



Essential Oil University

GC/MS Report

Item	Lot
Copaiba Balsam EO <i>Copaifera langsdorffii</i>	9E
Date	Analyst
8/10/2023	Dr. Robert S. Pappas

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The analysis of this batch sample, Copaiba Balsam EO, meets the expected chemical profile for authentic essential oil of *Copaifera langsdorffii*. 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:** Copaiba Balsam EO**Botanical Name:** *Copaifera langsdorffii***Lot Number:** 9E**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Brazil**Analysis Date:** 8/10/2023**Date of Distillation:** August 2023

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

-10.60

1.49567

0.92279



Ret. Time	Component	Ret. Idx.	Conc. %
17.808	Unidentified	1018	0.01%
18.567	cis-beta-Ocimene	1029	0.07%
24.779	neo-allo-Ocimene	1122	0.01%
38.683	Elemene isomer	1324	0.02%
38.897	delta-Elemene	1327	0.34%
39.686	alpha-Cubebene	1339	0.63%
41.129	alpha-Ylangene	1361	0.07%
41.560	alpha-Copaene	1368	3.19%
42.355	beta-Cubebene	1380	0.66%
42.448	beta-Elemene	1381	0.68%
42.626	Vanillin	1384	0.02%
42.755	Unidentified	1386	0.03%
43.314	Cyperene	1394	0.21%
43.415	cis-beta-Caryophyllene	1396	0.11%
43.578	Unidentified	1398	0.02%
43.835	Unidentified	1402	0.01%
44.006	cis-alpha-Bergamotene	1405	0.06%
44.483	trans-beta-Caryophyllene	1413	66.25%
44.689	Unidentified	1416	0.07%
44.920	Unidentified	1420	0.08%
44.980	gamma-Elemene	1421	0.45%
45.218	trans-alpha-Bergamotene	1425	3.85%
45.547	Aromadendrene	1430	0.04%
45.684	Sesquisabinene	1432	0.22%
45.860	Unidentified	1435	0.04%
46.088	epi-beta-Santalene	1438	0.06%
46.219	Cadina-3,5-diene	1440	0.03%
46.326	Unidentified	1442	0.01%
46.443	trans-beta-Farnesene	1444	0.17%
46.615	alpha-Humulene	1447	4.61%
46.888	Alloaromadendrene	1451	0.22%
47.019	Unidentified	1453	0.02%
47.357	Unidentified	1459	0.03%
47.639	cis-Cadina-1(6),4-diene	1463	0.07%
47.822	trans-Cadina-1(6),4-diene	1466	1%
47.990	Unidentified	1469	0.07%
48.085	Unidentified	1470	0.06%
48.203	Germacrene D	1472	4.34%
48.376	(Z,E)-alpha-Farnesene	1475	0.39%
48.566	delta-Selinene	1478	0.03%



Ret. Time	Component	Ret. Idx.	Conc. %
48.690	beta-Selinene	1480	0.31%
48.902	gamma-Murolene	1483	0.19%
49.095	Bicyclgermacrene	1486	0.61%
49.277	alpha-Murolene	1489	0.31%
49.402	alpha-Bisabolene	1491	0.14%
49.548	Cadinene isomer	1494	0.06%
49.627	Unidentified	1495	0.06%
49.847	beta-Bisabolene	1498	1.6%
50.028	(Z)-gamma-Bisabolene	1501	0.15%
50.157	gamma-Cadinene	1504	0.35%
50.331	Unidentified	1506	0.07%
50.467	delta-Cadinene	1509	1.48%
50.665	cis-Calamenene	1512	0.03%
50.796	beta-Sesquiphellandrene	1514	0.32%
50.975	(E)-gamma-Bisabolene	1517	0.03%
51.316	trans-Cadina-1,4-diene	1523	0.08%
51.569	Unidentified	1527	0.1%
51.793	(E)-alpha-Bisabolene	1531	0.24%
52.869	Germacrene B	1549	0.62%
53.063	Unidentified	1552	0.02%
53.491	Maaliol	1560	0.06%
53.848	Caryophyllene alcohol	1566	0.32%
54.231	Caryophyllene oxide	1572	0.16%
54.448	Globulol	1576	0.05%
54.951	Viridiflorol	1584	0.04%
55.552	Ledol	1594	0.05%
55.670	Unidentified	1596	0.01%
55.857	Unidentified	1599	0.03%
56.570	Humulane-1,6-dien-3-ol	1612	0.45%
56.877	Epicubenol	1617	0.06%
57.235	Unidentified	1624	0.11%
57.675	epi-alpha-Cadinol	1631	0.1%
57.782	epi-alpha-Muurolol	1633	0.22%
57.930	alpha-Muurolol	1636	0.32%
58.423	Cadin-4-en-10-ol	1645	0.37%
58.585	Unidentified	1648	0.04%
58.940	Unidentified	1654	0.01%
59.061	Unidentified	1656	0.01%
59.245	Unidentified	1659	0.04%
59.331	beta-Bisabolol	1661	0.03%



Ret. Time	Component	Ret. Idx.	Conc. %	
60.117	alpha-Bisabolol	1675	0.02%	IFRA
60.234	Unidentified	1677	0.02%	
60.789	Juniper camphor	1687	0.11%	
67.296	Unidentified	1807	0.01%	
73.795	Unidentified	1936	0.03%	
74.931	Unidentified	1959	0.07%	
77.276	Unidentified	2008	0.03%	
77.930	Unidentified	2022	0.02%	
78.349	Unidentified	2031	0.01%	
78.682	Manool analogue	2038	0.14%	
79.214	Manool	2049	0.24%	
85.157	Unidentified	2180	0.09%	
85.680	Unidentified	2192	0.02%	
85.840	Unidentified	2196	0.02%	
86.621	Unidentified	2214	0.02%	
87.965	Unidentified	2245	0.01%	
88.119	Unidentified	2249	0.01%	
88.478	Kolavenol	2257	0.05%	
89.645	Unidentified	2284	0.03%	
89.741	Unidentified	2287	0.07%	
90.965	Copalol	2316	0.48%	
91.550	Unidentified	2330	0.11%	
92.459	Unidentified	2352	0.05%	
93.191	Unidentified	2370	0.01%	
94.534	Unidentified	2403	0.08%	
96.815	Unidentified	2461	0.03%	
96.987	Unidentified	2465	0.22%	
98.696	Unidentified	2509	0.02%	
99.829	Unidentified	2538	0.05%	
101.863	Unidentified	2592	0.02%	
103.093	Unidentified	2625	0.03%	
104.614	Unidentified	2666	0.12%	
104.710	Unidentified	2669	0.03%	
104.775	Unidentified	2671	0.02%	
104.860	Unidentified	2673	0.01%	
105.215	Unidentified	2683	0.17%	
105.490	Unidentified	2690	0.01%	
107.730	Unidentified	2751	0.01%	

Total Identified Compounds **97.59 %**

