

CERTIFICATE OF ANALYSIS

PRODUCT NAME: *Joy Organics CBD Capsules
PRODUCT STRENGTH: 25 mg CBD
BATCH: 22039A
BEST BY DATE: HEMP 09/23/2023
EXTRACT LOT: 21E0002753

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

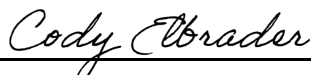
Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	HPLC-UV DAD	*LOQ: ≥ 25 mg / softgel	32.31 mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: $<0.01\%$ (broad spectrum)	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	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
 **CFU/g=Colony Forming Units per Gram
 † Parts Per Million †† Part Per Billion

Values expressed using scientific notation.
 Examples:
 $10^2=100$
 $10^3=1,000$

Quality Certified


 Cody Elbrader 02/14/2022

Quality Assurance Technician
 Date

Joy Organics 25mg capsule

Batch ID or Lot Number: 21E0002753	Test: Potency	Reported: 9/29/21	
Matrix: Unit	Test ID: T000165890	Started: 9/28/21	USDA License: N/A
Status: N/A	Method: TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis (Colorado Panel)	Received: 09/27/2021 @ 11:11 AM	Sampler ID: N/A

CANNABINOID PROFILE

Compound	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.216	0.727	ND	ND	# of Servings = 1 Sample Weight=0.571g
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.244	0.820	ND	ND	
Cannabidiolic acid (CBDA)	0.306	0.775	ND	ND	
Cannabidiol (CBD)	0.298	0.756	32.305	56.54	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.269	0.903	ND	ND	
Cannabinolic Acid (CBNA)	0.154	0.517	ND	ND	
Cannabinol (CBN)	0.070	0.237	ND	ND	
Cannabigerolic acid (CBGA)	0.226	0.758	ND	ND	
Cannabigerol (CBG)	0.054	0.181	2.044	3.58	
Tetrahydrocannabivarinic Acid (THCVA)	0.191	0.641	ND	ND	
Tetrahydrocannabivarin (THCV)	0.049	0.165	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.128	0.323	ND	ND	
Cannabidivarin (CBDV)	0.070	0.179	ND	ND	
Cannabichromenic Acid (CBCA)	0.087	0.292	ND	ND	
Cannabichromene (CBC)	0.095	0.319	ND	ND	
Total Cannabinoids			34.349	60.12	
Total Potential THC**			ND	ND	
Total Potential CBD**			32.305	56.54	



Daniel Weidensaul
29-Sep-2021
01:41 PM



Sam Smith
29-Sep-21
1:44 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

Joy Organics 25mg capsule

Batch ID or Lot Number: **21E0002753** Test: **Pesticides** Reported: **9/29/21**

Matrix: Concentrate Test ID: t000165891 Started: 9/28/21 USDA License: N/A

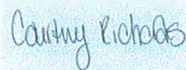
Status: N/A Method: TM17(LC-QQQ LC MS/MS): Received: 09/27/2021 @ 11:11 AM Sampler ID: N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	41	ND	Fenoxycarb	42	ND	Paclobutrazol	42	ND
Acetamiprid	40	ND	Fipronil	33	ND	Permethrin	287	ND
Avermectin	316	ND	Flonicamid	51	ND	Phosmet	43	ND
Azoxystrobin	43	ND	Fludioxonil	295	ND	Prophos	293	ND
Bifenazate	46	ND	Hexythiazox	47	ND	Propoxur	41	ND
Boscalid	54	ND	Imazalil	284	ND	Pyridaben	298	ND
Carbaryl	39	ND	Imidacloprid	42	ND	Spinosad A	35	ND
Carbofuran	41	ND	Kresoxim-methyl	150	ND	Spinosad D	54	ND
Chlorantraniliprole	53	ND	Malathion	299	ND	Spiromesifen	272	ND
Chlorpyrifos	500	ND	Metalaxyl	43	ND	Spirotetramat	305	ND
Clofentezine	285	ND	Methiocarb	42	ND	Spiroxamine 1	18	ND
Diazinon	290	ND	Methomyl	44	ND	Spiroxamine 2	24	ND
Dichlorvos	290	ND	MGK 264 1	160	ND	Tebuconazole	290	ND
Dimethoate	42	ND	MGK 264 2	136	ND	Thiacloprid	41	ND
E-Fenpyroximate	317	ND	Myclobutanil	40	ND	Thiamethoxam	43	ND
Etofenprox	44	ND	Naled	44	ND	Trifloxystrobin	43	ND
Etoxazole	307	ND	Oxamyl	1500	ND			



