

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Certified Organic - Joy Organics CBD Tincture - Mint
PRODUCT STRENGTH: 2250 mg / bottle
TINCTURE BATCH: 22033A
BEST BY DATE: 8/2/2023
HEMP EXTRACT LOT: C0819-001

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, Minty	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

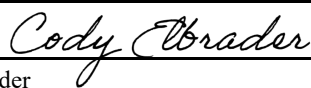
Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	HPLC-UV DAD	LOQ**: ≥ 2250 mg / bottle	2787.07 mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: $<0.01\%$ (broad spectrum)	Below LOQ	PASS
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 < 5 ppb Ochratoxin < 5 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


 Cody Elbrader
 Quality Assurance Technician

02/8/2022

Date

Batch ID or Lot Number: **C0819-001** Test: **Potency** Reported: **8/30/21**


Matrix: Test ID: Started: USDA License:
Unit T000158869 8/27/21 N/A

Status: Method: Received: Sampler ID:
N/A TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis (Colorado Panel) 08/20/2021 @ 01:50 PM N/A

CANNABINOID PROFILE

Compound	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	11.429	39.121	ND	ND	# of Servings = 1 Sample Weight=30g
Delta 9-Tetrahydrocannabinol (Delta 9THC)	12.899	44.154	ND	ND	
Cannabidiolic acid (CBDA)	16.632	46.600	ND	ND	
Cannabidiol (CBD)	16.216	45.435	2787.071	92.90	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	14.203	48.618	ND	ND	
Cannabinolic Acid (CBNA)	8.134	27.843	ND	ND	
Cannabinol (CBN)	3.721	12.735	ND	ND	
Cannabigerolic acid (CBGA)	11.922	40.809	ND	ND	
Cannabigerol (CBG)	2.852	9.762	173.980	5.80	
Tetrahydrocannabivarinic Acid (THCVA)	10.081	34.506	ND	ND	
Tetrahydrocannabivarin (THCV)	2.594	8.879	ND	ND	
Cannabidivarinic Acid (CBDVA)	6.938	19.439	ND	ND	
Cannabidivarin (CBDV)	3.835	10.746	8.714*	0.29*	
Cannabichromenic Acid (CBCA)	4.594	15.726	ND	ND	
Cannabichromene (CBC)	5.023	17.194	6.574*	0.22*	
Total Cannabinoids			2976.339	99.21	
Total Potential THC**			ND	ND	
Total Potential CBD**			2787.071	92.90	

 Daniel Weidensaul
30-Aug-2021
04:14 PM

 Ryan Weems
30-Aug-21
4:15 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.



CDPHE Certified



Certificate #4329.02

Batch ID or Lot Number: **C0819-001** Test: **Pesticides** Reported: **8/26/21**

Matrix: Concentrate Test ID: T000158870 Started: 8/24/21 USDA License: N/A

Status: N/A Method: TM17(LC-QQQ LC MS/MS): Received: 08/20/2021 @ 01:50 PM Sampler ID: N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	28	ND	Fenoxycarb	41	ND	Paclobutrazol	43	ND
Acetamiprid	30	ND	Fipronil	55	ND	Permethrin	309	ND
Avermectin	273	ND	Flonicamid	58	ND	Phosmet	28	ND
Azoxystrobin	38	ND	Fludioxonil	370	ND	Prophos	370	ND
Bifenazate	42	ND	Hexythiazox	28	ND	Propoxur	34	ND
Boscalid	41	ND	Imazalil	293	ND	Pyridaben	291	ND
Carbaryl	31	ND	Imidacloprid	31	ND	Spinosad A	30	ND
Carbofuran	33	ND	Kresoxim-methyl	150	ND	Spinosad D	60	ND
Chlorantraniliprole	16	ND	Malathion	308	ND	Spiromesifen	226	ND
Chlorpyrifos	500	ND	Metaxyl	39	ND	Spirotetramat	334	ND
Clofentezine	287	ND	Methiocarb	42	ND	Spiroxamine 1	21	ND
Diazinon	292	ND	Methomyl	29	ND	Spiroxamine 2	22	ND
Dichlorvos	300	ND	MGK 264 1	175	ND	Tebuconazole	339	ND
Dimethoate	39	ND	MGK 264 2	138	ND	Thiacloprid	36	ND
E-Fenpyroximate	274	ND	Myclobutanil	13	ND	Thiamethoxam	34	ND
Etofenprox	40	ND	Naled	42	ND	Trifloxystrobin	35	ND
Etoxazole	301	ND	Oxamyl	1500	ND			

