

Date : March 07, 2023

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 23C03-PTH01


Customer identification : Arbor Sapling - AW1100R

Type : Essential oil

Source : Blend of oils

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 : March 06, 2023

Checked and approved by :

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

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PHYSICOCHEMICAL DATA

Physical aspect: Brownish yellow liquid

Refractive index: 1.4900 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method. Characteristic compounds confirm Abies balsamea extract and/or oil (abienol, longifolene, maltol), Pseudotsuga menziesii (citronellyl and geranyl acetate, terpinolene), Copaifera sp. (kolavenol, methyl kolavenate), Cedrus deodara (atlantones), Juniperus virginiana (cedrenes, thujopsene, cedrol), Evernia prunastri (atraric acid, hematommates). Pinus sylvestris does not contain very specific compounds so we cannot attest its occurrence.

ANALYSIS SUMMARY – CONSOLIDATED CONTENTS

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

Identification	%	Class
3-Methylcyclopentene	0.01	Alkene
Santene	0.62	Normonoterpene
Tricyclene	0.31	Monoterpene
α -Thujene	0.23	Monoterpene
α -Pinene	7.01	Monoterpene
Camphene	2.23	Monoterpene
α -Fenchene	0.03	Monoterpene
Thuja-2,4(10)-diene	0.03	Monoterpene
3,7,7-Trimethylcyclohepta-1,3,5-triene	0.03	Monoterpene
Sabinene	2.05	Monoterpene
β -Pinene	16.29	Monoterpene
Myrcene	0.91	Monoterpene
Ethyl hexanoate	0.01	Aliphatic ester
α -Phellandrene	0.13	Monoterpene
Pseudolimonene	0.02	Monoterpene
Δ^3 -Carene	6.20	Monoterpene
α -Terpinene	0.56	Monoterpene
para-Cymene	0.22	Monoterpene
Limonene	3.53	Monoterpene
β -Phellandrene	2.33	Monoterpene
(Z)- β -Ocimene	0.08	Monoterpene
(E)- β -Ocimene	0.05	Monoterpene
γ -Terpinene	1.02	Monoterpene
Unknown	tr	Unknown
Isoterpinolene	0.02	Monoterpene
Fenchone	0.05	Monoterpenic ketone
Terpinolene	3.54	Monoterpene
para-Cymenene	0.07	Monoterpene
Linalool	0.05	Monoterpenic alcohol
Ethyl heptanoate	0.01	Aliphatic ester
endo-Fenchol	0.03	Monoterpenic alcohol
Maltol	tr	Aliphatic alcohol
1,3,8-para-Menthatriene	0.02	Monoterpene
cis-para-Menth-2-en-1-ol	0.02	Monoterpenic alcohol
α -Campholenal	0.02	Monoterpenic aldehyde
Methyl octanoate	0.02	Aliphatic ester
Limona ketone	0.11	Normonoterpenic ketone
Menthatriene isomer III	0.02	Monoterpene
trans-Pinocarveol	0.04	Monoterpenic alcohol
Camphor	0.09	Monoterpenic ketone
trans-para-Menth-2-en-1-ol	0.02	Monoterpenic alcohol
Camphene hydrate	0.04	Monoterpenic alcohol
Epoxyterpinolene	0.04	Monoterpenic ether
Hexyl isobutyrate	0.02	Aliphatic ester
Citronellal	0.04	Monoterpenic aldehyde

