

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Joy Organics Green Apple Gummies - Kosher Certified
PRODUCT STRENGTH: 10 mg CBD / gummy
BATCH: J10GA05
BEST BY DATE: HEMP 08/2023
EXTRACT LOT: CO325-003

Click on the links to view third-party reports

Physical Attributes

Test	Method	Specification	Results
Color	Joy Internal	Medium Green	PASS
Odor	Joy Internal	Sweet, apple, sour	PASS
Appearance	Joy Internal	Medium green gummies with sugar coating in child proof container	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and seals intact	PASS
Secondary Package Eval.	Joy Internal	Labeling Compliance Checked, Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	HPLC-UV DAD	*LOQ: ≥ 10 mg / gummy	10.68 mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: $<0.01\%$ (broad spectrum)	ND	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	Below LOQ	PASS
Microbial Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 **CFU/25	Absent	PASS
Microbial Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	Absent	PASS
Microbial Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^2 CFU/gram	Below LOQ	PASS
Microbial Total Coliforms*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^2 CFU/gram	Below LOQ	PASS
Microbial Total Aerobic Count*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10^3 CFU/gram	Below LOQ	PASS
Heavy Metals	ICP-MS	Arsenic (As): ≤ 1.5 ppm† Cadmium (Cd): ≤ 0.5 ppm Lead (Pb): ≤ 0.5 ppm Mercury (Hg): ≤ 1.5 ppm	Below LOQ	PASS
Mycotoxins	ICP-MS	Total Aflatoxins <20 ppb†† Afltoxin B1 < 5 ppb Ochratoxin < 5 ppb	Below LOQ	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR in effect during MFG*	Below LOQ	PASS

*Level of Quantification
 **Colony Forming Units per Gram
 † Parts Per Million †† Part Per Billion

Values expressed in scientific notation.
 Examples:
 $10^2=100$
 $10^3=1,000$

Quality Certified


 Kayla Kolber
 Quality Assurance Technician

09/02/2021

Date



C0325-003

7USC1639 Certificate of Analysis

sample ID 26419

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

Stillwater Laboratories

certificate ID 1CX18

total cannabinoids 87.39% per gram

THC total ND CBD total 82.44% terpenes

MSP-7.5.1.3

0.000

extract

order 10243 analysis date 3/26/2021 3:55:32 PM test tag 10243.3.4 sample wgt

Inspection MSP-7.5.1.2

DESCRIPTION: Concentrate sample received in a client-labeled bottle, by commercial courier. Labeled 26419 and sample tag 10243.3.4.

- caryophyllene humulene terpinolene ocimene beta pinene alpha pinene limonene myrcene linalool



0.000

Potency per gram

MSP-7.5.1.4 LOD LOQ error (95%CI k=2)

Terpenes

MSP-7.5.1.6

MSP-7.5.1.6

Table with 4 columns: Compound, Value, LOD, LOQ, Error. Rows include tetrahydrocannabinolic acid (THCa), Δ9-tetrahydrocannabinol (Δ9 THC), Δ8-tetrahydrocannabinol (Δ8 THC), tetrahydrocannabivarin (THCv), cannabidiolic acid (CBDa), cannabidiol (CBD), cannabidivarin (CBDv), cannabigerolic acid (CBGa), cannabigerol (CBG), cannabinalol (CBN), and cannabichromene (CBC).

‡ = decarbed NT = not tested NL = no limit, ND = not detected, LOD = detection limit, LOQ = quantitation limit

