

# Botany Evolution LLC

2510 Kirby Circle NE

Palm Bay, FL 32945

321-802-4583

## Certificate Of Analysis

### Sample Identification Information

<u>Date of Analysis</u> 3/27/2024	<u>Country of Origin</u> SOLOMON ISLANDS
<u>Sample:</u> S2089	<u>Country of Processing</u> USA
<u>Product Name</u> CHIEF	<u>Manufacture Date</u> Sep-23
<u>Lot#</u> SIK2309-C3	<u>Best By Date</u> Sep-26

### 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	Specification	Result	Test Method
<u>Standardization</u>	2-17% Kavalactones	10.15%	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>		1.4	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2382			
Methysticin	M	1	2.21	983.805	11.31%	1.20%	6
Dihydromethysticin	DHM	2	3.38	833.08	9.58%	1.55%	5
Kavain	K	3	1	3954.547	45.47%	2.18%	4
Dihydrokavain	DHK	4	3.48	1722.263	19.80%	3.31%	2
Desmethoxyyangonin	DMY	5	2.52	474.893	5.46%	0.66%	1
Yangonin	Y	6	3.12	727.921	8.37%	1.25%	3
Kavalactones			<b>Total:</b>	<b>8696.509</b>	<b>100.00%</b>	<b>10.15%</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.

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.

Chemist Justin Youngs

Date 3/29/24

SAMPLE S2089  
Vial 14

0.75795g/50mL

wavelength 246 nm

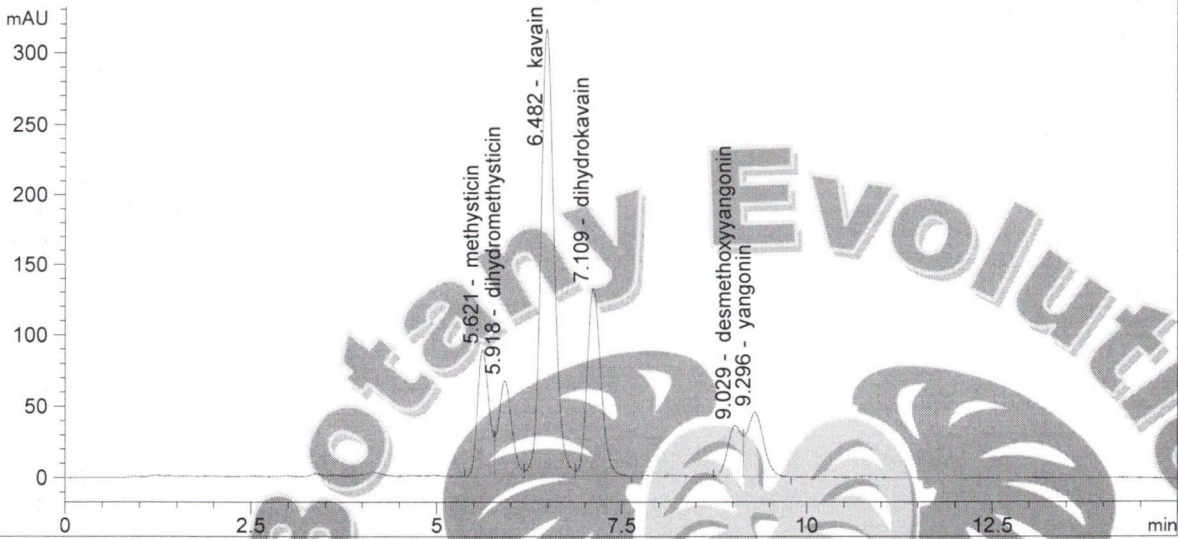
Path: \CHEM32\1\DATA\KAVA\_03\_27\_2024\_15MINSTDTESTMETHOD 2024-03-27 15-37-47\01->  
SEQUENCE C:\CHEM32\1\DATA\KAVA\_03\_27\_2024\_ ->

Injection date 3/27/2024  
Injection time 8:13:40 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA\_03\_27\_202->

DAD1 C, Sig=246,10 Ref=500,60 (KAVA\_03\_27\_2024\_15MINSTDTESTMETHOD 2024-03-27 15-37-47\014-1401.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.621	983.805	11.31	0.000
2	dihydromethysticin	5.918	833.080	9.58	0.000
3	kavain	6.482	3954.547	45.47	0.000
4	dihydrokavain	7.109	1722.263	19.80	0.000
5	desmethoxyyangonin	9.029	474.893	5.46	0.000
6	yangonin	9.296	727.921	8.37	0.000

3/29/24  
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# CERTIFICATE OF ANALYSIS

**GENERAL INFORMATION**

Report Date	3/27/2024	Country of Origin	Solomon Islands
Sample Number	S2089	Country of Processing	USA
Product Name	Chief	Manufacture Date	Sep-23
Lot Number	SIK2309-C3	Best By Date	Sep-26

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	10.15%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	245361	HPLC
K/DHM	> 1.2 for Noble	1.4	Calculation

**HEAVY METALS**

		Basal	Lateral		
Arsenic (As)	NMT 1,000 (ppb)*	12.4	12.4	ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	775	775	ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	131	131	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		
AEROBIC PLATE COUNT	NMT 10,000,000 cfu	17,000	17,000	cfu / 10 g	USP 2021
E. COLI	ABSENT (cfu/10g)	Absent	Absent	cfu / 10 g	USP 2022
PSEUDOMONAS AERUGINOSA	ABSENT (cfu/10g)	Absent	Absent	cfu / 10 g	USP 2022
SALMONELLA	ABSENT (cfu/10g)	Absent	Absent	cfu / 10 g	USP 2022
STAPHYLOCOCCUS AUREUS	ABSENT (cfu/10g)	Absent	Absent	cfu / 10 g	USP 2022
YEAST	NMT 100,000 cfu (Combined)	5,800	88,000	cfu / 10 g	
MOLD		< 10	< 10	cfu / 10 g	USP 2021
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	5,800	88,000	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**

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Completed By: Tony Sabeh                      Title: Manager                      Signature: Tony Sabeh