Isoborneol	0.01	Monoterpenic alcohol
Pinocarvone	0.02	Monoterpenic ketone
Borneol	0.11	Monoterpenic alcohol
Isopinocampone	0.03	Monoterpenic ketone
Terpinen-4-ol	0.89	Monoterpenic alcohol
meta-Cymen-8-ol	0.04	Monoterpenic alcohol
Cryptone	tr	Normonoterpenic ketone
para-Cymen-8-ol	0.04	Monoterpenic alcohol
Methyl salicylate	0.02	Phenolic ester
α -Terpineol	0.07	Monoterpenic alcohol
Myrtenol	0.04	Monoterpenic alcohol
Ethyl octanoate	0.03	Aliphatic ester
trans-Piperitol	0.02	Monoterpenic alcohol
Citronellol	0.20	Monoterpenic alcohol
Thymol methyl ether	0.03	Monoterpenic ether
Unknown	0.02	Oxygenated monoterpene
Piperitone	0.07	Monoterpenic ketone
Isopulegyl acetate	0.03	Monoterpenic ester
Bornyl acetate	2.34	Monoterpenic ester
Thymol	0.03	Monoterpenic alcohol
Methyl decanoate	0.01	Aliphatic ester
δ -Elemene	0.06	Sesquiterpene
α -Longipinene	0.05	Sesquiterpene
α -Cubebene	0.07	Sesquiterpene
Citronellyl acetate	0.38	Monoterpenic ester
α -Ylangene	0.01	Sesquiterpene
Neryl acetate	0.03	Monoterpenic ester
α -Copaene	0.37	Sesquiterpene
2-epi- α -Funebrene	0.09	Sesquiterpene
α -Duprezianene	0.02	Sesquiterpene
Geranyl acetate	0.32	Monoterpenic ester
Isolongifolene	0.03	Sesquiterpene
β -Cubebene	0.04	Sesquiterpene
β -Elemene	0.19	Sesquiterpene
Cyperene	0.02	Sesquiterpene
Sibirene	0.05	Sesquiterpene
Longifolene	0.27	Sesquiterpene
Ethyl decanoate	0.03	Aliphatic ester
α -Cedrene	2.82	Sesquiterpene
(Z?)-Vestitenone, or analog	0.05	Terpenic ketone
Methyleugenol	0.01	Phenylpropanoid
cis- α -Bergamotene	0.08	Sesquiterpene
β -Cedrene	0.63	Sesquiterpene
β -Caryophyllene	9.31	Sesquiterpene
β -Funebrene	0.03	Sesquiterpene
Himachala-2,4-diene	0.05	Sesquiterpene
β -Copaene	0.09	Sesquiterpene
cis-Thujopsene	1.81	Sesquiterpene
Unknown	0.08	Sesquiterpene
Aromadendrene	0.05	Sesquiterpene
trans- α -Bergamotene	0.47	Sesquiterpene
(E)-Vestitenone	0.14	Terpenic ketone

9-epi-Isocaryophyllene	0.04	Sesquiterpene
α -Himachalene	2.78	Sesquiterpene
α -Humulene	0.58	Sesquiterpene
Unknown	0.01	Sesquiterpene
allo-Aromadendrene	0.04	Sesquiterpene
(E)- β -Farnesene	0.18	Sesquiterpene
β -Acoradiene	0.08	Sesquiterpene
Thujopsene isomer	0.06	Sesquiterpene
Unknown	0.16	Sesquiterpene
Unknown	0.11	Sesquiterpene
γ -Muurolene	1.85*	Sesquiterpene
γ -Himachalene	1.85*	Sesquiterpene
Germacrene D	0.96	Sesquiterpene
11- α H-Himachala-1,4-diene	0.04	Sesquiterpene
β -Selinene	0.15	Sesquiterpene
γ -Curcumene	0.04	Sesquiterpene
<i>trans</i> - β -Bergamotene	0.01	Sesquiterpene
α -Selinene	0.42	Sesquiterpene
β -Himachalene	6.46	Sesquiterpene
α -Cuprenene	0.37	Sesquiterpene
α -Chamigrene	0.03	Sesquiterpene
Cuparene	0.22	Sesquiterpene
1,2-Dihydrocuparene	0.12	Sesquiterpene
α -Alaskene	0.03	Sesquiterpene
β -Bisabolene	0.41	Sesquiterpene
α -Dehydro-ar-himachalene	0.11	Sesquiterpene
γ -Cadinene	0.13	Sesquiterpene
δ -Cadinene	0.30	Sesquiterpene
Unknown	0.09	Sesquiterpene
γ -Dehydro-ar-himachalene	0.11	Sesquiterpene
Unknown	0.12	Sesquiterpene
<i>trans</i> -Cadina-1,4-diene	0.03	Sesquiterpene
ar-Himachalene	0.05	Sesquiterpene
α -Cadinene	0.05	Sesquiterpene
α -Calacorene	0.08	Sesquiterpene
(E)- α -Bisabolene	0.24	Sesquiterpene
Germacrene B	0.14	Sesquiterpene
(E)-Nerolidol	0.07	Sesquiterpenic alcohol
Caryophyllenyl alcohol	0.02	Sesquiterpenic alcohol
Unknown	0.02	Unknown
Himachalene epoxide	0.06	Sesquiterpenic ether
Caryophyllene oxide isomer	0.03	Sesquiterpenic ether
Caryophyllene oxide	0.10	Sesquiterpenic ether
allo-Cedrol	0.03	Sesquiterpenic alcohol
Widdrol	0.15	Sesquiterpenic alcohol
Longiborneol	0.47	Sesquiterpenic alcohol
α -Cedrol	2.52	Sesquiterpenic alcohol
Humulene epoxide II	0.03	Sesquiterpenic ether
β -Himachalene oxide	0.17	Sesquiterpenic ether
Unknown	0.10	Oxygenated sesquiterpene
epi-Cedrol	0.09	Sesquiterpenic alcohol
Unknown	0.06	Oxygenated sesquiterpene

