



Essential Oil University

GC/MS Report

Item	Lot
Palo Santo (Wood) EO <i>Bursera graveolens</i>	1B
Date	Analyst
1/16/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Palo Santo (Wood) EO, meets the expected chemical profile for authentic essential oil of *Bursera graveolens*. 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:** Palo Santo (Wood) EO**Botanical Name:** Bursera graveolens**Lot Number:** 1B**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Ecuador**Analysis Date:** 1/16/2025**Manufacture Date:** October 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

+43.48

1.47917

0.88564



Ret. Time	Component	Ret. Idx.	Conc. %	
8.408	3-Methylcyclopentanone	844	0.02%	
12.239	alpha-Pinene	931	0.06%	
13.244	3-Methylcyclohexanone	949	0.02%	
15.067	Unidentified	982	0.02%	
15.143	Unidentified	983	0.03%	
15.328	Myrcene	987	0.38%	
16.235	Pseudolimonene	1003	0.01%	
16.304	Unidentified	1004	0.02%	
16.380	alpha-Phellandrene	1005	0.17%	
17.045	alpha-Terpinene	1015	0.02%	
17.526	para-Cymene	1023	1.02%	
17.921	Limonene	1029	56.97%	IFRA
17.975	beta-Phellandrene	1029	0.16%	
18.015	1,8-Cineole	1030	0.08%	
19.679	gamma-Terpinene	1056	0.04%	
21.484	Terpinolene	1083	0.04%	
21.805	para-Cymenene	1088	0.03%	
22.428	Linalool	1098	0.03%	IFRA
23.919	trans-para-Mentha-2,8-dienol	1119	0.05%	
24.683	cis-Limonene oxide	1130	0.03%	
24.920	Unidentified	1134	0.05%	
24.980	trans-Limonene oxide	1135	0.03%	
25.818	cis-beta-Terpineol	1147	0.07%	
26.282	Menthone	1154	0.16%	
26.854	Menthofuran	1162	18.72%	
27.257	delta-Terpineol	1168	0.04%	
27.617	trans-Isopulegone	1173	0.04%	
27.827	Unidentified	1176	0.07%	
27.976	Terpinen-4-ol	1178	0.04%	
29.018	alpha-Terpineol	1193	10.37%	
29.189	cis-Dihydrocarvone	1196	0.14%	
29.317	Unidentified	1198	0.06%	
29.605	trans-Dihydrocarvone	1202	0.02%	
30.330	Unidentified	1213	0.03%	
30.515	Unidentified	1215	0.02%	
30.598	trans-Carveol	1216	0.1%	
31.503	cis-Carveol	1230	0.05%	
31.897	Pulegone	1236	0.78%	
32.294	Carvone	1241	1.08%	IFRA
32.841	Unidentified	1249	0.05%	



Ret. Time	Component	Ret. Idx.	Conc. %	
38.239	Unidentified	1330	0.01%	
38.430	delta-Elemene	1333	0.06%	
39.169	Menthafurolactone isomer	1344	0.15%	
39.242	Menthafurolactone isomer	1345	0.13%	
39.459	Eugenol	1348	0.11%	IFRA
40.669	alpha-Ylangene	1367	0.03%	
41.079	alpha-Copaene	1373	0.06%	
41.866	beta-Cubebene	1385	0.04%	
41.977	beta-Elemene	1387	0.14%	
43.654	alpha-Cedrene	1413	0.01%	IFRA
43.791	beta-Ylangene	1415	0.07%	
43.865	Unidentified	1416	0.02%	
44.521	beta-Copaene	1427	0.08%	
44.834	cis-Thujopsene	1432	0.06%	
45.248	Guaia-6,9-diene	1438	0.03%	
45.360	Unidentified	1440	0.07%	
45.717	Aromadendrene	1446	0.26%	
45.844	Unidentified	1448	0.03%	
45.985	trans-beta-Farnesene	1450	0.03%	
46.114	alpha-Humulene	1452	0.04%	
47.182	Unidentified	1469	0.02%	
47.344	gamma-Murolene	1472	0.25%	
47.721	Germacrene D	1478	4.24%	
47.965	Unidentified	1482	0.04%	
48.096	Unidentified	1484	0.01%	
48.211	Dehydromenthofurolactone	1486	0.14%	
48.416	trans-Murrola-4(14),5-diene	1489	0.1%	
48.589	Menthallactone isomer	1492	0.34%	
48.805	alpha-Murolene	1495	0.12%	
49.164	alpha-Farnesene	1501	0.54%	
49.364	Unidentified	1505	0.05%	
49.677	gamma-Cadinene	1510	0.15%	
49.990	delta-Cadinene	1515	0.33%	
50.190	Unidentified	1519	0.02%	
50.272	Unidentified	1520	0.02%	
50.447	Menthallactone isomer	1523	0.04%	
50.569	Unidentified	1525	0.11%	
50.839	Unidentified	1529	0.02%	
51.086	alpha-Cadinene	1534	0.03%	
52.048	Unidentified	1550	0.02%	



Ret. Time	Component	Ret. Idx.	Conc. %	
52.160	Unidentified	1552	0.02%	
52.374	Germacrene B	1555	0.03%	
52.527	Unidentified	1558	0.02%	
53.429	Spathulenol	1573	0.02%	
54.188	Unidentified	1586	0.04%	
55.689	Unidentified	1612	0.03%	
55.780	Unidentified	1613	0.01%	
56.070	Humulane-1,6-dien-3-ol	1619	0.17%	
56.400	Unidentified	1625	0.02%	
57.190	epi-alpha-Cadinol	1639	0.02%	
57.300	epi-alpha-Muurolol	1641	0.05%	
57.447	delta-Cadinol	1643	0.03%	
57.940	Cadin-4-en-10-ol	1652	0.11%	
58.120	Unidentified	1655	0.03%	
58.699	Unidentified	1665	0.01%	
59.630	Unidentified	1682	0.03%	
63.977	Unidentified	1762	0.02%	
88.642	Unidentified	2284	0.03%	
103.335	Unidentified	2660	0.05%	
109.702	Unidentified	2841	0.07%	

Total Identified Compounds **98.78 %**

