Botany Evolution LLC

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CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	2/20/2025	**Country of Origin**	Solomon Islands
Sample Number	S2230	**Country of Processing**	USA
Product Name	Chief Lateral Roots	**Manufacture Date**	Feb-25
Lot Number	SIK2502-CLR2	**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**	13.17%	**HPLC**
Kavalactone Profile	**Noble**	Complies	**HPLC**
Chemotype	**If # 5 is in 1st or 2nd in Abundance**	245361	**HPLC**
K/DHM	**> 1.2 for Noble**	1.5	**Calculation**

HEAVY METALS

		Results		
Arsenic (As)	**NMT 1,000 (ppb)***	52.3	ppb	**FDA EAM 4.7**
Cadmium (Cd)	**NMT 1,000 (ppb)***	865	ppb	**FDA EAM 4.7**
Lead (Pb)	**NMT 1,000 (ppb)***	42	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**	24,000	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)**	26,000	cfu / 10 g	
MOLD		160	cfu / 10 g	**USP 2021**
TOTAL YEAST & MOLD	**NMT 100,000 cfu (Combined)**	26160	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 Sichly Title: Manager Date: 2/23/25

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321-802-4583

Certificate Of Analysis

Sample Identification Information

Date of Analysis	2/20/2025	**Country of Origin**	SOLOMON ISLANDS
Sample:	S2230	**Country of Processing**	USA
Product Name	CHIEF LATERAL	**Manufacture Date**	Feb-25
Lot#	SIK2502-CLR2	**Best By Date**	Feb-28

General Product Specifications

Product Species	Piper Methysticum	**Common Names**	Kava kava, Awa, Yagona
Part Used	Root	**Appearance**	Yellow, Brown, beige powder

Analyzed Characteristics	Specification	Result	Test Method
Standardization	2-17% Kavalactones	13.17%	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		245361	HPLC
K/DHM	TUDEI < 1.2 > NOBLE	1.5	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	1273.855	11.92%	1.67%	6
Dihydromethysticin	DHM	2	3.38	970.06	9.08%	1.94%	5
Kavain	K	3	1	4941.771	46.26%	2.93%	4
Dihydrokavain	DHK	4	3.48	1901.216	17.80%	3.92%	2
Desmethoxyyangonin	DMY	5	2.52	650.687	6.09%	0.97%	1
Yangonin	Y	6	3.12	945.701	8.85%	1.75%	3
Kavalactones			**Total:**	**10683.290**	**100.00%**	**13.17%**	**245361**

*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 Heidi Young Date 2/21/25

-- ...ution LLC
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Kavalactone Analysis

SAMPLE S2230
Vial 12

.75705g/50mL

avelength 246 nm
\CHEM32\1\DATA\KAVA_02_20_2025_2ND15MINSTDTESTMETHOD 2025-02-20 14-26-57->
QUENCE C:\CHEM32\1\DATA\KAVA_02_20_2025_ ->
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jection time 6:30:03 PM
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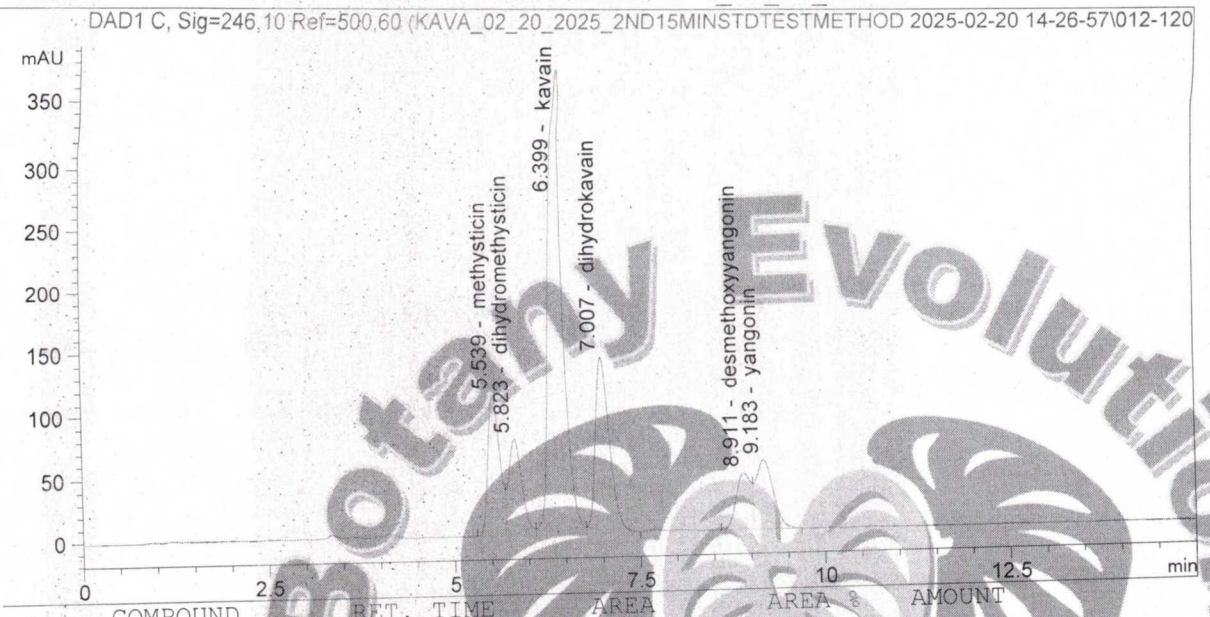

COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
methysticin	5.539	1273.855	11.92	0.000
dihydromethysticin	5.823	970.060	9.08	0.000
kavain	6.399	4941.771	46.26	0.000
dihydrokavain	7.007	1901.216	17.80	0.000
desmethoxyyangonin	8.911	650.687	6.09	0.000
yangonin	9.183	945.701	8.85	0.000

2/21/25