

## **CERTIFICATE OF ANALYSIS**

**DATE ISSUED 05/14/2022** 

#### SAMPLE NAME: cbdMD 300mg Natural Tincture

Infused, Hemp Infused

**CULTIVATOR / MANUFACTURER** 

**Business Name:** License Number:

Address:

SAMPLE DETAIL

Batch Number: 20911S1 Sample ID: 220408M007

**DISTRIBUTOR / TESTED FOR** 

Business Name: cbdMD License Number:

Address:

Date Collected: 04/08/2022 Date Received: 04/08/2022

Batch Size:

Sample Size: 1.0 units

Unit Mass: 30 milliliters per Unit Serving Size: 1 milliliters per Serving







Scan QR code to verify authenticity of results.

#### **CANNABINOID ANALYSIS - SUMMARY**

**Total THC: Not Detected** 

Total CBD: 345.630 mg/unit

Total Cannabinoids: 353.490 mg/unit

account the loss of a carboxyl group during the decarboxylation step: Total THC =  $\Delta^9$ -THC + (THCa (0.877)) Total CBD = CBD + (CBDa (0.877))

Sum of Cannabinoids =  $\Delta^9$ -THC + THCa + CBD + CBDa + CBG + CBGa + Sum of Cannabinoids: 353.490 mg/unit THCV + THCVa + CBC + CBCa + CBDV + CBDVa +  $\Delta^8$ -THC + CBL + CBN Total Cannabinoids =  $(\Delta^9$ -THC+0.877\*THCa) + (CBD+0.877\*CBDa) + (CBG+0.877\*CBGa) + (THCV+0.877\*THCVa) + (CBC+0.877\*CBCa) +

Total THC/CBD is calculated using the following formulas to take into

(CBDV+0.877\*CBDVa) + Δ8-THC + CBL + CBN

Density: 0.9455 g/mL

**TERPENOID ANALYSIS - SUMMARY** 

39 TESTED, TOP 3 HIGHLIGHTED

Total Terpenoids: 0.0804%

Limonene 0.804 mg/g

α-Pinene <LOQ

Sabinene <LOQ</p>

#### **SAFETY ANALYSIS - SUMMARY**

Pesticides: PASS

Heavy Metals: PASS

Mycotoxins: PASS

Microbiology (PCR): PASS

Residual Solvents: PASS

Microbiology (Plating): PASS

Foreign Material: PASS

For quality assurance purposes. Not a Regulatory Hemp Lab Test Report. These results relate only to the sample included on this report. This report shall not be reproduced, except in full, without written

Sample Certification: Action Limits used in this report are a compilation of guidance from state regulatory agencies in all states except Alaska. Action limits for required tests are the lower of any conflicting state regulations.

Decision Rule: Statements of conformity (e.g. Pass/Fail) to specifications are made in this report without taking measurement uncertainty into account. Where statements of conformity are made in this report, the following decision rules are applied: PASS - Results within limits/specifications. FAIL - Results exceed limits/specifications

References: limit of detection (LOD), limit of quantification (LOO), not detected (ND), not tested (NT). too numerous to count >250 cfu/plate (TNTC), colony-forming unit (cfu)

oved by: Josh Wurzer, President



## **CERTIFICATE OF ANALYSIS**



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Tested by high-performance liquid chromatography with diode-array detection (HPLC-DAD).

Method: QSP 1157 - Analysis of Cannabinoids by HPLC-DAD

TOTAL THC: Not Detected Total THC ( $\Delta^9$ -THC+0.877\*THCa)

TOTAL CBD: 345.630 mg/unit

Total CBD (CBD+0.877\*CBDa)

TOTAL CANNABINOIDS: 353.490 mg/unit

 $\begin{array}{l} Total \ Cannabinoids \ (Total \ THC) + (Total \ CBD) + \\ (Total \ CBG) + (Total \ THCV) + (Total \ CBC) + \\ (Total \ CBDV) + \Delta^8 - THC + CBL + CBN \end{array}$ 

TOTAL CBG: 4.890 mg/unit

Total CBG (CBG+0.877\*CBGa)

**TOTAL THCV: ND** 

Total THCV (THCV+0.877\*THCVa)

TOTAL CBC: ND
Total CBC (CBC+0.877\*CBCa)

TOTAL CBDV: 0.960 mg/unit

Total CBDV (CBDV+0.877\*CBDVa)

