

Analysis Sage Essential Oil

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PhytoChemia



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Date : May 19, 2017

SAMPLE IDENTIFICATION

Internal code : 17E10-FSE1-1-DM

Customer identification : Sage Whole Plant - Lot #MP16H574

Type : Essential oil

Source : *Salvia officinalis*

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 :** Benoit Roger Ph. D.

Analysis date : 2017-05-17

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.	
cis-Salvene	2.21	845	0.34	0.33	843	0.74	Normonoterpene
trans-Salvene	2.33	853	0.06	0.05	860	0.79	Normonoterpene
Tricyclene	3.22	917	0.27	0.25	918	1.00	Monoterpene
α -Thujene	3.31	922	0.48	0.56	953	1.14	Monoterpene
α -Pinene	3.43	929	5.45	5.26	945	1.11	Monoterpene
Camphene	3.71*	946	5.83	5.60	1001	1.39	Monoterpene
α -Fenchene	3.71*	946	[5.83]	0.10	993	1.32	Monoterpene
Sabinene	4.13	971	0.04	0.05	1053	1.87	Monoterpene
β -Pinene	4.19	975	1.37	1.30	1038	1.71	Monoterpene
Myrcene	4.47*	991	1.60	1.40	1115	2.43	Monoterpene
Octen-3-ol	4.47*	991	[1.60]	0.15	1396	6.48	Aliphatic alcohol
Pseudolimonene	4.69	1004	0.04	0.04	1110	2.37	Monoterpene
α -Phellandrene	4.74	1007	0.06	0.04	1108	2.34	Monoterpene
α -Terpinene	4.93	1017	0.18	0.17	1121	2.51	Monoterpene
para-Cymene	5.13	1028	1.03	1.02	1206	3.62	Monoterpene
Limonene	5.17*	1030	2.09	1.80	1141	2.76	Monoterpene
β -Phellandrene	5.17*	1030	[2.09]	10.92	1147	2.85*	Monoterpene
1,8-Cineole	5.24	1034	10.51	[10.92]	1147	2.85*	Monoterp. ether
cis- β -Ocimene	5.34	1039	0.06	0.34	1185	3.35*	Monoterpene
trans- β -Ocimene	5.52	1049	0.02	0.02	1200	3.53	Monoterpene
γ -Terpinene	5.70	1060	0.29	[0.34]	1185	3.35*	Monoterpene
cis-Sabinene hydrate	6.04	1078	0.03	0.03	1407	6.64	Monoterp. alcohol
Terpinolene	6.18	1085	0.16	0.15	1221	3.83	Monoterpene
para-Cymenene	6.38	1096	0.07	6.00	1365	5.99*	Monoterpene
α -Thujone	6.81*	1113	29.58	29.30	1350	5.76	Monoterp. ketone
Linalool	6.81*	1113	[29.58]	0.42	1490	8.55	Monoterp. alcohol
β -Thujone	7.02	1121	5.92	[6.00]	1365	5.99*	Monoterp. ketone
Dehydrosabinaketone	7.14	1125	0.06	0.43	1527	9.55*	Normonoterp. ketone
trans-Pinocarveol	7.67	1145	0.11	0.11	1572	11.21	Monoterp. alcohol
Camphor	7.81	1150	21.01	21.49	1427	7.06*	Monoterp. ketone
Camphene hydrate	7.96	1156	0.08	2.75	1520	9.29*	Monoterp. alcohol
Borneol	8.52	1176	1.72	1.41	1616	12.84	Monoterp. alcohol
Terpinen-4-ol	8.71	1183	0.37	[0.43]	1527	9.55*	Monoterp. alcohol
Cryptone	9.09	1197	0.02	0.02	1564	10.90	Monoterp. ketone
Myrtenal	9.18	1200	0.05	0.05	1523	9.40	Monoterp. aldehyde
α -Terpineol	9.33	1203	0.37	0.38	1623	13.11	Monoterp. alcohol
Verbenone	9.75	1213	0.07	0.07	1602	12.31	Monoterp. ketone
Bornyl acetate	12.85	1282	1.20	1.30	1501	8.81	Monoterp. ester
3-Thujanyl acetate	13.28	1291	0.18	[0.43]	1527	9.55*	Monoterp. ester
α -Copaene	17.59	1359	0.04	[21.49]	1427	7.06*	Sesquiterpene
β -Caryophyllene	20.51	1403	2.69	[2.75]	1520	9.29*	Sesquiterpene

