

Client



Source



Pepper, Black (*Piper nigrum*)
NF-BLKP-21-A

Sample

Pepper, Black (*Piper nigrum*)

Batch #:..... NF-BLKP-21-A

Type:..... Essential Oil

CAS Number:.... 8006-82-4

Nature's Fusions

Client



Website

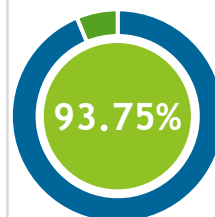
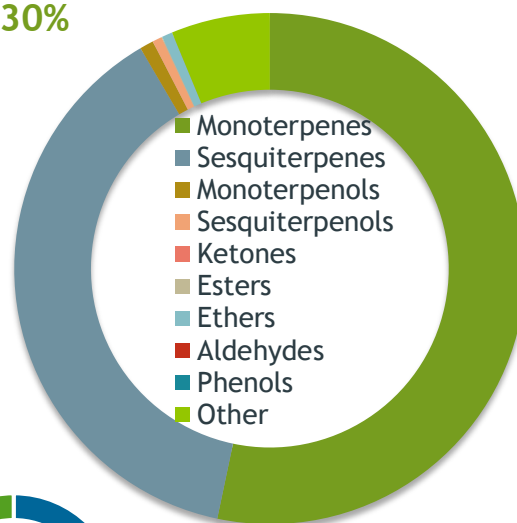


Primary

26.16%cis-Caryophyllene14.06%Limonene9.65%Sabinene

Monoterpenes

53.30%



Percentage
Identified

Result



Conclusion

No adulterants, diluents, or contaminants were detected via this method. This oil meets the expected profile for genuine Essential Oil of Pepper, Black (*Piper nigrum*)

Internal Number: | EVS-4275



Essential Validation
Services

747 SW 2nd Ave IMB 12 Suite 306
Gainesville, FL 32601

317.361.5044 |
<https://essentialvalidationservices.com/>

Monoterpenes	53.30%	53.30%
Sesquiterpenes	38.25%	38.25%
Monoterpenols		0.87%
Sesquiterpenols		0.61%
Ketones		0.00%
Esters		0.05%
Ethers		0.67%
Aldehydes		0.00%
Phenols		0.00%
Other	6.25%	6.25%

Client

Nature's FUSIONS
ESSENTIAL OILS

Source

Pepper, Black (*Piper nigrum*)

NF-BLKP-21-A

Total Percentage		93.75%		
Number	RT	Area %	Compound Name	Chemical Family
1	7.73	0.03%	Tricyclene	Monoterpene
2	7.90	1.28%	alpha-Thujene	Monoterpene
3	8.16	9.29%	alpha-Pinene	Monoterpene
4	8.76	0.38%	Camphene	Monoterpene
5	9.72	9.65%	Sabinene	Monoterpene
6	9.88	8.76%	beta-Pinene	Monoterpene
7	10.25	0.01%	3-p-Menthene	Monoterpene
8	10.45	1.95%	Myrcene	Monoterpene
9	10.99	0.04%	Pseudolimonene	Monoterpene
10	11.09	1.23%	alpha-Phellandrene	Monoterpene
11	11.21	5.28%	delta-3-Carene	Monoterpene
12	11.49	0.01%	1,4-Cineole	Monoterpene Ether
13	11.56	0.10%	alpha-Terpinene	Monoterpene
14	11.70	0.01%	o-Cymene	Monoterpene
15	11.90	0.49%	para-Cymene	Monoterpene
16	12.13	14.06%	Limonene	Monoterpene
17	12.48	0.03%	(Z)-beta-Ocimene	Monoterpene
18	12.94	0.14%	(E)-beta-Ocimene	Monoterpene
19	13.41	0.16%	gamma-Terpinene	Monoterpene
20	13.93	0.11%	trans-Sabinene hydrate	Monoterpenol
21	14.47	0.07%	Isoterpinolene	Monoterpene
22	14.63	0.33%	Terpinolene	Monoterpene
23	14.84	0.01%	para-Cymenene	Monoterpene
24	15.36	0.36%	Linalool	Monoterpenol
25	16.40	0.01%	cis-para-Menth-2-en-1-ol	Monoterpenol
26	17.09	0.01%	trans-Pinocarveol	Monoterpenol
27	18.18	0.01%	para-Mentha-1,5-dien-8-ol	Monoterpenol
28	18.96	0.29%	Terpinen-4-ol	Monoterpenol
29	19.30	0.01%	para-Cymen-8-ol	Monoterpenol
30	19.65	0.07%	alpha-Terpineol	Monoterpenol
31	25.93	1.63%	delta-Elemene	Sesquiterpene
32	26.43	0.19%	alpha-Cubebene	Sesquiterpene
33	27.25	0.09%	Longicyclene	Sesquiterpene
34	27.63	3.10%	alpha-Copaene	Sesquiterpene
35	28.16	0.30%	beta-Cubebene	Sesquiterpene

