

Analysis Musk Mallow Essential Oil

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Date : June 21, 2017

SAMPLE IDENTIFICATION

Internal code : 17F08-FSE17-1-DM

Customer identification : Ambrette Seed/Musk Mallow CO2 - Lot #641413

Type : Essential oil

Source : *Abelmoschus moschatus*

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).

Identifications double-checked by GC-MS

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

Analysis date : 2017-06-20



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.	
Acetic acid	0.54	657	0.09	0.08	1383	6.03	Aliphatic acid
Hexanal	1.73	807	tr				Aliphatic aldehyde
α -Pinene	3.42	929	0.03	0.02	945	1.03	Monoterpene
Sabinene	4.14	972	0.03	0.03	1060	1.77	Monoterpene
β -Pinene	4.20	976	0.01	0.01	1043	1.61	Monoterpene
Tiglic acid	5.00	1021	0.06	0.05	1781	20.59	Aliphatic acid
Hexyl acetate	5.00*	1021	[0.06]				Aliphatic ester
para-Cymene	5.13	1028	0.02	0.02	1206	3.45	Monoterpene
β -Phellandrene	5.17	1030	0.01	0.01	1141	2.61	Monoterpene
Octyl acetate	9.93	1217	0.01				Aliphatic ester
Hexyl 2-methylbutyrate	10.80	1236	0.01				Aliphatic ester
Decanol	12.97	1284	0.05				Aliphatic alcohol
Octyl butyrate	20.11	1398	0.03	0.03	1571	10.47	Aliphatic ester
Decyl acetate	21.82	1419	1.37	1.30	1635	12.81	Aliphatic ester
Octyl 2-methylbutyrate	23.31	1437	0.01				Aliphatic ester
trans- β -Farnesene	24.50*	1451	0.12	0.09	1619	12.23	Sesquiterpene
Geranylacetone	24.50*	1451	[0.12]	0.04	1775	20.20	Aliphatic ketone
Dodecanol	27.54	1487	0.06	0.14	1909	29.23	Aliphatic alcohol
Undecyl acetate	29.58	1514	0.04				Aliphatic ester
(E)-Nerolidol	33.80	1573	0.11	0.13	1995	34.34	Sesquiterp. alcohol
Decyl butyrate	35.58*	1597	0.28				Aliphatic ester
(Z)-Dodecenyl acetate isomer	35.58*	1597	[0.28]	0.21	1858	25.60	Aliphatic ester
Dodecyl acetate	36.73	1624	1.89	1.81	1845	24.78	Aliphatic ester
(Z)-Tetradecenol isomer	39.79	1698	0.17				Aliphatic alcohol
(2Z,6E)-Farnesol	40.21	1711	0.51	0.95	2265	42.94	Sesquiterp. alcohol
(2E,6Z)-Farnesal	40.34	1715	0.04				Sesquiterp. aldehyde
(2E,6E)-Farnesol	40.69	1726	2.03	2.19	2291	43.54	Sesquiterp. alcohol
(2E,6E)-Farnesal	41.31	1746	0.12				Sesquiterp. alcohol
(2Z,6Z)-Farnesyl acetate	42.53	1784	0.22				Sesquiterp. ester
(Z)-Tetradecenyl acetate	42.82	1794	1.03	1.35	2062	37.28	Aliphatic ester
(2E,6Z)-Farnesyl acetate	43.52	1818	3.88	3.85	2166	40.45	Sesquiterp. ester
(2E,6E)-Farnesyl acetate	44.48	1853	58.74	58.31	2219	41.76	Sesquiterp. ester
Ambrettolide	46.51*	1930	7.72	6.72	2309	43.95	Lactone
(2E,6E)-Farnesyl propionate	46.51*	1930	[7.72]	0.42	2338	44.59	Aliphatic ester
Methyl palmitate	46.71	1938	0.11	0.13	2177	40.70	Aliphatic ester
Palmitic acid	48.23	1999	1.36	1.94	2850	54.42	Fatty acid
(2E,6E)-Farnesyl butyrate	48.60	2015	0.44	0.29	2461	47.21	Sesquiterp. ester
(2E,6E)-Farnesyl isovalerate	49.51	2054	0.20				Sesquiterp. ester
Methyl linoleate	50.61	2102	0.25	0.27	2435	46.67	Aliphatic ester
(9Z)-18-Octadecenolide	51.25	2131	1.63	1.51	2518	48.34	Lactone

