



Essential Oil University

GC/MS Report

Item	Lot
Lemon Verbena EO <i>Lippia citriodora</i>	8G
Date	Analyst
3/14/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Lemon Verbena EO, meets the expected chemical profile for authentic essential oil of *Lippia citriodora*. 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:** Lemon Verbena EO**Botanical Name:** Lippia citriodora**Lot Number:** 8G**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** France**Analysis Date:** 3/14/2025**Manufacture Date:** September 2022

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

-19.40

1.48692

0.89200



Ret. Time	Component	Ret. Idx.	Conc. %	
3.595	2-Methyl-3-buten-2-ol	655	0.01%	
6.038	Methyl-alpha-methylbutyrate	768	0.02%	
7.662	Unidentified	825	0.03%	
10.092	Unidentified	888	0.01%	
11.804	alpha-Thujene	923	0.06%	
12.210	alpha-Pinene	930	1.11%	
12.679	Dihydromyrcene	939	0%	
13.106	Camphene	947	0.04%	
14.367	Sabinene	970	2.09%	
14.667	beta-Pinene	975	0.37%	
14.979	6-Methyl-hept-5-en-2-one	981	0.48%	
15.291	Myrcene	986	0.89%	
15.725	Octan-3-ol	994	0.02%	
16.204	Pseudolimonene	1003	0.07%	
16.347	alpha-Phellandrene	1005	0.01%	
17.005	alpha-Terpinene	1015	0.26%	
17.489	para-Cymene	1022	0.21%	
17.614	Methyl octyl ether	1024	0.01%	
17.827	Limonene	1028	20.4%	IFRA
17.984	1,8-Cineole	1030	2.51%	
18.182	cis-beta-Ocimene	1033	0.19%	
18.858	trans-beta-Ocimene	1043	1.25%	
19.284	Melonal	1050	0.01%	
19.643	gamma-Terpinene	1055	0.07%	
20.418	trans-Sabinene hydrate	1067	0.07%	
21.230	Unidentified	1080	0.01%	
21.442	Terpinolene	1083	0.02%	
21.863	Ocimenone isomer	1089	0.06%	
22.072	Unidentified	1093	0.01%	
22.305	Perillene	1096	0.03%	
22.389	Linalool	1098	0.18%	IFRA
22.470	cis-Sabinene hydrate	1099	0.01%	
22.791	alpha-Pinene oxide	1104	0.04%	
23.035	Unidentified	1107	0.02%	
23.889	trans-para-Mentha-2,8-dienol	1119	0.02%	
24.006	Unidentified	1121	0.01%	
24.324	allo-Ocimene	1126	0.02%	
24.526	Limona ketone	1129	0.01%	
24.650	cis-Limonene oxide	1130	0.01%	
24.720	Unidentified	1131	0.01%	



Ret. Time	Component	Ret. Idx.	Conc. %	
24.910	cis-para-Mentha-2,8-dien-1-ol	1134	0.02%	
24.944	trans-Limonene oxide	1135	0.03%	
25.017	Epiphocitral A	1136	0.1%	
25.365	exo-Isocitral	1141	0.04%	IFRA
25.628	Camphor	1145	0.1%	
25.731	trans-Chrysanthemal	1146	0.14%	
25.984	Citronellal	1150	0.09%	IFRA
26.612	Isoneral	1159	0.12%	IFRA
27.168	Rose furan oxide	1167	0.09%	
27.210	delta-Terpineol	1168	0.04%	
27.339	Borneol	1169	0.06%	
27.566	Unidentified	1173	0.02%	
27.920	Isogeranial + Terpinen-4-ol	1178	0.36%	
28.413	trans-Isocarveol	1185	0.02%	
28.953	alpha-Terpineol	1193	2.1%	
29.157	Unidentified	1196	0.01%	
29.270	Unidentified	1197	0.03%	
29.707	Unidentified	1204	0.02%	
30.530	Unidentified	1216	0.01%	
30.571	trans-Carveol	1217	0.03%	
30.935	Nerol	1222	0.85%	
31.114	Citronellol	1224	0.12%	IFRA
31.285	cis-para-Mentha-1(7),8-dien-2-ol	1227	0.05%	
31.488	cis-Carveol	1230	0.02%	
31.959	Neral	1237	17.37%	IFRA
32.302	Carvone	1242	0.07%	IFRA
32.705	Geraniol	1248	0.83%	IFRA
32.943	Piperitone	1251	0.06%	
33.385	Unidentified	1258	0.02%	
34.013	Geranial	1267	26.69%	IFRA
34.438	Perillaldehyde	1273	0.02%	IFRA
34.828	Unidentified	1279	0.07%	
35.026	Bornyl acetate	1282	0.02%	
35.934	Carvacrol	1295	0.02%	
38.190	delta-Elementene	1329	0.09%	
38.334	Unidentified	1332	0.02%	
39.029	Unidentified	1342	0.02%	
39.151	alpha-Terpinyol acetate	1344	0.03%	
39.346	Phenethyl propionate	1347	0.02%	
39.428	Eugenol	1348	0.02%	IFRA



