

# CERTIFICATE OF ANALYSIS

Prepared for:  
**Nuleaf Naturals**

1550 Larimer St #964  
Denver, CO USA 80202

## D310

Batch ID or Lot Number: <b>LB-O-60371</b>	Test: <b>Potency</b>	Reported: <b>15Mar2023</b>	USDA License: N/A
Matrix: Solution	Test ID: T000238658	Started: 15Mar2023	Sampler ID: N/A
	Method(s): TM14 (HPLC-DAD): Potency – Standard Cannabinoid Analysis	Received: 15Mar2023	Status: Active

## Cannabinoids

	LOD (mg/mL)	LOQ (mg/mL)	Result (mg/mL)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.068	0.209	1.955	2.11	Density = 0.926g/mL
Cannabichromenic Acid (CBCA)	0.062	0.192	ND	ND	
Cannabidiol (CBD)	0.197	0.559	62.194	67.16	
Cannabidiolic Acid (CBDA)	0.202	0.574	0.855	0.92	
Cannabidivarin (CBDV)	0.046	0.132	0.339	0.37	
Cannabidivarinic Acid (CBDVA)	0.084	0.239	ND	ND	
Cannabigerol (CBG)	0.039	0.119	ND	ND	
Cannabigerolic Acid (CBGA)	0.161	0.497	ND	ND	
Cannabinol (CBN)	0.050	0.155	<LOQ	<LOQ	
Cannabinolic Acid (CBNA)	0.110	0.339	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.192	0.592	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.174	0.538	1.713	1.85	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.155	0.477	ND	ND	
Tetrahydrocannabivarin (THCV)	0.035	0.108	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.136	0.420	ND	ND	
<b>Total Cannabinoids</b>			<b>67.056</b>	<b>72.41</b>	
Total Potential THC			1.713	1.85	
Total Potential CBD			62.944	67.97	

## Final Approval

  
Samantha Smith  
15Mar2023  
01:01:00 PM MDT

PREPARED BY / DATE

  
Karen Winternheimer  
15Mar2023  
01:13:00 PM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/a30d742f-e461-4f78-b1d3-ee38dd538da3>

**Definitions**  
% = % (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)).

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Cert #4329.02

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**Nuleaf Naturals**


1550 Larimer St #964  
Denver, CO USA 80202

## D310

Batch ID or Lot Number: <b>LB-O-60371</b>	Test: <b>Heavy Metals</b>	Reported: <b>20Mar2023</b>	USDA License: NA
Matrix: Unit Co	Test ID: T000238661	Started: 17Mar2023	Sampler ID: NA
	Method(s): TM19 (ICP-MS): Heavy Metals	Received: 15Mar2023	Status: NA

Heavy Metals	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.04 - 4.42	ND	
Cadmium	0.04 - 4.40	ND	
Mercury	0.04 - 4.47	ND	
Lead	0.04 - 4.39	ND	

## Final Approval



Sam Smith  
20Mar2023  
07:29:00 AM MDT

PREPARED BY / DATE



Karen Winternheimer  
20Mar2023  
07:36:00 AM MDT

APPROVED BY / DATE



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### Definitions

ND = None Detected (defined by dynamic range of the method)  
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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**Nuleaf Naturals**

1550 Larimer St #964  
Denver, CO USA 80202


## D310

Batch ID or Lot Number: <b>LB-O-60371</b>	Test: <b>Microbial Contaminants</b>	Reported: <b>19Mar2023</b>	USDA License: N/A
Matrix: Finished Product	Test ID: T000238660	Started: 15Mar2023	Sampler ID: N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 15Mar2023	Status: Active

## Microbial Contaminants

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

## Final Approval



Eden Thompson-Wright  
18Mar2023  
12:45:00 PM MDT

PREPARED BY / DATE



Brianne Maillot  
19Mar2023  
12:23:00 PM MDT

APPROVED BY / DATE



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### 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<sup>2</sup> = 100 CFU, 10<sup>3</sup> = 1,000 CFU, 10<sup>4</sup> = 10,000 CFU, 10<sup>5</sup> = 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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Prepared for:  
**Nuleaf Naturals**

1550 Larimer St #964  
Denver, CO USA 80202

## D310

Batch ID or Lot Number: <b>LB-O-60371</b>	Test: <b>Pesticides</b>	Reported: <b>17Mar2023</b>	USDA License: NA
Matrix: Concentrate	Test ID: T000238659	Started: 15Mar2023	Sampler ID: NA
	Method(s): TM17 (LC-QQ LC MS/MS)	Received: 15Mar2023	Status: NA

