

Botany Evolution LLC

2510 Kirby Circle NE

Palm Bay, FL 32945

321-802-4583

Certificate Of Analysis

Sample Identification Information

Date of Analysis 3/27/2024

Sample: S2087

Product Name LATERAL ROOTS

Lot# VSSC2402-LR3

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

10.30%

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

423561

HPLC

K/DHM

2.7

Calculation

| Kavalactones | Code | Peaks Ref. (elution order) | Correction Factor | Area * | Area % | Corrected Kavalactones | Chemotype Identifier |
|--------------------|------|-------------------------------|----------------------|-----------------|----------------|---------------------------|----------------------|
| Standard Kavain | K | | | 2382 | | | |
| Methysticin | M | 1 | 2.21 | 822.92 | 8.32% | 1.01% | 6 |
| Dihydromethysticin | DHM | 2 | 3.38 | 607.639 | 6.14% | 1.14% | 5 |
| Kavain | K | 3 | 1 | 5586.907 | 56.46% | 3.10% | 4 |
| Dihydrokavain | DHK | 4 | 3.48 | 1386.946 | 14.02% | 2.67% | 2 |
| Desmethoxyyangonin | DMY | 5 | 2.52 | 598.372 | 6.05% | 0.84% | 1 |
| Yangonin | Y | 6 | 3.12 | 893.326 | 9.03% | 1.54% | 3 |
| Kavalactones | | | Total: | 9896.110 | 100.00% | 10.30% | 423561 |

*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

Musil Youngs

Date

3/29/24

SAMPLE S2087
Vial 12

0.75449g/50mL

wavelength 246 nm

Path: \CHEM32\1\DATA\KAVA_03_27_2024_15MINSTDTESTMETHOD 2024-03-27 15-37-47\01->

SEQUENCE C:\CHEM32\1\DATA\KAVA_03_27_2024_ ->

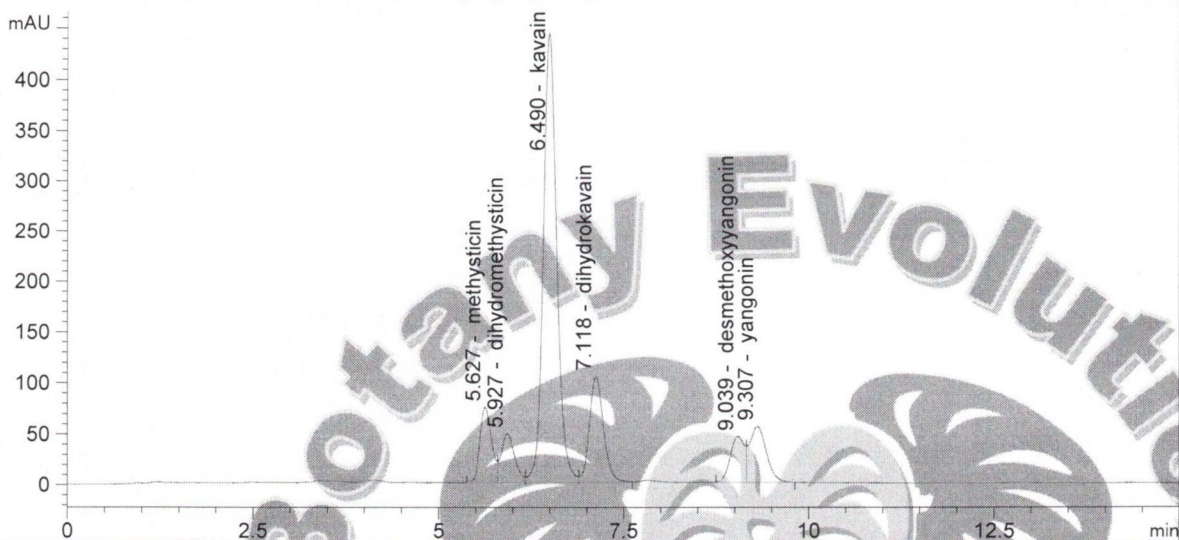
Injection date 3/27/2024

Injection time 7:41:15 PM

Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA_03_27_202->

DAD1 C, Sig=246,10 Ref=500,60 (KAVA_03_27_2024_15MINSTDTESTMETHOD 2024-03-27 15-37-47\012-1201.D)



| # | COMPOUND | RET. TIME | AREA | AREA % | AMOUNT |
|---|--------------------|-----------|----------|--------|--------|
| 1 | methysticin | 5.627 | 822.920 | 8.32 | 0.000 |
| 2 | dihydromethysticin | 5.927 | 607.639 | 6.14 | 0.000 |
| 3 | kavain | 6.490 | 5586.907 | 56.46 | 0.000 |
| 4 | dihydrokavain | 7.118 | 1386.946 | 14.02 | 0.000 |
| 5 | desmethoxyyangonin | 9.039 | 598.372 | 6.05 | 0.000 |
| 6 | yangonin | 9.307 | 893.326 | 9.03 | 0.000 |

3/29/24
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CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

| | | | |
|---------------|---------------|-----------------------|---------|
| Report Date | 3/27/2024 | Country of Origin | Vanuatu |
| Sample Number | S2087 | Country of Processing | USA |
| Product Name | Lateral Roots | Manufacture Date | Feb-24 |
| Lot Number | VSSC2402-LR3 | Best By Date | Feb-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 | 10.30% | HPLC |
| Kavalactone Profile | Noble | Pass | HPLC |
| Chemotype | If # 5 is in 1st or 2nd in Abundance | 423561 | HPLC |
| K/DHM | > 1.2 for Noble | 2.7 | 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 | | |
|------------------------|----------------------------|--------|---------|------------|----------|
| AEROBIC PLATE COUNT | NMT 10,000,000 cfu | 240 | 17,000 | cfu / 10 g | USP 61 |
| E. COLI | ABSENT (cfu/10g) | Absent | | cfu / 10 g | USP 62 |
| PSEUDOMONAS AERUGINOSA | ABSENT (cfu/10g) | Absent | | cfu / 10 g | USP 62 |
| SALMONELLA | ABSENT (cfu/10g) | Absent | | cfu / 10 g | USP 62 |
| STAPHYLOCOCCUS AUREUS | ABSENT (cfu/10g) | Absent | | cfu / 10 g | USP 62 |
| YEAST | NMT 100,000 cfu (Combined) | 80 | 800 | cfu / 10 g | |
| MOLD | NMT 100,000 cfu (Combined) | 80 | 1,000 | cfu / 10 g | USP 2021 |
| TOTAL YEAST & MOLD | NMT 100,000 cfu (Combined) | 160 | 1,800 | cfu / 10 g | |

:fu/g = Colony Forming Units Per Gran NMT = No More Than PDE = Permitted Daily Exposure PPB = Parts Per Billion

Analysis Performed by a Third-Party Laboratory

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