

Date : 2026-06-15

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

**Internal code** : 26D08-PTH10

**Customer Identification** : Sage Dalmatian - Greece - S10111

**Type** : Essential Oil

**Source** : *Salvia officinalis*

**Customer** : Plant Therapy

Checked and approved by:

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Sylvain Mercier, M. Sc., Chimiste 2014-005

*Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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. The compliance status of the sample is provided to facilitate the reading of the report. The client remains ultimately responsible for reviewing the results presented within this report and to establish compliance of the tested batch against relevant quality criteria.*

*This report is an update of the version first issued on 2026-04-15 to make a modification in the sample identification section.*

## GAS CHROMATOGRAPHIC ANALYSIS

**Method :** PC-MAT-014 - Analysis of the composition of an essential oil or other volatile liquide by FAST GC-FID

**\*ISO**

**Results :** See analysis summary (next page)

**Analyst :** Sylvain Mercier, M. Sc., Chimiste 2014-005

**Date :** 2026-04-15

## PHYSICOCHEMICAL DATA

**Refractive index :**  $1.4631 \pm 0.0003$  (20 °C)

**Method :** PC-MAT-016 - Measure of the refractive index of a liquid.

**Analyst :** Cindy Caron B. Sc.

**Date :** 2026-04-08

## 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
Isobutyral	0.01	Aliphatic aldehyde
Isovaleral	0.04	Aliphatic aldehyde
3-Methyl-2-butanone	0.01	Aliphatic ketone
2-Methylbutyral	0.02	Aliphatic aldehyde
2-Ethylfuran	0.01	Furan
Isoamyl alcohol	tr	Aliphatic alcohol
Methyl isovalerate	tr	Aliphatic ester
Hexanal	tr	Aliphatic aldehyde
Unknown	0.01	Alkene
(2E)-Hexenal	0.02	Aliphatic aldehyde
(Z)-Salvene	0.71	Normonoterpene
(3Z)-Hexenol	tr	Aliphatic alcohol
(E)-Salvene	0.12	Normonoterpene
(2E)-Hexenol	0.01	Aliphatic alcohol
Hexanol	0.01	Aliphatic alcohol
Hashishene	0.09	Monoterpene
Tricyclene	0.18	Monoterpene
$\alpha$ -Thujene	0.14	Monoterpene
$\alpha$ -Pinene	4.20	Monoterpene
Unknown	tr	Monoterpene
Camphene	5.56	Monoterpene
$\alpha$ -Fenchene	0.05	Monoterpene
Thuja-2,4(10)-diene	0.02	Monoterpene
$\beta$ -Pinene	1.40	Monoterpene
Sabinene	0.08	Monoterpene
Octen-3-ol	0.21	Aliphatic alcohol
Dehydro-1,8-cineole	0.01	Monoterpenic ether
6-Methyl-5-hepten-2-one	tr	Aliphatic ketone
Myrcene	1.22	Monoterpene
6-Methyl-5-hepten-2-ol	0.03	Aliphatic alcohol
Pseudolimonene	0.01	Monoterpene
$\alpha$ -Phellandrene	0.09	Monoterpene
$\Delta^3$ -Carene	0.02	Monoterpene
$\alpha$ -Terpinene	0.24	Monoterpene
<i>para</i> -Cymene	1.05	Monoterpene
1,8-Cineole	7.99	Monoterpenic ether
Limonene	2.39	Monoterpene
Unknown	0.02	Unknown
(Z)- $\beta$ -Ocimene	0.04	Monoterpene
Unknown	0.03	Unknown

