



STRAIGHT HEMP

CERTIFICATE OF ANALYSIS

PRODUCT: CBD Balm
BATCH/LOT: B0043

PRODUCTION DATE: 11/27/2019
BEST BY/EXP DATE: 11/2021

TEST	METHOD	SPECIFICATION	RESULTS
Strength & Composition			
Identity	Organoleptic	Conforming	PASS
Identity	UPLC/UV	Chemical Fingerprint	PASS
Total Cannabidiol (CBD) ⁱ	UPLC/UV	17.8 – 21.2 mg/g	20.1 mg/g
Total Tetrahydrocannabinol (THC) ⁱⁱ	UPLC/UV	NMT 0.30%	0.08%
Terpene assay ⁱⁱⁱ	HS-GC/MS	n/e	13.49 mg/g
Microbiological ^{iv}			
Total Plate Count	USP 42	NMT 1,000 cfu/g	PASS
Total Coliforms	USP 42	NMT 100 cfu/g	PASS
Total Yeast & Mold	USP 42	NMT 100 cfu/g	PASS
<i>E. coli</i>	USP 42	Absent	PASS
<i>Salmonella</i>	USP 42	Absent	PASS
Heavy Metals ^v			
Arsenic (As)	ICP/MS	NMT 5 ppm	PASS
Cadmium (Cd)	ICP/MS	NMT 2 ppm	PASS
Lead (Pb)	ICP/MS	NMT 2 ppm	PASS
Mercury (Hg)	ICP/MS	NMT 1 ppm	PASS
Residual Solvents			
Multi-residue panel ^{vi}	GC-HS-MSD	Below MRL	PASS
Pesticides			
Multi-residue panel ^{vii}	UPLC-MS/MS	Below MRL	PASS


David Cole
Director of Quality

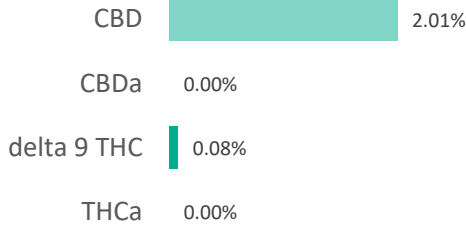
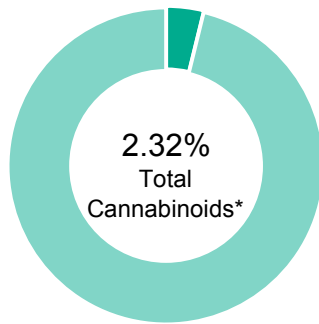
12/23/19
Date

ⁱ Total CBD = CBD + (0.877*CBDA) to account for loss of acid group during decarboxylation
ⁱⁱ Total THC = THC + (0.877*THCA) to account for loss of acid group during decarboxylation
ⁱⁱⁱ Sum of terpene assay (n=22)
^{iv} Microbiological limits based on USP, WHO, and/or NSF/ANSI
^v Limits for As and Pb set below CA Prop 65 *no significant risk level*; Cd and Hg set below USP permitted daily exposure for 110lb body weight
^{vi} 11 Residue Panel: Propane, Butane, Pentane, Ethanol, Acetone, Isopropyl Alcohol, Hexane, Benzene, Heptanes, Toluene, Xylenes
^{vii} 50 Residue Panel

NMT = Not More Than
MRL = Method Reporting Limit

HHS - CBD Balm

Batch ID:	B0043	Test ID:	6103391.0061
Reported:	6-Dec-2019	Method:	TM14
Type:	Concentrate		
Test:	Potency		

CANNABINOID PROFILE


Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.02	0.00	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.01	0.08	0.8
Cannabidiolic acid (CBDA)	0.02	0.00	0.0
Cannabidiol (CBD)	0.01	2.01	20.1
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.01	0.00	0.0
Cannabinolic Acid (CBNA)	0.02	0.00	0.0
Cannabinol (CBN)	0.01	0.00	0.0
Cannabigerolic acid (CBGA)	0.02	0.00	0.0
Cannabigerol (CBG)	0.01	0.13	1.3
Tetrahydrocannabivarinic Acid (THCVA)	0.01	0.00	0.0
Tetrahydrocannabivarin (THCV)	0.01	0.00	0.0
Cannabidivarinic Acid (CBDVA)	0.02	0.00	0.0
Cannabidivarin (CBDV)	0.01	0.00	0.0
Cannabichromenic Acid (CBCA)	0.01	0.00	0.0
Cannabichromene (CBC)	0.02	0.10	1.0
Total Cannabinoids		2.32	23.20
Total Potential THC**		0.08	0.80
Total Potential CBD**		2.01	20.10

