

# CERTIFICATE OF ANALYSIS

**SAMPLE NAME:** PART # X30005 - MIT45 MIT45 (15 ML) 12 PACK  
**SAMPLE CODE:** DTS-250204-003  
**CLIENT:** MIT45  
**BATCH RESULT:** PASS

**MATRIX NAME:** Tincture - Oil Based  
**SAMPLE TYPE:** Quality Assurance  
**RECEIVED DATE:** Wed, Feb 5, 2025  
**PUBLISHED DATE:** Mon, Feb 10, 2025  
**BATCH/LOT CODE:** 00-2098  
**BATCH SIZE:** 135mL  
**SAMPLE SIZE:** 135mL  
**AVERAGE UNIT WEIGHT:** 17.9415g (Density (1.1961 g/mL) x 15mL package. 5 servings/package.)

**MITRAGYNNINE** 24.31 mg / serv

**TOTAL MAJOR ALKALOIDS** 34.59 mg / serv

**TOTAL MINOR ALKALOIDS** 0.00 mg / serv



ALKU ✓  
**Kratom Alkaloids**  
High Level

ALKL ✓  
**Kratom Alkaloids**  
Low Level

SOL ✓  
**Residual Solvents**  
USP <467>

SAL ✓  
**Salmonella**  
25g qPCR

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

PGUSP ✓  
**Pesticides**  
USP <561>

PLUSP ✓  
**Pesticides**  
USP <561>

TAMC ✓  
**Total Aerobic Bacteria**  
Plate

DEN ✓  
**Density of Liquids**

SAUR ✓  
**Staphylococcus aureus**  
Plate

AWA ✓  
**Water Activity**

HVMET ✓  
**Heavy Metals**  
4

TYMFD ✓  
**Total Yeast & Mold**  
Plate

FTIRR ✓  
**Identification by FTIR**  
Report

## APPROVALS

### RESULTS REVIEWED BY:



**Leslie Varela**  
Laboratory Director

Cambium Analytica  
Monday, Feb 10, 2025

### RESULTS CERTIFIED BY:



**Douglas Smith**  
VP - Scientific Operations

Cambium Analytica  
Monday, Feb 10, 2025

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ALKU

**KRATOM ALKALOIDS - HIGH LEVEL**LAB-TM-052 - DETERMINATION OF KRATOM ALKALOID CONTENT BY UPLC-DAD  
ALKU-DTS-250204-003-01 - MON, FEB 10, 2025

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
Mitragynine	0.6774 %	6.774 mg/g	24.31 mg	121.54 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Paynantheine	0.1352 %	1.352 mg/g	4.85 mg	24.26 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciociliatine	0.0804 %	0.804 mg/g	2.88 mg	14.42 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciogyneine	0.0711 %	0.711 mg/g	2.55 mg	12.76 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Total Major Alkaloids	0.9641 %	9.641 mg/g	34.59 mg	172.97 mg	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-250204-003-01 - MON, FEB 10, 2025

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
7-Hydroxymitragynine	0.0001 %	0.001 mg/g	0.00 mg	0.02 mg	N/A	0.002 ug/g	0.011 ug/g	N/A
Mitraphylline	0.00002 %	0 mg/g	0.00 mg	0.00 mg	N/A	0.004 ug/g	0.019 ug/g	N/A
Total Minor Alkaloids	0.00012 %	0.001 mg/g	0.00 mg	0.02 mg	N/A	0.006 ug/g	0.03 ug/g	N/A



