



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: F30104

ESSENTIAL OIL: FRANKINCENSE CARTERI
BOTANICAL NAME: BOSWELLIA CARTERII
ORIGIN: SOMALIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF FRANKINCENSE CARTERI OIL	%
α -PINENE	32.9
LIMONENE	14.8
α -THUJENE	11.2
SABINENE	5.2
p-CYMENE	4.2
MYRCENE	3.9
β -CARYOPHYLLENE	3.6
β -PINENE	3.3
α -PHELLANDRENE	1.8
Δ 3-CARENE	1.3
δ -CADINENE	1.1

Comments from Robert Tisserand: Fresh, resinous, balsamic odor quality. Constituents are in expected amounts.

Date : August 8, 2017

SAMPLE IDENTIFICATION

Internal code : 17H07-PTH5-1-DM

Customer identification : Frankincense Carterii - Somalia - F3010463R

Type : Essential oil

Source : *Boswellia carterii*

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 : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2017-08-07

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.	
Toluene	1.31	758	0.04	32.44	961	1.29*	Simple phenolic
Hashishene	3.21	914	0.10	[32.44]	961	1.29*	Monoterpene
α -Thujene	3.34	922	11.22	11.31	968	1.33	Monoterpene
α -Pinene	3.48	930	32.91	[32.44]	961	1.29*	Monoterpene
Unknown (m/z = 91, 92 (49), 65 (12)... 134? (2))	3.65	940	0.20	0.24	1074	2.20	Monoterpene
Camphene	3.71	944	0.44	0.43	997	1.55	Monoterpene
Thuja-2,4(10)-diene	3.80	949	0.14	5.27	1065	2.12*	Monoterpene
Sabinene	4.16	970	5.23	[5.27]	1065	2.12*	Monoterpene
β -Pinene	4.22	974	3.26	3.19	1044	1.93	Monoterpene
Myrcene	4.50	990	3.86	3.81	1119	2.71*	Monoterpene
Pseudolimonene	4.71	1002	0.10	[3.81]	1119	2.71*	Monoterpene
α -Phellandrene	4.77*	1006	3.04	1.75	1110	2.61	Monoterpene
Δ^3 -Carene	4.77*	1006	[3.04]	1.32	1095	2.42	Monoterpene
α -Terpinene	4.95	1015	0.48	0.46	1125	2.79	Monoterpene
Limonene	5.22*	1030	19.24	14.80	1146	3.08	Monoterpene
para-Cymene	5.22*	1030	[19.24]	4.20	1215	3.98	Monoterpene
β -Phellandrene	5.24	1031	0.36	0.80	1150	3.12*	Monoterpene
1,8-Cineole	5.25	1032	0.36	[0.80]	1150	3.12*	Monoterp. ether
<i>cis</i> - β -Ocimene	5.36	1038	0.09	0.84	1195	3.68*	Monoterpene
<i>trans</i> - β -Ocimene	5.54	1047	0.10	0.10	1207	3.86	Monoterpene
γ -Terpinene	5.73	1058	0.70	[0.84]	1195	3.68*	Monoterpene
<i>cis</i> -Sabinene hydrate	6.01	1073	0.10	0.12	1415	7.27	Monoterp. alcohol
Terpinolene	6.20	1083	0.17	0.17	1228	4.18	Monoterpene
para-Cymenene	6.42	1095	0.13	0.10	1371	6.39	Monoterpene
Linalool	6.72	1107	0.04	0.03	1504	9.52	Monoterp. alcohol
α -Thujone	6.85	1112	0.03	0.03	1360	6.21	Monoterp. ketone
β -Thujone	7.01	1117	0.09	0.08	1368	6.33	Monoterp. ketone
α -Campholenal	7.26	1127	0.12				Monoterp. aldehyde
<i>trans</i> -Pinocarveol	7.60	1139	0.15	0.15	1573	12.09	Monoterp. alcohol
<i>trans</i> -Verbenol	7.81	1147	0.04	0.04	1604	13.32	Monoterp. alcohol
α -Phellandren-8-ol analog	7.96	1152	0.11				Monoterp. alcohol
Pinocarvone	8.22	1161	0.04	0.05	1477	8.74	Monoterp. ketone
α -Phellandren-8-ol	8.44	1169	0.04				Monoterp. alcohol
Borneol	8.73	1180	0.22	0.60	1624	14.41*	Monoterp. alcohol
Terpinen-4-ol	8.80	1182	0.82	0.84	1530	10.45	Monoterp. alcohol
para-Cymen-8-ol	9.18	1196	0.04	0.04	1770	23.16	Monoterp. alcohol
α -Terpineol	9.46	1203	0.38	0.51	1630	14.75*	Monoterp. alcohol
α -Phellandrene epoxide	9.72	1209	0.15	0.13	1722	19.92	Monoterpene
Verbenone	9.82	1211	0.13	0.15	1598	13.08	Monoterp. ketone
Octyl acetate	9.93	1213	0.23	0.26	1424	7.46	Aliphatic ester

