

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Joy Organics CBD Softgels with Melatonin
PRODUCT STRENGTH: 25 mg CBD / 3 mg Melatonin / 3mg CBN
TINCTURE BATCH: 21236B
BEST BY DATE: 06/25/2023
HEMP EXTRACT LOT: 21E0000847

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	No Odor	PASS
Appearance	Joy Internal	Dry, ovoid softgel capsules in container with lid and shrink-band	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	*NTL 25 mg / softgel	31.98 mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.01% THC (Broad Spectrum)	ND	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	ND	PASS
Mycotoxins	ICP-MS	Total Aflatoxins <20 ppb† Aflatoxin B1 < 5 ppb Ochratoxin < 5ppb	ND	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	ND	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

Kayla Kolber

Kayla Kolber

08/30/2021

Date

Quality Assurance Technician

5042 Technology Parkway, Fort Collins, CO 80528

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

FO-106 Certificate of Analysis
Rev. 1.1 - Effective Date: 2/20/2020

SG25M


Batch ID or Lot Number: **21E0000847** Test: **Potency** Reported: **7/30/21**


Matrix: Test ID: Started: USDA License:
 Unit T000153154 7/28/21 N/A

Status: Method: Received: Sampler ID:
 N/A TM14 (HPLC-DAD): Potency - Broad Spectrum Analysis, 0.01% THC (Colorado Panel) 07/22/2021 @ 10:29 AM N/A

CANNABINOID PROFILE

Compound	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.007	0.018	ND	ND	# of Servings = 1 Sample Weight=0.57g
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.007	0.020	ND	ND	
Cannabidiolic acid (CBDA)	0.065	0.237	ND	ND	
Cannabidiol (CBD)	0.064	0.231	31.979	56.07	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.083	0.240	ND	ND	
Cannabinolic Acid (CBNA)	0.047	0.137	ND	ND	
Cannabinol (CBN)	0.022	0.063	3.721	6.52	
Cannabigerolic acid (CBGA)	0.069	0.201	ND	ND	
Cannabigerol (CBG)	0.017	0.048	2.080	3.65	
Tetrahydrocannabivarinic Acid (THCVA)	0.059	0.170	ND	ND	
Tetrahydrocannabivarin (THCV)	0.015	0.044	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.027	0.099	ND	ND	
Cannabidivarin (CBDV)	0.015	0.055	0.049*	0.09*	
Cannabichromenic Acid (CBCA)	0.027	0.078	ND	ND	
Cannabichromene (CBC)	0.029	0.085	ND	ND	
Total Cannabinoids			37.829	66.33	
Total Potential THC**			ND	ND	
Total Potential CBD**			31.979	56.07	

 Ryan Weems
 30-Jul-2021
 09:48 AM

 Taylor Brevik
 30-Jul-21
 9:53 AM

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

SG25M

Batch ID:	21E0000847	Test ID:	T000153155
Type:	Concentrate	Submitted:	07/22/2021 @ 10:29 AM
Test:	Pesticides	Started:	7/26/2021
Method:	TM17 (UHPLC-QQQ LC MS/MS)	Reported:	7/28/2021


PESTICIDE RESIDUE

Compound	Dynamic Range (ppb)	Result (ppb)	Compound	Dynamic Range (ppb)	Result (ppb)
Acephate	47 - 2633	ND*	Malathion	317 - 2633	ND*
Acetamiprid	45 - 2633	ND*	Metalaxyl	44 - 2633	ND*
Abamectin	>288	ND*	Methiocarb	43 - 2633	ND*
Azoxystrobin	46 - 2633	ND*	Methomyl	46 - 2633	ND*
Bifenazate	43 - 2633	ND*	MGK 264 1	181 - 2633	ND*
Boscalid	45 - 2633	ND*	MGK 264 2	129 - 2633	ND*
Carbaryl	44 - 2633	ND*	Myclobutanil	49 - 2633	ND*
Carbofuran	48 - 2633	ND*	Naled	49 - 2633	ND*
Chlorantraniliprole	56 - 2633	ND*	Oxamyl	42 - 2633	ND*
Chlorpyrifos	49 - 2633	ND*	Paclobutrazol	48 - 2633	ND*
Clofentezine	306 - 2633	ND*	Permethrin	302 - 2633	ND*
Diazinon	312 - 2633	ND*	Phosmet	44 - 2633	ND*
Dichlorvos	>265	ND*	Prophos	280 - 2633	ND*
Dimethoate	45 - 2633	ND*	Propoxur	47 - 2633	ND*
E-Fenpyroximate	362 - 2633	ND*	Pyridaben	342 - 2633	ND*
Etofenprox	45 - 2633	ND*	Spinosad A	32 - 2633	ND*
Etoxazole	334 - 2633	ND*	Spinosad D	89 - 2633	ND*
Fenoxycarb	>45	ND*	Spiromesifen	>305	ND*
Fipronil	54 - 2633	ND*	Spirotetramat	>341	ND*
Flonicamid	47 - 2633	ND*	Spiroxamine 1	19 - 2633	ND*
Fludioxonil	>307	ND*	Spiroxamine 2	25 - 2633	ND*
Hexythiazox	41 - 2633	ND*	Tebuconazole	348 - 2633	ND*
Imazalil	294 - 2633	ND*	Thiacloprid	44 - 2633	ND*
Imidacloprid	48 - 2633	ND*	Thiamethoxam	45 - 2633	ND*
Kresoxim-methyl	49 - 2633	ND*	Trifloxystrobin	46 - 2633	ND*


