



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: C60102

ESSENTIAL OIL: CEDARWOOD ATLANTICA ORGANIC

BOTANICAL NAME: CEDRUS ATLANTICA

ORIGIN: MOROCCO

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CEDARWOOD ATLANTICA ORGANIC OIL	%
β -HIMACHALENE + α -MUUROLENE	45.6
α -HIMACHALENE	16.1
γ -HIMACHALENE	9.9
(E)- α -ATLANTONE	3.2
11- α H-HIMACHALA-1,4-DIENE	1.9
δ -CADINENE	1.7
α -DEHYDRO-AR-HIMACHALENE	1.0

Comments from Robert Tisserand: Light, lemon-wood odor profile. Constituents are within expected ranges.

Date : July 17, 2017

SAMPLE IDENTIFICATION

Internal code : 17G14-PTH25-1-DM

Customer identification : Cedarwood Atlas Organic - Morocco - C6010216R

Type : Essential oil

Source : *Cedrus atlantica*

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 : 2017-07-17

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.	
Mesityl oxide	1.70	805	0.02	0.02	1059	1.76	Aliphatic ketone
α -Pinene	3.43	930	0.03	0.02	942	1.02	Monoterpene
Limonene	5.18	1031	0.01	0.02	1138	2.57	Monoterpene
Limona ketone	7.43	1136	0.84	0.69	1462	7.47	Simple phenolic
para-Methylacetophenone	9.17	1200	0.07	0.06	1664	14.20	Simple phenolic
α -Terpineol	9.47	1207	0.03	46.39	1638	12.91*	Monoterp. alcohol
α -Longipinene	15.89	1334	0.07	0.07	1405	6.36	Sesquiterpene
Longicyclene	17.53	1358	0.02	0.03	1427	6.72	Sesquiterpene
α -Copaene	17.73	1361	0.02	0.01	1437	6.88	Sesquiterpene
Unknown (m/z = 131, 146 (36), 91 (20), 202 (19), 145 (16), 159 (14))	18.75	1377	0.41				Sesquiterpene
Sibirene	19.60	1390	0.57	0.55	1484	8.00	Sesquiterpene
Longifolene	19.72	1392	0.49	0.53	1480	7.89*	Sesquiterpene
α -Cedrene	20.29	1400	0.05	[0.53]	1480	7.89*	Sesquiterpene
Himachala-2,4-diene	21.20	1411	0.51	0.55	1531	9.09	Sesquiterpene
Thujopsen	21.74	1418	0.10	0.16	1547	9.59	Sesquiterpene
Unknown (m/z = 105, 93 (59), 43 (52), 120 (49), 91 (49), 145 (43)... 204 (2))	22.34	1425	0.17				Sesquiterpene
α -Himachalene	23.09	1434	16.12	16.33	1561	10.08	Sesquiterpene
Vestitenone	23.89	1443	0.45				Terpenic ketone
Unknown (m/z = 131, 105 (87), 119 (86), 91 (83), 159 (63), 187 (61), 202 (59))	24.76	1454	0.95	1.25	1643	13.14	Sesquiterpene
γ -Himachalene	25.53	1463	9.89	11.46	1608	11.81*	Sesquiterpene
11- α H-Himachala-1,4-diene	25.84	1467	1.86	[11.46]	1608	11.81*	Sesquiterpene
β -Himachalene	27.83*	1491	45.64	[46.39]	1638	12.91*	Sesquiterpene
α -Muurolene	27.83*	1491	[45.64]	0.41	1650	13.46	Sesquiterpene
<i>cis</i> - α -Bisabolene	28.01	1493	0.16	0.20	1660	13.97	Sesquiterpene
α -Dehydro-ar-himachalene	28.71	1502	1.04	0.95	1756	19.00	Sesquiterpene
δ -Cadinene	29.52	1513	1.69	1.59	1676	14.79	Sesquiterpene
γ -Dehydro-ar-himachalene	29.87*	1518	1.95	0.37	1810	22.49	Sesquiterpene
Unknown (m/z = 131, 91 (25), 202 (20), 115 (18), 159(16), 129 (16))	29.87*	1518	[1.95]	1.02	1782	20.68	Sesquiterpene
Unknown (m/z = 187, 145 (91), 131 (64), 202 (42))	30.62	1528	0.48				Sesquiterpene
α -Calacorene	31.41	1539	0.68	0.65	1802	21.98	Sesquiterpene
<i>trans</i> - α -Bisabolene	31.95	1547	0.48	0.47	1707	16.37	Sesquiterpene
Himachalene oxide	33.54	1569	0.39	0.35	1856	25.41	Sesquiterp. ether

(E)-Nerolidol	34.00	1575	0.15	0.13	1981	33.76	Sesquiterp. alcohol
Longiborneol	35.16	1592	0.30	0.26	2029	35.81	Sesquiterp. alcohol
β-Himachalene oxide	35.71	1599	0.54	0.51	1884	27.46	Sesquiterp. ether
Unknown (m/z = 138, 110 (77), 137 (72), 41 (71)... 220 (29))	35.89	1603	0.63				Sesquiterpene
1,10-diepi-Cubenol	36.66	1622	0.69	0.51	1952	32.30	Sesquiterp. alcohol
1-epi-Cubenol	36.76	1624	0.19	0.10	1974	33.41	Sesquiterp. alcohol
Cubenol	36.94	1629	0.15	0.16	1943	31.63	Sesquiterp. alcohol
Himachalol	37.75	1649	0.72	1.43	2084	37.95*	Sesquiterp. alcohol
Allohimachalol	38.27	1661	0.92	0.91	2121	39.05	Sesquiterp. alcohol
β-Atlantone	38.74*	1673	0.41	0.12	2058	37.09	Sesquiterp. ketone
(E)-10,11-Dihydroatlantone	38.74*	1673	[0.41]	0.25	2052	36.81	Sesquiterp. ketone
(Z)-γ-Atlantone	39.42	1689	0.69	[1.43]	2084	37.95*	Sesquiterp. ketone
Deodarone	39.65	1695	0.90	0.95	2098	38.36	Sesquiterp. ketone
Deodarone analog?	39.74	1697	0.90	0.81	2104	38.55	Sesquiterp. ketone
(E)-γ-Atlantone	39.91	1702	0.81	0.82	2107	38.65	Sesquiterp. ketone
(Z)-α-Atlantone	40.61	1724	0.60	0.62	2139	39.61	Sesquiterp. ketone
(E)-α-Atlantone	42.46	1782	3.18	3.19	2206	41.44	Sesquiterp. ketone
Nootkatone	43.02	1800	0.18	0.21	2349	44.85	Sesquiterp. ketone
Total identified			94.51%	92.86%			

*: 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 : Yellow liquid

Refractive index : 1.5110 ± 0.0003 (20 °C)

CONCLUSION

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

17G14-PTH25-1-DM_BP5



