

Date : 2024-01-22

CERTIFICATE OF ANALYSIS - GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 24A15-PTH08

Customer Identification : Ginger Root Distilled - Sri Lanka - GO0104R

Type : Essential Oil

Source : *Zingiber officinale*

Customer : Plant Therapy

Checked and approved by:

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

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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 : Benoit Roger, Ph. D.

Date : 2024-01-22

PHYSICOCHEMICAL DATA

Refractive index : 1.4899 ± 0.0003 (20 °C)

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

Analyst : Cindy Caron B. Sc.

Date : 2024-01-16

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
Toluene	0.01	Simple phenolic
Hexanal	0.38	Aliphatic aldehyde
2-Heptanone	0.07	Aliphatic ketone
2-Heptanol	0.08	Aliphatic alcohol
Tricyclene	0.19	Monoterpene
α -Thujene	0.02	Monoterpene
α -Pinene	2.92	Monoterpene
Camphene	6.69	Monoterpene
α -Fenchene	0.02	Monoterpene
Sabinene	0.08	Monoterpene
β -Pinene	0.28	Monoterpene
6-Methyl-5-hepten-2-one	0.43	Aliphatic ketone
Myrcene	0.83	Monoterpene
6-Methyl-5-hepten-2-ol	0.01	Aliphatic alcohol
Pseudolimonene	0.02	Monoterpene
α -Phellandrene	0.25	Monoterpene
Octanal	0.11	Aliphatic aldehyde
Δ^3 -Carene	0.07	Monoterpene
α -Terpinene	0.02	Monoterpene
<i>para</i> -Cymene	0.09	Monoterpene
Limonene	1.26	Monoterpene
1,8-Cineole	2.07	Monoterpenic ether
β -Phellandrene	4.78	Monoterpene
2-Heptyl acetate	0.01	Aliphatic ester
(<i>E</i>)- β -Ocimene	0.01	Monoterpene
2,6-Dimethyl-5-heptenal (melonal)	0.01	Aliphatic aldehyde
γ -Terpinene	0.04	Monoterpene
<i>para</i> -Cymenene	0.01	Monoterpene
Terpinolene	0.19	Monoterpene
<i>trans</i> -Linalool oxide (fur.)	tr	Monoterpenic alcohol
2-Nonanone	0.11	Aliphatic ketone
Unknown	0.08	Oxygenated monoterpene
Rosefuran	0.20	Monoterpenic ether
Linalool	0.45	Monoterpenic alcohol
2-Nonanol	0.10	Aliphatic alcohol
Bornyl methyl ether	0.02	Monoterpenic ether
(<i>E</i>)-4,8-Dimethylnona-1,3,7-triene	0.05	Terpene derivative
<i>trans</i> -Pinene hydrate	0.04	Monoterpenic alcohol
Camphor	0.08	Monoterpenic ketone
Camphene hydrate	0.07	Monoterpenic alcohol

