



# *Essential Validation Services*



## Sample:

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Client: | Nature's Fusions  
Sample: | Vetiver (Vetiveria zizanioides)  
Batch # | NF-VETI-18-A  
CAS Number | 84238-29-9  
Type: | Essential Oil

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## Conclusion:

- No adulterants, diluents, or contaminants were detected via this method.
- This oil meets the expected profile for genuine essential oil of Vetiver (Vetiveria zizanioides).



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Validated By:

Essential Validation Services

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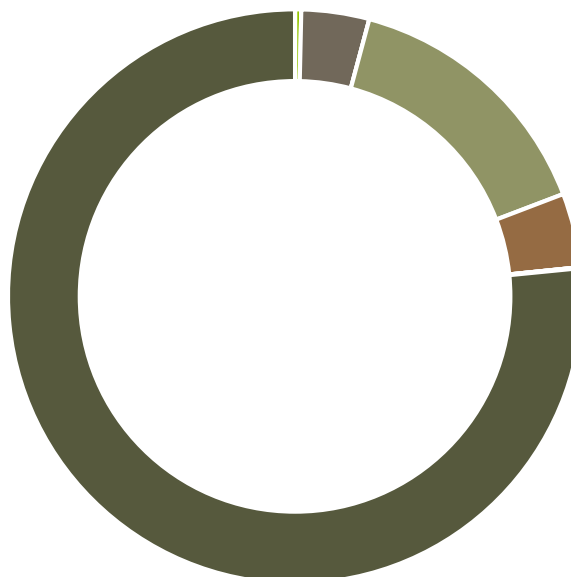
## Summary of Analyses

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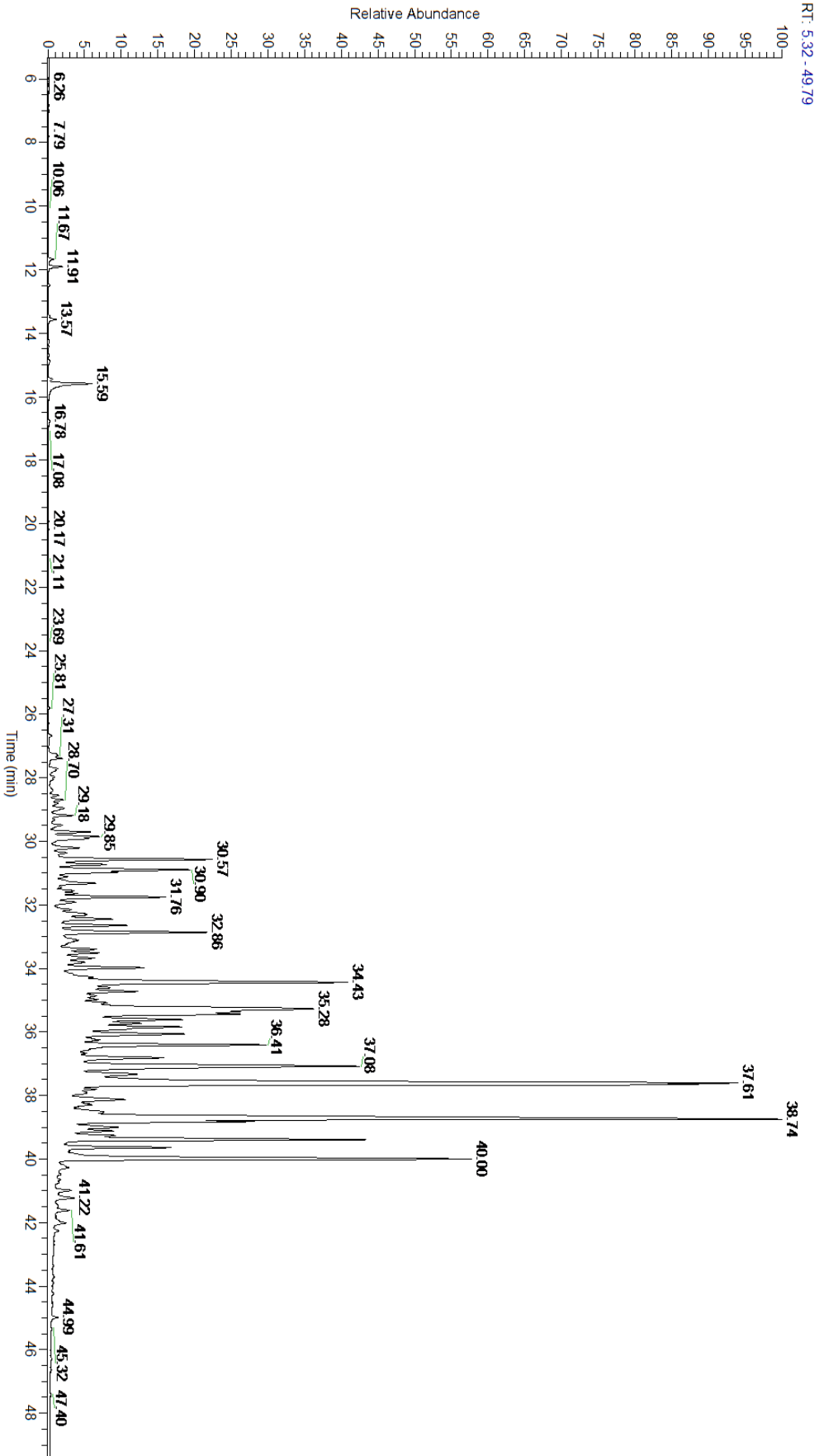
A fresh sample of Vetiver (Vetiveria zizanioides) Essential Oil (10 uL in .5 to .5 mL Hexane + ETOH) was prepared and analyzed via split injection GC/EI-MS.

