

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Tincture - Natural
PRODUCT STRENGTH: 450 mg
LOT NUMBER: 191213B
BEST BY DATE: 06/21
HEMP EXTRACT LOT NUMBER: 111919

Physical Attributes

Test	Method	Specification	Results
Color	SOP-100	Golden to Amber	PASS
Odor	SOP-100	Characteristic - Olive and hemp	PASS
Appearance	SOP-100	Golden to Amber oil in brown glass bottle with dropper	PASS
Primary Package Eval.	SOP-132	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	SOP-132	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results	Pass/Fail
Potency - Total CBD	SOP-111	427.5-562.2 mg CBD LOQ*: 10 PPM† (0.001%)	<u>479.9 mg</u>	PASS
Potency - D9-THC	SOP-111	None Detected LOQ: 10 PPM (0.001%)	<u>ND</u>	PASS
FL Compliant Pesticide Panel	SOP-111	Florida State Hemp Program Rule 5B-57.014: Action Limits for Pesticides	<u>ND</u>	PASS
Microbial - Stec E.Coli	SOP-111	Complies with USP 61/62	<u>>LOD</u>	PASS
Microbial - Salmonella	SOP-111	Complies with USP 61/62	<u>>LOD</u>	PASS
Microbial - Aspergillus	SOP-111	Complies with USP 61/62	<u>>LOD</u>	PASS
CA Compliant Heavy Metal Panel	SOP-111	Arsenic (As): ≤1.5 PPM Cadmium (Cd): ≤0.5 PPM Mercury (Hg): ≤1.0 PPM Lead (Pb): ≤0.5 PPM	<u>>LOQ</u>	PASS

* Level of Quantitation, † Parts Per Million

Quality Certified by: Darcie Moran 1/17/2020
 Darcie Moran Date
 Director of Quality Assurance

CERTIFICATE OF ANALYSIS

ISO/IEC 17025:2017 ACCREDITATION #103104



Order #: 44697
 Order Name: CTNAT450-191213B
 Batch#: 4
 Received: 12/20/2019
 Completed: 01/24/2020



Sample



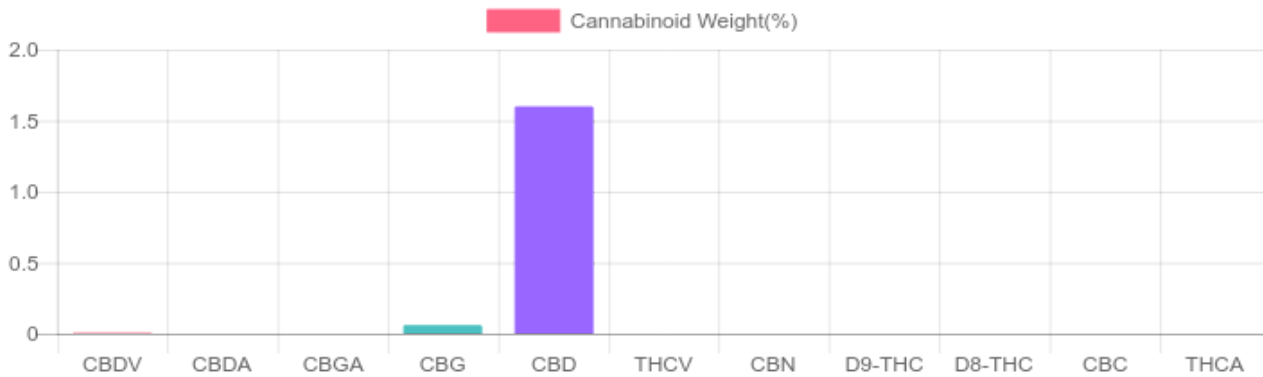
N/D D9-THC	1.600% Total CBD
499.1 mg Cannabinoids per bottle	479.9 mg CBD per bottle

