botanacor

CERTIFICATE OF ANALYSIS

Prepared for:
PET RELEAF
8100 SOUTHPARK WAY A3
LITTLETON, CO USA 80120

Organic Hemp Oil 500mg

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	Page 1 of 5
0222T305	Various	Unit	
Reported:	Started:	Received:	
04Mar2022	03Mar2022	02Mar2022	

Heavy Metals

Test ID: T000196020
Methods: TM19 (ICP-MS): Heavy Metals

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Arsenic	0.04 - 4.45	ND	
Cadmium	0.04 - 4.40	ND	
Mercury	0.04 - 4.40	ND	
Lead	0.04 - 4.26	ND	

Final Approval

Ryan Weems
04Mar2022
11:35:00 AM MST
PREPARED BY / DATE

Sam Smith
04Mar2022
11:38:00 AM MST
APPROVED BY / DATE

APPROVED

Justin Thomson 03/07/2022
NPD & Quality Manager

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Pesticides

Test ID: T000196018
Methods: TM17

(LC-QQ LC MS/MS)	**Dynamic Range** (ppb)	**Result** (ppb)		**Dynamic Range** (ppb)	**Result** (ppb)
Abamectin	289 - 2640	ND	Malathion	281 - 2743	ND
Acephate	46 - 2835	ND	Metalaxyl	47 - 2720	ND
Acetamiprid	36 - 2772	ND	Methiocarb	43 - 2654	ND
Azoxystrobin	46 - 2696	ND	Methomyl	43 - 2776	ND
Bifenazate	42 - 2669	ND	MGK 264 1	181 - 1611	ND
Boscalid	61 - 2650	ND	MGK 264 2	131 - 1090	ND
Carbaryl	40 - 2720	ND	Myclobutanil	42 - 2588	ND
Carbofuran	42 - 2674	ND	Naled	44 - 2738	ND
Chlorantraniliprole	42 - 2669	ND	Oxamyl	45 - 2740	ND
Chlorpyrifos	45 - 2713	ND	Paclobutrazol	48 - 2614	ND
Clofentezine	296 - 2575	ND	Permethrin	306 - 2736	ND
Diazinon	275 - 2715	ND	Phosmet	46 - 2770	ND
Dichlorvos	281 - 2810	ND	Prophos	257 - 2699	ND
Dimethoate	41 - 2749	ND	Propoxur	41 - 2737	ND
E-Fenpyroximate	291 - 2717	ND	Pyridaben	297 - 2705	ND
Etofenprox	44 - 2713	ND	Spinosad A	32 - 2250	ND
Etoxazole	294 - 2711	ND	Spinosad D	44 - 501	ND
Fenoxycarb	43 - 2725	ND	Spiromesifen	272 - 2768	ND
Fipronil	29 - 2620	ND	Spirotetramat	310 - 2731	ND
Flonicamid	43 - 2678	ND	Spiroxamine 1	16 - 1123	ND
Fludioxonil	290 - 2675	ND	Spiroxamine 2	22 - 1503	ND
Hexythiazox	43 - 2722	ND	Tebuconazole	290 - 2698	ND
Imazalil	254 - 2808	ND	Thiacloprid	37 - 2796	ND
Imidacloprid	48 - 2760	ND	Thiamethoxam	43 - 2752	ND
Kresoxim-methyl	54 - 2787	ND	Trifloxystrobin	44 - 2713	ND

Final Approval

Daniel Weidensaul
04Mar2022
03:18:00 PM MST
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Karen Winternheimer
04Mar2022
03:24:00 PM MST
APPROVED BY / DATE

APPROVED

Justin Thomson 03/07/2022
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Residual Solvents

Test ID: T000196021
Methods: TM04 (GC-MS): Residual Solvents

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Propane	105 - 2100	ND	
Butanes (Isobutane, n-Butane)	212 - 4237	ND	
Methanol	62 - 1239	ND	
Pentane	111 - 2220	ND	
Ethanol	89 - 1773	ND	
Acetone	109 - 2171	ND	
Isopropyl Alcohol	100 - 2009	ND	
Hexane	8 - 152	ND	
Ethyl Acetate	116 - 2326	ND	
Benzene	0.2 - 4.3	ND	
Heptanes	112 - 2240	ND	
Toluene	18 - 356	ND	
Xylenes (m,p,o-Xylenes)	117 - 2339	ND	

Final Approval

Hannah Wright
05Mar2022
05:23:00 PM MST
PREPARED BY / DATE

Daniel Weidensaul
05Mar2022
05:29:00 PM MST
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APPROVED

Justin Thomson 03/07/2022
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Cannabinoids

Test ID: T000196017
Methods: TM14 (HPLC-DAD)

	LOD (mg)	**LOQ** (mg)	**Result** (mg)	**Result** (mg/g)	**Notes**
Cannabichromene (CBC)	1.424	4.800	22.850	0.80	# of Servings = 1, Sample Weight=28g
Cannabichromenic Acid (CBCA)	1.303	4.390	ND	ND	
Cannabidiol (CBD)	4.460	12.576	521.800	18.60	
Cannabidiolic Acid (CBDA)	4.574	12.899	ND	ND	
Cannabidivarin (CBDV)	1.055	2.974	2.310	0.10	
Cannabidivarinic Acid (CBDVA)	1.908	5.381	ND	ND	
Cannabigerol (CBG)	0.809	2.725	15.450	0.60	
Cannabigerolic Acid (CBGA)	3.380	11.392	ND	ND	
Cannabinol (CBN)	1.055	3.555	2.220	0.10	
Cannabinolic Acid (CBNA)	2.306	7.772	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	4.027	13.572	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	3.658	12.326	17.190	0.60	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	3.241	10.920	5.630	0.20	
Tetrahydrocannabivarin (THCV)	0.736	2.479	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	2.858	9.632	ND	ND	
Total Cannabinoids			**587.450**	**20.98**	
Total Potential THC			22.128	0.79	
Total Potential CBD			521.800	18.64	

Final Approval

Hannah Wright
05Mar2022
05:09:00 PM MST
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Daniel Weidensaul
05Mar2022
05:16:00 PM MST
APPROVED BY / DATE

APPROVED

Justin Thomson 03/07/2022
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Microbial Contaminants

Test ID: T000196019
Methods: TM25 (qPCR) TM24, TM26, TM27, TM28 (Culture Plating)

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	TM25: PCR	10^0 CFU/g	NA	Absent	None Detected
Total Yeast and Mold*	TM24: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	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
05Mar2022
01:55:00 PM MST
PREPARED BY / DATE

Eden Thompson-Wright
07Mar2022
09:00:00 AM MST
APPROVED BY / DATE

APPROVED

Justin Thomson 03/07/2022
NPD & Quality Manager

https://results.botanacor.com/api/v1/coas/uuid/31b20347-88be-49c5-9c37-64528505d782

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.

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 17025:2017 Accredited by A2LA. Some tests listed on this COA may not be within our scope of A2LA accreditation. Please visit A2LA for more details.

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