1-epi-Cubenol	0.05	Sesquiterpenic alcohol
Unknown	0.06	Oxygenated sesquiterpene
Unknown	0.05	Oxygenated sesquiterpene
τ-Cadinol	0.12	Sesquiterpenic alcohol
Himachalol	0.34	Sesquiterpenic alcohol
Unknown	0.03	Oxygenated sesquiterpene
τ-Murolol	0.05	Sesquiterpenic alcohol
α-Cadinol	0.08	Sesquiterpenic alcohol
Allohimachalol	0.26	Sesquiterpenic alcohol
β-Atlantone	0.14	Sesquiterpenic ketone
Unknown	0.05	Unknown
Cadalene	0.13	Sesquiterpene
Khusiol	0.03	Sesquiterpenic alcohol
α-Bisabolol	0.08	Sesquiterpenic alcohol
(Z)-γ-Atlantone	0.93	Sesquiterpenic ketone
Deodarone epimer I	0.10	Sesquiterpenic ketone
(E)-γ-Atlantone	0.86	Sesquiterpenic ketone
(Z)-α-Atlantone	0.44	Sesquiterpenic ketone
Atracic acid	0.07	Phenolic ester
Ethyl hematommate	0.05*	Simple phenolic
Unknown	0.05*	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Benzyl benzoate	0.22	Phenolic ester
(E)-α-Atlantone	2.00	Sesquiterpenic ketone
Isopropyl hematommate	0.04	Simple phenolic
Unknown	0.04	Oxygenated sesquiterpene
Nootkatone	0.02	Sesquiterpenic ketone
Unknown	0.03	Unknown
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.03	Unknown
Palmitic acid	0.04	Aliphatic acid
para-Camphorene	0.05	Diterpene
cis-3,14-Clerodadien-13-ol	0.02	Diterpenic alcohol
Manool	0.05	Diterpenic alcohol
Kolavelool	0.06	Diterpenic alcohol
7,13-Abietadiene	0.02	Diterpene
Unknown	0.03	Oxygenated diterpene
(Z)-Abienol	0.11	Diterpenic alcohol
Linoleic acid	0.10	Aliphatic acid
Oleic acid	0.12	Aliphatic acid
Kolavenol	0.04	Diterpenic alcohol
Abietal	0.03	Diterpenic aldehyde
Copaifera diterpenic acid I	0.30	Diterpenic acid
Methyl kolavenate	0.02	Diterpenic ester
Copaifera diterpenic acid II	0.06	Diterpenic acid
Copaifera diterpenic acid III	0.14	Diterpenic acid
Copaifera diterpenic acid IV	0.12	Diterpenic acid
Copaifera diterpenic acid VI	0.09	Diterpenic acid
Copaifera diterpenic acid VII	0.02	Diterpenic acid
endo-Fenchyl acetate	0.02	Monoterpenic ester
Ethyl palmitate	0.07	Aliphatic ester
Consolidated total	98.28%	

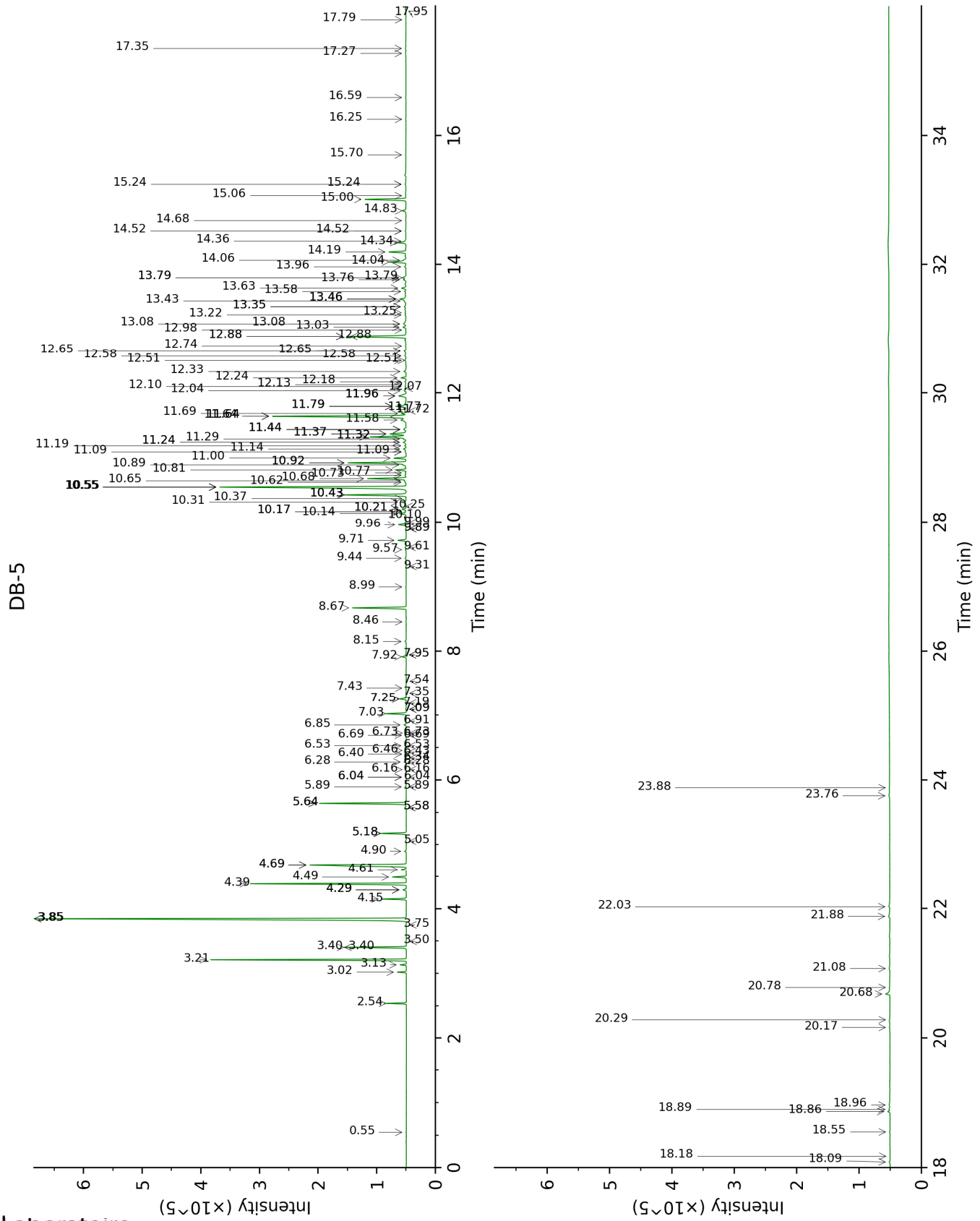
*: Individual compounds concentration could not be found due to overlapping coelutions on columns considered
[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated total