Cannabinoids Test

SHIMADZU INTEGRATED UPLC-PDA
 GSL SOP 400 **PREPARED:** 12/23/2019 11:57:57 **UPLOADED:** 12/23/2019 18:05:46

Cannabinoids	LOQ	weight(%)	mg/g	mg/bottle
D9-THC	10 PPM	N/D	N/D	N/D
THCA	10 PPM	N/D	N/D	N/D
CBD	10 PPM	1.600%	15.995	479.9
CBDA	20 PPM	N/D	N/D	N/D
CBDV	20 PPM	0.005%	0.052	1.6
CBC	10 PPM	N/D	N/D	N/D
CBN	10 PPM	N/D	N/D	N/D
CBG	10 PPM	0.059%	0.588	17.6
CBGA	20 PPM	N/D	N/D	N/D
D8-THC	10 PPM	N/D	N/D	N/D
THCV	10 PPM	N/D	N/D	N/D
TOTAL D9-THC		N/D	N/D	N/D
TOTAL CBD*		1.600%	15.995	479.9
TOTAL CANNABINOIDS		1.664%	16.635	499.1

1 bottle = 30 ml per bottle x density (1) x
 Cannabinoid concentration



Reporting Limit 10 ppm
 *Total CBD = CBD + CBDA x 0.877
 N/D - Not Detected, B/LOQ - Below Limit of Quantification

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

Green Scientific Labs
 info@greenscientificlabs.com
 1-833 TEST CBD



Green Scientific Labs uses its best efforts to deliver high quality results and to verify that the data contained therein are based on sound scientific judgment and levels listed are guidelines only and all data was reported based on standard laboratory procedures and deviations. However Green Scientific Labs makes no warranties or claims to that effect and further shall not be liable for any damage or misrepresentation that may result from the use or misuse of the data contained herein in any way. Further, Green Scientific Labs makes no claims regarding representations of the analyzed sample to the larger batch from which it was taken. Data and information in this report are intended solely for the individual(s) for whom samples were submitted and as part of our strict confidentiality policy, Green Scientific Labs can only discuss results with the original client of record.

CERTIFICATE OF ANALYSIS

ISO/IEC 17025:2017 ACCREDITATION #103104



Order #: 44697
 Order Name: CTNAT450-191213B
 Batch#: 4
 Received: 12/20/2019
 Completed: 01/24/2020



PESTICIDE ANALYSIS:

GSL SOP 401

PREPARED: 12/23/2019 15:47:09

UPLOADED: 12/26/2019 11:47:55

GCMS-MS - Shimadzu GCMS-TQ8040

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
CHLORFENAPYR	0.010	N/D	0.003	0.001
COUMAPHOS	0.010	N/D	0.003	0.001
CYFLUTHRIN	0.010	N/D	0.003	0.001
CYPERMETHRIN	0.500	N/D	0.003	0.001


Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
FIPRONIL	0.010	N/D	0.003	0.001
FLUDIOXONIL	0.020	N/D	0.003	0.001
PENTACHLORONITROBENZENE	0.030	N/D	0.003	0.001


