JOY ORGANICS

CERTIFICATE OF ANALYSIS

PRODUCT NAME: Nano CBD Softgels with Curcumin
PRODUCT STRENGTH: 25mg CBD / 250mg Curcumin
TINCTURE BATCH: 230309A
BEST BY DATE: 2/9/2025
HEMP EXTRACT LOT: 23020804

Physical Atttributes

Test	Method	Specification	Results
Color	Joy Internal	Red	PASS
Odor	Joy Internal	No Odor	PASS
Appearance	Joy Internal	Dry, ovoid softgel capsules in container with lid and shrink-band	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	Joy Internal	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	HPLC-UV DAD	*NTL 25mg / softgel	**28mg**	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.01% THC (Broad Spectrum)	**ND**	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	**ND**	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	**ND**	PASS
Mycotoxins	ICP-MS	Total Aflatoxins <20 ppb† Afltoxin B1 < 5 ppb Ochratoxin < 5ppb	**ND**	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	**ND**	PASS

* *Level of Quantitation, † Parts Per Million † Part Per Billion CFU/g=Colony Forming Units per Gram
*Nothing Less Than
10^2=100 CFU
10^3=1,000 CFU

Quality Certified — Name — **4/6/2023** Date

2519 S Shields St. #1042, Fort Collins, CO 80526
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CERTIFICATE OF ANALYSIS

CBD Softgels 25 mg Curcumin

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	Page 3 of 5
230309A	Various	Concentrate	
Reported:	**Started:**	**Received:**	
17Feb2023	16Feb2023	16Feb2023	

Cannabinoids - Colorado Compliance

Test ID: T000235656
Methods: TM14 (HPLC-DAD): Potency – Standard

Cannabinoid Analysis	**LOD** (mg)	**LOQ** (mg)	**Result** (mg)	**Result** (mg/g)	**Notes**
Cannabichromene (CBC)	0.054	0.177	0.217	0.43	# of Servings = 1 Sample Weight=0.509g
Cannabichromenic Acid (CBCA)	0.050	0.162	ND	ND	
Cannabidiol (CBD)	0.153	0.447	29.096	57.21	
Cannabidiolic Acid (CBDA)	0.157	0.458	ND	ND	
Cannabidivarin (CBDV)	0.036	0.106	0.205	0.40	
Cannabidivarinic Acid (CBDVA)	0.065	0.191	ND	ND	
Cannabigerol (CBG)	0.031	0.101	2.864	5.63	
Cannabigerolic Acid (CBGA)	0.129	0.420	ND	ND	
Cannabinol (CBN)	0.040	0.131	ND	ND	
Cannabinolic Acid (CBNA)	0.088	0.287	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.153	0.501	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.139	0.455	ND	ND	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.123	0.403	ND	ND	
Tetrahydrocannabivarin (THCV)	0.028	0.091	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.109	0.356	ND	ND	
Total Cannabinoids			**32.382**	**63.67**	
Total Potential THC			ND	ND	
Total Potential CBD			29.096	57.21	

Final Approval

Karen Winternheimer
20Feb2023
12:28:00 PM MST
PREPARED BY / DATE

Sam Smith
20Feb2023
12:40:00 PM MST
APPROVED BY / DATE

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CERTIFICATE OF ANALYSIS

CBD Softgels 25 mg Curcumin

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	Page 1 of 5
230309A	Various	Concentrate	
Reported:	**Started:**	**Received:**	
17Feb2023	16Feb2023	16Feb2023	

Pesticides

Test ID: T000235657
Methods: TM17

(LC-QQ LC MS/MS)	**Dynamic Range** (ppb)	**Result** (ppb)		**Dynamic Range** (ppb)	**Result** (ppb)
Abamectin	297 - 2792	ND	Malathion	302 - 2702	ND
Acephate	41 - 2796	ND	Metalaxyl	41 - 2735	ND
Acetamiprid	44 - 2777	ND	Methiocarb	42 - 2747	ND
Azoxystrobin	45 - 2726	ND	Methomyl	40 - 2767	ND
Bifenazate	41 - 2722	ND	MGK 264 1	169 - 1608	ND
Boscalid	41 - 2792	ND	MGK 264 2	110 - 1130	ND
Carbaryl	41 - 2718	ND	Myclobutanil	40 - 2752	ND
Carbofuran	45 - 2698	ND	Naled	44 - 2720	ND
Chlorantraniliprole	41 - 2742	ND	Oxamyl	43 - 2765	ND
Chlorpyrifos	38 - 2737	ND	Paclobutrazol	44 - 2698	ND
Clofentezine	273 - 2731	ND	Permethrin	288 - 2744	ND
Diazinon	291 - 2730	ND	Phosmet	42 - 2720	ND
Dichlorvos	263 - 2800	ND	Prophos	295 - 2742	ND
Dimethoate	41 - 2748	ND	Propoxur	44 - 2713	ND
E-Fenpyroximate	294 - 2737	ND	Pyridaben	310 - 2696	ND
Etofenprox	44 - 2698	ND	Spinosad A	35 - 2226	ND
Etoxazole	309 - 2713	ND	Spinosad D	52 - 493	ND
Fenoxycarb	45 - 2730	ND	Spiromesifen	285 - 2749	ND
Fipronil	42 - 2729	ND	Spirotetramat	289 - 2741	ND
Flonicamid	50 - 2770	ND	Spiroxamine 1	18 - 1159	ND
Fludioxonil	307 - 2813	ND	Spiroxamine 2	4 - 1599	ND
Hexythiazox	42 - 2732	ND	Tebuconazole	289 - 2696	ND
Imazalil	291 - 2750	ND	Thiacloprid	43 - 2750	ND
Imidacloprid	43 - 2771	ND	Thiamethoxam	41 - 2792	ND
Kresoxim-methyl	40 - 2749	ND	Trifloxystrobin	46 - 2706	ND

