

## **Hemp Quality Assurance Testing**

# **CERTIFICATE OF ANALYSIS**

**DATE ISSUED 01/08/2022** 

#### SAMPLE NAME: cbdMD Recover Inflammation 3.4oz Airless Pump - 1500 mg

Infused, Hemp Infused

**CULTIVATOR / MANUFACTURER** 

**Business Name:** License Number:

Address:

SAMPLE DETAIL

Batch Number: 21354REC Sample ID: 211229L016

**DISTRIBUTOR / TESTED FOR** 

Business Name: cbdMD License Number:

Address:

Date Collected: 12/29/2021 Date Received: 12/29/2021

Batch Size:

Sample Size: 1.0 units

Unit Mass: 100 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: 1884.200 mg/unit

Total THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during the decarboxylation step: Total THC =  $\Delta$ 9THC + (THCa (0.877))

Total CBD = CBD + (CBDa (0.877))

Sum of Cannabinoids =  $\Delta$ 9THC + THCa + CBD + CBDa + CBG + CBGa + Sum of Cannabinoids: 1897.900 mg/unit THCV + THCVa + CBC + CBCa + CBDV + CBDVa + Δ8THC + CBL + CBN Total Cannabinoids = (Δ9THC+0.877\*THCa) + (CBD+0.877\*CBDa) +

Total Cannabinoids: 1897.900 mg/unit

(CBG+0.877\*CBGa) + (THCV+0.877\*THCVa) + (CBC+0.877\*CBCa) + (CBDV+0.877\*CBDVa) + Δ8THC + CBL + CBN

Density: 0.9881 g/mL

**TERPENOID ANALYSIS - SUMMARY** 

39 TESTED, TOP 3 HIGHLIGHTED

Total Terpenoids: 0.3683%

Menthol 1.051 mg/g

Limonene 0.513 mg/g

igcap lpha Pinene 0.474 mg/g

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

Pesticides: PASS

Heavy Metals: PASS

Foreign Material: PASS

Mycotoxins: PASS

Microbiology (PCR): PASS

Residual Solvents: PASS

Microbiology (Plating): PASS

For quality assurance purposes. Not a Pre-Harvest 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. Action limits for required tests are either state-specific, or the lower of any conflicting state regulations based upon the panel requested.

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 (LOQ), not detected (ND), not tested (NT), too numerous to count >250 cfu/plate (TNTC), colony-forming unit (cfu)

erified by: Kevin Flores te: 01/08/2022

op oved by: Josh Wurzer, President ate: 01/08/2022



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# Cannabinoid Analysis

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 (Δ9THC+0.877\*THCa)

**TOTAL CBD: 1884.200 mg/unit** 

Total CBD (CBD+0.877\*CBDa)

TOTAL CANNABINOIDS: 1897.900 mg/unit

Total Cannabinoids (Total THC) + (Total CBD) + (Total CBG) + (Total THCV) + (Total CBC) + (Total CBDV) +  $\Delta$ 8THC + CBL + CBN

TOTAL CBG: 3.700 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: 5.800 mg/unit

Total CBDV (CBDV+0.877\*CBDVa)

#### **CANNABINOID TEST RESULTS - 01/08/2022**

	COMPOUND	LOD/LOQ (mg/mL)	MEASUREMENT UNCERTAINTY (mg/mL)	RESULT (mg/mL)	RESULT (%)
Ī	CBD	0.004 / 0.011	±0.9025	18.842	1.9069
	CBDV	0.002/0.012	±0.0030	0.058	0.0059
	CBN	0.001 / 0.007	±0.0015	0.042	0.0043
	CBG	0.002 / 0.006	±0.0023	0.037	0.0037
	Δ9ΤΗС	0.002/0.014	N/A	ND	ND
-	THCa	0.001 / 0.005	N/A	ND	ND
	Δ8ΤΗC	0.01 / 0.02	N/A	ND	ND
	THCV	0.002/0.012	N/A	ND	ND
	THCVa	0.002/0.019	N/A	ND	ND
it-	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 CANNAB	INOIDS		18.979 mg/mL	1.9208%

#### Unit Mass: 100 milliliters per Unit / Serving Size: 1 milliliters per Serving

Δ9THC per Unit	IIVI	ND
Δ9THC per Serving		ND
Total THC per Unit		ND
Total THC per Serving		ND
CBD per Unit		1884.200 mg/unit
CBD per Serving		18.842 mg/serving
Total CBD per Unit		1884.200 mg/unit
Total CBD per Serving		18.842 mg/serving
Sum of Cannabinoids per Unit		1897.900 mg/unit
Sum of Cannabinoids per Serving		18.979 mg/serving
Total Cannabinoids per Unit		1897.900 mg/unit
Total Cannabinoids per Serving		18.979 mg/serving

#### **DENSITY TEST RESULT**

0.9881 g/mL

Tested 01/08/2022

**Method:** QSP 7870 - Sample Preparation







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# **Terpenoid Analysis**

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

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



#### Menthol

A monoterpenoid alcohol with a fragrance that can be described as fresh, cool and herbal. It is responsible for the distinct odor of mint. It is frequently added to cigarettes and mouthwash as a flavorant. Found in mint, sunflower, micromeria, mountain mint, rose geranium, pennyroyal, tarragon, savory, basil, juniper, couch grass, rhubarb, acinos (basil thyme), ironwort, muña...etc.