Main Compounds	Percentages
Isovalencenol	12.98%
Khusimol	10.14%
alpha-Vetivone	6.34%
gamma-Costol	5.77%
Vetiselinenol	5.33%
beta-Eudesmol	4.89%
10-epi-gamma-Eudesmol	4.72%
beta-Vetivone	4.15%
Junipercamphor	2.49%
UK Vetiver	2.03%
alpha-Amorphene	1.99%
UK Vetiver	1.97%
beta-Vetivenene isomer I	1.89%

Monoterpenes	Sesquiterpenes	Monoterpenols	Sesquiterpenols	Ketones
1.21%	13.38%	0.00%	52.60%	14.63%
Esters	Ethers	Aldehydes	Phenols	Other
0.00%	0.00%	0.18%	0.00%	18.00%



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



Total Percentage		42.09%			
Peak Number	RT	Area %	Compound Name	RI	Chemical Family
1	11.67	0.07%	alpha-Thujene	927.80	Monoterpene
2	11.91	0.16%	alpha-Pinene	936.10	Monoterpene
3	12.48	0.01%	Camphene	950.30	Monoterpene
4	13.46	0.02%	Sabinene	973.00	Monoterpene
5	13.57	0.09%	beta-Pinene	974.00	Monoterpene
6	14.89	0.03%	delta-3-carene	1008.00	Monoterpene
7	15.44	0.05%	para-Cymene	1024.30	Monoterpene
8	15.59	0.75%	Limonene	1029.50	Monoterpene
9	16.78	0.03%	gamma-Terpinene	1054.00	Monoterpene
10	26.68	0.04%	12-Norisoziza-5-ene	1365.50	Norsesquiterpene
11	27.30	0.17%	Cyclosativene	1370.50	Sesquiterpene
12	27.39	0.14%	alpha-Ylangene	1371.33	Sesquiterpene
13	27.52	0.01%	Nigritene	1376.00	Norsesquiterpene
14	27.71	0.10%	alpha-Copaene	1379.00	Sesquiterpene
15	27.77	0.08%	Daucene	1381.00	Sesquiterpene
16	27.97	0.08%	beta-Elemene	1389.20	Sesquiterpene
17	28.05	0.04%	beta-Cubebene	1390.50	Sesquiterpene
18	28.39	0.06%	diepi-alpha-Cedrene	1400.10	Sesquiterpene
19	28.56	0.09%	Acora-3,7(14)-diene	1407.00	Sesquiterpene
20	28.70	0.15%	alpha-Gurjunene	1412.00	Sesquiterpene
21	28.80	0.11%	beta-Caryophyllene	1427.14	Sesquiterpene
22	28.96	0.24%	beta-Cedrene	1428.00	Sesquiterpene
23	29.18	0.26%	beta-Gurjunene	1437.71	Sesquiterpene
24	29.33	0.04%	beta-Copaene	1445.00	Sesquiterpene
25	29.49	0.15%	6,9-Guaiadiene	1446.00	Sesquiterpene
26	29.71	0.44%	UK Vetiver		
27	29.85	0.58%	Khusimene	1460.50	Sesquiterpene
28	29.92	0.39%	Cadina-1,4-diene	1462.50	Sesquiterpene
29	30.21	0.35%	beta-Acoradiene	1475.00	Sesquiterpene
30	30.36	0.14%	gamma-Murolene	1478.86	Sesquiterpene
31	30.57	1.99%	alpha-Amorphene	1481.75	Sesquiterpene
32	30.73	0.62%	alpha-Vetispirene	1490.10	Sesquiterpene
33	30.90	1.73%	beta-Vetispirene	1492.00	Sesquiterpene
34	30.97	0.54%	gamma-Amorphene	1493.00	Sesquiterpene
35	31.02	0.15%	Eudesma-2,4(15),11-triene	1497.50	Sesquiterpene
36	31.32	0.59%	Nootkatene	1504.50	Sesquiterpene
37	31.56	0.19%	gamma-Cadinene	1515.29	Sesquiterpene
38	31.64	0.22%	UK Vetiver		
39	31.76	1.35%	delta-Cadinene	1524.14	Sesquiterpene
40	31.91	0.30%	UK Vetiver		
41	32.15	0.20%	UK Vetiver		
42	32.32	0.62%	UK Vetiver		
43	32.44	0.74%	UK Vetiver		

