Date : 2024-03-13

Certificate of Analysis - GC Profiling

Sample Identification

Internal code : 24C04-PTH01
Customer Identification : Ginger Root CO2 - Nigeria - G40114R
Type : CO2 Extract
Source : *Zingiber officinale*
Customer : Plant Therapy

Checked an approved by:

Alexis St-Gelais, Ph. D., 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Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.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.

This report is an update from the first version issued on 2024-03-11 to correct the customer identification.

Méthode certifiée ISO 17025:2017 Certified method

Laboratoire PhytoChemia

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Gas Chromatographic Analysis

Method : PC-MAT-004 - Terpenes and volatiles profiling by response factor
Results : See analysis summary (next page)
Analyst : Alexis St-Gelais, Ph. D., Chimiste 2013-174
Date : 2024-03-11

Physicochemical data

Conclusion

No adulterant, contaminant or diluent has been detected using this method.

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Analysis Summary

Identification	mg/g	% m/m	Class
Hexanal	38.19	3.82	Aliphatic aldehyde
Biomarker	0.48	0.05	Aliphatic aldehyde
2-Heptanone	0.63	0.06	Aliphatic ketone
2-Heptanol	0.49	0.05	Aliphatic alcohol
α-Pinene	3.55	0.35	Monoterpene
Camphene	10.90	1.09	Monoterpene
α-Fenchene	0.09	0.01	Monoterpene
β-Pinene	0.52	0.05	Monoterpene
Sabinene	0.16	0.02	Monoterpene
6-Methyl-5-hepten-2-one	0.56	0.06	Aliphatic ketone
Myrcene	2.04	0.2	Monoterpene
α-Phellandrene	0.67	0.07	Monoterpene
Octanal	8.20	0.82	Aliphatic aldehyde
Biomarker	0.18	0.02	Aliphatic aldehyde
Δ3-Carene	0.06	0.01	Monoterpene
para-Cymene	0.14	0.01	Monoterpene
Limonene	2.89	0.29	Monoterpene
1,8-Cineole	7.95	0.8	Monoterpenic ether
β-Phellandrene	11.48	1.15	Monoterpene
(*E*)-β-Ocimene	0.08	0.01	Monoterpene
γ-Terpinene	0.08	0.01	Monoterpene
cis-Sabinene hydrate	0.08	0.01	Monoterpenic alcohol
Terpinolene	0.61	0.06	Monoterpene
Unknown	1.15	0.11	Oxygenated monoterpene
Rosefuran	0.61	0.06	Monoterpenic ether
Linalool	1.53	0.15	Monoterpenic alcohol
2-Nonanol	0.27	0.03	Aliphatic alcohol
(*E*)-4,8-Dimethyl-1,3,7-nonatriene	0.10	0.01	Monoterpene
Bornyl methyl ether	0.10	0.01	Monoterpenic ether
trans-Pinene hydrate	0.27	0.03	Monoterpenic alcohol
Camphor	0.43	0.04	Monoterpenic ketone
Camphene hydrate	0.30	0.03	Monoterpenic alcohol
exo-Isocitral	0.28	0.03	Monoterpenic aldehyde
Citronellal	0.34	0.03	Monoterpenic aldehyde
Borneol	4.95	0.49	Monoterpenic alcohol
Isoneral	0.11	0.01	Monoterpenic aldehyde
Unknown	0.38	0.04	Oxygenated monoterpene
Rosefuran oxide	0.46	0.05	Monoterpenic ether
Terpinen-4-ol	0.70	0.07	Monoterpenic alcohol
para-Cymen-8-ol	0.08	0.01	Monoterpenic alcohol
Isogeranial	0.44	0.04	Monoterpenic aldehyde