LCMS-MS - Shimadzu LCMS-8060

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
ABAMECTIN B1A	0.020	N/D	0.005	0.001
ACEPHATE	0.020	N/D	0.001	0.001
ACEQUINOCYL	0.020	N/D	0.001	0.001
ACETAMIPRID	10.000	N/D	0.005	0.001
ALDICARB	0.010	N/D	0.005	0.001
AZOXYSTROBIN	0.100	N/D	0.001	0.001
BIFENAZATE	0.010	N/D	0.005	0.001
CHLORPYRIFOS	0.020	N/D	0.001	0.001
CLOFENTEZINE	0.040	N/D	0.001	0.001
DAMINOZIDE	0.010	N/D	0.005	0.001
DIAZANON	0.010	N/D	0.001	0.001
DICHLORVOS	0.020	N/D	0.005	0.001
DIMETHOATE	0.010	N/D	0.001	0.001
DIMETHOMORPH	0.010	N/D	0.005	0.001
ETHOPROPHOS	0.010	N/D	0.001	0.001
ETOFENPROX	0.010	N/D	0.001	0.001
ETOXAZOLE	0.010	N/D	0.010	0.005
FENHEXAMID	0.080	N/D	0.005	0.001
FENOXYCARB	0.010	N/D	0.005	0.001
FENPYROXIMATE	0.100	N/D	0.001	0.001
FLONICAMID	0.100	N/D	0.025	0.010
HEXYTHIAZOX	0.100	N/D	0.005	0.001
IMAZALIL	0.010	N/D	0.005	0.001
IMIDACLOPRID	0.020	N/D	0.005	0.001
KRESOXIM-METHYL	0.020	N/D	0.010	0.005
MALATHION	0.010	N/D	0.005	0.001

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
METALAXYL	0.010	N/D	0.001	0.001
METHIOCARB	0.010	N/D	0.005	0.001
METHOMYL	0.010	N/D	0.001	0.001
MEVINPHOS	0.010	N/D	0.001	0.001
MYCLOBUTANIL	0.020	N/D	0.005	0.001
NALED	0.010	N/D	0.005	0.001
OXAMYL	0.026	N/D	0.001	0.001
PACLOBUTRAZOL	0.010	N/D	0.005	0.001
PERMETHRINS	0.020	N/D	0.005	0.001
PHOSMET	0.020	N/D	0.005	0.001
PIPERONYL BUTOXIDE	3.000	N/D	0.001	0.001
PRALLETHRIN	0.020	N/D	0.005	0.005
PROPICONAZOLE	0.020	N/D	0.010	0.005
PROPOXUR	0.020	N/D	0.001	0.001
PYRETHRINS (PYRETHRIN I)	0.500	N/D	0.005	0.005
PYRIDABEN	0.020	N/D	0.005	0.001
SPINETORAM	0.040	N/D	0.001	0.001
SPINOSAD (SPINOSYN A)	0.020	N/D	0.001	0.001
SPINOSAD (SPINOSYN D)	0.020	N/D	0.001	0.001
SPIROMESIFEN	0.030	N/D	0.005	0.001
SPIROTETRAMAT	0.020	N/D	0.001	0.001
SPIROXAMINE	0.010	N/D	0.001	0.001
TEBUCONAZOLE	0.010	N/D	0.005	0.001
THIACLOPRID	0.010	N/D	0.001	0.001
THIAMETHOXAM	0.010	N/D	0.001	0.001
TRIFLOXYSTROBIN	0.020	N/D	0.001	0.001

N/D = Not Detected, A/LOQ = Above LOQ Level, B/LOQ = Below LOQ Level, B/LOD = Below LOD Level


 Dr. Andrew Hall, Ph.D., Chief Scientific Officer


 Ben Witten, MS, MT., Lab Director

Green Scientific Labs
 info@greenscientificlabs.com
 1-833 TEST CBD



Green Scientific Labs uses its best efforts to deliver high quality results and to verify that the data contained therein are based on sound scientific judgment and levels listed are guidelines only and all data was reported based on standard laboratory procedures and deviations. However Green Scientific Labs makes no warranties or claims to that effect and further shall not be liable for any damage or misrepresentation that may result from the use or misuse of the data contained herein in any way. Further, Green Scientific Labs makes no claims regarding representations of the analyzed sample to the larger batch from which it was taken. Data and information in this report are intended solely for the individual(s) for whom samples were submitted and as part of our strict confidentiality policy, Green Scientific Labs can only discuss results with the original client of record.