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

N/A

FINAL APPROVAL


 Taylor Brevik
 28-Jul-2021
 9:34 AM

PREPARED BY / DATE


 Sam Smith
 28-Jul-2021
 9:37 AM

APPROVED BY / DATE

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

SG25M

Batch ID or Lot Number: 21236B	Test: Microbial Contaminants	Reported: 8/28/21	
Matrix: Finished Product	Test ID: T000159819	Started: 8/25/21	USDA License: N/A
Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 08/25/2021 @ 10:11 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 ² CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
Total Yeast and Mold*	TM-24, Culture Plating	10 ² 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	

Brianne Maillot
 Brianne Maillot
 8/28/2021
 10:15:00 AM

Courtney Richards
 Courtney Richards
 8/28/2021
 9:54:00 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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Certificate #4329.02

SG25M

Batch ID or Lot Number: 21E0000847	Test: Metals	Reported: 8/4/21	
Matrix: Unit Co	Test ID: T000153157	Started: 7/28/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS): Heavy Metals (Colorado Panel)	Received: 07/22/2021 @ 10:29 AM	Sampler ID: N/A

HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Arsenic	0.052 - 5.23	ND	Amendment to certificate T000153157, certificate updated to Colorado Compliance format.
Cadmium	0.044 - 4.42	ND	
Mercury	0.044 - 4.38	ND	
Lead	0.044 - 4.37	ND	

 Ryan Weems
4-Aug-21
10:45 AM

 Sam Smith
4-Aug-21
10:53 AM

PREPARED BY / DATE

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Definitions

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SG25M

Batch ID or Lot Number: 21E0000847	Test: Mycotoxins	Reported: 7/29/21	
Matrix: Concentrate	Test ID: T000153159	Started: 7/28/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 07/22/2021 @ 10:29 AM	Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	3.9 - 128.4	ND	N/A
Aflatoxin B1	1 - 32.5	ND	
Aflatoxin B2	1.1 - 32.5	ND	
Aflatoxin G1	1.1 - 31.2	ND	
Aflatoxin G2	1.2 - 30.8	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	


 Sam Smith
 29-Jul-21
 8:42 AM

PREPARED BY / DATE


 Chris Jungling
 29-Jul-21
 3:32 PM

APPROVED BY / DATE

Definitions

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Certificate #4329.02


SG25M

Batch ID or Lot Number: 21E0000847	Test: Residual Solvents	Reported: 7/28/21	
Matrix: N/A	Test ID: T000153158	Started: 7/27/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 07/22/2021 @ 10:29 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	68 - 1352	*ND	
Butanes (Isobutane, n-Butane)	160 - 3194	*ND	
Methanol	56 - 1125	*ND	
Pentane	77 - 1537	*ND	
Ethanol	87 - 1747	*ND	
Acetone	88 - 1755	*ND	
Isopropyl Alcohol	94 - 1883	*ND	
Hexane	5 - 105	*ND	
Ethyl Acetate	88 - 1766	*ND	
Benzene	0 - 3	*ND	
Heptanes	84 - 1675	*ND	
Toluene	16 - 320	*ND	
Xylenes (m,p,o-Xylenes)	117 - 2338	*ND	

 Taylor Brevik
28-Jul-21
1:15 PM

 Sam Smith
28-Jul-21
1:19 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

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

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