

Date : October 26, 2017

SAMPLE IDENTIFICATION

Internal code : 17J20-PTH1-1-CC

Customer identification : Cedarwood Atlas - C6110274R

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 : 2017-10-26

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	804	0.01	0.01	1059	2.03	Aliphatic ketone
α -Pinene	3.43	927	0.03	0.03	954	1.18	Monoterpene
Limonene	5.18	1028	0.01	0.01	1144	2.93	Monoterpene
Limona ketone	7.46	1134	0.74	0.72	1468	8.30	Simple phenolic
Unknown (m/z = 93, 91 (34), 79 (32), 107 (29), 122 (27)...))	8.20	1161	0.06				
para-Methylacetophenone	9.24	1198	0.07	0.22	1661	15.82*	Simple phenolic
α -Terpineol	9.55	1205	0.03	45.21	1638	14.59*	Monoterp. alcohol
α -Longipinene	15.93	1330	0.07	0.07	1410	6.94	Sesquiterpene
Longicyclene	17.31	1351	0.04	0.02	1427	7.35	Sesquiterpene
Unknown (m/z = 131, 146 (36), 91 (20), 202 (19), 145 (16), 159 (14))	18.79	1373	0.39				
Sibirene	19.65	1386	0.58	1.15	1492	8.87*	Sesquiterpene
Longifolene	19.77	1388	0.51	[1.15]	1492	8.87*	Sesquiterpene
α -Cedrene	20.35	1397	0.07	[1.15]	1492	8.87*	Sesquiterpene
Himachala-2,4-diene	21.26	1408	0.49	0.37	1521	9.79	Sesquiterpene
Thujopsen	21.78	1414	0.10	0.52	1533	10.22	Sesquiterpene
Unknown (m/z = 105, 93 (59), 43 (52), 120 (49), 91 (49), 145 (43)... 204 (2))	22.40	1422	0.17				Sesquiterpene
α -Himachalene	23.16	1431	15.99	16.10	1563	11.34	Sesquiterpene
Vestitenone	24.03	1441	0.62				Terpenic ketone
Unknown (m/z = 131, 105 (87), 119 (86), 91 (83), 159 (63), 187 (61), 202 (59))	24.83	1451	0.63	[45.21]	1638	14.59*	Sesquiterpene
γ -Himachalene	25.62	1460	9.79	11.36	1613	13.31*	Sesquiterpene
11- α H-Himachala-1,4-diene	25.92	1464	1.87	[11.36]	1613	13.31*	Sesquiterpene
β -Himachalene	27.92*	1488	45.34	[45.21]	1638	14.59*	Sesquiterpene
α -Muurolene	27.92*	1488	[45.34]	0.21	1640	14.68	Sesquiterpene
<i>cis</i> - α -Bisabolene	28.10	1490	0.16	[0.22]	1661	15.82*	Sesquiterpene
α -Dehydro-ar-himachalene	28.82	1498	0.97	1.21	1759	21.60	Sesquiterpene
δ -Cadinene	29.60	1509	1.76	1.70	1681	16.80	Sesquiterpene
γ -Dehydro-ar-himachalene	29.97*	1514	1.78	0.40	1812	25.14	Sesquiterpene
Unknown (m/z = 131, 91 (25), 202 (20), 115 (18), 159(16), 129 (16))	29.97*	1514	[1.78]	0.97	1787	23.42	Sesquiterpene
Unknown (m/z = 187, 145 (91), 131 (64), 202 (42))	30.73	1525	0.43				Sesquiterpene
α -Calacorene	31.54	1536	0.61	0.61	1806	24.72	Sesquiterpene

<i>trans</i> - α -Bisabolene	32.02	1543	0.57	0.54	1712	18.54	Sesquiterpene
Himachalene oxide	33.64	1566	0.40	0.37	1856	28.42	Sesquiterp. ether
(<i>E</i>)-Nerolidol	34.02	1571	0.11	0.09	1988	35.96	Sesquiterp. alcohol
Unknown (m/z = 96, 95 (16), 91 (110), 41 (10)... 202? (3))	34.18	1574	0.17				Sesquiterpene?
Longiborneol	35.32	1590	0.28	0.29	2028	37.57	Sesquiterp. alcohol
β -Himachalene oxide	35.80	1596	0.41	0.36	1884	30.42	Sesquiterp. ether
Unknown (m/z = 138, 110 (77), 137 (72), 41 (71)... 220 (29))	35.98	1600	0.56				Oxygenated sesquiterp.
1,10-diepi-Cubenol	36.35	1609	0.11	0.14	1949	34.20	Sesquiterp. alcohol
1-epi-Cubenol	36.77	1619	0.70	0.57	1958	34.60	Sesquiterp. alcohol
Himachalol	37.88	1646	0.77	1.56	2089	39.51*	Sesquiterp. alcohol
Allohimachalol	38.39	1659	0.88	0.87	2125	40.58	Sesquiterp. alcohol
(<i>E</i>)-10,11-Dihydroatlantone	38.82*	1669	0.45	0.26	2042	38.03	Sesquiterp. ketone
β -Atlantone	38.82*	1669	[0.45]	0.34	2056	38.49	Sesquiterp. ketone
(<i>Z</i>)- γ -Atlantone	39.51	1686	0.77	[1.56]	2089	39.51*	Sesquiterp. ketone
Deodarone	39.75	1692	0.80	0.81	2100	39.86	Sesquiterp. ketone
Deodarone analog?	39.85	1695	0.90	0.87	2107	40.04	Sesquiterp. ketone
(<i>E</i>)- γ -Atlantone	39.99	1698	0.94	0.96	2111	40.19	Sesquiterp. ketone
(<i>Z</i>)- α -Atlantone	40.70	1720	0.73	0.75	2142	41.04	Sesquiterp. ketone
(<i>E</i>)- α -Atlantone	42.56	1779	3.64	3.55	2211	42.81	Sesquiterp. ketone
Nootkatone	43.12	1797	0.19	0.17	2358	46.16	Sesquiterp. ketone
Total identified			94.46%	93.39%			

*: 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 : 1.5120 \pm 0.0003 (20 °C)

CONCLUSION

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

17J20-PTH1-1-CC_BP5