CERTIFICATE OF ANALYSIS

ISO/IEC 17025:2017 ACCREDITATION #103104



Order #: 44697
Order Name: CTNAT450-191213B
Batch#: 4
Received: 12/20/2019
Completed: 01/24/2020



Microbial Analysis:

Microbial Analysis GSL SOP 406

Uploaded: 12/26/2019 13:07:18

PCR - Agilent AriaMX

Test	Test Method Used	Device Used	LOD	Allowable Criteria	Actual Result	Pass/Fail
STEC E.COLI*	USP 61/62†	ARIAMX PCR	2 COPIES OF DNA	PRESENCE / ABSENT	BELOW LOD	PASS
SALMONELLA*	USP 61/62†	ARIAMX PCR	5 COPIES OF DNA	PRESENCE / ABSENT	BELOW LOD	PASS
ASPERGILLUS	USP 61/62†	ARIAMX PCR	ASP_LOD***	PRESENCE / ABSENT	BELOW LOD	PASS

† USP 61 (enumeration of bacteria TAC, TYM, and ENT/Coliform), USP 62 (identifying specific species E.coli Aspergillus etc)

* STEC and Salmonella run as Multiplex

*** Flavus = 2 Copies of DNA / Fumigatis = 2 Copies of DNA Niger = 20 Copies of DNA / Terrus = 10 copies of DNA

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

Green Scientific Labs
 info@greenscientificlabs.com
 1-833 TEST CBD



Green Scientific Labs uses its best efforts to deliver high quality results and to verify that the data contained therein are based on sound scientific judgment and levels listed are guidelines only and all data was reported based on standard laboratory procedures and deviations. However Green Scientific Labs makes no warranties or claims to that effect and further shall not be liable for any damage or misrepresentation that may result from the use or misuse of the data contained herein in any way. Further, Green Scientific Labs makes no claims regarding representations of the analyzed sample to the larger batch from which it was taken. Data and information in this report are intended solely for the individual(s) for whom samples were submitted and as part of our strict confidentiality policy, Green Scientific Labs can only discuss results with the original client of record.

CERTIFICATE OF ANALYSIS

ISO/IEC 17025:2017 ACCREDITATION #103104



Order #: 44697
Order Name: CTNAT450-191213B
Batch#: 4
Received: 12/20/2019
Completed: 01/24/2020



Heavy Metals Analysis:

ICP-MS - Shimadzu ICPMS-2030
GSL SOP 403

Uploaded: 12/23/2019 20:16:47

Metal	Action Level (ppb)	Result (ppb)
ARSENIC (AS)	200	B/LOQ
CADMIUM (CD)	200	B/LOQ
MERCURY (HG)	100	B/LOQ
LEAD (PB)	500	B/LOQ

Lower Limit of Quantitation (LOQ) is 75 ppb

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

Green Scientific Labs
info@greenscientificlabs.com
1-833 TEST CBD



Green Scientific Labs uses its best efforts to deliver high quality results and to verify that the data contained therein are based on sound scientific judgment and levels listed are guidelines only and all data was reported based on standard laboratory procedures and deviations. However Green Scientific Labs makes no warranties or claims to that effect and further shall not be liable for any damage or misrepresentation that may result from the use or misuse of the data contained herein in any way. Further, Green Scientific Labs makes no claims regarding representations of the analyzed sample to the larger batch from which it was taken. Data and information in this report are intended solely for the individual(s) for whom samples were submitted and as part of our strict confidentiality policy, Green Scientific Labs can only discuss results with the original client of record.



total cannabinoids **88.5%**
 CBD decarb total 84.61%
 Δ9-THC ND

This Product Has Been Tested and Complies with 7USC1639o(1) Definition of Hemp



Stillwater Laboratories

https://portal.a2la.org/scopepdf/4961-01.pdf

Sample Handling

test ID sample date 12/4/19 2:46 PM
 order 6070 labID 9MD44 weight 5.4 g
 source

Methods

method	equipment
weights MSP-7.3.1.3	AUX120.1
potency MSP-7.5.1.5	LC-2030
terpenes MSP-7.5.1.7	QP2020/HS20
pesticides MSP-7.5.1.8	LC-8060
mycotoxins MSP-7.5.1.8	LC-8060
microbial MSP-7.5.1.9	Hardy Diag
solvents MSP-7.5.1.6	QP2020/HS20
metals MSP-7.5.1.10	ICPMS2030

