

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Organic Full Spectrum CBD Tincture - Tropical
PRODUCT STRENGTH: 900mg
TINCTURE BATCH: 220614B & 220608A
BEST BY DATE: 6/8/2024
HEMP EXTRACT LOT: C0908-001

Physical Attributes

Test	Method	Specification	Results
Color	Joy Internal	Golden to Amber	PASS
Odor	Joy Internal	Characteristic - Coconut and Hemp, Tropical	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	33.25mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.3% total THC (Full spectrum)	<0.3%	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 < 5 ppb Ochratoxin < 5ppb	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  8/6/2022
 Name _____ Date _____

900 Tropicial

Batch ID or Lot Number: 220614B	Test: Potency	Reported: 24Jun2022	USDA License: N/A
Matrix: Concentrate	Test ID: T000211079	Started: 23Jun2022	Sampler ID: N/A
	Method(s): TM14 (HPLC-DAD)	Received: 21Jun2022	Status: N/A

Cannabinoids

	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.006	0.017	ND	ND	
Cannabichromenic Acid (CBCA)	0.005	0.016	ND	ND	
Cannabidiol (CBD)	0.013	0.044	3.500	35.00	
Cannabidiolic Acid (CBDA)	0.013	0.045	ND	ND	
Cannabidivarin (CBDV)	0.003	0.010	0.020	0.20	
Cannabidivarinic Acid (CBDVA)	0.006	0.019	ND	ND	
Cannabigerol (CBG)	0.003	0.010	0.260	2.60	
Cannabigerolic Acid (CBGA)	0.013	0.041	ND	ND	
Cannabinol (CBN)	0.004	0.013	ND	ND	
Cannabinolic Acid (CBNA)	0.009	0.028	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.016	0.049	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.014	0.044	ND	ND	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.013	0.039	ND	ND	
Tetrahydrocannabivarin (THCV)	0.003	0.009	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.011	0.035	ND	ND	
Total Cannabinoids			3.780	37.80	
Total Potential THC			ND	ND	
Total Potential CBD			3.500	35.00	

Final Approval



Daniel Weidensaul
24Jun2022
01:26:00 PM MDT

PREPARED BY / DATE



Jacob Miller
24Jun2022
01:28:00 PM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/837e9d65-e9d9-4506-b530-dc8f1592cf4e>

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 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. ISO/IEC 17025:2017 Accredited by A2LA.



Cert #4329.02
837e9d65e9d94506b530dc8f1592cf4e.1

900 Tropicial

Batch ID or Lot Number: 220614B	Test: Microbial Contaminants	Reported: 27Jun2022	USDA License: NA
Matrix: Finished Product	Test ID: T000211080	Started: 22Jun2022	Sampler ID: NA
	Method(s): TM25 (PCR) TM24, TM26, TM27 (Culture Plating)	Received: 21Jun2022	Status: NA

Microbial Contaminants

Microbial Contaminants	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10 ⁰ CFU/g	NA	Absent	Free from visual mold, mildew, and foreign matter
<i>Salmonella</i>	TM25: PCR	10 ⁰ CFU/g	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



Carly Bader
25Jun2022
12:50:00 PM MDT

PREPARED BY / DATE



Eden Thompson-Wright
27Jun2022
09:32:00 AM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/619efbc4-7eb3-47a2-908d-a3f89d961fe7>

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

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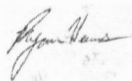
Cert #4329.02
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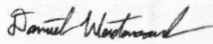
Batch ID or Lot Number: C0908-001	Test: Potency	USDA License: N/A
Matrix: Concentrate	Test ID: T000162435	Sampler ID: N/A
Status: N/A	Method: TM14 (HPLC-DAD): Potency – Standard Cannabinoid Analysis (Colorado Panel)	

CANNABINOID PROFILE

Compound	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.155	0.445	ND	ND	N/A
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.175	0.502	0.293	2.93	
Cannabidiolic acid (CBDA)	0.182	0.583	ND	ND	
Cannabidiol (CBD)	0.177	0.569	85.304	853.04	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.192	0.553	ND	ND	
Cannabinolic Acid (CBNA)	0.110	0.317	ND	ND	
Cannabinol (CBN)	0.050	0.145	0.051*	0.51*	
Cannabigerolic acid (CBGA)	0.161	0.464	ND	ND	
Cannabigerol (CBG)	0.039	0.111	6.575	65.75	
Tetrahydrocannabivarinic Acid (THCVA)	0.136	0.393	ND	ND	
Tetrahydrocannabivarin (THCV)	0.035	0.101	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.076	0.243	ND	ND	
Cannabidivarin (CBDV)	0.042	0.135	0.348	3.48	
Cannabichromenic Acid (CBCA)	0.062	0.179	ND	ND	
Cannabichromene (CBC)	0.068	0.196	0.078*	0.78*	
Total Cannabinoids			92.649	926.49	
Total Potential THC**			0.293	2.93	
Total Potential CBD**			85.304	853.04	



Ryan Weems



Daniel Weidensaul

PREPARED BY

APPROVED BY

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.

$$\text{Total THC} = \text{THC} + (\text{THCa} \times (0.877)) \text{ and}$$

$$\text{Total CBD} = \text{CBD} + (\text{CBDa} \times (0.877))$$

Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.

