



# CERTIFICATE OF ANALYSIS

prepared for: TREEHOUSE BIOTECH  
N/A  
LONGMONT, COLORADO

## CBD ISOLATE

Batch ID: JD-027

Reported: 9-Mar-2019

Type: Concentrate

Test: Micro

## MICROBIAL CONTAMINANTS

Test	Result	Unit
Total Aerobic Count	None Detected	CFU/g
Total Coliforms	None Detected	CFU/g
Total Yeast and Molds	None Detected	CFU/g
<i>E. coli</i>	None Detected	CFU/g
<i>Salmonella</i>	None Detected	CFU/g

\* CFU/g = Colony Forming Unit per Gram

\*\* Total Yeast and Molds values are recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.

Examples:  $10^2 = 100$  CFU  
 $10^3 = 1,000$  CFU  
 $10^4 = 10,000$  CFU  
 $10^5 = 100,000$  CFU

### NOTES:

Free from visual mold, mildew, and foreign matter.

## FINAL APPROVAL

Robert Belfon Jr.  
9-Mar-2019  
4:47 PM

Mike Branvold  
9-Mar-2019  
7:26 PM

PREPARED BY / DATE

APPROVED BY / DATE

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.

**CBD Isolate**


<b>Batch ID:</b>	JD-027	<b>Test ID:</b>	5383650.016
<b>Reported:</b>	11-Mar-2019	<b>Method:</b>	TM04
<b>Type:</b>	Concentrate		
<b>Test:</b>	Residual Solvents		

**RESIDUAL SOLVENTS**

Solvent	Reportable Range (ppm)	Result (ppm)
Propane	100 - 2000	0
Butanes (Isobutane, n-Butane)	100 - 2000	0
Pentane	100 - 2000	0
Ethanol	100 - 2000	0
Acetone	100 - 2000	0
Isopropyl Alcohol	100 - 2000	0
Hexane	6 - 120	0
Benzene	0.2 - 4	0.0
Heptanes	100 - 2000	376
Toluene	18 - 360	0
Xylenes (m,p,o-Xylenes)	43 - 860	0

**NOTES:**

Free from visual mold, mildew, and foreign matter.

**FINAL APPROVAL**

**Sam Smith**  
 11-Mar-2019  
 5:39 AM


**David Green**  
 11-Mar-2019  
 7:53 AM

PREPARED BY / DATE

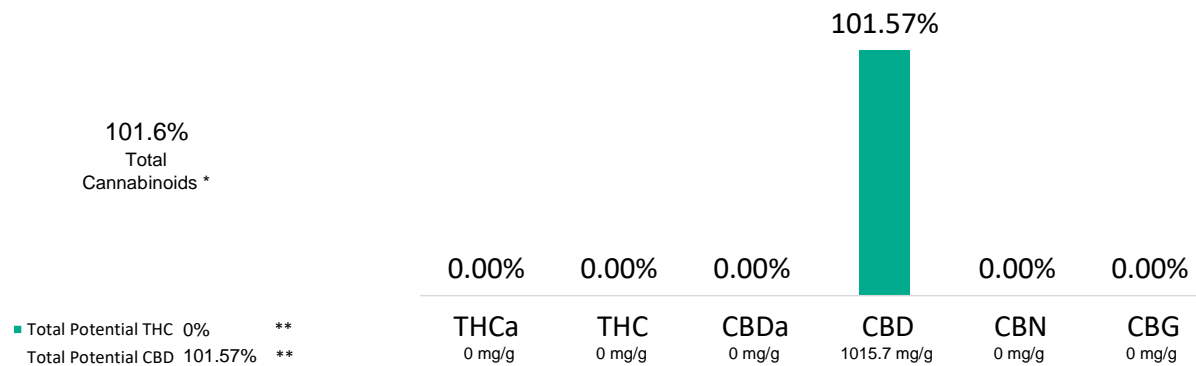
APPROVED BY / DATE

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**CBD ISOLATE**

<b>Batch ID:</b>	JD-027	<b>Test ID:</b>	1614240.018
<b>Reported:</b>	12-Mar-2019	<b>Method:</b>	TM01
<b>Type:</b>	Concentrate		
<b>Test:</b>	Potency		

**CANNABINOID PROFILE**


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

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.


