

CERTIFICATE OF ANALYSIS

GENERAL INFORMATION

Report Date	2/5/2025	Country of Origin	Vanuatu
Sample Number	S2226	Country of Processing	China
Product Name	70% Kavalactone Extract	Manufacture Date	10/21/2023
Lot Number	CJ2502KE70	Best By Date	10/20/2026

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	72.28%	HPLC
Kavalactone Profile	Noble	Pass	HPLC
Chemotype	If # 5 is in 1st or 2nd in Abundance	423156	HPLC
K/DHM	> 1.2 for Noble	4.1	Calculation

HEAVY METALS

		Results	
Arsenic (As)	NMT 1,000 (ppb)*	24.1 ppb	FDA EAM 4.7
Cadmium (Cd)	NMT 1,000 (ppb)*	290.9 ppb	FDA EAM 4.7
Lead (Pb)	NMT 1,000 (ppb)*	< 1 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	700 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)	5 cfu / 10 g	
MOLD		5 cfu / 10 g	USP 2021
TOTAL YEAST & MOLD	NMT 100,000 cfu (Combined)	10 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

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Certificate Of Analysis

Sample Identification Information

<u>Date of Analysis</u> 2/5/2025	<u>Country of Origin</u> CHINA
<u>Sample:</u> S2226	<u>Country of Processing</u> USA
<u>Product Name</u> 70% KAVA EXTRACT	<u>Manufacture Date</u> 10/21/23
<u>Batch #</u> CJ2502KE70	<u>Best By Date</u> 10/20/26

General Product Specifications

<u>Product Species</u> Piper Methysticum	<u>Common Names</u> Kava kava, Awa, Yagona
<u>Part Used</u> Root	<u>Appearance</u> viscous yellow liquid

Analyzed Characteristics

Specification

Result

Test Method

<u>Standardization</u>	20-90% Kavalactones	72.28%	HPLC
<u>Identification</u>	Complies by HPLC	Conform	HPLC
<u>Kavalactone Profile</u>	Noble	PASS	HPLC
<u>Mesh Size</u>	60-30	30	Sieve
<u>Color</u>	Beige to Yellow	Pass	Visual
<u>Odor</u>		Pass	Organoleptic
<u>Taste</u>		Pass	Organoleptic
<u>Chemotype</u>		423156	HPLC
<u>K/DHM</u>		4.1	Calculation

Kavalactones	Code	Peaks Ref. (elution order)	Correction Factor	Area *	Area %	Corrected Kavalactones	Chemotype Identifier
Standard Kavain	K			23770.531			
Methysticin	M	1	2.21	1656.444	6.82%	6.178%	6
Dihydromethysticin	DHM	2	3.38	1084.008	4.47%	6.183%	5
Kavain	K	3	1	15079.882	62.12%	25.45%	4
Dihydrokavain	DHK	4	3.48	3351.93	13.81%	19.68%	2
Desmethoxyyangonin	DMY	5	2.52	1537.605	6.33%	6.54%	1
Yangonin	Y	6	3.12	1567.001	6.45%	8.25%	3
Kavalactones			Total:	24276.870	100.00%	72.28%	423156