Aromadendrene	21.83	1419	0.05	[2.75]	1520	9.29*	Sesquiterpene
α -Humulene	23.30	1436	3.21	3.19	1579	11.46	Sesquiterpene
allo-Aromadendrene	23.51	1439	0.11	0.12	1556*	10.64	Sesquiterpene
<i>trans</i> - β -Farnesene	24.23	1448	0.16	0.22	1628	13.32	Sesquiterpene
Viridiflorene	26.23	1472	0.12	0.09	1612	12.67	Sesquiterpene
Caryophyllene oxide	33.59	1570	0.17	0.13	1845	26.37	Sesquiterp. ether
Viridiflorol	34.59	1584	1.19	1.21	1977	34.67	Sesquiterp. alcohol
Humulene epoxide II	35.30	1593	0.20	0.20	1897	30.19	Sesquiterp. ether
Manool	49.20	2041	0.16	0.17	2540	49.45	Diterp. alcohol
Total identified			98.82%	98.64%			

*: 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

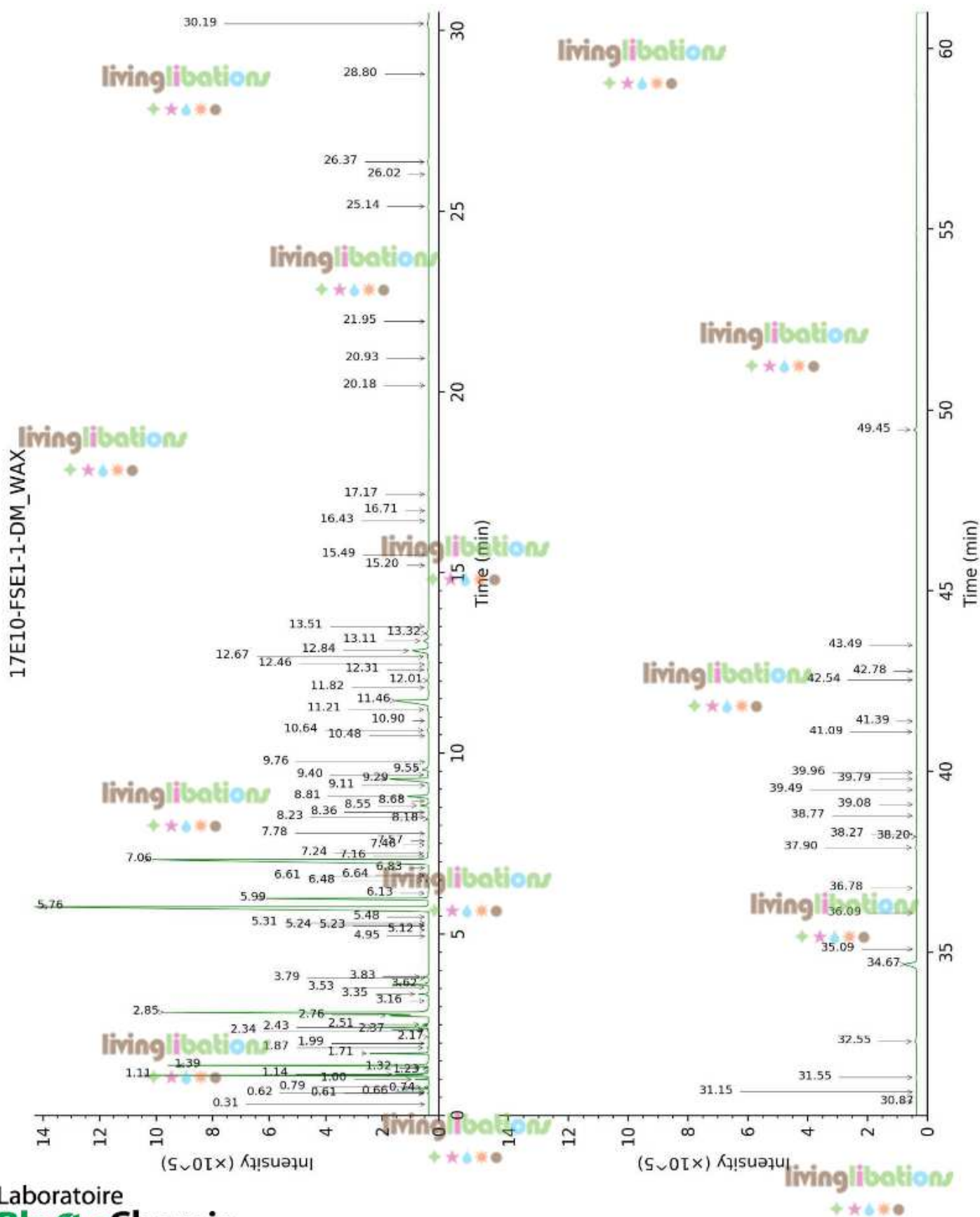
OTHER DATA

Physical aspect : Faintly yellow liquid

Refractive Index : 1.4635 ± 0.0003 (20 °C)

