



Essential Oil University

GC/MS Report

Item	Lot
Fir Needle EO Balsam <i>Abies balsamea</i>	0D
Date	Analyst
12/6/2024	Dr. Robert S. Pappas

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The analysis of this batch sample, Fir Needle EO Balsam, meets the expected chemical profile for authentic essential oil of *Abies balsamea*. No contamination or adulteration was detected. The results provided in this GCMS quality analysis reflect the chemical composition of the oil and lot referenced above on the date of analysis.



Sample Information

Company: Revive**Sample Name:** Fir Needle EO Balsam**Botanical Name:** Abies balsamea**Lot Number:** 0D**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Canada**Analysis Date:** 12/6/2024**Manufacture Date:** September 2024

GC/MS

Inst. ID: Shimadzu GCMS-QP2010Ultra**Injection Type:** Split**Split Ratio:** 24.4**Column Type:** ZB-5**Injection Volume:** 0.1 µL**Temperature Program:** 2C/min

Physical Data

ANALYSIS

Optical Rotation @20°C

Refractive Index @20°C

Specific Gravity @20°C

METHOD

USP[781]

USP[831]

USP[841]

RESULTS

-25.60

1.47405

0.87148



Ret. Time	Component	Ret. Idx.	Conc. %	
5.908	Toluene	762	0.01%	IFRA
6.507	1-Methoxyhexane	789	0.02%	
9.730	Santene	878	1.18%	
10.735	Unidentified	903	0.03%	
11.668	Tricyclene	920	0.73%	
11.822	alpha-Thujene	923	0.15%	
12.250	alpha-Pinene	931	17.01%	
13.022	alpha-Fenchene	945	0.1%	
13.121	Camphene	947	4.84%	
13.316	Thuja-2,4(10)diene	950	0.05%	
14.297	meta-Cymene	968	0.03%	
14.384	Sabinene	970	0.07%	
14.730	beta-Pinene	976	30.39%	
15.312	Myrcene	986	2.39%	
16.215	Pseudolimonene	1002	0.01%	
16.280	Unidentified	1003	0.02%	
16.366	alpha-Phellandrene	1005	0.23%	
16.532	delta-3-Carene	1007	10.91%	
17.020	alpha-Terpinene	1015	0.21%	
17.497	para-Cymene	1022	0.21%	
17.826	Limonene	1027	13.79%	IFRA
17.916	beta-Phellandrene	1028	5.29%	
19.656	gamma-Terpinene	1055	0.31%	
21.200	Isoterpinolene	1079	0.03%	
21.461	Terpinolene	1083	1.17%	
21.656	Fenchone	1086	0.13%	
21.776	para-Cymenene	1088	0.08%	
22.166	alpha-Campholenal	1094	0.03%	
22.404	Linalool	1097	0.06%	IFRA
23.716	Fenchyl alcohol	1116	0.12%	
24.088	Unidentified	1122	0.01%	
24.250	alpha-Campholenal	1124	0.02%	
25.194	trans-Pinocarveol	1138	0.09%	
25.618	Camphor	1144	0.24%	
25.870	Unidentified	1148	0.01%	
26.171	trans-beta-Terpineol	1152	0.04%	
26.550	trans-Pinocamphone	1158	0.02%	
26.689	Unidentified	1160	0.02%	
26.760	Isoborneol	1161	0.01%	
27.334	Borneol	1169	0.82%	



Ret. Time	Component	Ret. Idx.	Conc. %	
27.619	Isopinocampphone	1173	0.05%	
27.944	Terpinen-4-ol	1178	0.26%	
28.374	Unidentified	1184	0.01%	
28.948	alpha-Terpineol	1192	1.15%	
29.171	Estragole	1196	0.03%	IFRA
29.739	Verbenone	1204	0.01%	
30.484	endo-Fenchyl acetate	1215	0.04%	
31.099	Unidentified	1224	0.01%	
31.303	Thymol methyl ether	1227	0.04%	
32.283	Carvone	1241	0.01%	IFRA
32.931	Piperitone	1251	0.06%	
34.569	Phellandral	1275	0.01%	
34.745	Unidentified	1277	0.01%	
35.017	Bornyl acetate	1281	5.87%	
35.172	Unidentified	1284	0.02%	
35.401	Thymol	1287	0.01%	
35.614	Unidentified	1290	0.01%	
35.755	Unidentified	1292	0.01%	
38.866	Unidentified	1339	0.01%	
39.370	alpha-Longipinene	1347	0.13%	
40.634	alpha-Ylangene	1366	0.03%	
40.931	Longicyclene	1371	0.01%	
41.055	Unidentified	1373	0.01%	
41.209	Geranyl acetate	1375	0.01%	
42.089	Sativene	1388	0.02%	
43.198	Junipene	1406	0.43%	
43.846	beta-Caryophyllene	1416	0.14%	
44.709	trans-alpha-Bergamotene	1430	0.01%	
45.953	trans-beta-Farnesene	1450	0.01%	
46.093	alpha-Humulene	1452	0.06%	
47.807	Unidentified	1479	0.04%	
48.173	beta-Selinene	1485	0.02%	
48.515	Unidentified	1491	0.01%	
48.612	alpha-Selinene	1492	0.02%	
48.765	Unidentified	1495	0.01%	
48.868	beta-Himachalene	1496	0.04%	
49.044	Unidentified	1499	0.02%	
49.348	beta-Bisabolene	1504	0.35%	
49.529	Unidentified	1507	0.01%	
49.644	Unidentified	1509	0.01%	



Ret. Time	Component	Ret. Idx.	Conc. %	
49.960	delta-Cadinene	1515	0.03%	
51.297	trans-alpha-Bisabolene	1537	0.04%	
52.482	trans-Nerolidol	1557	0.01%	

Total Identified Compounds **99.69 %**