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

* 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))

NOTES:

N/A

FINAL APPROVAL


 Tyler Wiese
 6-Dec-2019
 1:23 PM
 PREPARED BY / DATE

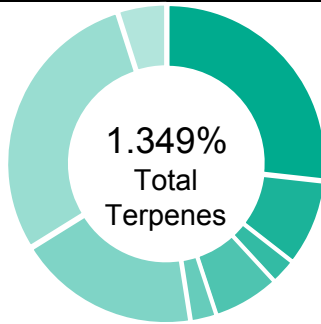

 David Green
 6-Dec-2019
 1:28 PM
 APPROVED BY / DATE

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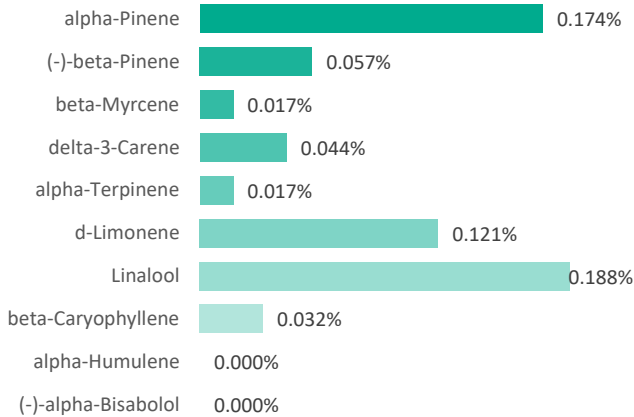


HHS - CBD Balm

Batch ID:	B0043	Test ID:	2662061.0051
Reported:	9-Dec-2019	Method:	TM10
Type:	Concentrate		
Test:	Terpenes		

TERPENE PROFILE


Compound	%(w/w)	mg/g
(-)-alpha-Bisabolol	0.000	0
Camphene	0.034	0.34
delta-3-Carene	0.044	0.44
beta-Caryophyllene	0.032	0.32
(-)-Caryophyllene Oxide	0.000	0
p-Cymene	0.042	0.42
Eucalyptol	0.548	5.48
Geraniol	0.010	0.1
alpha-Humulene	0.000	0
(-)-Isopulegol	0.004	0.04
d-Limonene	0.121	1.21
Linalool	0.188	1.88
beta-Myrcene	0.017	0.17
cis-Nerolidol	0.000	0
trans-Nerolidol	0.000	0
Ocimene	0.004	0.04
beta-Ocimene	0.000	0
alpha-Pinene	0.174	1.74
(-)-beta-Pinene	0.057	0.57
alpha-Terpinene	0.017	0.17
gamma-Terpinene	0.044	0.44
Terpinolene	0.013	0.13
Total	1.349%	13.49

PREDOMINANT TERPENES

 NOTES:
 0

FINAL APPROVAL

 Daniel Weidensaul 9-Dec-2019 1:47 PM	 David Green 9-Dec-2019 2:13 PM
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HHS - CBD BALM

Batch ID:	B0043	Test ID:	5688383.019
Reported:	6-Dec-2019	Method:	Topical - Test Methods: TM05, TM06
Type:	Topical		
Test:	Microbial Contaminants		

MICROBIAL CONTAMINANTS

Contaminant	Result (CFU/g)*
Total Aerobic Count**	None Detected
Total Coliforms**	None Detected
Total Yeast and Molds**	None Detected
<i>E. coli</i>	None Detected
<i>Salmonella</i>	None Detected

* CFU/g = Colony Forming Unit per Gram


** Values 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
TYM: None Detected
Total Aerobic: None Detected
Coliforms: None Detected

