

# CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** Certified Organic - CBD Tincture - Orange  
**PRODUCT STRENGTH:** 900 mg / bottle  
**TINCTURE BATCH:** 22061B  
**BEST BY DATE:** 09/02/2023  
**HEMP EXTRACT LOT:** C1117-003

\*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 - Coconut and Hemp, Orange	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

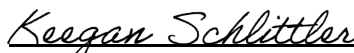
### Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
<b>Potency - Total CBD</b>	HPLC-UV DAD	LOQ*: ≥ 900 mg / bottle	<b>1065.3 mg</b>	PASS
<b>Potency - D9-THC</b>	HPLC-UV DAD	LOQ: <0.01% (broad spectrum)	<b>Below LOQ</b>	PASS
<b>Pesticide Panel</b>	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	<b>Below LOQ</b>	PASS
<b>Microbial</b> Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram**	<b>Absent</b>	PASS
<b>Microbial</b> Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	<b>Absent</b>	PASS
<b>Microbial</b> Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>2</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Microbial</b> Total Coliforms	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>2</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Microbial</b> Total Aerobic Count	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>3</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Heavy Metals</b>	ICP-MS	Arsenic (As): ≤1.5 ppm† Cadmium (Cd): ≤0.5 ppm Lead (Pb): ≤0.5 ppm Mercury (Hg): ≤1.5 ppm	<b>Below LOQ</b>	PASS
<b>Mycotoxins</b>	ICP-MS	Total Aflatoxins <20 ppb†† Aflatoxin B1 < 20 ppb Ochratoxin < 20 ppb	<b>Below LOQ</b>	PASS
<b>Residual Solvents</b>	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	<b>Below LOQ</b>	PASS

\*Level of Quantification  
 \*\*Colony Forming Units per Gram  
 † Parts Per Million †† Part Per Billion

Values expressed in scientific notation.  
 Examples:  
 10<sup>2</sup>=100  
 10<sup>3</sup>=1,000

Quality Certified

  
 Keegan Schlittler  
 Quality Assurance Manager

03/07/2022

Date

**27852**

Batch ID or Lot Number: <b>C1117-003</b>	Test: <b>Potency</b>	Reported: <b>11/23/21</b>
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Matrix: Solution	Test ID: T000177409	Started: 11/22/21	USDA License: N/A
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Status: N/A	Method: TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A
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## CANNABINOID PROFILE

Compound	LOD (mg/mL)	LOQ (mg/mL)	Result (mg/mL)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.170	0.483	ND	ND	Density = 0.945g/mL
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.192	0.545	ND	ND	
Cannabidiolic acid (CBDA)	0.183	0.563	ND	ND	
Cannabidiol (CBD)	0.178	0.549	35.510	37.58	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.212	0.600	ND	ND	
Cannabinolic Acid (CBNA)	0.121	0.344	ND	ND	
Cannabinol (CBN)	0.055	0.157	ND	ND	
Cannabigerolic acid (CBGA)	0.178	0.504	ND	ND	
Cannabigerol (CBG)	0.042	0.120	2.410	2.55	
Tetrahydrocannabivarinic Acid (THCVA)	0.150	0.426	ND	ND	
Tetrahydrocannabivarin (THCV)	0.039	0.110	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.076	0.235	ND	ND	
Cannabidivarin (CBDV)	0.042	0.130	0.245	0.26	
Cannabichromenic Acid (CBCA)	0.068	0.194	ND	ND	
Cannabichromene (CBC)	0.075	0.212	ND	ND	
<b>Total Cannabinoids</b>			<b>38.165</b>	<b>40.39</b>	
Total Potential THC**			ND	ND	
Total Potential CBD**			35.510	37.58	

*Daniel Weidensaul*  
 Daniel Weidensaul  
 23-Nov-2021  
 05:10 PM

*Ryan Weems*  
 Ryan Weems  
 23-Nov-21  
 5:13 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

**27852**


Batch ID or Lot Number: **C1117-003**      Test: **Pesticides**      Reported: **11/29/21**


Matrix: Concentrate      Test ID: T000177410      Started: 11/29/21      USDA License: N/A

Status: N/A      Method: TM17(LC-QQQ LC MS/MS):      Received: 11/19/2021 @ 10:26 AM      Sampler ID: N/A

## PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	34	ND	Fenoxycarb	47	ND	Paclobutrazol	43	ND
Acetamiprid	43	ND	Fipronil	2	ND	Permethrin	283	ND
Avermectin	274	ND	Flonicamid	47	ND	Phosmet	36	ND
Azoxystrobin	46	ND	Fludioxonil	292	ND	Prophos	283	ND
Bifenazate	43	ND	Hexythiazox	41	ND	Propoxur	43	ND
Boscalid	55	ND	Imazalil	286	ND	Pyridaben	287	ND
Carbaryl	41	ND	Imidacloprid	48	ND	Spinosad A	35	ND
Carbofuran	43	ND	Kresoxim-methyl	150	ND	Spinosad D	51	ND
Chlorantraniliprole	47	ND	Malathion	294	ND	Spiromesifen	274	ND
Chlorpyrifos	500	ND	Metalaxyl	45	ND	Spirotetramat	287	ND
Clofentezine	281	ND	Methiocarb	41	ND	Spiroxamine 1	29	ND
Diazinon	285	ND	Methomyl	42	ND	Spiroxamine 2	27	ND
Dichlorvos	320	ND	MGK 264 1	158	ND	Tebuconazole	289	ND
Dimethoate	45	ND	MGK 264 2	127	ND	Thiacloprid	43	ND
E-Fenpyroximate	287	ND	Myclobutanil	42	ND	Thiamethoxam	36	ND
Etofenprox	46	ND	Naled	41	ND	Trifloxystrobin	48	ND
Etoxazole	296	ND	Oxamyl	1500	ND			


