

# CERTIFICATE OF ANALYSIS

**GENERAL INFORMATION**

Report Date	1/13/2025	Country of Origin	Vanuatu
Sample Number	S2208	Country of Processing	USA
Product Name	Premium Chips	Manufacture Date	Dec-24
Lot Number	VPS2412-PC1	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	9.94%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	243516	HPLC
K/DHM	> 1.2 for Noble	3.7	Calculation

**HEAVY METALS**

		Results	
Arsenic (As)	NMT 1,000 (ppb)*	12.4 ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	461 ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	138 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	840,000 cfu / 10 g	USP 61
E. COLI	ABSENT (cfu/10g)	Negative cfu / 10 g	USP 62
PSEUDOMONAS AERUGINOSA	ABSENT (cfu/10g)	Negative cfu / 10 g	USP 62
SALMONELLA	ABSENT (cfu/10g)	Negative cfu / 10 g	USP 62
STAPHYLOCOCCUS AUREUS	ABSENT (cfu/10g)	Negative cfu / 10 g	USP 62
YEAST	NMT 100,000 cfu (Combined)	620 cfu / 10 g	
MOLD	NMT 100,000 cfu (Combined)	280 cfu / 10 g	USP 2021
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	900 cfu / 10 g	

cfu/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.*

Authorized By (Name / Title):

Tony Sabeh

Manager

Signature:

Tony Sabeh



**Botany Evolution LLC**

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 321-802-4583

**Certificate Of Analysis**

Sample Identification Information

<u>Date of Analysis</u> 1/13/2025	<u>Country of Origin</u> VANUATU
<u>Sample:</u> S2208	<u>Country of Processing</u> USA
<u>Product Name</u> PREMIUM CHIPS	<u>Manufacture Date</u> Dec-24
<u>Lot#</u> VPS2412-PC1	<u>Best By Date</u> Dec-27

General Product Specifications

<u>Product Species</u> Piper Methysticum	<u>Common Names</u> Kava kava, Awa, Yagona
<u>Part Used</u> Root	<u>Appearance</u> Yellow, Brown, beige powder

<u>Analyzed Characteristics</u>	<u>Specification</u>	<u>Result</u>	<u>Test Method</u>
<u>Standardization</u>	2-17% Kavalactones	9.94%	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>		243516	HPLC
<u>K/DHM</u>	TUDEI < 1.2 > NOBLE	3.7	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2458.841			
Methysticin	M	1	2.21	447.333	4.84%	0.56%	<b>6</b>
Dihydromethysticin	DHM	2	3.38	427.245	4.62%	0.82%	<b>5</b>
Kavain	K	3	1	5409.804	58.48%	3.09%	<b>4</b>
Dihydrokavain	DHK	4	3.48	1751.579	18.93%	3.48%	<b>2</b>
Desmethoxyyangonin	DMY	5	2.52	511.734	5.53%	0.74%	<b>1</b>
Yangonin	Y	6	3.12	703.397	7.60%	1.25%	<b>3</b>
<b>Kavalactones</b>			<b>Total:</b>	<b>9251.092</b>	<b>100.00%</b>	<b>9.94%</b>	<b>243516</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 Youngs*   Date   1/14/25

SAMPLE S2208  
Vial 14

0.74714g/50mL

wavelength 246 nm

C:\CHEM32\1\DATA\KAVA\_01\_13\_2025\_15MINSTDTESTMETHOD 2025-01-13 17-00-36\01->  
SEQUENCE C:\CHEM32\1\DATA\KAVA\_01\_13\_2025\_ ->

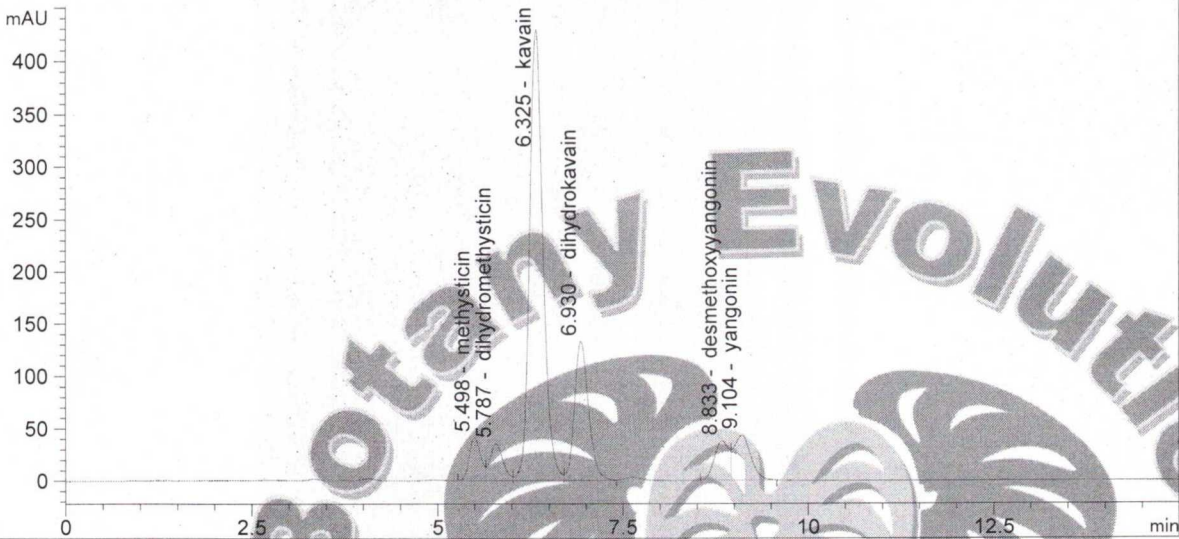
Injection date 1/13/2025

Injection time 9:35:50 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA\_01\_13\_202->

DAD1 C, Sig=246,10 Ref=500.60 (KAVA\_01\_13\_2025\_15MINSTDTESTMETHOD 2025-01-13 17-00-36\014-1401.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.498	447.333	4.84	0.000
2	dihydromethysticin	5.787	427.245	4.62	0.000
3	kavain	6.325	5409.804	58.48	0.000
4	dihydrokavain	6.930	1751.579	18.93	0.000
5	desmethoxyyangonin	8.833	511.734	5.53	0.000
6	yangonin	9.104	703.397	7.60	0.000

1/14/25  
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