CERTIFICATE OF ANALYSIS

PRODUCT NAME:	Dog Chews
PRODUCT STRENGTH:	2 mg / chew
FILL LOT NUMBER:	20272C
DOG TREAT LOT NUMBER*:	CODSC20-17
BEST BY DATE	11/11/2021

Click on the links to view third-party reports

Physical Atttributes

Test	Method	Specification	Results
Color	SOP-100	Brown	PASS
Odor	SOP-100	Beef, grains, somewhat yeasty	PASS
Appearance	SOP-100	Squat cylindrical dog treats a plastic amber container	PASS
Primary Package Eval.	SOP-132	Container clean and free of filth. Container caps tight and shrink bands intanct.	PASS
Secondary Package Eval.	SOP-132	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	SOP-111	1.9-2.5 mg CBD / ea. LOQ**: 10 PPM† (0.001%)	2 mg/chew	PASS
Potency - D9-THC	SOP-111	None Detected LOQ: 10 PPM (0.001%)	0.0%	PASS
Compliant Pesticide Panel	SOP-111	WIP-100008 : Product specification for Bulk Dog Treats, Oregon Action limits apply	ND	PASS
Microbial - Full Panel	SOP-111	Complies with USP 61/62	ND	PASS
CA Compliant Heavy Metal Panel	SOP-111	Arsenic (As): ≤1.5 PPM Cadmium (Cd): ≤0.5 PPM Mercury (Hg): ≤1.0 PPM Lead (Pb): ≤0.5 PPM	ND	PASS

* *Level of Quantitation, † Parts Per Million

Quality Certified by: Kei Horikawa 08.17.2020

Kei Horikawa — Date

Quality Control Manager

Chew 20272C

Certificate of Analysis

total cannabinoids
3 mg
per
chew

Δ9-THC	THCa	total THC
0.00 mg	0.33 mg	0.33 mg

CBD	CBDa	total CBD
2.0 mg	0.00 mg	2.0 mg

Lot# 20272C

This Product Has Been Tested and Complies with 7USC1639o(1) Definition of Hemp

ISO/IEC 17025:2017
ACCREDITED
Certificate #4961.01
https://portal.a2la.org/scopepdf/4961-01.pdf

Stillwater Laboratories

Sample Handling

test ID		sample wt	131.6 g
type	edible	order	**8933**
lab ID	**0LM29**	sample date	
unit	chew	unit weight	**4.3 g**

Methods

	method	equipment
weights	MSP-7.3.1.3	AUX120.1
potency	MSP-7.5.1.5	LC-2030
terpenes	MSP-7.5.1.7	QP2020/HS20
pesticides	MSP-7.5.1.8	LC-8060
mycotoxins	MSP-7.5.1.8	LC-8060
microbial	MSP-7.5.1.1	AriaMx/Hardy
solvents	MSP-7.5.1.6	QP2020/HS20
metals	MSP-7.5.1.1	ICPMS2030

edible

Potency

per	chew		estimated error
tetrahydrocannabolic acid (THCa)	.01%	0.33 mg	± 0.08 mg
Δ^9-tetrahydrocannabinol (Δ^9 THC)	0%	0.00 mg	± 0.07 mg
Δ^8-tetrahydrocannabinol (Δ^8 THC)	0%	0.00 mg	± 0.07 mg
tetrahydrocannabivarin (THCv)	0%	0.00 mg	± 0.07 mg
cannabidiolic acid (CBDa)	0%	0.00 mg	± 0.07 mg
cannabidiol (CBD)	.05%	2.0 mg	± 0.11 mg
cannabidivarin (CBDv)	0%	0.00 mg	± 0.07 mg
cannabigerolic acid (CBGa)	0%	0.00 mg	± 0.07 mg
cannabigerol (CBG)	0%	0.00 mg	± 0.07 mg
cannabinol (CBN)	0%	0.00 mg	± 0.07 mg
cannabichromene (CBC)	0%	0.14 mg	± 0.07 mg