Client


Nature's FUSIONS
 ESSENTIAL OILS

Source

Pepper, Black (*Piper nigrum*)

NF-BLKP-21-A

Number	RT	Area %	Compound Name	Chemical Family
36	28.246	0.31%	beta-Elemene	Sesquiterpene
37	28.94	0.07%	alpha-Gurjunene	Sesquiterpene
38	29.51	26.16%	cis-Caryophyllene	Sesquiterpene
39	29.77	0.03%	beta-Caryophyllene	Sesquiterpene
40	29.86	0.17%	beta-Copaene	Sesquiterpene
41	30.14	0.03%	alpha-Guaiene	Sesquiterpene
42	30.65	0.09%	trans-Muurolo-3,5-diene	Sesquiterpene
43	30.89	1.11%	alpha-Humulene	Sesquiterpene
44	30.97	0.12%	(E)-beta-Farnesene	Sesquiterpene
45	31.08	0.03%	allo-Aromadendrene	Sesquiterpene
46	31.62	0.05%	Dauca-5,8-diene	Sesquiterpene
47	31.76	0.11%	gamma-Muuroloene	Sesquiterpene
48	32.25	0.21%	beta-Selinene	Sesquiterpene
49	32.55	0.42%	gamma-Gurjunene	Sesquiterpene
50	32.64	0.06%	alpha-Zingiberene	Sesquiterpene
51	32.73	0.47%	alpha-Muuroloene	Sesquiterpene
52	32.87	0.03%	cis-alpha-Bisabolene	Sesquiterpene
53	33.16	2.05%	beta-Bisabolene	Sesquiterpene
54	33.35	0.23%	Cubebol	Sesquiterpenol
55	33.52	1.26%	delta-Cadinene	Sesquiterpene
56	33.75	0.01%	beta-Sesquiphellandrene	Sesquiterpene
57	34.03	0.05%	trans-Cadina-1,4-diene	Sesquiterpene
58	34.44	0.10%	trans-alpha-Bisabolene	Sesquiterpene
59	34.68	0.05%	cis-Sesquisabinene hydrate	Monoterpene Ester
60	35.24	0.04%	(E)-Nerolidol	Sesquiterpenol
61	35.69	0.05%	Spathulenol	Sesquiterpenol
62	35.86	0.63%	Caryophyllene oxide	Sesquiterpene Ether
63	36.91	0.03%	Humulene epoxide II	Sesquiterpene Ether
64	37.68	0.12%	Isospathulenol	Sesquiterpenol
65	38.37	0.17%	alpha-Muurolol	Sesquiterpenol

ESSENTIAL VALIDATION SERVICES | 14 / SW 2ND AVE GAINESVILLE, FLORIDA 32601 | 351-301-3044



Source

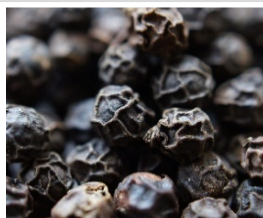


NF-BLKP-21-A

Client

Nature's FUSIONS
ESSENTIAL OILS

Source

Pepper, Black (*Piper nigrum*)
NF-BLKP-19-A

Sample

Pepper, Black (*Piper nigrum*)

