



License No. 800025015
FL License # CMTL-0003
CLIA No. 10D1094068

Certificate of Analysis

Compliance Test

Root Bioscience
951 Aviation Pkwy
Morrisville, NC 27560

Batch # FS120010
Batch Date: 2022-02-01

Sampling Method: MSP 7.3.1
Test Reg State: Florida

Production Facility: Root Bioscience NC, LLC
Production Date: 2022-02-01

Order # RO0220201-020001
Order Date: 2022-02-01
Sample # AACK874

Sampling Date: 2022-02-03
Lab Batch Date: 2022-02-03
Completion Date: 2022-02-07

Initial Gross Weight: 80.863 g
Net Weight: 30.563 g

Number of Units: 1
Net Weight per Unit: 30563.000 mg



Product Image

- Potency Tested**
- Heavy Metals Passed**
- Mycotoxins Passed**
- Pesticides Passed**
- Residual Solvents Passed**
- Pathogenic Microbiology Passed**
- Listeria Monocytogenes Passed**

Potency - 11

Specimen Weight: 97.200 mg

Tested (LCU)

Analyte	Dilution (1:n)	LOD (%)	LOQ (%)	Result (mg/g)	(%)
CBD	1000.000	0.000054	0.001	47.020	4.702
Delta-9 THC	1000.000	0.000013	0.001	1.300	0.130
CBG	1000.000	0.000248	0.001	0.640	0.064
CBDV	1000.000	0.000065	0.001	0.490	0.049
THCV	1000.000	0.000007	0.001	0.250	0.025
CBDA	1000.000	0.00001	0.001	0.160	0.016
CBC	1000.000	0.000018	0.001		<LOQ
Delta-8 THC	1000.000	0.000026	0.001		<LOQ
CBN	1000.000	0.000014	0.001		<LOQ
CBGA	1000.000	0.00008	0.001		<LOQ
THCA-A	1000.000	0.000032	0.001		<LOQ

Potency Summary

0.130% Total THC	39.732mg	4.716% Total CBD	1,441.351mg
0.064% Total CBG	19.560mg	Total CBN None Detected	
0.074% Other Cannabinoids	22.617mg	4.984% Total Cannabinoids	1,523.260mg

Xueli Gao
Xueli Gao
Ph.D., DABT
Lab Toxicologist

Aixia Sun
Aixia Sun
D.H.Sc., M.Sc., B.Sc., MT (AAB)
Lab Director/Principal Scientist



Definitions and Abbreviations used in this report: *Total CBD = CBD + (CBD-A * 0.877), *Total CBDV = CBDV + (CBDVA * 0.87), *Total THC = THCA-A * 0.877 + Delta 9 THC, *Total THCV = THCV + (THCVA * 0.87), *CBG Total = (CBGA * 0.877) + CBG, *CBN Total = (CBNA * 0.877) + CBN, *Total CBC = CBC + (CBCA * 0.877), *Total THC-O-Acetate = Delta 8 THC-O-Acetate + Delta 9 THC-O-Acetate, *Other Cannabinoids Total = Total Cannabinoids - All the listed cannabinoids on the summary section, *Total Detected Cannabinoids = Delta8-THC + Total CBN + CBT + Delta8-THCV + Total CBG + Total CBD + Total THCV + CBL + Total THC + Total CBC + Total CBDV + Delta10-THC + Total THC-O-Acetate, *Analyte Details above show the Dry Weight Concentrations unless specified as 12% moisture concentration. (mg/ml) = Milligrams per Milliliter, LOQ = Limit of Quantitation, LOD = Limit of Detection, Dilution = Dilution Factor (ppb) = Parts per Billion, (%) = Percent, (cfu/g) = Colony Forming Unit per Gram (cfu/g) = Colony Forming Unit per Gram, LOD = Limit of Detection, (µg/g) = Microgram per Gram (ppm) = Parts per Million, (ppm) = (µg/g), (aw) = aw (area ratio) = Area Ratio, (mg/Kg) = Milligram per Kilogram, *Measurement of Uncertainty = +/- 10%



This report shall not be reproduced, without written approval, from ACS Laboratory. The results of this report relate only to the material or product analyzed. Test results are confidential unless explicitly waived otherwise. Accredited by a third-party accrediting body as a competent testing laboratory pursuant to ISO/IEC 17025 of the International Organization for Standardization.



