

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Certified Organic CBD Tincture - Natural
PRODUCT STRENGTH: 450 mg
TINCTURE BATCH: 42004C
BEST BY DATE: 27 10 2025
HEMP EXTRACT LOT: C1116-002

Click on the links to view third-party reports

Physical Attributes

Test	Method	Specification	Results
Color	Joy Internal	Golden to Amber	PASS
Odor	Joy Internal	Characteristic - Olive and Hemp	PASS
Appearance	Joy Internal	Golden to Amber oil in brown glass bottle with dropper.	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	Joy Internal	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	HPLC-UV DAD	*LOQ: ≥ 450 mg / bottle	541.4a [PASS
Potency - D9-THC	HPLC-UV DAD	Complies with CDPHE 6 CCR 1010-21 THC 0.0%	ND	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	Below LOQ	PASS
Microbial Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 **CFU/25 gram	Absent	PASS
Microbial Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	Absent	PASS
Microbial Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^2 CFU/gram	Below LOQ	PASS
Microbial Total Coliforms*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^2 CFU/gram	Below LOQ	PASS
Microbial Total Aerobic Count*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^3 CFU/gram	Below LOQ	PASS
Heavy Metals	ICP-MS	Arsenic (As): ≤ 1.5 ppm† Cadmium (Cd): ≤ 0.5 ppm Lead (Pb): ≤ 0.5 ppm Mercury (Hg): ≤ 1.5 ppm	Below LOQ	PASS
Mycotoxins	ICP-MS	Total Aflatoxins < 20 ppb†† Aflatoxin B1 < 20 ppb Ochratoxin < 20 ppb	Below LOQ	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	Below LOQ	PASS

*Level of Quantification

**Colony Forming Units per Gram

† Parts Per Million †† Part Per Billion

Values expressed in scientific notation.

Examples:

$10^2 = 100$

$10^3 = 1,000$

Quality Certified Keegan Schlittler
 Keegan Schlittler
 Quality Assurance Manager

01/11/2022


Date


27836

Batch ID or Lot Number: C1116-002	Test: Potency	Reported: 11/23/21	
Matrix: Solution	Test ID: T000177403	Started: 11/22/21	USDA License: N/A
Status: N/A	Method: TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A

CANNABINOID PROFILE

Compound	LOD (mg/mL)	LOQ (mg/mL)	Result (mg/mL)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.156	0.441	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.176	0.498	ND	ND	Density = 0.92g/mL
Cannabidiolic acid (CBDA)	0.167	0.514	ND	ND	
Cannabidiol (CBD)	0.163	0.502	18.048	19.62	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.193	0.549	ND	ND	
Cannabinolic Acid (CBNA)	0.111	0.314	ND	ND	
Cannabinol (CBN)	0.051	0.144	ND	ND	
Cannabigerolic acid (CBGA)	0.162	0.460	ND	ND	
Cannabigerol (CBG)	0.039	0.110	1.255	1.36	
Tetrahydrocannabivarinic Acid (THCVA)	0.137	0.389	ND	ND	
Tetrahydrocannabivarin (THCV)	0.035	0.100	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.070	0.215	ND	ND	
Cannabidivarin (CBDV)	0.039	0.119	0.126	0.14	
Cannabichromenic Acid (CBCA)	0.063	0.177	ND	ND	
Cannabichromene (CBC)	0.068	0.194	ND	ND	
Total Cannabinoids			19.429	21.12	
Total Potential THC**			ND	ND	
Total Potential CBD**			18.048	19.62	

 Daniel Weidensaul
23-Nov-2021
05:10 PM

 Ryan Weems
23-Nov-21
5:13 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)

* Indicates a value below the Limit of Quantitation (LOQ) and above the Limit of Detection (LOD).

** Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.

Total THC = THC + (THCa *(0.877)) and

Total CBD = CBD + (CBDa *(0.877))

Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.

ND = None Detected (Defined by Dynamic Range of the method)

Testing results are based solely upon the sample submitted to Botanacor Laboratories, LLC, in the condition it was received. Botanacor Laboratories, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Laboratories, LLC.



Certificate #4329.02

27836


Batch ID or Lot Number:	Test:	Reported:
C1116-002	Pesticides	11/29/21


Matrix:	Test ID:	Started:	USDA License:
Concentrate	T000177404	11/29/21	N/A

Status:	Method:	Received:	Sampler ID:
N/A	TM17(LC-QQQ LC MS/MS):	11/19/2021 @ 10:26 AM	N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	34	ND	Fenoxycarb	47	ND	Paclobutrazol	43	ND
Acetamiprid	43	ND	Fipronil	2	ND	Permethrin	283	ND
Avermectin	274	ND	Flonicamid	47	ND	Phosmet	36	ND
Azoxystrobin	46	ND	Fludioxonil	292	ND	Prophos	283	ND
Bifenazate	43	ND	Hexythiazox	41	ND	Propoxur	43	ND
Boscalid	55	ND	Imazalil	286	ND	Pyridaben	287	ND
Carbaryl	41	ND	Imidacloprid	48	ND	Spinosad A	35	ND
Carbofuran	43	ND	Kresoxim-methyl	150	ND	Spinosad D	51	ND
Chlorantraniliprole	47	ND	Malathion	294	ND	Spiromesifen	274	ND
Chlorpyrifos	500	ND	Metalaxyl	45	ND	Spirotetramat	287	ND
Clofentezine	281	ND	Methiocarb	41	ND	Spiroxamine 1	29	ND
Diazinon	285	ND	Methomyl	42	ND	Spiroxamine 2	27	ND
Dichlorvos	320	ND	MGK 264 1	158	ND	Tebuconazole	289	ND
Dimethoate	45	ND	MGK 264 2	127	ND	Thiacloprid	43	ND
E-Fenpyroximate	287	ND	Myclobutanil	42	ND	Thiamethoxam	36	ND
Etofenprox	46	ND	Naled	41	ND	Trifloxystrobin	48	ND
Etoxazole	296	ND	Oxamyl	1500	ND			


