

CERTIFICATE OF ANALYSIS



SAMPLE NAME: PART# X30005 - MIT45 MIT45 (15 ML) 12 PACK

SAMPLE CODE: DTS-241108-002

CLIENT: MIT45

BATCH RESULT: PASS

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MATRIX NAME: Tincture - Oil Based
SAMPLE TYPE: Quality Assurance
RECEIVED DATE: Wed, Nov 13, 2024
PUBLISHED DATE: Mon, Nov 18, 2024
BATCH/LOT CODE: 00-1830
BATCH SIZE: N/A
SAMPLE SIZE: 1U
AVERAGE UNIT WEIGHT: 17.8605g (Density (g/mL) * 15mL. 5 servings/pkg.)

MITRAGYNINE	24.89 mg / serv
TOTAL MAJOR ALKALOIDS	35.62 mg / serv
TOTAL MINOR ALKALOIDS	0.01 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, Nov 18, 2024

RESULTS CERTIFIED BY:

Douglas Smith
VP - Scientific Operations

Cambium Analytica
Monday, Nov 18, 2024

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ALKU

KRATOM ALKALOIDS - HIGH LEVELLAB-TM-052 - DETERMINATION OF KRATOM ALKALOID CONTENT BY UPLC-DAD
ALKU-DTS-241108-002-01 - FRI, NOV 15, 2024

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
Mitragynine	0.697 %	6.967 mg/g	24.89 mg	124.43 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Paynantheine	0.141 %	1.413 mg/g	5.05 mg	25.24 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciociliatine	0.086 %	0.862 mg/g	3.08 mg	15.40 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciogynine	0.073 %	0.729 mg/g	2.60 mg	13.02 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Total Major Alkaloids	0.997 %	9.971 mg/g	35.62 mg	178.09 mg	N/A	N/A	N/A	N/A

ALKL

KRATOM ALKALOIDS - LOW LEVELLAB-TM-047 - DETERMINATION OF KRATOM ALKALOID CONTENT BY LC-TQ
ALKL-DTS-241108-002-01 - MON, NOV 18, 2024

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
7-Hydroxymitragynine	0.00016 %	0.00159 mg/g	0.01 mg	0.03 mg	N/A	0.002 ug/g	0.011 ug/g	N/A
Mitraphylline	ND	N/A	N/A	N/A	N/A	0.004 ug/g	0.019 ug/g	N/A
Total Minor Alkaloids	0.00016 %	0.00160 mg/g	0.01 mg	0.03 mg	N/A	0.006 ug/g	0.03 ug/g	N/A



SOL

RESIDUAL SOLVENTS - USP <467>

LAB-TM-004 - DETERMINATION OF RESIDUAL SOLVENTS
SOL-DTS-241108-002-01 - FRI, NOV 15, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
1,2-Dichloroethane	ND	5 ug/g	0.4 ug/g	1.34 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	0.59 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	2.59 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)	ND	N/A			N/A
Hexanes (Sum of Hexane, 2,2-Dimethylbutane, 2,3-Dimethylbutane, 2-Methylpentane, and 3-Methylpentane)	ND	290 ug/g			PASS
Pentanes (Sum of Pentane, 2-Methylbutane, and Neopentane)	ND	5000 ug/g			PASS



SAL **SALMONELLA - 25G QPCR**
LAB-TM-063 - DETECTION AND ISOLATION OF SALMONELLA SPP. IN FOODS AND DIETARY SUPPLEMENTS
SAL-DTS-241108-002-01 - FRI, NOV 15, 2024



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-241108-002-01 - FRI, NOV 15, 2024



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 <561> - GC/TQ

LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ
PGUSP-DTS-241108-002-01 - MON, NOV 18, 2024