α-Terpineol	2.78	0.28	Monoterpenic alcohol
Myrtenol	0.47	0.05	Monoterpenic alcohol
Decanal	14.09	1.41	Aliphatic aldehyde
2,3-Epoxyneral?	0.25	0.03	Monoterpenic aldehyde
Nerol	1.83	0.18	Monoterpenic alcohol
Neral	10.01	1.0	Monoterpenic aldehyde
Unknown	0.65	0.07	Oxygenated monoterpene
Geraniol	2.90	0.29	Monoterpenic alcohol
Geranial	16.03	1.6	Monoterpenic aldehyde
Bornyl acetate	0.75	0.07	Monoterpenic ester
2-Undecanone	1.45	0.14	Aliphatic ketone
2-Undecanol	0.31	0.03	Aliphatic alcohol
δ-Elemene	0.46	0.05	Sesquiterpene
α-Cubebene	0.10	0.01	Sesquiterpene
Citronellyl acetate	0.57	0.06	Monoterpenic ester
Cyclosativene I	0.71	0.07	Sesquiterpene
Cyclosativene II	0.28	0.03	Sesquiterpene
Neryl acetate	0.04	0.0	Monoterpenic ester
α-Copaene	1.88	0.19	Sesquiterpene
β-Cubebene	0.47	0.05	Sesquiterpene
Geranyl acetate	2.61	0.26	Monoterpenic ester
β-Elemene	2.95	0.3	Sesquiterpene
Vanillin	0.21	0.02	Simple phenolic
γ-4-Dimethylbenzenebutyral	0.20	0.02	Simple phenolic
Sesquithujene	0.96	0.1	Sesquiterpene
Dodecanal	0.67	0.07	Aliphatic aldehyde
β-Caryophyllene	0.31	0.03	Sesquiterpene
β-Copaene	0.23	0.02	Sesquiterpene
γ-Elemene	0.74	0.07	Sesquiterpene
trans-α-Bergamotene	0.46	0.05	Sesquiterpene
Sesquisabinene A	0.36	0.04	Sesquiterpene
α-Humulene	0.33	0.03	Sesquiterpene
allo-Aromadendrene	1.47	0.15	Sesquiterpene
Sesquisabinene B	1.23	0.12	Sesquiterpene
(*E*)-β-Farnesene	1.71	0.17	Sesquiterpene
Selina-4,11-diene	0.71	0.07	Sesquiterpene
γ-Muurolene	0.60	0.06	Sesquiterpene
Germacrene D	7.19	0.72	Sesquiterpene
β-Selinene	1.15	0.11	Sesquiterpene
ar-Curcumene	19.10	1.91	Sesquiterpene
Unknown	6.44	0.64	Sesquiterpene
2-Tridecanone	0.13	0.01	Aliphatic ketone
epi-Cubebol	0.31	0.03	Sesquiterpenic alcohol
Bicyclosesquiphellandrene?	11.22	1.12	Sesquiterpene
α-Zingiberene	129.84	12.98	Sesquiterpene

β-Bisabolene	25.16	2.52	Sesquiterpene
Cubebol	0.82	0.08	Sesquiterpenic alcohol
γ-Cadinene	1.84	0.18	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	29.58	2.96	Sesquiterpene
7-epi-α-Selinene	0.25	0.03	Sesquiterpene
δ-Cadinene	0.82	0.08	Sesquiterpene
trans-Calamenene	0.14	0.01	Sesquiterpene
β-Sesquiphellandrene	50.91	5.09	Sesquiterpene
(*E*)-γ-Bisabolene	2.14	0.21	Sesquiterpene
Unknown	0.63	0.06	Oxygenated sesquiterpene
α-Elemol	2.30	0.23	Sesquiterpenic alcohol
Germacrene B	2.10	0.21	Sesquiterpene
cis-Sesquisabinene hydrate	0.95	0.1	Sesquiterpenic alcohol
β-Calacorene	0.02	0.0	Sesquiterpene
(*E*)-Nerolidol	2.35	0.24	Sesquiterpenic alcohol
1'-Hydroxyeugenol	0.35	0.03	Phenylpropanoid
ar-Turmerol	0.26	0.03	Sesquiterpenic alcohol
trans-Sesquisabinene hydrate	2.42	0.24	Sesquiterpenic alcohol
Unknown	0.34	0.03	Oxygenated sesquiterpene
cis-Zingiberenol	3.68	0.37	Sesquiterpenic alcohol
Unknown	0.81	0.08	Oxygenated sesquiterpene
trans-Zingiberenol	1.87	0.19	Sesquiterpenic alcohol
α-Eudesmol	0.30	0.03	Sesquiterpenic alcohol
β-Eudesmol	5.73	0.57	Sesquiterpenic alcohol
Zingerone	99.15	9.92	Phenylbutanoid
(3*E*,5*E*)-7-Hydroxyfarnesene	1.11	0.11	Sesquiterpenic alcohol
α-Bisabolol	1.18	0.12	Sesquiterpenic alcohol
Zingerone methyl ether	0.52	0.05	Simple phenolic
Unknown	4.09	0.41	Oxygenated sesquiterpene
Unknown	3.72	0.37	Oxygenated sesquiterpene
Unknown	1.52	0.15	Oxygenated sesquiterpene
Oplopanone	0.17	0.02	Sesquiterpenic alcohol
Xanthorizzhol?	1.59	0.16	Sesquiterpenic alcohol
Unknown	0.41	0.04	Oxygenated sesquiterpene
Unknown	0.67	0.07	Oxygenated sesquiterpene
Unknown	0.58	0.06	Oxygenated sesquiterpene
Unknown	4.08	0.41	Oxygenated sesquiterpene
Unknown	1.44	0.14	Oxygenated sesquiterpene
Unknown	1.38	0.14	Oxygenated sesquiterpene
Geranyl-*para*-cymene	1.16	0.12	Diterpene
Palmitic acid	4.20	0.42	Aliphatic acid
(*E*,*E*)-Geranyllinalool	1.46	0.15	Diterpenic alcohol
[4]-Shogaol	0.80	0.08	Gingerol derivative
Unknown	0.24	0.02	Gingerol derivative
Unknown	0.87	0.09	Gingerol derivative

