

Analysis Patchouli Essential Oil

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Date : May 11, 2017

SAMPLE IDENTIFICATION

Internal code : 17E05-FSE2-1-DM

Customer identification : Patchouli - Lot #BX-1748

Type : Essential oil

Source : Pogostemon cablin

Customer : Flowers Shining Everywhere Inc.



ANALYSIS



Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-05-11

Checked and approved by :



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



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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
α -Pinene	3.41	928	0.09	0.08	942	1.10	Monoterpene
β -Pinene	4.19	975	0.23	0.21	1038	1.71	Monoterpene
Limonene	5.15	1029	0.02	0.02	1139	2.74	Monoterpene
δ -Elemene	15.22	1323	0.09	2.08	1418	6.85*	Sesquiterpene
α -Copaene	17.58	1359	0.02	0.02	1429	7.12	Sesquiterpene
β -Patchoulene	17.91	1364	2.03	[2.08]	1418	6.85*	Sesquiterpene
β -Elemene	18.79	1378	0.75	2.88	1521	9.31*	Sesquiterpene
Cycloseychellene	19.85	1394	0.64	0.59	1475	8.20	Sesquiterpene
β -Caryophyllene	20.50	1403	3.17	[2.88]	1521	9.31*	Sesquiterpene
α -Guaiane	22.27	1424	13.57	14.23	1529	9.64	Sesquiterpene
Seychellene	22.53	1427	6.47	11.40	1547	10.29*	Sesquiterpene
α -Humulene	22.99	1433	0.09	0.39	1583	11.61	Sesquiterpene
α -Patchoulene	23.44	1438	5.44	[11.40]	1547	10.29*	Sesquiterpene
γ -Patchoulene	23.62	1440	1.67	1.48	1548	10.34	Sesquiterpene
δ -Patchoulene	23.82	1443	0.97	0.96	1556	10.64	Sesquiterpene
γ -Gurjunene	24.16	1447	0.38	0.22	1605	12.41	Sesquiterpene
<i>trans</i> -Cadina-1(6),4-diene	24.48	1451	0.05	0.05	1592	11.97	Sesquiterpene
Unknown (m/z = 147, 93 (94), 91 (76), 107 (71), 105 (69), 79 (60)... 189 (24), 204 (23))	25.14	1459	0.39				Sesquiterpene
γ -Muurolene	25.30	1461	0.08	0.17	1613	12.73	Sesquiterpene
β -Selinene	25.96	1468	0.11	17.04	1638	13.89*	Sesquiterpene
<i>cis</i> - β -Guaiane	26.22	1472	0.59	0.59	1588	11.80	Sesquiterpene
α -Selinene	26.62	1476	0.08	0.08	1642	14.11	Sesquiterpene
Aciphyllene	26.97	1481	2.78	2.95	1623	13.11	Sesquiterpene
δ -Guaiane	27.69	1489	17.05	[17.04]	1638	13.89*	Sesquiterpene
Nootkatene	27.77	1490	0.42	0.37	1693	16.70	Sesquiterpene
7-epi- α -Selinene	28.55	1500	0.49	0.70	1662	15.12	Sesquiterpene
δ -Cadinene	29.18	1508	0.05	0.04	1675	15.79	Sesquiterpene
Selina-3,7(11)-diene	30.03	1520	0.14	0.10	1670	15.51	Sesquiterpene
Norpatchoulene	32.70	1557	0.59	0.59	1968	34.28*	Norsesquiterp. alcohol
Caryophyllenyl alcohol	33.34	1566	0.24				Sesquiterp. alcohol
Caryophyllene oxide	33.58	1569	0.43	0.30	1846	26.45	Sesquiterp. ether
1-epi-Cubenol	36.60	1620	0.72	[0.59]	1968	34.28*	Sesquiterp. alcohol
τ -Cadinol	37.14	1634	0.07	0.10	2078	38.60	Sesquiterp. alcohol
Patchoulol	38.12*	1658	33.14	30.70	2035	37.22	Sesquiterp. alcohol
Pogostol	38.12*	1658	[33.14]	2.17	2097	39.17	Sesquiterp. alcohol
Patchoulene	39.63	1695	0.17	0.22	2279	43.98	Sesquiterp. ketone