License No. 800025015
FL License # CMTL-0003
CLIA No. 10D1094068

Certificate of Analysis

Compliance Test

Root Bioscience
951 Aviation Pkwy
Morrisville, NC 27560

Batch # FS120010
Batch Date: 2022-02-01

Sampling Method: MSP 7.3.1
Test Reg State: Florida

Production Facility: Root Bioscience NC, LLC
Production Date: 2022-02-01

Order # RO0220201-020001
Order Date: 2022-02-01
Sample # AACK874

Sampling Date: 2022-02-03
Lab Batch Date: 2022-02-03
Completion Date: 2022-02-07

Initial Gross Weight: 80.863 g
Net Weight: 30.563 g

Number of Units: 1
Net Weight per Unit: 30563.000 mg

Pesticides FL V4

Specimen Weight: 217.000 mg

Passed
(LCMS/GCMS)

Residual Solvents - FL (CBD)

Specimen Weight: 126.300 mg

Passed
(GCMS)

Dilution Factor: 6.912

Analyte	LOQ (ppb)	Action Level (ppb)	Result (ppb)	Analyte	LOQ (ppb)	Action Level (ppb)	Result (ppb)
Abamectin	28.23	300	<LOQ	Fludioxonil	48	3000	<LOQ
Acephate	30	3000	<LOQ	Hexythiazox	30	2000	<LOQ
Acequinocyl	48	2000	<LOQ	Imazalil	30	100	<LOQ
Acetaminiprid	30	3000	<LOQ	Imidacloprid	30	3000	<LOQ
Aldicarb	30	100	<LOQ	Kresoxim Methyl	30	1000	<LOQ
Azoxystrobin	10	3000	<LOQ	Malathion	30	2000	<LOQ
Bifenazate	30	3000	<LOQ	Metaxalyl	10	3000	<LOQ
Bifenthrin	30	500	<LOQ	Methiocarb	30	100	<LOQ
Boscalid	10	3000	<LOQ	Methomyl	30	100	<LOQ
Captan	30	3000	<LOQ	methyl-Parathion	10	100	<LOQ
Carbaryl	10	500	<LOQ	Mevinphos	10	100	<LOQ
Carbofuran	10	100	<LOQ	Myclobutanil	30	3000	<LOQ
Chlorantraniliprole	10	3000	<LOQ	Naled	30	500	<LOQ
Chlordane	10	100	<LOQ	Oxamyl	30	500	<LOQ
Chlorfenapyr	30	100	<LOQ	Paclobotrazol	30	100	<LOQ
Chloromequat Chloride	10	3000	<LOQ	Pentachloronitrobenzene	10	200	<LOQ
Chlorpyrifos	30	100	<LOQ	Permethrin	30	1000	<LOQ
Clofentezine	30	500	<LOQ	Phosmet	30	200	<LOQ
Coumaphos	48	100	<LOQ	Piperonylbutoxide	30	3000	<LOQ
Cyfluthrin	30	1000	<LOQ	Prallethrin	30	400	<LOQ
Cypermethrin	30	1000	<LOQ	Propiconazole	30	1000	<LOQ
Daminozide	30	100	<LOQ	Propoxur	30	100	<LOQ
Diazinon	30	200	<LOQ	Pyrethrins	30	1000	<LOQ
Dichlorvos	30	100	<LOQ	Pyridaben	30	3000	<LOQ
Dimethoate	30	100	<LOQ	Spinetoram	10	3000	<LOQ
Dimethomorph	48	3000	<LOQ	Spinosad	30	3000	<LOQ
Ethoprophos	30	100	<LOQ	Spiromesifen	30	3000	<LOQ
Etofenprox	30	100	<LOQ	Spirotetramat	30	3000	<LOQ
Etoxazole	30	1500	<LOQ	Spiroxamine	30	100	<LOQ
Fenhexamid	10	3000	<LOQ	Tebuconazole	30	1000	<LOQ
Fenoxycarb	30	100	<LOQ	Thiacloprid	30	100	<LOQ
Fenpyroximate	30	2000	<LOQ	Thiamethoxam	30	1000	<LOQ
Fipronil	30	100	<LOQ	Trifloxystrobin	30	3000	<LOQ
Fonicamid	30	2000	<LOQ				