Unknown	0.31	0.03	Oxygenated diterpene
Linoleic acid	0.86	0.09	Aliphatic acid
Oleic acid	2.65	0.27	Aliphatic acid
[4]-Gingerol	0.24	0.02	Gingerol derivative
[4]-Isogingerol?	11.19	1.12	Gingerol derivative
[6]-Isoshogaol?	1.62	0.16	Gingerol derivative
[6]-Paradol	3.12	0.31	Gingerol derivative
Methyl [6]-isoshogaol?	0.22	0.02	Gingerol derivative
Methyl [6]-paradol?	0.13	0.01	Gingerol derivative
[6]-Dihydroparadol?	0.35	0.03	Gingerol derivative
[6]-Shogaol	31.07	3.11	Gingerol derivative
Methyl [6]-shogaol	1.16	0.12	Gingerol derivative
Acetoxy-[6]-dihydroparadol	0.09	0.01	Gingerol derivative
Diacetoxy-[4]-gingerdiol	0.52	0.05	Gingerol derivative
Geranyl laurate	0.42	0.04	Monoterpenic ester
[6]-Gingerol	9.56	0.96	Gingerol derivative
[6]-Isogingerol?	0.27	0.03	Gingerol derivative
[8]-Isoshogaol	0.32	0.03	Gingerol derivative
Methyl [6]-gingerol	0.43	0.04	Gingerol derivative
1-(4'-Hydroxy-3'-methoxyphenyl)-7-dodecen-3-one?	0.09	0.01	Gingerol derivative
[8]-Paradol	0.44	0.04	Gingerol derivative
Acetoxy-[6]-gingerol	0.23	0.02	Gingerol derivative
[6]-Gingerdiol isomer I	1.62	0.16	Gingerol derivative
[6]-Gingerdiol isomer II	0.51	0.05	Gingerol derivative
[8]-Shogaol	6.36	0.64	Gingerol derivative
5-Acetoxy-[6]-gingerdiol	0.78	0.08	Gingerol derivative
Methyl 5-acetoxy-[6]-gingerdiol	12.04	1.2	Gingerol derivative
Diacetoxy-[6]-gingerdiol	0.85	0.08	Gingerol derivative
[8]-Gingerdione	0.71	0.07	Gingerol derivative
1-Dehydro-[6]-gingerdione	1.32	0.13	Gingerol derivative
[8]-Gingerol	1.90	0.19	Gingerol derivative
[10]-Isoshogaol	0.21	0.02	Gingerol derivative
[10]-Paradol	0.24	0.02	Gingerol derivative
[10]-Shogaol	8.52	0.85	Gingerol derivative
[10]-Gingerdione	0.80	0.08	Gingerol derivative
[12]-Isoshogaol?	1.88	0.19	Gingerol derivative
[12]-Shogaol	0.28	0.03	Gingerol derivative
[6]-Gingerdiol neral acetal?	0.06	0.01	Gingerol derivative
[6]-Gingerdiol geranial acetal	1.58	0.16	Gingerol derivative
Consolidated total	**720.77**	**72.08**	

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

Note: Individual compounds contents were corrected following the method of Cachet et al., 2016 (Flavour and Fragrance Journal guidelines).
Unknown compounds are expressed in equivalents of internal standard without correction.

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

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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: 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.

