Columbia LABORATORIES
A Tentamus Company

12423 NE Whitaker Way
Portland, OR 97230
503-254-1794

Report Number: 22-002482/D002.R000
Report Date: 03/10/2022
Purchase Order:
Received: 03/03/22 10:15 AM

Customer: Mitragynine Extracts

Sample ID: 22-01/088/X/65/SA/A
Sample Matrix: Kratom extract
Laboratory ID: 22-002482-0005-00
Evidence of Cooling: No
Temp: 18.8 °C
Relinquished by: UPS

Sample Results

Metals

Heavy Metals Profile K

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
Arsenic	< LOQ	mg/kg	0.0335	03/08/22	AOAC 2013.06 (mod.)[1]	
Cadmium	< LOQ	mg/kg	0.0335	03/08/22	AOAC 2013.06 (mod.)[1]	
Lead	0.0475	mg/kg	0.0335	03/08/22	AOAC 2013.06 (mod.)[1]	
Mercury	< LOQ	mg/kg	0.0168	03/08/22	AOAC 2013.06 (mod.)[1]	
Nickel	0.514	mg/kg	0.0670	03/08/22	AOAC 2013.06 (mod.)[1]	

1) trace metals in food by Inductively Coupled Mass Spectrometry

Microbiology

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
Enterobacteriaceae	< LOQ	cfu/g	100	03/05/22	AOAC 2003.01	
Salmonella spp. by PCR	Negative	/25g		03/05/22	AOAC 2020.02[2]	

E. coli/Coliform Count (EC) Plate

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
E.coli	< LOQ	cfu/g	100	03/06/22	AOAC 991.14 (Petrifilm)	
Total Coliforms	< LOQ	cfu/g	100	03/06/22	AOAC 991.14 (Petrifilm)	

Yeast and Mold

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
Mold (RAPID Petrifilm)	< LOQ	cfu/g	100	03/07/22	AOAC 2014.05 (RAPID)	
Yeast (RAPID Petrifilm)	< LOQ	cfu/g	100	03/07/22	AOAC 2014.05 (RAPID)	

2) GENE-UP® Assay

Mitragynine

Mitragynine Full Alkaloid Panel

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
7-Hydroxymitragynine†	0.0588	%	0.0100	03/07/22	In house method by HPLC-DAD	
Isorhynchophylline	< LOQ	%	0.0500	03/07/22	In house method by HPLC-DAD	
Mitragynine†	63.5	%	0.0500	03/07/22	In house method by HPLC-DAD	

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Mitragynine

Mitragynine Full Alkaloid Panel

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
Mitraphylline	< LOQ	%	0.0500	03/07/22	In house method by HPLC-DAD	
Paynantheine	3.70	%	0.0500	03/07/22	In house method by HPLC-DAD	
Speciociliatine	1.57	%	0.0500	03/07/22	In house method by HPLC-DAD	
Speciogynine	2.68	%	0.0500	03/07/22	In house method by HPLC-DAD	

Pesticides

P2250 Multi-Residue Pesticide Profile

Analyte	Result	Units	Analyzed	Method	Notes
Multi-Residue Pesticide Profile- Kratom	< LOQ for all analytes	mg/kg	03/09/22	AOAC 2007.01 & EN 15662 (mod)	

Solvents

Residual Solvents (Comprehensive)

Analyte	Result	Units	LOQ	Analyzed	Method	Notes
1-Butanol	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
1-Pentanol	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
1,2-Dichloroethane	< LOQ	µg/g	1	03/09/22	Residual Solvents by GC/MS	
1,4-Dioxane	< LOQ	µg/g	100	03/09/22	Residual Solvents by GC/MS	
2-Butanol	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
2-Ethoxyethanol	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
2-methyl-1-propanol	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
2-Methylbutane (Isopentane)	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
2-Methylpentane	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
2-Propanol (IPA)	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
2,2-Dimethylbutane	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
2,2-Dimethylpropane (neo-pentane)	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
2,3-Dimethylbutane	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
3-Methyl-(1)-Butanol	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
3-Methylpentane	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
Acetone	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Acetonitrile	< LOQ	µg/g	100	03/09/22	Residual Solvents by GC/MS	
Anisole	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Benzene	< LOQ	µg/g	1.00	03/09/22	Residual Solvents by GC/MS	
Butanes (sum)	< LOQ	µg/g	400	03/09/22	Residual Solvents by GC/MS	
Butyl acetate	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Chloroform	< LOQ	µg/g	1.00	03/09/22	Residual Solvents by GC/MS	
Cyclohexane	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Ethanol	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Ethyl acetate	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Ethyl benzene	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Ethyl ether	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Ethyl Formate	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Ethylene glycol	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Ethylene oxide	< LOQ	µg/g	1.00	03/09/22	Residual Solvents by GC/MS	
Hexanes (sum)	< LOQ	µg/g	150	03/09/22	Residual Solvents by GC/MS	
Isobutyl acetate	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	

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Analyte	Result	Units	LOQ	Analyzed	Method	Notes
Isopropyl acetate	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Isopropylbenzene (Cumene)	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
m,p-Xylene	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Methanol	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Methyl-t-butyl ether	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Methylacetat	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Methylene chloride	16.4	µg/g	1.00	03/09/22	Residual Solvents by GC/MS	
Methylethylketone	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Methylisobutylketone	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Methylpropane (Isobutane)	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
n-Butane	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
n-Heptane	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
n-Hexane	< LOQ	µg/g	30.0	03/09/22	Residual Solvents by GC/MS	
n-Pentane	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
n-Propanol	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
o-Xylene	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Pentanes (sum)	< LOQ	µg/g	600	03/09/22	Residual Solvents by GC/MS	
Propane	< LOQ	µg/g	200	03/09/22	Residual Solvents by GC/MS	
Propyl Acetate	< LOQ	µg/g	500	03/09/22	Residual Solvents by GC/MS	
Tetrahydrofuran	< LOQ	µg/g	100	03/09/22	Residual Solvents by GC/MS	
Toluene	< LOQ	µg/g	100	03/09/22	Residual Solvents by GC/MS	
Total Residual Solvents	< LOQ	µg/g	5000	03/09/22	Residual Solvents by GC/MS	
Total Xylenes	< LOQ	µg/g	400	03/09/22	Residual Solvents by GC/MS	
Total Xylenes and Ethyl benzene	< LOQ	µg/g	600	03/09/22	Residual Solvents by GC/MS	
Trichloroethylene	< LOQ	µg/g	1.00	03/09/22	Residual Solvents by GC/MS	