concentrate



Potency

	%	estimated error
tetrahydrocannabinolic acid (THCa)	ND	± 0.02 %
Δ ⁹ -tetrahydrocannabinol (Δ ⁹ THC)	ND	± 0.02 %
Δ ⁸ -tetrahydrocannabinol (Δ ⁸ THC)	ND	± 0.02 %
tetrahydrocannabivarin (THCv)	ND	± 0.02 %
cannabidiolic acid (CBDa)	.14%	± 0.04 %
cannabidiol (CBD)	84.48%	± 0.75 %
cannabidivarin (CBDv)	.33%	± 0.05 %
cannabigerolic acid (CBGa)	ND	± 0.02 %
cannabigerol (CBG)	3.54%	± 0.15 %
cannabinol (CBN)	ND	± 0.02 %
cannabichromene (CBC)	ND	± 0.02 %

Terpenes

	%	estimated error		%	estimated error		%	estimated error
β-myrcene	0.004%	± 0.0018%	camphene	0.000%	± 0.0016 %	guaiaol	0.000%	± 0.0016 %
β-caryophyllene	0.000%	± 0.0016%	Δ ³ -carene	0.000%	± 0.0016 %	β-bisabolol	0.000%	± 0.0016 %
alpha-pinene	0.003%	± 0.0017%	a-terpinene	0.000%	± 0.0016 %	eucalyptol	0.000%	± 0.0016 %
β-pinene	0.008%	± 0.0019%	para-cymene	0.000%	± 0.0016 %			
D-limonene	0.000%	± 0.0016%	g-terpinene	0.000%	± 0.0016 %			
linalool	0.000%	± 0.0016%	(-)-isopulegol	0.000%	± 0.0016 %	total terpenes		0.01%
ocimene	0.000%	± 0.0033%	geraniol	0.000%	± 0.0016 %			
terpinolene	0.000%	± 0.0016%	cis-nerolidol	0.000%	± 0.0016 %			
alpha-humulene	0.000%	± 0.0016%	trans-nerolidol	0.000%	± 0.0016 %			

Solvents

MT limit	9MD44	LOQ
propane 5,000	PASS	<10ppm
butanes 5,000	PASS	<10ppm
pentanes 5,000	PASS	<10ppm
hexanes 290	PASS	<10ppm
cyclohexane 3,880	PASS	<10ppm
heptanes 5,000	PASS	<10ppm
methanol 3,000	PASS	<10ppm
isopropanol 5,000	PASS	<10ppm
acetone 5,000	PASS	<10ppm
ethyl acetate 5,000	PASS	<10ppm
benzene 2	PASS	<0.2ppm
toluene 890	PASS	<10ppm
xylenes 2,170	PASS	<10ppm
chloroform 2	PASS	<0.2ppm
dichloromethane 600	PASS	<10ppm

Pesticides (MT)

MT limit	9MD44	LOQ
abamectin 2.50 ppm	PASS	<10ppb
acequinocyl 10.00 ppm	PASS	<10ppb
bifenazate 1.00 ppm	PASS	<10ppb
bifenthrin 1.00 ppm	PASS	<10ppb
chlormequat cl. 5.00 ppm	PASS	<10ppb
cyfluthrin 5.00 ppm	PASS	<80ppb
diaminozide 5.00 ppm	PASS	<10ppb
etoxazole 1.00 ppm	PASS	<10ppb
fenoxycarb 1.00 ppm	PASS	<10ppb
imazalil 1.00 ppm	PASS	<10ppb
imidacloprid 2.00 ppm	PASS	<10ppb
myclobutanil 0.60 ppm	PASS	<10ppb
paclobutrazol 2.00 ppm	PASS	<10ppb
pyrethrins 5.00 ppm	PASS	<10ppb
spinosad 1.00 ppm	PASS	<10ppb
spiromesifen 1.00 ppm	PASS	<10ppb
spirotetramat 1.00 ppm	PASS	<10ppb
trifloxystrobin 1.00 ppm	PASS	<10ppb