Microbial

MSP-7.5.1.10

limit

Metals

MSP-7.5.1.11

limit

Pesticides

MSP-7.5.1.8

limit

Pesticides

MSP-7.5.1.8

limit

Table with 4 columns: Microbial, Metals, Pesticides, Pesticides. Rows include E.coli, Salmonella sp., molds, Ochratoxin A, Aflatoxin, Arsenic, Cadmium, Lead, Mercury, Abamectin, Acephate, Acequinocyl, Acetamiprid, Aldicarb, Azoxystrobin, Bifenazate, Bifenthrin, Boscalid, Carbaryl, Carbofuran, Chloantraniliprole, Chlorfenapyr, Chlorpyrifos, Clofentezine, Coumaphos, Cyfluthrin, Cypermethrin, Daminozide, Dichlorvos, Diazinon, Dimethoate, Etoxazole, Fenoxycarb, Fenpyroximate, Fipronil, Flonicamid, Fludioxonil, Hexythiazox, Imazalil, Imidacloprid, Malathion, Metalaxyl, Methiocarb, Methomyl, Methyl parathion, Mevinphos, Myclobutanil, Naled, Oxamyl, Paclobutrazol, and Permethrin.

Solvents

MSP-7.5.1.7

limit

Pesticides

MSP-7.5.1.8

limit

Table with 4 columns: Solvents, Pesticides, Pesticides, Pesticides. Rows include Acetone, Acetonitrile, Benzene, Butane, Chloroform, Cyclohexane, Ethanol, Heptane, Hexane, Isopropyl alcohol, Methanol, Pentane, Propane, Toluene, Xylenes, Permethrin, Phosmet, Piperonylbutoxide, Prallethrin, Propiconazole, Propoxur, Pyrethrin, Pyridaben, Spinetoram, Spinosad, Spiromesifen, Spirotetramat, Spiroxamine, Tebuconazole, Thiachloprid, Thiamethoxam, Trifloxystrobin, Abamectin, Acephate, Acequinocyl, Acetamiprid, Aldicarb, Azoxystrobin, Bifenazate, Bifenthrin, Boscalid, Carbaryl, Carbofuran, Chloantraniliprole, Chlorfenapyr, Chlorpyrifos, Clofentezine, Coumaphos, Cyfluthrin, Cypermethrin, Daminozide, Dichlorvos, Diazinon, Dimethoate, Etoxazole, Fenoxycarb, Fenpyroximate, Fipronil, Flonicamid, Fludioxonil, Hexythiazox, Imazalil, Imidacloprid, Malathion, Metalaxyl, Methiocarb, Methomyl, Methyl parathion, Mevinphos, Myclobutanil, Naled, Oxamyl, Paclobutrazol, and Permethrin.

INSTRUMENTS potency: HPLC (LC2030C-UV) terpenes: GCMS (QP2020/HS20) solvents: GCMS (QP2020/HS20) pesticides: LCMSMS (LC8060) mycotoxins: LCMSMS (LC8060) microbial: qPCR (AriaMx) and plating metals: ICPMS (ICPMS-2030)

SECURITY FEATURE: WATERMARK MUST MATCH CERTIFICATE ID AND ISSUE DATE

Certified by:

[Signature]

Kyle Larson, MSc (Biology) Deputy Director

Stillwater Laboratories Inc. MT License L00001, 7, 8 6073 US93N Suite 5 Olney MT 59927 406-881-2019

Printed 3/31/2021 11:07 AM

The data in this report is the property of and is administered by Stillwater Labs. The format, layout, and security features of this report are copyrighted by Stillwater Laboratories Inc. © 2020



Certificate #4961.01

https://portal.a2la.org/scopepdf/4961-01.pdf

GUMGA10

Batch ID or Lot Number: J10GA05	Test: Potency	Reported: 9/1/21
---	-------------------------	----------------------------

Matrix: Concentrate	Test ID: T000159567	Started: 8/31/21	USDA License: N/A
------------------------	------------------------	---------------------	----------------------

Status: N/A	Method: TM14 (HPLC-DAD): Potency - Broad Spectrum Analysis, 0.01% THC (Colorado Panel)	Received: 08/24/2021 @ 10:12 AM	Sampler ID: N/A
----------------	---	------------------------------------	--------------------