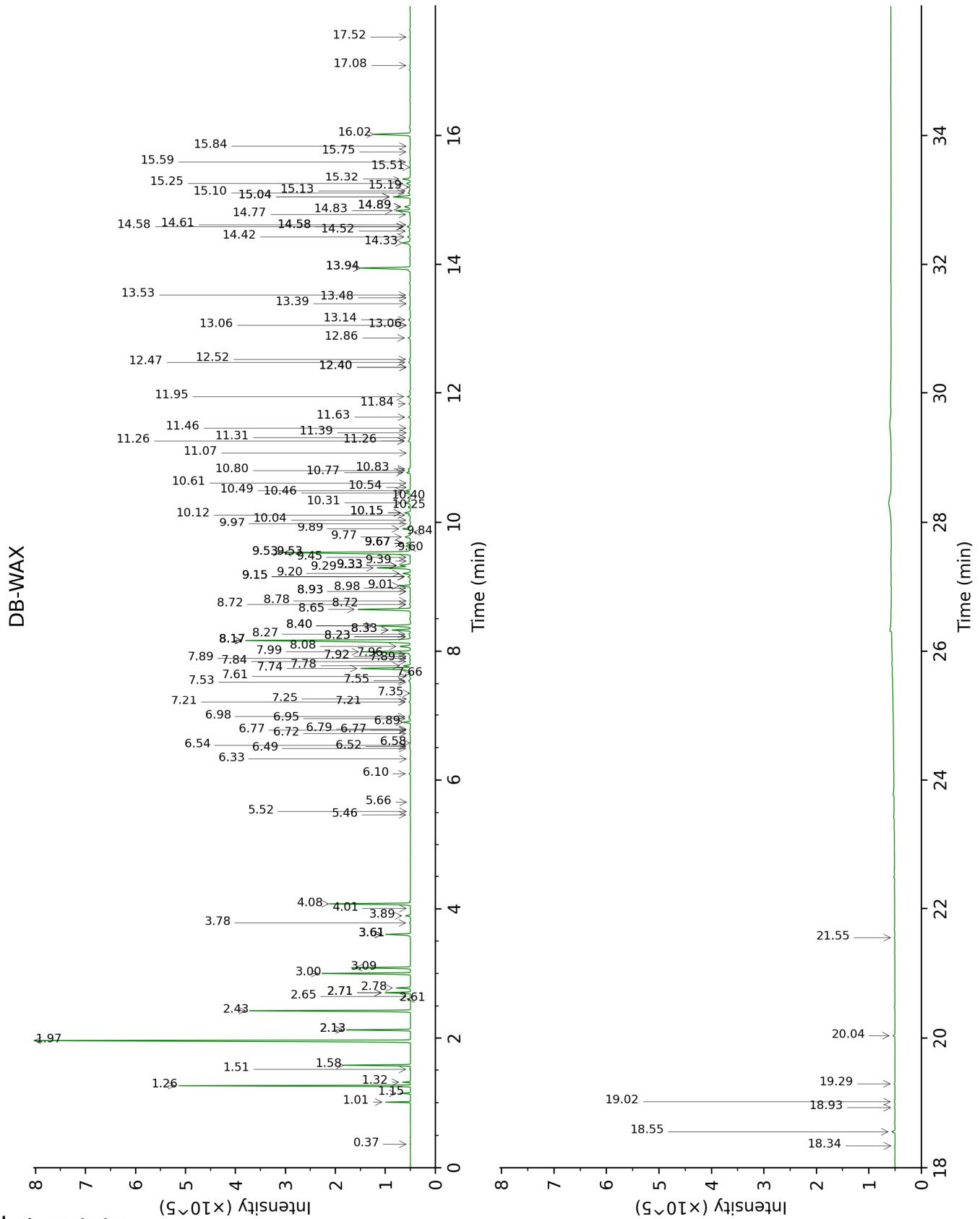
Note: no correction factor was applied

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.





FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
3-Methylcyclopentene	0.55	606	0.01	0.37	670	0.01
Santene	2.54	882	0.62	1.01	945	0.63
Tricyclene	3.02	918	0.31	1.15	969	0.31
α -Thujene	3.13	926	0.23	1.32	998	0.22
α -Pinene	3.21	931	7.01	1.26	990	7.05
Camphene	3.40*	944	2.27	1.58	1025	2.23
α -Fenchene	3.40*	944	[2.27]	1.51	1018	0.03
Thuja-2,4(10)-diene	3.50	950	0.03	2.13*	1082	2.21
3,7,7-Trimethylcyclohepta-1,3,5-triene	3.75	966	0.03	2.71*	1132	0.93
Sabinene	3.85*	972	18.34	2.13*	1082	[2.21]
β -Pinene	3.85*	972	[18.34]	1.97	1065	16.29
Myrcene	4.15	992	0.91	2.71*	1132	[0.93]
Ethyl hexanoate	4.29*	1002	0.17	3.61*	1206	1.11
α -Phellandrene	4.29*	1002	[0.17]	2.61	1124	0.13
Pseudolimonene	4.29*	1002	[0.17]	2.65	1128	0.02
Δ^3 -Carene	4.39	1008	6.20	2.43	1110	6.24
α -Terpinene	4.49	1014	0.56	2.78	1138	0.56
para-Cymene	4.61	1022	0.22	3.89	1228	0.22