Batch #:..... NF-BLKP-19-A

Type:..... Essential Oil

CAS Number:... 8006-82-4

Nature's Fusions

Client

Nature's FUSIONS
ESSENTIAL OILS

Website

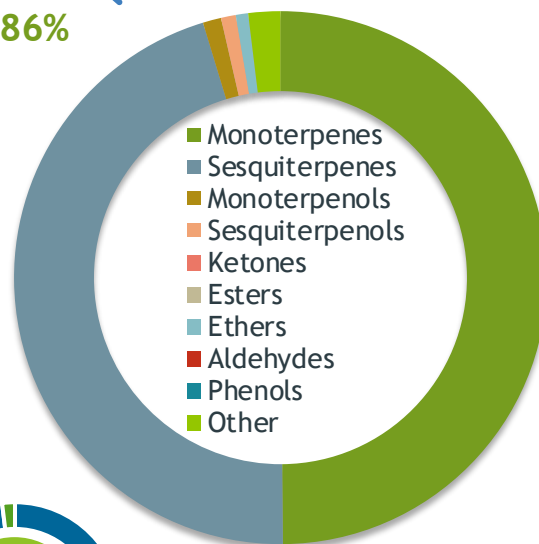


Primary

26.23%beta-Caryophyllene11.68%Limonene11.39%Sabinene

Monoterpenes

49.86%

Percentage
Identified

Result

APPROVED

Conclusion

No adulterants, diluents, or contaminants were detected via this method. This oil meets the expected profile for genuine essential oil of Pepper, Black (*Piper nigrum*)

Internal Number: | EVS-2901



Essential Validation Services

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Monoterpenes	49.86%	49.86%
Sesquiterpenes	45.44%	45.44%
Monoterpenols		1.11%
Sesquiterpenols		0.90%
Ketones		0.00%
Esters		0.00%
Ethers		0.75%
Aldehydes		0.00%
Phenols		0.00%
Other		1.94%