Pogostone	40.55	1722	2.01	2.03	2363	45.83	Sesquiterp. ketone
Total identified	94.84%			92.76%			

*: 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 : Orange liquid

Refractive index : 1.5075 \pm 0.0003 (20 °C)

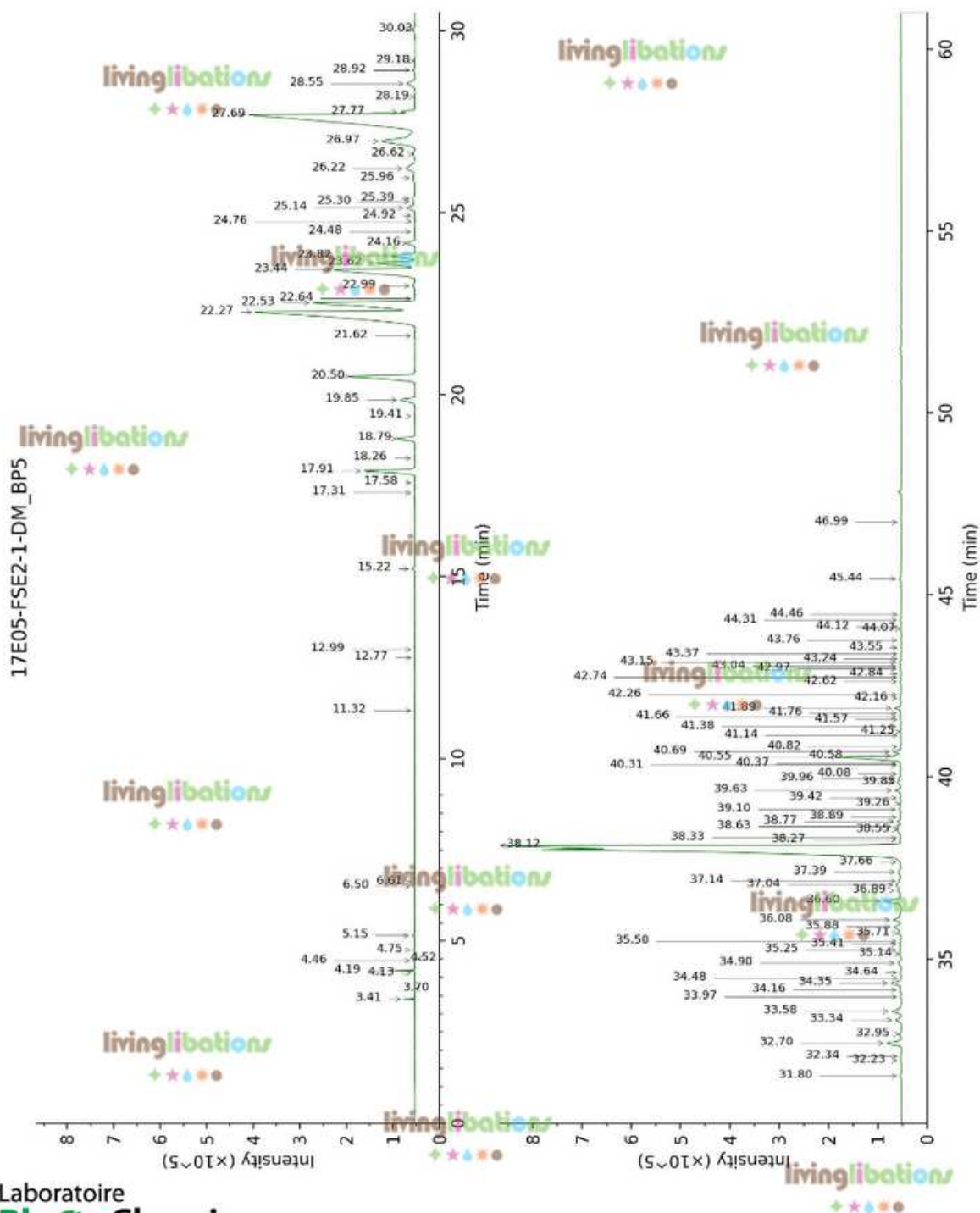
CONCLUSION

No adulterant, contaminant or diluent were detected using this method.

