2130	0.95
4-Methylhexyl 2-methylbutyrate	8.72	1304	0.12	7.11	1464	0.06
Carvacrol	8.79	1309	0.05	15.04*	2154	1.27
6-Hydroxycarvotanacetone	8.87	1315	0.02	11.42	1814	0.02
1,4-para-Menthadien-7-ol	9.04	1327	0.08	13.47	2000	0.09
Bicycloelemene	9.15	1334	0.01	6.76*	1439	[0.05]
α-Cubebene	9.30	1345	0.01	6.49	1419	0.01
γ-Terpinyl acetate	9.36	1349	0.03	9.34	1638	0.01
α-Copaene	9.68	1372	0.05	6.92*	1451	[15.52]
Modhephene	9.75	1377	0.01	7.18	1470	0.01
(*E*)-β-Damascenone	9.80	1381	0.05	10.76	1757	0.05
7-epi-Sesquithujene?	9.85	1384	0.04	7.55*†	1498	[0.27]
β-Elemene	9.93	1390	0.20	8.11*†	1541	[1.51]
α-Cedrene	10.14	1405	0.02	7.67*	1507	[0.08]
β-Caryophyllene	10.26	1414	1.36	8.08*†	1539	1.51
β-Copaene	10.36	1421	0.01	8.08*†	1539	[1.51]
Octyl 2-methylbutyrate	10.44	1427	0.05	8.66*	1584	[0.09]
trans-α-Bergamotene	10.54	1435	0.07	8.11*†	1541	[1.51]
Sesquisabinene A	10.65	1442	1.35	8.82	1597	1.39
α-Humulene	10.72	1447	0.14	8.99	1610	0.05
(*E*)-β-Farnesene	10.88	1459	0.09	9.24*	1631	[0.27]
4,5-diepi-Aristolochene	10.94	1464	0.07	9.09	1618	0.09
Dehydrosesquicineole	10.99	1468	0.03	9.71*	1669	[0.17]
γ-Muurolene	11.06	1473	0.04	9.31	1636	0.05
Germacrene D	11.09	1476	0.63	9.44	1647	0.59
γ-Curcumene	11.14†	1479	0.41	9.38	1642	0.08
β-Selinene	11.15*†	1480	[0.41]	9.52*†	1653	[2.40]
ar-Curcumene	11.15*†	1480	[0.41]	10.39	1726	0.03
Phenylethyl isovalerate	11.18*	1482	0.23	12.72	1931	0.01
Eremophilene	11.18*	1482	[0.23]	9.64	1663	0.04
Phenylethyl 2-methylbutyrate	11.30*	1491	0.24	12.47	1908	0.05
Bicyclogermacrene	11.30*	1491	[0.24]	9.71*	1669	[0.17]
δ-Guaiene	11.40	1498	0.13	9.52*†	1653	[2.40]

γ-Cadinene	11.56*	1510	2.83	10.08	1699	0.15
3,6-Dihydrochamazulene	11.56*	1510	[2.83]	11.79*	1847	3.31
β-Curcumene	11.56*	1510	[2.83]	9.98	1690	0.05
Dihydrochamazulene isomer I	11.60	1514	0.61	11.79*	1847	[3.31]
δ-Cadinene	11.71*	1522	0.66	10.18	1708	0.20
β-Sesquiphellandrene	11.71*	1522	[0.66]	10.29*	1717	[0.71]
Dihydrochamazulene isomer II	11.71*	1522	[0.66]	12.12	1876	0.07
Dihydrochamazulene isomer III	11.77	1527	0.03	12.07	1872	0.10
Phenylethyl angelate?	11.87	1535	0.03	13.99	2051	0.01
α-Elemol	12.00*	1545	0.09	13.77	2029	0.02
Isocaryophyllene epoxide B	12.00*	1545	[0.09]	11.79*	1847	[3.31]
(*E*)-Nerolidol	12.21	1562	0.04	13.56	2009	0.05
Spathulenol	12.32	1570	0.05	14.12	2063	0.08
Caryophyllene oxide isomer	12.37*	1574	0.50	12.36	1898	0.03
Caryophyllene oxide	12.37*	1574	[0.50]	12.40	1901	0.42
Humulene epoxide II	12.70	1600	0.04	12.99	1956	0.02
Junenol	12.81*	1609	0.94	13.32	1986	0.01
5,6-Dihydrochamazulene	12.81*	1609	[0.94]	14.08*†	2058	2.28
Unknown [m/z 145, 173 (83), 159 (57), 174 (47), 129 (47), 115 (44), 128 (43), 91 (43), 157 (36), 202 (30)]	12.98*	1623	2.08			
7,12-Dehydro-5,6,7,8-tetrahydrochamazulene	12.98*	1623	[2.08]	13.66	2018	1.83
γ-Eudesmol	13.04	1628	0.04	14.57*	2107	0.20
Eremoligenol	13.09	1632	0.09	14.69	2118	0.13
τ-Cadinol	13.14	1636	0.03	14.57*	2107	[0.20]
β-Eudesmol	13.21	1642	1.13	15.04*	2154	[1.27]
α-Eudesmol	13.26*†	1646	1.56	15.04*	2154	[1.27]
Dihydrochamazulene isomer IV	13.26*†	1646	[1.56]	14.08*†	2058	[2.28]
(3*E*,5*E*)-7-Hydroxyfarnesene	13.43	1661	0.03	15.92	2244	0.02
Unknown [m/z 143, 142 (92), 157 (79), 158 (61), 141 (59), 128 (57), 159 (43), 115 (41), 202 (41)]	13.96	1704	0.08	18.44	2519	0.03
Chamazulene	14.16	1722	11.43	16.35*	2288	11.37
α-Phellandrene dimer II	14.93	1788	0.05	12.28	1890	0.01
Dehydrochamazulene	15.13	1806	0.04			
Phytone	15.58	1847	0.07	14.38	2088	0.06
9-(15,16-Dihydro-15-methyleneneryl)-para-cymene?	17.22	2000	0.21	16.23	2276	0.28

9-(15,16-Dihydro-15-methylenegeranyl)-α-terpinene	17.29*	2007	0.82	15.48	2198	0.55
9-(15,16-Dihydro-15-methylenegeranyl)-para-cymene	17.29*	2007	[0.82]	16.35*	2288	[11.37]
Unknown analog I	21.14	2415	0.18	20.70	2790	0.19
Unknown [m/z 186, 157 (37), 171 (18), 322 (15)]	21.73	2483	0.68	21.46	2886	0.67
Unknown analog II	22.74	2605	0.02			
Unknown analog III	23.06	2645	0.01			
Total identified		**94.47%**			**93.74%**	
Total reported		**95.74%**			**95.06%**	

*: 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