PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: J10101

ESSENTIAL OIL: JASMINE ABSOLUTE
BOTANICAL NAME: JASMINUM SAMBAC
ORIGIN: EGYPT

KEY CONSTITUENTS PRESENT IN THIS BATCH OF JASMINE ABSOLUTE OIL	%
(E,E)-a-FARNESENE	13.9
LINALOOL	9.5
BENZYL ACETATE	8.4
INDOLE	7.3
GERMACRENE D-4-OL	6.1
CIS-9-TRICOSENE	5.8
(Z)-3-HEXENYL BENZOATE	5.5
METHYL ANTHRANILATE	4.4
METHYL a-LINOLENATE	3.2
BENZYL ALCOHOL	2.8
SQUALENE	1.9
(Z)-3-HEXENYL ACETATE	1.7
PHENYLMETHYL a-LINOLENATE	1.6
LINOLENIC ACID	1.6
(E,E)-GERANYL LINALOOL	1.4
PALMITIC ACID	1.2
PHENYLACETONITRILE	1.1
a-TOCOPHEROL	1.0

Comments from Robert Tisserand: A rich absolute with relatively high indole and linalool, making this a sedative jasmine. The constituents are within expected ranges for Egyptian Jasminum sambac oil.

Date : October 21, 2015

SAMPLE IDENTIFICATION

Internal code : 15J20-PTH12-1-LC
Customer identification : Jasmine Absolute - Egypt - J10101R
Type : Absolute
Source : *Jasminum sambac*
Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French). Identifications double-checked by GC-MS.
Analyst : Alexis St-Gelais, M. Sc.
Analysis date : 2015-10-20

Laboratoire PhytoChemia
3225-A Boul. St-François, Jonquière (Qc) G7T 1A1 | www.phytochemia.com

IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Ethanol	0.28	476	0.66	0.68	893	0.65	Aliphatic alcohol
cis-Hex-3-en-1-ol	1.96	861	0.16	0.16	1348	5.43	Aliphatic alcohol
trans-Hex-2-en-1-ol	2.12	875	0.05	0.05	1372	5.80	Aliphatic alcohol
Hexanol	2.17	880	0.03	0.02	1321	5.03	Aliphatic alcohol
cis-Hex-3-en-1-yl acetate	4.20	1013	1.67	1.72	1285	4.49	Aliphatic ester
Hexyl acetate	4.32	1020	0.01	0.01	1242	3.87	Aliphatic ester
trans-Hex-2-en-1-yl acetate	4.39	1024	0.05	0.05	1302	4.75	Aliphatic ester
trans-β-Ocimene	4.81	1048	0.04	0.04	1221	3.57	Monoterpene
Benzyl alcohol	5.00	1059	2.77	3.07	1804	22.83*	Simple phenolic
cis-Linalool oxide (fur.)	5.26	1074	0.03	0.03	1400	6.23	Monoterp. alcohol
trans-Linalool oxide (fur.)	5.56	1091	0.26	0.35	1423	6.70*	Monoterp. alcohol
Methyl benzoate	5.80	1104	0.31	0.33	1552	10.01	Phenolic ester
Linalool	5.96	1111	9.54	9.92	1518	8.89	Monoterp. alcohol
Phenylethyl alcohol	6.26	1125	0.46	1.74	1833	24.90*	Simple phenolic
Phenylacetonitrile	6.88	1153	1.14	[1.74]	1833	24.90*	Simple phenolic
Benzyl acetate	7.33	1174	8.35	8.85	1665	14.63	Phenolic ester
Ethyl benzoate	7.42*	1178	0.95	0.08	1601	11.60	Phenolic ester
Unknown (m/z = 43, 69 (50), 83 (40), 41 (31), 56 (27)... 150 (1)...)	7.42*	1178	[0.95]	0.87	1620	12.52	
cis-Linalool oxide (pyr.)	7.56	1184	0.08	0.10	1716	17.33	Monoterp. alcohol
cis-Hex-3-en-1-yl butyrate	7.68	1190	0.09	[0.35]	1423	6.70*	Alihatic ester
Methyl salicylate	7.91	1200	0.12	0.15	1689	15.78	Phenolic ester
cis-Hex-3-en-1-yl isovalerate	8.96	1229	0.02				Aliphatic ester
Phenylethyl acetate	10.06	1258	0.32	0.32	1742	18.93	Phenolic ester
Geraniol	10.39	1267	0.10	[3.07]	1804	22.83*	Monoterp. alcohol
Chavicol	11.30	1291	0.08	0.08	2267	43.42	Phenylpropanoid
Indole	12.43*	1314	4.37	10.29	2329	44.84*	Indole
1-Nitro-2-phenylethane	12.43*	1314	[4.37]				Simple phenolic
Bicycloelemene	12.43*	1314	[4.37]				Sesquiterpene
(*E*)-Cinnamyl alcohol	13.00	1324	0.14	0.19	2196	41.70	Phenylpropanoid
Methyl anthranilate	14.44*	1350	4.44	4.82	2134	40.00	Phenolic ester
α-Copaene	14.44*	1350	[4.44]	0.01	1437	7.00	Sesquiterpene
β-Elemene	15.84	1374	0.08	0.06	1536	9.48	Sesquiterpene
Methyl (*E*)-cinnamate	16.82	1391	0.03	0.05	1979	34.37	Phenylpropanoid ester
(*Z*)-Jasmone	17.00	1394	0.02				Jasmonate
β-Caryophyllene	17.16	1397	0.04	0.05	1531	9.31	Sesquiterpene