exo-Isocitral	0.01	Monoterpenic aldehyde
Citronellal	0.13	Monoterpenic aldehyde
Borneol	0.90	Monoterpenic alcohol
Isoneral	0.04	Monoterpenic aldehyde
Terpinen-4-ol	0.30	Monoterpenic alcohol
Cryptone	0.02	Normonoterpenic ketone
<i>para</i> -Cymen-8-ol	0.02	Monoterpenic alcohol
Myrtenal	0.09	Monoterpenic aldehyde
α -Terpineol	0.39	Monoterpenic alcohol
Myrtenol	0.04	Monoterpenic alcohol
Decanal	0.17	Aliphatic aldehyde
<i>trans</i> -Piperitol	0.01	Monoterpenic alcohol
<i>trans</i> -Carveol	0.05	Monoterpenic alcohol
Bornyl formate	0.02	Monoterpenic ester
Citronellol	0.26	Monoterpenic alcohol
Neral	0.42	Monoterpenic aldehyde
Unknown	0.06	Oxygenated monoterpene
Geraniol	0.16	Monoterpenic alcohol
Geranial	0.67	Monoterpenic aldehyde
Citronellyl formate	0.01	Monoterpenic ester
Bornyl acetate	0.08	Monoterpenic ester
2-Undecanone	0.26	Aliphatic ketone
Geranyl formate	0.04	Monoterpenic ester
Carvacrol	0.04	Monoterpenic alcohol
4-Hydroxycryptone	0.01	Normonoterpenic alcohol
δ -Elemene	0.11	Sesquiterpene
α -Cubebene	0.03	Sesquiterpene
Citronellyl acetate	0.06	Monoterpenic ester
Cyclosativene I	0.24	Sesquiterpene
Cyclosativene II	0.09	Sesquiterpene
Neryl acetate	0.01	Monoterpenic ester
α -Copaene	0.62	Sesquiterpene
Geranyl acetate	6.37	Monoterpenic ester
β -Cubebene	0.06	Sesquiterpene
β -Elemene	0.87	Sesquiterpene
Sesquithujene	0.26	Sesquiterpene
Dodecanal	0.01	Aliphatic aldehyde
β -Caryophyllene	0.12	Sesquiterpene
β -Copaene	0.06	Sesquiterpene
γ -Elemene	0.13	Sesquiterpene
<i>trans</i> - α -Bergamotene	0.13	Sesquiterpene
Sesquisabinene A	0.06	Sesquiterpene
Unknown	tr	Sesquiterpene
Unknown	0.12	Sesquiterpene
α -Humulene	0.07	Sesquiterpene

allo-Aromadendrene	0.43	Sesquiterpene
Sesquisabinene B	0.33	Sesquiterpene
(E)- β -Farnesene	0.37	Sesquiterpene
Selina-4,11-diene	0.23	Sesquiterpene
γ -Muurolene	0.21	Sesquiterpene
Germacrene D	1.50	Sesquiterpene
ar-Curcumene	6.57	Sesquiterpene
γ -Curcumene	0.21	Sesquiterpene
Unknown	1.36	Sesquiterpene
Bicyclosesquiphellandrene?	3.15	Sesquiterpene
α -Zingiberene	25.94	Sesquiterpene
β -Bisabolene	5.43	Sesquiterpene
Cubebol	0.08	Sesquiterpenic alcohol
γ -Cadinene	6.83	Sesquiterpene
(3E,6E)- α -Farnesene	0.25	Sesquiterpene
<i>trans</i> -Calamenene	0.07	Sesquiterpene
β -Sesquiphellandrene	9.84	Sesquiterpene
(E)- γ -Bisabolene	0.35	Sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
α -Elemol	0.24	Sesquiterpenic alcohol
Germacrene B	0.51	Sesquiterpene
Unknown	0.12	Oxygenated sesquiterpene
<i>cis</i> -Sesquisabinene hydrate	0.10	Sesquiterpenic alcohol
(E)-Nerolidol	0.36	Sesquiterpenic alcohol
1'-Hydroxyeugenol	0.03	Phenylpropanoid
ar-Turmerol	0.03	Sesquiterpenic alcohol
<i>trans</i> -Sesquisabinene hydrate	0.20	Sesquiterpenic alcohol
Unknown	0.04	Oxygenated sesquiterpene
10-epi- γ -Eudesmol	0.10	Sesquiterpenic alcohol
<i>cis</i> -Zingiberenol	0.28	Sesquiterpenic alcohol
Unknown	0.08	Oxygenated sesquiterpene
γ -Eudesmol	0.10	Sesquiterpenic alcohol
<i>trans</i> -Zingiberenol	0.19	Sesquiterpenic alcohol
β -Eudesmol	0.25	Sesquiterpenic alcohol
Zingerone	0.02	Phenylbutanoid
α -Eudesmol	0.14	Sesquiterpenic alcohol
(3E,5E)-7-Hydroxyfarnesene	0.03	Sesquiterpenic alcohol
Zingerone methyl ether	0.01	Simple phenolic
4-(1,5-Dimethylhex-4-enyl)cyclohex-2-enone	0.05	Norsesquiterpenic ketone
α -Bisabolol	0.05	Sesquiterpenic alcohol
Unknown	0.18	Oxygenated sesquiterpene
Unknown	0.20	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.05	Oxygenated sesquiterpene

