

# CERTIFICATE OF ANALYSIS

**GENERAL INFORMATION**

Report Date	12/17/2024	Country of Origin	Vanuatu
Sample Number	S2192	Country of Processing	USA
Product Name	Traditional	Manufacture Date	Dec-24
Lot Number	VSSC2411-TR12	Best By Date	Dec-27

ITEM	SPECIFICATION	TEST RESULTS	METHOD
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**PHYSICAL & CHEMICAL**

Identification	Piper methysticum	Complies	HPLC
Appearance	Beige to Yellow Powder	Complies	Organoleptic
Kavalactone Standard	2-17 % Kavalactones	7.36%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	245361	HPLC
K/DHM	> 1.2 for Noble	2.0	Calculation

**HEAVY METALS**

		Results		
Arsenic (As)	NMT 1,000 (ppb)*	28.2	ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	379	ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	65.1	ppb	FDA EAM 4.7
Mercury (Hg)	NMT 1,000 (ppb)*	< 10	ppb	FDA EAM 4.7

\*Heavy Metals Action Limits Based on Maximum PDE at 5% Kavalactones. Results May Exceed 1,000 ppb action limit with higher kavalactone contents.

**MICROBIOLOGICAL**

		Results		
AEROBIC PLATE COUNT	NMT 10,000,000 cfu	42,800	cfu / 10 g	USP 2021
E. COLI	ABSENT (cfu/10g)	Absent	cfu / 10 g	USP 2022
PSEUDOMONAS AERUGINOSA	ABSENT (cfu/10g)	Absent	cfu / 10 g	USP 62
SALMONELLA	ABSENT (cfu/10g)	Absent	cfu / 10 g	USP 2022
STAPHYLOCOCCUS AUREUS	ABSENT (cfu/10g)	Absent	cfu / 10 g	USP 2022
YEAST	NMT 100,000 cfu (Combined)	1,040	cfu / 10 g	
MOLD	NMT 100,000 cfu (Combined)	320	cfu / 10 g	USP 2021
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	1360	cfu / 10 g	

fu/g = Colony Forming Units Per Gram NMT = No More Than PDE = Permitted Daily Exposure PPB = Parts Per Billion

Analysis Performed by a Third-Party Laboratory

We are dedicated to offer the best quality of botanical products on the market. We test and stand behind our products.

Disclaimer \* The test results are accurate to the best of our knowledge and are based upon reputable laboratory and industry standard testing methods.

These results should not be used as a final determination for use in a finished product. It is recommended that you verify these test results with an in-house quality control department or obtain an additional independent third-party lab to verify that this material meets specifications.

Botany Evolution, its board of directors, contract laboratories, employees, and affiliates are held harmless from any loss or damages resulting from the use or misuse of this document. The appropriate use of this product is the sole responsibility of the user of the purchasing party.