Final Approval

Karen Winternheimer
17Feb2023
01:56:00 PM MST
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Sam Smith
17Feb2023
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CBD Softgels 25 mg Curcumin

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	
230309A	Various	Concentrate	
Reported:	Started:	Received:	
17Feb2023	16Feb2023	16Feb2023	

Residual Solvents - Colorado Compliance

Test ID: T000235660
Methods: TM04 (GC-MS): Residual Solvents

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Propane	111 - 2220	ND	
Butanes (Isobutane, n-Butane)	229 - 4589	ND	
Methanol	70 - 1405	ND	
Pentane	113 - 2268	ND	
Ethanol	111 - 2213	ND	
Acetone	112 - 2234	ND	
Isopropyl Alcohol	114 - 2271	ND	
Hexane	7 - 136	ND	
Ethyl Acetate	116 - 2326	ND	
Benzene	0.2 - 4.6	ND	
Heptanes	111 - 2224	ND	
Toluene	20 - 403	ND	
Xylenes (m,p,o-Xylenes)	149 - 2982	ND	

Final Approval

Karen Winternheimer
19Feb2023
08:55:00 AM MST
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Sam Smith
19Feb2023
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CERTIFICATE OF ANALYSIS

CBD Softgels 25 mg Curcumin

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	
230309A	Various	Concentrate	
Reported:	Started:	Received:	
17Feb2023	16Feb2023	16Feb2023	

Microbial Contaminants - Colorado Compliance

Test ID: T000235658
Methods: TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	TM25: PCR	10^0 CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10^2 CFU/g	$1.0x10^3$ - $1.5x10^5$	None Detected	
Total Coliforms*	TM27: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	

Final Approval

Brianne Maillot
20Feb2023
05:21:00 PM MST
PREPARED BY / DATE

Eden Thompson-Wright
20Feb2023
10:15:00 AM MST
APPROVED BY / DATE

Mycotoxins - Colorado Compliance

Test ID: T000235661
Methods: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins

	Dynamic Range (ppb)	**Result** (ppb)	Notes
Ochratoxin A	3.25 - 134.64	ND	N/A
Aflatoxin B1	0.94 - 33.19	ND	
Aflatoxin B2	0.98 - 33.22	ND	
Aflatoxin G1	1.04 - 33.25	ND	
Aflatoxin G2	1.07 - 33.74	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Final Approval

Sam Smith
23Feb2023
07:44:00 AM MST
PREPARED BY / DATE

Karen Winternheimer
23Feb2023
07:50:00 AM MST
APPROVED BY / DATE

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CERTIFICATE OF ANALYSIS

CBD Softgels 25 mg Curcumin

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	Page 5 of 5
230309A	Various	Concentrate	
Reported:	Started:	Received:	
17Feb2023	16Feb2023	16Feb2023	

Heavy Metals - Colorado Compliance

Test ID: T000235659
Methods: TM19 (ICP-MS): Heavy Metals

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Arsenic	0.05 - 5.11	ND	
Cadmium	0.05 - 4.94	ND	
Mercury	0.04 - 4.39	ND	
Lead	0.04 - 4.02	ND	

Final Approval

Sam Smith
23Feb2023
03:06:00 PM MST
PREPARED BY / DATE

Karen Winternheimer
23Feb2023
03:13:00 PM MST
APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/c3100d8f-96e3-44ef-8e58-8be92c86f710

Definitions
LOD = Limit of Detection, ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation, PPB = Parts per Billion, % = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method). Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa *(0.877)) and Total CBD = CBD + (CBDa *(0.877)). Fail equates to a concentration level of Delta 9-THC, on a dry weight basis, higher than 0.3 percent + or – the measurement uncertainty. Total Potential THC 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)). ALOQ = Above Limit Of Quantitation (defined by dynamic range of the method), CFU/g = Colony Forming Units 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.

Cert #4329.02
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Official Compliance: Colorado

CERTIFICATE OF ANALYSIS

CBD Softgels 25 mg Curcumin

Batch ID or Lot Number: **230309A**	Test: **Microbial Contaminants**	Reported: **20Mar2023**	USDA License: N/A
Matrix: Finished Product	Test ID: T000238747	Started: 16Mar2023	Sampler ID: N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 16Mar2023	Status: Active

Microbial Contaminants

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	TM25: PCR	10^0 CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10^2 CFU/g	$1.0x10^3$ - $1.5x10^5$	None Detected	
Total Coliforms*	TM27: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	

Final Approval

Brianne Maillot
19Mar2023
12:20:00 PM MDT

PREPARED BY / DATE

Brett Hudson
20Mar2023
03:34:00 PM MDT

APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/9bd37b09-0f97-4ea0-ab04-853680ebc297

Definitions
* 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
CFU/g = Colony Forming Units per Gram, LOD = Limit of Detection
ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation
STEC = Shiga Toxin-Producing E. coli

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