

CERTIFICATE OF ANALYSIS

PRODUCT NAME:	Organic CBD Tincture - Natural
PRODUCT STRENGTH:	450mg
TINCTURE BATCH:	230830A
BEST BY DATE:	8/30/2025
HEMP EXTRACT LOT:	230303I

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 (product strength) mg / bottle	517mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: 10 ppm (.001-0.3%)	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† Afltoxin 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


 Name

9/22/2023

Date

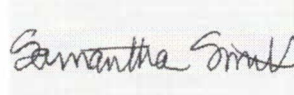
450mg CBD Broad Spectrum Tincture- Natural

Batch ID or Lot Number: 230830A	Test: Potency	Reported: 09Mar2023	USDA License: N/A
Matrix: Concentrate	Test ID: T000237775	Started: 08Mar2023	Sampler ID: N/A
	Method(s): TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis	Received: 07Mar2023	Status: Active

Cannabinoids	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.007	0.021	ND	ND	
Cannabichromenic Acid (CBCA)	0.007	0.020	ND	ND	
Cannabidiol (CBD)	0.021	0.060	1.876	18.76	
Cannabidiolic Acid (CBDA)	0.021	0.062	ND	ND	
Cannabidivarin (CBDV)	0.005	0.014	<LOQ	<LOQ	
Cannabidivarinic Acid (CBDVA)	0.009	0.026	ND	ND	
Cannabigerol (CBG)	0.004	0.012	0.145	1.45	
Cannabigerolic Acid (CBGA)	0.017	0.051	ND	ND	
Cannabinol (CBN)	0.005	0.016	ND	ND	
Cannabinolic Acid (CBNA)	0.012	0.035	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.021	0.060	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.019	0.055	ND	ND	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.017	0.049	ND	ND	
Tetrahydrocannabivarin (THCV)	0.004	0.011	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.015	0.043	ND	ND	
Total Cannabinoids			2.021	20.21	
Total Potential THC			ND	ND	
Total Potential CBD			1.876	18.76	

Final Approval


 Karen Winternheimer
 09Mar2023
 12:05:00 PM MST



 Sam Smith
 09Mar2023
 12:07:00 PM MST


PREPARED BY / DATE

APPROVED BY / DATE

<https://results.botanacor.com/api/v1/coas/uuid/d7f69cf-49f0-4fde-8f7b-6d4ac27c0ddd>
Definitions

% = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method).
 Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa *(0.877)) and Total CBD = CBD + (CBDA *(0.877)).

Testing results are based solely upon the sample submitted to SC Laboratories, Inc. in the condition it was received. SC Laboratories, Inc. 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 SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA



Cert #4329 02

 CDPHE Certified
 fd7f69cf49f04fde8f7b6d4ac27c0ddd.1

450mg CBD Broad Spectrum Tincture- Natural

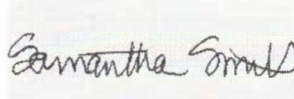
Batch ID or Lot Number: 230830A	Test: Residual Solvents	Reported: 09Mar2023	USDA License: N/A
Matrix: Concentrate	Test ID: T000237779	Started: 08Mar2023	Sampler ID: N/A
	Method(s): TM04 (GC-MS): Residual Solvents	Received: 07Mar2023	Status: Active

Residual Solvents	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	109 - 2177	ND	
Butanes (Isobutane, n-Butane)	225 - 4504	ND	
Methanol	67 - 1333	ND	
Pentane	111 - 2222	ND	
Ethanol	114 - 2275	ND	
Acetone	111 - 2215	ND	
Isopropyl Alcohol	114 - 2270	ND	
Hexane	7 - 133	ND	
Ethyl Acetate	110 - 2195	ND	
Benzene	0.2 - 4.3	ND	
Heptanes	109 - 2175	ND	
Toluene	20 - 396	ND	
Xylenes (m,p,o-Xylenes)	144 - 2881	ND	

Final Approval


 Karen Winternheimer
 09Mar2023
 12:38:00 PM MST

PREPARED BY / DATE



 Sam Smith
 09Mar2023
 12:40:00 PM MST

APPROVED BY / DATE


<https://results.botanacor.com/api/v1/coas/uuid/f58986c1-59c1-4e5b-9f52-2a085daa9eed>
Definitions

 ND = None Detected (defined by dynamic range of the method)
 Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

Testing results are based solely upon the sample submitted to SC Laboratories, Inc., in the condition it was received. SC Laboratories, Inc. 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 SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA.



