

CERTIFICATE OF ANALYSIS

ISO/IEC 17025:2017 ACCREDITATION #103104



Order #: 37704
 Order Name: Carolina
 Batch#: Testing- 100219
 Received: 10/07/2019
 Completed: 10/11/2019



Bluhen Botanicals
 220 W Jackson Ave, Suite 106
 Knoxville TX, 37902
 (928) 300-4099
 info@bluhenbotanicals.com



Sample



0.017%
D9-THC

15.358%
Total CBD

Cannabinoids Test

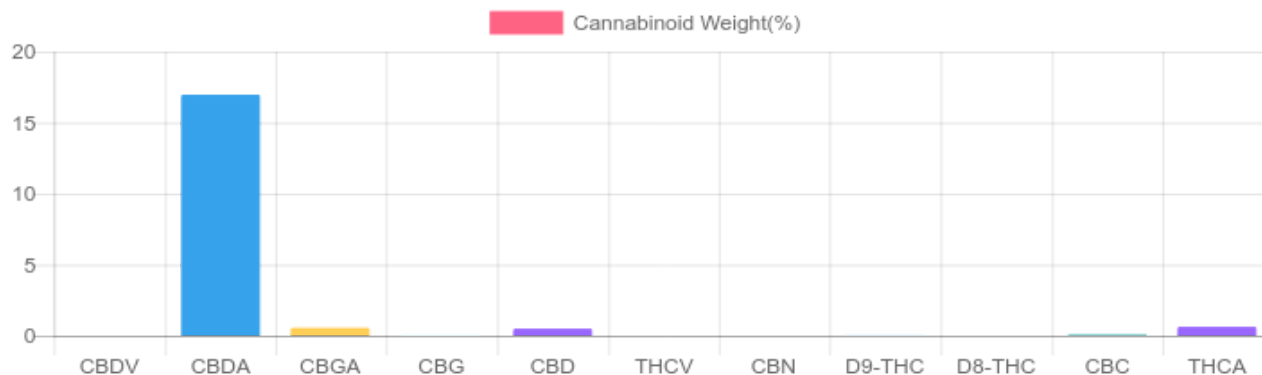
SHIMADZU INTEGRATED UPLC-PDA

GSL SOP 400

PREPARED: 10/08/2019 20:39:01

UPLOADED: 10/09/2019 12:50:42

Cannabinoids	LOQ	weight(%)	mg/g
D9-THC	10 PPM	0.017%	0.173
THCA	10 PPM	0.617%	6.170
CBD	10 PPM	0.488%	4.881
CBDA	20 PPM	16.955%	169.546
CBDV	20 PPM	N/D	N/D
CBC	10 PPM	0.079%	0.792
CBN	10 PPM	N/D	N/D
CBG	10 PPM	0.012%	0.116
CBGA	20 PPM	0.555%	5.546
D8-THC	10 PPM	N/D	N/D
THCV	10 PPM	N/D	N/D
TOTAL D9-THC		0.017%	0.017%
TOTAL CBD*		15.358%	153.573
TOTAL CANNABINOIDS		18.723%	187.224



Reporting Limit 10 ppm

*Total CBD = CBD + CBDA x 0.877

N/D - Not Detected, B/LOQ - Below Limit of Quantification



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Accreditation #103104



Dr. Andrew Hall, Ph.D., CSO & Lab Director

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TERPENES: TOTAL (0.679%)

