Botany Evolution LLC

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CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	2/20/2025	**Country of Origin**	Solomon Islands
Sample Number	S2229	**Country of Processing**	USA
Product Name	Chief	**Manufacture Date**	Feb-25
Lot Number	SIK2502-C2	**Best By Date**	Feb-28

PHYSICAL & CHEMICAL

ITEM	SPECIFICATION	TEST RESULTS	METHOD
Identification	**Piper methysticum**	**Complies**	**HPLC**
Appearance	**Beige to Yellow Powder**	**Complies**	**Organoleptic**
Kavalactone Standard	**2-17 % Kavalactones**	10.10%	**HPLC**
Kavalactone Profile	**Noble**	Complies	**HPLC**
Chemotype	**If # 5 is in 1st or 2nd in Abundance**	245631	**HPLC**
K/DHM	**> 1.2 for Noble**	1.4	**Calculation**

HEAVY METALS

		Results		
Arsenic (As)	**NMT 1,000 (ppb)***	24.1	ppb	**FDA EAM 4.7**
Cadmium (Cd)	**NMT 1,000 (ppb)***	580	ppb	**FDA EAM 4.7**
Lead (Pb)	**NMT 1,000 (ppb)***	164	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**	18,000	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 2022**
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)**	14,300	cfu / 10 g	
MOLD		320	cfu / 10 g	**USP 2021**
TOTAL YEAST & MOLD	**NMT 100,000 cfu (Combined)**	14620	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.

Completed By: Tony Sabely Title: Manager Date: 2/23/25

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Certificate Of Analysis

Sample Identification Information

Date of Analysis 2/20/2025
Sample: S2229
Product Name CHIEF
Lot# SIK2502-C2

Country of Origin SOLOMON ISLANDS
Country of Processing USA
Manufacture Date Feb-25
Best By Date Feb-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	10.10%	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		245631	HPLC
K/DHM	TUDEI < 1.2 > NOBLE	1.4	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2337.87			
Methysticin	M	1	2.21	898.936	11.18%	1.19%	6
Dihydromethysticin	DHM	2	3.38	776.912	9.66%	1.57%	5
Kavain	K	3	1	3710.657	46.13%	2.22%	4
Dihydrokavain	DHK	4	3.48	1577.588	19.61%	3.28%	2
Desmethoxyyangonin	DMY	5	2.52	453.712	5.64%	0.68%	1
Yangonin	Y	6	3.12	626.191	7.78%	1.17%	3
Kavalactones			Total:	8043.996	100.00%	10.10%	245631

*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 Nusit Youngs Date 2/21/25

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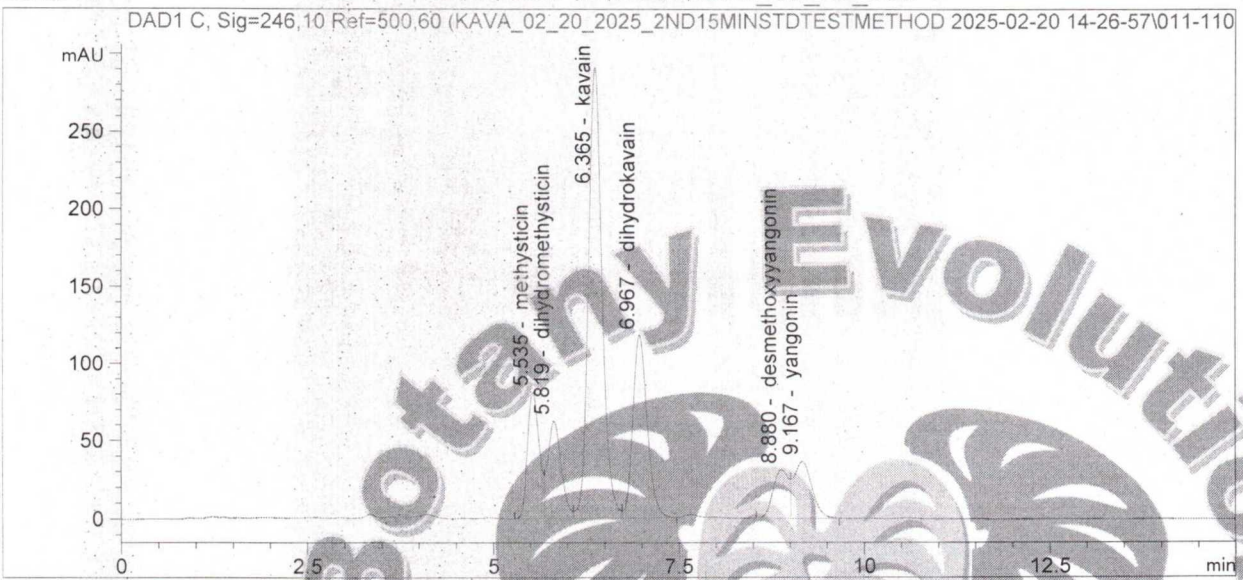
Kavalactone Analysis

SAMPLE S2229
Vial 11

0.75046g/50mL

wavelength 246 nm
C:\CHEM32\1\DATA\KAVA_02_20_2025_2ND15MINSTDTESTMETHOD 2025-02-20 14-26-57->
SEQUENCE C:\CHEM32\1\DATA\KAVA_02_20_2025_ ->
Injection date 2/20/2025
Injection time 6:13:51 PM
Acq. operator KRISTL
Method C:\CHEM32\1\DATA\KAVA_02_20_202->



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.535	898.936	11.18	0.000
2	dihydromethysticin	5.819	776.912	9.66	0.000
3	kavain	6.365	3710.657	46.13	0.000
4	dihydrokavain	6.967	1577.588	19.61	0.000
5	desmethoxyyangonin	8.880	453.712	5.64	0.000
6	yangonin	9.167	626.191	7.78	0.000

2/24/25