Terpenes

%	estimated error	%	estimated error	%	estimated error

terpenes
not tested / not required

Solvents

	MT limit	0LM29	LOQ

Toxic Metals

	MT limit	0LM29	LOQ
arsenic	2 ppm	0.0 ppm	<10ppb
cadmium	4.1 ppm	0.0 ppm	<10ppb
lead	1.2 ppm	0.0 ppm	<10ppb
mercury	0.4 ppm	0.0 ppm	<10ppb

Comments

Pesticides (MT)

	MT limit	0LM29	LOQ
abamectin		0.00 ppm	<10ppb
acequinocyl		0.00 ppm	<10ppb
bifenazate		0.00 ppm	<10ppb
bifenthrin		0.00 ppm	<10ppb
chlormequat cl.		0.00 ppm	<10ppb
cyfluthrin		0.00 ppm	<80ppb
diaminozide		0.00 ppm	<10ppb
etoxazole		0.00 ppm	<10ppb
fenoxycarb		0.00 ppm	<10ppb
imazalil		0.00 ppm	<10ppb
imidacloprid		0.00 ppm	<10ppb
myclobutanil		0.00 ppm	<10ppb
paclobutrazol		0.00 ppm	<10ppb
pyrethrins		0.00 ppm	<10ppb
spinosad		0.00 ppm	<10ppb
spiromesifen		0.00 ppm	<10ppb
spirotetramat		0.00 ppm	<10ppb
trifloxystrobin		0.00 ppm	<10ppb

Microbial

	MT limit	0LM29	LOQ
E. coli	10 CFU	0 CFU	<10 CFU/g
Salmonella sp.	10 CFU	0 CFU	<10 CFU/g
molds	10000 CFU	0 CFU	<10k CFU/g
Aflatoxin B1,B2,G1,G2	20 ppb	0 ppb	<20 ppb
Ochratoxin A	20 ppb	0 ppb	<20 ppb

Pesticides (other)

	0LM29	LOQ
acephate	0.00 ppm	<10ppb
acetamiprid	0.00 ppm	<10ppb
aldicarb	0.00 ppm	<10ppb
azoxystrobin	0.00 ppm	<10ppb
boscalid	0.00 ppm	<10ppb
carbaryl	0.00 ppm	<10ppb
carbofuran	0.00 ppm	<10ppb
chloantraniliprole	0.00 ppm	<10ppb
chlorpyrifos	0.00 ppm	<10ppb
clofentezine	0.00 ppm	<10ppb
cypermethrin	0.00 ppm	<10ppb
diazinon	0.00 ppm	<10ppb
dichlorvos	0.00 ppm	<10ppb
dimethoate	0.00 ppm	<10ppb
etofenprox	0.00 ppm	<10ppb
fenpyroximate	0.00 ppm	<10ppb
fipronil	0.00 ppm	<10ppb
flonicamid	0.00 ppm	<10ppb
fludioxonil	0.00 ppm	<10ppb
hexythiazox	0.00 ppm	<10ppb
kresoxym-methyl	0.00 ppm	<10ppb
malathion	0.00 ppm	<10ppb
metalaxyl	0.00 ppm	<10ppb
methiocarb	0.00 ppm	<10ppb
methomyl	0.00 ppm	<10ppb
oxamyl	0.00 ppm	<10ppb
permethrins	0.00 ppm	<10ppb
phosmet	0.00 ppm	<10ppb
piperonyl butoxide	0.00 ppm	<10ppb
prallethrin	0.00 ppm	<10ppb
propiconazole	0.00 ppm	<10ppb
pyridaben	0.00 ppm	<10ppb
spiroxamine	0.00 ppm	<10ppb
tebuconazole	0.00 ppm	<10ppb
thiacloprid	0.00 ppm	<10ppb
thiamethoxam	0.00 ppm	<10ppb

