Botany Evolution LLC

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CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	8/14/2024	**Country of Origin**	Solomon Islands
Sample Number	S2165	**Country of Processing**	USA
Product Name	Chief Basal Root	**Manufacture Date**	Jun-24
Lot Number	SIK2406-CBR8	**Best By Date**	Jun-27

ITEM	SPECIFICATION	TEST RESULTS	METHOD
PHYSICAL & CHEMICAL			
Identification	**Piper methysticum**	**Complies**	**HPLC**
Appearance	**Beige to Yellow Powder**	**Complies**	**Organoleptic**
Kavalactone Standard	**2-17 % Kavalactones**	5.64%	**HPLC**
Kavalactone Profile	**Noble**	Pass	**HPLC**
Chemotype	**If # 5 is in 1st or 2nd in Abundance**	245631	**HPLC**
K/DHM	**> 1.2 for Noble**	1.1	**Calculation**

HEAVY METALS

		Results		
Arsenic (As)	**NMT 1,000 (ppb)***	< 10	ppb	**FDA EAM 4.7**
Cadmium (Cd)	**NMT 1,000 (ppb)***	513	ppb	**FDA EAM 4.7**
Lead (Pb)	**NMT 1,000 (ppb)***	98	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**	4,400	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)**	4,400	cfu / 10 g	**USP 2021**
MOLD		1,700	cfu / 10 g	
TOTAL YEAST & MOLD	**NMT 100,000 cfu (Combined)**	6,100	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: Trey Sabeh Title: Manager Date: 8/14/2024

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321-802-4583

Certificate Of Analysis

Sample Identification Information

Date of Analysis 8/9/2024
Sample: S2165
Product Name CHIEF BASAL ROOTS
Lot# SIK-2406-CBR8

Country of Origin SOLOMON ISLANDS
Country of Processing USA
Manufacture Date Jun-24
Best By Date Jun-27

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	5.64%	HPLC
Identification	Complies by HPLC	Conform	HPLC
Kavalactone Profile	Noble	Conform	HPLC
Mesh Size	60-30	60	Sieve
Color	Beige to Yellow	Pass	Visual
Odor		Pass	Organoleptic
Taste		Pass	Organoleptic
Chemotype		245631	HPLC
K/DHM		1.1	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2372.192			
Methysticin	M	1	2.21	491.236	11.05%	0.63%	6
Dihydromethysticin	DHM	2	3.38	506.7	11.40%	1.00%	5
Kavain	K	3	1	1936.076	43.56%	1.13%	4
Dihydrokavain	DHK	4	3.48	957.489	21.55%	1.94%	2
Desmethoxyyangonin	DMY	5	2.52	221.534	4.98%	0.33%	1
Yangonin	Y	6	3.12	331.079	7.45%	0.60%	3
Kavalactones			**Total:**	**4444.114**	**100.00%**	**5.64%**	**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 Kristi Young Date 8/13/24

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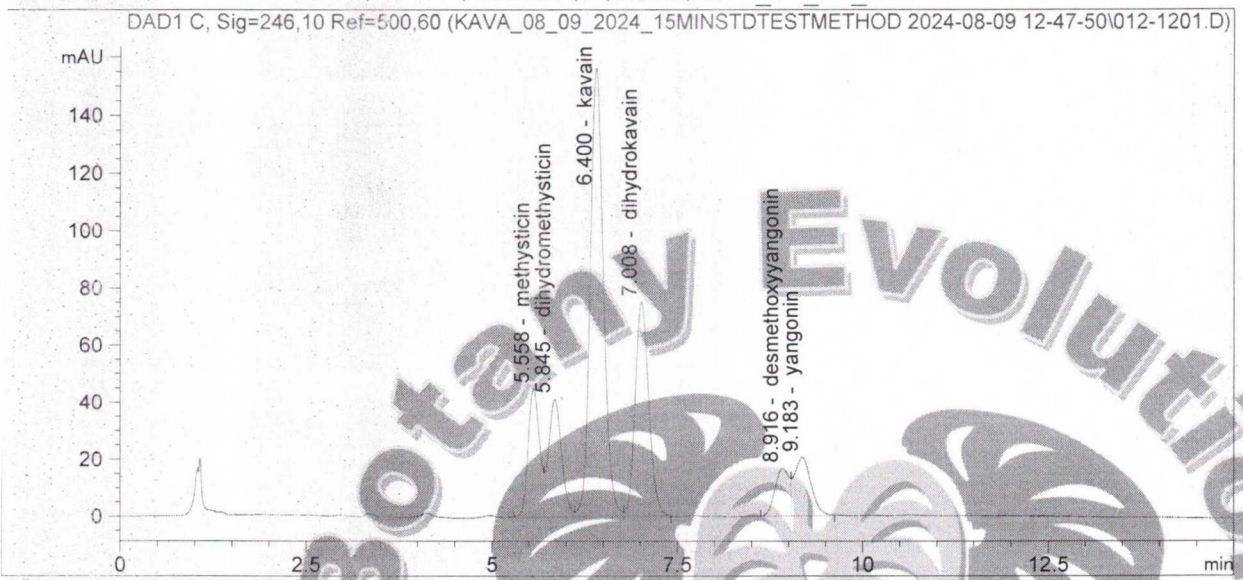
Kavalactone Analysis

SAMPLE S2165
Vial 12

0.75706g/50mL

Wavelength 246 nm
C:\CHEM32\1\DATA\KAVA_08_09_2024_15MINSTDTESTMETHOD 2024-08-09 12-47-50\01->
SEQUENCE C:\CHEM32\1\DATA\KAVA_08_09_2024_ ->
Injection date 8/9/2024
Injection time 4:50:54 PM
Acq. operator KRISTL
Method C:\CHEM32\1\DATA\KAVA_08_09_202->



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.558	491.236	11.05	0.000
2	dihydromethysticin	5.845	506.700	11.40	0.000
3	kavain	6.400	1936.076	43.56	0.000
4	dihydrokavain	7.008	957.489	21.55	0.000
5	desmethoxyyangonin	8.916	221.534	4.98	0.000
6	yangonin	9.183	331.079	7.45	0.000

8/13/24
KS