Essential oil, *Pogostemon cablin*
Internal Code: 17E05-FSE2-1-DM

Customer Identification:
Patchouli - Lot #BX-1748

Report prepared for
Flowers Shining Everywhere Inc.

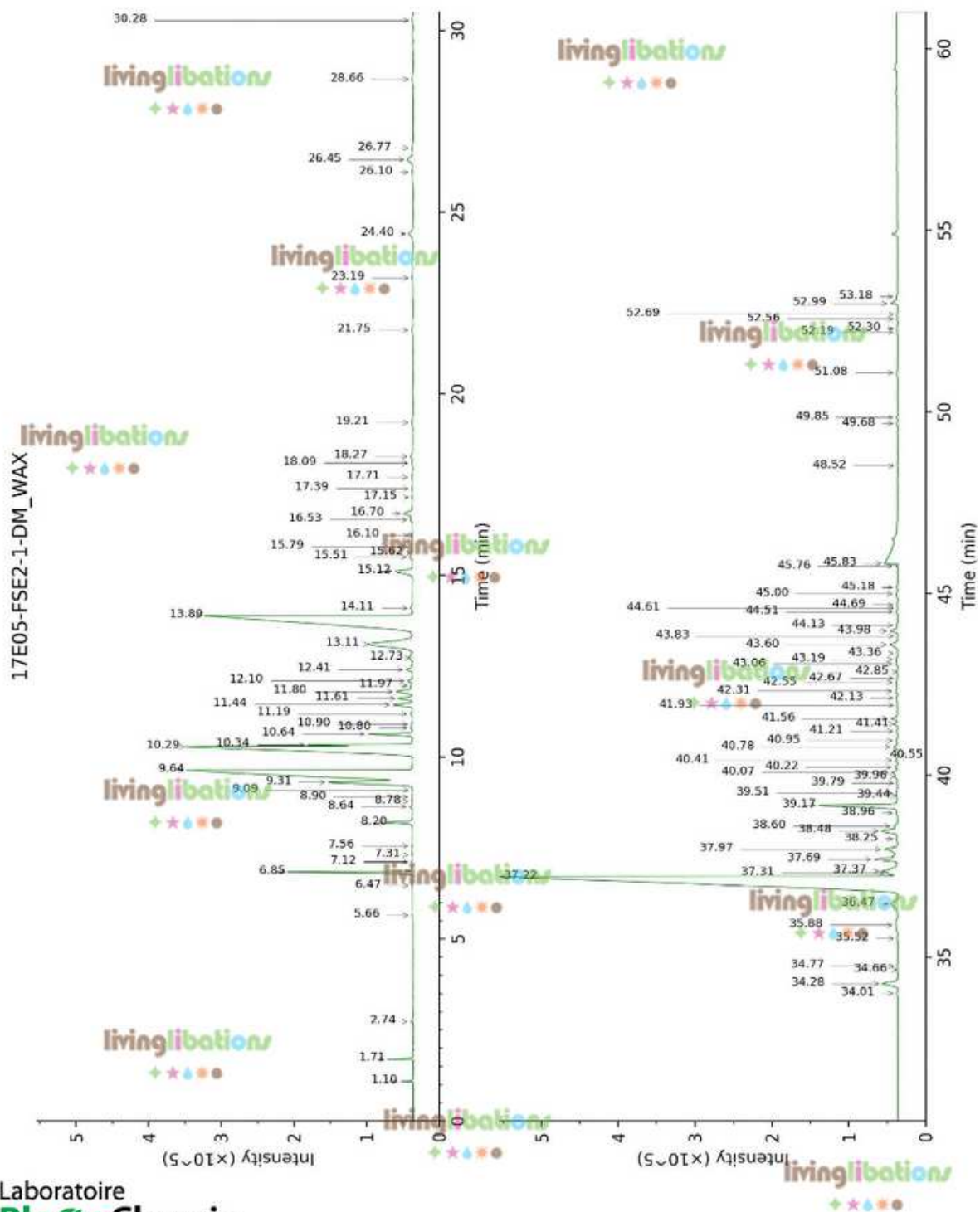


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