Botany Evolution LLC

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CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	4/1/2025	**Country of Origin**	Vanuatu
Sample Number	S2239	**Country of Processing**	USA
Product Name	Premium Chips	**Manufacture Date**	Mar-25
Lot Number	VPS2412-PC3	**Best By Date**	Mar-28

ITEM	SPECIFICATION	TEST RESULTS	METHOD
PHYSICAL & CHEMICAL			
Identification	**Piper methysticum**	**Complies**	**HPLC**
Appearance	**Beige to Yellow Powder**	**Complies**	**Organoleptic**
Kavalactone Standard	**2-17 % Kavalactones**	10.35%	**HPLC**
Kavalactone Profile	**Noble**	Pass	**HPLC**
Chemotype	**If # 5 is in 1st or 2nd in Abundance**	243516	**HPLC**
K/DHM	**> 1.2 for Noble**	3.5	**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**
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		280 cfu / 10 g	**USP 2021**
TOTAL YEAST & MOLD	**NMT 100,000 cfu (Combined)**	900 cfu / 10 g	

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

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 Saleh Manager Signature:

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321-802-4583

Certificate Of Analysis

Sample Identification Information

Date of Analysis 4/1/2025
Sample: S2239
Product Name PREMIUM CHIPS
Lot# VPS2412PC-3

Country of Origin VANUATU
Country of Processing USA
Manufacture Date Mar-25
Best By Date Mar-28

General Product Specifications

Product Species Piper Methysticum
Part Used Root

Common Names Kava kava, Awa, Yagona
Appearance Yellow, Brown, beige powder

Analyzed Characteristics	Specification	Result	Test Method
Standardization	2-17% Kavalactones	10.35%	HPLC
Identification	Complies by HPLC	Conform	HPLC
Kavalactone Profile	Noble	PASS	HPLC
Mesh Size	60-30	60	Sieve
Color	Beige to Yellow	Pass	Visual
Odor		Pass	Organoleptic
Taste		Pass	Organoleptic
Chemotype		243516	HPLC
K/DHM	TUDEI < 1.2 > NOBLE	3.5	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2270.82			
Methysticin	M	1	2.21	466.84	5.22%	0.63%	6
Dihydromethysticin	DHM	2	3.38	442.447	4.94%	0.92%	5
Kavain	K	3	1	5193.479	58.04%	3.18%	4
Dihydrokavain	DHK	4	3.48	1675.927	18.73%	3.57%	2
Desmethoxyyangonin	DMY	5	2.52	472.982	5.29%	0.73%	1
Yangonin	Y	6	3.12	696.061	7.78%	1.33%	3
Kavalactones			**Total:**	**8947.736**	**100.00%**	**10.35%**	**243516**

*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 Justin Youngs Date 4/3/25

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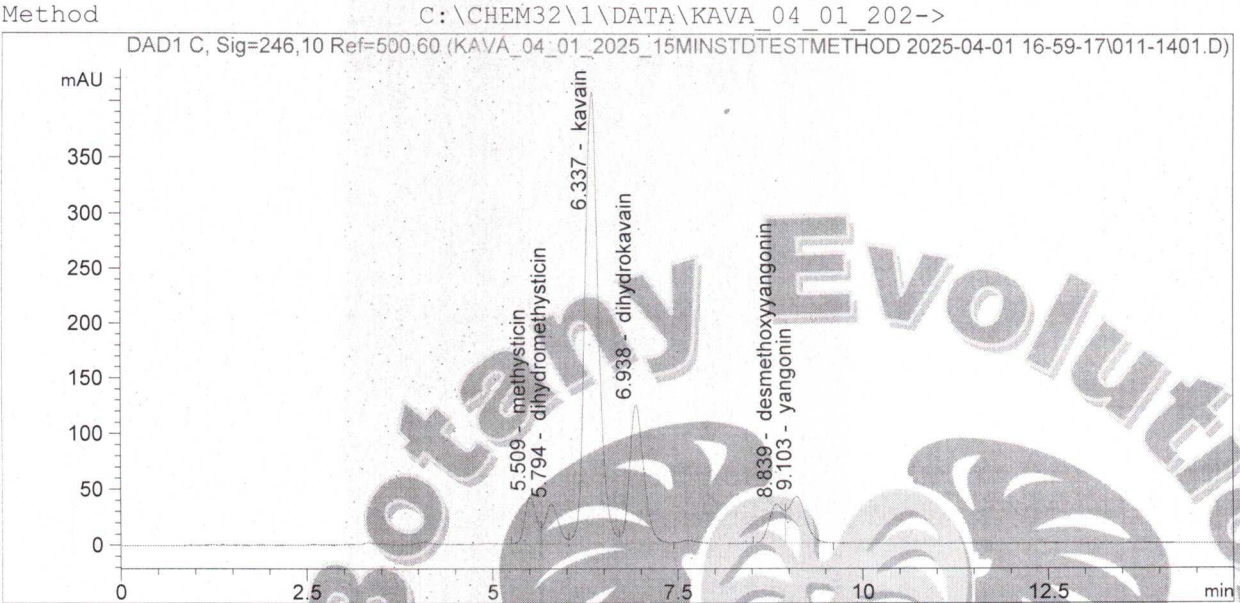
Kavalactone Analysis

SAMPLE S2239
Vial 11

0.75421g/50mL

wavelength 246 nm
C:\CHEM32\1\DATA\KAVA_04_01_2025_15MINSTDTESTMETHOD 2025-04-01 16-59-17\01->
SEQUENCE C:\CHEM32\1\DATA\KAVA_04_01_2025_ ->
Injection date 4/1/2025
Injection time 9:50:33 PM
Acq. operator KRISTL
Method C:\CHEM32\1\DATA\KAVA_04_01_202->



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.509	466.840	5.22	0.000
2	dihydromethysticin	5.794	442.447	4.94	0.000
3	kavain	6.337	5193.479	58.04	0.000
4	dihydrokavain	6.938	1675.927	18.73	0.000
5	desmethoxyyangonin	8.839	472.982	5.29	0.000
6	yangonin	9.103	696.061	7.78	0.000

4/3/25