Dilution Factor: 50.000

Analyte	LOQ (ppm)	Action Level (ppm)	Result (ppm)	Analyte	LOQ (ppm)	Action Level (ppm)	Result (ppm)
1,1-Dichloroethene	0.16	8	<LOQ	Heptane	1.39	5000	<LOQ
1,2-Dichloroethane	0.04	5	<LOQ	Hexane	1.17	290	<LOQ
Acetone	2.08	5000	<LOQ	Isopropyl alcohol	1.39	500	<LOQ
Acetonitrile	1.17	410	<LOQ	Methanol	0.69	3000	<LOQ
Benzene	0.02	2	<LOQ	Methylene chloride	2.43	600	<LOQ
Butanes	2.5	2000	<LOQ	Penatane	2.08	5000	<LOQ
Chloroform	0.04	60	<LOQ	Propane	5.83	2100	<LOQ
Ethanol	2.78	5000	<LOQ	Toluene	2.92	890	<LOQ
Ethyl Acetate	1.11	5000	<LOQ	Total Xylenes	2.92	2170	<LOQ
Ethyl Ether	1.39	5000	<LOQ	Trichloroethylene	0.49	80	<LOQ
Ethylene Oxide	0.1	5	<LOQ				

Mycotoxins

Specimen Weight: 217.000 mg

Passed
(LCMS)

Dilution Factor: 6.912

Analyte	LOQ (ppb)	Action Level (ppb)	Result (ppb)	Analyte	LOQ (ppb)	Action Level (ppb)	Result (ppb)
Aflatoxin B1	6	20	<LOQ	Aflatoxin G2	6	20	<LOQ
Aflatoxin B2	6	20	<LOQ	Ochratoxin A	12	20	<LOQ
Aflatoxin G1	6	20	<LOQ				

Pathogenic Microbiology SAE (MicroArray)

Specimen Weight: 1046.110 mg

Passed
(Micro Array)

Dilution Factor: 1.000

Analyte	Result (cfu/g)	Result	Analyte	Result (cfu/g)	Result
Aspergillus flavus	<1	Absence in 1g	Aspergillus terreus	<1	Absence in 1g
Aspergillus fumigatus	<1	Absence in 1g	Salmonella	<1	Absence in 1g
Aspergillus niger	<1	Absence in 1g	STEC E. Coli	<1	Absence in 1g

Xueli Gao
Ph.D., DABT
Lab Toxicologist

Aixia Sun
D.H.Sc., M.Sc., B.Sc., MT (AAB)
Lab Director/Principal Scientist

Definitions and Abbreviations used in this report: *Total CBD = CBD + (CBD-A * 0.877), *Total CBDV = CBDV + (CBDVA * 0.87), *Total THC = THCA-A * 0.877 + Delta 9 THC, *Total THCV = THCV + (THCVA * 0.87), *CBG Total = (CBGA * 0.877) + CBG, *CBN Total = (CBNA * 0.877) + CBN, *Total CBC = CBC + (CBCA * 0.877), *Total THC-O-Acetate = Delta 8 THC-O-Acetate + Delta 9 THC-O-Acetate, *Other Cannabinoids Total = Total Cannabinoids - All the listed cannabinoids on the summary section, *Total Detected Cannabinoids = Delta8-THC + Total CBN + CBT + Delta8-THCV + Total CBG + Total CBD + Total THCV + CBL + Total THC + Total CBC + Total CBDV + Delta10-THC + Total THC-O-Acetate, *Analyte Details above show the Dry Weight Concentrations unless specified as 12% moisture concentration. (mg/ml) = Milligrams per Milliliter, LOQ = Limit of Quantitation, LOD = Limit of Detection, Dilution = Dilution Factor (ppb) = Parts per Billion, (%) = Percent, (cfu/g) = Colony Forming Unit per Gram (cfu/g) = Colony Forming Unit per Gram, , LOD = Limit of Detection, (µg/g) = Microgram per Gram (ppm) = Parts per Million, (ppm) = (µg/g), (aw) = aw (area ratio) = Area Ratio, (mg/kg) = Milligram per Kilogram, *Measurement of Uncertainty = +/- 10%

This report shall not be reproduced, without written approval, from ACS Laboratory. The results of this report relate only to the material or product analyzed. Test results are confidential unless explicitly waived otherwise. Accredited by a third-party accrediting body as a competent testing laboratory pursuant to ISO/IEC 17025 of the International Organization for Standardization.