Samantha Smith
 Sam Smith
 8/26/2021
 4:08:00 PM

PREPARED BY / DATE

K Winterheimer
 Karen Winterheimer
 8/26/2021
 4:11:00 PM

APPROVED BY / DATE

Definitions

LOQ = Limit of Quantification
 ppb = Parts per Billion

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

Prepared for:

JOY ORGANICS
OTM2250

Batch ID or Lot Number: 22033A	Test: Microbial Contaminants	Reported: 2/7/22	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
--	--	----------------------------	---

Matrix: Finished Product	Test ID: T000190945	Started: 2/4/22	USDA License: N/A
-----------------------------	------------------------	--------------------	----------------------

Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 02/04/2022 @ 10:55 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	

Eden Thompson-Wright
2/7/2022
4:31:00 PM

Brett Hudson
2/7/2022
4:39:00 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

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.



CDPHE Certified




Certificate #4329.02

Batch ID or Lot Number: C0819-001	Test: Metals	Reported: 8/30/21	
Matrix: Unit Co	Test ID: T000158872	Started: 8/27/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS); Heavy Metals (Colorado Panel)	Received: 08/20/2021 @ 01:50 PM	Sampler ID: N/A

HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.043 - 4.27	ND	
Cadmium	0.043 - 4.34	ND	
Mercury	0.044 - 4.40	ND	
Lead	0.041 - 4.06	ND	

 Ryan Weems
30-Aug-21
11:16 AM

PREPARED BY / DATE

 Daniel Weidensaul
30-Aug-21
11:26 AM

APPROVED BY / DATE

Definitions

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.



CDPHE Certified



Certificate #4329.02

Batch ID or Lot Number: **C0819-001** Test: **Mycotoxins** Reported: **9/1/21**

Matrix: Concentrate Test ID: T000158874 Started: 8/31/21 USDA License: N/A

Status: N/A Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel) Received: 08/20/2021 @ 01:50 PM Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	3.2 - 131.7	ND	N/A
Aflatoxin B1	1.2 - 33.7	ND	
Aflatoxin B2	1.2 - 33.2	ND	
Aflatoxin G1	1.1 - 32.7	ND	
Aflatoxin G2	1.2 - 33.5	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Samantha Smith
 Sam Smith
 1-Sep-21
 1:46 PM

PREPARED BY / DATE

Alex Smith
 Alex Smith
 1-Sep-21
 1:59 PM

APPROVED BY / DATE

Definitions

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.



CDPHE Certified



Certificate #4329.02


Batch ID or Lot Number: **C0819-001** Test: **Residual Solvents** Reported: **8/27/21**

Matrix: N/A Test ID: T000158873 Started: 8/26/21 USDA License: N/A


Status: N/A Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel) Received: 08/20/2021 @ 01:50 PM Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	76 - 1516	*ND	
Butanes (Isobutane, n-Butane)	145 - 2895	*ND	
Methanol	55 - 1095	*ND	
Pentane	80 - 1606	*ND	
Ethanol	87 - 1748	*ND	
Acetone	91 - 1823	*ND	
Isopropyl Alcohol	98 - 1964	*ND	
Hexane	6 - 111	*ND	
Ethyl Acetate	92 - 1836	*ND	
Benzene	0 - 4	*ND	
Heptanes	87 - 1741	*ND	
Toluene	17 - 332	*ND	
Xylenes (m,p,o-Xylenes)	120 - 2399	*ND	

 Ryan Weems
27-Aug-21
11:52 AM

PREPARED BY / DATE

 Sam Smith
27-Aug-21
12:05 PM

APPROVED BY / DATE

Definitions

* 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.



CDPHE Certified



Certificate #4329.02