

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Full Spectrum CBD Massage and Body Oil
PRODUCT STRENGTH: 500 mg per bottle
TINCTURE BATCH: 21357A
BEST BY DATE: 11/2023
HEMP EXTRACT LOT: C1123/223

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*: ≥ product strength mg / bottle	577.8 a [PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.3% total THC (Full 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 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 <42 ppb Ochratoxin <42 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:
 10²=100
 10³=1,000

Quality Certified Keegan Schlittler 01/04/2022
 Keegan Schlittler
 Quality Assurance Manager Date

27864


 Batch ID or Lot Number: **C1123-001** Test: **Potency** Reported: **12/1/21**


Matrix: Solution Test ID: T000178516 Started: 11/30/21 USDA License: N/A

Status: N/A Method: TM14 (HPLC-DAD): Potency - Full Spectrum Analysis, 0.3% THC (Colorado Panel) Received: 11/24/2021 @ 10:01 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)	0.166	0.478	ND	ND	Density = 0.945g/mL
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.187	0.540	ND	ND	
Cannabidiolic acid (CBDA)	0.184	0.550	ND	ND	
Cannabidiol (CBD)	0.179	0.537	4.897	5.18	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.206	0.595	ND	ND	
Cannabinolic Acid (CBNA)	0.118	0.341	ND	ND	
Cannabinol (CBN)	0.054	0.156	ND	ND	
Cannabigerolic acid (CBGA)	0.173	0.499	ND	ND	
Cannabigerol (CBG)	0.041	0.119	0.325	0.34	
Tetrahydrocannabivarinic Acid (THCVA)	0.146	0.422	ND	ND	
Tetrahydrocannabivarin (THCV)	0.038	0.109	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.077	0.230	ND	ND	
Cannabidivarin (CBDV)	0.042	0.127	ND	ND	
Cannabichromenic Acid (CBCA)	0.067	0.192	ND	ND	
Cannabichromene (CBC)	0.073	0.210	ND	ND	
Total Cannabinoids			5.222	5.53	
Total Potential THC**			ND	ND	
Total Potential CBD**			4.897	5.18	


 Jacob Miller
 01-Dec-2021
 03:51 PM


 Ryan Weems
 1-Dec-21
 3:52 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

27864

Batch ID or Lot Number: **C1123-001** Test: **Pesticides** Reported: **12/2/21**

Matrix: Concentrate Test ID: T000178517 Started: 12/1/21 USDA License: N/A

Status: N/A Method: TM17(LC-QQQ LC MS/MS): Received: 11/24/2021 @ 10:01 AM Sampler ID: N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	39	ND	Fenoxycarb	43	ND	Paclobutrazol	48	ND
Acetamiprid	41	ND	Fipronil	50	ND	Permethrin	284	ND
Avermectin	339	ND	Flonicamid	48	ND	Phosmet	39	ND
Azoxystrobin	46	ND	Fludioxonil	316	ND	Prophos	312	ND
Bifenazate	41	ND	Hexythiazox	39	ND	Propoxur	44	ND
Boscalid	36	ND	Imazalil	283	ND	Pyridaben	290	ND
Carbaryl	41	ND	Imidacloprid	50	ND	Spinosad A	35	ND
Carbofuran	44	ND	Kresoxim-methyl	150	ND	Spinosad D	52	ND
Chlorantraniliprole	67	ND	Malathion	302	ND	Spiromesifen	290	ND
Chlorpyrifos	500	ND	Metalaxyl	44	ND	Spirotetramat	290	ND
Clofentezine	293	ND	Methiocarb	43	ND	Spiroxamine 1	19	ND
Diazinon	284	ND	Methomyl	42	ND	Spiroxamine 2	24	ND
Dichlorvos	293	ND	MGK 264 1	203	ND	Tebuconazole	306	ND
Dimethoate	42	ND	MGK 264 2	123	ND	Thiacloprid	41	ND
E-Fenpyroximate	280	ND	Myclobutanil	42	ND	Thiamethoxam	43	ND
Etofenprox	44	ND	Naled	47	ND	Trifloxystrobin	44	ND
Etoxazole	304	ND	Oxamyl	1500	ND			