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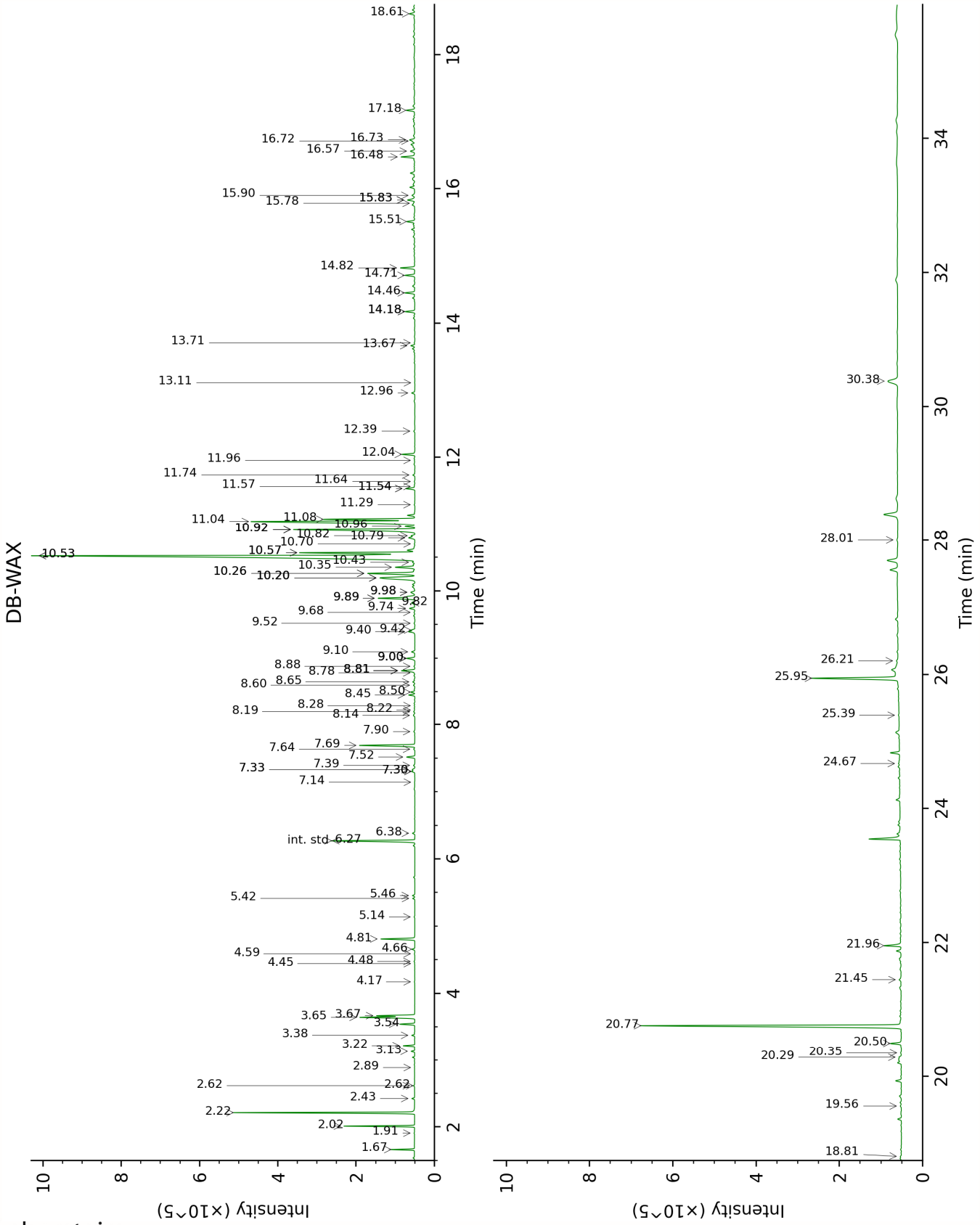
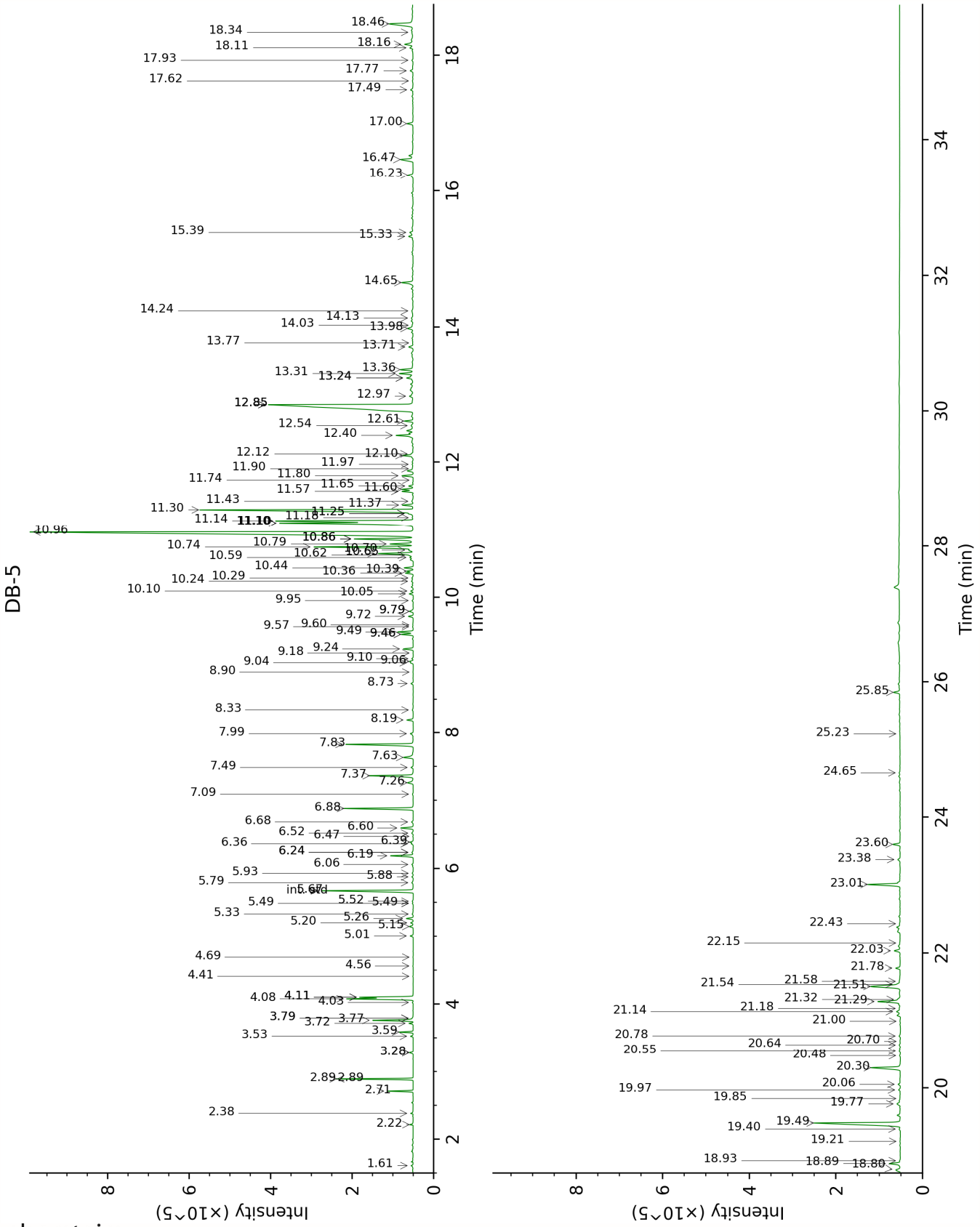

