SC Labs®
Formerly Botanacor Labs

CERTIFICATE OF ANALYSIS

Prepared for:
BLUEBIRD BOTANICALS
PO BOX 271724
Louisville, CO USA 80027

15CL-30

Batch ID or Lot Number:	Test, Test ID and Methods:	Matrix:	Page 1 of 7
211102355	Various	Solution	
Reported:	**Started:**	**Received:**	
13Mar2023	10Mar2023	09Mar2023	

Cannabinoids - Colorado Compliance

Test ID: T000238131
Methods: TM14 (HPLC-DAD): Potency – Standard

Cannabinoid Analysis	**LOD** (mg/mL)	**LOQ** (mg/mL)	**Result** (mg/mL)	**Result** (mg/g)	**Notes**
Cannabichromene (CBC)	0.070	0.204	0.922	0.98	Density = 0.945g/mL
Cannabichromenic Acid (CBCA)	0.064	0.186	ND	ND	
Cannabidiol (CBD)	0.210	0.559	34.063	36.05	
Cannabidiolic Acid (CBDA)	0.215	0.574	<LOQ	<LOQ	
Cannabidivarin (CBDV)	0.050	0.132	0.134	0.14	
Cannabidivarinic Acid (CBDVA)	0.090	0.239	ND	ND	
Cannabigerol (CBG)	0.040	0.116	0.648	0.69	
Cannabigerolic Acid (CBGA)	0.167	0.484	ND	ND	
Cannabinol (CBN)	0.052	0.151	<LOQ	<LOQ	
Cannabinolic Acid (CBNA)	0.114	0.330	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.199	0.576	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.181	0.523	0.842	0.89	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.160	0.464	ND	ND	
Tetrahydrocannabivarin (THCV)	0.036	0.105	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.141	0.409	ND	ND	
Total Cannabinoids			**36.609**	**38.75**	
Total Potential THC			0.842	0.89	
Total Potential CBD			34.063	36.05	

Final Approval

Sam Smith
13Mar2023
01:26:00 PM MDT
PREPARED BY / DATE

Karen Winternheimer
13Mar2023
01:30:00 PM MDT
APPROVED BY / DATE

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Cannabinoids - Colorado Compliance

Test ID: T000238132
Methods: TM14 (HPLC-DAD): Potency – Standard

Cannabinoid Analysis	**LOD** (mg/mL)	**LOQ** (mg/mL)	**Result** (mg/mL)	**Result** (mg/g)	**Notes**
Cannabichromene (CBC)	0.070	0.202	0.927	0.98	Density = 0.945g/mL
Cannabichromenic Acid (CBCA)	0.064	0.184	ND	ND	
Cannabidiol (CBD)	0.208	0.553	34.112	36.10	
Cannabidiolic Acid (CBDA)	0.213	0.568	<LOQ	<LOQ	
Cannabidivarin (CBDV)	0.049	0.131	0.130	0.14	
Cannabidivarinic Acid (CBDVA)	0.089	0.237	ND	ND	
Cannabigerol (CBG)	0.040	0.114	0.628	0.66	
Cannabigerolic Acid (CBGA)	0.166	0.478	ND	ND	
Cannabinol (CBN)	0.052	0.149	<LOQ	<LOQ	
Cannabinolic Acid (CBNA)	0.113	0.326	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.197	0.570	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.179	0.518	0.851	0.90	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.159	0.459	ND	ND	
Tetrahydrocannabivarin (THCV)	0.036	0.104	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.140	0.404	ND	ND	
Total Cannabinoids			**36.648**	**38.78**	
Total Potential THC			0.851	0.90	
Total Potential CBD			34.112	36.10	

Final Approval

Sam Smith
13Mar2023
01:26:00 PM MDT
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Karen Winternheimer
13Mar2023
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Microbial Contaminants - Colorado Compliance