α-Humulene	19.63	1430	0.06	0.07	1598	11.50	Sesquiterpene
Germacrene D	21.63*	1457	0.51	0.53	1632	13.08	Sesquiterpene
(*E*)-Cinnamyl acetate	21.63*	1457	[0.51]	0.03	2066	37.88	Phenylpropanoid ester
Bicyclogermacrene	22.73	1471	0.19	0.19	1653	14.06	Sesquiterpene
(*Z,E*)-α-Farnesene	24.07	1489	0.13	0.29	1687	15.71*	Sesquiterpene
γ-Cadinene	24.46	1494	0.13	0.10	1681	15.40	Sesquiterpene
(*E,E*)-α-Farnesene	25.35*	1505	13.88	13.86	1713	17.13	Sesquiterpene
δ-Cadinene	25.35*	1505	[13.88]	[0.29]	1687	15.71*	Sesquiterpene
Germacrene D-4-ol	30.28*	1564	6.45	6.10	1973	34.02*	Sesquiterp. alcohol
(*E*)-Nerolidol	30.28*	1564	[6.45]	0.49	2001	35.58	Sesquiterp. alcohol
(*Z*)-Hex-3-en-1-yl benzoate	31.13	1574	5.54	5.67	2035	36.79	Phenolic ester
Hexyl benzoate	31.72	1581	0.13	0.21	2015	36.07	Phenolic ester
(*E*)-Hex-2-en-1-yl benzoate	32.52	1591	0.50	0.54	2059	37.63	Phenolic ester
Methyl N-acetylanthranilate	32.94	1596	0.06	0.06	2418	46.77	Phenolic ester
τ-Cadinol	34.98	1635	0.03	0.06	2086	38.57	Sesquiterp. alcohol
τ-Muurolol	35.12	1638	0.06	0.07	2100	39.06	Sesquiterp. alcohol
α-Cadinol	35.64	1648	0.16	0.17	2143	40.25	Sesquiterp. alcohol
Methyl (Z)-jasmonate	35.83	1652	0.06	0.09	2241	42.79	Jasmonate
(2E,6E)-Farnesol	38.77	1719	0.25	0.27	2305	44.31*	Sesquiterp. alcohol
Benzyl ester (m/z = 105, 77 (43), 1652 (20)... 191 (5)... 256? (t))	39.98	1754	0.65				Phenolic ester
Benzyl benzoate	40.38	1766	0.48	3.26	2506	48.56*	Phenolic ester
(2*E*,6*E*)-Farnesyl acetate	42.50	1834	0.16	0.19	2209	42.03	Sesquiterp. ester
Phenylethyl benzoate	42.99	1851	0.16	0.16	2589	50.18	Phenolic ester
Methyl palmitate	45.10	1929	0.46	0.46	2179	41.23	Fatty acid ester
Palmitic acid	46.78	1995	1.19	1.49	2866	55.17	Fatty acid
(*E,E*)-Geranyllinalool	47.33	2018	1.39	1.39	2500	48.43	Diterp. alcohol
Methyl linoleate	48.89	2084	0.30	0.26	2398	46.36	Fatty acid ester
Heneicosane	49.02	2090	0.34	0.34	2119	39.59	Alkane
Methyl α-linolenate	49.20	2098	3.19	[3.26]	2506	48.56*	Fatty acid ester
Methyl stearate	49.88	2128	0.32	0.36	2390	46.18	Fatty acid ester
Linoleic acid	50.69*	2165	2.45	0.25	3100	59.05	Fatty acid
Linolenic acid	50.69*	2165	[2.45]	1.58	3218	60.90	Fatty acid
cis-9-Tricosene	52.90	2268	5.75	[10.29]	2329	44.84*	Alkene
trans-11-Tricosene	53.39	2292	0.16	0.17	2257	43.17	Alkene
Tricosane	53.51	2297	0.03	[0.27]	2305	44.31*	Alkane
Behenic alcohol	57.00	2473	0.12				Aliphatic alcohol
Phenylmethyl palmitate	58.86	2572	0.18				Fatty acid ester
Phenylmethyl α-linolenate	62.09	2753	1.63				Fatty acid ester
Squalene	62.73	2790	1.93	1.87	3039	58.07	Triterpene
2,3-Oxidosqualene	64.70	2908	0.87	2.14	3315	62.39	Triterp. ether
α-Tocopherol	65.91	2982	1.02				Tocopherol
Dimethyl anthranilate				[6.10]	1973	34.02*	Phenolic ester
Total identified			**87.33%**	**86.81%**			

