



Essential Validation Services



Sample:

Client: | Be Kind Botanicals
Sample: | Douglas Fir (*Pseudotsuga menziesii*)
Batch # | DF1120
CAS Number | 97926-19-7
Type: | Essential Oil

Conclusion:

- No adulterants, diluents, or contaminants were detected via this method.
- This oil meets the expected profile for genuine essential oil of Douglas Fir (*Pseudotsuga menziesii*).

X



Validated By:



Essential Validation Services

747 SW 2nd Ave, Gainesville, FL 32601

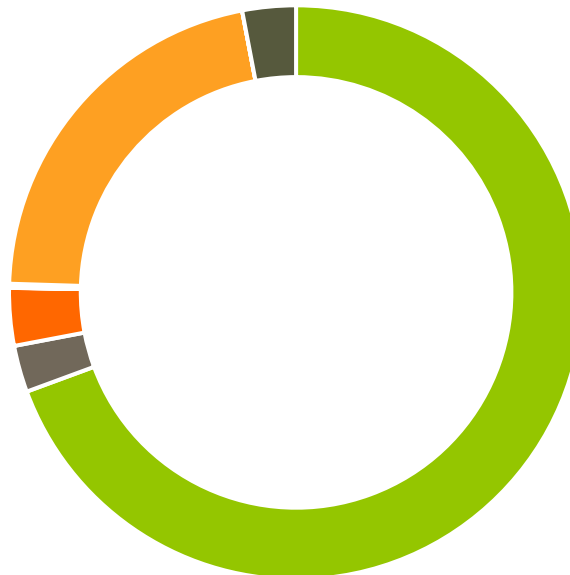
Phone: 317-361-5044 E-mail: Adam@essentialvalidationservices.com

Summary of Analyses

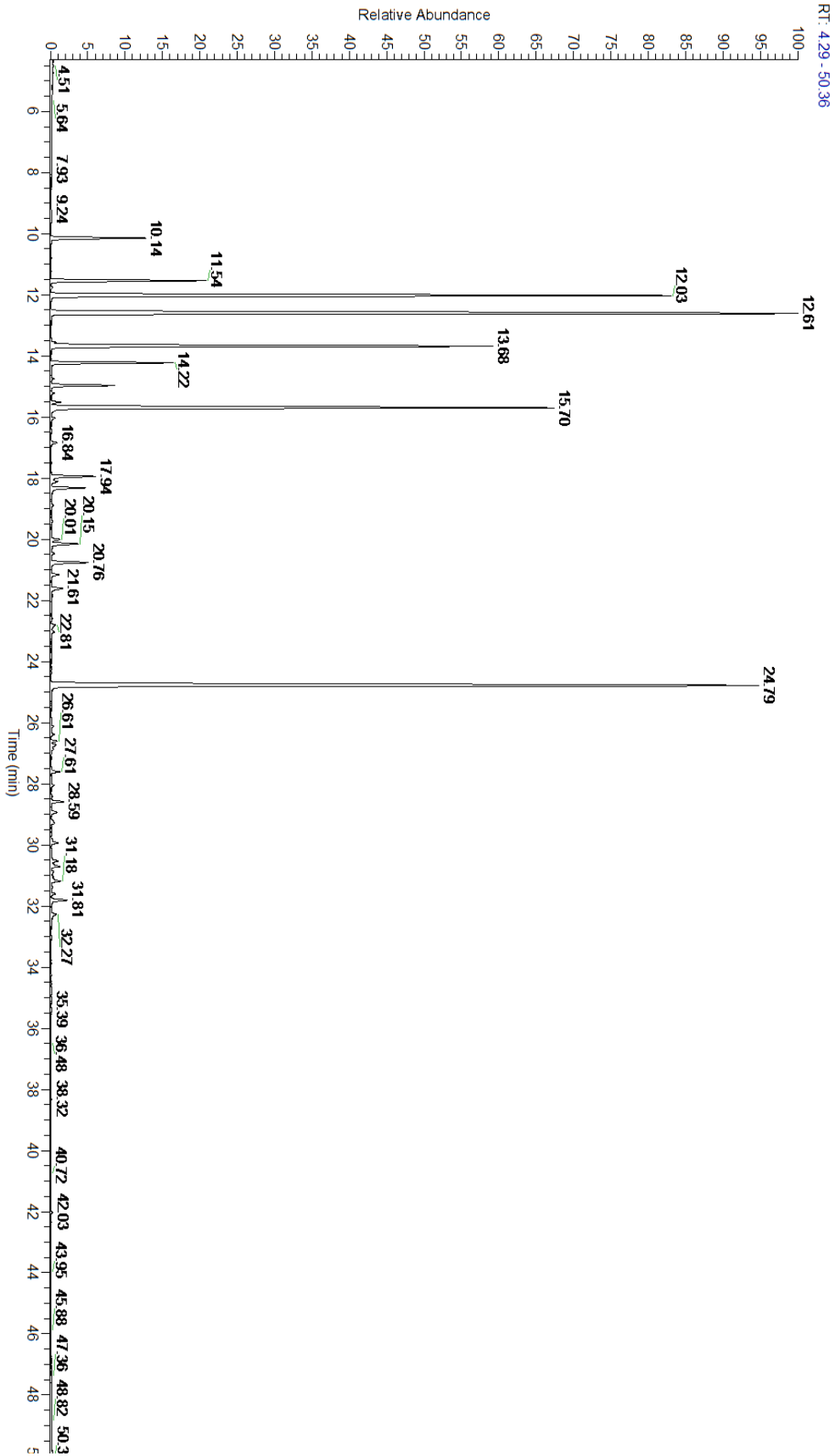
A fresh sample Douglas Fir (*Pseudotsuga menziesii*) Essential Oil (10 uL in .5to.5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.