Total THC = THC + (THCa \* (0.877)) and Total CBD = CBD + (CBDa \* (0.877))


% = % (w/w) = Percent (Weight of Analyte / Weight of Product)

**NOTES:**

Free from visual mold, mildew, and foreign matter.

**FINAL APPROVAL**

  
 Greg Zimpfer  
 12-Mar-2019  
 8:23 AM

  
 David Green  
 12-Mar-2019  
 8:34 AM

PREPARED BY / DATE

APPROVED BY / DATE

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 17025:2005 Accredited A2LA Certificate Number 4329.02




Certificate #4329.02

Certificate ID: **51218 (Prelim)** Received: **3/22/19**  
 Client Sample ID: **CBD Isolate**  
 Lot Number: **JD-027**  
 Matrix: **Concentrates/Extracts - Isolate**

 Scan QR Code  
 for authenticity

**Treehouse Biotech**  
**4472 Hilltop Road, Unit A**  
**Longmont, CO 80504**  
**Attn: Casey Black**

Authorization: Jon Podgorni, Lab Manager	Signature: 	Date: 3/27/2019
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The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2005. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**HM: Heavy Metal Analysis [WI-10-13]**

 Analyst: *JFD*

 Test Date: *3/26/2019*

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**51218-HM**

Symbol	Metal	Conc. <sup>1</sup>	Units	MDL	Use Limits <sup>2</sup>		Units	Status
					All	Ingestion		
As	Arsenic	ND	µg/kg	4	200	1500	µg/kg	PASS
Cd	Cadmium	ND	µg/kg	1	200	500	µg/kg	PASS
Hg	Mercury	ND	µg/kg	2	100	1500	µg/kg	PASS
Pb	Lead	ND	µg/kg	2	500	1000	µg/kg	PASS

- 1) ND = None detected to Lowest Limits of Detection (LLD)  
 2) MA Dept. of Public Health: Protocol for MMJ and MIPS, Exhibit 4(a) for all products.  
 3) USP exposure limits based on daily oral dosing of 1g of concentrate for a 110 lb person.

**END OF REPORT**

April 02, 2019

**TREEHOUSE HEMP**  
 4472 Hilltop Roa, Unit A  
 Longmont, CO 80504

Order No. 505560  
 Sample No. 1024199

## SAMPLE INFORMATION

**Description** CBD Isolate  
**Lot Number** JD-027  
**Category (Type)** Concentrate  
**Received** March 28, 2019

## ANALYTICAL RESULTS

**Analysis** Pesticide Residue Screen ✔ Pass  
**Instrument** Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS) & Gas Chromatography Tandem Mass Spectrometry (GC-MS/MS)  
**Method** MF 21P030  
**Analysis Date** March 28, 2019 to April 02, 2019