SOL

## RESIDUAL SOLVENTS - USP &lt;467&gt;

LAB-TM-004 - DETERMINATION OF RESIDUAL SOLVENTS  
SOL-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
1,2-Dichloroethane	ND	5 ug/g	0.4 ug/g	1.00 ug/g	PASS
2-Methylbutane	ND	N/A	1.54 ug/g	5.14 ug/g	N/A
2-Methylpentane	ND	N/A	0.046 ug/g	0.154 ug/g	N/A
2,2-Dimethylbutane	ND	N/A	0.98 ug/g	3.27 ug/g	N/A
2,3-Dimethylbutane	ND	N/A	2.19 ug/g	7.32 ug/g	N/A
3-Methylpentane	ND	N/A	0.73 ug/g	2.44 ug/g	N/A
Acetone	ND	5000 ug/g	1.57 ug/g	5.23 ug/g	PASS
Acetonitrile	ND	410 ug/g	1.85 ug/g	6.17 ug/g	PASS
Benzene	ND	2 ug/g	0.18 ug/g	0.50 ug/g	PASS
Butane	ND	N/A	1.68 ug/g	5.59 ug/g	N/A
Chloroform	ND	60 ug/g	0.78 ug/g	1.00 ug/g	PASS
Ethanol	ND	5000 ug/g	6.02 ug/g	20.1 ug/g	PASS
Ethyl Acetate	ND	5000 ug/g	1.95 ug/g	6.49 ug/g	PASS
Ethyl Ether	ND	5000 ug/g	1.37 ug/g	4.55 ug/g	PASS
Ethylene Oxide	ND	N/A	0.15 ug/g	0.49 ug/g	N/A
Heptane	ND	5000 ug/g	1.31 ug/g	4.37 ug/g	PASS
Hexane	ND	290 ug/g	1.42 ug/g	4.74 ug/g	PASS
Isobutane	ND	N/A	1.6 ug/g	5.34 ug/g	N/A
Isopropyl Alcohol	ND	N/A	4.9 ug/g	16.3 ug/g	N/A
Methanol	ND	3000 ug/g	7.89 ug/g	26.4 ug/g	PASS
Methylene Chloride	ND	600 ug/g	1.36 ug/g	4.53 ug/g	PASS
Neopentane	ND	N/A	1.49 ug/g	4.97 ug/g	N/A
Pentane	ND	5000 ug/g	1.46 ug/g	4.87 ug/g	PASS
Propane	ND	N/A	1.95 ug/g	6.51 ug/g	N/A
Toluene	ND	890 ug/g	1.88 ug/g	6.26 ug/g	PASS
Total Xylenes	ND	2170 ug/g	2.02 ug/g	6.72 ug/g	PASS
Trichloroethylene	ND	80 ug/g	0.29 ug/g	0.96 ug/g	PASS
Butanes (Sum of Butane and Isobutane)	0 ug/g	N/A	N/A	N/A	N/A
Hexanes (Sum of Hexane, 2,2-Dimethylbutane, 2,3-Dimethylbutane, 2-Methylpentane, and 3-Methylpentane)	0 ug/g	290 ug/g	N/A	N/A	PASS
Pentanes (Sum of Pentane, 2-Methylbutane, and Neopentane)	0 ug/g	5000 ug/g	N/A	N/A	PASS



SAL

**SALMONELLA - 25G QPCR**LAB-TM-063 - DETECTION AND ISOLATION OF SALMONELLA SPP. IN FOODS AND DIETARY SUPPLEMENTS  
SAL-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Salmonella Spp	ND	Detection	N/A	N/A	PASS

ECOLI

**TOTAL E. COLI & COLIFORMS - PLATE**LAB-TM-059 - ENUMERATION OF ESCHERICHIA COLI AND TOTAL COLIFORM IN FOODS AND DIETARY SUPPLEMENTS  
ECOLI-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
E. coli	ND	Detection	10 CFU/g	10 CFU/g	PASS
Total Coliforms	ND	1000 CFU/g	10 CFU/g	10 CFU/g	PASS



PGUSP

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

LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ  
PGUSP-DTS-250204-003-01 - MON, FEB 10, 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



PGUSP

**PESTICIDES - USP <561> - GC/TQ**LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ  
PGUSP-DTS-250204-003-01 - MON, FEB 10, 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