Methyl decyl ether	10.39	1223	0.14	0.14	1318	5.55	Aliphatic ether
<i>trans</i> -Carveol	10.45	1225	0.10	0.09	1756	22.24	Monoterp. alcohol
Carvone	11.37	1245	0.14	[0.51]	1630	14.75*	Monoterp. ketone
Bornyl acetate	12.90	1279	0.22	0.25	1506	9.60	Monoterp. ester
α -Cubebene	15.97	1331	0.19	0.20	1406	7.06	Sesquiterpene
α -Copaene	17.70	1357	0.72	0.72	1431	7.64	Sesquiterpene
β -Bourbonene	18.12	1363	0.11	0.14	1452	8.14	Sesquiterpene
β -Elemene	18.94	1376	0.70	0.65	1523	10.20	Sesquiterpene
Geranyl acetate	19.66	1387	0.08	0.07	1690	17.93	Monoterp. ester
β -Caryophyllene	20.66	1401	3.63	3.77	1521	10.13	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.15	1419	0.06	0.05	1526	10.32	Sesquiterpene
6,9-Guaiadiene	22.97	1428	0.10	0.11	1552	11.29	Sesquiterpene
α -Humulene	23.40	1434	0.68	0.95	1583	12.46*	Sesquiterpene
allo-Aromadendrene	23.64	1436	0.13	0.20	1560	11.61	Sesquiterpene
<i>trans</i> -Cadinane-1(6),4-diene	25.06	1453	0.26	[0.95]	1583	12.46*	Sesquiterpene
γ -Muurolene	25.45	1458	0.32	0.27	1620	14.20	Sesquiterpene
Germacrene D	26.22	1467	0.35	[0.60]	1624	14.41*	Sesquiterpene
β -Selinene	26.38	1469	0.17	[0.51]	1630	14.75*	Sesquiterpene
α -Selinene	26.85	1475	0.31	[0.51]	1630	14.75*	Sesquiterpene
α -Muurolene	27.63	1484	0.14	0.15	1643	15.43	Sesquiterpene
γ -Cadinene	28.68	1497	0.44	0.50	1667	16.71	Sesquiterpene
δ -Cadinene	29.36	1506	1.06	1.07	1674	17.09	Sesquiterpene
<i>trans</i> -Calamenene	29.52	1508	0.04	0.03	1732	20.64	Sesquiterpene
α -Cadinene	30.81	1526	0.04	0.04	1701	18.55	Sesquiterpene
α -Elemol	32.59	1551	0.04	0.03	1991	36.73	Sesquiterp. alcohol
Caryophyllene oxide	33.79	1568	0.17	0.21	1844	28.43	Sesquiterp. ether
Spathulenol	33.94	1570	0.03	0.03	2017	37.71	Sesquiterp. alcohol
Viridiflorol	34.80	1582	0.10	0.09	1976	36.03	Sesquiterp. alcohol
Humulene epoxide II	35.47	1592	0.02	0.02	1909	32.99	Sesquiterp. ether
1,10-diepi-Cubenol	36.62	1615	0.06	0.04	1946	34.69	Sesquiterp. alcohol
τ -Cadinol	37.52	1637	0.42	0.55	2071	39.40	Sesquiterp. alcohol
τ -Muurolol	37.63	1640	0.03	0.03	2085	39.85	Sesquiterp. alcohol
α -Muurolol	37.76	1643	0.05	0.03	2099	40.30	Sesquiterp. alcohol
β -Eudesmol	37.86	1646	0.05	0.05	2110	40.60	Sesquiterp. alcohol
α -Cadinol	38.06	1651	0.12	0.11	2129	41.11	Sesquiterp. alcohol
Dimer of α -phellandrene II	42.32	1772	0.05				Diterpene
Neophytadiene	43.81	1822	0.28				Diterpene
(3 <i>E</i>)-Cembrene A	46.67	1929	0.10	0.12	2135	41.27	Diterpene
Cembrenol	51.18	2118	0.15	0.15	2636	52.06	Diterp. alcohol
Serratol	51.45*	2131	1.28	0.93	2578	50.98	Diterp. alcohol
Incensole	51.45*	2131	[1.28]	0.48	2704	53.30	Diterp. alcohol
Total identified			97.78%	96.29%			