DB-WAX
Time (min)
Intensity (×10^5)
18.61
17.18
16.72
16.73
16.57
16.48
15.90
15.78
15.83
15.51
14.82
14.71
14.46
14.18
13.71
13.67
13.11
12.96
12.39
12.04
11.96
11.74
11.57
11.64
11.54
11.29
11.04
11.08
10.92
10.96
10.82
10.79
10.70
10.57
10.53
10.35
10.43
10.26
10.20
9.89
9.98
9.74
9.82
9.68
9.52
9.40
9.42
9.10
9.00
8.88
8.78
8.81
8.60
8.65
8.45
8.50
8.19
8.28
8.14
8.22
7.90
7.64
7.69
7.52
7.33
7.39
7.38
7.14
6.38
int. std
6.27
5.42
5.46
5.14
4.81
4.59
4.66
4.45
4.48
4.17
3.65
3.67
3.54
3.38
3.22
3.13
2.89
2.62
2.62
2.43
2.22
2.02
1.91
1.67
30.38
28.01
26.21
25.95
25.39
24.67
21.96
21.45
20.77
20.50
20.29
20.35
19.56
18.81


DB-5
Intensity (×10^5)
Time (min)
18.46
18.34
18.16
18.11
17.93
17.77
17.62
17.49
17.00
16.47
16.23
15.39
15.33
14.65
14.24
14.13
14.03
13.98
13.77
13.71
13.36
13.31
13.24
12.97
12.85
12.61
12.54
12.40
12.12
12.10
11.97
11.90
11.80
11.74
11.65
11.60
11.57
11.43
11.37
11.30
11.25
11.14
11.10
11.18
10.96
10.86
10.79
10.74
10.70
10.62
10.59
10.44
10.39
10.36
10.29
10.24
10.10
10.05
9.95
9.79
9.72
9.60
9.57
9.49
9.46
9.24
9.18
9.10
9.06
9.04
8.90
8.73
8.33
8.19
7.99
7.83
7.63
7.49
7.37
7.26
7.09
6.88
6.68
6.60
6.52
6.47
6.39
6.36
6.24
6.19
6.06
5.93
5.88
5.79
5.67
5.52
5.49
5.49
5.33
5.26
5.20
5.15
5.01
4.69
4.56
4.41
4.11
4.08
4.03
3.79
3.77
3.72
3.59
3.53
3.28
2.89
2.89
2.71
2.38
2.22
1.61
25.85
25.23
24.65
23.60
23.38
23.01
22.43
22.15
22.03
21.78
21.58
21.54
21.51
21.32
21.29
21.18
21.14
21.00
20.78
20.70
20.64
20.55
20.48
20.30
20.06
19.97
19.85
19.77
19.49
19.40
19.21
18.93
18.89
18.80