#### 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.

#### TERPENOID TEST RESULTS - 12/30/2021

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
Menthol	0.008 / 0.025	±0.0420	1.051	0.1051
Limonene	0.005 / 0.016	±0.0073	0.513	0.0513
$\alpha$ Pinene	0.005 / 0.017	±0.0041	0.474	0.0474
Camphor	0.006 / 0.019	±0.0163	0.459	0.0459
Eucalyptol	0.006 / 0.018	±0.0094	0.371	0.0371
Camphene	0.005 / 0.015	±0.0018	0.157	0.0157
Citronellol	0.003 / 0.010	±0.0058	0.119	0.0119
Borneol	0.005 / 0.016	±0.0044	0.104	0.0104
Linalool	0.009/0.032	±0.0035	0.092	0.0092
Terpineol	0.016 / 0.055	±0.0038	0.062	0.0062
β Caryophyllene	0.004 / 0.012	±0.0019	0.053	0.0053
Myrcene	0.008 / 0.025	±0.0006	0.050	0.0050
Geraniol	0.002 / 0.007	±0.0019	0.043	0.0043
p-Cymene	0.005 / 0.016	±0.0009	0.035	0.0035
3 Carene	0.005 / 0.018	±0.0004	0.031	0.0031
(-)-Isopulegol	0.005 / 0.016	±0.0011	0.026	0.0026
Isoborneol	0.004 / 0.012	±0.0010	0.024	0.0024
R-(+)-Pulegone	0.003 / 0.011	±0.0008	0.019	0.0019
γTerpinene	0.006 / 0.018	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Geranyl Acetate	0.004 / 0.014	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Cedrol	0.008 / 0.027	N/A	<loq< td=""><td><loq< td=""></loq<></td></loq<>	<loq< td=""></loq<>
Sabinene	0.004 / 0.014	N/A	ND	ND
β Pinene	0.004 / 0.014	N/A	ND	ND
$\alpha$ Phellandrene	0.006 / 0.020	N/A	ND	ND
αTerpinene	0.005 / 0.017	N/A	ND	ND
Ocimene	0.011/0.038	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
Fenchol	0.010 / 0.034	N/A	ND	ND
Nerol	0.003 / 0.011	N/A	ND	ND
α Cedrene	0.005 / 0.016	N/A	ND	ND
trans-β-Farnesene	0.008 / 0.025	N/A	ND	ND
$\alpha$ Humulene	0.009 / 0.029	N/A	ND	ND
Valencene	0.009 / 0.030	N/A	ND	ND
Nerolidol	0.009 / 0.028	N/A	ND	ND
Caryophyllene Oxide	0.010 / 0.033	N/A	ND	ND
Guaiol	0.009 / 0.030	N/A	ND	ND
α Bisabolol	0.008 / 0.026	N/A	ND	ND
TOTAL TERPENOIDS			3.683 mg/g	0.3683%









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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



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
DDVP (Dichlorvos)	0.03 / 0.09	≥LOD	N/A	ND	PASS
Diazinon	0.02 / 0.05	0.2	N/A	ND	PASS
Dimethoate	0.03 / 0.08	≥LOD	N/A	ND	PASS
Dimethomorph	0.03 / 0.09	20	N/A	ND	PASS
Ethoprop(hos)	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
lmazalil	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





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# Pesticide Analysis Continued

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

#### PESTICIDE TEST RESULTS - 12/31/2021 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
Methyl parathion	0.03 / 0.10	≥LOD	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
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
Piperonylbutoxide	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 LC-MS

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

#### MYCOTOXIN TEST RESULTS - 12/31/2021 **⊘ 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 - 01/01/2022 PASS

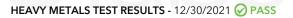
Butane         10/50         5000         N/A         ND           Pentane         20/50         5000         N/A         ND           Hexane         2/5         290         N/A         ND	PASS PASS PASS PASS PASS PASS
Pentane         20/50         5000         N/A         ND           Hexane         2/5         290         N/A         ND	PASS PASS PASS
Hexane 2/5 290 N/A ND	PASS PASS PASS
	PASS
<b>Heptane</b> 20 / 60 5000 N/A <b>ND</b>	PASS
<b>Benzene</b> 0.03 / 0.09 1 N/A <b>ND</b>	
<b>Toluene</b> 7 / 21 890 N/A <b>ND</b>	PASS
<b>Total Xylenes</b> 50 / 160 2170 N/A <b>ND</b>	PASS
Methanol 50 / 200 3000 N/A ND	PASS
<b>Ethanol</b> 20 / 50 N/A <b>ND</b>	
Isopropyl Alcohol 10 / 40 N/A ND	
Acetone 20 / 50 5000 N/A ND	PASS
<b>Ethyl ether</b> 20 / 50 5000 N/A <b>ND</b>	PASS
Ethylene Oxide         0.3 / 0.8         1         N/A         ND	PASS
<b>Ethyl acetate</b> 20 / 60 5000 N/A <b>ND</b>	PASS
<b>Chloroform</b> 0.1 / 0.2 1 N/A <b>ND</b>	PASS
Methylene chloride 0.3 / 0.9 1 N/A ND	PASS
Trichloroethylene 0.1 / 0.3 1 N/A ND	PASS
<b>1,2-Dichloroethane</b> 0.05 / 0.1 1 N/A <b>ND</b>	PASS
Acetonitrile 2/7 410 N/A <loq< th=""><th>PASS</th></loq<>	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



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) - 01/02/2022 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





# **Hemp Quality Assurance Testing**

## **CERTIFICATE OF ANALYSIS**

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# Microbiology Analysis Continued MICROBIOLOGY TEST RESULTS (PLATING) - 01/02/2022 PASS

PCR AND PLATING

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 - 12/30/2021 PASS

COMPOUND	ACTION LIMIT	RESULT
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

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

