

# Botany Evolution LLC

2510 Kirby Circle NE

Palm Bay, FL 32945

321-802-4583

## Certificate Of Analysis

### Sample Identification Information

Date of Analysis 3/27/2024

Sample: S2090

Product Name CHIEF LATERAL

Lot# SIK2309-CLR3

Country of Origin SOLOMON ISLANDS

Country of Processing USA

Manufacture Date Sep-23

Best By Date Sep-26

### 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

14.53%

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

243561

HPLC

K/DHM

2.5

Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2382			
Methysticin	M	1	2.21	1175.028	8.73%	1.44%	<b>6</b>
Dihydromethysticin	DHM	2	3.38	857.788	6.37%	1.61%	<b>5</b>
Kavain	K	3	1	7248.334	53.84%	4.03%	<b>4</b>
Dihydrokavain	DHK	4	3.48	2234.67	16.60%	4.32%	<b>2</b>
Desmethoxyyangonin	DMY	5	2.52	755.579	5.61%	1.06%	<b>1</b>
Yangonin	Y	6	3.12	1190.703	8.84%	2.07%	<b>3</b>
<b>Kavalactones</b>			<b>Total:</b>	<b>13462.102</b>	<b>100.00%</b>	<b>14.53%</b>	<b>243561</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

*Mustil Youngs*

Date

*3/29/24*

SAMPLE S2090  
Vial 15

0.75182g/50mL

wavelength 246 nm

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

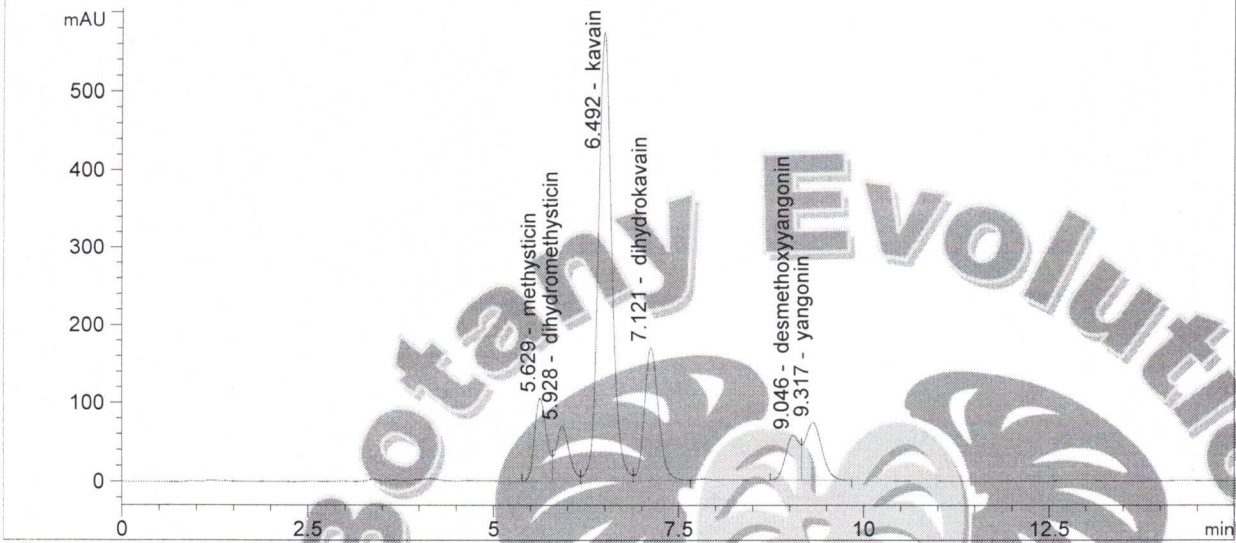
Injection date 3/27/2024

Injection time 8:29:54 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\015-1501.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.629	1175.028	8.73	0.000
2	dihydromethysticin	5.928	857.788	6.37	0.000
3	kavain	6.492	7248.334	53.84	0.001
4	dihydrokavain	7.121	2234.670	16.60	0.000
5	desmethoxyyangonin	9.046	755.579	5.61	0.000
6	yangonin	9.317	1190.703	8.84	0.000

# CERTIFICATE OF ANALYSIS

**GENERAL INFORMATION**

Report Date	3/27/2024	Country of Origin	Solomon Islands
Sample Number	S2090	Country of Processing	USA
Product Name	Chief Lateral Root	Manufacture Date	Sep-23
Lot Number	SIK2309-CLR3	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	14.53%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	243561	HPLC
K/DHM	> 1.2 for Noble	2.5	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		
<b>AEROBIC PLATE COUNT</b>	<b>NMT 10,000,000 cfu</b>	17,000	17,000	cfu / 10 g	<b>USP 2021</b>
<b>E. COLI</b>	<b>ABSENT (cfu/10g)</b>	Absent	cfu / 10 g		<b>USP 2022</b>
<b>PSEUDOMONAS AERUGINOSA</b>	<b>ABSENT (cfu/10g)</b>	Absent	cfu / 10 g		<b>USP 2022</b>
<b>SALMONELLA</b>	<b>ABSENT (cfu/10g)</b>	Absent	cfu / 10 g		<b>USP 2022</b>
<b>STAPHYLOCOCCUS AUREUS</b>	<b>ABSENT (cfu/10g)</b>	Absent	cfu / 10 g		<b>USP 2022</b>
<b>YEAST</b>	<b>NMT 100,000 cfu (Combined)</b>	5,800	88,000	cfu / 10 g	
<b>MOLD</b>		< 10	< 10	cfu / 10 g	<b>USP 2021</b>
<b>TOTAL YEAST &amp; MOLD</b>	<b>NMT 100,000 cfu (Combined)</b>	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