*: 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

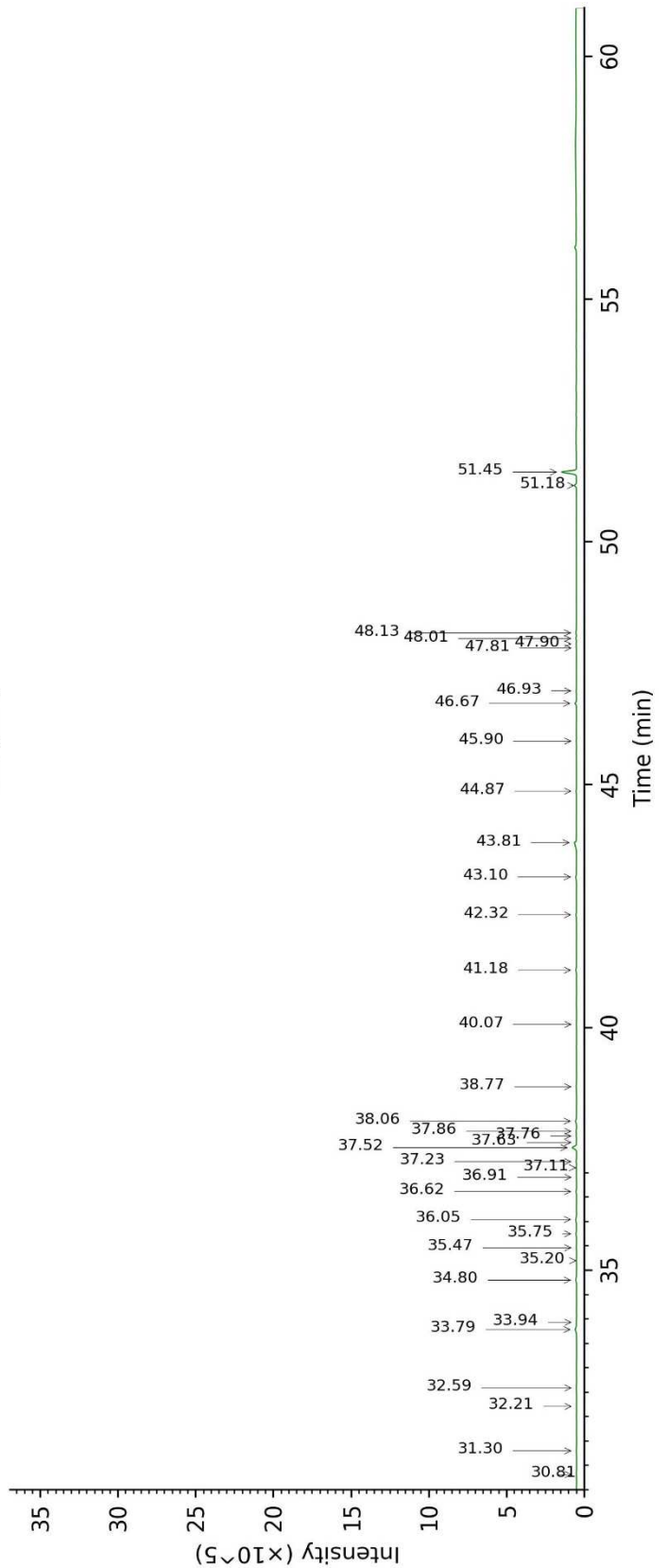
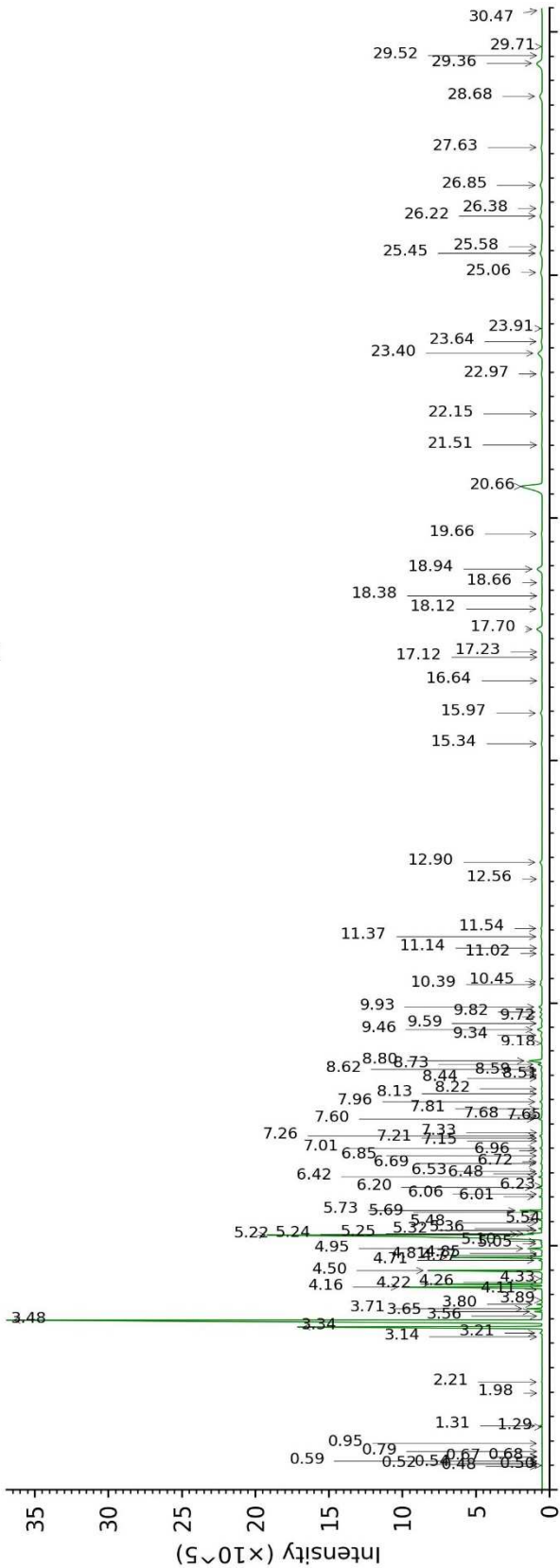
Physical aspect : Light yellow liquid

Refractive index : 1.4730 ± 0.0003 (20 °C)

CONCLUSION

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

17H07-PTH5-1-DM_BP5



17H07-PTH5-1-DM_WAX

