



CERTIFICATE OF ANALYSIS

STATUS: RELEASED REVISION: 00

DATE: 05/27/2021

Analysis ID No. 211543
 TDA License No. 2020002
 ISO/IEC No. 1055838
 Purchase Order: 20210464

ALKALOIDS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Mitragynine	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	31.510 w/w% 315.104 mg/g	Results Reported
Paynantheine	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	13.168 w/w% 131.678 mg/g	Results Reported
Speciogynine	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	6.699 w/w% 66.993 mg/g	Results Reported
Speciociliatine	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	17.436 w/w% 174.360 mg/g	Results Reported
7-OH-Mitragynine	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only % Total Alkaloids: NMT 2%	< 0.01%	PASS
Mitraphylline	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	< 0.01%	Results Reported
Isorhynchophylline	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	< 0.01%	Results Reported
Total Alkaloids	UHPLC-DAD	0.01 w/w%	w/w%: Report Only mg/g: Report Only	68.813 w/w% 688.135 mg/g	Results Reported

HEAVY METALS					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Lead	USP <232> <233> by ICP-MS	10 ppb	NMT 1,000 ppb	36.7 ppb	PASS
Mercury	USP <232> <233> by ICP-MS	5 ppb	NMT 500 ppb	< LOQ	PASS
Cadmium	USP <232> <233> by ICP-MS	10 ppb	NMT 300 ppb	< LOQ	PASS
Arsenic	USP <232> <233> by ICP-MS	10 ppb	NMT 1,500 ppb	< LOQ	PASS
Nickel	USP <232> <233> by ICP-MS	10 ppb	NMT 200,000 ppb	74.6 ppb	PASS

Santé Laboratories, LLC - 8201 East Riverside Drive, STE 650, Austin, Texas 78744 USA

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MICROBIOLOGICAL ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
Total Aerobic Plate Count (TAPC)	Isolation Agar	20 CFU/gm	NMT 10,000 CFU/gm	< LOQ	PASS
Total Yeast & Mold (TYM)	Isolation Agar	20 CFU/gm	NMT 1,000 CFU/gm	< LOQ	PASS
Coliforms	Isolation Agar	20 CFU/gm	NMT 100 CFU/gm	< LOQ	PASS
Escherichia coli (E.coli)	Isolation Agar	1 CFU/10gm	Absent	Absent	PASS
Salmonella	Isolation Agar	1 CFU/25gm	Absent	Absent	PASS

RESIDUAL SOLVENTS ASSAY					
Analysis	Test Method	LOQ	Specifications	Test Results	Pass / Fail
1,1-Dichloroethene	USP <467> by GC-MS	0.4 ppm	NMT 8 ppm	< LOQ	PASS
1,1,1-Trichloroethane	USP <467> by GC-MS	75 ppm	NMT 1,500 ppm	< LOQ	PASS
1,2-Dichloroethane	USP <467> by GC-MS	0.25 ppm	NMT 5 ppm	< LOQ	PASS
Benzene	USP <467> by GC-MS	0.1 ppm	NMT 2 ppm	< LOQ	PASS
Carbon tetrachloride	USP <467> by GC-MS	0.2 ppm	NMT 4 ppm	< LOQ	PASS
1,2-dichloroethene (E,Z)	USP <467> by GC-MS	93.5 ppm	NMT 1870 ppm	< LOQ	PASS
1,2-Dimethoxyethane	USP <467> by GC-MS	5 ppm	NMT 100 ppm	< LOQ	PASS
1,2,3,4-tetrahydronaphthalene	USP <467> by GC-MS	5 ppm	NMT 100 ppm	< LOQ	PASS
1,4-Dioxane	USP <467> by GC-MS	19 ppm	NMT 380 ppm	< LOQ	PASS
2-Hexanone	USP <467> by GC-MS	2.5 ppm	NMT 50 ppm	< LOQ	PASS
4-methyl-2-pentanone	USP <467> by GC-MS	225 ppm	NMT 4,500 ppm	< LOQ	PASS
Acetonitrile	USP <467> by GC-MS	20.5 ppm	NMT 410 ppm	< LOQ	PASS
Chlorobenzene	USP <467> by GC-MS	18 ppm	NMT 360 ppm	< LOQ	PASS
Chloroform	USP <467> by GC-MS	3 ppm	NMT 60 ppm	< LOQ	PASS
Cumene	USP <467> by GC-MS	3.5 ppm	NMT 70 ppm	< LOQ	PASS
Cyclohexane	USP <467> by GC-MS	194 ppm	NMT 3,880 ppm	< LOQ	PASS
Dichloromethane	USP <467> by GC-MS	30 ppm	NMT 600 ppm	< LOQ	PASS
Ethylbenzene	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS

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Hexane, n-	USP <467> by GC-MS	14.5 ppm	NMT 290 ppm	< LOQ	PASS
Methanol	USP <467> by GC-MS	150 ppm	NMT 3,000 ppm	< LOQ	PASS
Methylcyclohexane	USP <467> by GC-MS	59 ppm	NMT 1,180 ppm	< LOQ	PASS
Nitromethane	USP <467> by GC-MS	2.5 ppm	NMT 50 ppm	< LOQ	PASS
Pyridine	USP <467> by GC-MS	10 ppm	NMT 200 ppm	< LOQ	PASS
Tetrahydrofuran	USP <467> by GC-MS	36 ppm	NMT 720 ppm	< LOQ	PASS
Toluene	USP <467> by GC-MS	44.5 ppm	NMT 890 ppm	< LOQ	PASS
Trichloroethene	USP <467> by GC-MS	4 ppm	NMT 80 ppm	< LOQ	PASS
Xylene, m-	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
Xylene, o-	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
Xylene, p-	USP <467> by GC-MS	108.5 ppm	NMT 2,170 ppm	< LOQ	PASS
1-Butanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
1-Pentanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
1-Propanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-Butanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-Butanone	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-methyl-1-propanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
2-Propanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
3-methyl-1-butanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Acetone	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Anisole	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Butyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethanol	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethyl ether	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Ethyl formate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Heptane, n-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS

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Isobutyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Isopropyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Methyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
N,N-Dimethylsulfoxide	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Pentane, n-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Propyl acetate	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
t-Butyl Methyl Ether	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Butane, iso-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Butane, n-	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS
Propane	USP <467> by GC-MS	250 ppm	NMT 5,000 ppm	< LOQ	PASS

TESTING FACILITY INFORMATION	SAMPLE INFORMATION
Santé Laboratories 8201 East Riverside Drive, STE 650 Austin, Texas 78744 USA	Santé Sample ID: 211543 Receipt Date: 05/25/2021 / 10:40 AM CST / S. ORTEGA Receipt Condition: Good Analysis Start Date: 05/25/2021

ADDITIONAL REPORT NOTES

The reported results presented in this document is only applicable to samples submitted to Santé Laboratories for testing and may not represent the entire lot and/or batch produced by the manufacturer. **Heavy metal specifications according to limits defined by Texas DSHS for consumable hemp. Nickel specification according to oral drug products per USP <232>. Microbiological specifications follow AHPA guidelines for botanical extracts.**
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VERSION HISTORY

Version	Effective Date	Summary of Changes
00	05/27/2021	Initial Release

REVIEWED AND APPROVED BY

DocuSigned by: <i>Brian Sloat</i>	5/27/2021	DD-MM-YY
Brian Sloat, Ph.D. Chief Scientific Officer / Quality Manager Santé Laboratories	Date	

PRODUCT SAMPLE / IMAGE



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