Unknown	0.02	Oxygenated sesquiterpene
Unknown	0.03	Oxygenated sesquiterpene
Unknown	0.04	Oxygenated sesquiterpene
Unknown	0.15	Oxygenated sesquiterpene
Unknown	0.06	Oxygenated sesquiterpene
Consolidated total	102.73	

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

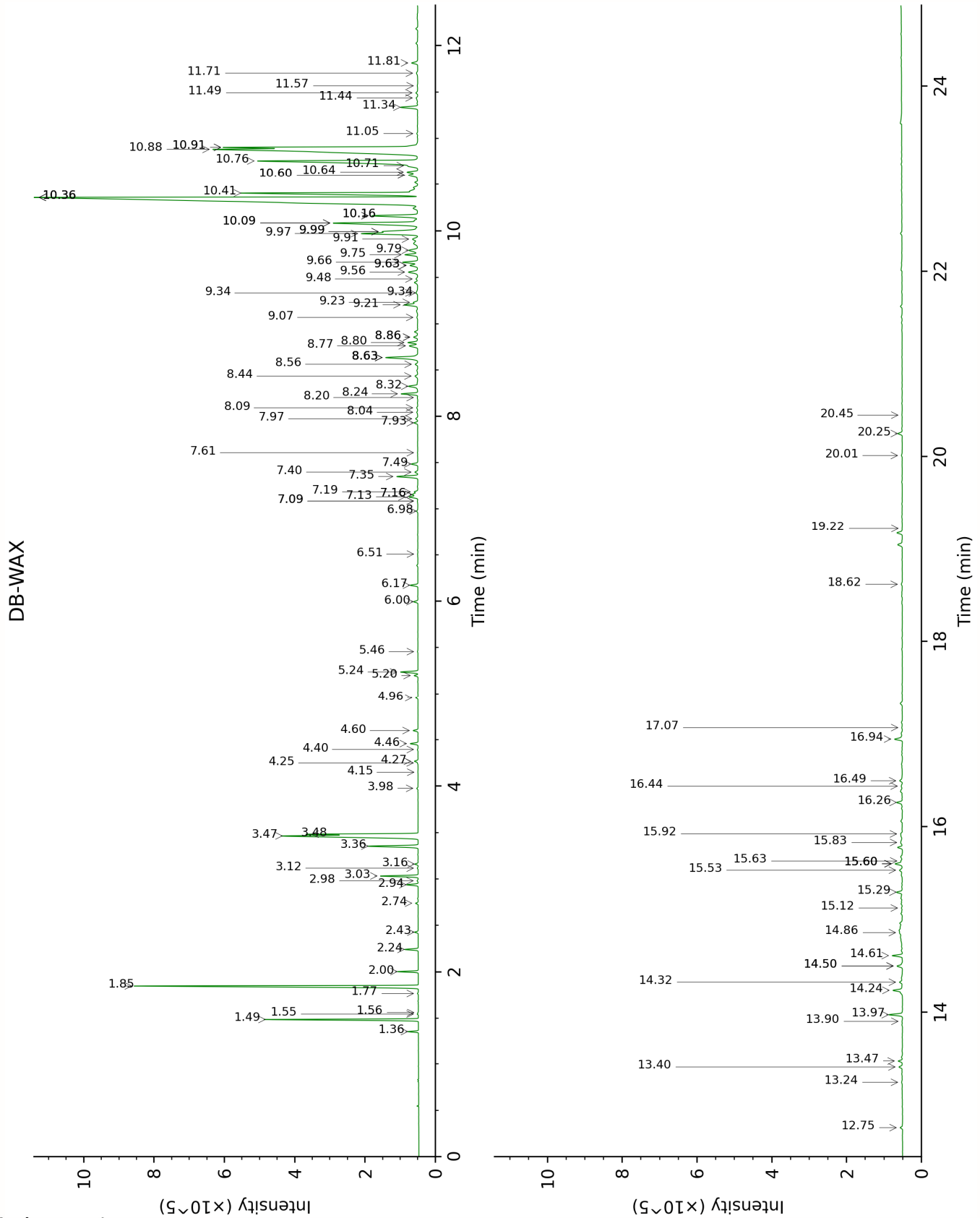
Note: no correction factor was applied

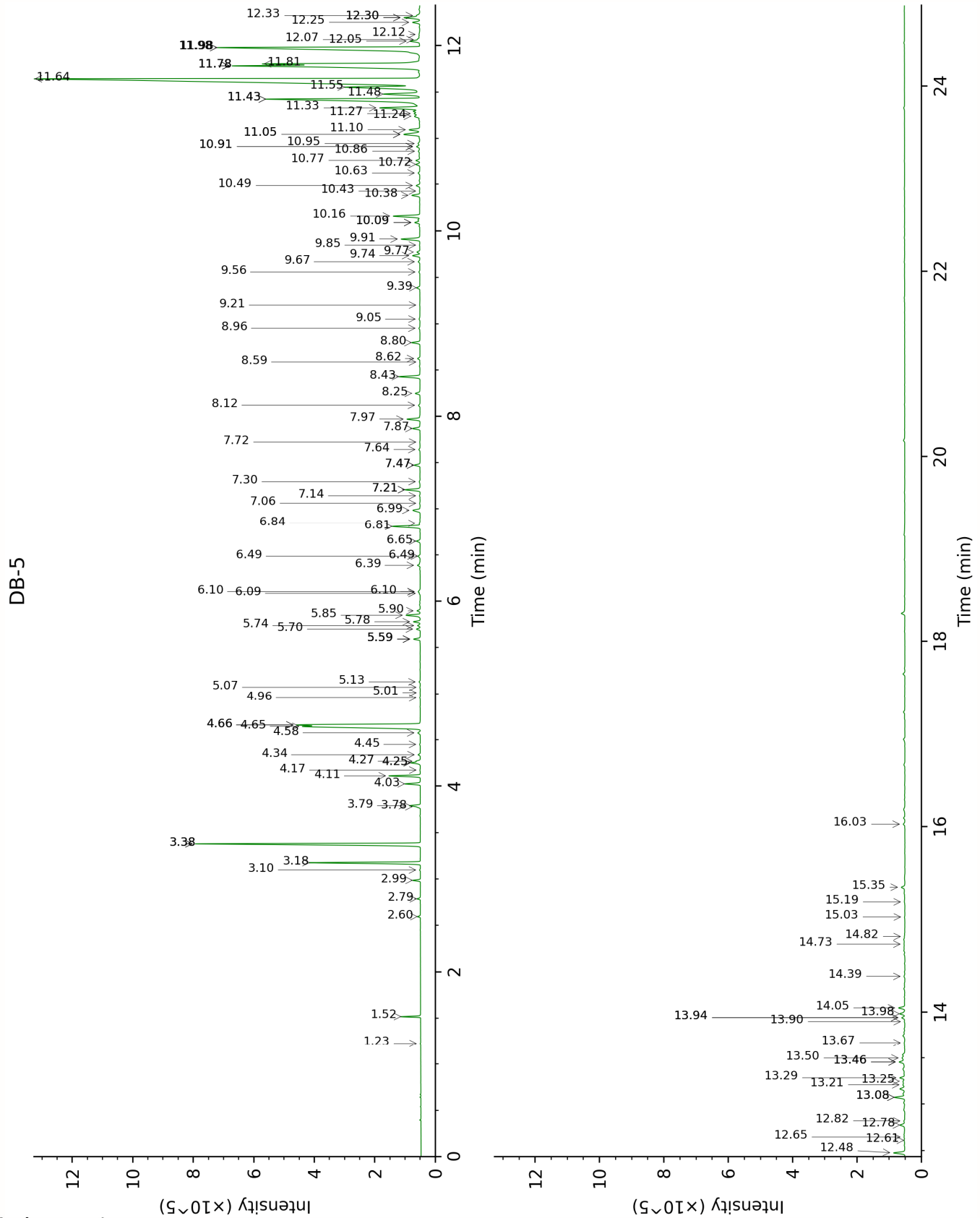
About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm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