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

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Batch ID or Lot Number: C0908-001	Test: Residual Solvents	USDA License: N/A
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Matrix: N/A	Test ID: T000163124	Sampler ID: N/A
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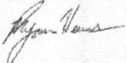
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)
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RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	52 - 1042	*ND	
Butanes	103 - 2063	*ND	
(Isobutane, n-Butane)			
Methanol	48 - 956	*ND	
Pentane	64 - 1277	*ND	
Ethanol	76 - 1524	*ND	
Acetone	75 - 1506	*ND	
Isopropyl Alcohol	85 - 1695	*ND	
Hexane	4 - 90	*ND	
Ethyl Acetate	78 - 1554	*ND	
Benzene	0 - 3	*ND	
Heptanes	72 - 1437	*ND	
Toluene	15 - 291	*ND	
Xylenes	109 - 2172	*ND	
(m,p,o-Xylenes)			



Hannah Wright



Ryan Weems

PREPARED BY

APPROVED BY

Definitions

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

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 Batch ID or Lot Number:
C0908-001

 Test:
Pesticides

 USDA License:
 N/A

 Matrix:
 Concentrate

 Test ID:
 T000163121

 Sampler ID:
 N/A

 Status:
 N/A

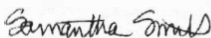
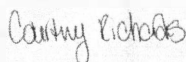
 Method:
 TM17(LC-QQQ LC MS/MS):

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	38	ND	Fenoxycarb	43	ND	Paclobot razol	41	ND
Acetamiprid	38	ND	Fipronil	55	ND	Permethrin	305	ND
Avermectin	312	ND	Flonicamid	40	ND	Phosmet	39	ND
Azoxystrobin	42	ND	Fludioxonil	286	ND	Prophos	291	ND
Bifenazate	39	ND	Hexythiazox	35	ND	Propoxur	41	ND
Boscalid	41	ND	Imazalil	278	ND	Pyridaben	303	ND
Carbaryl	35	ND	Imidacloprid	37	ND	Spinosad A	34	ND
Carbofuran	40	ND	Kresoxim-methyl	150	ND	Spinosad D	52	ND
Chlorantraniliprole	34	ND	Malathion	286	ND	Spiromesifen	274	ND
Chlorpyrifos	500	ND	Metalaxyl	42	ND	Spirotetramat	303	ND
Clofentezine	287	ND	Methiocarb	38	ND	Spiroxamine 1	18	ND
Diazinon	290	ND	Methomyl	38	ND	Spiroxamine 2	24	ND
Dichlorvos	286	ND	MGK 264 1	160	ND	Tebuconazole	283	ND
Dimethoate	40	ND	MGK 264 2	117	ND	Thiacloprid	38	ND
E-Fenpyroximate	277	ND	Myclobutanil	39	ND	Thiamethoxam	38	ND
Etofenprox	41	ND	Naled	44	ND	Trifloxystrobin	44	ND
Etoazole	304	ND	Oxamyl	1500	ND			

Sam Smith

Courtney Richards

PREPARED BY

APPROVED BY

Definitions

 LOQ = Limit of Quantification
 ppb = Parts per Billion

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27460

Batch ID or Lot Number: C0908-001	Test: Metals	USDA License: N/A
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Matrix: Unit Co	Test ID: T000163123	Sampler ID: N/A
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Status: N/A	Method: TM19 (ICP-MS): Heavy Metals (Colorado Panel)
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HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.047 - 4.70	ND	
Cadmium	0.046 - 4.56	ND	
Mercury	0.044 - 4.43	ND	
Lead	0.046 - 4.59	ND	

 PREPARED BY	Daniel Weidensaul	 APPROVED BY
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Definitions

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

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27460

Batch ID or Lot Number: C0908-001	Test: Microbial Contaminants	USDA License: N/A
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Matrix: Finished Product	Test ID: T000163122	Sampler ID: N/A
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Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)
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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 ² CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
Total Yeast and Mold*	TM-24, Culture Plating	10 ² 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	

Carly Baden

PREPARED BY

Tori King

Tori King

APPROVED BY

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: C0908-001	Test: Mycotoxins	USDA License: N/A
Matrix: Concentrate	Test ID: T000163125	Sampler ID: N/A
Status: N/A	Method: TM18 (UHPLC-QQ LCMS/MS): Mycotoxins (Colorado Panel)	

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	3.9 - 127	ND	N/A
Aflatoxin B1	1.2 - 32.5	ND	
Aflatoxin B2	1.2 - 32.3	ND	
Aflatoxin G1	0.9 - 31.2	ND	
Aflatoxin G2	1.2 - 31.5	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Samantha Smith

PREPARED BY

Alex Smith

APPROVED BY

Definitions

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

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