

# CERTIFICATE OF ANALYSIS

**SAMPLE NAME:** RAW LEAF  
**SAMPLE CODE:** DTS-250325-040  
**CLIENT:** KR80M  
**BATCH RESULT:** PASS

**MATRIX NAME:** Botanical Powder - Plant  
**SAMPLE TYPE:** Quality Assurance  
**RECEIVED DATE:** Wed, Mar 26, 2025  
**PUBLISHED DATE:** Mon, Mar 31, 2025  
**BATCH/LOT CODE:** 25RM0116MD-S  
**BATCH SIZE:** 40kg  
**SAMPLE SIZE:** 50g

**MITRAGYNINE** 1.0225 %

**TOTAL MAJOR ALKALOIDS** 1.7231 %

**TOTAL MINOR ALKALOIDS** 0.00230 %



ALKU ✓  
**Kratom Alkaloids**  
High Level

ALKL ✓  
**Kratom Alkaloids**  
Low Level

ECOLI ✓  
**Total E. Coli & Coliforms**  
Plate

MOS ✓  
**Moisture Content**  
Loss on Drying

AFLA ✓  
**Aflatoxins**  
USP <561>

PGUSP ✓  
**Pesticides**  
USP <561>m

PLUSP ✓  
**Pesticides**  
USP <561>m

TAMC ✓  
**Total Aerobic Bacteria**  
Plate

SS ✓  
**Salmonella & STEC**  
qPCR

AWA ✓  
**Water Activity**

HVMET ✓  
**Heavy Metals**  
4

TYMFD ✓  
**Total Yeast & Mold**  
Plate

PSEUD ✓  
**Pseudomonas aeruginosa**  
Plate

FTIRR ✓  
**Identification by FTIR**  
Report

## APPROVALS

### RESULTS REVIEWED BY:



**Leslie Varela**  
Laboratory Director

Cambium Analytica  
Monday, Mar 31, 2025

### RESULTS CERTIFIED BY:



**Douglas Smith**  
VP - Scientific Operations

Cambium Analytica  
Monday, Mar 31, 2025

This report may not be reproduced except in full without approval from Cambium Analytica. The results herein relate only to the sample & batch identified in this report.



ALKU

**KRATOM ALKALOIDS - HIGH LEVEL**LAB-TM-052 - DETERMINATION OF KRATOM ALKALOID CONTENT BY UPLC-DAD  
ALKU-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	VALUE (MG/G)	ACTION LIMIT	LOD	LOQ	STATUS
Mitragynine	1.0225 %	10.225 mg/g	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciociliatine	0.3539 %	3.539 mg/g	N/A	0.3 ug/g	0.5 ug/g	N/A
Paynantheine	0.2188 %	2.188 mg/g	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciogyneine	0.1279 %	1.279 mg/g	N/A	0.3 ug/g	0.5 ug/g	N/A
Total Major Alkaloids	1.7231 %	17.231 mg/g	N/A	N/A	N/A	N/A

ALKL

**KRATOM ALKALOIDS - LOW LEVEL**LAB-TM-047 - DETERMINATION OF KRATOM ALKALOID CONTENT BY LC-TQ  
ALKL-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	VALUE (MG/G)	ACTION LIMIT	LOD	LOQ	STATUS
7-Hydroxymitragynine	0.00228 %	0.023 mg/g	N/A	0.002 ug/g	0.011 ug/g	N/A
Mitraphylline	0.00002 %	0.000 mg/g	N/A	0.004 ug/g	0.019 ug/g	N/A
Total Minor Alkaloids	0.00230 %	0.023 mg/g	N/A	0.006 ug/g	0.03 ug/g	N/A