Toluene	Column DB-WAX			Column DB-5		
	1.56	1002.3	0.01	1.23	759.4	0.01
Hexanal	2.00	1044.0	0.38	1.52	799.5	0.38
2-Heptanone	3.16	1142.6	0.07	2.60	890.1	0.07
2-Heptanol	5.20	1291.1	0.09	2.79	905.6	0.08
Tricyclene	1.36	973.0	0.19	2.99	918.7	0.19
α -Thujene	1.55	1000.8	0.02	3.10	926.0	0.02
α -Pinene	1.49	992.6	2.88	3.18	931.2	2.92
Camphene	1.85	1029.3	6.69	3.38*	944.6	[6.80]
α -Fenchene	1.77	1021.7	0.02	3.38*	944.6	[6.80]
Sabinene	2.43	1084.1	0.08	3.78*†	970.9	[0.07]
β -Pinene	2.24	1066.5	0.28	3.79*†	971.7	[0.30]
6-Methyl-5-hepten-2-one	5.24	1293.8	0.43	4.03	987.1	0.43
Myrcene	3.03	1132.9	0.81	4.11	992.8	0.83
6-Methyl-5-hepten-2-ol	7.09*	1428.4	[0.02]	4.18	996.9	0.01
Pseudolimonene	2.98	1129.0	0.02	4.25*	1002.0	[0.29]
α -Phellandrene	2.94	1125.8	0.25	4.25*	1002.0	[0.29]
Octanal	4.60	1248.4	0.12	4.27	1003.1	0.11
Δ^3 -Carene	2.74	1110.7	0.05	4.34	1007.6	0.07
α -Terpinene	3.12	1139.3	0.02	4.45	1014.6	0.02
<i>para</i> -Cymene	4.27	1224.9	0.09	4.58	1022.3	0.09
Limonene	3.36	1157.3	1.26	4.65*†	1026.7	[4.71]
1,8-Cineole	3.48	1167.0	2.07	4.66*†	1027.7	[3.51]
β -Phellandrene	3.47	1165.6	4.78	4.66*†	1027.7	[3.51]
2-Heptyl acetate	4.40	1233.9	0.02	4.96	1046.1	0.01
(<i>E</i>)- β -Ocimene	4.15	1216.5	0.01	5.01	1049.7	0.01
2,6-Dimethyl-5-heptenal (melonal)	5.46	1311.0	0.01	5.07	1053.4	0.01
γ -Terpinene	3.98	1204.2	0.03	5.13	1057.1	0.04
<i>para</i> -Cymenene	6.51	1386.0	0.01	5.59*	1085.9	[0.20]
Terpinolene	4.46	1238.4	0.19	5.59*	1085.9	[0.20]
<i>trans</i> -Linalool oxide (fur.)	7.09*	1428.4	[0.02]	5.59*	1085.9	[0.20]
2-Nonanone	6.00	1349.4	0.11	5.70	1092.7	0.11
Unknown ZIOF IX [m/z 96, 109 (55), 79 (41), 67 (38), 41 (36)... 150 (3)]	8.86*	1562.0	[0.13]	5.74	1095.0	0.08
Rosefuran	6.17	1362.1	0.20	5.78	1097.6	0.20
Linalool	8.24	1514.4	0.42	5.85	1102.0	0.45
2-Nonanol	7.93	1490.7	0.10	5.90	1105.0	0.10
Bornyl methyl ether	4.25	1223.6	0.01	6.09	1116.9	0.02
(<i>E</i>)-4,8-Dimethylnona-1,3,7- triene	4.96	1273.7	0.05	6.10*	1118.1	[0.08]
<i>trans</i> -Pinene hydrate	8.09	1502.8	0.04	6.10*	1118.1	[0.08]
Camphor	7.40	1451.4	0.08	6.39	1136.2	0.08