Client


Nature's FUSIONS
 ESSENTIAL OILS

Source



Pepper, Black (Piper nigrum)
 NF-BLKP-19-A

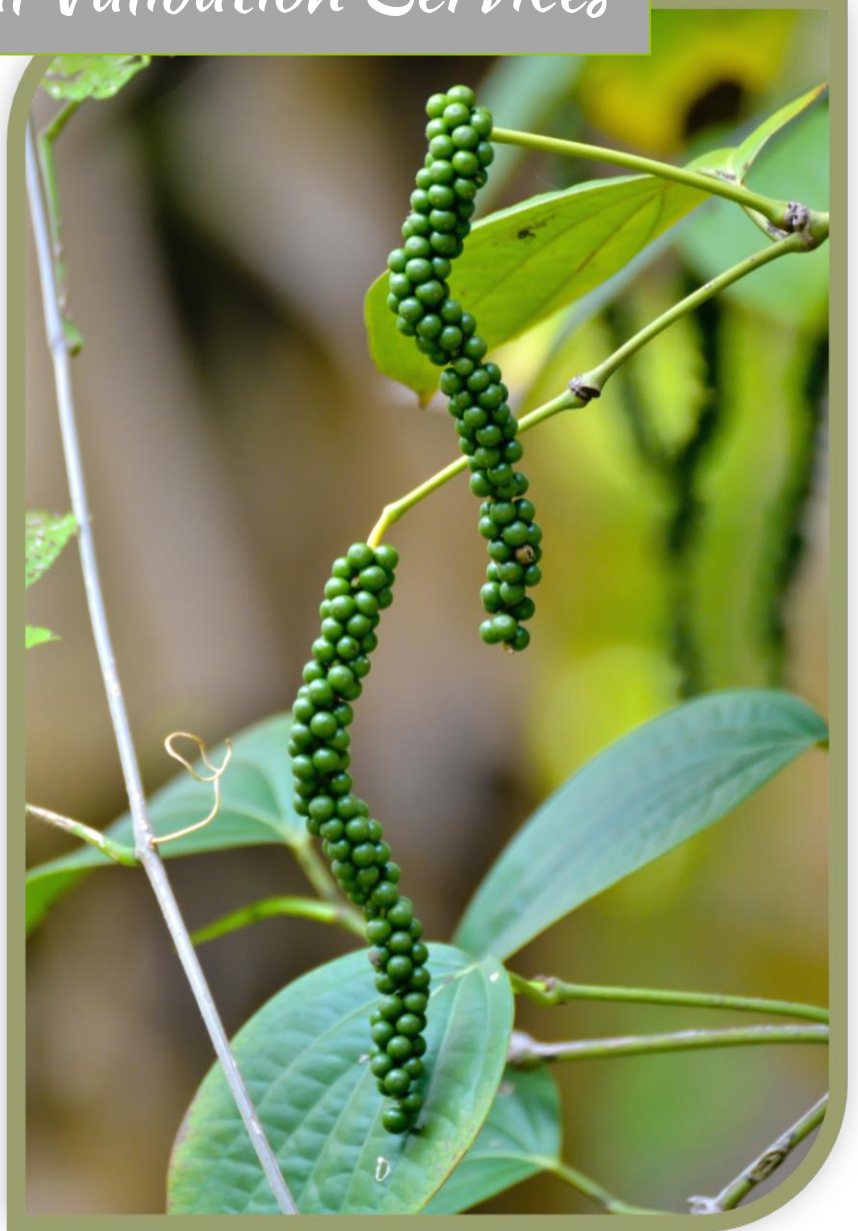
Total Percentage		98.06%			
Number	RT	Area %	Compound Name	RI	Chemical Family
1	12.62	0.95%	alpha-Thujene	927.80	Monoterpene
2	12.90	10.18%	alpha-Pinene	936.10	Monoterpene
3	13.51	0.27%	Camphene	950.30	Monoterpene
4	14.60	11.39%	Sabinene	973.00	Monoterpene
5	14.72	8.23%	beta-Pinene	974.00	Monoterpene
6	15.28	1.23%	Myrcene	989.20	Monoterpene
7	15.85	0.85%	alpha-Phellandrene	1002.00	Monoterpene
8	16.11	3.60%	delta-3-Carene	1008.00	Monoterpene
9	16.37	0.17%	alpha-Terpinene	1014.00	Monoterpene
10	16.70	0.46%	para-Cymene	1024.30	Monoterpene
11	16.90	11.68%	Limonene	1029.50	Monoterpene
12	17.24	0.05%	(Z)-beta-Ocimene	1037.80	Monoterpene
13	17.67	0.10%	(E)-beta-Ocimene	1047.70	Monoterpene
14	18.12	0.32%	gamma-Terpinene	1054.00	Monoterpene
15	19.34	0.38%	Terpinolene	1092.10	Monoterpene
16	19.74	0.35%	Linalool	1099.00	Monoterpenol
17	21.36	0.03%	trans-Pinocarveol	1143.75	Monoterpenol
18	22.82	0.65%	Terpinen-4-ol	1180.57	Monoterpenol
19	23.31	0.08%	alpha-Terpineol	1191.71	Monoterpenol
20	28.57	2.76%	delta-Elemene	1335.83	Sesquiterpene
21	28.98	0.32%	alpha-Cubebene	1355.71	Sesquiterpene
22	29.61	0.13%	alpha-Ylangene	1371.33	Sesquiterpene
23	29.92	4.53%	alpha-Copaene	1379.00	Sesquiterpene
24	30.37	0.88%	beta-Cubebene	1390.50	Sesquiterpene
25	31.05	0.11%	alpha-Gurjunene	1412.00	Sesquiterpene
26	31.47	26.23%	beta-Caryophyllene	1427.14	Sesquiterpene
27	31.66	0.34%	beta-Copaene	1445.00	Sesquiterpene
28	32.29	0.32%	(Z)-beta-Farnesene	1453.40	Sesquiterpene
29	32.46	1.79%	alpha-Humulene	1461.43	Sesquiterpene
30	33.02	0.10%	Allo-aromadendrene	1471.00	Sesquiterpene
31	33.10	0.22%	gamma-Murolene	1478.86	Sesquiterpene
32	33.29	0.27%	Germacrene D	1484.71	Sesquiterpene
33	33.48	0.37%	alpha-Selinene	1492.50	Sesquiterpene
34	33.83	1.42%	alpha-Murolene	1500.25	Sesquiterpene
35	34.00	2.98%	beta-Bisabolene	1509.86	Sesquiterpene