ECOLI

**TOTAL E. COLI & COLIFORMS - PLATE**LAB-TM-059 - ENUMERATION OF ESCHERICHIA COLI AND TOTAL COLIFORM IN FOODS AND DIETARY SUPPLEMENTS  
ECOLI-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
E. coli	ND	N/A	10 CFU/g	10 CFU/g	N/A
Total Coliforms	450 CFU/g	N/A	10 CFU/g	10 CFU/g	N/A

MOS

**MOISTURE CONTENT - LOSS ON DRYING**LAB-TM-008 - LOSS ON DRYING  
MOS-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Moisture	4.60 %	N/A	N/A	N/A	N/A

AFLA

**AFLATOXINS - USP <561>**LAB-TM-043 - USP 561 AFLATOXINS ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC-TQ  
AFLA-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Aflatoxin B1	ND	N/A	0.001 ug/g	0.002 ug/g	N/A
Aflatoxin B2	ND	N/A	0.001 ug/g	0.002 ug/g	N/A
Aflatoxin G1	ND	N/A	0.001 ug/g	0.002 ug/g	N/A
Aflatoxin G2	ND	N/A	0.001 ug/g	0.002 ug/g	N/A
Ochratoxin A	ND	N/A	0.001 ug/g	0.002 ug/g	N/A
Aflatoxins (Sum of B1, B2, G1, and G2)	0.000 ug/g	N/A	N/A	N/A	N/A



PGUSP

## PESTICIDES - USP &lt;561&gt;M - GC/TQ

LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ  
PGUSP-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Aldrin + Dieldrin	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Bromophos Ethyl	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Bromophos Methyl	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Bromopropylate	ND	3.00 ug/g	6 ng/g	12 ng/g	PASS
Chlordane (Sum of -Cis, -Trans, Oxychlordane)	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Chlorthal-Dimethyl	ND	0.01 ug/g	0.02 ng/g	0.04 ng/g	PASS
DDT (Sum of O,P-DDE, P,P-DDE, O,P-DDT, P,P-DDT, O,P-TDE, and P,P-TDE)	ND	1.00 ug/g	2 ng/g	4 ng/g	PASS
Dicofol	ND	0.50 ug/g	1 ng/g	2 ng/g	PASS
Endosulfan (Sum of Isomers and Sulphate)	ND	3.00 ug/g	6 ng/g	12 ng/g	PASS
Endrin	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Fenchlorophos (Sum of Fenchlorophos and Fenchlorophos-Oxon)	ND	0.10 ug/g	0.2 ng/g	0.4 ng/g	PASS
Fenitrothion	ND	0.50 ug/g	1 ng/g	2 ng/g	PASS
Fenvalerate	ND	1.50 ug/g	3 ng/g	6 ng/g	PASS
Fluvalinate-Tau	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Heptachlor (Sum of Heptachlor, Cis-Heptachlorepoide, and Trans-Heptachlorepoide)	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Hexachlorobenzene	ND	0.10 ug/g	0.2 ng/g	0.4 ng/g	PASS
Hexachlorocyclohexane (Sum of Isomers Alpha-, Beta-, Delta-, and Epsilon-)	ND	0.30 ug/g	0.6 ng/g	1.2 ng/g	PASS
Lindane (Gamma-Hexachlorocyclohexane)	ND	0.60 ug/g	1.2 ng/g	2.4 ng/g	PASS
Methacrifos	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Methoxychlor	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Mirex	ND	0.01 ug/g	0.02 ng/g	0.04 ng/g	PASS
Parathion Ethyl + Paraoxon Ethyl	ND	0.50 ug/g	1 ng/g	2 ng/g	PASS
Pentachloroanisole	ND	0.01 ug/g	0.02 ng/g	0.04 ng/g	PASS
Procymidone	ND	0.10 ug/g	0.2 ng/g	0.4 ng/g	PASS
Quintozene (Sum of Quintozene, Pentachloroaniline, and Methyl-Pentachlorophenyl Sulfide)	ND	1.00 ug/g	2 ng/g	4 ng/g	PASS

Modified Test Method does not include the following analytes:

