

CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	3/22/2024	Country of Origin	Vanuatu
Sample Number	S2077	Country of Processing	USA
Product Name	Ceremonial	Manufacture Date	Jan-24
Lot Number	VPS2401-C2	Best By Date	Jan-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	8.46%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	423516	HPLC
K/DHM	> 1.2 for Noble	3.8	Calculation

HEAVY METALS

		Basal	Lateral		
Arsenic (As)	NMT 1,000 (ppb)*	21.1	438	ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	233	1,030	ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	56.6	177	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	15,000	34,000	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)	50	4,800	cfu / 10 g	USP 2021
MOLD		10	800	cfu / 10 g	
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	60	5,600	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.

Authorized By (Name / Title): Tony Sabeh / Manager

Signature: Tony Sabeh

Botany Evolution LLC

2510 Kirby Circle NE

Palm Bay, FL 32945

321-802-4583

Certificate Of Analysis

Sample Identification Information

Date of Analysis 3/22/2024
Sample: S2077
Product Name CEREMONIAL
Lot# VPS2401-C2

Country of Origin VANUATU
Country of Processing USA
Manufacture Date Jan-24
Best By Date Jan-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

<u>Standardization</u>	2-17% Kavalactones	8.46%	HPLC
<u>Identification</u>	Complies by HPLC	Conform	HPLC
<u>Kavalactone Profile</u>	Noble	PASS	HPLC
<u>Mesh Size</u>	60-30	60	Sieve
<u>Color</u>	Beige to Yellow	Pass	Visual
<u>Odor</u>		Pass	Organoleptic
<u>Taste</u>		Pass	Organoleptic
<u>Chemotype</u>		423516	HPLC
<u>K/DHM</u>		3.8	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2371			
Methysticin	M	1	2.21	475.596	5.73%	0.58%	6
Dihydromethysticin	DHM	2	3.38	384.832	4.64%	0.72%	5
Kavain	K	3	1	4979.331	60.00%	2.77%	4
Dihydrokavain	DHK	4	3.48	1359.595	16.38%	2.63%	2
Desmethoxyyangonin	DMY	5	2.52	489.304	5.90%	0.69%	1
Yangonin	Y	6	3.12	610.598	7.36%	1.06%	3
Kavalactones			Total:	8299.256	100.00%	8.46%	423516

*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 Mustel Youngs

Date 3/25/24

SAMPLE S2077
Vial 18

1.75487g/50mL

wavelength 246 nm

Path: \CHEM32\1\DATA\KAVA_03_22_2024_15MINSTDTESTMETHOD 2024-03-22 15-33-40\01->

SEQUENCE C:\CHEM32\1\DATA\KAVA_03_22_2024_ ->

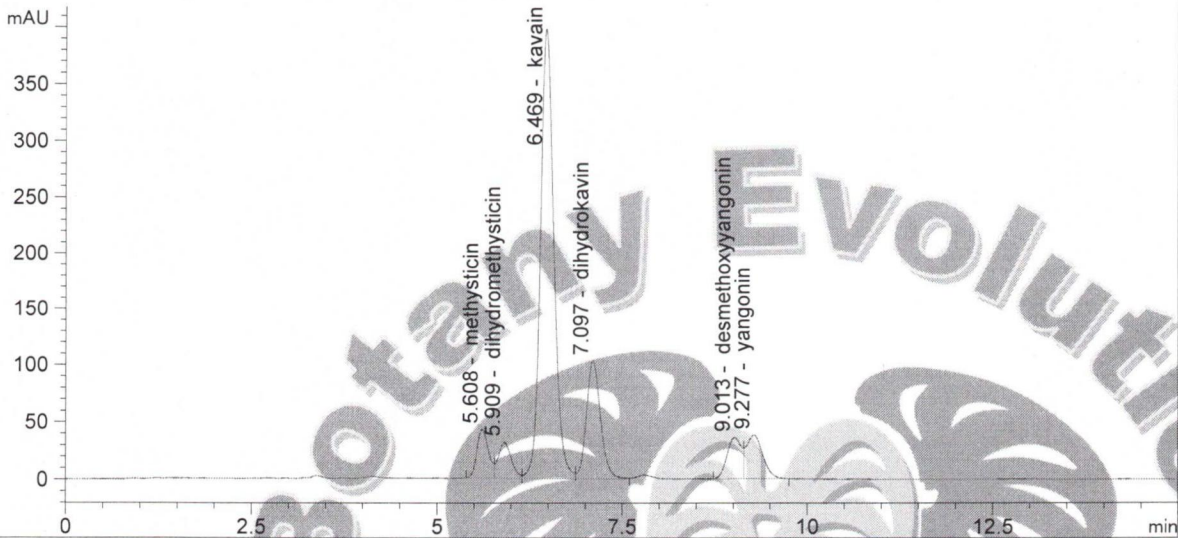
Injection date 3/22/2024

Injection time 9:14:06 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA_03_22_2024->

DAD1 C, Sig=246,10 Ref=500,60 (KAVA_03_22_2024_15MINSTDTESTMETHOD 2024-03-22 15-33-40\018-1801.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.608	475.596	5.73	0.000
2	dihydromethysticin	5.909	384.832	4.64	0.000
3	kavain	6.469	4979.331	60.00	0.000
4	dihydrokavin	7.097	1359.595	16.38	0.000
5	desmethoxyyangonin	9.013	489.304	5.90	0.000
6	yangonin	9.277	610.598	7.36	0.000

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