

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Certified Organic Joy Organics FS CBD Tincture - Natural
PRODUCT STRENGTH: 2250 mg / bottle
TINCTURE BATCH: 22028A
BEST BY DATE: 7/28/2023
HEMP EXTRACT LOT: CO915-001

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	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	* NLT 2250 mg / bottle	2601.6 mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.3% (full spectrum)	0.23%	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	ND	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 Panel	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 Quantitation, † Parts Per Million ‡ Part Per Billion CFU/g=Colony Forming Units per Gram

*Nothing Less Than
10²=100 CFU
10³=1,000 CFU

Quality Certified

Keegan Schlittler

Quality Assurance Manager

5042 Technology Parkway, Fort Collins, CO 80528

Tel: (833) 569-7223 www.joyorganics.com

02/04/2022

Date

27529


 Batch ID or Lot Number: **C0915-001** Test: **Potency** Reported: **9/27/21**


Matrix: Solution Test ID: T000164188 Started: 9/22/21 USDA License: N/A

Status: N/A Method: TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis (Colorado Panel) Received: 09/20/2021 @ 10:39 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)	0.152	0.516	ND	ND	Density = 0.945g/mL
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.171	0.582	2.158	2.28	
Cannabidiolic acid (CBDA)	0.209	0.550	ND	ND	
Cannabidiol (CBD)	0.204	0.536	86.716	91.76	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.189	0.641	ND	ND	
Cannabinolic Acid (CBNA)	0.108	0.367	ND	ND	
Cannabinol (CBN)	0.049	0.168	0.302	0.32	
Cannabigerolic acid (CBGA)	0.158	0.538	ND	ND	
Cannabigerol (CBG)	0.038	0.129	5.826	6.17	
Tetrahydrocannabivarinic Acid (THCVA)	0.134	0.455	ND	ND	
Tetrahydrocannabivarin (THCV)	0.034	0.117	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.087	0.229	ND	ND	
Cannabidivarin (CBDV)	0.048	0.127	0.495	0.52	
Cannabichromenic Acid (CBCA)	0.061	0.207	ND	ND	
Cannabichromene (CBC)	0.067	0.227	0.11*	0.12*	
Total Cannabinoids			95.607	101.17	
Total Potential THC**			2.158	2.28	
Total Potential CBD**			86.716	91.76	


 Sam Smith
 27-Sep-2021
 01:23 PM


 Daniel Weidensaul
 27-Sep-21
 1:27 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.

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and}$$

$$\text{Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$

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

27529

Batch ID or Lot Number: **C0915-001** Test: **Pesticides** Reported: **9/24/21**

Matrix: Concentrate Test ID: T000164189 Started: 9/22/21 USDA License: N/A

Status: N/A Method: TM17(LC-QQQ LC MS/MS): Received: 09/20/2021 @ 10:39 AM Sampler ID: N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	40	ND	Fenoxycarb	39	ND	Paclobutrazol	43	ND
Acetamiprid	38	ND	Fipronil	36	ND	Permethrin	263	ND
Avermectin	315	ND	Flonicamid	51	ND	Phosmet	46	ND
Azoxystrobin	47	ND	Fludioxonil	286	ND	Prophos	294	ND
Bifenazate	45	ND	Hexythiazox	40	ND	Propoxur	42	ND
Boscalid	50	ND	Imazalil	269	ND	Pyridaben	283	ND
Carbaryl	40	ND	Imidacloprid	51	ND	Spinosad A	36	ND
Carbofuran	42	ND	Kresoxim-methyl	150	ND	Spinosad D	54	ND
Chlorantraniliprole	56	ND	Malathion	287	ND	Spiromesifen	292	ND
Chlorpyrifos	500	ND	Metalaxyl	43	ND	Spirotetramat	299	ND
Clofentezine	289	ND	Methiocarb	40	ND	Spiroxamine 1	18	ND
Diazinon	290	ND	Methomyl	40	ND	Spiroxamine 2	25	ND
Dichlorvos	286	ND	MGK 264 1	170	ND	Tebuconazole	284	ND
Dimethoate	39	ND	MGK 264 2	118	ND	Thiacloprid	41	ND
E-Fenpyroximate	261	ND	Myclobutanil	44	ND	Thiamethoxam	42	ND
Etofenprox	41	ND	Naled	41	ND	Trifloxystrobin	45	ND
Etoxazole	310	ND	Oxamyl	1500	ND			

Samantha Smith
 Sam Smith
 9/24/2021
 4:03:00 PM

PREPARED BY / DATE

K Winterheimer
 Karen Winterheimer
 9/24/2021
 4:06:00 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
OFTNAT2250


Batch ID or Lot Number: 22028A	Test: Microbial Contaminants	Reported: 2/4/22	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
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Matrix: Finished Product	Test ID: T000190084	Started: 2/1/22	USDA License: N/A
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Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 01/31/2022 @ 11:33 AM	Sampler ID: N/A
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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	


 Jackson Osaghae-Nosa
 2/4/2022
 12:38:00 PM


 Brianne Maillot
 2/4/2022
 1:42:00 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: C0915-001	Test: Metals	Reported: 9/22/21	
Matrix: Unit Co	Test ID: T000164191	Started: 9/21/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS); Heavy Metals (Colorado Panel)	Received: 09/20/2021 @ 10:39 AM	Sampler ID: N/A

HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.047 - 4.70	ND	
Cadmium	0.046 - 4.56	ND	
Mercury	0.044 - 4.43	ND	
Lead	0.046 - 4.59	ND	


 Daniel Weidensaul
 22-Sep-21
 2:20 PM


 Ryan Weems
 22-Sep-21
 2:23 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

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

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Batch ID or Lot Number: C0915-001	Test: Mycotoxins	Reported: 9/27/21	
Matrix: Concentrate	Test ID: T000164193	Started: 9/24/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 09/20/2021 @ 10:39 AM	Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	4 - 129.9	ND	N/A
Aflatoxin B1	1.3 - 33.2	ND	
Aflatoxin B2	1.2 - 33	ND	
Aflatoxin G1	0.9 - 31.9	ND	
Aflatoxin G2	1.2 - 32.2	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	


 Sam Smith
 27-Sep-21
 8:43 AM

PREPARED BY / DATE


 Alex Smith
 27-Sep-21
 3:02 PM

APPROVED BY / DATE

Definitions

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

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ACCREDITED

27529


Batch ID or Lot Number: C0915-001	Test: Residual Solvents	Reported: 9/29/21	
Matrix: N/A	Test ID: T000164192	Started: 9/28/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 09/20/2021 @ 10:39 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	70 - 1398	*ND	
Butanes (Isobutane, n-Butane)	145 - 2902	*ND	
Methanol	53 - 1052	*ND	
Pentane	75 - 1503	*ND	
Ethanol	80 - 1601	*ND	
Acetone	82 - 1645	*ND	
Isopropyl Alcohol	89 - 1783	*ND	
Hexane	5 - 101	*ND	
Ethyl Acetate	84 - 1690	*ND	
Benzene	0 - 3	*ND	
Heptanes	79 - 1587	*ND	
Toluene	15 - 301	*ND	
Xylenes (m,p,o-Xylenes)	108 - 2165	*ND	

 Hannah Wright
29-Sep-21
1:19 PM

PREPARED BY / DATE

 Daniel Weidensaul
29-Sep-21
1:46 PM

APPROVED BY / DATE

Definitions

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

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