PLUSP

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

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ  
PLUSP-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Acephate	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Alachlor	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Azinphos Ethyl	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Azinphos Methyl	ND	1.00 ug/g	12.5 ng/g	25 ng/g	PASS
Chlorfenvinphos	ND	0.50 ug/g	12.5 ng/g	25 ng/g	PASS
Chlorpyrifos Ethyl	ND	0.20 ug/g	12.5 ng/g	25 ng/g	PASS
Cyfluthrin	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Cypermethrin	ND	1.00 ug/g	12.5 ng/g	25 ng/g	PASS
Deltamethrin	ND	0.50 ug/g	12.5 ng/g	25 ng/g	PASS
Diazinon	ND	0.50 ug/g	12.5 ng/g	25 ng/g	PASS
Dichlorvos	ND	1.00 ug/g	12.5 ng/g	25 ng/g	PASS
Dimethoate + Omethoate	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Ethion	ND	2.00 ug/g	12.5 ng/g	25 ng/g	PASS
Etrimphos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Fenpropathrin	ND	0.03 ug/g	12.5 ng/g	25 ng/g	PASS
Fensulfothion (Sum of Fensulfothion, Fensulfothion-Oxon, Fensulfothion-Oxon-Sulfone, and Fensulfothion-Sulfone)	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Fenthion (Sum of Fenthion, Fenthion-Oxon, Fenthion-Oxon-Sulfone, Fenthion-Oxon-Sulfoxide, Fenthion-Sulfone, and Fenthion-Sulfoxide)	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Flucythrinate	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Fonophos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Lambda-Cyhalothrin	ND	1.00 ug/g	12.5 ng/g	25 ng/g	PASS
Malathion + Malaaxon	ND	1.00 ug/g	12.5 ng/g	25 ng/g	PASS
Mecarbam	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Methamidophos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Methidathion	ND	0.20 ug/g	12.5 ng/g	25 ng/g	PASS
Monocrotophos	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Pendimethalin	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Permethrins (Sum of Cis- and Trans-Permethrin)	ND	1.00 ug/g	12.5 ng/g	25 ng/g	PASS
Phosalone	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Phosmet	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS



PLUSP

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

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ  
PLUSP-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Piperonyl Butoxide	ND	3.00 ug/g	12.5 ng/g	25 ng/g	PASS
Pirimiphos Ethyl	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Pirimiphos Methyl (Sum of Pirimiphos-Methyl and n- Desethyl-Pirimiphos-Methyl)	ND	4.00 ug/g	12.5 ng/g	25 ng/g	PASS
Profenophos	ND	0.10 ug/g	12.5 ng/g	25 ng/g	PASS
Prothiophos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Pyrethrins (Sum of Cinerin 1, Jasmolin 1, and Pyrethrin 1)	ND	3.00 ug/g	12.5 ng/g	25 ng/g	PASS
Quinalphos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS





TAMC

**TOTAL AEROBIC BACTERIA - PLATE**LAB-TM-060 - ENUMERATION OF TOTAL AEROBIC COUNT IN FOODS AND DIETARY SUPPLEMENTS  
TAMC-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Aerobic Count	ND	10000 CFU/g	100 CFU/g	100 CFU/g	PASS

DEN

**DENSITY OF LIQUIDS**LAB-TM-017 - BRIX & DENSITY ANALYSIS  
DEN-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Density	1.196 g/mL	N/A	N/A	N/A	N/A

SAUR

**STAPHYLOCOCCUS AUREUS - PLATE**LAB-TM-062 - ENUMERATION OF STAPHYLOCOCCUS AUREUS IN FOODS AND DIETARY SUPPLEMENTS  
SAUR-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
S. aureus	ND	Detection	10 CFU/g	10 CFU/g	PASS

AWA

**WATER ACTIVITY**LAB-TM-009 - DETERMINATION OF WATER ACTIVITY  
AWA-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Water Activity	0.6 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-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
Arsenic	ND	N/A	N/A	N/A	1.00 ug/g	0.198 ug/kg	0.662 ug/kg	PASS
Cadmium	ND	N/A	N/A	N/A	1.00 ug/g	0.082 ug/kg	0.272 ug/kg	PASS
Lead	ND	N/A	N/A	N/A	3.00 ug/g	0.155 ug/kg	0.515 ug/kg	PASS
Mercury	0 ug/g	0 mg/g	0.00 ug	0.01 ug	1.00 ug/g	0.017 ug/kg	0.057 ug/kg	PASS

TYMFD

**TOTAL YEAST & MOLD - PLATE**LAB-TM-061 - ENUMERATION OF YEAST AND MOLD IN FOODS AND DIETARY SUPPLEMENTS  
TYMFD-DTS-250204-003-01 - MON, FEB 10, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Yeast and Mold	ND	100 CFU/g	100 CFU/g	100 CFU/g	PASS





### IDENTIFICATION BY FTIR - REPORT

NULL IDENTIFICATION BY FTIR  
FTIR-DTS-250204-003-01 - FRI, FEB 7, 2025

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Quality Index Score	99.9 %	95-100 %			PASS