#### **CANNABINOID TEST RESULTS - 04/09/2022**

COMPOUND	LOD/LOQ (mg/mL)	MEASUREMENT UNCERTAINTY (mg/mL)	RESULT (mg/mL)	RESULT (%)
CBD	0.004 / 0.011	±0.4297	11.521	1.2185
CBG	0.002 / 0.006	±0.0079	0.163	0.0172
CBN	0.001 / 0.007	±0.0019	0.067	0.0071
CBDV	0.002 / 0.012	±0.0013	0.032	0.0034
Δ <sup>9</sup> -THC	0.002 / 0.014	N/A	ND	ND
$\Delta^8$ -THC	0.01 / 0.02	N/A	ND	ND
THCa	0.001 / 0.005	N/A	ND	ND
THCV	0.002 / 0.012	N/A	ND	ND
THCVa	0.002/0.019	N/A	ND	ND
CBDa	0.001 / 0.026	N/A	ND	ND
CBDVa	0.001 / 0.018	N/A	ND	ND
CBGa	0.002 / 0.007	N/A	ND	ND
CBL	0.003 / 0.010	N/A	ND	ND
СВС	0.003 / 0.010	N/A	ND	ND
CBCa	0.001 / 0.015	N/A	ND	ND
SUM OF CANNAE	BINOIDS		11.783 mg/mL	1.2462%

## Unit Mass: 30 milliliters per Unit / Serving Size: 1 milliliters per Serving

$\Delta^9$ -THC per Unit	ND
Δ <sup>9</sup> -THC per Serving	ND
Total THC per Unit	ND
Total THC per Serving	ND
CBD per Unit	345.630 mg/unit
CBD per Serving	11.521 mg/serving
Total CBD per Unit	345.630 mg/unit
Total CBD per Serving	11.521 mg/serving
Sum of Cannabinoids per Unit	353.490 mg/unit
Sum of Cannabinoids per Serving	11.783 mg/serving
Total Cannabinoids per Unit	353.490 mg/unit
Total Cannabinoids per Serving	11.783 mg/serving

#### **DENSITY TEST RESULT**

0.9455 g/mL

Tested 04/09/2022

**Method:** QSP 7870 - Sample Preparation



## CERTIFICATE OF ANALYSIS



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## **Terpenoid Analysis**

Terpene analysis utilizing gas chromatographyflame ionization detection (GC-FID).

Method: QSP 1192 - Analysis of Terpenoids by GC-FID



#### Limonene

A monoterpene with a fragrance that can be described as orangey, citrusy, sweet and tart. It is most commonly found in nature as D-Limonene and is a primary contributor to the distinct scent of orange peels, from which it is commonly derived. Found in numerous pines, red maple, silver maple, aspens, cottonwoods, hemlocks, sumac, cedar, junipers...etc.



#### $\alpha$ -Pinene

One of two isomers of the monoterpene Pinene, the most abundant terpene in the natural world. It is responsible for the distinct aroma of many coniferous trees, particularly pines, from which it derives its name. It is a primary constituent of turpentine. Found in pines, rose gun, parsley, frankincense, guava, juniper, rosemary, nutmeg, blue gum, valerian...etc.



## Sabinene

A monoterpene with a fragrance that can be described as woody, citrusy, piney and spicy. Found in Norway spruce, holm oak, black pepper, carrot seed, nutmeg, bay laurel, horsewood...etc.