Cert #4329 02

 CDPHE Certified
 f58986c159c14e5b9f522a085daa9eed.1

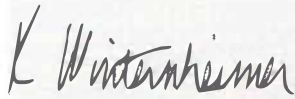
USDA License:

450mg CBD Broad Spectrum Tincture- Natural

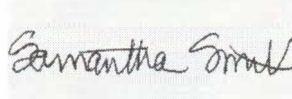
Batch ID or Lot Number: 230830A	Test: Pesticides	Reported: 10Mar2023	NA
Matrix: Concentrate	Test ID: T000237776	Started: 09Mar2023	Sampler ID: NA
	Method(s): TM17 (LC-QQ LC MS/MS)	Received: 07Mar2023	Status: NA

Pesticides	Dynamic Range (ppb)	Result (ppb)	Pesticides	Dynamic Range (ppb)	Result (ppb)
Abamectin	287 - 2706	ND	Malathion	287 - 2728	ND
Acephate	42 - 2791	ND	Metalaxyl	42 - 2738	ND
Acetamiprid	42 - 2774	ND	Methiocarb	43 - 2757	ND
Azoxystrobin	43 - 2724	ND	Methomyl	43 - 2799	ND
Bifenazate	45 - 2727	ND	MGK 264 1	168 - 1649	ND
Boscalid	50 - 2758	ND	MGK 264 2	118 - 1130	ND
Carbaryl	41 - 2727	ND	Myclobutanil	36 - 2729	ND
Carbofuran	45 - 2722	ND	Naled	49 - 2737	ND
Chlorantraniliprole	43 - 2784	ND	Oxamyl	42 - 2801	ND
Chlorpyrifos	47 - 2894	ND	Paclobutrazol	45 - 2726	ND
Clofentezine	279 - 2736	ND	Permethrin	292 - 2741	ND
Diazinon	281 - 2750	ND	Phosmet	45 - 2684	ND
Dichlorvos	263 - 2763	ND	Prophos	286 - 2754	ND
Dimethoate	44 - 2762	ND	Propoxur	44 - 2733	ND
E-Fenproximate	288 - 2879	ND	Pyridaben	299 - 2820	ND
Etofenprox	47 - 2664	ND	Spinosad A	36 - 2225	ND
Etoazole	288 - 2838	ND	Spinosad D	50 - 520	ND
Fenoxycarb	45 - 2716	ND	Spiromesifen	276 - 2878	ND
Fipronil	47 - 2714	ND	Spirotetramat	284 - 2742	ND
Fonicamid	48 - 2864	ND	Spiroxamine 1	19 - 1180	ND
Fludioxonil	310 - 2748	ND	Spiroxamine 2	23 - 1563	ND
Hexythiazox	40 - 2838	ND	Tebuconazole	278 - 2722	ND
Imazalil	273 - 2749	ND	Thiacloprid	45 - 2785	ND
Imidacloprid	44 - 2758	ND	Thiamethoxam	42 - 2797	ND
Kresoxim-methyl	43 - 2760	ND	Trifloxystrobin	46 - 2732	ND

Final Approval



Karen Winternheimer
10Mar2023
10:32:00 AM MST



Sam Smith
10Mar2023
10:35:00 AM MST



PREPARED BY / DATE

APPROVED BY / DATE

<https://results.botanacor.com/api/v1/coas/uuid/7583335e-2174-4b24-ba8a-56a907a9e511>

Definitions

ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range
ppb = Parts Per Billion

Testing results are based solely upon the sample submitted to SC Laboratories, Inc., in the condition it was received. SC Laboratories, Inc., 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 SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA.