K Winterheimer
 Karen Winterheimer
 12/2/2021
 3:50:00 PM

Samantha Smith
 Sam Smith
 12/2/2021
 3:57:00 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

LOQ = Limit of Quantification
 ppb = Parts per Billion

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

Prepared for:

LUB500
JOY ORGANICS

Batch ID or Lot Number: 21357A	Test: Microbial Contaminants	Reported: 1/3/22	Location: 5042 Technology Parkway Ste. 50 FT. COLLINS, CO 80528
--	--	----------------------------	---

Matrix: Finished Product	Test ID: T000184740	Started: 12/28/21	USDA License: N/A
-----------------------------	------------------------	----------------------	----------------------

Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 12/27/2021 @ 11:04 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	
E. coli (STEC)	TM-25, PCR	1 CFU/25 g	NA	NA	Absent	
Salmonella	TM-25, PCR	1 CFU/25 g	NA	NA	Absent	



 Jackson Osaghae-Nosa
 12/31/2021
 12:26:00 PM



 Sarah Henning
 1/3/2022
 9:30:00 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

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

27864

Batch ID or Lot Number: C1123-001	Test: Metals	Reported: 12/1/21	
Matrix: Unit Co	Test ID: T000178519	Started: 11/30/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS); Heavy Metals (Colorado Panel)	Received: 11/24/2021 @ 10:01 AM	Sampler ID: N/A

HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.046 - 4.63	ND	
Cadmium	0.045 - 4.47	ND	
Mercury	0.044 - 4.42	ND	
Lead	0.044 - 4.42	ND	

 Ryan Weems 1-Dec-21 3:19 PM	 Sam Smith 1-Dec-21 3:22 PM
PREPARED BY / DATE	APPROVED BY / DATE

Definitions

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.




27864


Batch ID or Lot Number: C1123-001	Test: Mycotoxins	Reported: 12/2/21	
Matrix: Concentrate	Test ID: T000178521	Started: 11/30/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 11/24/2021 @ 10:01 AM	Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	2.5 - 136.7	ND	N/A
Aflatoxin B1	1.2 - 34.5	ND	
Aflatoxin B2	1.1 - 34.5	ND	
Aflatoxin G1	0.9 - 33.5	ND	
Aflatoxin G2	1.2 - 32.9	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	


 Sam Smith
 2-Dec-21
 8:57 AM

PREPARED BY / DATE


 Alex Smith
 2-Dec-21
 12:20 PM

APPROVED BY / DATE

Definitions

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

27864

Batch ID or Lot Number: C1123-001	Test: Residual Solvents	Reported: 11/30/21	
Matrix: N/A	Test ID: T000178520	Started: 11/30/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 11/24/2021 @ 10:01 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	98 - 1960	*ND	
Butanes (Isobutane, n-Butane)	194 - 3878	*ND	
Methanol	58 - 1150	*ND	
Pentane	80 - 1595	*ND	
Ethanol	81 - 1629	*ND	
Acetone	94 - 1880	*ND	
Isopropyl Alcohol	98 - 1961	*ND	
Hexane	6 - 114	*ND	
Ethyl Acetate	94 - 1884	*ND	
Benzene	0.2 - 3.8	*ND	
Heptanes	89 - 1775	*ND	
Toluene	17 - 343	*ND	
Xylenes (m,p,o-Xylenes)	124 - 2471	*ND	

 Daniel Weidensaul
30-Nov-21
7:54 PM

PREPARED BY / DATE

 Ryan Weems
30-Nov-21
8:02 PM

APPROVED BY / DATE

Definitions

* 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