(E)- $\beta$ -Ocimene	0.02	Monoterpene
$\gamma$ -Terpinene	0.37	Monoterpene
<i>cis</i> -Sabinene hydrate	0.04	Monoterpenic alcohol
<i>cis</i> -Linalool oxide (fur.)	0.02	Monoterpenic alcohol
Fenchone	0.02	Monoterpenic ketone
Terpinolene	0.24	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	0.01	Monoterpenic alcohol
<i>para</i> -Cymenene	0.08	Monoterpene
$\alpha$ -Thujone	35.37	Monoterpenic ketone
Linalool	0.40	Monoterpenic alcohol
$\beta$ -Thujone	4.51	Monoterpenic ketone
Dehydrosabinaketone	0.04	Normonoterpenic ketone
<i>cis-para</i> -Menth-2-en-1-ol	0.08	Monoterpenic alcohol
$\alpha$ -Campholenal	0.04	Monoterpenic aldehyde
Camphor	18.20	Monoterpenic ketone
<i>trans-para</i> -Menth-2-en-1-ol	0.01	Monoterpenic alcohol
neoiso-Thujol	0.02	Monoterpenic alcohol
Camphene hydrate	0.05	Monoterpenic alcohol
neo-Thujol	0.07	Monoterpenic alcohol
Isoborneol	0.03	Monoterpenic alcohol
Pinocamphone	0.03	Monoterpenic ketone
Borneol	1.50	Monoterpenic alcohol
Thujol	0.29	Monoterpenic alcohol
$\delta$ -Terpineol	0.04	Monoterpenic alcohol
Isopinocamphone	0.02	Monoterpenic ketone
Terpinen-4-ol	0.41	Monoterpenic alcohol
Thuj-3-en-10-al	0.02	Monoterpenic aldehyde
<i>para</i> -Cymen-8-ol	0.09	Monoterpenic alcohol
endo-Isocamphonone	0.07	Monoterpenic ketone
$\alpha$ -Terpineol	0.07	Monoterpenic alcohol
Myrtenol	0.05	Monoterpenic alcohol
4-Hydroxy- $\beta$ -thujone	0.08	Monoterpenic alcohol
Unknown	0.02	Unknown
<i>trans</i> -Carveol	0.04	Monoterpenic alcohol
Bornyl formate	0.02	Monoterpenic ester
<i>cis</i> -Carveol	0.04	Monoterpenic alcohol
Cuminal	0.01	Monoterpenic aldehyde
Carvone	0.03	Monoterpenic ketone
Carvotanacetone	0.02	Monoterpenic ketone
Geraniol	0.02	Monoterpenic alcohol
Linalyl acetate	0.02	Monoterpenic ester
Unknown	0.01	Oxygenated monoterpene
Unknown	0.04	Unknown
Isobornyl acetate	0.03	Monoterpenic ester
Bornyl acetate	1.20	Monoterpenic ester

<i>trans</i> -Sabinyl acetate	0.37	Monoterpenic ester
Unknown	0.02	Unknown
Thymol	0.02	Monoterpenic alcohol
Carvacrol	0.09	Monoterpenic alcohol
Myrtenyl acetate	0.02	Monoterpenic ester
Unknown	0.04	Unknown
<i>trans</i> -Carvyl acetate	0.01	Monoterpenic ester
<i>exo</i> -2-Hydroxycineole acetate	0.02	Monoterpenic ester
Unknown	0.08	Unknown
$\alpha$ -Terpinyl acetate	0.02	Monoterpenic ester
$\alpha$ -Ylangene	0.01	Sesquiterpene
$\alpha$ -Copaene	0.02	Sesquiterpene
$\beta$ -Bourbonene	tr	Sesquiterpene
Geranyl acetate	0.02	Monoterpenic ester
Isocaryophyllene	0.05	Sesquiterpene
$\beta$ -Caryophyllene	2.55	Sesquiterpene
Caryophylla-4(12),8(13)-diene	0.02	Sesquiterpene
Aromadendrene	0.12	Sesquiterpene
Unknown	0.04	Unknown
Unknown	0.10	Unknown
$\alpha$ -Humulene	3.08	Sesquiterpene
allo-Aromadendrene	0.14	Sesquiterpene
$\gamma$ -Gurjunene	0.02	Sesquiterpene
Germacrene D	0.02	Sesquiterpene
$\beta$ -Selinene	0.02	Sesquiterpene
$\alpha$ -Selinene	0.02	Sesquiterpene
Viridiflorene	0.18	Sesquiterpene
$\gamma$ -Cadinene	0.02	Sesquiterpene
$\delta$ -Cadinene	0.03	Sesquiterpene
Isocaryophyllene epoxide B	0.02	Sesquiterpenic ether
Caryophyllene oxide	0.15	Sesquiterpenic ether
Viridiflorol	1.30	Sesquiterpenic alcohol
Humulene epoxide I	0.06	Sesquiterpenic ether
Ledol	0.01	Sesquiterpenic alcohol
Humulene epoxide II	0.25	Sesquiterpenic ether
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.07	Oxygenated sesquiterpene
Caryophylladienol II	0.03	Sesquiterpenic alcohol
(3 <i>Z</i> )-Caryophylla-3,8(13)-dien-5 $\beta$ -ol	0.03	Sesquiterpenic alcohol
Unknown	0.01	Oxygenated sesquiterpene
Unknown	0.03	Sesquiterpene
Phytone	0.01	Terpenic ketone
Isopimaradiene isomer I	0.04	Diterpene
Unknown	0.02	Unknown
Manool	0.27	Diterpenic alcohol