FULL ANALYSIS DATA

Hexanal	Column DB-WAX			Column DB-5		
	2.22	1050.4	4.30	1.30	807.7	4.20
Biomarker *Z. officinale* CO2, I	2.62*	1087.9	[0.03]	1.61	837.4	0.05
2-Heptanone	3.38	1144.9	0.08	2.22	894.8	0.07
2-Heptanol	5.42	1293.0	0.06	2.38	908.5	0.06
α-Pinene	1.67	998.0	0.51	2.71	931.9	0.49
Camphene	2.02	1031.4	1.55	2.89*	944.7	[1.49]
α-Fenchene	1.91	1021.4	0.01	2.89*	944.7	[1.49]
β-Pinene	2.43	1070.2	0.07	3.28*	972.2	[0.10]
Sabinene	2.62*	1087.9	[0.03]	3.28*	972.2	[0.10]
6-Methyl-5-hepten-2-one	5.46	1296.1	0.08	3.53	989.9	0.06
Myrcene	3.22	1133.5	0.29	3.59	994.2	0.28
α-Phellandrene	3.13	1126.8	0.09	3.72	1003.3	0.09
Octanal	4.81	1243.5	1.01	3.76	1006.2	0.98
Biomarker *Z. officinale* CO2, II	5.14	1264.8	0.02	3.80*	1008.2	[0.03]
Δ3-Carene	2.89	1108.8	0.01	3.80*	1008.2	[0.03]
para-Cymene	4.48	1221.6	0.02	4.03	1023.3	0.02
Limonene	3.54	1157.1	0.41	4.08*†	1026.8	[1.71]
1,8-Cineole	3.67	1166.2	1.00	4.10*†	1028.3	[1.23]
β-Phellandrene	3.65	1164.4	1.64	4.10*†	1028.3	[1.23]
(*E*)-β-Ocimene	4.44	1219.4	0.01	4.41	1048.2	0.01
γ-Terpinene	4.17	1201.4	0.01	4.56	1058.0	0.01
cis-Sabinene hydrate	7.30*	1428.8	[0.11]	4.69	1066.4	0.01
Terpinolene	4.66	1233.5	0.08	5.01	1086.5	0.08
Unknown ZIOF IX [m/z 96, 109 (55), 79 (41), 67 (38), 41 (36)... 150 (3)]	9.10	1563.4	0.12	5.15	1095.5	0.12
Rosefuran	6.38	1362.1	0.08	5.20	1098.9	0.07
Linalool	8.45	1514.2	0.19	5.26	1103.1	0.19
2-Nonanol	8.19	1494.3	0.04	5.33	1107.2	0.03
(*E*)-4,8-Dimethyl-1,3,7-nonatriene				5.49*	1117.5	[0.03]
Bornyl methyl ether	4.59	1229.1	0.01	5.49*	1117.5	[0.03]
trans-Pinene hydrate	8.28	1501.2	0.02	5.52	1119.5	0.03
Camphor	7.64	1453.1	0.04	5.79	1137.1	0.05
Camphene hydrate	8.88	1546.9	0.03	5.88	1142.7	0.04
exo-Isocitral	7.90	1472.3	0.04	5.93	1146.0	0.03
Citronellal	7.40	1435.4	0.05	6.06	1154.4	0.04
Borneol	10.20*	1650.3	[2.03]	6.19	1162.7	0.61
Isoneral	8.22	1496.2	0.01	6.24*	1165.9	[0.05]
Unknown AFGI I [m/z 109, 79 (18), 81 (15), 91 (12), 77				6.24*	1165.9	[0.05]

(10)... 152 (3)]						
Rosefuran oxide	9.00*	1556.0	[0.31]	6.36	1174.1	0.05
Terpinen-4-ol	9.00*	1556.0	[0.31]	6.39	1175.7	0.09
para-Cymen-8-ol	11.96	1796.3	0.02	6.47	1181.1	0.01
Isogeranial	8.60	1525.3	0.05	6.52	1184.1	0.05
α-Terpineol	10.20*	1650.3	[2.03]	6.60	1189.0	0.34
Myrtenol	11.30	1740.7	0.02	6.68	1194.7	0.06
Decanal	7.69	1457.3	1.76	6.88	1207.6	1.76
2,3-Epoxyneral?				7.09	1221.6	0.03
Nerol	11.54*	1760.8	[0.31]	7.26	1232.9	0.22
Neral	9.89*	1626.1	[1.24]	7.37	1239.8	1.20
Unknown BODA V [m/z 109, 119 (84), 91 (81), 134 (55)... 137 (27)...]	11.74	1777.6	0.07	7.49	1247.8	0.07
Geraniol	12.04	1804.1	0.42	7.64	1257.7	0.36
Geranial	10.53*†	1676.8	[20.11]	7.83	1270.5	1.92
Bornyl acetate	8.65	1529.2	0.07	7.98	1280.9	0.08
2-Undecanone	9.00*	1556.0	[0.31]	8.19	1294.2	0.18
2-Undecanol	10.70	1691.1	0.02	8.33	1303.8	0.04
δ-Elemene	7.33*	1430.8	[0.10]	8.73	1332.6	0.06
α-Cubebene	7.14	1417.0	0.02	8.90	1344.7	0.01
Citronellyl acetate	9.89*	1626.1	[1.24]	9.04	1354.7	0.06
Cyclosativene I	7.30*	1428.8	[0.11]	9.06	1356.0	0.10
Cyclosativene II	7.33*	1430.8	[0.10]	9.10	1358.8	0.04
Neryl acetate	10.57*	1680.4	[3.65]	9.18	1364.8	tr
α-Copaene	7.52	1444.5	0.27	9.24	1369.2	0.27
β-Cubebene	8.14	1490.1	0.07	9.46*	1384.6	[0.31]
Geranyl acetate	10.96	1713.1	0.30	9.46*	1384.6	[0.31]
β-Elemene	8.82*	1541.9	[0.52]	9.49	1387.1	0.42
Vanillin	18.81	2465.9	0.05	9.57	1392.6	0.02
γ-4-Dimethylbenzenebutyral				9.60	1394.5	0.03
Sesquithujene	8.50	1517.5	0.13	9.72	1403.7	0.14
Dodecanal	10.43	1669.0	0.09	9.80*	1409.2	[0.13]
β-Caryophyllene	8.82*	1541.9	[0.52]	9.80*	1409.2	[0.13]
β-Copaene	8.78	1539.5	0.02	9.95	1421.2	0.03
γ-Elemene	9.42	1588.3	0.10	10.05	1428.7	0.10
trans-α-Bergamotene	8.82*	1541.9	[0.52]	10.10	1431.9	0.07
Sesquisabinene A	9.52	1596.3	0.03	10.24	1442.6	0.05
α-Humulene	9.68	1609.3	0.03	10.29	1446.4	0.05
allo-Aromadendrene	9.40	1586.4	0.24	10.36	1451.8	0.21
Sesquisabinene B	9.74	1614.1	0.19	10.39	1454.0	0.17
(*E*)-β-Farnesene	9.98*	1633.3	[0.20]	10.44	1457.6	0.24
Selina-4,11-diene	9.82	1620.7	0.16	10.59	1469.2	0.10
γ-Muurolene	9.98*	1633.3	[0.20]	10.62	1471.7	0.09