*: Two or more compounds are coeluting on this column
[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

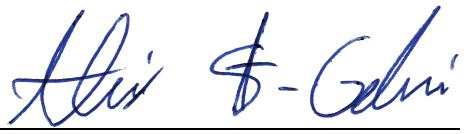
Other Data

Physical aspect : Bright yellow-orange liquid
Refractive index : 1.4980 ± 0.0003 (20 °C)

Conclusion

No adulterant, contaminant or diluent were detected using this method. To the best of our knowledge and according to our retention indexes, the hex-3-en-1-yl benzoate isomer is (*Z*), not (*E*).

Checked and approved by :



Alexis St-Gelais, M. Sc., chimiste 2013-174

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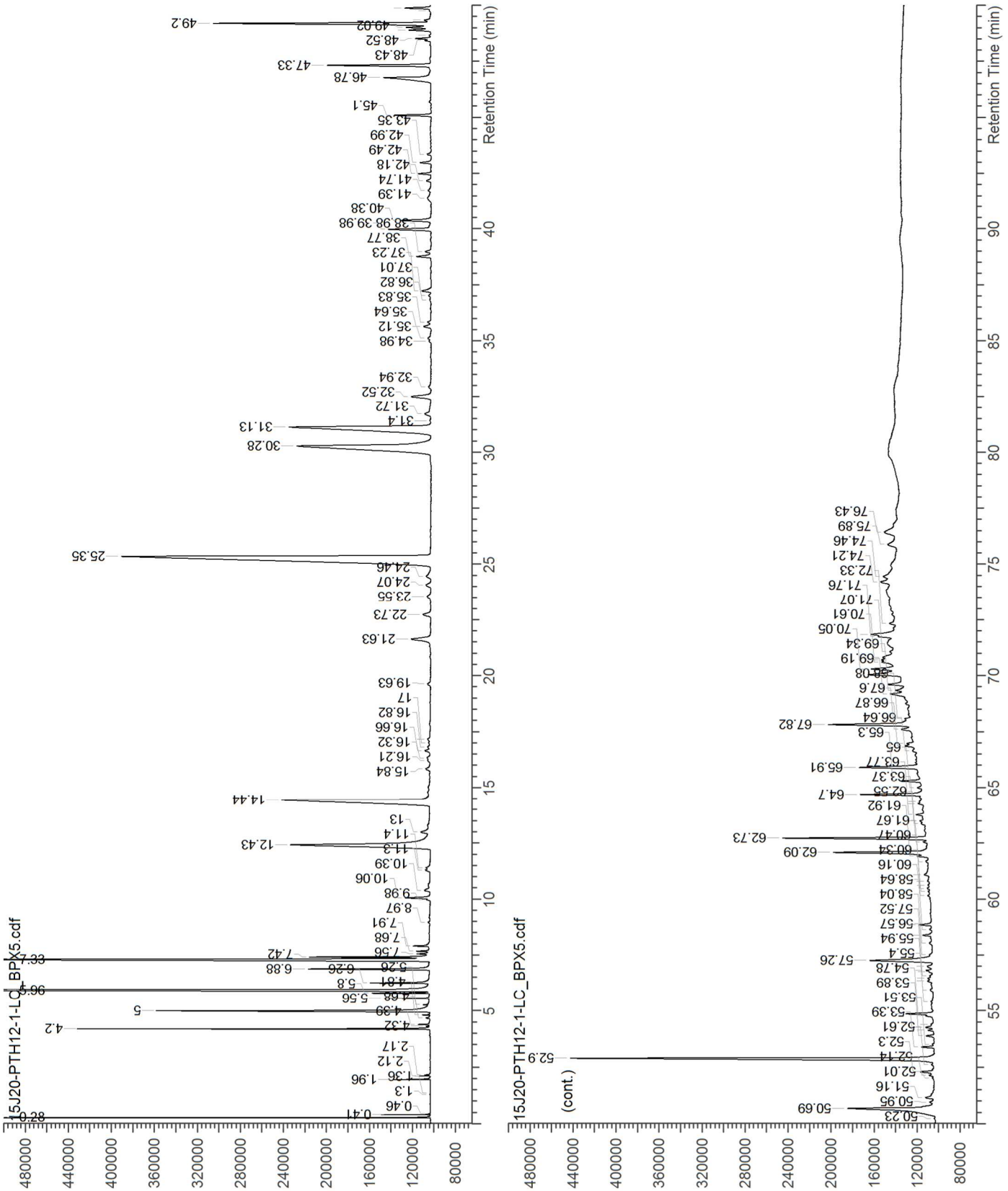
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Retention Time (min)