CONCLUSION

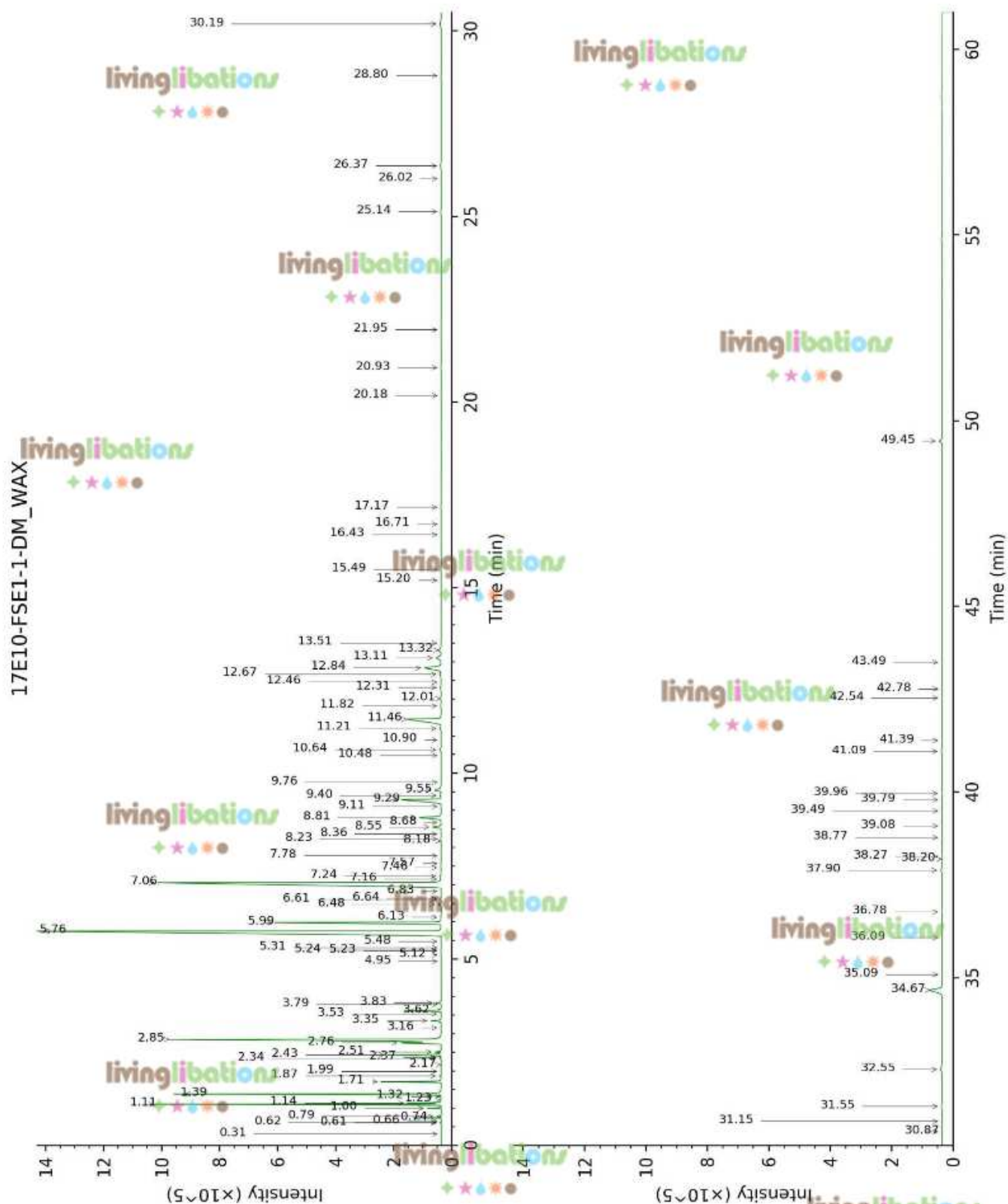
No adulterant, contaminant or diluent were detected using this method.



Essential oil, *Salvia officinalis*
Internal Code: 17E10-FSE1-1-DM

Customer Identification:
Sage Whole Plant - Lot #MP16H574

Report prepared for
Flowers Shining Everywhere Inc.



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