Essential oil, *Abelmoschus moschatus*
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Linoleic acid	52.01	2166	1.34	1.44	3083	58.27	Fatty acid
Oleic acid	52.15	2172	1.04	2.00	3129	59.01	Fatty acid
(2E,6E)-Farnesyl palmitate	70.64	3210	1.85	1.85	3572	65.59	Sesquiterp. ester
(2E,6E)-Farnesyl stearate	73.76*	3392	6.44	3.86	3848	69.35	Sesquiterp. ester
Total identified	93.35%		91.05%				

*: 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 : Light yellow liquid

Refractive Index : 1.4740 ± 0.0003 (20 °C)

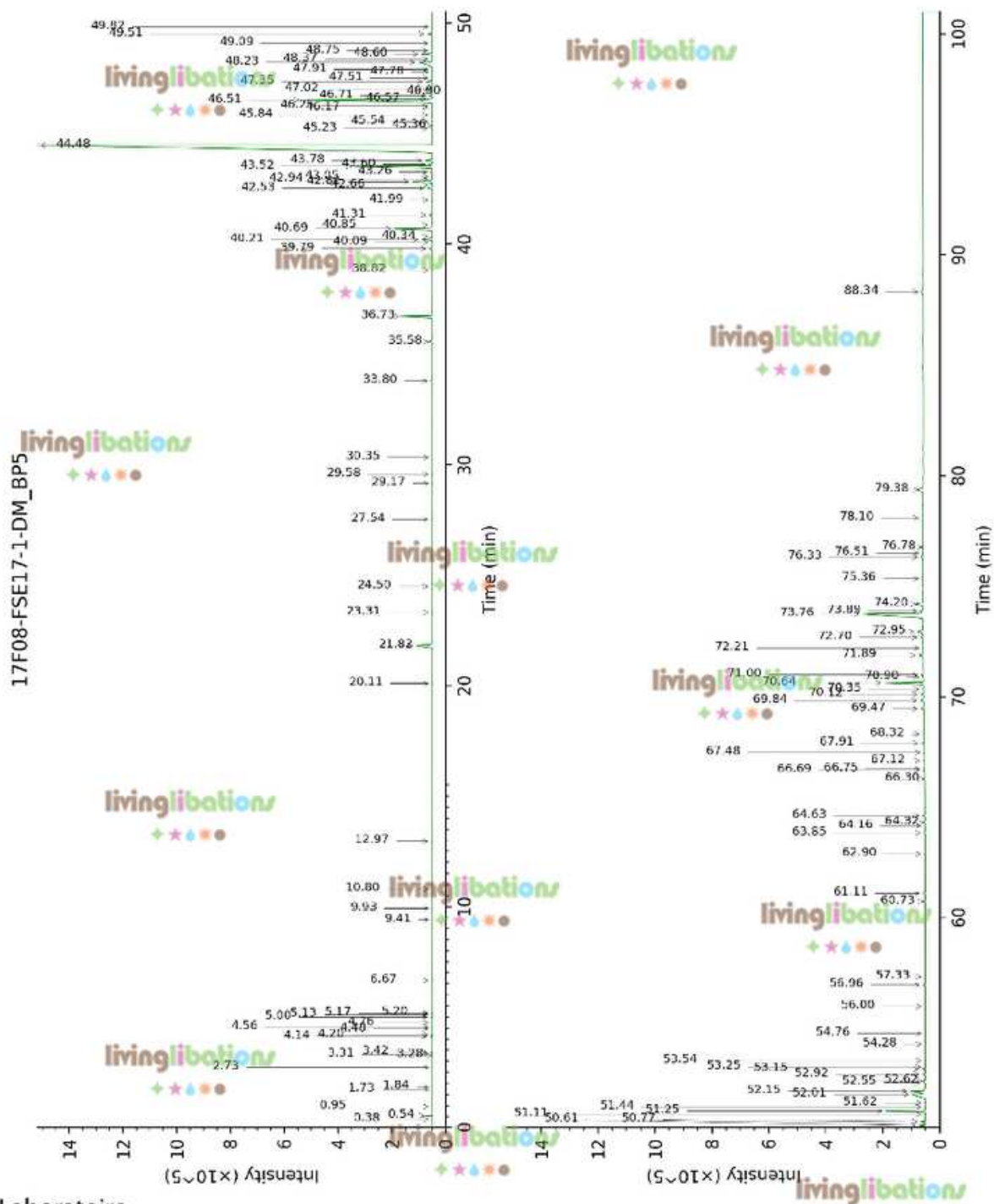
CONCLUSION

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

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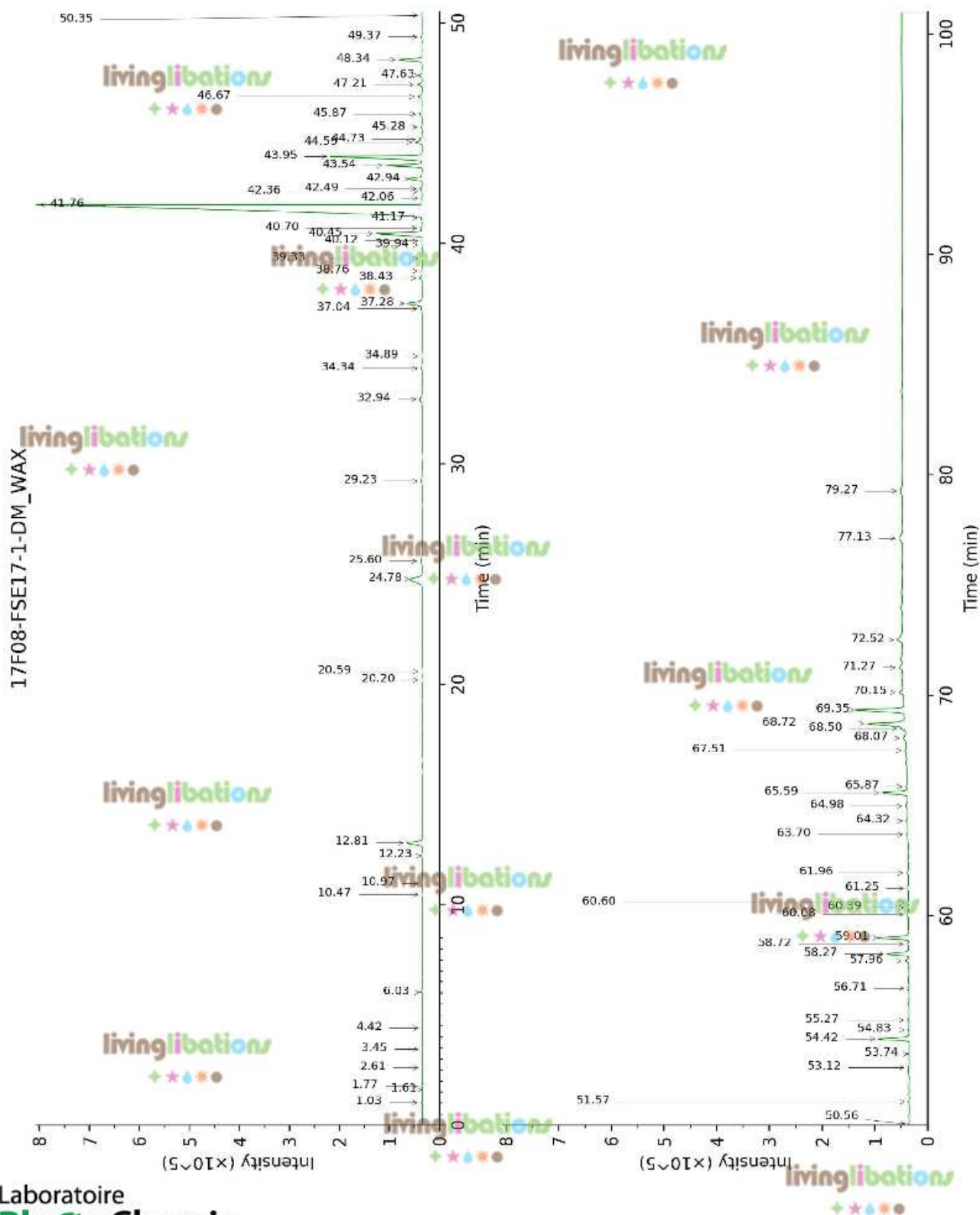
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