• All testing was completed onsite at 6073 US93N, Olney MT •• Potency (cannabinoid concentration) is calcuated from the equation: [cannabioid] = $[\text{cannabinoid}]_{HPLC} \times \text{volume}_{dilution}/m_{dry}$. Terpene concentration is calcuated from the equation: [terpene] = $(\text{terpene mass})_{GCMS} / m_{dry}$. ••• Decarboxyted cannabinoid concentration is calculated from the equation $XXX_{total} = 0.877 \times XXXa + XXX$ •••• Standards are used to calibrate the resulting data and estimate error using a standard estimate of error method; this is combined with error from weighing and dilution using the propagation of error formula $s_g^2 = \sum(\partial f/\partial i)^2 s_i^2$ where i is the contributor to error. The 95% confidence range is calculated from the equation: (concentration) $\pm t_{CL90} \times s_g$. Sampling error is not

Certified by:

Justin M Johnston
Deputy Director
6073 US93N, Olney MT 59927
406-881-2019 rdb@stwlabs.com

CONFIDENTIAL EXTRACTOR

CERTIFICATE OF ANALYSIS

PRODUCT NAME: CBD Rich Dog Treats
PRODUCT CODE: K9-X-Y-Z-A
LOT NUMBER: CODSC20-17
DATE OF MANUFACTURE: 17JAN2020 (DDMMMYYYY) **EXPIRATION DATE:** 17JAN2022 *(Expiration date is 24 months under sealed conditions.)*

INGREDIENTS:

Brewer's yeast, water, Beef Liver Powder, Glycerin, Natural Bacon Flavor, Flaxseed Oil, Organic Sweet Potato Powder, Gum Arabic, Microcrystalline Cellulose, Sunflower Lecithin, Salt, Citrus Pectin, Sodium Alginate, Sorbic Acid, Water Soluble Powder containing Broad Spectrum CBD Oil (0.0% THC) (dextrin carrier), Sodium Propionate, Calcium Sulfate Dihydrate, Natural Mixed Tocopherols (Natural Preservative).

Parameter	Method[1]	Specification	Results	
Appearance	QCU002	Soft Cylindrical Sold	Pass	
Color		Brown	Pass	
Cannabinoids	QCU001 (UHPLC-DAD)	LOQ (ppm)	Wt. (%)	(mg/g)
CBD		20	0.0524	0.524
CBD-A		20	< LOQ	< LOQ
Δ9-THC		5	< LOQ	< LOQ
THC-A		5	< LOQ	< LOQ
CBN		5	< LOQ	< LOQ
CBN-A		5	< LOQ	< LOQ
CBG		5	< LOQ	< LOQ
CBC		5	< LOQ	< LOQ
CBC-A		5	< LOQ	< LOQ
Δ8-THC		5	< LOQ	< LOQ
CBDV		5	< LOQ	< LOQ
CBDV-A		5	< LOQ	< LOQ
THCV		5	< LOQ	< LOQ
Potency – Total CBD		NLT 1.8mg/Chew	2.3 mg/Chew	
Total THC		0.0%	0.0%	
Identity – CBD		Retention Time ± 0.05min of Standard	0.00 min	
Terpenes[2]	GC/FID & LC/MS	Refer to Oil Specification	Refer to Oil Specification	
Pesticides[2]	LC/MS & GC/MS	Refer to Oil Specification	Refer to Oil Specification	
Residual Solvents[2]	USP <467>	Refer to Oil Specification	Refer to Oil Specification	
Elemental Impurities:[2]	USP <2232>	Refer to Oil Specification	Refer to Oil Specification	

CONFIDENTIAL EXTRACTOR

Parameter	Method[1]	Specification	Results
Microbial Limits			
Total yeast & mold	USP <2023> (Green Scientific)	<100 cfu/g	Pass
Enterobacteriaceae		<10 MPN/g	Pass
E. coli		Absent	Pass
Salmonella		Absent	Pass
Aspergillus		Absent	Pass

Notes: [1]according to Folium Biosciences internal analytical methods, US Pharmacopeia or 3rd party contract laboratory method. [2] Testing performed on bulk oil. ND=Not Detected, LOQ=Limit of Quantification, LOD=Limit of Detection