Camphene hydrate	8.63*	1544.5	[1.11]	6.49*	1142.5	[0.08]
exo-Isocitral	7.61	1466.9	0.01	6.49*	1142.5	[0.08]
Citronellal	7.19	1435.7	0.09	6.65	1152.9	0.13
Borneol	9.99*†	1651.7	[1.02]	6.81	1163.1	0.90
Isoneral	8.04	1499.1	0.04	6.84	1165.3	0.04
Terpinen-4-ol	8.77	1554.9	0.29	6.99	1174.4	0.30
Cryptone	9.34*	1598.7	[0.09]	7.06	1179.3	0.02
para-Cymen-8-ol	11.70	1794.1	0.06	7.14	1184.5	0.02
Myrtenal	8.86*	1562.0	[0.13]	7.21*	1188.7	[0.48]
α-Terpineol	9.99*†	1651.7	[1.02]	7.21*	1188.7	[0.48]
Myrtenol	11.05	1739.2	0.02	7.30	1194.2	0.04
Decanal	7.49	1457.9	0.17	7.48*	1205.5	[0.19]
trans-Piperitol	10.60*	1701.2	[0.42]	7.48*	1205.5	[0.19]
trans-Carveol	11.57	1782.7	0.02	7.64	1216.8	0.05
Bornyl formate	8.20	1511.3	0.01	7.72	1222.1	0.02
Citronellol	10.91*†	1726.7	[4.71]	7.87	1231.9	0.26
Neral	9.66	1625.3	0.43	7.97	1238.7	0.42
Unknown BODA V [m/z 109, 119 (84), 91 (81), 134 (55)... 137 (27)...]	11.49	1776.3	0.06	8.12	1248.6	0.06
Geraniol	11.82	1803.8	0.19	8.25	1257.2	0.16
Geranial	10.36*	1681.4	[25.88]	8.43	1269.3	0.67
Citronellyl formate	9.07	1578.3	0.03	8.59	1279.8	0.01
Bornyl acetate	8.44	1529.2	0.10	8.62	1282.3	0.08
2-Undecanone	8.80	1557.6	0.27	8.80	1294.2	0.26
Geranyl formate	10.08*	1659.2	[3.08]	8.96	1304.5	0.04
Carvacrol	15.60*	2157.0	[0.25]	9.06	1311.5	0.04
4-Hydroxycryptone	15.83	2179.8	0.11	9.20	1322.0	0.01
δ-Elemene	7.16*	1433.6	[0.19]	9.39	1335.2	0.11
α-Cubebene	6.98	1420.4	0.04	9.56	1347.0	0.03
Citronellyl acetate	9.63*	1622.5	[0.25]	9.67	1354.8	0.06
Cyclosativene I	7.13	1431.7	0.26	9.74	1359.4	0.24
Cyclosativene II	7.16*	1433.6	[0.19]	9.77	1362.1	0.09
Neryl acetate	10.36*	1681.4	[25.88]	9.85	1367.4	0.01
α-Copaene	7.35	1447.9	0.60	9.91	1371.9	0.62
Geranyl acetate	10.76	1714.3	6.37	10.09*	1384.5	[0.16]
β-Cubebene	7.98	1493.9	0.06	10.09*	1384.5	[0.16]
β-Elemene	8.63*	1544.5	[1.11]	10.16	1389.3	0.87
Sesquithujene	8.32	1520.7	0.30	10.38	1405.0	0.26
Dodecanal	10.16*	1665.5	[1.45]	10.43	1408.4	0.01
β-Caryophyllene	8.63*	1544.5	[1.11]	10.49	1412.8	0.12
β-Copaene	8.56	1539.0	0.08	10.63	1423.4	0.06
γ-Elemene	9.23	1590.8	0.12	10.72	1430.3	0.13
trans-α-Bergamotene	8.63*	1544.5	[1.11]	10.76	1433.5	0.13
Sesquisabinene A	9.34*	1598.7	[0.09]	10.86	1440.8	0.06

