

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Joy Organics Green Apple Gummies
PRODUCT STRENGTH: 10 mg CBD / gummy
BATCH: 220061
BEST BY DATE: 03/2023
HEMP EXTRACT LOT: C1026-001

Click on the links to view third-party reports

Physical Attributes

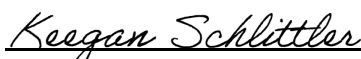
Test	Method	Specification	Results
Color	Joy Internal	Medium Green	PASS
Odor	Joy Internal	Sweet, green apple	PASS
Appearance	Joy Internal	Medium green gummies with sugar coating in child proof container	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and 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	*NLT 10 mg / gummy	12.4mg	PASS
Potency - D9-THC	HPLC-UV DAD	Complies with CDPHE 6 CCR for 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 gram	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 Panel	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† Aflatoxin B1 < 5 ppb Ochratoxin < 5ppb	Below LOQ	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR in effect during MFG*	Below LOQ	PASS

* *Level of Quantitation, † Parts Per Million ‡ Part Per Billion
 CFU/g=Colony Forming Units per Gram
 * Nothing Less Than Manufacture*
 10²=100 CFU
 10³=1,000 CFU

Quality Certified


 Keegan Schlittler

Quality Assurance Manager

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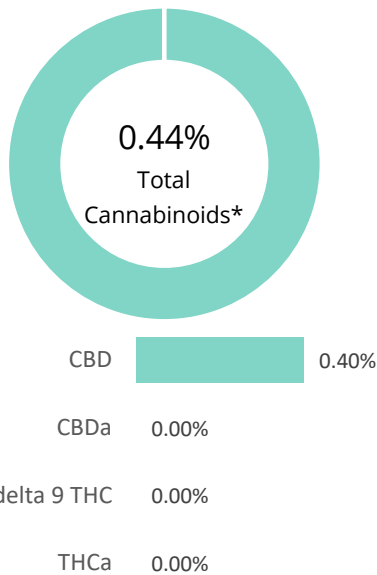
03/30/2022

Date

Green Apple Gummy Composite Potency

Batch ID:	F220085-88, 98-100	Test ID:	T000197918
Type:	Concentrate	Submitted:	03/14/2022 @ 11:22 AM
Test:	Potency	Started:	3/15/2022
Method:	TM14 (HPLC-DAD)	Reported:	3/16/2022

CANNABINOID PROFILE



Compound	LOQ (%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic acid (THCA-A)	0.04	ND	ND
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.05	ND	ND
Cannabidiolic acid (CBDA)	0.05	ND	ND
Cannabidiol (CBD)	0.05	0.40	4.0
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.05	ND	ND
Cannabinolic Acid (CBNA)	0.03	ND	ND
Cannabinol (CBN)	0.01	ND	ND
Cannabigerolic acid (CBGA)	0.04	ND	ND
Cannabigerol (CBG)	0.01	0.04	0.4
Tetrahydrocannabivarinic Acid (THCVA)	0.04	ND	ND
Tetrahydrocannabivarin (THCV)	0.01	ND	ND
Cannabidivarinic Acid (CBDVA)	0.02	ND	ND
Cannabidivarin (CBDV)	0.01	ND	ND
Cannabichromenic Acid (CBCA)	0.02	ND	ND
Cannabichromene (CBC)	0.02	ND	ND
Total Cannabinoids		0.44	4.4
Total Potential THC**		ND	ND
Total Potential CBD**		0.40	4.0

NOTES:

N/A

% = % (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.

$$\text{Total THC} = \text{THC} + (\text{THCa} * (0.877)) \text{ and}$$

$$\text{Total CBD} = \text{CBD} + (\text{CBDa} * (0.877))$$

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

FINAL APPROVAL

 Rvan Weems 16-Mar-2022 3:55 PM	 Daniel Weidensaul 16-Mar-2022 3:59 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. ISO/IEC 17025:2005 Accredited A2LA Certificate Number 4329.02



Certificate #4329.02

27728

Batch ID or Lot Number: **C1026-001** Test: **Pesticides** Reported: **11/17/21**

Matrix: Concentrate Test ID: T000176014 Started: 11/16/21 USDA License: N/A

Status: N/A Method: TM17(LC-QQQ LC MS/MS): Received: 11/12/2021 @ 10:52 AM Sampler ID: N/A