 Sam Smith  
 11/29/2021  
 5:56:00 PM


 Daniel Weidensaul  
 11/29/2021  
 6:39:00 PM

PREPARED BY / DATE

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### Definitions

LOQ = Limit of Quantification  
 ppb = Parts per Billion

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Certificate #4329.02

Prepared for:

**JOY ORGANICS**
**OTO900**

Batch ID or Lot Number: <b>22061B</b>	Test: <b>Microbial Contaminants</b>	Reported: <b>3/7/22</b>	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
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Matrix: Finished Product	Test ID: T000196211	Started: 3/3/22	USDA License: N/A
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Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial	Received: 03/03/2022 @ 10:52 AM	Sampler ID: N/A
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### MICROBIAL CONTAMINANTS DETERMINATION

Contaminant	Method	LOD	LLOQ	ULOQ	Result	Notes
<b>Total Aerobic Count*</b>	TM-26, Culture Plating	10 <sup>2</sup> CFU/g	10 <sup>3</sup> CFU/g	1.5x10 <sup>5</sup> CFU/g	None Detected	Free from visual mold, mildew, and foreign matter
<b>Total Coliforms*</b>	TM-27, Culture Plating	10 <sup>1</sup> CFU/g	10 <sup>2</sup> CFU/g	1.5x10 <sup>4</sup> CFU/g	None Detected	
<b>Total Yeast and Mold*</b>	TM-24, Culture Plating	10 <sup>1</sup> CFU/g	10 <sup>2</sup> CFU/g	1.5x10 <sup>4</sup> CFU/g	None Detected	
<b>STEC</b>	TM-25, PCR	10 <sup>0</sup> CFU/25 g	NA	NA	Absent	
<b>Salmonella</b>	TM-25, PCR	10 <sup>0</sup> CFU/25 g	NA	NA	Absent	

*Carly Bader*  
 Carly Bader  
 3/6/2022  
 12:13:00 PM

*Eden Thompson*  
 Eden Thompson-Wright  
 3/7/2022  
 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:  
 10<sup>2</sup> = 100 CFU  
 10<sup>3</sup> = 1,000 CFU  
 10<sup>4</sup> = 10,000 CFU  
 10<sup>5</sup> = 100,000 CFU

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**27852**

Batch ID or Lot Number: <b>C1117-003</b>	Test: <b>Metals</b>	Reported: <b>11/23/21</b>	
Matrix: Unit Co	Test ID: T000177412	Started: 11/22/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS); Heavy Metals (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A

### HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.040 - 4.04	ND	
Cadmium	0.042 - 4.23	ND	
Mercury	0.042 - 4.15	ND	
Lead	0.042 - 4.23	ND	

 Ryan Weems  
23-Nov-21  
1:03 PM

PREPARED BY / DATE

 Sam Smith  
23-Nov-21  
1:07 PM

APPROVED BY / DATE

#### Definitions

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

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**27852**


Batch ID or Lot Number: <b>C1117-003</b>	Test: <b>Mycotoxins</b>	Reported: <b>11/29/21</b>	
Matrix: Concentrate	Test ID: T000177414	Started: 11/24/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A

### MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	4.2 - 129.4	ND	N/A
Aflatoxin B1	1.1 - 32.9	ND	
Aflatoxin B2	1.2 - 32.9	ND	
Aflatoxin G1	1.1 - 33	ND	
Aflatoxin G2	1.2 - 32.2	ND	
<b>Total Aflatoxins (B1, B2, G1, and G2)</b>		ND	


 Ryan Weems  
 29-Nov-21  
 3:49 PM

PREPARED BY / DATE


 Sam Smith  
 29-Nov-21  
 4:04 PM

APPROVED BY / DATE

#### Definitions

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

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27852

Batch ID or Lot Number: <b>C1117-003</b>	Test: <b>Residual Solvents</b>	Reported: <b>11/24/21</b>	
Matrix: N/A	Test ID: T000177413	Started: 11/23/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 11/19/2021 @ 10:26 AM	Sampler ID: N/A

### RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	106 - 2125	*ND	
Butanes (Isobutane, n-Butane)	212 - 4250	*ND	
Methanol	65 - 1298	*ND	
Pentane	88 - 1764	*ND	
Ethanol	94 - 1875	*ND	
Acetone	104 - 2074	*ND	
Isopropyl Alcohol	111 - 2221	*ND	
Hexane	6 - 126	*ND	
Ethyl Acetate	106 - 2121	*ND	
Benzene	0.2 - 4.2	*ND	
Heptanes	99 - 1981	*ND	
Toluene	19 - 384	*ND	
Xylenes (m,p,o-Xylenes)	139 - 2780	*ND	


 Sam Smith  
 24-Nov-21  
 2:14 PM


 Ryan Weems  
 24-Nov-21  
 2:15 PM

PREPARED BY / DATE

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#### Definitions

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

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