

# CERTIFICATE OF ANALYSIS

**GENERAL INFORMATION**

Report Date	3/22/2024	Country of Origin	Vanuatu
Sample Number	S2081	Country of Processing	USA
Product Name	Premium Chips	Manufacture Date	Jan-24
Lot Number	VPS2401-PC2	Best By Date	Jan-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	7.46%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	243516	HPLC
K/DHM	> 1.2 for Noble	3.0	Calculation

**HEAVY METALS**

		Basal	Lateral		
Arsenic (As)	NMT 1,000 (ppb)*	21.1	438	ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	233	1,030	ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	56.6	177	ppb	FDA EAM 4.7
Mercury (Hg)	NMT 1,000 (ppb)*	< 10	< 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**

		Basal	Lateral		
<b>AEROBIC PLATE COUNT</b>	NMT 10,000,000 cfu	15,000	34,000	cfu / 10 g	USP 2021
<b>E. COLI</b>	ABSENT (cfu/10g)	Absent	cfu / 10 g		USP 2022
<b>PSEUDOMONAS AERUGINOSA</b>	ABSENT (cfu/10g)	Absent	cfu / 10 g		USP 2022
<b>SALMONELLA</b>	ABSENT (cfu/10g)	Absent	cfu / 10 g		USP 2022
<b>STAPHYLOCOCCUS AUREUS</b>	ABSENT (cfu/10g)	Absent	cfu / 10 g		USP 2022
<b>YEAST</b>	NMT 100,000 cfu (Combined)	50	4,800	cfu / 10 g	
<b>MOLD</b>		10	800	cfu / 10 g	USP 2021
<b>TOTAL YEAST &amp; MOLD</b>	NMT 100,000 cfu (Combined)	60	5,600	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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## Certificate Of Analysis

### Sample Identification Information

<u>Date of Analysis</u>	3/22/2024	<u>Country of Origin</u>	VANUATU
<u>Sample:</u>	S2081	<u>Country of Processing</u>	USA
<u>Product Name</u>	PREMIUM CHIPS	<u>Manufacture Date</u>	Jan-24
<u>Lot#</u>	VPS2401-PC2	<u>Best By Date</u>	Jan-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

### Analyzed Characteristics

<u>Standardization</u>	<u>Specification</u>	<u>Result</u>	<u>Test Method</u>
<u>Identification</u>	2-17% Kavalactones	7.46%	HPLC
<u>Kavalactone Profile</u>	Complies by HPLC	Conform	HPLC
<u>Mesh Size</u>	Noble	PASS	HPLC
<u>Color</u>	60-30	60	Sieve
<u>Odor</u>	Beige to Yellow	Pass	Visual
<u>Taste</u>		Pass	Organoleptic
<u>Chemotype</u>		Pass	Organoleptic
<u>K/DHM</u>		243516	HPLC
		3.0	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2371			
Methysticin	M	1	2.21	395.379	5.68%	0.49%	6
Dihydromethysticin	DHM	2	3.38	392.825	5.64%	0.74%	5
Kavain	K	3	1	3937.187	56.57%	2.20%	4
Dihydrokavain	DHK	4	3.48	1331.95	19.14%	2.59%	2
Desmethoxyyangonin	DMY	5	2.52	373.354	5.36%	0.52%	1
Yangonin	Y	6	3.12	529.016	7.60%	0.92%	3
Kavalactones			<b>Total:</b>	<b>6959.711</b>	<b>100.00%</b>	7.46%	<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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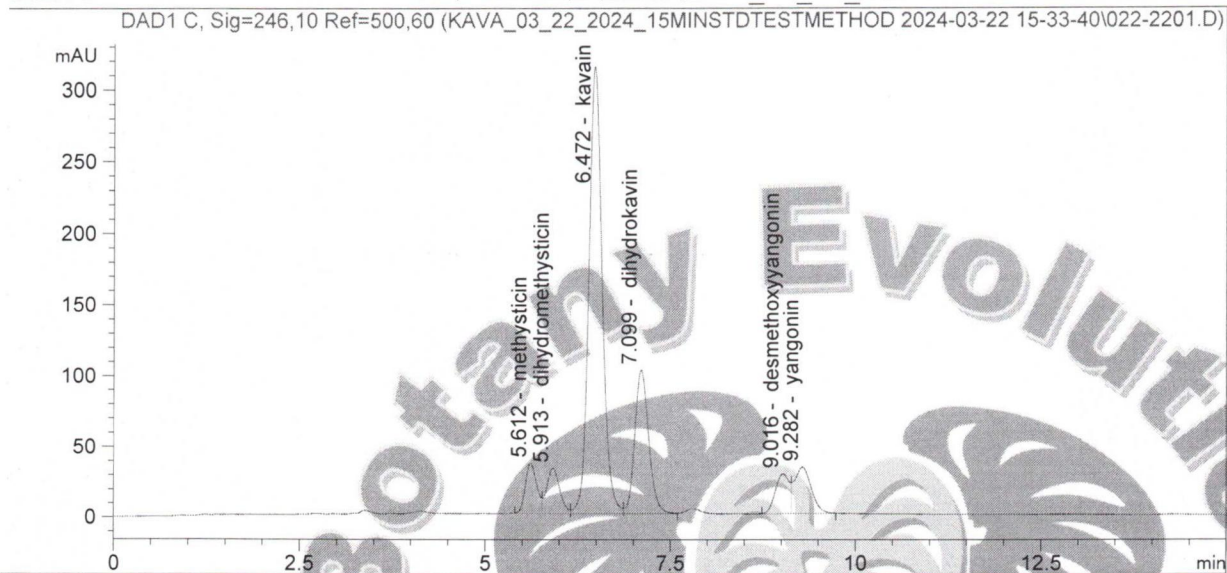
Chemist Mustil Young

Date 3/25/24

SAMPLE S2081  
Vial 22

.75264g/50mL

wavelength 246 nm  
:\CHEM32\1\DATA\KAVA\_03\_22\_2024\_15MINSTDTESTMETHOD 2024-03-22 15-33-40\02->  
SEQUENCE C:\CHEM32\1\DATA\KAVA\_03\_22\_2024\_ ->  
injection date 3/22/2024  
injection time 10:18:54 PM  
operator KRISTL  
method C:\CHEM32\1\DATA\KAVA\_03\_22\_202->



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.612	395.379	5.68	0.000
2	dihydromethysticin	5.913	392.825	5.64	0.000
3	kavain	6.472	3937.187	56.57	0.000
4	dihydrokavin	7.099	1331.950	19.14	0.000
5	desmethoxyyangonin	9.016	373.354	5.36	0.000
6	yangonin	9.282	529.016	7.60	0.000

3/25/24  
6