Bromide, inorganic (calculated as bromide ion)

Chlorpyrifos-methyl

Dichlofluanid

Dithiocarbamates (as CS<sub>2</sub>)

Parathion-methyl and Paraoxon-methyl (sum of)



PGUSP

**PESTICIDES - USP <561>M - GC/TQ**LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ  
PGUSP-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
S-421	ND	0.02 ug/g	0.04 ng/g	0.08 ng/g	PASS
Tecnazene	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Tetradifon	ND	0.30 ug/g	0.6 ng/g	1.2 ng/g	PASS
Vinclozolin	ND	0.40 ug/g	0.8 ng/g	1.6 ng/g	PASS

Modified Test Method does not include the following analytes:

Bromide, inorganic (calculated as bromide ion)

Chlorpyrifos-methyl

Dichlofluanid

Dithiocarbamates (as CS<sub>2</sub>)

Parathion-methyl and Paraoxon-methyl (sum of)



PLUSP

## PESTICIDES - USP &lt;561&gt;M - LC/TQ

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ  
PLUSP-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Acephate	ND	0.4 ug/g	12.5 ng/g	25 ng/g	PASS
Alachlor	ND	N/A	12.5 ng/g	25 ng/g	N/A
Azinphos Ethyl	ND	N/A	12.5 ng/g	25 ng/g	N/A
Azinphos Methyl	ND	N/A	12.5 ng/g	25 ng/g	N/A
Chlorfenvinphos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Chlorpyrifos Ethyl	ND	N/A	12.5 ng/g	25 ng/g	N/A
Cyfluthrin	ND	1.0 ug/g	12.5 ng/g	25 ng/g	PASS
Cypermethrin	0.185 ug/g	1.0 ug/g	12.5 ng/g	25 ng/g	PASS
Deltamethrin	ND	N/A	12.5 ng/g	25 ng/g	N/A
Diazinon	ND	0.2 ug/g	12.5 ng/g	25 ng/g	PASS
Dichlorvos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Dimethoate + Omethoate	ND	N/A	12.5 ng/g	25 ng/g	N/A
Ethion	ND	N/A	12.5 ng/g	25 ng/g	N/A
Etrimphos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Fenpropathrin	ND	N/A	12.5 ng/g	25 ng/g	N/A
Fensulfothion (Sum of Fensulfothion, Fensulfothion-Oxon, Fensulfothion-Oxon-Sulfone, and Fensulfothion-Sulfone)	ND	N/A	12.5 ng/g	25 ng/g	N/A
Fenthion (Sum of Fenthion, Fenthion-Oxon, Fenthion-Oxon-Sulfone, Fenthion-Oxon-Sulfoxide, Fenthion-Sulfone, and Fenthion-Sulfoxide)	ND	N/A	12.5 ng/g	25 ng/g	N/A
Flucythrinate	ND	N/A	12.5 ng/g	25 ng/g	N/A
Fonophos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Lambda-Cyhalothrin	0.045 ug/g	N/A	12.5 ng/g	25 ng/g	N/A
Malathion + Malaoxon	ND	N/A	12.5 ng/g	25 ng/g	N/A
Mecarbam	ND	N/A	12.5 ng/g	25 ng/g	N/A
Methamidophos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Methidathion	ND	N/A	12.5 ng/g	25 ng/g	N/A
Monocrotophos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Pendimethalin	ND	N/A	12.5 ng/g	25 ng/g	N/A
Permethrins (Sum of Cis- and Trans-Permethrin)	ND	N/A	12.5 ng/g	25 ng/g	N/A
Phosalone	ND	N/A	12.5 ng/g	25 ng/g	N/A
Phosmet	ND	N/A	12.5 ng/g	25 ng/g	N/A

Modified Test Method does not include the following analytes:

Bromide, inorganic (calculated as bromide ion)

Chlorpyrifos-methyl

Dichlofluanid

Dithiocarbamates (as CS<sub>2</sub>)