Germacrene D	10.20*	1650.3	[2.03]	10.65	1473.5	1.02
β-Selinene	10.26*	1655.7	[1.79]	10.70	1477.5	0.16
ar-Curcumene	11.08	1722.6	2.85	10.74	1480.9	2.87
Unknown ZIOF XVII [m/z 161, 91 (100), 105 (93), 79 (89), 93 (89), 107 (79)... 204 (34)]	10.35	1663.1	0.73	10.79	1484.2	0.69
2-Tridecanone	11.57	1763.3	0.02	10.86*	1489.8	[1.74]
epi-Cubebol	12.39	1834.2	0.04	10.86*	1489.8	[1.74]
Bicyclosesquiphellandrene?	10.26*	1655.7	[1.79]	10.86*	1489.8	[1.74]
α-Zingiberene	10.53*†	1676.8	[20.11]	10.96	1497.6	18.39
β-Bisabolene	10.57*	1680.4	[3.65]	11.10*	1508.2	[4.21]
Cubebol	12.96	1883.8	0.11	11.10*	1508.2	[4.21]
γ-Cadinene	10.79	1698.7	0.27	11.10*	1508.2	[4.21]
(3*E*,6*E*)-α-Farnesene	10.92*	1709.0	[4.57]	11.14	1510.9	4.19
7-epi-α-Selinene	10.92*	1709.0	[4.57]	11.18	1514.7	0.04
δ-Cadinene	10.82	1701.3	0.12	11.25*	1519.6	[0.13]
trans-Calamenene	11.64	1769.5	0.02	11.25*	1519.6	[0.13]
β-Sesquiphellandrene	11.04	1719.7	7.48	11.30	1523.9	7.21
(*E*)-γ-Bisabolene	10.92*	1709.0	[4.57]	11.37	1529.5	0.30
Unknown ZIOF XIX [m/z 177, 159 (67), 41 (43), 91 (43), 43 (41)... 220 (t)]	13.71	1952.5	0.02	11.43	1533.9	0.07
α-Elemol	14.46	2021.4	0.34	11.57	1545.6	0.30
Germacrene B	11.54*	1760.8	[0.31]	11.60	1548.0	0.30
cis-Sesquisabinene hydrate	13.67	1948.7	0.13	11.65	1551.8	0.12
β-Calacorene	13.11	1897.6	0.01	11.74	1558.6	tr
(*E*)-Nerolidol	14.18*	1995.1	[0.33]	11.80	1563.8	0.30
1'-Hydroxyeugenol	20.35	2642.8	0.03	11.90	1572.0	0.03
ar-Turmerol	15.90	2160.9	0.13	11.97	1577.1	0.04
trans-Sesquisabinene hydrate	14.71	2045.8	0.34	12.10	1587.5	0.31
Unknown ZIOF XXIII [m/z 132, 118 (89), 145 (85), 119 (79), 117 (60)...]	14.18*	1995.1	[0.33]	12.12	1589.4	0.04
cis-Zingiberenol	14.82	2056.3	0.50	12.40	1611.4	0.48
Unknown CULO XXV [m/z 119, 85 (92), 105 (37), 120 (36), 91 (28)... 218 (6)]	16.72	2243.6	0.07	12.54	1623.4	0.09
trans-Zingiberenol	15.51	2122.9	0.30	12.61	1629.0	0.24
α-Eudesmol	15.78	2149.5	0.04	12.85*	1649.1	[10.92]
β-Eudesmol	15.83*	2154.2	[0.32]	12.85*	1649.1	[10.92]
Zingerone	20.77	2691.8	10.39	12.85*	1649.1	[10.92]
(3*E*,5*E*)-7-Hydroxyfarnesene	16.74	2245.4	0.20	12.97	1659.5	0.14
α-Bisabolol	15.83*	2154.2	[0.32]	13.24*	1681.9	[0.21]