Unknown	0.02	Unknown
<b>Consolidated total</b>	<b>99.37</b>	

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

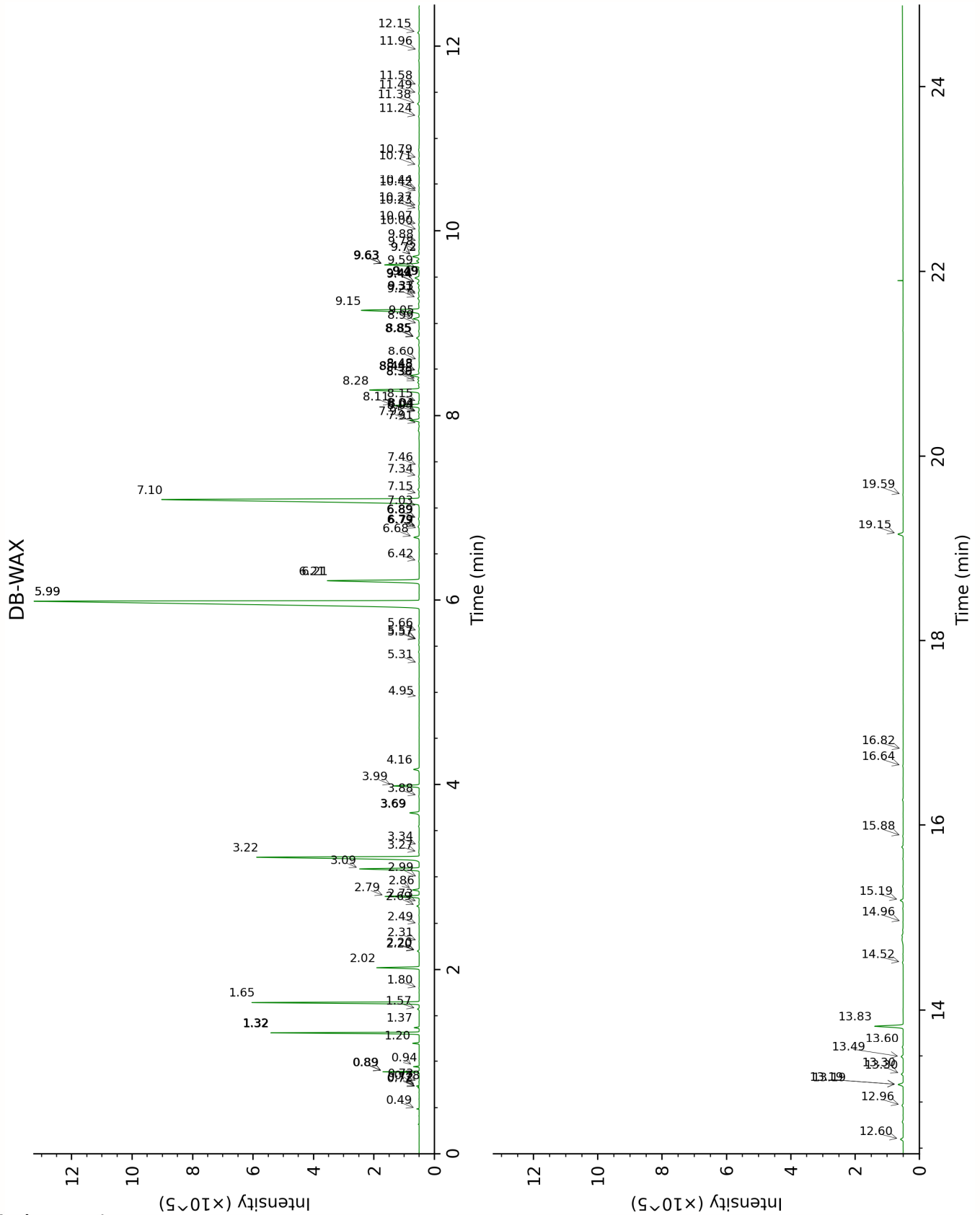