Parathion-methyl and Paraoxon-methyl (sum of)



PLUSP

## PESTICIDES - USP &lt;561&gt;M - LC/TQ

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ  
PLUSP-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Piperonyl Butoxide	ND	N/A	12.5 ng/g	25 ng/g	N/A
Pirimiphos Ethyl	ND	N/A	12.5 ng/g	25 ng/g	N/A
Pirimiphos Methyl (Sum of Pirimiphos-Methyl and n- Desethyl-Pirimiphos-Methyl)	ND	N/A	12.5 ng/g	25 ng/g	N/A
Profenophos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Prothiophos	ND	N/A	12.5 ng/g	25 ng/g	N/A
Pyrethrins (Sum of Cinerin 1, Jasmolin 1, and Pyrethrin 1)	ND	N/A	12.5 ng/g	25 ng/g	N/A
Quinalphos	ND	N/A	12.5 ng/g	25 ng/g	N/A

Modified Test Method does not include the following analytes:

Bromide, inorganic (calculated as bromide ion)

Chlorpyrifos-methyl

Dichlofluanid

Dithiocarbamates (as CS<sub>2</sub>)

Parathion-methyl and Paraoxon-methyl (sum of)



TAMC

**TOTAL AEROBIC BACTERIA - PLATE**LAB-TM-060 - ENUMERATION OF TOTAL AEROBIC COUNT IN FOODS AND DIETARY SUPPLEMENTS  
TAMC-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Aerobic Count	103000 CFU/g	N/A	1000 CFU/g	1000 CFU/g	N/A

SS

**SALMONELLA & STEC- QPCR**LAB-TM-006 - MICROBIAL ANALYSIS BY QPCR  
SS-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Salmonella Spp	ND	N/A	N/A	N/A	N/A
Shiga Toxin Producing E. coli	ND	N/A	N/A	N/A	N/A

AWA

**WATER ACTIVITY**LAB-TM-009 - DETERMINATION OF WATER ACTIVITY  
AWA-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Water Activity	0.281 aw	N/A	N/A	N/A	N/A

HVMET

**HEAVY METALS - 4**LAB-TM-044 - DETERMINATION OF HEAVY METALS BY ICP-MS  
HVMET-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	VALUE (MG/G)	ACTION LIMIT	LOD	LOQ	STATUS
Arsenic	0.283 ug/g	0.000 mg/g	N/A	0.198 ug/kg	0.662 ug/kg	N/A
Cadmium	0.035 ug/g	0.000 mg/g	N/A	0.082 ug/kg	0.272 ug/kg	N/A
Lead	0.681 ug/g	0.001 mg/g	N/A	0.155 ug/kg	0.515 ug/kg	N/A
Mercury	0.025 ug/g	0.000 mg/g	N/A	0.017 ug/kg	0.057 ug/kg	N/A

TYMFD

**TOTAL YEAST & MOLD - PLATE**LAB-TM-061 - ENUMERATION OF YEAST AND MOLD IN FOODS AND DIETARY SUPPLEMENTS  
TYMFD-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Yeast and Mold	30 CFU/g	N/A	10 CFU/g	10 CFU/g	N/A

PSEUD

**PSEUDOMONAS AERUGINOSA - PLATE**LAB-TM-088 - DETECTION OF PRESUMPTIVE PSEUDOMONAS AERUGINOSA  
PSEUD-DTS-250325-040-01 - MON, MAR 31, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Pseudomonas aeruginosa	ND	N/A	100 CFU/g	100 CFU/g	N/A

FTIRR

**IDENTIFICATION BY FTIR - REPORT**NULL IDENTIFICATION BY FTIR  
FTIRR-DTS-250325-040-01 - FRI, MAR 28, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Quality Index Score	99.50 %	N/A	N/A	N/A	N/A

Matched Library Item: Raw Leaf