*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 Musol Youngs Date 2/11/25

SAMPLE S2226
Vial 19

0.25179g/50mL

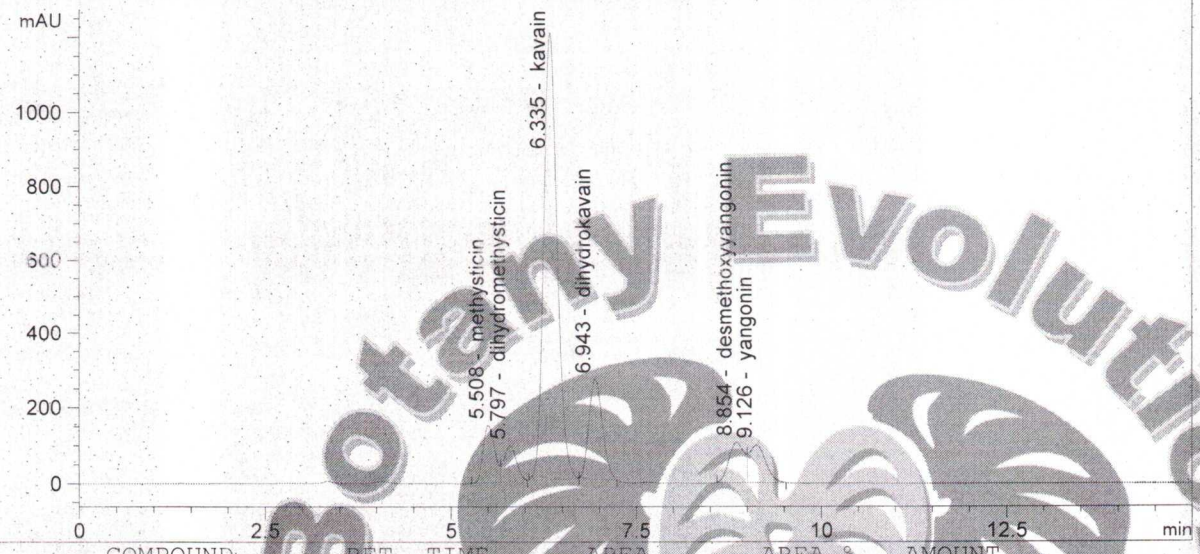
wavelength 246 nm

C:\CHEM32\1\DATA\KAVA_02_05_2025_15MINSTDTESTMETHOD 2025-02-05 16-17-08\01->
SEQUENCE C:\CHEM32\1\DATA\KAVA_02_05_2025_ ->

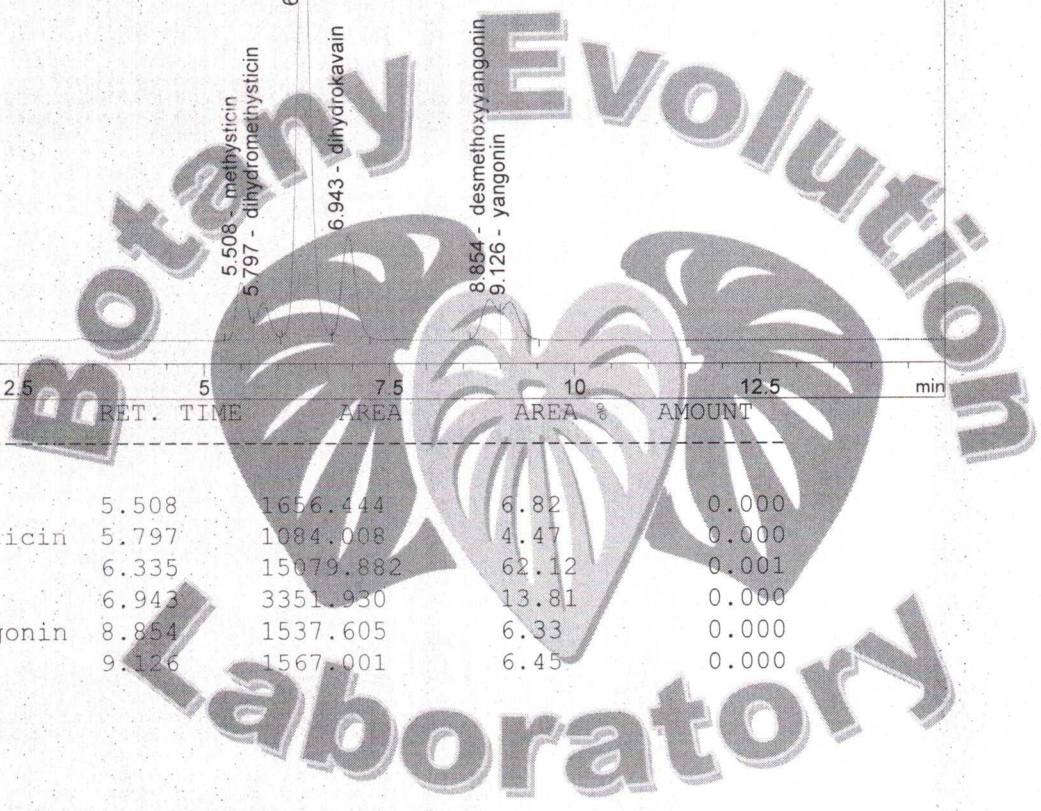
Injection date 2/5/2025
Injection time 10:13:00 PM
Acq. operator KRISTL

Method C:\CHEM32\1\DATA\KAVA_02_05_202->

DAD1 C, Sig=246,10 Ref=500.60 (KAVA_02_05_2025_15MINSTDTESTMETHOD 2025-02-05 16-17-08\019-1901.D)



#	COMPOUND	RET. TIME	AREA	AREA %	AMOUNT
1	methysticin	5.508	1656.444	6.82	0.000
2	dihydromethysticin	5.797	1084.008	4.47	0.000
3	kavain	6.335	15079.882	62.12	0.001
4	dihydrokavain	6.943	3351.930	13.81	0.000
5	desmethoxyyangonin	8.854	1537.605	6.33	0.000
6	yangonin	9.126	1567.001	6.45	0.000



2/11/25
SP/ML
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