FINAL APPROVAL


Jamie Bunker
6-Dec-2019
1:49 PM
David Green
6-Dec-2019
1:53 PM

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HHS - CBD Balm

Batch ID:	B0043	Test ID:	T000040328
Reported:	17-Dec-2019	Method:	Arsenic = Arsenic EPA 6020A (mod), Cadmium = Cadmium EPA 6020A (mod), Lead = Lead EPA 6020A (mod), Mercury = Mercury EPA 6020A (mod)
Type:	Other		
Test:	Metals		


HEAVY METALS

Compound	Reporting Limit (ppm)	Result (ppm)
Arsenic	0.05	0.05
Cadmium	0.05	<0.05
Lead	0.05	<0.05
Mercury	0.05	<0.05

FINAL APPROVAL

 Sam Smith
17-Dec-2019
7:09 AM

PREPARED BY / DATE

 Greg Zimpfer
17-Dec-2019
9:32 AM

APPROVED BY / DATE

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HHS - CBD Balm

Batch ID:	B0043	Test ID:	6617826.013
Reported:	6-Dec-2019	Method:	TM04
Type:	Topical		
Test:	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	0
Toluene	18 - 360	0
Xylenes (m,p,o-Xylenes)	43 - 860	0

NOTES:

Free from visual mold, mildew, and foreign matter.

FINAL APPROVAL

Karen Winternheimer
6-Dec-2019
2:33 PMGreg Zimpfer
6-Dec-2019
2:44 PM

PREPARED BY / DATE

APPROVED BY / DATE

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Certificate #4329.02

HHS - CBD Balm

Batch ID:	B0043	Test ID:	9361112.0077
Reported:	6-Dec-2019	Method:	TM17
Type:	Concentrate		
Test:	Pesticides		


PESTICIDE RESIDUE

Compound	Dynamic Range (ppb)	Result (ppb)	Compound	Dynamic Range (ppb)	Result (ppb)
Acephate	53 - 2465	ND*	Malathion	53 - 2465	ND*
Acetamiprid	53 - 2465	ND*	Metalaxyl	319 - 2465	ND*
Avermectin	319 - 2465	ND*	Methiocarb	53 - 2465	ND*
Azoxystrobin	53 - 2465	ND*	Methomyl	53 - 2465	ND*
Bifenazate	53 - 2465	ND*	MGK 264 1	53 - 2465	ND*
Boscalid	319 - 2465	ND*	MGK 264 2	319 - 2465	ND*
Carbaryl	53 - 2465	ND*	Myclobutanil	319 - 2465	ND*
Carbofuran	53 - 2465	ND*	Naled	319 - 2465	ND*
Chlorantraniliprole	53 - 2465	ND*	Oxamyl	53 - 2465	ND*
Chlorpyrifos	319 - 2465	ND*	Paclobutrazol	53 - 2465	ND*
Clofentezine	53 - 2465	ND*	Permethrin	319 - 2465	ND*
Diazinon	53 - 2465	ND*	Phosmet	53 - 2465	ND*
Dichlorvos	319 - 2465	ND*	Prophos	319 - 2465	ND*
Dimethoate	53 - 2465	ND*	Propoxur	319 - 2465	ND*
E-Fenpyroximate	319 - 2465	ND*	Pyridaben	319 - 2465	ND*
Etofenprox	319 - 2465	ND*	Spinosad A	53 - 2465	ND*
Etoxazole	319 - 2465	ND*	Spinosad D	319 - 2465	ND*
Fenoxycarb	53 - 2465	ND*	Spiromesifen	53 - 2465	ND*
Fipronil	319 - 2465	ND*	Spirotetramat	319 - 2465	ND*
Flonicamid	53 - 2465	ND*	Spiroxamine 1	53 - 2465	ND*
Fludioxonil	319 - 2465	ND*	Spiroxamine 2	53 - 2465	ND*
Hexythiazox	319 - 2465	ND*	Tebuconazole	53 - 2465	ND*
Imazalil	319 - 2465	ND*	Thiacloprid	53 - 2465	ND*
Imidacloprid	53 - 2465	ND*	Thiamethoxam	53 - 2465	ND*
Kresoxim-methyl	53 - 2465	ND*	Trifloxystrobin	319 - 2465	ND*

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

N/A

FINAL APPROVAL


 Sam Smith
 6-Dec-2019
 12:35 PM
 PREPARED BY / DATE


 Greg Zimpfer
 6-Dec-2019
 1:00 PM
 APPROVED BY / DATE

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