Note: no correction factor was applied

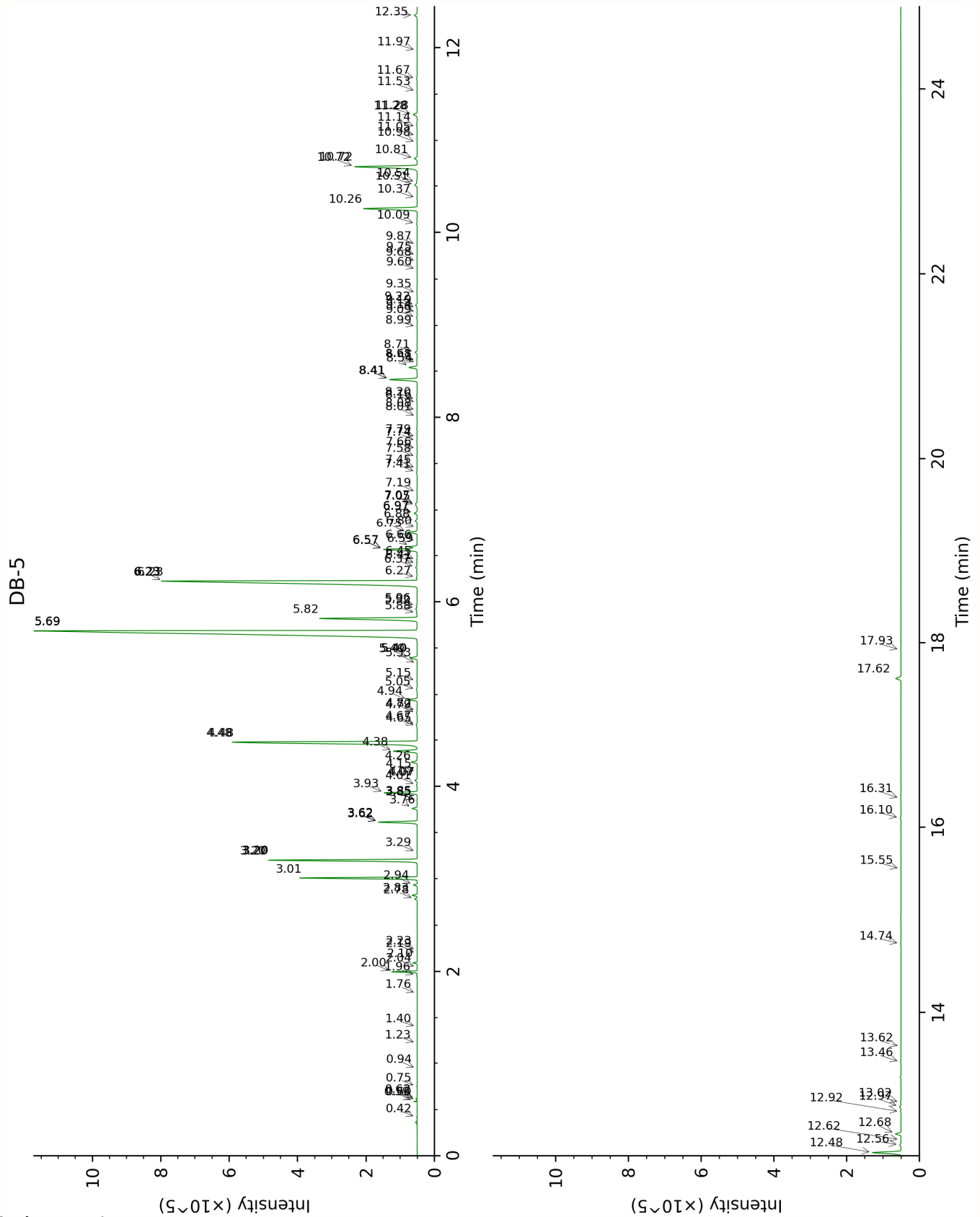
**About "consolidated" data:** The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