#### TERPENOID TEST RESULTS - 04/09/2022

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
Limonene	0.005 / 0.016	±0.0089	0.804	0.0804
α-Pinene	0.005 / 0.017	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Sabinene	0.004 / 0.014	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Myrcene	0.008 / 0.025	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
γ-Terpinene	0.006 / 0.018	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Camphene	0.005 / 0.015	N/A	ND	ND
β-Pinene	0.004 / 0.014	N/A	ND	ND
α-Phellandrene	0.006 / 0.020	N/A	ND	ND
$\Delta^3$ -Carene	0.005 / 0.018	N/A	ND	ND
α-Terpinene	0.005 / 0.017	N/A	ND	ND
p-Cymene	0.005 / 0.016	N/A	ND	ND
Eucalyptol	0.006 / 0.018	N/A	ND	ND
β-Ocimene	0.006 / 0.020	N/A	ND	ND
Sabinene Hydrate	0.006 / 0.022	N/A	ND	ND
Fenchone	0.009 / 0.028	N/A	ND	ND
Terpinolene	0.008 / 0.026	N/A	ND	ND
Linalool	0.009 / 0.032	N/A	ND	ND
Fenchol	0.010 / 0.034	N/A	ND	ND
Isopulegol	0.005 / 0.016	N/A	ND	ND
Camphor	0.006 / 0.019	N/A	ND	ND
Isoborneol	0.004 / 0.012	N/A	ND	ND
Borneol	0.005 / 0.016	N/A	ND	ND
Menthol	0.008 / 0.025	N/A	ND	ND
Terpineol	0.009 / 0.031	N/A	ND	ND
Nerol	0.003 / 0.011	N/A	ND	ND
Citronellol	0.003 / 0.010	N/A	ND	ND
Pulegone	0.003 / 0.011	N/A	ND	ND
Geraniol	0.002 / 0.007	N/A	ND	ND
Geranyl Acetate	0.004 / 0.014	N/A	ND	ND
α-Cedrene	0.005 / 0.016	N/A	ND	ND
β-Caryophyllene	0.004 / 0.012	N/A	ND	ND
trans-β-Farnesene	0.008 / 0.025	N/A	ND	ND
α-Humulene	0.009/0.029	N/A	ND	ND
Valencene	0.009 / 0.030	N/A	ND	ND
Nerolidol	0.006 / 0.019	N/A	ND	ND
Caryophyllene Oxide	0.010 / 0.033	N/A	ND	ND
Guaiol	0.009 / 0.030	N/A	ND	ND
Cedrol	0.008 / 0.027	N/A	ND	ND
α-Bisabolol	0.008 / 0.026	N/A	ND	ND
TOTAL TERPENOIDS			0.804 mg/g	0.0804%



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## **Pesticide Analysis**

Pesticide and plant growth regulator analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS) or gas chromatography-mass spectrometry (GC-MS).

\*GC-MS utilized where indicated.

**Method:** QSP 1212 - Analysis of Pesticides and Mycotoxins by LC-MS or QSP 1213 - Analysis of Pesticides by GC-MS

Exclusions<sup>1</sup> see last page

Exclusions<sup>2</sup> see last page

## PESTICIDE TEST RESULTS - 04/10/2022 **⊘** PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (μg/g)	MEASUREMENT UNCERTAINTY (µg/g)	RESULT (μg/g)	RESULT
Abamectin	0.03 / 0.10	0.3	N/A	ND	PASS
Acephate	0.02 / 0.07	5	N/A	ND	PASS
Acequinocyl	0.02 / 0.07	4	N/A	ND	PASS
Acetamiprid	0.02 / 0.05	5	N/A	ND	PASS
Aldicarb	0.03 / 0.08	≥LOD	N/A	ND	PASS
Azoxystrobin	0.02 / 0.07	40	N/A	ND	PASS
Bifenazate	0.01 / 0.04	5	N/A	ND	PASS
Bifenthrin	0.02 / 0.05	0.5	N/A	ND	PASS
Boscalid	0.03 / 0.09	10	N/A	ND	PASS
Captan	0.19 / 0.57	5	N/A	ND	PASS
Carbaryl	0.02 / 0.06	0.5	N/A	ND	PASS
Carbofuran	0.02 / 0.05	≥LOD	N/A	ND	PASS
Chlorantraniliprole	0.04 / 0.12	40	N/A	ND	PASS
Chlordane*	0.03 / 0.08	≥LOD	N/A	ND	PASS
Chlorfenapyr*	0.03 / 0.10	≥LOD	N/A	ND	PASS
Chlorpyrifos	0.02 / 0.06	≥LOD	N/A	ND	PASS
Clofentezine	0.03 / 0.09	0.5	N/A	ND	PASS
Coumaphos	0.02 / 0.07	≥LOD	N/A	ND	PASS
Cyfluthrin	0.12 / 0.38	1	N/A	ND	PASS
Cypermethrin	0.11/0.32	1	N/A	ND	PASS
Daminozide	0.02 / 0.07	≥LOD	N/A	ND	PASS
Diazinon	0.02 / 0.05	0.2	N/A	ND	PASS
Dichlorvos (DDVP)	0.03 / 0.09	≥LOD	N/A	ND	PASS
Dimethoate	0.03 / 0.08	≥LOD	N/A	ND	PASS
Dimethomorph	0.03 / 0.09	20	N/A	ND	PASS
Ethoprophos	0.03 / 0.10	≥LOD	N/A	ND	PASS
Etofenprox	0.02 / 0.06	≥LOD	N/A	ND	PASS
Etoxazole	0.02 / 0.06	1.5	N/A	ND	PASS
Fenhexamid	0.03 / 0.09	10	N/A	ND	PASS
Fenoxycarb	0.03 / 0.08	≥LOD	N/A	ND	PASS
Fenpyroximate	0.02 / 0.06	2	N/A	ND	PASS
Fipronil	0.03 / 0.08	≥LOD	N/A	ND	PASS
Flonicamid	0.03 / 0.10	2	N/A	ND	PASS
Fludioxonil	0.03 / 0.10	30	N/A	ND	PASS
Hexythiazox	0.02 / 0.07	2	N/A	ND	PASS
Imazalil	0.02 / 0.06	≥LOD	N/A	ND	PASS
Imidacloprid	0.04 / 0.11	3	N/A	ND	PASS
Kresoxim-methyl	0.02 / 0.07	1	N/A	ND	PASS
Malathion	0.03 / 0.09	5	N/A	ND	PASS
Metalaxyl	0.02 / 0.07	15	N/A	ND	PASS
Methiocarb	0.02 / 0.07	≥LOD	N/A	ND	PASS