Pepper, Black (*Piper nigrum*)
NF-BLKP-19-A

[illegible]



Essential Validation Services



Sample:

Client: | Nature's Fusions
 Sample: | Black Pepper (Piper nigrum)
 Batch # | 11111-A16
 CAS Number | 8006-82-4
 Type: | Essential Oil

Conclusion:

- No adulterants, diluents, or contaminants were detected via this method.



X 

Validated By:

Essential Validation Services

747 SW 2nd Ave, Gainesville, FL 32601

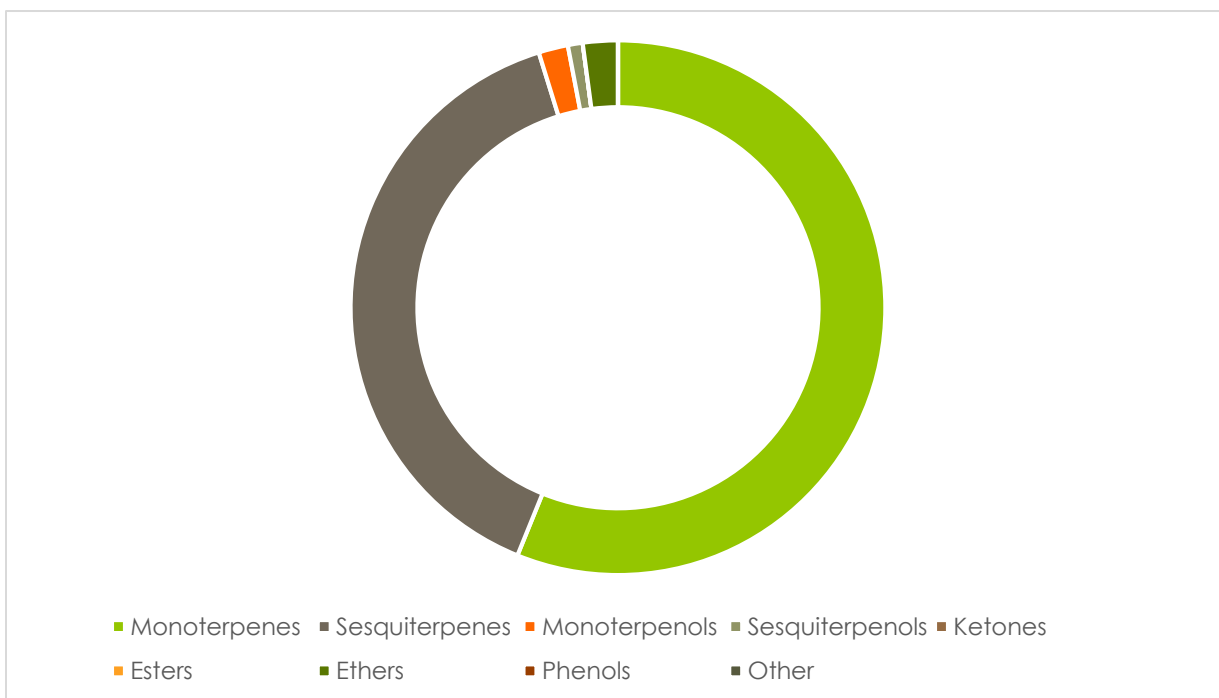
Phone: 317-361-5044 E-mail: Adam@essentialvalidationservices.com

Summary of Analyses

A fresh sample of Black Pepper (Piper nigrum) Essential Oil (10 uL in .5 to .5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.