License No. 800025015
FL License # CMTL-0003
CLIA No. 10D1094068

Certificate of Analysis

Compliance Test

Root Bioscience
951 Aviation Pkwy
Morrisville, NC 27560

Batch # FS120010
Batch Date: 2022-02-01

Sampling Method: MSP 7.3.1
Test Reg State: Florida

Production Facility: Root Bioscience NC, LLC
Production Date: 2022-02-01

Order # RO0220201-020001
Order Date: 2022-02-01
Sample # AACK874

Sampling Date: 2022-02-03
Lab Batch Date: 2022-02-03
Completion Date: 2022-02-07

Initial Gross Weight: 80.863 g
Net Weight: 30.563 g

Number of Units: 1
Net Weight per Unit: 30563.000 mg

H Heavy Metals

Specimen Weight: 248.200 mg

Passed
(ICP-MS)

Dilution Factor: 201

Analyte	LOQ (ppb)	Action Level (ppb)	Result (ppb)	Analyte	LOQ (ppb)	Action Level (ppb)	Result (ppb)
Arsenic (As)	100	1500	<LOQ	Lead (Pb)	100	500	<LOQ
Cadmium (Cd)	100	500	<LOQ	Mercury (Hg)	100	3000	<LOQ

Listeria Monocytogenes

Specimen Weight: 985.300 mg

Passed
(qPCR)

Dilution Factor: 1.000

Analyte	Action Level (cfu/g)	Result
Listeria Monocytogenes	1	Absence in 1g

Xueli Gao
Xueli Gao
Ph.D., DABT
Lab Toxicologist

Aixia Sun
Aixia Sun
D.H.Sc., M.Sc., B.Sc., MT (AAB)
Lab Director/Principal Scientist



Definitions and Abbreviations used in this report: *Total CBD = CBD + (CBD-A * 0.877), *Total CBDV = CBDV + (CBDVA * 0.87), *Total THC = THCA-A * 0.877 + Delta 9 THC, *Total THCV = THCV + (THCVA * 0.87), *CBG Total = (CBGA * 0.877) + CBG, *CBN Total = (CBNA * 0.877) + CBN, *Total CBC = CBC + (CBCA * 0.877), *Total THC-O-Acetate = Delta 8 THC-O-Acetate + Delta 9 THC-O-Acetate, *Other Cannabinoids Total = Total Cannabinoids - All the listed cannabinoids on the summary section, *Total Detected Cannabinoids = Delta8-THC + Total CBN + CBT + Delta8-THCV + Total CBG + Total CBD + Total THCV + CBL + Total THC + Total CBC + Total CBDV + Delta10-THC + Total THC-O-Acetate, *Analyte Details above show the Dry Weight Concentrations unless specified as 12% moisture concentration. (mg/ml) = Milligrams per Milliliter, LOQ = Limit of Quantitation, LOD = Limit of Detection, Dilution = Dilution Factor (ppb) = Parts per Billion, (%) = Percent, (cfu/g) = Colony Forming Unit per Gram (cfu/g) = Colony Forming Unit per Gram, LOD = Limit of Detection, (µg/g) = Microgram per Gram (ppm) = Parts per Million, (ppm) = (µg/g), (aw) = aw (area ratio) = Area Ratio, (mg/Kg) = Milligram per Kilogram, *Measurement of Uncertainty = +/- 10%

This report shall not be reproduced, without written approval, from ACS Laboratory. The results of this report relate only to the material or product analyzed. Test results are confidential unless explicitly waived otherwise. Accredited by a third-party accrediting body as a competent testing laboratory pursuant to ISO/IEC 17025 of the International Organization for Standardization.