Unknown ZIOF XVI [m/z 139, 69 (43), 91 (42), 41 (36), 81 (36), 43 (36)... 204 (5)]	14.50*	2048.9	[0.20]	10.91*	1444.6	[0.12]
Unknown ZIOF XV [m/z 139, 69 (60), 41 (51), 43 (47), 119 (41)... 204 (1)]				10.91*	1444.6	[0.12]
α -Humulene	9.48	1610.7	0.06	10.95	1447.0	0.07
allo-Aromadendrene	9.21	1588.8	0.43	11.05*	1454.3	[0.68]
Sesquisabinene B	9.56	1616.7	0.33	11.05*	1454.3	[0.68]
(E)- β -Farnesene	9.75	1631.8	0.38	11.10	1458.1	0.37
Selina-4,11-diene	9.63*	1622.5	[0.25]	11.24	1468.8	0.23
γ -Muurolene	9.79	1635.5	0.36	11.27	1471.0	0.21
Germacrene D	9.97*†	1650.1	[1.76]	11.33	1475.6	1.50
ar-Curcumene	10.91*†	1726.7	[4.71]	11.43*	1482.6	[6.78]
γ -Curcumene	9.91	1645.2	0.21	11.43*	1482.6	[6.78]
Unknown ZIOF XVII [m/z 161, 91 (100), 105 (93), 79 (89), 93 (89), 107 (79)... 204 (34)]	10.16*	1665.5	[1.45]	11.48	1486.6	1.36
Bicyclosesquiphellandrene?	10.08*	1659.2	[3.08]	11.56	1492.2	3.15
α -Zingiberene	10.36*	1681.4	[25.88]	11.64	1498.8	25.94
β -Bisabolene	10.41	1685.1	5.43	11.78*†	1509.5	[7.87]
Cubebol	12.75	1886.0	0.08	11.78*†	1509.5	[7.87]
γ -Cadinene	10.60*	1701.2	[0.42]	11.78*†	1509.5	[7.87]
(3E,6E)- α -Farnesene	10.71	1710.1	0.25	11.81*†	1511.2	[4.72]
trans-Calamenene	11.44	1771.6	0.07	11.98*	1524.9	[9.90]
β -Sesquiphellandrene	10.88*†	1724.9	[11.20]	11.98*	1524.9	[9.90]
(E)- γ -Bisabolene	10.64	1704.1	0.32	12.05	1530.3	0.35
Unknown ZIOF XIX [m/z 177, 159 (67), 41 (43), 91 (43), 43 (41)... 220 (t)]	13.47	1951.8	0.11	12.07	1531.6	0.06
Unknown ZIOF XX [m/z 43, 177 (99), 93 (75), 41 (73), 91 (65), 107 (60)... 220 (4)]	13.24	1930.7	0.03	12.12	1535.9	0.04
α -Elemol	14.24	2023.8	0.33	12.25	1546.2	0.24
Germacrene B	11.34	1763.2	0.51	12.30*	1550.2	[0.55]
Unknown ZIOF XXI [m/z 98, 97 (95), 126 (91), 95 (69), 41 (67), 55 (55), 123 (53)... 220 (3)]	14.86	2083.3	0.12	12.30*	1550.2	[0.55]
cis-Sesquisabinene hydrate	13.40	1945.9	0.10	12.33	1552.0	0.10
(E)-Nerolidol	13.97	1998.6	0.38	12.48	1563.8	0.36
1'-Hydroxyeugenol	20.01	2641.0	0.03	12.61	1574.4	0.03
ar-Turmerol	15.63	2159.9	0.05	12.65	1577.2	0.03
trans-Sesquisabinene	14.50*	2048.9	[0.20]	12.78	1587.3	0.20

