

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Certified Organic CBD Tincture - Natural
PRODUCT STRENGTH: 450 mg
TINCTURE BATCH: 42069B
BEST BY DATE: 09/10/2025
HEMP EXTRACT LOT: C1116-002

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 | *LOQ: ≥ 450 mg / bottle | 541.4a [| PASS |
| Potency - D9-THC | HPLC-UV DAD | Complies with CDPHE 6 CCR 1010-21 THC 0.0% | 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 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 | 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 Quantification
 **Colony Forming Units per Gram
 † Parts Per Million †† Part Per Billion

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

Quality Certified Keegan Schlittler 03/15/2022
 Keegan Schlittler Date
 Quality Assurance Manager

27836

| | | |
|---|-------------------------|------------------------------|
| Batch ID or Lot Number: C1116-002 | Test: Potency | Reported: 11/23/21 |
|---|-------------------------|------------------------------|

| | | | |
|---------------------|------------------------|----------------------|----------------------|
| Matrix: Solution | Test ID: T000177403 | Started: 11/22/21 | USDA License: N/A |
|---------------------|------------------------|----------------------|----------------------|

| | | | |
|----------------|--|------------------------------------|--------------------|
| Status: N/A | Method: TM14 (HPLC-DAD): Potency - Standard Cannabinoid Analysis (Colorado Panel) | Received: 11/19/2021 @ 10:26 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) | 0.156 | 0.441 | ND | ND | Density = 0.92g/mL |
| Delta 9-Tetrahydrocannabinol (Delta 9THC) | 0.176 | 0.498 | ND | ND | |
| Cannabidiolic acid (CBDA) | 0.167 | 0.514 | ND | ND | |
| Cannabidiol (CBD) | 0.163 | 0.502 | 18.048 | 19.62 | |
| Delta 8-Tetrahydrocannabinol (Delta 8THC) | 0.193 | 0.549 | ND | ND | |
| Cannabinolic Acid (CBNA) | 0.111 | 0.314 | ND | ND | |
| Cannabinol (CBN) | 0.051 | 0.144 | ND | ND | |
| Cannabigerolic acid (CBGA) | 0.162 | 0.460 | ND | ND | |
| Cannabigerol (CBG) | 0.039 | 0.110 | 1.255 | 1.36 | |
| Tetrahydrocannabivarinic Acid (THCVA) | 0.137 | 0.389 | ND | ND | |
| Tetrahydrocannabivarin (THCV) | 0.035 | 0.100 | ND | ND | |
| Cannabidivarinic Acid (CBDVA) | 0.070 | 0.215 | ND | ND | |
| Cannabidivarin (CBDV) | 0.039 | 0.119 | 0.126 | 0.14 | |
| Cannabichromenic Acid (CBCA) | 0.063 | 0.177 | ND | ND | |
| Cannabichromene (CBC) | 0.068 | 0.194 | ND | ND | |
| Total Cannabinoids | | | 19.429 | 21.12 | |
| Total Potential THC** | | | ND | ND | |
| Total Potential CBD** | | | 18.048 | 19.62 | |

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.



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Certificate #4329.02

27836

Batch ID or Lot Number: **C1116-002** Test: **Pesticides** Reported: **11/29/21**

Matrix: Concentrate Test ID: T000177404 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 | | | |

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

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

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Definitions

LOQ = Limit of Quantification
 ppb = Parts per Billion

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Certificate #4329.02

Prepared for:

OTNAT450
JOY ORGANICS


| | | | |
|--|--|-----------------------------|---|
| Batch ID or Lot Number: 22069B | Test: Microbial Contaminants | Reported: 3/14/22 | Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528 |
|--|--|-----------------------------|---|


| | | | |
|-----------------------------|------------------------|--------------------|----------------------|
| Matrix: Finished Product | Test ID: T000197184 | Started: 3/9/22 | USDA License: N/A |
|-----------------------------|------------------------|--------------------|----------------------|

| | | | |
|----------------|--|------------------------------------|--------------------|
| Status: N/A | Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial | Received: 03/09/2022 @ 10:34 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 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 | |
| STEC | TM-25, PCR | 10 ⁰ CFU/25 g | NA | NA | Absent | |
| Salmonella | TM-25, PCR | 10 ⁰ CFU/25 g | NA | NA | Absent | |


 Eden Thompson-Wright
 3/12/2022
 12:48:00 PM


 Brianne Maillot
 3/14/2022
 9:51:00 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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|---|--|------------------------------------|----------------------|
| Batch ID or Lot Number: C1116-002 | Test: Metals | Reported: 11/23/21 | |
| Matrix: Unit Co | Test ID: T000177406 | 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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|---|---|------------------------------------|----------------------|
| Batch ID or Lot Number: C1116-002 | Test: Mycotoxins | Reported: 11/29/21 | |
| Matrix: Concentrate | Test ID: T000177408 | 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 | 4.3 - 132.2 | ND | N/A |
| Aflatoxin B1 | 1.2 - 33.6 | ND | |
| Aflatoxin B2 | 1.2 - 33.7 | ND | |
| Aflatoxin G1 | 1.2 - 33.8 | ND | |
| Aflatoxin G2 | 1.2 - 32.9 | ND | |
| Total Aflatoxins (B1, B2, G1, and G2) | | 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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ACCREDITED

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| | | | |
|---|--|------------------------------------|----------------------|
| Batch ID or Lot Number: C1116-002 | Test: Residual Solvents | Reported: 11/24/21 | |
| Matrix: N/A | Test ID: T000177407 | 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 | 105 - 2092 | *ND | |
| Butanes (Isobutane, n-Butane) | 209 - 4183 | *ND | |
| Methanol | 64 - 1278 | *ND | |
| Pentane | 87 - 1737 | *ND | |
| Ethanol | 92 - 1845 | *ND | |
| Acetone | 102 - 2041 | *ND | |
| Isopropyl Alcohol | 109 - 2186 | *ND | |
| Hexane | 6 - 124 | *ND | |
| Ethyl Acetate | 104 - 2088 | *ND | |
| Benzene | 0.2 - 4.1 | *ND | |
| Heptanes | 98 - 1950 | *ND | |
| Toluene | 19 - 378 | *ND | |
| Xylenes (m,p,o-Xylenes) | 137 - 2737 | *ND | |


 Sam Smith
 24-Nov-21
 2:14 PM


 Ryan Weems
 24-Nov-21
 2:15 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

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

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