Sam Smith
9/29/2021
5:13:00 PM



Courtney Richards
9/29/2021
7:12:00 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

LOQ = Limit of Quantification
ppb = Parts per Billion

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Certificate #4329.02

Prepared for:

JOY ORGANICS
SG25


Batch ID or Lot Number: 22039A	Test: Microbial Contaminants	Reported: 2/14/22	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
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Matrix: Finished Product	Test ID: T000191921	Started: 2/10/22	USDA License: N/A
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Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 02/09/2022 @ 11:21 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	


 Eden Thompson-Wright
 2/13/2022
 12:33:00 PM


 Brett Hudson
 2/14/2022
 9:52:00 AM

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

Joy Organics 25mg capsule

Batch ID or Lot Number: 21E0002753	Test: Metals	Reported: 9/30/21	USDA License: N/A
Matrix: Unit Co	Test ID: T000165893	Started: 9/29/21	Sampler ID: N/A
Status: N/A	Method: TM19 (ICP-MS): Heavy Metals (Colorado Panel)	Received: 09/27/2021 @ 11:11 AM	

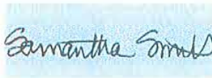
HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.047 - 4.73	ND	
Cadmium	0.046 - 4.60	ND	
Mercury	0.044 - 4.38	ND	
Lead	0.048 - 4.76	ND	



 Ryan Weems
 30-Sep-21
 12:59 PM

PREPARED BY / DATE



 Sam Smith
 30-Sep-21
 1:02 PM

APPROVED BY / DATE

Definitions

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

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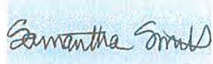
Certificate #4329.02

Joy Organics 25mg capsule

Batch ID or Lot Number: 21E0002753	Test: Mycotoxins	Reported: 10/1/21	
Matrix: Concentrate	Test ID: T000165895	Started: 9/29/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 09/27/2021 @ 11:11 AM	Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	1.8 - 131.9	ND	N/A
Aflatoxin B1	1.1 - 33.8	ND	
Aflatoxin B2	1.1 - 33.4	ND	
Aflatoxin G1	0.9 - 33.4	ND	
Aflatoxin G2	1.1 - 32.2	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	


 PREPARED BY / DATE
 Sam Smith
 30-Sep-21
 11:46 AM


 APPROVED BY / DATE
 Courtney Richards
 1-Oct-21
 8:35 AM

Definitions

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

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 ACCREDITED
 Certificate #4329.02

Joy Organics 25mg capsule

Batch ID or Lot Number: 21E0002753	Test: Residual Solvents	Reported: 9/29/21	
Matrix: N/A	Test ID: T000165894	Started: 9/29/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS); Residual Solvents (Colorado Panel)	Received: 09/27/2021 @ 11:11 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	103 - 2054	*ND	
Butanes (Isobutane, n-Butane)	207 - 4133	*ND	
Methanol	75 - 1493	*ND	
Pentane	108 - 2167	*ND	
Ethanol	116 - 2314	*ND	
Acetone	118 - 2351	*ND	
Isopropyl Alcohol	128 - 2555	*ND	
Hexane	7 - 145	*ND	
Ethyl Acetate	120 - 2394	*ND	
Benzene	0 - 5	*ND	
Heptanes	114 - 2273	*ND	
Toluene	22 - 431	*ND	
Xylenes (m,p,o-Xylenes)	156 - 3128	*ND	



 Daniel Weidensaul
 29-Sep-21
 7:33 PM



 Ryan Weems
 29-Sep-21
 7:35 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

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

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