hydrate						
Unknown ZIOF XXIII [m/z 132, 118 (89), 145 (85), 119 (79), 117 (60)...]	13.90	1991.9	0.02	12.82	1590.8	0.04
10-epi- γ -Eudesmol	14.32	2032.1	0.10	13.08*	1611.1	[0.36]
<i>cis</i> -Zingiberenol	14.61	2059.6	0.28	13.08*	1611.1	[0.36]
Unknown CULO XXV [m/z 119, 85 (92), 105 (37), 120 (36), 91 (28)... 218 (6)]	16.44	2242.3	0.05	13.21	1622.2	0.08
γ -Eudesmol	15.12	2109.3	0.04	13.25	1625.4	0.10
<i>trans</i> -Zingiberenol	15.29	2126.4	0.19	13.29	1628.5	0.19
β -Eudesmol	15.60*	2157.0	[0.25]	13.46*	1642.5	[0.26]
Zingerone	20.45	2693.1	0.02	13.46*	1642.5	[0.26]
α -Eudesmol	15.53	2150.0	0.12	13.50	1646.1	0.14
(3 <i>E</i> ,5 <i>E</i>)-7-Hydroxyfarnesene	16.49	2248.3	0.12	13.67	1660.0	0.03
Zingerone methyl ether	19.22	2547.7	0.01	13.90	1679.0	0.01
4-(1,5-Dimethylhex-4-enyl)cyclohex-2-enone	15.92	2189.1	0.05	13.94*	1682.6	[0.10]
α -Bisabolol	15.60*	2157.0	[0.25]	13.94*	1682.6	[0.10]
Unknown ZIOF XXXVIII [m/z 137, 119 (70), 84 (69), 41 (68), 69 (53), 55 (45), 109 (38)... 222 (2)]	16.26	2224.1	0.19	13.98	1686.0	0.18
Unknown ZIOF XXVI [m/z 69, 41 (59), 118 (33), 43 (32), 55 (31)... 234? (t)]	16.94	2295.0	0.27	14.05	1691.2	0.20
Unknown ZIOF XXXIX [m/z 119, 91 (31), 105 (29), 41 (25), 133 (23), 158 (21)...]	17.07	2308.3	0.02	14.39	1719.9	0.04
Unknown ZIOF XXVII [m/z 82, 43 (85), 91 (67), 93 (66), 41 (66), 69 (59), 106 (47)... 218 (5)...]				14.73	1750.0	0.05
Unknown ZIOF XXIX [m/z 43, 82 (100), 41 (86), 69 (76), 93 (72), 91 (72)... 218 (4)...]				14.82	1757.1	0.02
Unknown ZIOF XXXI [m/z 151, 41 (78), 95 (71), 109 (59), 55 (56), 69 (55)... 234 (15)]				15.03	1775.4	0.03
Unknown ZIOF XXXII [m/z 69, 41 (96), 43 (90), 109 (51), 55 (42), 81 (33)...]	18.62	2478.4	0.05	15.19	1789.5	0.04
Unknown AMBA XVIII [m/z 69, 43 (95), 41 (84), 109 (78),	20.25	2669.2	0.13	15.35	1803.2	0.15

95 (54), 93 (49)... 177 (36), 220 (2)...]					
Unknown AMBA XXII [m/z 43, 109 (77), 69 (65), 41 (60), 55 (51), 95 (44), 135 (43)... 207 (19)...]			16.03	1864.8	0.06
Total reported		94.64%		96.48%	

*: 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