Zingerone methyl ether	19.56	2550.8	0.06	13.24*	1681.9	[0.21]
Unknown ZIOF XXXVIII [m/z 137, 119 (70), 84 (69), 41 (68), 69 (53), 55 (45), 109 (38)... 222 (2)]	16.48	2219.6	0.50	13.31	1687.3	0.43
Unknown ZIOF XXVI [m/z 69, 41 (59), 118 (33), 43 (32), 55 (31)... 234? (t)]	17.18	2290.8	0.30	13.36	1692.1	0.40
Unknown ZIOF XXXIX [m/z 119, 91 (31), 105 (29), 41 (25), 133 (23), 158 (21)...]				13.71	1721.6	0.16
Oplopanone	18.61	2444.8	0.19	13.77	1726.7	0.02
Xanthorizzhol?				13.98	1745.4	0.22
Unknown ZIOF XXVII [m/z 82, 43 (85), 91 (67), 93 (66), 41 (66), 69 (59), 106 (47)... 218 (5)...]				14.03	1749.4	0.04
Unknown ZIOF XXIX [m/z 43, 82 (100), 41 (86), 69 (76), 93 (72), 91 (72)... 218 (4)...]				14.13	1758.7	0.07
Unknown ZIOF XXX [m/z 79, 41 (77), 135 (75), 69 (74), 43 (70)... 220 (9)]				14.24	1767.9	0.06
Unknown AMBA XVIII [m/z 69, 43 (95), 41 (84), 109 (78), 95 (54), 93 (49)... 177 (36), 220 (2)...]	20.50	2660.2	0.39	14.65	1804.2	0.43
Unknown MOPE V [m/z 109, 69 (58), 43 (56), 41 (42), 135 (37), 55 (27)... 220 (5)]	21.96	2837.0	0.61	15.33	1866.1	0.15
Unknown ZIOF XL [m/z 137, 218 (84), 119 (72), 69 (64), 175 (61), 41 (60), 93 (58)]	21.45	2774.4	0.10	15.39	1871.4	0.15
Geranyl-*para*-cymene	16.57	2228.4	0.17	16.23	1950.7	0.17
Palmitic acid				16.47	1972.9	0.52
(*E*,*E*)-Geranyllinalool				17.00	2024.1	0.20
[4]-Shogaol				17.49	2073.6	0.09
Unknown ZIOF XLI [m/z 135, 150 (34), 77 (13), 163 (11)... 262 (2)]				17.62	2086.7	0.03
Unknown ZIOF XLII [m/z 137, 203 (15), 138 (11), 105 (11), 41 (9)... 274 (7), 286? (1)]				17.77	2101.5	0.09
Unknown ZIOF XLIII [m/z				17.93	2117.4	0.03

69, 41 (44), 121 (37), 107 (36), 81 (33)... 272 (2)]						
Linoleic acid	24.67	3193.4	0.04	18.11	2136.4	0.11
Oleic acid				18.16	2141.7	0.33
[4]-Gingerol				18.34	2160.0	0.02
[4]-Isogingerol?				18.46	2172.9	1.16
[6]-Isoshogaol?	25.39	3294.0	0.02	18.80	2207.2	0.19
[6]-Paradol				18.89	2217.2	0.37
Methyl [6]-isoshogaol?				18.93	2221.7	0.03
Methyl [6]-paradol?				19.22	2252.3	0.02
[6]-Dihydroparadol?	26.21	3409.9	0.03	19.40	2271.8	0.04
[6]-Shogaol	25.95	3373.4	3.41	19.49	2281.4	3.60
Methyl [6]-shogaol				19.77	2312.0	0.14
Acetoxy-[6]-dihydroparadol				19.85	2320.8	0.01
Diacetoxy-[4]-gingerdiol				19.97	2335.0	0.05
Geranyl laurate	20.29	2635.3	0.08	20.06	2344.2	0.05
[6]-Gingerol				20.30	2371.6	1.04
[6]-Isogingerol?				20.48	2391.5	0.03
[8]-Isoshogaol				20.55	2399.1	0.04
Methyl [6]-gingerol				20.64	2409.9	0.05
1-(4'-Hydroxy-3'-methoxyphenyl)-7-dodecen-3-one?				20.70	2416.3	0.01
[8]-Paradol				20.78	2425.4	0.05
Acetoxy-[6]-gingerol				21.00	2450.5	0.02
[6]-Gingerdiol isomer I				21.14	2467.1	0.16
[6]-Gingerdiol isomer II				21.18	2472.4	0.06
[8]-Shogaol				21.29	2484.2	0.76
5-Acetoxy-[6]-gingerdiol				21.32	2487.7	0.08
Methyl 5-acetoxy-[6]-gingerdiol				21.51	2510.2	1.29
Diacetoxy-[6]-gingerdiol	28.01	3610.0	0.05	21.54	2513.8	0.09
[8]-Gingerdione				21.58	2519.2	0.08
1-Dehydro-[6]-gingerdione				21.78	2542.5	0.14
[8]-Gingerol				22.03	2573.0	0.21
[10]-Isoshogaol				22.15	2586.6	0.03
[10]-Paradol				22.43	2621.3	0.03
[10]-Shogaol	30.38	3786.7	0.86	23.01	2692.8	1.04
[10]-Gingerdione				23.38	2739.4	0.09
[12]-Isoshogaol?				23.60	2767.9	0.23
[12]-Shogaol				24.65	2905.8	0.03
[6]-Gingerdiol neral acetal?				25.23	2983.6	0.01
[6]-Gingerdiol geranial acetal				25.85	3070.1	0.19
Total reported		85.96%			93.69%	

*: 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

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