



Essential Oil University

GC/MS Report

Item	Lot
Fennel (Sweet) EO <i>Foeniculum vulgare</i>	1L
Date	Analyst
1/21/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Fennel (Sweet) EO, meets the expected chemical profile for authentic essential oil of *Foeniculum vulgare*. 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:** Fennel (Sweet) EO**Botanical Name:** Foeniculum vulgare**Lot Number:** 1L**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Egypt**Analysis Date:** 1/21/2025**Manufacture Date:** May 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

+20.88

1.53460

0.95426



Ret. Time	Component	Ret. Idx.	Conc. %	
11.445	Hashishene	920	0.01%	
11.708	alpha-Thujene	925	0.05%	
12.125	alpha-Pinene	932	8.12%	
12.903	alpha-Fenchene	947	0.01%	
12.997	Camphene	948	0.1%	
14.248	Sabinene	971	0.04%	
14.545	beta-Pinene	977	0.12%	
15.171	Myrcene	988	0.26%	
16.221	alpha-Phellandrene	1007	0.82%	
16.365	delta-3-Carene	1009	0.01%	
16.874	alpha-Terpinene	1017	0.01%	
17.357	para-Cymene	1024	0.06%	
17.683	Limonene	1029	12.84%	IFRA
17.768	beta-Phellandrene	1030	0.15%	
17.833	1,8-Cineole	1031	0.07%	
18.047	cis-beta-Ocimene	1035	0.01%	
19.503	gamma-Terpinene	1057	0.16%	
21.294	Terpinolene	1085	0.04%	
21.516	Fenchone	1088	2.38%	
22.236	Linalool	1099	0.02%	IFRA
23.898	endo-Fenchol	1124	0.01%	
25.350	trans-Verbenol	1145	0.01%	
25.463	Camphor	1146	0.13%	
27.775	Terpinen-4-ol	1180	0.06%	
28.779	alpha-Terpineol	1195	0.02%	
29.000	Estragole	1198	2.8%	IFRA
32.698	cis-Anethole	1252	0.08%	
32.809	para-Anisaldehyde	1254	0.9%	IFRA
35.223	trans-Anethole	1289	70.65%	
41.201	Anisyl methyl ketone	1380	0.06%	
43.637	beta-Caryophyllene	1418	0.02%	

Total Identified Compounds **100.02 %**