Ret. Time	Component	Ret. Idx.	Conc. %	
39.662	Unidentified	1352	0.01%	
39.924	Neryl acetate	1356	0.02%	
40.074	Unidentified	1358	0.02%	
40.586	Cyclosativene	1366	0.03%	
40.710	Unidentified	1368	0.03%	
41.051	alpha-Copaene	1373	0.43%	
41.211	Geranyl acetate	1376	1.01%	
41.465	2-epi-alpha-Funebrene	1379	0.04%	
41.568	beta-Bourbonene	1381	0.31%	
41.790	alpha-Bourbonene	1384	0.01%	
41.836	beta-Cubebene	1385	0.04%	
41.944	beta-Elemene	1387	0.08%	
42.606	Methyleugenol	1397	0.02%	IFRA
42.780	alpha-Funebrene	1400	0.07%	
42.966	Unidentified	1402	0.01%	
43.634	alpha-Cedrene	1413	0.27%	IFRA
43.857	trans-beta-Caryophyllene	1417	3.12%	
44.134	beta-Cedrene	1421	0.14%	IFRA
44.261	Unidentified	1423	0.05%	
44.497	beta-Copaene	1427	0.06%	
44.711	trans-alpha-Bergamotene	1430	0.02%	
45.032	Aromadendrene	1436	0.01%	
45.181	Unidentified	1438	0.01%	
45.395	Isogermacrene D	1441	0.02%	
45.946	trans-beta-Farnesene	1450	0.04%	
46.096	alpha-Humulene	1453	0.44%	
46.366	Alloaromadendrene	1457	0.36%	
46.953	Geranyl propionate	1466	0.29%	
47.307	gamma-Murolene	1472	0.09%	
47.494	gamma-Curcumene	1475	0.08%	
47.695	alpha-Curcumene	1478	4.28%	
48.495	alpha-Zingiberene	1491	0.19%	
48.571	Bicyclogermacrene	1492	1.7%	
48.770	alpha-Murolene	1496	0.04%	
49.346	beta-Bisabolene	1505	0.06%	
49.451	beta-Curcumene	1507	0.77%	
49.646	gamma-Cadinene	1510	0.16%	
49.763	Cubedol analogue	1512	0.15%	
49.949	delta-Cadinene	1515	0.19%	
50.243	Unidentified	1520	0.03%	



Ret. Time	Component	Ret. Idx.	Conc. %	
51.048	alpha-Cadinene	1534	0.05%	
51.883	Unidentified	1548	0.05%	
52.132	Unidentified	1552	0.02%	
52.496	trans-Nerolidol	1558	0.62%	
52.885	Unidentified	1565	0.01%	
53.268	Unidentified	1571	0.03%	
53.398	Spathulenol	1573	1.3%	
53.712	Caryophyllene oxide	1579	1.5%	
53.854	Unidentified	1581	0.06%	
54.188	Unidentified	1587	0.04%	
54.449	Unidentified	1591	0.06%	
54.584	Cedrol analogue	1593	0.02%	
55.275	Cedrol	1605	0.17%	
55.657	1,10-di-epi-Cubenol	1612	0.03%	
56.367	Unidentified	1625	0.01%	
56.618	Unidentified	1629	0.11%	
56.869	Caryophylla-4(12),8(13)-dien-5-beta-ol	1633	0.01%	
57.157	epi-alpha-Cadinol	1639	0.31%	
57.270	Unidentified	1641	0.03%	
57.412	Unidentified	1643	0.04%	
57.914	Cadin-4-en-10-ol	1652	0.11%	
58.078	Unidentified	1655	0.01%	
58.196	Unidentified	1657	0.03%	
58.437	Unidentified	1661	0.02%	
58.734	Unidentified	1667	0.06%	
58.982	Unidentified	1671	0.05%	
59.222	Unidentified	1675	0.02%	
59.826	Acorenone B	1686	0.05%	

Total Identified Compounds **98.88 %**