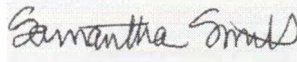
Cert #4329 02
7583335e21744b24ba8a56a907a9e511

450mg CBD Broad Spectrum Tincture- Natural

Batch ID or Lot Number: 230830A	Test: Heavy Metals	Reported: 09Mar2023	USDA License: NA
Matrix: Unit Co	Test ID: T000237778	Started: 08Mar2023	Sampler ID: NA
	Method(s): TM19 (ICP-MS): Heavy Metals	Received: 07Mar2023	Status: NA

Heavy Metals	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.04 - 4.21	ND	
Cadmium	0.04 - 4.38	ND	
Mercury	0.04 - 4.37	ND	
Lead	0.04 - 4.42	ND	

Final Approval



Sam Smith
09Mar2023
09:56:00 AM MST

PREPARED BY / DATE



Karen Winternheimer
09Mar2023
10:09:00 AM MST

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/9e9a969f-8002-47d6-9bfb-3e04775a2521>

Definitions

ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

Testing results are based solely upon the sample submitted to SC Laboratories, Inc. in the condition it was received. SC Laboratories, Inc. 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 SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA.



Cert #4329 02

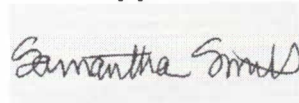
CDPHE Certified
9e9a969f800247d69bfb3e04775a2521.1

450mg CBD Broad Spectrum Tincture- Natural

Batch ID or Lot Number: 230830A	Test: Mycotoxins	Reported: 09Mar2023	USDA License: N/A
Matrix: Concentrate	Test ID: T000237780	Started: 08Mar2023	Sampler ID: N/A
	Method(s): TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins	Received: 07Mar2023	Status: Active

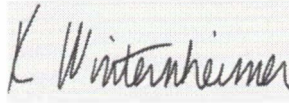
Mycotoxins	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	2.35 - 137.94	ND	N/A
Aflatoxin B1	0.99 - 34.27	ND	
Aflatoxin B2	0.96 - 33.94	ND	
Aflatoxin G1	0.96 - 34.63	ND	
Aflatoxin G2	2.22 - 34.47	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Final Approval



Sam Smith
09Mar2023
07:45:00 AM MST

PREPARED BY / DATE



Karen Winterheimer
09Mar2023
07:48:00 AM MST

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uujd/dc8abbfd-d7b8-4a94-aa24-f06dcaae6389>

Definitions

ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

Testing results are based solely upon the sample submitted to SC Laboratories, Inc., in the condition it was received. SC Laboratories, Inc., 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 SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA.



Cert #4329 02

CDPHE Certified
dc8abbfd7b84a94aa24f06dcaae6389.1

CERTIFICATE OF ANALYSIS

Prepared for:
JOY ORGANICS

5042 Technology Parkway Ste. 500
FT. COLLINS, CO USA 80528

OTNAT450

Batch ID or Lot Number: 230830A	Test: Microbial Contaminants	Reported: 11Sep2023	USDA License: N/A
Matrix: Finished Product	Test ID: T000255223	Started: 07Sep2023	Sampler ID: N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 06Sep2023	Status: Active

Microbial Contaminants

Contaminants	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10 ⁰ CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
<i>Salmonella</i>	TM25: PCR	10 ⁰ CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10 ¹ CFU/g	1.0x10 ² - 1.5x10 ⁴	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10 ² CFU/g	1.0x10 ³ - 1.5x10 ⁵	None Detected	
Total Coliforms*	TM27: Culture Plating	10 ¹ CFU/g	1.0x10 ² - 1.5x10 ⁴	None Detected	

Final Approval



Brett Hudson
10Sep2023
04:20:00 PM MDT



Eden Thompson-Wright
11Sep2023
04:16:00 PM MDT



PREPARED BY / DATE

APPROVED BY / DATE

<https://results.botanacor.com/api/v1/coas/uuid/93059b6e-8aba-40fe-abdb-48dc9bd48352>

Definitions

* 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
CFU/g = Colony Forming Units per Gram, LOD = Limit of Detection
ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation
STEC = Shiga Toxin-Producing E. coli

Testing results are based solely upon the sample submitted to SC Laboratories, Inc., in the condition it was received. SC Laboratories, Inc., 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 SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA.



Cert #4329.02

CDPHE Certified

93059b6e8aba40feabdb48dc9bd48352.1