

Botany Evolution LLC

2510 Kirby Circle NE

Palm Bay, FL 32945

321-802-4583

Certificate Of Analysis

Sample Identification Information

Date of Analysis 5/28/2024

Sample: S2122

Product Name CHIEF

Lot# SIK2404-C5

Country of Origin

SOLOMON ISLANDS

Country of Processing

USA

Manufacture Date

Apr-24

Best By Date

Apr-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

10.42%

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

245631

HPLC

K/DHM

1.3

Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2394			
Methysticin	M	1	2.21	1057.567	12.49%	1.36%	6
Dihydromethysticin	DHM	2	3.38	849.729	10.03%	1.67%	5
Kavain	K	3	1	3827.345	45.20%	2.23%	4
Dihydrokavain	DHK	4	3.48	1597.392	18.86%	3.24%	2
Desmethoxyyangonin	DMY	5	2.52	431.568	5.10%	0.63%	1
Yangonin	Y	6	3.12	704.465	8.32%	1.28%	3
Kavalactones			Total:	8468.066	100.00%	10.42%	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.

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

Mustel Youngs

Date

5/29/24

SAMPLE S2122
Vial 15

0.75108g/50mL

wavelength 246 nm

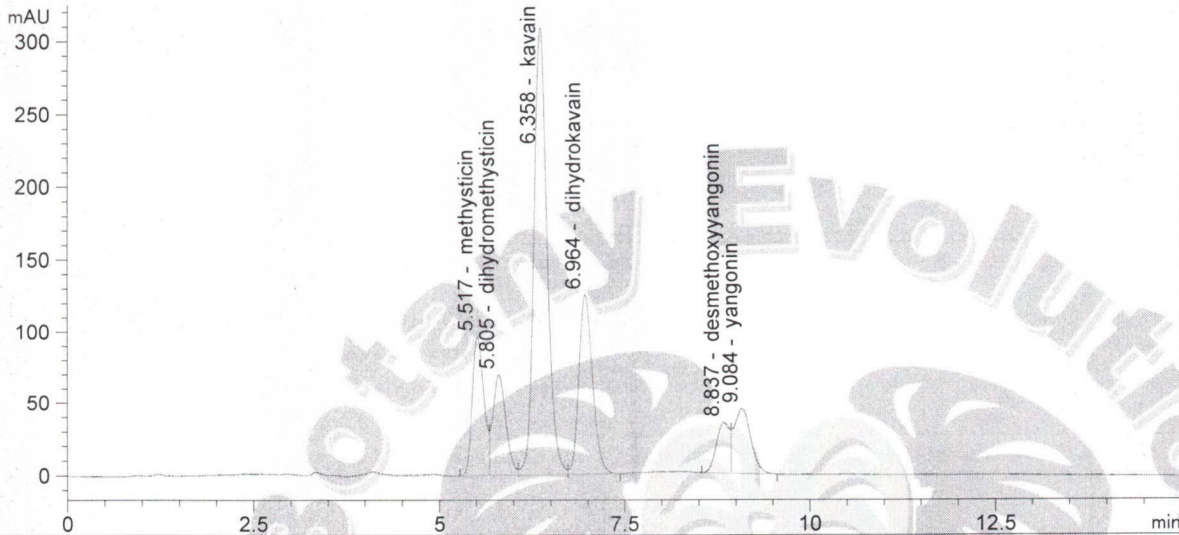
C:\CHEM32\1\DATA\KAVA_05_28_2024_15MINSTDTESTMETHOD 2024-05-28 16-38-07\01->
SEQUENCE C:\CHEM32\1\DATA\KAVA_05_28_2024_ ->

Injection date 5/28/2024
Injection time 9:13:25 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA_05_28_202->

DAD1 C, Sig=246,10 Ref=500,60 (KAVA_05_28_2024_15MINSTDTESTMETHOD 2024-05-28 16-38-07\015-1401.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.517	1057.567	12.49	0.000
2	dihydromethysticin	5.805	849.729	10.03	0.000
3	kavain	6.358	3827.345	45.20	0.000
4	dihydrokavain	6.964	1597.392	18.86	0.000
5	desmethoxyyangonin	8.837	431.568	5.10	0.000
6	yangonin	9.084	704.465	8.32	0.000

5/29/24
6

CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	5/28/2024	Country of Origin	Solomon Islands
Sample Number	S2122	Country of Processing	United States
Product Name	Chief	Manufacture Date	Apr-24
Lot Number	SIK2404-C5	Best By Date	Apr-27

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	10.42%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	245631	HPLC
K/DHM	> 1.2 for Noble	1.3	Calculation

HEAVY METALS

		Basal	Lateral		
Arsenic (As)	NMT 1,000 (ppb)*	< 10	45	ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	907	1050	ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	77.7	221	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	1,500	250,000	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)	890	59,000	cfu / 10 g	
MOLD		20	20	cfu / 10 g	USP 2021
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	910	59020	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:  Title: Manager Date: 05/30/2024