### Pesticides

Pesticides	Dynamic Range (ppb)	Result (ppb)	Pesticides	Dynamic Range (ppb)	Result (ppb)
Abamectin	346 - 2771	ND	Malathion	302 - 2721	ND
Acephate	43 - 2762	ND	Metalaxyl	47 - 2729	ND
Acetamiprid	42 - 2731	ND	Methiocarb	44 - 2780	ND
Azoxystrobin	45 - 2755	ND	Methomyl	41 - 2736	ND
Bifenazate	47 - 2752	ND	MGK 264 1	168 - 1665	ND
Boscalid	40 - 2797	ND	MGK 264 2	119 - 1123	ND
Carbaryl	43 - 2752	ND	Myclobutanil	51 - 2791	ND
Carbofuran	43 - 2748	ND	Naled	48 - 2751	ND
Chlorantraniliprole	44 - 2821	ND	Oxamyl	42 - 2737	ND
Chlorpyrifos	46 - 2751	ND	Pacllobutrazol	43 - 2747	ND
Clofentezine	279 - 2777	ND	Permethrin	273 - 2805	ND
Diazinon	280 - 2744	ND	Phosmet	41 - 2737	ND
Dichlorvos	242 - 2766	ND	Prophos	306 - 2757	ND
Dimethoate	43 - 2719	ND	Propoxur	44 - 2744	ND
E-Fenpyroximate	285 - 2726	ND	Pyridaben	298 - 2741	ND
Etofenprox	45 - 2804	ND	Spinosad A	34 - 2266	ND
Etoxazole	296 - 2715	ND	Spinosad D	51 - 495	ND
Fenoxycarb	44 - 2760	ND	Spiromesifen	287 - 2712	ND
Fipronil	50 - 2786	ND	Spirotetramat	273 - 2768	ND
Flonicamid	54 - 2797	ND	Spiroxamine 1	18 - 1190	ND
Fludioxonil	321 - 2737	ND	Spiroxamine 2	25 - 1568	ND
Hexythiazox	42 - 2718	ND	Tebuconazole	295 - 2754	ND
Imazalil	293 - 2758	ND	Thiacloprid	42 - 2730	ND
Imidacloprid	47 - 2711	ND	Thiamethoxam	43 - 2729	ND
Kresoxim-methyl	23 - 2792	ND	Trifloxystrobin	44 - 2761	ND

### Final Approval



Karen Winternheimer  
17Mar2023  
07:43:00 AM MDT

PREPARED BY / DATE



Sam Smith  
17Mar2023  
07:45:00 AM MDT

APPROVED BY / DATE



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#### Definitions

ND = None Detected (defined by dynamic range of the method)  
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range  
ppb = Parts Per Billion

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Denver, CO USA 80202

## D310

Batch ID or Lot Number: <b>LB-O-60371</b>	Test: <b>Residual Solvents</b>	Reported: <b>20Mar2023</b>	USDA License: N/A
Matrix: Concentrate	Test ID: T000238662	Started: 20Mar2023	Sampler ID: N/A
	Method(s): TM04 (GC-MS): Residual Solvents	Received: 15Mar2023	Status: Active

Residual Solvents	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	87 - 1741	ND	
Butanes (Isobutane, n-Butane)	180 - 3609	ND	
Methanol	54 - 1077	ND	
Pentane	89 - 1784	ND	
Ethanol	93 - 1850	ND	
Acetone	87 - 1747	ND	
Isopropyl Alcohol	90 - 1809	ND	
Hexane	5 - 109	ND	
Ethyl Acetate	89 - 1780	ND	
Benzene	0.2 - 3.8	ND	
Heptanes	93 - 1869	ND	
Toluene	16 - 325	ND	
Xylenes (m,p,o-Xylenes)	117 - 2345	ND	

## Final Approval

  
Sam Smith  
20Mar2023  
01:16:00 PM MDT

PREPARED BY / DATE

  
Karen Winternheimer  
20Mar2023  
01:19:00 PM MDT

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**Nuleaf Naturals**


1550 Larimer St #964  
Denver, CO USA 80202


## D310

Batch ID or Lot Number: <b>LB-O-60371</b>	Test: <b>Mycotoxins</b>	Reported: <b>22Mar2023</b>	USDA License: N/A
Matrix: Concentrate	Test ID: T000238663	Started: 21Mar2023	Sampler ID: N/A
	Method(s): TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins	Received: 15Mar2023	Status: Active

Mycotoxins	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	2.32 - 135.60	ND	N/A
Aflatoxin B1	1.13 - 33.97	ND	
Aflatoxin B2	0.96 - 33.93	ND	
Aflatoxin G1	1.23 - 34.43	ND	
Aflatoxin G2	1.33 - 33.87	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

## Final Approval

  
Sam Smith  
22Mar2023  
11:39:00 AM MDT  
PREPARED BY / DATE

  
Karen Winternheimer  
22Mar2023  
11:43:00 AM MDT  
APPROVED BY / DATE



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