**Bracketed value ([xx]):** A bracketed percent value indicate that two or more compound percentage could not be solved due to coelution.

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





FULL ANALYSIS DATA

Isobutyral	Column DB-WAX			Column DB-5		
	0.49	781.2	0.03	0.42	540.2	0.01
Isovaleral	0.74	884.8	0.04	0.59	642.5	0.04
3-Methyl-2-butanone	0.78	900.9	0.01	0.60	648.3	0.01
2-Methylbutyral	0.72*	878.6	[0.02]	0.62	652.9	0.02
2-Ethylfuran	0.89*	921.1	[0.71]	0.75	702.4	0.01
Isoamyl alcohol	3.34	1176.5	tr	0.94	732.4	tr
Methyl isovalerate	1.32*	989.9	[4.24]	1.23	773.9	tr
Hexanal	1.80	1042.8	tr	1.40	799.7	tr
Unknown BOCA I [m/z 109, 67 (32), 81 (14), 41 (12), 124 (10)]	0.72*	878.6	[0.02]	1.76	832.3	0.01
(2E)-Hexenal	3.27	1170.7	0.02	1.96	848.7	0.02
(Z)-Salvene	0.89*	921.1	[0.71]	2.00	852.3	0.71
(3Z)-Hexenol	5.66	1344.4	0.01	2.04	855.9	tr
(E)-Salvene	0.94	930.0	0.12	2.10	860.5	0.12
(2E)-Hexenol	5.99*	1368.2	[35.27]	2.19	868.7	0.01
Hexanol	5.31	1319.2	0.01	2.23	872.0	0.01
Hashishene	1.32*	989.9	[4.24]	2.78	916.0	0.09
Tricyclene	1.20	970.4	0.17	2.82	918.7	0.18
$\alpha$ -Thujene	1.37	998.9	0.13	2.94	926.1	0.14
$\alpha$ -Pinene	1.32*	989.9	[4.24]	3.01	931.3	4.20
Unknown SAOF I [m/z 91, 92 (47), 65 (11)... 134 (1)]	2.31	1092.8	tr	3.20*	944.1	[5.65]
Camphene	1.65	1027.5	5.56	3.20*	944.1	[5.65]
$\alpha$ -Fenchene	1.58	1020.5	0.05	3.20*	944.1	[5.65]
Thuja-2,4(10)-diene	2.20*	1082.3	[0.06]	3.29	949.9	0.02
$\beta$ -Pinene	2.02	1064.5	1.40	3.62*	971.7	[1.48]
Sabinene	2.20*	1082.3	[0.06]	3.62*	971.7	[1.48]
Octen-3-ol	6.68	1418.8	0.23	3.76	981.6	0.21
Dehydro-1,8-cineole	2.99	1148.8	0.01	3.85*	987.2	[0.02]
6-Methyl-5-hepten-2-one	4.95	1297.2	tr	3.85*	987.2	[0.02]
Myrcene	2.79	1133.1	1.21	3.93	993.0	1.22
6-Methyl-5-hepten-2-ol	6.79*	1427.4	[0.06]	4.01	998.4	0.03
Pseudolimonene	2.73	1128.2	0.01	4.07*	1002.0	[0.10]
$\alpha$ -Phellandrene	2.69	1124.9	0.09	4.07*	1002.0	[0.10]
$\Delta^3$ -Carene	2.49	1109.5	0.01	4.15	1007.8	0.02
$\alpha$ -Terpinene	2.86	1138.5	0.23	4.26	1014.7	0.24
<i>para</i> -Cymene	3.99	1225.9	1.03	4.38	1022.2	1.05
1,8-Cineole	3.22	1166.4	7.99	4.48*	1028.4	[10.34]
Limonene	3.09	1156.5	2.39	4.48*	1028.4	[10.34]