Continued on next page



## **CERTIFICATE OF ANALYSIS**



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## Pesticide Analysis Continued

### PESTICIDE TEST RESULTS - 04/10/2022 continued **⊘** PASS

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (μg/g)	RESULT
Methomyl	0.03 / 0.10	0.1	N/A	ND	PASS
Mevinphos	0.03 / 0.09	≥LOD	N/A	ND	PASS
Myclobutanil	0.03 / 0.09	9	N/A	ND	PASS
Naled	0.02 / 0.07	0.5	N/A	ND	PASS
Oxamyl	0.04 / 0.11	0.2	N/A	ND	PASS
Paclobutrazol	0.02 / 0.05	≥LOD	N/A	ND	PASS
Parathion-methyl	0.03 / 0.10	≥LOD	N/A	ND	PASS
Pentachloronitrobenzene*	0.03 / 0.09	0.2	N/A	ND	PASS
Permethrin	0.04 / 0.12	20	N/A	ND	PASS
Phosmet	0.03 / 0.10	0.2	N/A	ND	PASS
Piperonyl Butoxide	0.02 / 0.07	8	N/A	ND	PASS
Prallethrin	0.03 / 0.08	0.4	N/A	ND	PASS
Propiconazole	0.02 / 0.07	20	N/A	ND	PASS
Propoxur	0.03 / 0.09	≥LOD	N/A	ND	PASS
Pyrethrins	0.04 / 0.12	1	N/A	ND	PASS
Pyridaben	0.02 / 0.07	3	N/A	ND	PASS
Spinetoram	0.02 / 0.07	3	N/A	ND	PASS
Spinosad	0.02 / 0.07	3	N/A	ND	PASS
Spiromesifen	0.02 / 0.05	12	N/A	ND	PASS
Spirotetramat	0.02 / 0.06	13	N/A	ND	PASS
Spiroxamine	0.03 / 0.08	≥LOD	N/A	ND	PASS
Tebuconazole	0.02 / 0.07	2	N/A	ND	PASS
Thiacloprid	0.03 / 0.10	≥LOD	N/A	ND	PASS
Thiamethoxam	0.03 / 0.10	4.5	N/A	ND	PASS
Trifloxystrobin	0.03 / 0.08	30	N/A	ND	PASS



## Mycotoxin Analysis

Mycotoxin analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS).

**Method:** QSP 1212 - Analysis of Pesticides and Mycotoxins by I.C.-MS

Exclusions<sup>3</sup> see last page

## MYCOTOXIN TEST RESULTS - 04/10/2022 **⊘ PASS**

	COMPOUND	LOD/LOQ (µg/kg)	ACTION LIMIT (μg/kg)	MEASUREMENT UNCERTAINTY (μg/kg)	RESULT (µg/kg)	RESULT
	Aflatoxin B1	2.0 / 6.0		N/A	ND	
	Aflatoxin B2	1.8 / 5.6		N/A	ND	
	Aflatoxin G1	1.0 / 3.1		N/A	ND	
	Aflatoxin G2	1.2 / 3.5		N/A	ND	
	Total Aflatoxin		20		ND	PASS
	Ochratoxin A	6.3 / 19.2	20	N/A	ND	PASS



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## **Residual Solvents Analysis**

Residual Solvent analysis utilizing gas chromatography-mass spectrometry (GC-MS).

