Botany Evolution LLC

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CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	2/20/2025	**Country of Origin**	Solomon Islands
Sample Number	S2231	**Country of Processing**	USA
Product Name	Chief Basal Roots	**Manufacture Date**	Feb-25
Lot Number	SIK2502-CBR2	**Best By Date**	Feb-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**	3.99%	**HPLC**
Kavalactone Profile	**Noble**	Complies	**HPLC**
Chemotype	**If # 5 is in 1st or 2nd in Abundance**	254361	**HPLC**
K/DHM	**> 1.2 for Noble**	1.0	**Calculation**
HEAVY METALS		**Results**	
Arsenic (As)	**NMT 1,000 (ppb)***	< 10 ppb	**FDA EAM 4.7**
Cadmium (Cd)	**NMT 1,000 (ppb)***	438 ppb	**FDA EAM 4.7**
Lead (Pb)	**NMT 1,000 (ppb)***	32.4 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**	14,000 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)**	8,400 cfu / 10 g	
MOLD		400 cfu / 10 g	**USP 2021**
TOTAL YEAST & MOLD	**NMT 100,000 cfu (Combined)**	8800 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.

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

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Certificate Of Analysis

Sample Identification Information

Date of Analysis	2/20/2025	**Country of Origin**	SOLOMON ISLANDS
Sample:	S2231	**Country of Processing**	USA
Product Name	CHIEF BASAL	**Manufacture Date**	Feb-25
Lot#	SIK2502-CBR2	**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	3.99%	HPLC
Identification	Complies by HPLC	Conform	HPLC
Kavalactone Profile	Noble	TUDEI	HPLC
Mesh Size	60-30	60	Sieve
Color	Beige to Yellow	Pass	Visual
Odor		Pass	Organoleptic
Taste		Pass	Organoleptic
Chemotype		254361	HPLC
K/DHM	TUDEI < 1.2 > NOBLE	**1.0**	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	350.783	11.33%	0.4623%	**6**
Dihydromethysticin	**DHM**	2	3.38	400.607	12.94%	0.8074%	**5**
Kavain	**K**	3	1	1353.943	43.72%	0.8073%	**4**
Dihydrokavain	**DHK**	4	3.48	585.99	18.92%	1.2160%	**2**
Desmethoxyyangonin	**DMY**	5	2.52	153.617	4.96%	0.2308%	**1**
Yangonin	**Y**	6	3.12	251.94	8.14%	0.4687%	**3**
Kavalactones			**Total:**	**3096.880**	**100.00%**	**3.99%**	**254361**

*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 Austl Young Date 2/21/25

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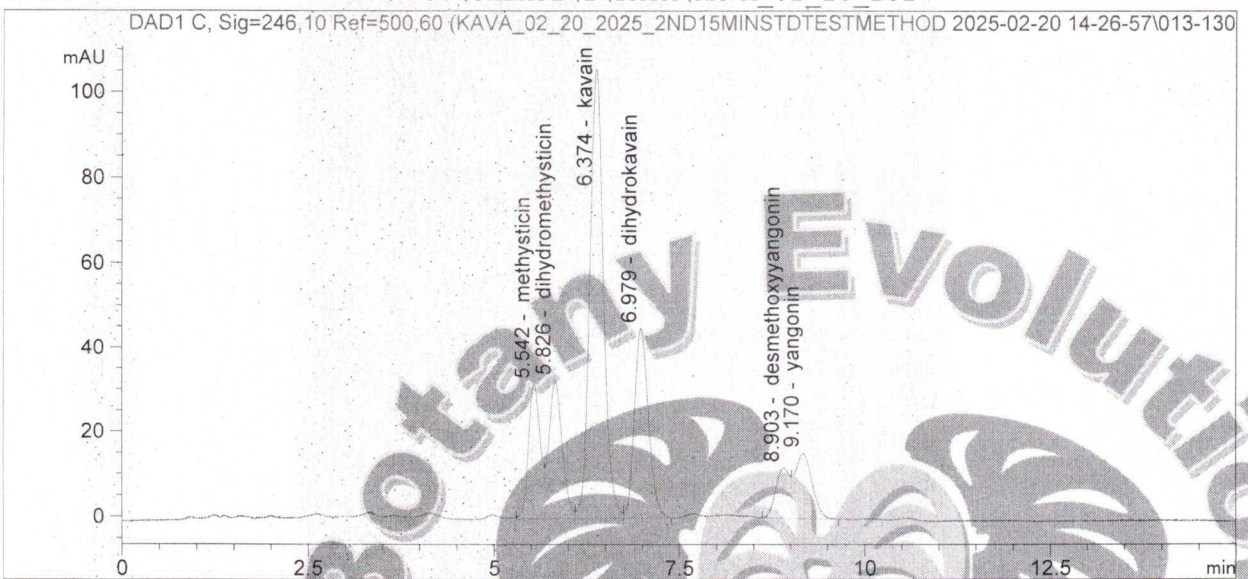
Kavalactone Analysis

SAMPLE S2231
Vial 13

0.75177g/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 6:46:10 PM
Acq. operator KRISTL
Method C:\CHEM32\1\DATA\KAVA_02_20_202->



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.542	350.783	11.33	0.000
2	dihydromethysticin	5.826	400.607	12.94	0.000
3	kavain	6.374	1353.943	43.72	0.000
4	dihydrokavain	6.979	585.990	18.92	0.000
5	desmethoxyyangonin	8.903	153.617	4.96	0.000
6	yangonin	9.170	251.940	8.14	0.000

2/21/25