

CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	9/4/2024	Country of Origin	Tonga
Sample Number	S2173	Country of Processing	USA
Product Name	Lateral Roots	Manufacture Date	Jun-24
Lot Number	TAT2406-LR8	Best By Date	Jun-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	10.51%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	463251	HPLC
K/DHM	> 1.2 for Noble	2.0	Calculation

HEAVY METALS

		Results	
Arsenic (As)	NMT 1,000 (ppb)*	34.6 ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	844 ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	42.4 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	120,000 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 62
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)	14,000 cfu / 10 g	
MOLD		40 cfu / 10 g	USP 2021
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	14,040 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 Sabeh Title: Manager Signature: 

Botany Evolution LLC

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Palm Bay, FL 32945

321-802-4583

Certificate Of Analysis**Sample Identification Information**Date of Analysis 9/4/2024Sample: S2173Product Name LATERAL ROOTSLot# TAT2406-LR8Country of Origin TONGACountry of Processing USAManufacture Date Jun-24Best By Date Jun-27**General Product Specifications**Product Species Piper MethysticumPart Used RootCommon Names Kava kava, Awa, YagonaAppearance Yellow, Brown, beige powder**Analyzed Characteristics****Specification****Result****Test Method**Standardization

2-17% Kavalactones

10.51%

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

463251

HPLC

K/DHM

2.0

Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2431.118			
Methysticin	M	1	2.21	1665.534	17.51%	2.09%	6
Dihydromethysticin	DHM	2	3.38	693.721	7.29%	1.33%	5
Kavain	K	3	1	4630.989	48.69%	2.63%	4
Dihydrokavain	DHK	4	3.48	902.802	9.49%	1.79%	2
Desmethoxyyangonin	DMY	5	2.52	588.226	6.19%	0.84%	1
Yangonin	Y	6	3.12	1029.021	10.82%	1.82%	3
Kavalactones			Total:	9510.293	100.00%	10.51%	463251

*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

Kristl Youngs

Date

9/4/24

SAMPLE S2173
Vial 11

0.75873g/50mL

wavelength 246 nm

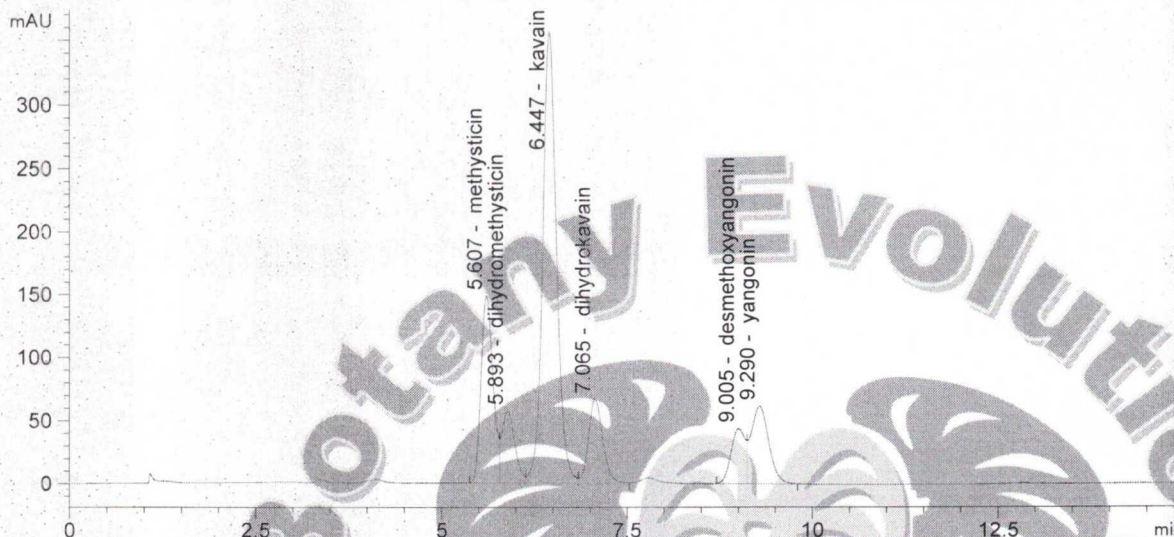
C:\CHEM32\1\DATA\KAVA_09_02_2024_15MINSTDTESTMETHOD 2024-09-03 14-37-57\01->
SEQUENCE C:\CHEM32\1\DATA\KAVA_09_02_2024_ ->

Injection date 9/3/2024
Injection time 6:25:17 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA_09_02_202->

DAD1 C, Sig=246,10 Ref=500,60 (KAVA_09_02_2024_15MINSTDTESTMETHOD 2024-09-03 14-37-57\011-1101.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.607	1665.534	17.51	0.000
2	dihydromethysticin	5.893	693.721	7.29	0.000
3	kavain	6.447	4630.989	48.69	0.000
4	dihydrokavain	7.065	902.802	9.49	0.000
5	desmethoxyyangonin	9.005	588.226	6.19	0.000
6	yangonin	9.290	1029.021	10.82	0.000

9/4/24
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