The above certificate of analysis is based on Product Specification (FORM1QAU005-K9-X-Y-Z-A)
Revision No: 02

Results conform to all specifications: (Yes) or No

Storage: Room Temperature, Protect from Light

Prepared by: Jill Bogdan _____ Date: 02 Apr 2020
Quality Control, Folium Biosciences

Reviewed by: Chris Didomenico _____ Date: 02APR2020
Quality Control, Folium Biosciences

COPY

CERTIFICATE OF ANALYSIS
ISO/IEC 17025:2017 ACCREDITATION #103104

Order #: 48192
Order Name: DSC_2641104
Batch#: DSC_2641104
Received: 02/10/2020
Completed: 02/27/2020

Microbial Analysis:

Microbial Analysis GSL SOP 406

Uploaded: 02/27/2020 12:30:41

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
ASPERGILLUS	USP 61/62†	ARIAMX PCR	ASP_LOD***	PRESENCE / ABSENT	BELOW LOD	PASS
YEAST AND MOLD	USP 61/62†	ARIAMX PCR	363.05518 CFU/G**	1,000	BELOW THRESHOLD	PASS
TOTAL AEROBIC BACTERIA	USP 61/62†	ARIAMX PCR	0.25316 CFU/G**	10,000	BELOW THRESHOLD	PASS
COLIFORM	USP 61/62†	ARIAMX PCR	3.41539 CFU/G**	100	BELOW THRESHOLD	PASS
ENTEROBACTERIACEAE	USP 61/62†	ARIAMX PCR	0.32951 CFU/G**	100	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
*** Flavus = 2 Copies of DNA / Fumigatis = 2 Copies of DNA Niger = 20 Copies of DNA / Terrus = 10 copies of DNA

Dr. Andrew Hall, Ph.D.,Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

Green Scientific Labs
info@greenscientificlabs.com
1-833 TEST CBD

PJLA Testing
Accreditation #103104

ACCU Bio-Chem LABORATORIES

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Tel: 818.547.3221 Email: acculab@accubclabs.com
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To:	
COA No.:	**M-JO100220-03**
COA Date:	**10/07/20**
Sample Rec'd Date:	**10/02/20**
ISO/IEC 17025:2017 Standard	**Page 1 of 1**

MICROBIOLOGICAL CERTIFICATE OF ANALYSIS

Sample Description: *Dog Treats*
Sample Batch/Lot No.: *20272C*
ACCU Laboratory Ref.: *0809350*
Purchase Order No.: *N/A*
Test Method: *USP*
Notes: *N/A*

Analysis:	Results:
Total Plate Count:	**80 CFU / g**
Yeast & Mold Count:	**<10 CFU / g**
Bile-Tolerant g- Bacteria (coliforms):	**Negative**
Escherichia coli:	**Negative**
Salmonella:	**Negative**

Approved By: _____
Vano Baghdasarian, Laboratory Director

Abbreviations: **g -: gram negative; g +B: gram positive Bacilli; g +C: gram positive Cocci; TPC: Total Plate Count; TNTC: Too Numerous to Count**

ACCU Bio-Chem LABORATORIES

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To:

COA No.:	**M-JO100220-01ID**
COA Date:	**10/09/20**
Sample Rec'd Date:	**10/02/20**
ISO/IEC 17025:2017 Standard	**Page 1 of 1**

MICROBIOLOGICAL CERTIFICATE OF ANALYSIS

Sample Description: *Dog Treats*
Sample Batch/Lot No.: *20272C*
ACCU Laboratory Ref.: *0809350*
Test Method: *DNA Sequencing (16S rRNA Sequence)*
Notes: *N/A*

Analysis:	**Results:**
Microbial Identification:	***Bacillus subtilis***

Approved By: _____
Vano Baghdasarian, Laboratory Director

Abbreviations: **g -: gram negative; g +B: gram positive Bacilli; g +C: gram positive Cocci; TPC: Total Plate Count; TNTC: Too Numerous to Count**