Limonene	4.69*	1026	5.78	3.00	1157	3.53
β -Phellandrene	4.69*	1026	[5.78]	3.09	1164	2.33
(Z)- β -Ocimene	4.90	1040	0.08	3.61*	1206	[1.11]
(E)- β -Ocimene	5.06	1049	0.05	3.78	1219	0.04
γ -Terpinene	5.18*	1057	1.02	3.61*	1206	[1.11]
Unknown [m/z 155, 97 (78), 155 (59), 55 (55), 69 (48), 43 (48)...]	5.18*	1057	[1.02]			
Isoterpinolene	5.58*	1082	0.08	4.01	1236	0.02
Fenchone	5.58*	1082	[0.08]	5.46	1341	0.05
Terpinolene	5.64*	1086	3.59	4.08	1242	3.54
para-Cymenene	5.64*	1086	[3.59]	6.10	1386	0.07
Linalool	5.90*	1102	0.06	7.84	1516	0.05
Ethyl heptanoate	5.90*	1102	[0.06]			
endo-Fenchol	6.04*	1111	0.05	8.17*	1542	10.09
Maltol	6.04*	1111	[0.05]	12.40*	1895	0.03
1,3,8-para-Menthatriene	6.04*	1111	[0.05]	5.52	1344	0.02
cis-para-Menth-2-en-1-ol	6.16*	1119	0.04	7.92†	1522	[0.08]
α -Campholenal	6.16*	1119	[0.04]	6.79	1437	0.02
Methyl octanoate	6.28*	1126	0.11	5.66	1355	0.02
Limona ketone	6.28*	1126	[0.11]	7.55	1494	0.11
Menthatriene isomer III	6.34	1130	0.02			
trans-Pinocarveol	6.40	1134	0.04	8.93*	1601	0.04