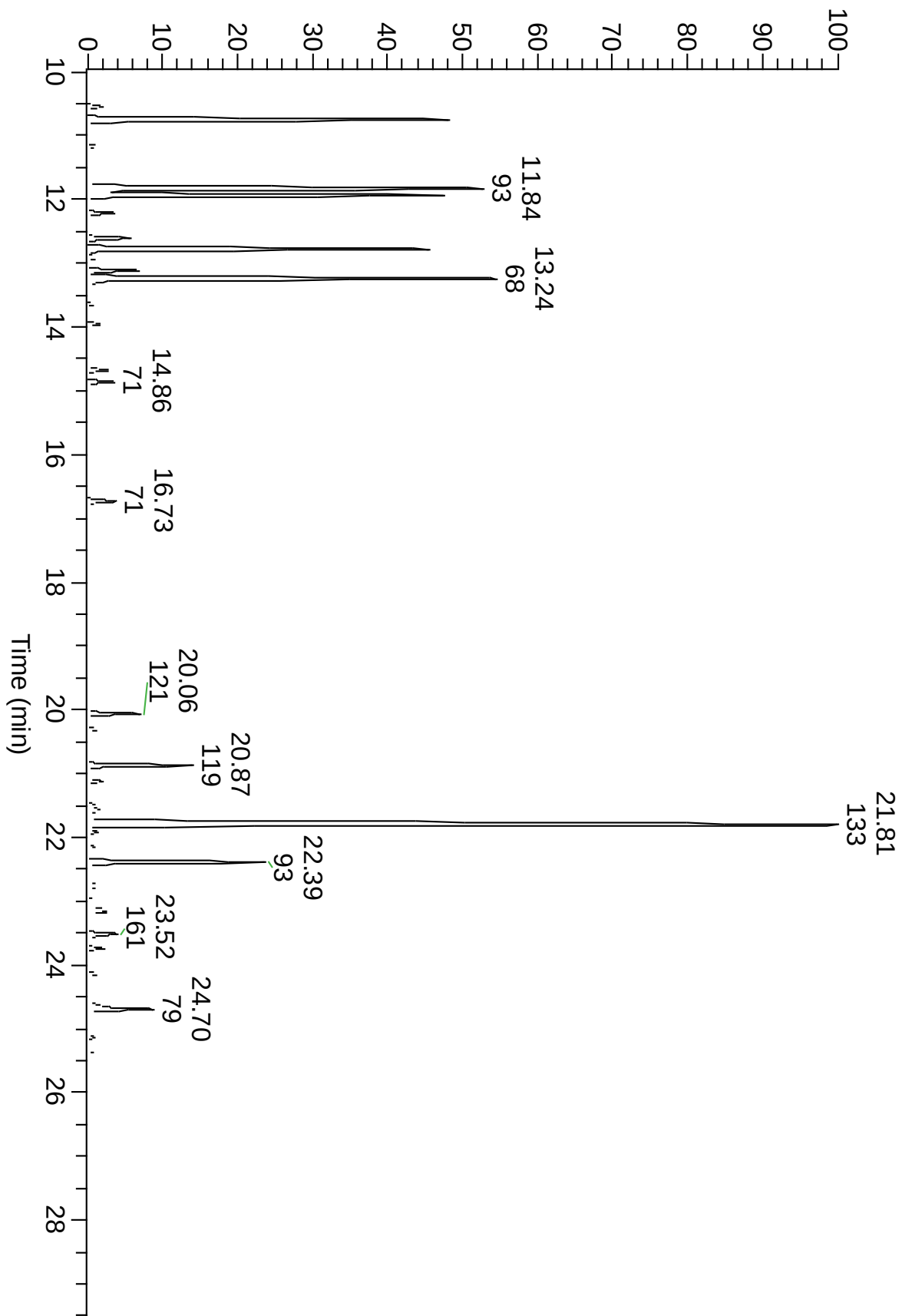
Main Compounds	Percentages
beta-Caryophyllene	26.31%
Sabinene	11.94%
Limonene	11.21%
alpha-Pinene	9.88%
beta-Pinene	9.23%
delta-3-Carene	8.77%
alpha-Humulene	4.33%
alpha-Copaene	2.32%
para-Cymene	1.23%
delta-Elemene	1.16%
alpha-Phellandrene	1.09%
Terpinen-4-ol	0.70%
Linalool	0.65%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
55.79%	38.83%	1.77%	0.89%	0.00%
Esters	Ethers	Aldehydes	Phenols	Other
0.00%	2.10%	0.00%	0.04%	0.00%