Unknown ARAN I [m/z 43, 55 (65), 41 (34), 67 (32), 107 (30), 122 (26)... 125 (10)]	5.57*	1337.6	[0.02]	4.65	1039.3	0.02
(Z)- $\beta$ -Ocimene	3.69*	1204.3	[0.40]	4.67	1040.3	0.04
Unknown SAOF IX [m/z 70, 55 (44), 42 (37), 69 (31), 41 (30), 140 (29)...]				4.79	1048.4	0.03
(E)- $\beta$ -Ocimene	3.88	1217.8	0.02	4.82	1049.8	0.02
$\gamma$ -Terpinene	3.69*	1204.3	[0.40]	4.94	1057.5	0.37
<i>cis</i> -Sabinene hydrate	6.79*	1427.4	[0.06]	5.06	1065.0	0.04
<i>cis</i> -Linalool oxide (fur.)	6.42	1399.5	0.03	5.15	1071.0	0.02
Fenchone	5.57*	1337.6	[0.02]	5.33	1082.4	0.02
Terpinolene	4.16	1239.1	0.24	5.40*	1086.6	[0.33]
<i>trans</i> -Linalool oxide (fur.)	6.77	1425.3	0.01	5.40*	1086.6	[0.33]
<i>para</i> -Cymenene	6.21*	1384.3	[4.55]	5.40*	1086.6	[0.33]
$\alpha$ -Thujone	5.99*	1368.2	[35.27]	5.69*	1105.3	[35.77]
Linalool	7.95	1514.7	0.40	5.69*	1105.3	[35.77]
$\beta$ -Thujone	6.21*	1384.3	[4.55]	5.82	1114.0	4.51
Dehydrosabinaketone	8.48*	1556.2	[0.06]	5.88	1117.6	0.04
<i>cis-para</i> -Menth-2-en- 1-ol	8.04*†	1521.4	[0.05]	5.92	1120.5	0.08
$\alpha$ -Campholenal	6.89*	1434.4	[0.04]	5.96	1122.7	0.04
Camphor	7.10	1450.1	18.20	6.23*	1140.2	[18.25]
<i>trans-para</i> -Menth-2-en- 1-ol	8.85*	1584.7	[0.15]	6.23*	1140.2	[18.25]
neoiso-Thujol	9.44*	1632.0	[0.09]	6.23*	1140.2	[18.25]
Camphene hydrate	8.36	1546.6	0.08	6.27	1142.8	0.05
neo-Thujol	9.44*	1632.0	[0.09]	6.37	1149.8	0.07
Isoborneol	9.27	1618.6	0.07	6.41	1152.3	0.03
Pinocamphone	7.15	1454.4	0.02	6.45	1155.0	0.03
Borneol	9.63*	1648.1	[1.63]	6.57*†	1162.5	[1.53]
Thujol	9.72*	1655.4	[0.31]	6.57*†	1162.5	[1.53]
$\delta$ -Terpineol	9.33	1623.5	0.04	6.60*†	1164.2	[0.31]
Isopinocamphone	7.46	1477.4	0.02	6.66	1168.3	0.02
Terpinen-4-ol	8.44*	1552.5	[0.39]	6.75	1174.4	0.41
Thuj-3-en-10-al	8.60	1565.1	0.01	6.80	1177.7	0.02
<i>para</i> -Cymen-8-ol	11.38	1794.6	0.08	6.88	1182.9	0.09
endo-Isocamphonone	8.39	1549.2	0.07	6.97*	1188.4	[0.14]
$\alpha$ -Terpineol	9.63*	1648.1	[1.63]	6.97*	1188.4	[0.14]
Myrtenol	10.71	1737.5	0.03	7.05	1193.7	0.05
4-Hydroxy- $\beta$ -thujone	12.15	1862.6	0.07	7.07	1195.0	0.08

