



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: SW0102

ESSENTIAL OIL: SANDALWOOD ORGANIC
BOTANICAL NAME: SANTALUM SPICATUM
ORIGIN: AUSTRALIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF SANDALWOOD ORGANIC OIL	%
(2E,6E)-FARNESOL	16.61
(Z)- α -SANTALOL	16.29
(E)- α -SANTALOL	11.92
(Z)-NUCIFEROL	9.45
(Z)- β -CURCUMEN-12-ol	5.98
(Z)- β -SANTALOL	5.31
(Z)- γ -CURCUMEN-12-ol	5.08
(Z)- α -trans-BERGAMOTOL	4.25
(Z)-LANCEOL	2.96
(E)-NEROLIDOL	2.71
DENDROLASIN	1.92
β -BISABOLOL	1.82
(Z)-epi- β -SANTALOL	1.51
(E)- β -SANTALOL	1.50
α -BISABOLOL	1.02

Comments from Robert Tisserand: Delightfully fragrant green-woody-creamy odor profile. All seven key ISO constituents are within range.

Date : October 13, 2017

SAMPLE IDENTIFICATION

Internal code : 17I29-PTH13-1-CC

Customer identification : Sandalwood Organic - Australia - SW010277R

Type : Essential oil

Source : *Santalum spicatum*

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., chimiste

Analysis date : 2017-10-04

Checked and approved by :

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

Note: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia.

This report is digitally signed, it is only considered valid if the digital signature is intact.

IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Tricycloekasantalal	16.00	1331	0.09				Terpenic aldehyde
α -Cedrene	20.10	1393	0.14	0.17	1497	8.99	Sesquiterpene
Sesquithujene	20.25	1396	0.14	1.12	1516	9.61*	Sesquiterpene
α -Santalene	20.99	1405	0.88	[1.12]	1516	9.61*	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.17	1419	0.31	0.36	1530	10.12	Sesquiterpene
(<i>Z</i>)- <i>epi</i> - β -Santalene	23.21	1431	0.46	0.50	1568	11.53	Sesquiterpene
(<i>Z</i>)- β -Santalene	24.11	1442	0.51	0.80	1585	12.13	Sesquiterpene
9- <i>epi</i> - β -Caryophyllene	24.23	1444	0.83	0.97	1676	16.52*	Sesquiterpene
α -Acoradiene	24.52	1447	0.13	0.13	1592	12.37	Sesquiterpene
γ -Curcumene	26.05	1465	0.37	0.46	1627	14.03	Sesquiterpene
<i>ar</i> -Curcumene	26.97	1476	0.56	0.72	1702	17.93*	Sesquiterpene
β -Curcumene	29.03	1501	0.89	[0.97]	1676	16.52*	Sesquiterpene
β -Sesquiphellandrene	30.23	1518	0.26	[0.72]	1702	17.93*	Sesquiterpene
(<i>E</i>)-Nerolidol	33.96	1571	2.71	2.97	1992	36.14	Sesquiterp. alcohol
Dendrolasin	34.09	1572	1.92	2.16	1867	29.16	Sesquiterp. ether
Guaiol	35.37	1590	0.33	0.39	2012	37.01	Sesquiterp. alcohol
α -Acorenol	36.46	1611	0.24	0.29	2037	37.86	Sesquiterp. alcohol
β -Acorenol	36.83	1621	0.18	0.22	2059	38.55	Sesquiterp. alcohol
(<i>Z</i>)- α -Santalal?	37.75	1643	0.45				Sesquiterp. aldehyde
β -Bisabolol	38.81*	1669	2.92	1.82	2071	38.95	Sesquiterp. alcohol
Unknown santalol analog (<i>m/z</i> = 95, 123 (77), 94 (77), 151 (61), 121 (56), 93 (51)... 220 (5))	38.81*	1669	[2.92]	0.75	2022	37.39	Sesquiterp. alcohol
(<i>Z</i>)- α -Santalol	39.19	1678	16.29	17.49	2260	43.97	Sesquiterp. alcohol
α -Bisabolol	39.59	1688	1.02	5.24	2140	40.99*	Sesquiterp. alcohol
(<i>E</i>)- α -Santalol	39.73*	1692	8.78	11.92	2294	44.77*	Sesquiterp. alcohol
(<i>Z</i>)- α - <i>trans</i> -Bergamotol	39.73*	1692	[8.78]	4.25	2273	44.28	Sesquiterp. alcohol
<i>epi</i> - α -Bisabolol	39.73*	1692	[8.78]	[5.24]	2140	40.99*	Sesquiterp. alcohol
(<i>Z</i>)- <i>epi</i> - β -Santalol	40.12	1702	1.51	1.31	2321	45.38	Sesquiterp. alcohol
Unknown santalol analog (<i>m/z</i> = 93, 94 (70), 91 (59), 77 (52), 105 (44), 79 (42), 41 (40)...)	40.48	1714	0.90				Sesquiterp. alcohol
(<i>Z</i>)- β -Santalol	40.65	1719	5.31	5.95	2337	45.73	Sesquiterp. alcohol
(2 <i>E</i> ,6 <i>E</i>)-Farnesol	40.93*	1728	16.61	[11.92]	2294	44.77*	Sesquiterp. alcohol
(<i>Z</i>)-Nuciferol	40.93†*	1728	25.54	9.45	2435	47.78	Sesquiterp. alcohol
(<i>Z</i>)- γ -Curcumen-12-ol	41.16†	1735	[25.54]	5.08	2357	46.14	Sesquiterp. alcohol
Unknown (<i>m/z</i> = 91, 79 (53), 93 (47), 105 (45), 77 (44), 119 (39), 117 (46)...)	41.46	1744	0.92				