Analyte	LOD / LOQ (µg/g)	Findings (µg/g)	Limit (µg/g)	Status
Abamectin	0.04/0.10	ND	0.1	Pass
Acephate	0.04/0.10	ND	0.1	Pass
Acequinocyl	0.04/0.10	ND	0.1	Pass
Acetamiprid	0.04/0.10	ND	0.1	Pass
Aldicarb	0.04/0.10	ND	0.0	Pass
Azoxystrobin	0.04/0.10	ND	0.1	Pass
Bifenazate	0.04/0.10	ND	0.1	Pass
Bifenthrin	0.20/0.50	ND	3.0	Pass
Boscalid	0.04/0.10	ND	0.1	Pass
Captan	0.25/0.70	ND	0.7	Pass
Carbaryl	0.20/0.50	ND	0.5	Pass
Carbofuran	0.04/0.10	ND	0.0	Pass
Chlorantraniliprole	0.04/0.10	ND	10.0	Pass
Chlordane	0.04/0.10	ND	0.0	Pass
Chlorfenapyr	0.04/0.10	ND	0.0	Pass
Chlorpyrifos	0.04/0.10	ND	0.0	Pass
Clofentezine	0.04/0.10	ND	0.1	Pass
Coumaphos	0.04/0.10	ND	0.0	Pass
Cyfluthrin	0.70/2.00	ND	2.0	Pass
Cypermethrin	0.35/1.00	ND	1.0	Pass
Daminozide	0.04/0.10	ND	0.0	Pass
DDVP (Dichlorvos)	0.04/0.10	ND	0.0	Pass
Diazinon	0.04/0.10	ND	0.1	Pass
Dimethoate	0.04/0.10	ND	0.0	Pass
Dimethomorph	0.04/0.10	ND	2.0	Pass
Ethoprop(hos)	0.04/0.10	ND	0.0	Pass
Etofenprox	0.04/0.10	ND	0.0	Pass
Etoxazole	0.04/0.10	ND	0.1	Pass
Fenhexamid	0.04/0.10	ND	0.1	Pass
Fenoxycarb	0.04/0.10	ND	0.0	Pass
Fenpyroximate	0.04/0.10	ND	0.1	Pass

If there are any questions with this report, please contact "[iso@anresco.com](mailto:iso@anresco.com)".

page 1 of 2



Analyte	LOD / LOQ (µg/g)	Findings (µg/g)	Limit (µg/g)	Status
Fipronil	0.04/0.10	ND	0.0	Pass
Flonicamid	0.04/0.10	ND	0.1	Pass
Fludioxanil	0.04/0.10	ND	0.1	Pass
Hexythiazox	0.04/0.10	ND	0.1	Pass
Imazalil	0.04/0.10	ND	0.0	Pass
Imidacloprid	0.04/0.10	ND	5.0	Pass
Kresoxim Methyl	0.04/0.10	ND	0.1	Pass
Malathion	0.20/0.50	ND	0.5	Pass
Metalaxyl	0.04/0.10	ND	2.0	Pass
Methiocarb	0.04/0.10	ND	0.0	Pass
Methomyl	0.04/1.00	ND	1.0	Pass
Methyl parathion	0.04/0.10	ND	0.0	Pass
Mevinphos	0.04/0.10	ND	0.0	Pass
Myclobutanil	0.04/0.10	ND	0.1	Pass
Naled	0.50/1.50	ND	0.1	Pass
Oxamyl	0.20/0.50	ND	0.5	Pass
Paclobutrazol	0.04/0.10	ND	0.0	Pass
Pentachloronitrobenzene	0.04/0.10	ND	0.1	Pass
Permethrins	0.20/0.50	ND	0.5	Pass
Phosmet	0.04/0.10	ND	0.1	Pass
Piperonyl Butoxide	0.04/0.10	ND	3.0	Pass
Prallethrin	0.50/1.50	ND	0.1	Pass
Propiconazole	0.04/0.10	ND	0.1	Pass
Propoxur	0.04/0.10	ND	0.0	Pass
Pyrethrins	0.20/0.50	ND	0.5	Pass
Pyridaben	0.04/0.10	ND	0.1	Pass
Spinetoram	0.04/0.10	ND	0.1	Pass
Spinosad	0.04/0.10	ND	0.1	Pass
Spiromesifen	0.04/0.10	ND	0.1	Pass
Spirotetramat	0.04/0.10	ND	0.1	Pass
Spiroxamine	0.04/0.10	ND	0.0	Pass
Tebuconazole	0.04/0.10	ND	0.1	Pass
Thiacloprid	0.04/0.10	ND	0.0	Pass
Thiamethoxam	0.35/1.00	ND	5.0	Pass
Trifloxystrobin	0.04/0.10	ND	0.1	Pass

Reported by  
**Anresco, Inc.**

ND = None Detected  
<LOQ = Below Limit of Quantitation




Mark Rosasco  
Analyst

April 02, 2019