Method: QSP 1204 - Analysis of Residual Solvents by GC-MS

Exclusions<sup>4</sup> see last page

#### RESIDUAL SOLVENTS TEST RESULTS - 04/12/2022 **⊘** PASS

	COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (μg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Ī	Propane	10/20	5000	N/A	ND	PASS
Ī	n-Butane	10/50	5000	N/A	ND	PASS
	n-Pentane	20/50	5000	N/A	ND	PASS
Ī	n-Hexane	2/5	290	N/A	ND	PASS
Ī	n-Heptane	20/60	5000	N/A	ND	PASS
	Benzene	0.03/0.09	1	N/A	ND	PASS
Ī	Toluene	7/21	890	N/A	ND	PASS
Ī	Total Xylenes	50 / 160	2170	N/A	ND	PASS
	Methanol	50/200	3000	N/A	ND	PASS
Ī	Ethanol	20 / 50	5000	N/A	ND	PASS
	2-Propanol (Isopropyl Alcohol)	10 / 40	5000	N/A	ND	PASS
Ī	Acetone	20/50	5000	N/A	ND	PASS
Ī	Ethyl Ether	20/50	5000	N/A	ND	PASS
Ī	Ethylene Oxide	0.3 / 0.8	1	N/A	ND	PASS
Ī	Ethyl Acetate	20/60	5000	N/A	ND	PASS
Ī	Chloroform	0.1 / 0.2	1	N/A	ND	PASS
	Dichloromethane (Methylene Chloride)	0.3/0.9	1	N/A	ND	PASS
Ī	Trichloroethylene	0.1/0.3	1	N/A	ND	PASS
4	1,2-Dichloroethane	0.05 / 0.1	1	N/A	ND	PASS
	Acetonitrile	2/7	410	N/A	ND	PASS



## **Heavy Metals Analysis**

Heavy metal analysis utilizing inductively coupled plasma-mass spectrometry (ICP-MS).

Method: QSP 1160 - Analysis of Heavy Metals by ICP-MS

### **HEAVY METALS TEST RESULTS** - 04/09/2022 **⊘ PASS**

COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Arsenic	0.02 / 0.1	0.42	N/A	ND	PASS
Cadmium	0.02 / 0.05	0.27	N/A	ND	PASS
Lead	0.04 / 0.1	0.5	N/A	ND	PASS
Mercury	0.002 / 0.01	0.4	N/A	ND	PASS



## **Microbiology Analysis**

PCR AND PLATING

Analysis conducted by polymerase chain reaction (PCR) and fluorescence detection of microbiological contaminants.

Method: QSP 1221 - Analysis of Microbiological Contaminants

#### MICROBIOLOGY TEST RESULTS (PCR) - 04/12/2022 PASS

COMPOUND	ACTION LIMIT	RESULT	RESULT
Shiga toxin-producing Escherichia coli	Not Detected in 1g	ND	PASS
Salmonella spp.	Not Detected in 1g	ND	PASS
Listeria monocytogenes	Not Detected in 1g	ND	PASS



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# Microbiology Analysis Continued MICROBIOLOGY TEST RESULTS (PLATING) - 04/12/2022 PASS

Analysis conducted by  $3M^{TM}$  Petrifilm and plate counts of microbiological contaminants.

Method: QSP 6794 - Plating with 3M<sup>™</sup> Petrifilm<sup>™</sup>

COMPOUND	ACTION LIMIT (cfu/g)	RESULT (cfu/g)	RESULT
Total Aerobic Bacteria	100	ND	PASS
Total Yeast and Mold	10	ND	PASS

# Foreign Material Analysis

Visual analysis includes, but is not limited to, sand, soil, cinders, dirt, mold, hair, insect fragments, and mammalian excreta.

Method: QSP 1226 - Analysis of Foreign Material in Cannabis and Cannabis Products

FOREIGN MATERIAL	TEST RESULTS -	04/09/2022	PASS

	COMPOUND	ACTION LIMIT	RESULT
Ī	Total Sample Area Covered by Sand, Soil, Cinders, or Dirt	>25%	PASS
	Total Sample Area Covered by Mold	>25%	PASS
	Total Sample Area Covered by an Imbedded Foreign Material	>25%	PASS
	Insect Fragment Count	> 1 per 3 grams	PASS
	Hair Count	> 1 per 3 grams	PASS
	Mammalian Excreta Count	> 1 per 3 grams	PASS

#### **NOTES**

Farm Bill Compliant: Product contains a total  $\Delta 9\text{-tetrahydrocannabinol}$  content that does not exceed 0.3% CoA amended Update: Order Details-Batch ID

- 1. Exclusions: QSP 1212 Sample Certification: California Code of Regulation Title 4 Division 19
- 2. Exclusions: QSP 1213 Sample Certification: California Code of Regulation Title 4 Division 19
- 3. Exclusions: Sample Certification: California Code of Regulation Title 4 Division 19
- 4. Exclusions: Sample Certification: California Code of Regulation Title 4 Division 19