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 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 ug/g	2 ng/g	4 ng/g	PASS
Dicofol	ND	0.5 ug/g	1 ng/g	2 ng/g	PASS
Endosulfan (Sum of Isomers and Sulphate)	ND	3 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	0.1 ug/g	0.2 ng/g	0.4 ng/g	PASS
Fenitrothion	ND	0.5 ug/g	1 ng/g	2 ng/g	PASS
Fenvalerate	ND	1.5 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-Heptachlorepoxyde, and Trans-Heptachlorepoxyde)	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Hexachlorobenzene	ND	0.1 ug/g	0.2 ng/g	0.4 ng/g	PASS
Hexachlorocyclohexane (Sum of Isomers Alpha-, Beta-, Delta-, and Epsilon-)	ND	0.3 ug/g	0.6 ng/g	1.2 ng/g	PASS
Lindane (Gamma-Hexachlorocyclohexane)	ND	0.6 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	0.5 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	0.1 ug/g	0.2 ng/g	0.4 ng/g	PASS
Quintozene (Sum of Quintozene, Pentachloroaniline, and Methyl-Pentachlorophenyl Sulfide)	ND	1 ug/g	2 ng/g	4 ng/g	PASS



PGUSP

PESTICIDES - USP <561> - GC/TQLAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ
PGUSP-DTS-241108-002-01 - MON, NOV 18, 2024

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	0.3 ug/g	0.6 ng/g	1.2 ng/g	PASS
Vinclozolin	ND	0.4 ug/g	0.8 ng/g	1.6 ng/g	PASS



PLUSP

PESTICIDES - USP <561> - LC/TQ

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ
PLUSP-DTS-241108-002-01 - MON, NOV 18, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Acephate	ND	0.1 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	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Azinphos Methyl	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Chlorfenvinphos	ND	0.5 ug/g	12.5 ng/g	25 ng/g	PASS
Chlorpyrifos Ethyl	ND	0.2 ug/g	12.5 ng/g	25 ng/g	PASS
Cyfluthrin	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Cypermethrin	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Deltamethrin	ND	0.5 ug/g	12.5 ng/g	25 ng/g	PASS
Diazinon	ND	0.5 ug/g	12.5 ng/g	25 ng/g	PASS
Dichlorvos	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Dimethoate + Omethoate	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Ethion	ND	2 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 ug/g	12.5 ng/g	25 ng/g	PASS
Malathion + Malaaxon	ND	1 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	0.2 ug/g	12.5 ng/g	25 ng/g	PASS
Monocrotophos	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Pendimethalin	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Permethrins (Sum of Cis- and Trans-Permethrin)	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Phosalone	ND	0.1 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 <561> - LC/TQ

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ
PLUSP-DTS-241108-002-01 - MON, NOV 18, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Piperonyl Butoxide	ND	3 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 ug/g	12.5 ng/g	25 ng/g	PASS
Profenophos	ND	0.1 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 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-241108-002-01 - FRI, NOV 15, 2024



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 - BRUX & DENSITY ANALYSIS
 DEN-DTS-241108-002-01 - THU, NOV 14, 2024



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Density	1.191 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-241108-002-01 - FRI, NOV 15, 2024



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-241108-002-01 - FRI, NOV 15, 2024



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Water Activity	0.598 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-241108-002-01 - FRI, NOV 15, 2024



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	0.005 ug/g	N/A	0.02 ug	0.10 ug	3.00 ug/g	0.155 ug/kg	0.515 ug/kg	PASS
Mercury	0.001 ug/g	N/A	0.00 ug	0.01 ug	1.00 ug/g	0.017 ug/kg	0.057 ug/kg	PASS

TYMF **TOTAL YEAST & MOLD - PLATE**
 LAB-TM-061 - ENUMERATION OF YEAST AND MOLD IN FOODS AND DIETARY SUPPLEMENTS
 TYMFD-DTS-241108-002-01 - MON, NOV 18, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Yeast and Mold	ND	100 CFU/g	10 CFU/g	10 CFU/g	PASS

FTIRR **IDENTIFICATION BY FTIR - REPORT**
 NULL IDENTIFICATION BY FTIR
 FTIRR-DTS-241108-002-01 - THU, NOV 14, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Quality Index Score	99.961 %	95-100 %			PASS