CANNABINOID PROFILE

Compound	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)	Notes
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.002	0.007	ND	ND	N/A
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.002	0.008	ND	ND	
Cannabidiolic acid (CBDA)	0.018	0.049	ND	ND	
Cannabidiol (CBD)	0.018	0.048	0.267	2.67	
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.015	0.052	ND	ND	
Cannabinolic Acid (CBNA)	0.008	0.030	ND	ND	
Cannabinol (CBN)	0.004	0.014	ND	ND	
Cannabigerolic acid (CBGA)	0.012	0.044	ND	ND	
Cannabigerol (CBG)	0.003	0.010	0.016	0.16	
Tetrahydrocannabivarinic Acid (THCVA)	0.010	0.037	ND	ND	
Tetrahydrocannabivarin (THCV)	0.003	0.010	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.008	0.021	ND	ND	
Cannabidivarin (CBDV)	0.004	0.011	ND	ND	
Cannabichromenic Acid (CBCA)	0.005	0.017	ND	ND	
Cannabichromene (CBC)	0.005	0.018	ND	ND	
Total Cannabinoids			0.283	2.83	
Total Potential THC**			ND	ND	
Total Potential CBD**			0.267	2.67	


 Sam Smith
 01-Sep-2021
 04:10 PM


 Daniel Weidensaul
 1-Sep-21
 4:21 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)
 * Indicates a value below the Limit of Quantitation (LOQ) and above the Limit of Detection (LOD).
 ** 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))
 Total Cannabinoids result reflects the absolute sum of all cannabinoids detected.
 ND = None Detected (Defined by Dynamic Range of the method)

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.



CDPHE Certified



Certificate #4329.02

GUMGA10

Batch ID or Lot Number: **J10GA05** Test: **Pesticides** Reported: **8/31/21**

Matrix: Concentrate Test ID: T000159568 Started: 8/29/21 USDA License: N/A

Status: N/A Method: TM17(LC-QQQ LC MS/MS): Received: 08/24/2021 @ 10:12 AM Sampler ID: N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	42	ND	Fenoxycarb	24	ND	Paclobutrazol	44	ND
Acetamiprid	42	ND	Fipronil	38	ND	Permethrin	298	ND
Avermectin	390	ND	Flonicamid	53	ND	Phosmet	48	ND
Azoxystrobin	47	ND	Fludioxonil	321	ND	Prophos	321	ND
Bifenazate	47	ND	Hexythiazox	44	ND	Propoxur	42	ND
Boscalid	42	ND	Imazalil	279	ND	Pyridaben	281	ND
Carbaryl	45	ND	Imidacloprid	46	ND	Spinosad A	37	ND
Carbofuran	44	ND	Kresoxim-methyl	150	ND	Spinosad D	58	ND
Chlorantraniliprole	60	ND	Malathion	312	ND	Spiromesifen	313	ND
Chlorpyrifos	500	ND	Metalaxyl	43	ND	Spirotetramat	319	ND
Clofentezine	297	ND	Methiocarb	45	ND	Spiroxamine 1	20	ND
Diazinon	308	ND	Methomyl	43	ND	Spiroxamine 2	26	ND
Dichlorvos	294	ND	MGK 264 1	190	ND	Tebuconazole	295	ND
Dimethoate	42	ND	MGK 264 2	137	ND	Thiacloprid	44	ND
E-Fenpyroximate	330	ND	Myclobutanil	44	ND	Thiamethoxam	44	ND
Etofenprox	43	ND	Naled	44	ND	Trifloxystrobin	48	ND
Etoxazole	321	ND	Oxamyl	1500	ND			

Samantha Smith
 Sam Smith
 8/31/2021
 3:17:00 PM

K Winterheimer
 Karen Winterheimer
 8/31/2021
 3:18:00 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

LOQ = Limit of Quantification
 ppb = Parts per Billion

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.