480000
440000
400000
360000
320000
280000
240000
200000
160000
120000
80000
5
10
15
20
25
30
35
40
0.28
0.41
0.46
1.3
1.36
1.96
2.12
2.17
4.2
4.32
4.39
5
4.68
5.56
5.8
4.61
5.26
6.26
6.88
7.33
7.42
7.56
7.68
7.91
8.97
9.98
10.06
10.39
11.3
11.4
12.43
13
14.44
15.84
16.21
16.32
16.66
16.82
17
19.63
21.63
22.73
23.55
24.07
24.46
25.35
30.28
31.13
31.4
31.72
32.52
32.94
34.98
35.12
35.64
35.83
36.82
37.01
37.23
38.77
38.98
39.98
40.38
41.39
41.74
42.18
42.49
42.99
43.35
45.1
46.78
47.33
48.43
48.52
49.02
49.2
15J20-PTH12-1-LC_BPX5.cdf
(cont.)
Retention Time (min)
480000
440000
400000
360000
320000
280000
240000
200000
160000
120000
80000
55
60
65
70
75
80
85
90
50.23
50.69
50.95
51.16
52.01
52.14
52.3
52.61
52.9
53.39
53.51
53.89
54.78
55.4
55.94
56.57
57.52
58.04
58.64
60.16
60.34
60.47
61.67
61.92
62.55
63.37
63.77
65
65.3
66.64
66.87
67.6
68.08
69.19
69.34
70.05
70.61
71.07
71.76
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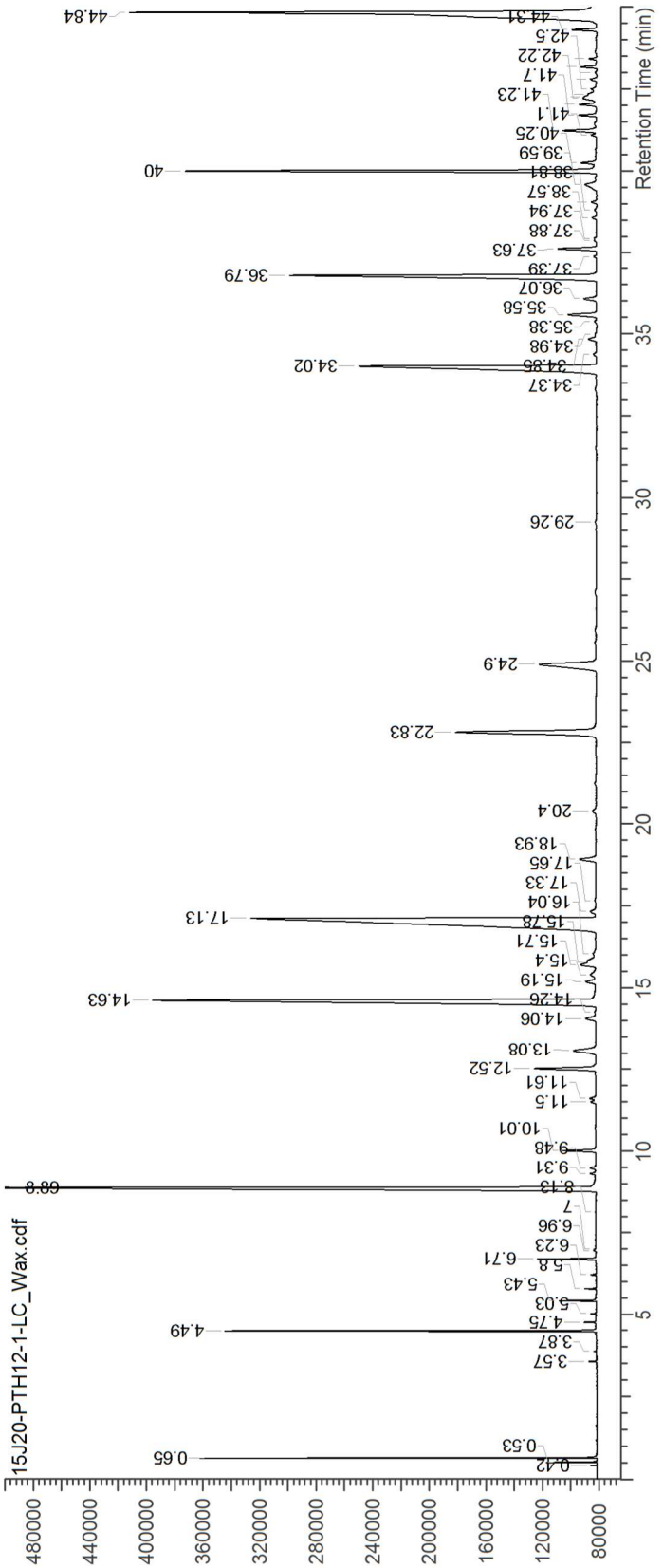
67.82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Retention Time (min)
0.42
0.53
0.65
3.57
3.87
4.49
4.75
5.03
5.43
5.8
6.23
6.71
6.96
7
8.13
8.8
9.31
9.48
10.01
11.5
11.61
12.52
13.08
14.06
14.26
14.63
15.19
15.4
15.71
15.78
17.13
16.04
17.33
17.65
18.93
20.4
22.83
24.9
29.26
34.02
34.37
34.85
34.98
35.38
35.58
36.07
36.79
37.39