Camphor	6.43	1136	0.09	6.98	1452	0.10
<i>trans</i> -para-Menth-2-en-1-ol	6.46	1138	0.02	8.72*	1585	0.07
Camphene hydrate	6.53*	1142	0.08	8.23*	1546	0.07
Epoxyterpinolene	6.53*	1142	[0.08]	6.52	1417	0.04
Hexyl isobutyrate	6.69*	1152	0.05			
Citronellal	6.69*	1152	[0.05]	6.77*	1436	0.05
Isoborneol	6.73*	1155	0.03	9.15*	1619	0.15
Pinocarvone	6.73*	1155	[0.03]	7.66	1502	0.02
Borneol	6.85	1163	0.11	9.53*	1649	7.60
Isopinocampone	6.91	1166	0.03	7.35	1479	0.02
Terpinen-4-ol	7.03	1174	0.89	8.33*	1554	0.88
meta-Cymen-8-ol	7.10*	1178	0.04	11.26*	1794	0.18
Cryptone	7.10*	1178	[0.04]	8.93*	1601	[0.04]
para-Cymen-8-ol	7.19	1184	0.04	11.31	1799	0.07
Methyl salicylate	7.25*	1188	0.30	10.25	1709	0.02
α-Terpineol	7.25*	1188	[0.30]	9.53*	1649	[7.60]
Myrtenol	7.35	1194	0.04	10.61	1739	0.04
Ethyl octanoate	7.43	1200	0.03	6.33	1403	0.03
<i>trans</i> -Piperitol	7.54	1206	0.02	10.15*	1700	0.32
Citronellol	7.92	1232	0.20	10.49	1729	0.24
Thymol methyl ether	7.94*	1234	0.05	8.23*	1546	[0.07]
Unknown [m/z 137, 152 (28), 43 (25), 91 (24), 109 (23), 119 (19)]	7.94*	1234	[0.05]	11.08	1778	0.02
Piperitone	8.15	1247	0.07	9.67*†	1661	0.53
Isopulegyl acetate	8.46	1268	0.03	7.89*†	1520	0.08
Bornyl acetate	8.67	1282	2.34	7.99	1528	2.36
Thymol	9.00	1304	0.03	14.89*	2133	0.37
Methyl decanoate	9.31	1326	0.01	8.40*	1559	1.82
δ-Elemene	9.44	1335	0.06	6.72	1432	0.05
α-Longipinene	9.57	1344	0.05	6.49	1415	0.04
α-Cubebene	9.60	1346	0.07	6.54	1419	0.06
Citronellyl acetate	9.72	1354	0.38	9.20	1623	0.39
α-Ylangene	9.89*	1367	0.04	6.77*	1436	[0.05]
Neryl acetate	9.89*	1367	[0.04]	9.97	1686	0.03
α-Copaene	9.96	1371	0.37	6.89	1445	0.36
2-epi-α-Funebrene	9.99	1374	0.09	6.95	1449	0.08
α-Duprezianene	10.10	1381	0.02	7.21*	1468	0.10
Geranyl acetate	10.14	1384	0.32	10.31	1713	0.30
Isolongifolene	10.17*	1386	0.06	7.21*	1468	[0.10]
β-Cubebene	10.17*	1386	[0.06]	7.53	1492	0.04
β-Elemene	10.21*	1389	0.21	8.17*	1542	[10.09]
Cyperene	10.21*	1389	[0.21]	7.25	1472	0.02
Sibirene	10.25	1392	0.05	7.61	1499	0.06
Longifolene	10.32	1396	0.27	7.78	1511	0.35
Ethyl decanoate	10.37	1400	0.03	8.98	1605	0.05
α-Cedrene	10.43*	1404	3.04	7.74	1508	2.82
(Z?)-Vestitenone, or analog	10.43*	1404	[3.04]	11.46	1812	0.05
Methyleugenol	10.43*	1404	[3.04]	13.06*	1956	0.04