Unknown PIMA 7 [m/z 95, 93 (32), 121 (24), 79 (22), 91 (21), 105 (16)... 154 (2)]	10.79	1744.2	0.02	7.19	1203.0	0.02
<i>trans</i> -Carveol	11.24	1783.0	0.03	7.41	1217.8	0.04
Bornyl formate	7.91	1511.5	0.02	7.45	1220.6	0.02
<i>cis</i> -Carveol	11.58	1811.9	0.02	7.58	1229.0	0.04
Cuminal	10.44	1714.8	tr	7.66	1235.0	0.01
Carvone	9.88	1668.5	0.01	7.74	1240.6	0.03
Carvotanacetone	9.32	1622.0	0.01	7.79	1243.7	0.02
Geraniol	11.49	1804.3	0.03	8.01	1258.5	0.02
Linalyl acetate	8.04*†	1521.4	[0.05]	8.08	1263.4	0.02
Unknown BOSE VI [m/z 109, 41 (22), 81 (14), 43 (11)... 152 (4)]				8.16	1268.9	0.01
Unknown PECR X [m/z 109, 43 (83), 95 (70), 110 (70), 99 (53), 119 (48)...]				8.20	1271.5	0.04
Isobornyl acetate	8.15	1530.1	0.03	8.41*	1286.3	[1.21]
Bornyl acetate	8.11	1527.1	1.20	8.41*	1286.3	[1.21]
<i>trans</i> -Sabinyl acetate	9.05	1600.9	0.30	8.54	1295.2	0.37
Unknown SAOF VIII [m/z 166, 96 (61), 83 (60), 41 (57), 69 (56), 69 (56), 81 (53), 97 (51), 95 (48), 151 (41), 123 (39), 109 (39)...]				8.58	1298.1	0.02
Thymol	14.96	2127.9	tr	8.61	1300.2	0.02
Carvacrol	15.19	2151.6	0.14	8.71	1306.5	0.09
Myrtenyl acetate	9.49*	1636.6	[0.23]	8.99	1323.0	0.02
Unknown SAOF XII [m/z 153, 108 (97), 107 (94), 93 (76), 109 (35)...]				9.09	1330.2	0.04
<i>trans</i> -Carvyl acetate	10.07	1683.7	0.03	9.14	1334.2	0.01
exo-2-Hydroxycineole acetate	10.00	1678.4	0.02	9.19	1337.4	0.02
Unknown RHGR XLVII [m/z 70, 153 (94), 55 (51), 41 (50), 42 (36), 97 (29)...]				9.22	1339.8	0.08
α-Terpinyl acetate	9.59	1644.6	0.05	9.35	1348.7	0.02
α-Ylangene	6.89*	1434.4	[0.04]	9.60	1367.0	0.01
α-Copaene	7.03	1445.0	0.01	9.68	1372.8	0.02