37.63
37.88
37.94
38.57
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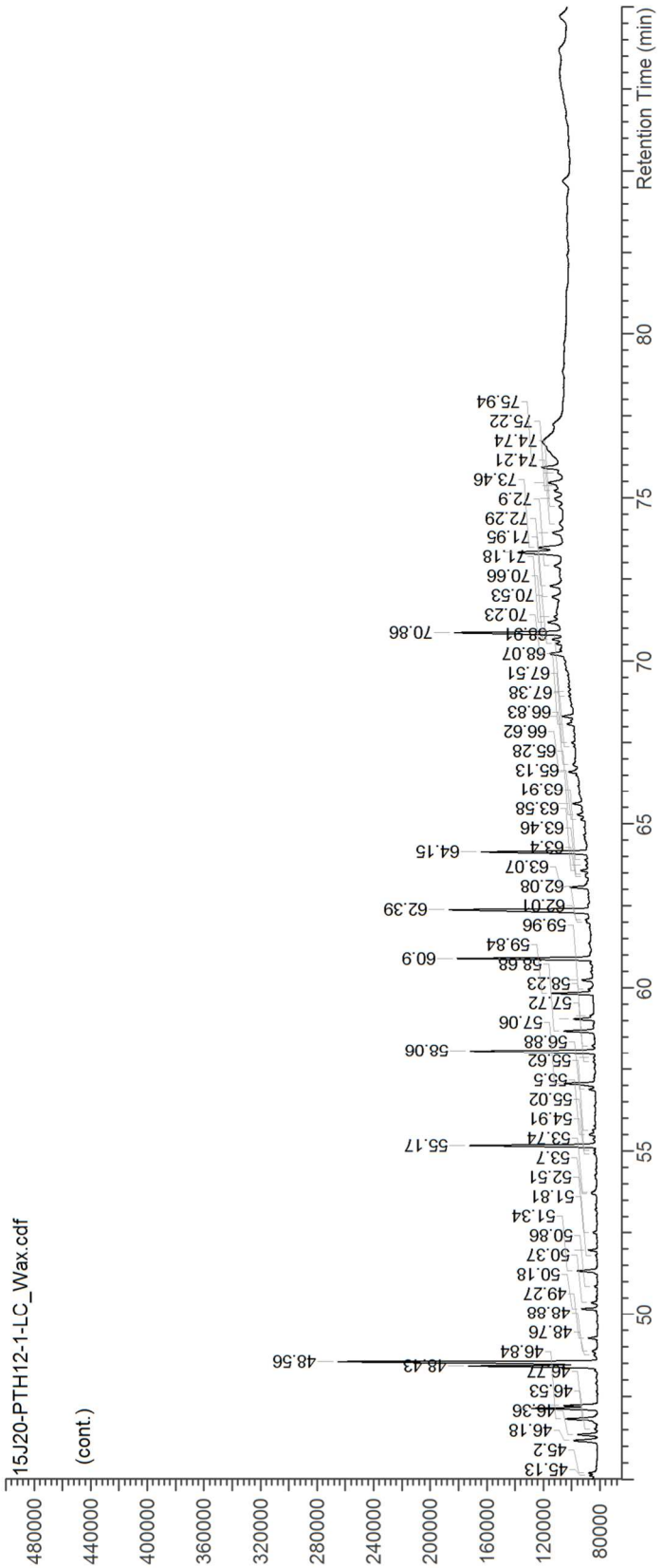
41.23
41.7
42.22
42.5
44.31
44.84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Retention Time (min)
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45.2
46.18
46.36
46.53
46.77
46.84
48.43
48.56
48.76
48.88
49.27
50.18
50.37
50.86
51.34
51.81
52.51
53.7
53.74
54.91
55.02
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55.62
56.06
56.88
57.06
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58.23
58.68
59.84
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68.91
70.23
70.53
70.66
71.18
71.95
72.29
72.9
73.46
74.21
74.74
75.22
75.94