Pesticides (other)

9MD44	LOQ
acephate 0.00 ppm	<10ppb
acetamidiprid 0.00 ppm	<10ppb
aldicarb 0.00 ppm	<10ppb
azoxystrobin 0.00 ppm	<10ppb
boscalid 0.00 ppm	<10ppb
carbaryl 0.00 ppm	<10ppb
carbofuran 0.00 ppm	<10ppb
chlorantraniliprole 0.00 ppm	<10ppb
chlorpyrifos 0.00 ppm	<10ppb
clofentezine 0.00 ppm	<10ppb
cypermethrin 0.00 ppm	<10ppb
diazinon 0.00 ppm	<10ppb
dichlorvos 0.00 ppm	<10ppb
dimethoate 0.00 ppm	<10ppb
etofenprox 0.00 ppm	<10ppb
fenpyroximate 0.00 ppm	<10ppb
fipronil 0.00 ppm	<10ppb
flonicamid 0.00 ppm	<10ppb
fludioxonil 0.00 ppm	<10ppb
hexythiazox 0.00 ppm	<10ppb
kresoxym-methyl 0.00 ppm	<10ppb
malathion 0.00 ppm	<10ppb
metalaxyl 0.00 ppm	<10ppb
methiocarb 0.00 ppm	<10ppb
methomyl 0.00 ppm	<10ppb
oxamyl 0.00 ppm	<10ppb
permethrins 0.00 ppm	<10ppb
phosmet 0.00 ppm	<10ppb
piperonyl butoxide 0.00 ppm	<10ppb
prallethrin 0.00 ppm	<10ppb
propiconazole 0.00 ppm	<10ppb
pyridaben 0.00 ppm	<10ppb
spiroxamine 0.00 ppm	<10ppb
tebuconazole 0.01 ppm	<10ppb
thiacloprid 0.00 ppm	<10ppb
thiamethoxam 0.00 ppm	<10ppb

Toxic Metals

MT limit	9MD44	LOQ
arsenic 2 ppm	PASS	<10ppb
cadmium 4.1 ppm	PASS	<10ppb
lead 1.2 ppm	PASS	<10ppb
mercury 0.4 ppm	PASS	<10ppb

Microbial

MT limit	9MD44	LOQ
E. coli 10 CFU	PASS	<10 CFU/g
Salmonella sp. 10 CFU	PASS	<10 CFU/g
molds 10000 CFU	PASS	<10k CFU/g
Aflatoxin B1,B2,G1,G2 20 ppb	PASS	<20 ppb
Ochratoxin A 20 ppb	PASS	<20 ppb

Certified by:

Kyle Larson, MSc (Biology)
 Deputy Director
 6073 US93N, Olney MT 59927
 406-881-2019 rdb@stlslabs.com

• All testing was completed onsite at 6073 US93N, Olney MT • Potency (cannabinoid concentration) is calculated from the equation: [cannabinoid] = [cannabinoid]_{HP-PLC} × volume_{dilution} / m_{dry}. Terpene concentration is calculated from the equation: [terpene] = (terpene mass)_{GCMS} / m_{dry}. •• Decarboxyated cannabinoid concentration is calculated from the equation XXX_{total} = 0.877 × XXX_a + XXX ••• Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; this is combined with error from weighing and dilution using the propagation of error formula s_y² = Σ (df/di)² s_i² where i is the contributor to error. The 95% confidence range is calculated from the equation: (concentration) ± t_{CL90} × s_y. Sampling error is not