 Sam Smith
 11/29/2021
 5:56:00 PM


 Daniel Weidensaul
 11/29/2021
 6:39:00 PM

PREPARED BY / DATE

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Definitions

LOQ = Limit of Quantification
 ppb = Parts per Billion

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Prepared for:

OTNAT450-**JOY ORGANICS**

Batch ID or Lot Number: 22004A	Test: Microbial Contaminants	Reported: 1/10/22	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
Matrix: Finished Product	Test ID: T000185632	Started: 1/6/22	USDA License: N/A
Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 01/05/2022 @ 10:20 AM	Sampler ID: N/A

MICROBIAL CONTAMINANTS DETERMINATION

Contaminant	Method	LOD	LLOQ	ULOQ	Result	Notes
Total Aerobic Count*	TM-26, Culture Plating	10 ² CFU/g	10 ³ CFU/g	1.5x10 ⁵ CFU/g	None Detected	Free from visual mold, mildew, and foreign matter
Total Coliforms*	TM-27, Culture Plating	10 ¹ CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
Total Yeast and Mold*	TM-24, Culture Plating	10 ¹ CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
E. coli (STEC)	TM-25, PCR	1 CFU/25 g	NA	NA	Absent	
Salmonella	TM-25, PCR	1 CFU/25 g	NA	NA	Absent	

Brett Hudson
1/10/2022
4:09:00 PMEden Thompson-Wright
1/10/2022
5:16:00 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

LOD = Limit of Detection | LLOQ = Lower Limit of Quantitation | ULOQ = Upper Limit of Quantitation

CFU/g = Colony Forming Units per Gram | STEC = Shiga Toxin-Producing *E. coli*

* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.

Examples:

10² = 100 CFU
10³ = 1,000 CFU
10⁴ = 10,000 CFU
10⁵ = 100,000 CFU

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Batch ID or Lot Number: C1116-002	Test: Metals	Reported: 11/23/21
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Matrix: Unit Co	Test ID: T000177406	Started: 11/22/21	USDA License: N/A
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Status: N/A	Method: TM19 (ICP-MS): Heavy Metals (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A
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HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.040 - 4.04	ND	
Cadmium	0.042 - 4.23	ND	
Mercury	0.042 - 4.15	ND	
Lead	0.042 - 4.23	ND	

 Ryan Weems
23-Nov-21
1:03 PM

PREPARED BY / DATE

 Sam Smith
23-Nov-21
1:07 PM

APPROVED BY / DATE

Definitions

ND = None Detected (Defined by Dynamic Range of the method)

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Batch ID or Lot Number: C1116-002	Test: Mycotoxins	Reported: 11/29/21
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Matrix: Concentrate	Test ID: T000177408	Started: 11/24/21	USDA License: N/A
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Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A
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MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	4.3 - 132.2	ND	N/A
Aflatoxin B1	1.2 - 33.6	ND	
Aflatoxin B2	1.2 - 33.7	ND	
Aflatoxin G1	1.2 - 33.8	ND	
Aflatoxin G2	1.2 - 32.9	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

 Ryan Weems
29-Nov-21
3:49 PM

PREPARED BY / DATE

 Sam Smith
29-Nov-21
4:04 PM

APPROVED BY / DATE

Definitions

ND = None Detected (Defined by Dynamic Range of the method)

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27836

Batch ID or Lot Number: C1116-002	Test: Residual Solvents	Reported: 11/24/21	
Matrix: N/A	Test ID: T000177407	Started: 11/23/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	105 - 2092	*ND	
Butanes	209 - 4183	*ND	
(Isobutane, n-Butane)			
Methanol	64 - 1278	*ND	
Pentane	87 - 1737	*ND	
Ethanol	92 - 1845	*ND	
Acetone	102 - 2041	*ND	
Isopropyl Alcohol	109 - 2186	*ND	
Hexane	6 - 124	*ND	
Ethyl Acetate	104 - 2088	*ND	
Benzene	0.2 - 4.1	*ND	
Heptanes	98 - 1950	*ND	
Toluene	19 - 378	*ND	
Xylenes	137 - 2737	*ND	
(m,p,o-Xylenes)			


 Sam Smith
 24-Nov-21
 2:14 PM

PREPARED BY / DATE


 Ryan Weems
 24-Nov-21
 2:15 PM

APPROVED BY / DATE

Definitions

* ND = None Detected (Defined by Dynamic Range of the method)

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