Certificate #4329.02

GUMGA10

Batch ID or Lot Number: J10GA05	Test: Microbial Contaminants	Reported: 8/27/21
---	--	-----------------------------

Matrix: Finished Product	Test ID: T000159569	Started: 8/24/21	USDA License: N/A
-----------------------------	------------------------	---------------------	----------------------

Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial (Colorado Panel)	Received: 08/24/2021 @ 10:12 AM	Sampler ID: N/A
----------------	---	------------------------------------	--------------------

MICROBIAL CONTAMINANTS DETERMINATION

Contaminant	Method	LOD	LLOQ	ULOQ	Result	Notes
Total Aerobic Count*	TM-26, Culture Plating	10 ² CFU/g	10 ³ CFU/g	1.5x10 ⁵ CFU/g	None Detected	Free from visual mold, mildew, and foreign matter
Total Coliforms*	TM-27, Culture Plating	10 ² CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
Total Yeast and Mold*	TM-24, Culture Plating	10 ² CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
E. coli (STEC)	TM-25, PCR	1 CFU/25 g	NA	NA	Absent	
Salmonella	TM-25, PCR	1 CFU/25 g	NA	NA	Absent	

Brianne Maillot
 Brianne Maillot
 8/27/2021
 10:53:00 AM

Sarah Henning
 Sarah Henning
 8/27/2021
 11:55:00 AM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

LOD = Limit of Detection | LLOQ = Lower Limit of Quantitation | ULOQ = Upper Limit of Quantitation

 CFU/g = Colony Forming Units per Gram | STEC = Shiga Toxin-Producing *E. coli*

* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form.

Examples: 10² = 100 CFU
 10³ = 1,000 CFU
 10⁴ = 10,000 CFU
 10⁵ = 100,000 CFU

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.



CDPHE Certified



Certificate #4329.02

GUMGA10

Batch ID or Lot Number: J10GA05	Test: Metals	Reported: 8/30/21	
Matrix: Unit Co	Test ID: T000159570	Started: 8/27/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS); Heavy Metals (Colorado Panel)	Received: 08/24/2021 @ 10:12 AM	Sampler ID: N/A

HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.043 - 4.27	ND	
Cadmium	0.043 - 4.34	ND	
Mercury	0.044 - 4.40	ND	
Lead	0.041 - 4.06	ND	


 Ryan Weems
 30-Aug-21
 11:16 AM

PREPARED BY / DATE


 Daniel Weidensaul
 30-Aug-21
 11:26 AM

APPROVED BY / DATE

Definitions

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

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.



CDPHE Certified



Certificate #4329.02

GUMGA10

Batch ID or Lot Number: J10GA05	Test: Mycotoxins	Reported: 9/1/21	
Matrix: Concentrate	Test ID: T000159572	Started: 8/31/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 08/24/2021 @ 10:12 AM	Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	3.1 - 129.9	ND	N/A
Aflatoxin B1	1.2 - 33.2	ND	
Aflatoxin B2	1.2 - 32.7	ND	
Aflatoxin G1	1.1 - 32.3	ND	
Aflatoxin G2	1.2 - 33.1	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	


 Sam Smith
 1-Sep-21
 1:46 PM

PREPARED BY / DATE


 Alex Smith
 1-Sep-21
 1:59 PM

APPROVED BY / DATE

Definitions

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

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.



CDPHE Certified



Certificate #4329.02

GUMGA10

Batch ID or Lot Number: J10GA05	Test: Residual Solvents	Reported: 8/27/21	
Matrix: N/A	Test ID: T000159571	Started: 8/26/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 08/24/2021 @ 10:12 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	93 - 1854	*ND	
Butanes (Isobutane, n-Butane)	177 - 3541	*ND	
Methanol	67 - 1340	*ND	
Pentane	98 - 1964	*ND	
Ethanol	107 - 2138	>2138	
Acetone	111 - 2230	*ND	
Isopropyl Alcohol	120 - 2402	*ND	
Hexane	7 - 135	*ND	
Ethyl Acetate	112 - 2246	*ND	
Benzene	0 - 4	*ND	
Heptanes	106 - 2129	*ND	
Toluene	20 - 406	*ND	
Xylenes (m,p,o-Xylenes)	147 - 2934	*ND	

 Ryan Weems
27-Aug-21
11:52 AM

 Sam Smith
27-Aug-21
12:05 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

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

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.



CDPHE Certified



Certificate #4329.02