Completed By: Tracy Sabel Title: Manager Signature: 12/18/24



# Botany Evolution LLC

2510 Kirby Circle NE

Palm Bay, FL 32945

321-802-4583

## Certificate Of Analysis

### Sample Identification Information

Date of Analysis 12/17/2024

Sample: S2192

Product Name TRADITIONAL

Lot# VSSC2411-TR12

Country of Origin VANUATU

Country of Processing USA

Manufacture Date Nov-24

Best By Date Nov-27

### General Product Specifications

Product Species Piper Methysticum

Part Used Root

Common Names Kava kava, Awa, Yagona

Appearance Yellow, Brown, beige powder

<u>Analyzed Characteristics</u>	<u>Specification</u>	<u>Result</u>	<u>Test Method</u>
<u>Standardization</u>	2-17% Kavalactones	7.36%	HPLC
<u>Identification</u>	Complies by HPLC	Conform	HPLC
<u>Kavalactone Profile</u>	Noble	PASS	HPLC
<u>Mesh Size</u>	60-30	60	Sieve
<u>Color</u>	Beige to Yellow	Pass	Visual
<u>Odor</u>		Pass	Organoleptic
<u>Taste</u>		Pass	Organoleptic
<u>Chemotype</u>		245361	HPLC
<u>K/DHM</u>		2.0	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2472.728			
Methysticin	M	1	2.21	570.296	8.80%	0.72%	6
Dihydromethysticin	DHM	2	3.38	506.393	7.81%	0.98%	5
Kavain	K	3	1	3386.909	52.26%	1.94%	4
Dihydrokavain	DHK	4	3.48	1128.809	17.42%	2.25%	2
Desmethoxyangonin	DMY	5	2.52	402.846	6.22%	0.58%	1
Yagonin	Y	6	3.12	486.245	7.50%	0.87%	3
<b>Kavalactones</b>			<b>Total:</b>	<b>6481.498</b>	<b>100.00%</b>	<b>7.36%</b>	<b>245361</b>

\*See data in attachment HPLC1100 Agilent Certificate with Chromatogram graph.

This result are in house tested and the best of our knowledge and experience. Using calibrated equipment.

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Chemist Mustl Young

Date 12/18/24



SAMPLE S2192  
Vial 12

0.75070g/50mL

wavelength 246 nm

C:\CHEM32\1\DATA\KAVA\_12\_17\_2024\_15MINSTDTESTMETHOD 2024-12-17 14-19-01\01->  
SEQUENCE C:\CHEM32\1\DATA\KAVA\_12\_17\_2024\_ ->

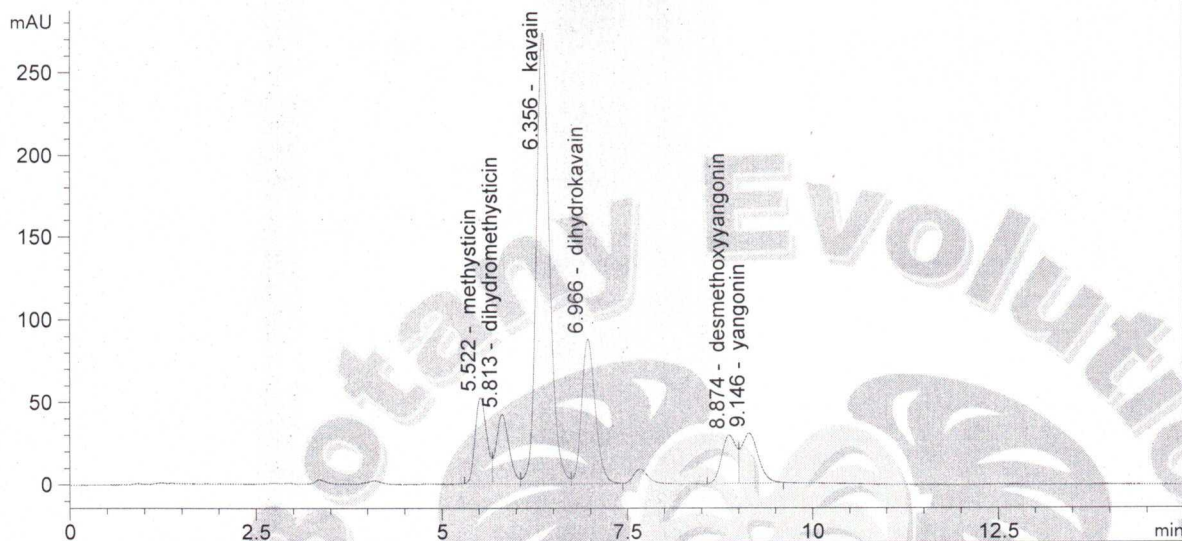
Injection date 12/17/2024

Injection time 6:21:49 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA\_12\_17\_202->

DAD1 C, Sig=246,10 Ref=500,60 (KAVA\_12\_17\_2024\_15MINSTDTESTMETHOD 2024-12-17 14-19-01\012-1201.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.522	570.296	8.80	0.000
2	dihydromethysticin	5.813	506.393	7.81	0.000
3	kavain	6.356	3386.909	52.26	0.000
4	dihydrokavain	6.966	1128.809	17.42	0.000
5	desmethoxyyangonin	8.874	402.846	6.22	0.000
6	yangonin	9.146	486.245	7.50	0.000

12/18/24  
KRISTL