200 (20)...							
(E)- β -Santalol	41.60	1749	1.50	1.99	2371	46.44	Sesquiterp. alcohol
(Z)- β -Curcumen-12-ol	42.04	1763	5.98	10.31	2406	47.17*	Sesquiterp. alcohol
(Z)-Lanceol	42.23	1769	2.96	[10.31]	2406	47.17*	Sesquiterp. alcohol
(Z)- α -Santalyl acetate	42.34	1772	0.22	0.16	2096	39.73	Sesquiterp. ester
(E)-Lanceol?	43.14	1797	0.86	0.96	2450	48.07	Sesquiterp. alcohol
Total identified			84.29%	87.94%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

t: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

Note: no correction factor was applied

OTHER DATA

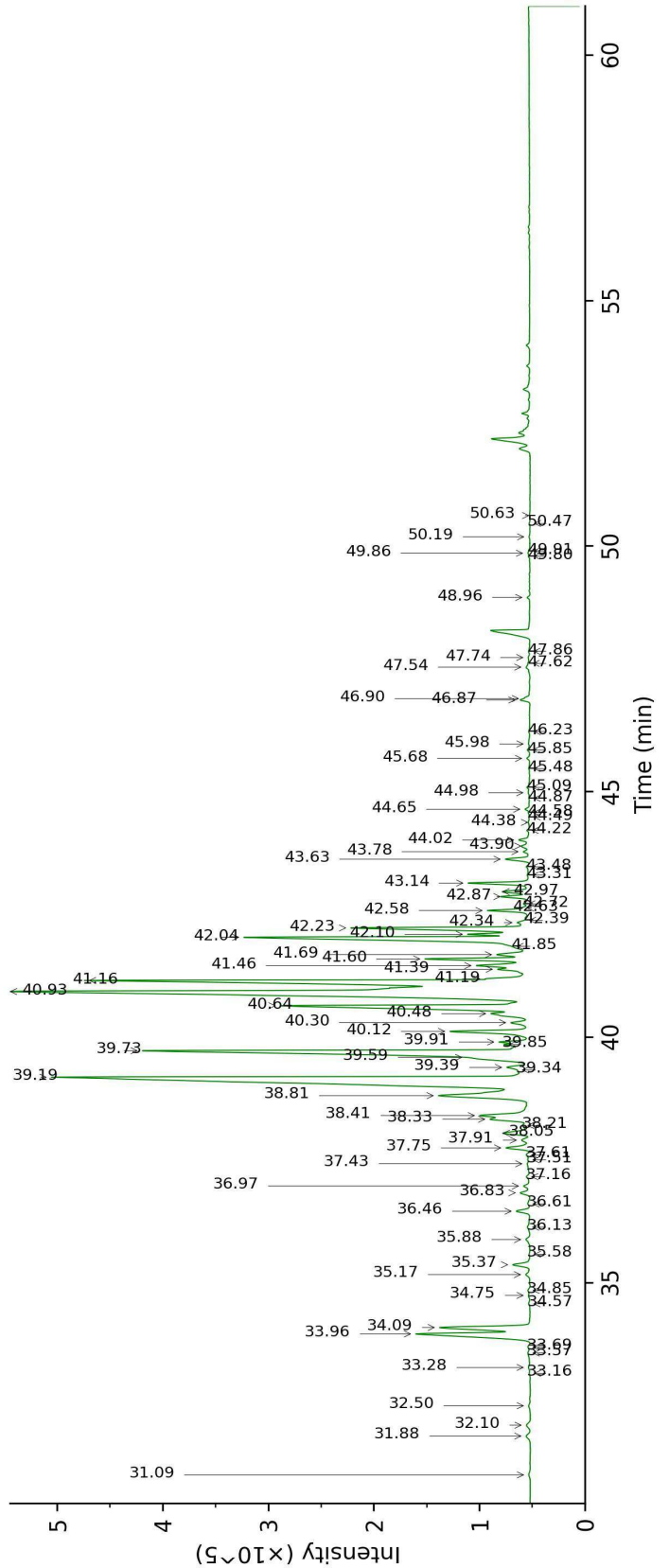
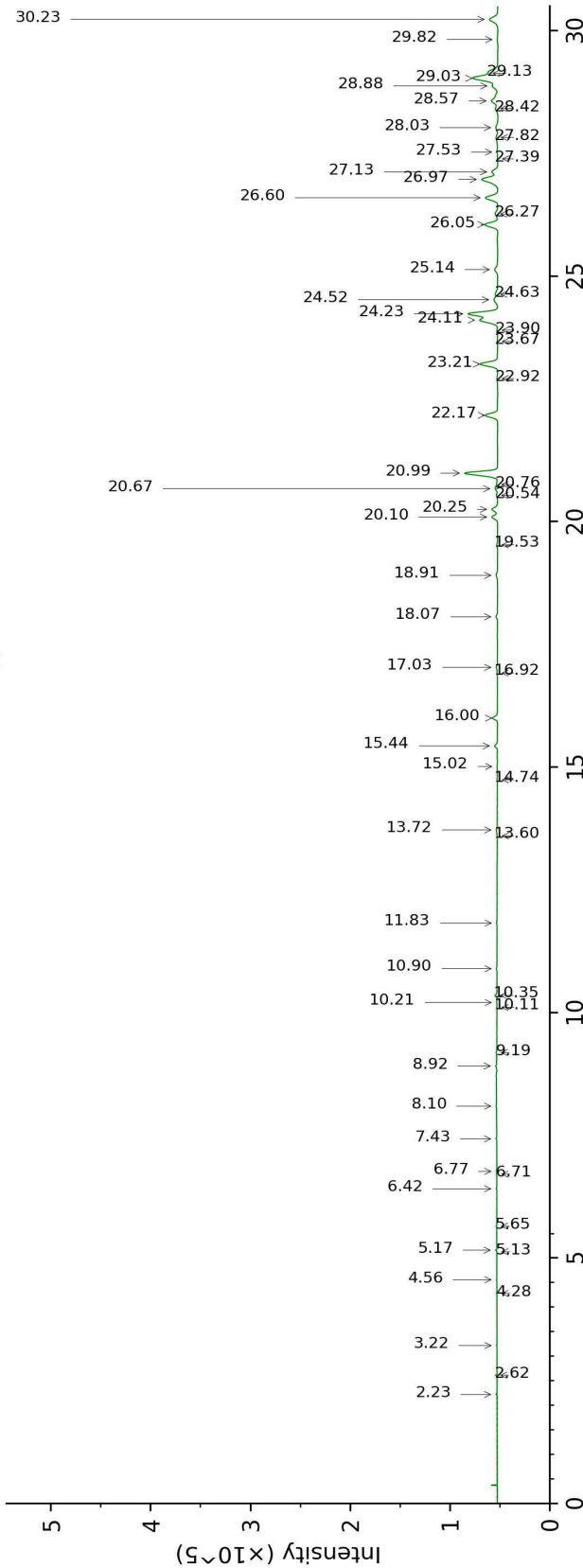
Physical aspect : Light yellow liquid

Refractive index : 1.5035 ± 0.0003 (20 °C)

CONCLUSION

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

17129-PTH13-1-CC_BP5



17129-PTH13-1-CC_WAX