β-Bourbonene	7.34	1468.7	0.03	9.75	1377.7	tr
Geranyl acetate	10.42	1712.8	0.01	9.87	1386.1	0.02
Isocaryophyllene	8.04*†	1521.4	[0.05]	10.09	1402.0	0.05
β-Caryophyllene	8.28	1540.2	2.56	10.26	1414.1	2.55
Caryophylla-4(12),8(13)-diene	8.48*	1556.2	[0.06]	10.37	1422.8	0.02
Aromadendrene	8.44*	1552.5	[0.39]	10.51	1433.2	0.12
Unknown SAOF III [m/z 153, 43 (57), 107 (56), 108 (44)... 204 (11)...]	13.30*	1968.4	[0.09]	10.54	1435.3	0.04
Unknown SAOF IV [m/z 153, 43 (55), 168 (33), 41 (28)... 207 (3)...]	13.49	1986.0	0.10	10.72*	1448.6	[3.16]
α-Humulene	9.15	1608.2	3.08	10.72*	1448.6	[3.16]
allo-Aromadendrene	8.85*	1584.7	[0.15]	10.81	1455.3	0.14
γ-Gurjunene	8.99	1596.1	0.01	10.98	1468.1	0.02
Germacrene D	9.63*	1648.1	[1.63]	11.05	1473.7	0.02
β-Selinene	9.72*	1655.4	[0.31]	11.14	1480.6	0.02
α-Selinene	9.78	1660.3	0.02	11.28*	1490.9	[0.21]
Viridiflorene	9.49*	1636.6	[0.23]	11.28*	1490.9	[0.21]
γ-Cadinene	10.24	1697.3	0.03	11.53	1509.8	0.02
δ-Cadinene	10.27	1699.8	0.03	11.67	1520.8	0.03
Isocaryophyllene epoxide B	11.96	1845.7	0.02	11.97	1544.7	0.02
Caryophyllene oxide	12.60	1903.0	0.13	12.35	1574.9	0.15
Viridiflorol	13.83	2017.8	1.32	12.48	1584.9	1.30
Humulene epoxide I	12.96	1937.0	0.06	12.56	1591.5	0.06
Ledol	13.19*	1958.1	[0.25]	12.62	1595.9	0.01
Humulene epoxide II	13.19*	1958.1	[0.25]	12.68	1600.9	0.25
Unknown SAOF V [m/z 81, 41 (55), 79 (45), 67 (4), 93 (38)...]	13.30*	1968.4	[0.09]	12.92	1620.5	0.03
Unknown SAOF VI [m/z 41, 91 (78), 67 (76), 119 (70), 55 (61)... 220 (7)]	13.60	1995.7	0.05	12.98	1625.0	0.07
Caryophylladienol II (3Z)-Caryophylla-3,8(13)-dien-5β-ol	15.88	2222.0	0.03	13.02	1628.6	0.03
Unknown ARAN XXXVI [m/z 109, 91 (67), 93 (62), 95 (58), 41 (57), 107 (56)... 220	16.82	2320.6	0.01	13.62	1678.8	0.01

(6)]						
Unknown SAOF X [m/z 133, 148 (97), 43 (50), 93 (47), 91 (41), 147 (40)...204 (8)]				14.74	1775.3	0.03
Phytone	14.52	2084.5	0.04	15.55	1847.4	0.01
Isopimaradiene isomer I				16.10	1897.5	0.04
Unknown THAR IX [m/z 43, 93 (95), 91 (69), 41 (67), 107 (62), 81 (62)...]				16.31	1917.3	0.02
Manool	19.15	2582.6	0.26	17.62	2043.3	0.27
Unknown MISC CXXXV [m/z 204, 109 (57), 80 (50), 93 (32), 81 (28), 161 (26)..]	19.58	2633.6	0.01	17.92	2074.0	0.02
Total reported	98.54%			99.35%		

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

[xx]: Duplicate percentage due to coelutions, only the first one is 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