

# CERTIFICATE OF ANALYSIS

**GENERAL INFORMATION**

Report Date	6/13/2024	Country of Origin	Vanuatu
Sample Number	S2130	Country of Processing	USA
Product Name	Basal Roots	Manufacture Date	Feb-24
Lot Number	VSSC2402-BR6	Best By Date	Feb-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	5.24%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	243561	HPLC
K/DHM	> 1.2 for Noble	1.9	Calculation

**HEAVY METALS**

		Basal	Lateral		
Arsenic (As)	NMT 1,000 (ppb)*	< 10	5.5	ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	145	176	ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	14.9	108	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		
<b>AEROBIC PLATE COUNT</b>	NMT 10,000,000 cfu	240	17,000	cfu / 10 g	USP 61
<b>E. COLI</b>	ABSENT (cfu/10g)	Absent		cfu / 10 g	USP 62
<b>PSEUDOMONAS AERUGINOSA</b>	ABSENT (cfu/10g)	Absent		cfu / 10 g	USP 62
<b>SALMONELLA</b>	ABSENT (cfu/10g)	Absent		cfu / 10 g	USP 62
<b>STAPHYLOCOCCUS AUREUS</b>	ABSENT (cfu/10g)	Absent		cfu / 10 g	USP 62
<b>YEAST</b>	NMT 100,000 cfu (Combined)	80	800	cfu / 10 g	
<b>MOLD</b>	NMT 100,000 cfu (Combined)	80	1,000	cfu / 10 g	USP 2021
<b>TOTAL YEAST &amp; MOLD</b>	NMT 100,000 cfu (Combined)	160	1,800	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:



# Botany Evolution LLC

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Palm Bay, FL 32945

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## Certificate Of Analysis

### Sample Identification Information

Date of Analysis 6/13/2024

Sample: S2130

Product Name BASAL ROOT

Lot# VSSC2402-BR6

Country of Origin VANUATU

Country of Processing USA

Manufacture Date Feb-24

Best By Date Feb-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

5.24%

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

243561

HPLC

K/DHM

1.9

Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			2369			
Methysticin	M	1	2.21	305.896	6.97%	0.40%	<b>6</b>
Dihydromethysticin	DHM	2	3.38	356.813	8.14%	0.71%	<b>5</b>
Kavain	K	3	1	2255.159	51.42%	1.33%	<b>4</b>
Dihydrokavain	DHK	4	3.48	847.113	19.32%	1.74%	<b>2</b>
Desmethoxyyangonin	DMY	5	2.52	221.979	5.06%	0.33%	<b>1</b>
Yangonin	Y	6	3.12	398.657	9.09%	0.73%	<b>3</b>
<b>Kavalactones</b>			<b>Total:</b>	<b>4385.617</b>	<b>100.00%</b>	<b>5.24%</b>	<b>243561</b>

\*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

*Mistl Youngs*

Date

*6/14/24*