



Essential Oil University

GC/MS Report

Item	Lot
Cardamom EO <i>Elettaria Cardamomum</i>	1G
Date	Analyst
6/9/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Cardamom EO, meets the expected chemical profile for authentic essential oil of *Elettaria Cardamomum*. 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:** Cardamom EO**Botanical Name:** Elettaria Cardamomum**Lot Number:** 1G**Production Method:** Hydrodistillation**Sample Type:** EO - Single**Country of Origin:** Guatemala**Analysis Date:** 6/9/2025**Manufacture Date:** May 2025

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

+11.88

1.46342

0.93104



Ret. Time	Component	Ret. Idx.	Conc. %	
11.642	alpha-Thujene	924	0.08%	
12.042	alpha-Pinene	931	1.64%	
12.830	alpha-Fenchene	945	0%	
12.927	Camphene	947	0.02%	
14.179	Sabinene	970	4.2%	
14.471	beta-Pinene	976	0.91%	
14.832	6-Methyl hept-5-en-2-one	982	0.01%	
15.097	Myrcene	987	0.28%	
15.968	Octanal	1003	0.01%	
16.143	alpha-Phellandrene	1005	0.01%	
16.801	alpha-Terpinene	1015	0.02%	
17.279	para-Cymene	1023	0.2%	
17.580	Limonene	1027	3%	IFRA
17.675	beta-Phellandrene	1029	0.03%	
17.790	1,8-Cineole	1031	30.29%	
17.964	cis-beta-Ocimene	1033	0.02%	
18.650	trans-beta-Ocimene	1044	0.02%	
19.417	gamma-Terpinene	1056	0.31%	
20.188	trans-Sabinene hydrate	1068	0.18%	
21.209	Terpinolene	1083	0.04%	
21.250	trans-Linalool oxide (furanoid)	1084	0.01%	
22.175	Linalool	1098	5.17%	IFRA
23.076	trans-4,8-Dimethyl-nona-1,3,7-triene	1112	0.01%	
23.826	cis-para-Menth-2-en-1-ol	1122	0.01%	
25.368	Camphor	1145	0.05%	
26.971	delta-Terpineol	1168	0.04%	
27.071	Borneol	1170	0.02%	
27.682	Terpinen-4-ol	1179	1.61%	
28.123	para-Cymen-8-ol	1185	0.01%	
28.500	Unidentified	1191	0.01%	
28.685	alpha-Terpineol	1193	1.56%	
29.761	Octyl acetate	1209	0.02%	
30.120	trans-Sabinene hydrate acetate	1214	0.09%	
30.200	Unidentified	1215	0.01%	
31.610	Neral	1236	0.03%	IFRA
32.108	Unidentified	1243	0.01%	
32.403	Linalyl acetate	1248	4.15%	
33.181	Unidentified	1259	0.01%	
33.626	Geranial	1266	0.06%	IFRA
34.060	cis-Ascaridol glycol	1272	0.01%	



Ret. Time	Component	Ret. Idx.	Conc. %
34.420	Terpinyl acetate isomer	1277	0.34%
34.608	Terpinyl acetate isomer	1280	0.16%
34.723	Bornyl acetate	1282	0.59%
34.877	Isobornyl acetate	1284	0.15%
35.131	Unidentified	1288	0.01%
35.514	Terpin-1-en-4-yl acetate	1294	0.12%
35.681	Unidentified	1296	0.02%
36.655	delta-Terpinyl acetate	1311	0.11%
37.207	Methyl geranate	1319	0.03%
37.885	beta-Terpinyl acetate	1330	0.33%
38.952	alpha-Terpinyl acetate	1346	39.62%
39.025	gamma-Terpinyl acetate	1347	2.56%
39.633	Unidentified	1356	0.02%
40.915	Geranyl acetate	1376	0.53%
41.495	Dodec-(5Z)-enyl acetate	1385	0.01%
41.644	beta-Elemene	1387	0.01%
42.136	Unidentified isomer I	1394	0.01%
43.085	Unidentified isomer I	1409	0.01%
43.525	beta-Caryophyllene	1416	0.05%
44.246	Unidentified	1428	0.03%
44.405	Terpinyl propionate	1430	0.03%
45.252	Unidentified	1444	0.01%
45.781	alpha-Humulene	1453	0.05%
47.362	Germacrene D	1478	0.01%
47.848	beta-Selinene	1486	0.06%
48.264	alpha-Selinene	1492	0.03%
49.130	Unidentified	1507	0.02%
49.322	gamma-Cadinene	1510	0.03%
49.664	Unidentified	1516	0.03%
51.454	Unidentified	1546	0.03%
52.174	trans-Nerolidol	1558	0.81%
52.932	Unidentified	1571	0.01%
54.983	Unidentified	1606	0.02%
56.207	Unidentified	1628	0.02%
56.672	Unidentified	1636	0.01%
56.819	Unidentified	1638	0.01%
58.926	Unidentified	1676	0.01%
72.560	Unidentified	1938	0.01%

Total Identified Compounds **99.75 %**