Test ID: T000238134
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	$1.0x10^2$ - $1.5x10^4$	2.2x10^4 CFU/g	
Total Aerobic Count*	TM26: Culture Plating	10^2 CFU/g	$1.0x10^3$ - $1.5x10^5$	6.6x10^3 CFU/g	
Total Coliforms*	TM27: Culture Plating	10^1 CFU/g	$1.0x10^2$ - $1.5x10^4$	None Detected	

Final Approval

Eden Thompson-Wright
13Mar2023
03:55:00 PM MDT
PREPARED BY / DATE

Brett Hudson
14Mar2023
06:04:00 PM MDT
APPROVED BY / DATE

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Residual Solvents - Colorado Compliance

Test ID: T000238136
Methods: TM04 (GC-MS): Residual Solvents

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Propane	90 - 1804	ND	
Butanes (Isobutane, n-Butane)	180 - 3592	ND	
Methanol	56 - 1117	ND	
Pentane	93 - 1868	ND	
Ethanol	95 - 1898	ND	
Acetone	94 - 1883	ND	
Isopropyl Alcohol	98 - 1952	ND	
Hexane	6 - 111	ND	
Ethyl Acetate	94 - 1874	ND	
Benzene	0.2 - 3.9	ND	
Heptanes	96 - 1914	ND	
Toluene	17 - 337	ND	
Xylenes (m,p,o-Xylenes)	126 - 2521	ND	

Final Approval

Samantha Smith
Sam Smith
14Mar2023
05:19:00 PM MDT
PREPARED BY / DATE

K Winternheimer
Karen Winternheimer
14Mar2023
05:23:00 PM MDT
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Heavy Metals - Colorado Compliance

Test ID: T000238135
Methods: TM19 (ICP-MS): Heavy Metals

	Dynamic Range (ppm)	**Result** (ppm)	**Notes**
Arsenic	0.04 - 4.37	ND	
Cadmium	0.04 - 4.41	ND	
Mercury	0.04 - 4.03	ND	
Lead	0.04 - 4.32	0.16	

Final Approval


Sam Smith
14Mar2023
02:41:00 PM MDT
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Karen Winternheimer
14Mar2023
02:44:00 PM MDT
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Mycotoxins - Colorado Compliance

Test ID: T000238137
Methods: TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins

	Dynamic Range (ppb)	**Result** (ppb)	**Notes**
Ochratoxin A	2.98 - 137.07	ND	N/A
Aflatoxin B1	0.96 - 33.74	ND	
Aflatoxin B2	1.06 - 33.71	ND	
Aflatoxin G1	1.03 - 33.61	ND	
Aflatoxin G2	1.19 - 33.93	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Final Approval


Sam Smith
16Mar2023
07:42:00 AM MDT
PREPARED BY / DATE


Karen Winternheimer
16Mar2023
07:51:00 AM MDT
APPROVED BY / DATE

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211102355	Various	Solution	
Reported:	Started:	Received:	
13Mar2023	10Mar2023	09Mar2023	

Pesticides

Test ID: T000238133
Methods: TM17

(LC-QQ LC MS/MS)	**Dynamic Range** (ppb)	**Result** (ppb)		**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	Paclobutrazol	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

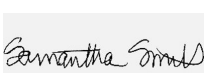

Sam Smith
17Mar2023
07:45:00 AM MDT
APPROVED BY / DATE

Water Activity (Aw)

Test ID: T000238564
Methods: TM-29 (Chilled Mirror Dew Point)

	Result	**Notes**
Aw	0.32	Free from visual mold, mildew, and foreign matter

Final Approval


Sam Smith
17Mar2023
09:36:00 AM MDT
PREPARED BY / DATE


Karen Winternheimer
17Mar2023
09:39:00 AM MDT
APPROVED BY / DATE

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211102355	Various	Solution	
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13Mar2023	10Mar2023	09Mar2023	

https://results.botanacor.com/api/v1/coas/uuid/2b0f1e81-5759-4854-9196-5564dba94d3c

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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