Headspace GCMS - Shimadzu GCMS QP2020 with HS20

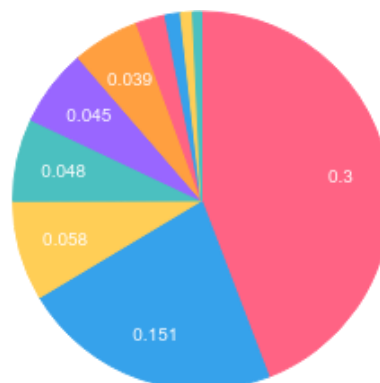
GSL SOP 404

Prepared: 10/08/2019 21:03:38

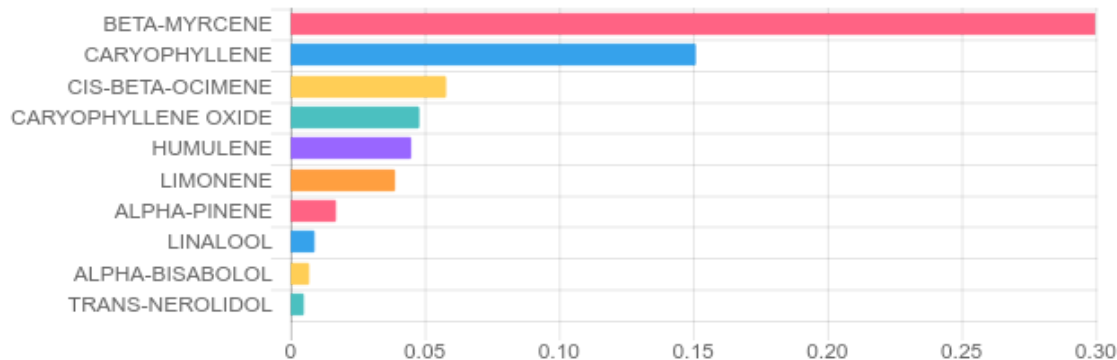
Uploaded: 10/11/2019 17:44:34

Terpene	Results (%)	LOQ (%)	LOD (%)
ALPHA-BISABOLOL	0.007%	0.0067%	0.0063%
ALPHA-PINENE	0.017%	0.0067%	0.0063%
BETA-MYRCENE	0.300%	0.0067%	0.0063%
CARYOPHYLLENE	0.151%	0.0067%	0.0063%
CARYOPHYLLENE OXIDE	0.048%	0.0067%	0.0063%
CIS-BETA-OCIMENE	0.058%	0.0067%	0.0031%
HUMULENE	0.045%	0.0067%	0.0063%
LIMONENE	0.039%	0.0067%	0.0063%
LINALOOL	0.009%	0.0067%	0.0063%
TRANS-NEROLIDOL	B/LOQ	0.0067%	0.0063%

Terpenes Breakdown



Top Terpenes Results:



Tested for but not present:

CAMPHENE, BETA-PINENE, 3-CARENE, ALPHA-TERPINENE, TRANS-BETA-OCIMENE, P-CYMENE, EUCALYPTOL, GAMMA-TERPINENE, TERPINOLENE, ISOPULEGOL, GERANIOL, CIS-NEROLIDOL, GUAIOL



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PESTICIDE ANALYSIS:

GSL SOP 401

PREPARED: 10/08/2019 21:14:23

UPLOADED: 10/09/2019 19:12:02

LCMS-MS - Shimadzu LCMS-8060

Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)	Pesticide	Action Level (ppm)	Results (ppm)	LOQ (ppm)	LOD (ppm)
ABAMECTIN B1A	0.100	N/D	0.005	0.001	IMAZALIL	0.100	N/D	0.005	0.001
ACEPHATE	0.100	N/D	0.001	0.001	IMIDACLOPRID	5.000	N/D	0.005	0.001
ACEQUINOCYL	0.100	N/D	0.001	0.001	KRESOXIM-METHYL	0.100	N/D	0.010	0.005
ACETAMIPRID	0.100	N/D	0.005	0.001	MALATHION	0.500	N/D	0.005	0.001
ALDICARB	0.100	N/D	0.005	0.001	METALAXYL	2.000	N/D	0.001	0.001
AZOXYSTROBIN	0.100	N/D	0.001	0.001	METHIOCARB	0.100	N/D	0.005	0.001
BIFENAZATE	0.100	N/D	0.005	0.001	METHOMYL	1.000	N/D	0.001	0.001
BIFENTHRIN	3.000	N/D	0.005	0.001	MEVINPHOS	0.100	N/D	0.001	0.001
BOSCALID	0.100	N/D	0.005	0.001	MYCLOBUTANIL	0.100	N/D	0.005	0.001
CARBARYL	0.500	N/D	0.003	0.001	NALED	0.100	N/D	0.005	0.001
CARBOFURAN	0.100	N/D	0.001	0.001	OXAMYL	0.500	N/D	0.001	0.001
CHLORANTRANILIPROLE	10.000	N/D	0.005	0.005	PACLOBUTRAZOL	0.100	N/D	0.005	0.001
CHLORPYRIFOS	0.100	0.054	0.001	0.001	PERMETHRINS	0.500	0.335	0.005	0.001
CLOFENTEZINE	0.100	N/D	0.001	0.001	PHOSMET	0.100	N/D	0.005	0.001
DAMINOZIDE	0.100	N/D	0.005	0.001	PIPERONYL	3.000	0.005	0.001	0.001
DIAZANON	0.100	0.015	0.001	0.001	BUTOXIDE				
DICHLORVOS	0.100	N/D	0.005	0.001	PRALLETHRIN	0.100	N/D	0.005	0.005
DIMETHOATE	0.100	N/D	0.001	0.001	PROPICONAZOLE	0.100	N/D	0.010	0.005
DIMETHOMORPH	2.000	N/D	0.005	0.001	PROPOXUR	0.100	N/D	0.001	0.001
ETHOPROPHOS	0.100	N/D	0.001	0.001	PYRETHRINS				
ETOFENPROX	0.100	N/D	0.001	0.001	(PYRETHRIN I)	0.500	N/D	0.005	0.005
ETOXAZOLE	0.100	N/D	0.010	0.005	PYRIDABEN	0.100	N/D	0.005	0.001
FENHEXAMID	0.100	N/D	0.005	0.001	SPINETORAM	0.100	N/D	0.001	0.001
FENOXYCARB	0.100	N/D	0.005	0.001	SPINOSAD	0.100	N/D	0.001	0.001
FENPYROXIMATE	0.100	N/D	0.001	0.001	SPIROMESIFEN	0.100	N/D	0.005	0.001
FIPRONIL	0.100	N/D	0.003	0.001	SPIROTETRAMAT	0.100	N/D	0.001	0.001
FLONICAMID	0.100	N/D	0.025	0.010	SPIROXAMINE	0.100	N/D	0.001	0.001
FLUDIOXONIL	0.100	N/D	0.003	0.001	TEBUCONAZOLE	0.100	N/D	0.005	0.001
HEXYTHIAZOX	0.100	N/D	0.005	0.001	THIACLOPRID	0.100	N/D	0.001	0.001
					THIAMETHOXAM	5.000	N/D	0.001	0.001
					TRIFLOXYSTROBIN	0.100	N/D	0.001	0.001

N/D = Not Detected, A/LOQ = Above LOQ Level, B/LOQ = Below LOQ Level, B/LOD = Below LOD Level



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Microbial Analysis:

Microbial Analysis GSL SOP 406

Uploaded: 10/11/2019 13:34:30

PCR - Agilent AriaMX

Test	Test Method Used	Device Used	LOD	Allowable Criteria	Actual Result	Pass/Fail
STEC E.COLI*	USP 61/62†	ARIAMX PCR	2 COPIES OF DNA	PRESENCE / ABSENT	BELOW LOD	PASS
SALMONELLA*	USP 61/62†	ARIAMX PCR	5 COPIES OF DNA	PRESENCE / ABSENT	BELOW LOD	PASS
YEAST AND MOLD	USP 61/62†	ARIAMX PCR	0.0857 CFU/G**	10,000	BELOW THRESHOLD	PASS

† USP 61 (enumeration of bacteria TAC, TYM, and ENT/Coliform), USP 62 (identifying specific species E.coli Aspergillus etc)

* STEC and Salmonella run as Multiplex

** CFU/g Calculation based on Select Category Type Gummy MIP/Extract Flower matrix



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Mycotoxin Analysis:

LC-MS - Shimadzu LCMS-8060
GSL SOP 401

Uploaded: 10/09/2019 19:12:02

Analyte	Action Lvl (ppb)	Results (ppb)
AFLATOXIN B1	20	N/D
AFLATOXIN B2	20	N/D
AFLATOXIN G1	20	N/D
AFLATOXIN G2	20	N/D
OCHRATOXIN A	20	N/D

LOQ is 4ppb, LOD is 1ppb

Heavy Metals Analysis:

ICP-MS - Shimadzu ICPMS-2030
GSL SOP 403

Uploaded: 10/08/2019 20:33:26

Metal	Action Level (ppb)	Result (ppb)
ARSENIC (AS)	200	B/LOQ
CADMIUM (CD)	200	B/LOQ
MERCURY (HG)	100	B/LOQ
LEAD (PB)	500	B/LOQ

Lower Limit of Quantitation (LOQ) is 75 ppb



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