RT: 9.95 - 29.58



Total Percentage	99.42%				
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	10.54	0.36%	alpha-Thujene	927.80	Monoterpenes
2	10.75	9.88%	alpha-Pinene	936.10	Monoterpenes
3	11.17	0.23%	Camphene	953.30	Monoterpenes
4	11.84	11.94%	Sabinene	973.00	Monoterpenes
5	11.94	9.23%	beta-Pinene	977.70	Monoterpenes
6	12.21	0.63%	Myrcene	989.20	Monoterpenes
7	12.61	1.09%	alpha-Phellandrene	1004.10	Monoterpenes
8	12.78	8.77%	delta-3-Carene	1011.30	Monoterpenes
9	12.92	0.27%	alpha-Terpinene	1017.10	Monoterpenes
10	13.11	1.23%	para-Cymene	1024.30	Monoterpenes
11	13.24	11.21%	Limonene	1029.50	Monoterpenes
12	13.24	Co-Eluting	beta-Phellandrene	1030.00	Monoterpenes
13	13.38	0.07%	1,8-Cineole	1031.80	Ethers
14	13.64	0.13%	(E)-beta-Ocimene	1047.70	Monoterpenes
15	13.95	0.29%	gamma-Terpinene	1063.71	Monoterpenes
16	14.17	0.06%	cis-Sabinene hydrate	1066.50	Monoterpenols
17	14.68	0.53%	Terpinolene	1089.43	Monoterpenes
18	14.86	0.65%	Linalool	1099.00	Monoterpenols
19	15.73	0.05%	Terpinen-1-ol	1138.05	Monoterpenols
20	15.97	0.16%	trans-Pinocarveol	1144.10	Monoterpenols
21	16.73	0.70%	Terpinen-4-ol	1180.57	Monoterpenols
22	16.84	0.04%	para-Cymen-8-ol	1184.43	Monoterpenols
23	17.00	0.11%	alpha-Terpineol	1191.71	Monoterpenols
24	20.06	1.16%	delta-Elemene	1335.83	Sesquiterpenes
25	20.31	0.23%	alpha-Cubebene	1355.71	Sesquiterpenes
26	20.37	0.04%	Eugenol	1365.89	Phenols
27	20.74	0.07%	Cycloisosativene	1370.50	Sesquiterpenes
28	20.87	2.32%	alpha-Copaene	1379.00	Sesquiterpenes
29	21.12	0.37%	beta-Cubebene	1390.50	Sesquiterpenes
30	21.49	0.14%	alpha-Gurjunene	1412.00	Sesquiterpenes
31	21.56	0.42%	cis-alpha-Bergamotene	1424.50	Sesquiterpenes
32	21.81	26.31%	beta-Caryophyllene	1427.14	Sesquiterpenes
33	21.91	0.20%	trans-alpha-Bergamotene	1435.00	Sesquiterpenes
34	22.00	0.05%	alpha-Guaiene	1438.67	Sesquiterpenes
35	22.14	0.17%	(Z)-beta-Farnesene	1453.40	Sesquiterpenes
36	22.22	0.10%	(E)-beta-Farnesene	1456.29	Sesquiterpenes
37	22.39	4.33%	alpha-Humulene	1461.43	Sesquiterpenes
38	22.53	0.07%	Allo-aromadendrene	1471.00	Sesquiterpenes
39	22.71	0.25%	gamma-Murolene	1478.86	Sesquiterpenes
40	22.78	0.18%	Germacrene D	1484.71	Sesquiterpenes
41	22.86	0.09%	beta-Selinene	1487.57	Sesquiterpenes
42	22.98	0.18%	alpha-Selinene	1492.50	Sesquiterpenes