<i>cis</i> - α -Bergamotene	10.55*	1413	10.07	7.96	1525	0.08
β -Cedrene	10.55*	1413	[10.07]	8.08	1534	0.63
β -Caryophyllene	10.55*	1413	[10.07]	8.17*	1542	[10.09]
β -Funebrene	10.55*	1413	[10.07]	7.89*†	1520	[0.08]
Himachala-2,4-diene	10.62	1419	0.05	8.26	1549	0.12
β -Copaene	10.65	1421	0.09	8.17*	1542	[10.09]
<i>cis</i> -Thujopsene	10.68	1423	1.81	8.40*	1559	[1.82]
Unknown [m/z 105, 91 (70), 93 (65), 43 (61), 120 (57), 145 (50)... 204 (6)]	10.73	1427	0.08			
Aromadendrene	10.77	1430	0.05	8.33*	1554	[0.88]
<i>trans</i> - α -Bergamotene	10.81	1433	0.47	8.17*	1542	[10.09]
(<i>E</i>)-Vestitenone	10.89	1439	0.14	11.95	1855	0.17
9-epi-Isocaryophyllene	10.92*	1441	2.83	8.78	1589	0.04
α -Himachalene	10.92*	1441	[2.83]	8.65	1579	2.78
α -Humulene	11.00	1447	0.58	9.01	1608	0.57
Unknown [m/z 187, 131 (78), 202 (76), 105 (74), 91 (74), 117 (53), 145 (52)]	11.09*	1454	0.06	9.67*†	1661	[0.53]
allo-Aromadendrene	11.09*	1454	[0.06]	8.72*	1585	[0.07]
(<i>E</i>)- β -Farnesene	11.14	1457	0.18	9.33*†	1633	[2.46]
β -Acoradiene	11.19	1461	0.08	9.15*	1619	[0.15]
Thujopsene isomer	11.24*	1465	0.21	9.15*	1619	[0.15]
Unknown [m/z 131, 202 (78), 91 (74), 105 (68), 187 (68), 119 (53), 145 (52)]	11.24*	1465	[0.21]			
Unknown [m/z 189, 204 (85), 105 (78), 161 (62), 119 (56), 91 (54), 95 (54)...]	11.29	1469	0.11			
γ -Muurolole	11.32*	1471	1.85	9.33*†	1633	[2.46]
γ -Himachalene	11.32*	1471	[1.85]	9.29†	1630	2.46
Germacrene D	11.37*	1474	1.00	9.53*	1649	[7.60]
11- α H-Himachala-1,4-diene	11.37*	1474	[1.00]	9.40	1639	0.04
β -Selinene	11.44*	1480	0.20	9.60	1655	0.15
γ -Curcumene	11.44*	1480	[0.20]	9.45	1643	0.04
<i>trans</i> - β -Bergamotene	11.44*	1480	[0.20]	9.33*†	1633	[2.46]
α -Selinene	11.58	1490	0.42	9.67*†	1661	[0.53]
β -Himachalene	11.64*	1495	6.86	9.53*	1649	[7.60]
α -Cuprenene	11.64*	1495	[6.86]	9.77	1669	0.37
α -Chamigrene	11.64*	1495	[6.86]	9.84	1675	0.03
Cuparene	11.68	1498	0.22	10.77	1753	0.21
1,2-Dihydrocuparene	11.72	1501	0.12	10.04	1691	0.07
α -Alaskene	11.76	1504	0.03	9.67*†	1661	[0.53]
β -Bisabolene	11.80*	1506	0.65	9.89	1679	0.41

α -Dehydro-ar-himachalene	11.80*	1506	[0.65]	11.26*	1794	[0.18]
γ -Cadinene	11.80*	1506	[0.65]	10.12	1697	0.13
δ -Cadinene	11.96*	1519	0.57	10.15*	1700	[0.32]
Unknown [m/z 131, 202 (28), 91 (22), 159 (16), 145 (16), 132 (15), 115 (14)]	11.96*	1519	[0.57]	10.80	1756	0.09
γ -Dehydro-ar-himachalene	11.96*	1519	[0.57]	11.63	1827	0.11
Unknown [m/z 119, 105 (53), 161 (33), 93 (28), 91 (25), 40 (20)...204]	12.04	1525	0.12			
<i>trans</i> -Cadina-1,4-diene	12.08	1528	0.03	10.40	1721	0.06
ar-Himachalene	12.10	1530	0.05	11.39	1806	0.03
α -Cadinene	12.13	1532	0.05	10.54	1734	0.04
α -Calacorene	12.18	1536	0.08	11.84	1845	0.10
(<i>E</i>)- α -Bisabolene	12.24	1541	0.24	10.46	1726	0.25
Germacrene B	12.33	1548	0.14	10.83	1758	0.12
(<i>E</i>)-Nerolidol	12.51*	1562	0.09	13.53	2000	0.07
Caryophyllenyl alcohol	12.51*	1562	[0.09]	13.39	1987	0.02
Unknown [m/z 96, 95 (18), 83 (15), 125 (13), 119 (12), 55 (12), 41 (11)... 218? (tr)]	12.58*	1568	0.10	14.61	2105	0.02
Himachalene epoxide	12.58*	1568	[0.10]	12.52	1906	0.06
Caryophyllene oxide isomer	12.65*	1574	0.13	12.40*	1895	[0.03]
Caryophyllene oxide	12.65*	1574	[0.13]	12.48	1902	0.10
allo-Cedrol	12.74	1580	0.03	13.94*	2040	2.72
Widdrol	12.88*	1592	3.14	14.42	2086	0.15
Longiborneol	12.88*	1592	[3.14]	14.33	2077	0.47
α -Cedrol	12.88*	1592	[3.14]	13.94*	2040	[2.72]
Humulene epoxide II	12.98	1599	0.03	13.06*	1956	[0.04]
β -Himachalene oxide	13.03	1603	0.17	12.86	1938	0.16
Unknown [m/z 138, 110 (77), 137 (75), 107 (62), 91 (61), 93 (60), 109 (57)... 220 (34)]	13.08*	1607	0.24	13.14	1964	0.10
epi-Cedrol	13.08*	1607	[0.24]	14.52	2095	0.09
Unknown [m/z 137, 119 (69), 43 (51), 95 (50), 109 (40)... 222 (1)]	13.22	1618	0.06	14.58*	2102	0.18
1-epi-Cubenol	13.25	1621	0.05	13.48	1996	0.03
Unknown [m/z 119, 163 (80), 107 (64), 95	13.34*	1629	0.11			