Main Compounds	Percentages
Camphene	21.46%
Bornyl acetate	21.36%
alpha-Pinene	16.05%
Limonene	12.33%
beta-Pinene	10.40%
Tricyclene	3.34%
Myrcene	2.50%
Santene	2.00%
delta-3-Carene	1.37%
Terpinolene	1.07%
Borneol	0.91%
Linalool	0.87%
Camphene hydrate	0.65%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
69.38%	2.63%	3.24%	0.01%	0.22%
Esters	Ethers	Aldehydes	Phenols	Other
21.51%	0.00%	0.00%	0.00%	3.01%



- Monoterpenes
- Sesquiterpenes
- Monoterpenols
- Sesquiterpenols
- Ketones
- Esters
- Ethers
- Phenols
- Other



Total Percentage		99.04%			
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	9.24	0.02%	(Z)-3-Hexenol	850.00	Aliphatic Alcohol
2	10.14	2.00%	Santene	884.00	Normonoterpene
3	11.54	3.34%	Tricyclene	923.00	Monoterpene
4	11.77	0.03%	alpha-Thujene	927.80	Monoterpene
5	12.03	16.05%	alpha-Pinene	936.10	Monoterpene
6	12.61	21.46%	Camphene	950.30	Monoterpene
7	13.56	0.09%	Sabinene	973.00	Monoterpene
8	13.68	10.40%	beta-Pinene	974.00	Monoterpene
9	14.22	2.50%	Myrcene	989.20	Monoterpene
10	14.96	1.37%	delta-3-Carene	1008.00	Monoterpene
11	15.22	0.07%	alpha-Terpinene	1014.00	Monoterpene
12	15.51	0.21%	para-Cymene	1024.30	Monoterpene
13	15.70	12.33%	Limonene	1029.50	Monoterpene
14	15.70	Co-Eluting	beta-Phellandrene	1030.00	Monoterpene
15	16.03	0.09%	(Z)-beta-Ocimene	1037.80	Monoterpene
16	16.44	0.02%	(E)-beta-Ocimene	1047.70	Monoterpene
17	16.84	0.14%	gamma-Terpinene	1054.00	Monoterpene
18	17.94	1.07%	Terpinolene	1092.10	Monoterpene
19	18.11	0.16%	alpha,p-Dimethylstyrene	1092.43	Monoterpene
20	18.32	0.87%	Linalool	1099.00	Monoterpenol
21	18.88	0.07%	Fenchol	1099.10	Monoterpenol
22	19.82	0.02%	trans-Pinocarveol	1143.75	Monoterpenol
23	20.01	0.22%	Camphor	1147.55	Monoterpene Ketone
24	20.15	0.65%	Camphene hydrate	1151.00	Monoterpenol
25	20.46	0.07%	Isoborneol	1159.70	Monoterpenol
26	20.76	0.91%	Borneol	1168.71	Monoterpenol
27	21.16	0.19%	Terpinen-4-ol	1180.57	Monoterpenol
28	21.61	0.31%	alpha-Terpineol	1191.71	Monoterpenol
29	22.81	0.15%	Citronellol	1229.25	Monoterpenol
30	24.79	21.36%	Bornyl acetate	1288.29	Monoterpene Ester
31	26.39	0.07%	delta-Elemene	1335.83	Sesquiterpene
32	26.73	0.15%	Citronellyl acetate	1357.83	Monoterpene Ester
33	26.87	0.06%	alpha-Longipinene	1357.90	Sesquiterpene
34	27.61	0.22%	alpha-Copaene	1379.00	Sesquiterpene
35	28.05	0.07%	beta-Elemene	1389.20	Sesquiterpene
36	28.41	0.03%	Sibirene	1401.20	Sesquiterpene
37	28.59	0.29%	Longifolene	1403.83	Sesquiterpene
38	28.93	0.18%	beta-Caryophyllene	1427.14	Sesquiterpene
39	29.23	0.05%	trans-alpha-Bergamotene	1435.00	Sesquiterpene
40	29.94	0.19%	alpha-Humulene	1461.43	Sesquiterpene
41	30.30	0.02%	cis-Muurolo-4(14),5-diene	1465.75	Sesquiterpene
42	30.53	0.19%	gamma-Muuroloene	1478.86	Sesquiterpene
43	30.71	0.26%	Germacrene D	1484.71	Sesquiterpene