PESTICIDE DETERMINATION

Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)	Compound	LOQ (ppb)	Result (ppb)
Acephate	38	ND	Fenoxycarb	33	ND	Paclobutrazol	34	ND
Acetamiprid	31	ND	Fipronil	36	ND	Permethrin	294	ND
Avermectin	238	ND	Flonicamid	35	ND	Phosmet	32	ND
Azoxystrobin	33	ND	Fludioxonil	297	ND	Prophos	269	ND
Bifenazate	33	ND	Hexythiazox	31	ND	Propoxur	37	ND
Boscalid	29	ND	Imazalil	270	ND	Pyridaben	293	ND
Carbaryl	32	ND	Imidacloprid	33	ND	Spinosad A	27	ND
Carbofuran	34	ND	Kresoxim-methyl	150	ND	Spinosad D	52	ND
Chlorantraniliprole	25	ND	Malathion	272	ND	Spiromesifen	256	ND
Chlorpyrifos	500	ND	Metalaxyl	36	ND	Spirotetramat	273	ND
Clofentezine	288	ND	Methiocarb	34	ND	Spiroxamine 1	16	ND
Diazinon	279	ND	Methomyl	35	ND	Spiroxamine 2	20	ND
Dichlorvos	269	ND	MGK 264 1	151	ND	Tebuconazole	282	ND
Dimethoate	35	ND	MGK 264 2	112	ND	Thiacloprid	31	ND
E-Fenpyroximate	275	ND	Myclobutanil	30	ND	Thiamethoxam	35	ND
Etofenprox	32	ND	Naled	43	ND	Trifloxystrobin	33	ND
Etoxazole	282	ND	Oxamyl	1500	ND			

Samantha Smith
 Sam Smith
 11/17/2021
 4:42:00 PM

Daniel Weidensaul
 Daniel Weidensaul
 11/17/2021
 5:02:00 PM

PREPARED BY / DATE

APPROVED BY / DATE

Definitions

LOQ = Limit of Quantification
 ppb = Parts per Billion

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Certificate #4329.02

Green Apple gummy composite micros


Batch ID or Lot Number: 220061	Test: Microbial Contaminants	Reported: 3/17/22	
Matrix: Finished Product	Test ID: T000197936	Started: 3/14/22	USDA License: N/A
Status: N/A	Methods: TM25 (qPCR) TM24, TM26, TM27(Culture Plating): Microbial	Received: 03/14/2022 @ 10:07 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 ¹ CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
Total Yeast and Mold*	TM-24, Culture Plating	10 ¹ CFU/g	10 ² CFU/g	1.5x10 ⁴ CFU/g	None Detected	
STEC	TM-25, PCR	10 ⁰ CFU/25 g	NA	NA	Absent	
Salmonella	TM-25, PCR	10 ⁰ CFU/25 g	NA	NA	Absent	

 Brett Hudson
3/17/2022
1:12:00 PM

PREPARED BY / DATE

 Carly Bader
3/17/2022
1:40:00 PM

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

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27728

Batch ID or Lot Number: C1026-001	Test: Metals	Reported: 11/17/21	
Matrix: Unit Co	Test ID: T000176016	Started: 11/16/21	USDA License: N/A
Status: N/A	Method: TM19 (ICP-MS); Heavy Metals (Colorado Panel)	Received: 11/12/2021 @ 10:52 AM	Sampler ID: N/A

HEAVY METALS DETERMINATION

Compound	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.043 - 4.32	ND	
Cadmium	0.044 - 4.40	ND	
Mercury	0.043 - 4.34	ND	
Lead	0.042 - 4.23	ND	


 Daniel Weidensaul
 17-Nov-21
 1:38 PM

PREPARED BY / DATE


 Sam Smith
 17-Nov-21
 1:41 PM

APPROVED BY / DATE

Definitions

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

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CDPHE Certified




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27728

Batch ID or Lot Number: C1026-001	Test: Mycotoxins	Reported: 11/18/21	
Matrix: Concentrate	Test ID: T000176018	Started: 11/17/21	USDA License: N/A
Status: N/A	Method: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins (Colorado Panel)	Received: 11/12/2021 @ 10:52 AM	Sampler ID: N/A

MYCOTOXIN DETERMINATION

Compound	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	3.4 - 136.1	ND	N/A
Aflatoxin B1	1 - 33.6	ND	
Aflatoxin B2	1 - 33.4	ND	
Aflatoxin G1	1 - 32.6	ND	
Aflatoxin G2	1 - 32.7	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	


 Sam Smith
 18-Nov-21
 8:42 AM

PREPARED BY / DATE


 Courtney Richards
 18-Nov-21
 4:45 PM

APPROVED BY / DATE

Definitions

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

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Certificate #4329.02

27728

Batch ID or Lot Number: C1026-001	Test: Residual Solvents	Reported: 11/15/21	
Matrix: N/A	Test ID: T000176017	Started: 11/15/21	USDA License: N/A
Status: N/A	Methods: TM04 (GC-MS): Residual Solvents (Colorado Panel)	Received: 11/12/2021 @ 10:52 AM	Sampler ID: N/A

RESIDUAL SOLVENTS DETERMINATION

Solvent	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	84 - 1689	*ND	
Butanes (Isobutane, n-Butane)	170 - 3409	*ND	
Methanol	65 - 1301	*ND	
Pentane	86 - 1728	*ND	
Ethanol	99 - 1986	*ND	
Acetone	99 - 1979	*ND	
Isopropyl Alcohol	118 - 2369	*ND	
Hexane	6 - 122	*ND	
Ethyl Acetate	105 - 2094	*ND	
Benzene	0.2 - 4.1	*ND	
Heptanes	95 - 1899	*ND	
Toluene	20 - 393	*ND	
Xylenes (m,p,o-Xylenes)	157 - 3139	*ND	

	Hannah Wright 15-Nov-21 4:02 PM		Sam Smith 15-Nov-21 4:08 PM
PREPARED BY / DATE		APPROVED BY / DATE	

Definitions

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

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