(61), 93 (57), 91 (53)... 220 (11)]						
Unknown [m/z 105, 93 (78), 95 (75), 131 (72), 119 (71), 132 (70), 91 (67), 120 (49)... 202 (39), 220 (9)]	13.34*	1629	[0.11]	15.59	2204	0.05
τ -Cadinol	13.43	1636	0.12	14.58*	2102	[0.18]
Himachalol	13.46*	1639	0.42	14.89*	2133	[0.37]
Unknown [m/z 119, 121 (47), 93 (47), 91 (44), 105 (43), 95 (38), 109 (37)... 220 (3)]	13.46*	1639	[0.42]			
τ -Muurolol	13.46*	1639	[0.42]	14.77	2121	0.05
α -Cadinol	13.58	1648	0.08	15.19	2163	0.07
Allohimachalol	13.63	1653	0.26	15.25	2169	0.19
β -Atlantone	13.76	1664	0.14	14.58*	2102	[0.18]
Unknown [m/z 163, 69 (85), 95 (54), 107 (24), 67 (23), 93 (20)...]	13.79*	1666	0.22			
Cadalene	13.79*	1666	[0.22]	15.10	2154	0.13
Khusiol	13.79*	1666	[0.22]	15.84	2229	0.03
α -Bisabolol	13.96	1680	0.08	15.13	2157	0.06
(Z)- γ -Atlantone	14.04	1686	0.93	14.83	2127	0.77
Deodarone epimer I	14.06	1688	0.10	15.04*	2148	0.93
(E)- γ -Atlantone	14.19	1699	0.86	15.04*	2148	[0.93]
(Z)- α -Atlantone	14.34	1711	0.44	15.32	2176	0.40
Atracic acid	14.36	1713	0.07			
Ethyl hematommate	14.52*	1726	0.05			
Unknown [m/z 105, 119 (89), 59 (68), 120 (65), 43 (65), 93 (62), 121 (61)...]	14.52*	1726	[0.05]			
Unknown [m/z 83, 91 (28), 105 (25), 55 (21), 43 (17), 119 (17)...]	14.68	1740	0.04			
Benzyl benzoate	14.83	1754	0.22	18.56	2528	0.17
(E)- α -Atlantone	15.00	1769	2.00	16.02	2248	2.03
Isopropyl hematommate	15.06	1774	0.04			
Unknown [m/z 95, 43 (59), 69, (57), 67 (43), 163 (42), 94 (37), 107 (37)... 178 (26), 218 (2)]	15.24*	1789	0.06			
Nootkatone	15.24*	1789	[0.06]	17.52	2410	0.02
Unknown [m/z 199, 119 (40), 115 (23), 91 (19), 214 (15)...]	15.70	1830	0.03			

Unknown [m/z 173, 83 (83), 91 (80), 201 (79), 115 (65)... 216 (31)]	16.25	1880	0.03	18.34	2502	0.02
Unknown [m/z 151, 123 (72), 83 (67), 109 (22), 43 (22), 55 (22)...]	16.59	1911	0.03			
Palmitic acid	17.27	1976	0.04			
para-Camphorene	17.35	1983	0.05	15.51	2195	0.03
cis-3,14-Clerodadien-13-ol	17.79	2026	0.02	18.93	2571	0.03
Manool	17.95	2042	0.05	19.02	2581	0.05
Kolavelool	18.09	2056	0.06	19.29	2614	0.05
7,13-Abietadiene	18.18	2065	0.02	17.08	2362	0.05
Unknown [m/z 177, 95 (36), 43 (35), 69 (34), 71 (32), 121 (26)...290 (13)]	18.55	2102	0.03			
(Z)-Abienol	18.86	2134	0.11	20.04	2705	0.10
Linoleic acid	18.90	2137	0.10			
Oleic acid	18.96	2144	0.12			
Kolavenol	20.17	2272	0.04			
Abietal	20.28	2284	0.03	21.56	2897	0.03
Copaifera diterpenic acid I	20.68	2328	0.30			
Methyl kolavenate	20.78	2339	0.02			
Copaifera diterpenic acid II	21.08	2372	0.06			
Copaifera diterpenic acid III	21.88	2464	0.14			
Copaifera diterpenic acid IV	22.03	2482	0.12			
Copaifera diterpenic acid VI	23.76	2692	0.09			
Copaifera diterpenic acid VII	23.88	2708	0.02			
endo-Fenchyl acetate				6.58	1422	0.02
Ethyl palmitate				15.75	2220	0.07
Total identified		98.10%			96.30%	
Total reported		98.64%			96.61%	

*: 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

Note: no correction factor was applied

R.T.: Retention time (minutes)

R.I.: Retention index