HIGH NORTH ID:
00420419
Date: 2023-12-22
Certificate: 1703267695

High North Inc.
241 Hanlan Rd, Unit 7
Woodbridge, ON, L4L 3R7
1-416-864-6119
LIC-P4PNJMAC20-2022

Client:	Rosebud Productions Inc. #115 - 23000 FRASERWOOD WAY, RICHMOND, BC, V6V 3C7	Product:	1:1 THC CBD Muscle and Joint cream
		Lot:	230206
		Matrix:	Oil
Name:	Madeleine Gwynne 17782291621 madeleine@herbaldispatch.com	Sub-matrix:	Topical
		Sampled:	2023-12-15
		Received:	2023-12-18

Certificate of Analysis

Cannabinoid Analysis	LOD (%)	LOQ (%)	wt%	mg/g
Total THC [(THCA x 0.877) + D9-THC]			0.4756	4.7552
Total CBD [(CBDA x 0.877) + CBD]			0.4146	4.1461
CBD	0.0005	0.001	0.4131	4.1315
THCA-A	0.0005	0.001	0.2993	2.9926
D9-THC	0.0005	0.001	0.2131	2.1307
CBG	0.0005	0.001	0.0171	0.1713
CBN	0.0005	0.001	0.0051	0.0508
CBGA	0.0005	0.001	0.0048	0.0477
CBDV	0.0005	0.001	0.0030	0.0299
CBCA	0.0005	0.001	0.0027	0.0269
THCVA	0.0005	0.001	0.0027	0.0268
CBDA	0.0005	0.001	0.0017	0.0167
CBC	0.0005	0.001	ND	ND
D8-THC	0.0005	0.001	ND	ND
CBCVA	0.0005	0.001	ND	ND
CBCV	0.0005	0.001	ND	ND
THCV	0.0005	0.001	ND	ND
CBDVA	0.0005	0.001	ND	ND
Total of all quantified cannabinoids:			0.9626	9.6249

Microbial Analysis	LOD (CFU/g)	RL (CFU/g)	Result (CFU/g)	Status
S.aureus/P.aeruginosa			Absent in 1g	PASS
Salmonella			Absent in 10g	PASS
E.coli			Absent in 10g	PASS
Total Aerobic Count	12	100,000	< 12	PASS
Total Yeast and Mold Count	2	1,000	< 2	PASS
Bile-Tolerant Gram-Negative	5	1,000	< 5	PASS

Abbreviations: wt% = percentage of weight, CFU = colony forming units, ppm = Parts per million, ppb = Parts per billion, ND = None Detected, BLQ = Below Limit of Quantification, LOQ = Limit of Quantification, LOD = Limit of Detection, RL = Reporting Limit, * = Mixture of Isomers

Authorized by:

Gui Scharlack
QA Specialist

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Residual Solvents Analysis	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
1-Butanol	136.46	1000	5000	ND	PASS
1-Pentanol	102.40	1000	5000	ND	PASS
1-Propanol	199.71	1000	5000	ND	PASS
2-Butanol	48.38	1000	5000	ND	PASS
2-Methyl-1-propanol	153.28	1000	5000	ND	PASS
2-Propanol	142.60	1000	5000	ND	PASS
3-Methyl-1-butanol	64.03	1000	5000	ND	PASS
Acetone	81.47	1000	5000	ND	PASS
Anisole	54.77	1000	5000	ND	PASS
Butyl acetate	40.51	1000	5000	ND	PASS
Dimethyl sulfoxide	96.05	1000	5000	ND	PASS
Ethanol	179.88	1000	5000	ND	PASS
Ethyl acetate	89.17	1000	5000	ND	PASS
Ethyl ether	105.42	1000	5000	ND	PASS
Ethyl formate	194.93	1000	5000	ND	PASS
Heptane	109.56	1000	5000	ND	PASS
Isobutyl acetate	48.49	1000	5000	ND	PASS
Isopropyl acetate	118.80	1000	5000	ND	PASS
Methyl acetate	87.65	1000	5000	ND	PASS
Methylethyl ketone	97.35	1000	5000	ND	PASS
Pentane	102.77	1000	5000	ND	PASS
Propyl acetate	58.63	1000	5000	ND	PASS
Tert-Butylmethyl ether	115.57	1000	5000	ND	PASS
Triethylamine	22.07	1000	5000	ND	PASS

Comments

Residual Solvents analysis was performed with a method that is not validated for Topical matrix.

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Details of Testing

Cannabinoid Analysis

LAB-MTD-020: Determination of 16 Cannabinoids in Cannabis Flowers, Extracts, Topicals, Tablets and Isolates by HPLC
LAB-MTD-039: Determination of 11 Cannabinoids in Cannabis Edibles by HPLC
LAB-MTD-051: Assay of Cannabinoids in Cannabis Flower as per DAB by HPLC
LAB-MTD-052: Identification of CBD and THCA as per DAB by Thin-Layer Chromatography

Terpene Analysis

LAB-MTD-044: Determination of Terpene Content in Cannabis Dried Flower, Fresh Flower and Extracts by GC-MS

Pesticide Analysis

LAB-MTD-010: Determination of Health Canada Pesticide Residues and Toxins in Dried Cannabis Flower by LC-MS/MS and GC-MS/MS
LAB-MTD-040: Determination of EP 2.8.13 Pesticide Residues in Cannabis Extracts by GC-MS/MS
LAB-MTD-041: Determination of EP 2.8.13/USP 561 Pesticide Residues in Cannabis Flower by GC-MS/MS and LC-MS/MS
LAB-MTD-046: Determination of Health Canada Pesticides and Toxins in Cannabis Extracts by LC-MS/MS
LAB-MTD-048: Determination of Health Canada Pesticide Residues and Toxins in Fresh Cannabis Flower by LC-MS/MS and GC-MS/MS
LAB-MTD-055: Determination of Israel Pesticide Residues in Dried/Fresh Cannabis by LC-MS/MS and GC-MS/MS

Mycotoxin Analysis

LAB-MTD-010: Determination of Health Canada Pesticide Residues and Toxins in Dried Cannabis Flower by LC-MS/MS and GC-MS/MS
LAB-MTD-029: Determination of Toxins in Tablet Samples by LC-MS/MS
LAB-MTD-037: Determination of Mycotoxins in Topical/Cream Samples by LC-MS/MS
LAB-MTD-046: Determination of Health Canada Pesticides and Toxins in Cannabis Extracts by LC-MS/MS
LAB-MTD-048: Determination of Health Canada Pesticide Residues and Toxins in Fresh Cannabis Flower by LC-MS/MS and GC-MS/MS

Flavonoid Analysis

LAB-MTD-045: Determination of Flavonoids in Cannabis Dried Flower, Fresh Flower, and Extracts by LC-MS/MS

Peroxide Value, p-Anisidine and Acidity (FFA) Analysis

LAB-MTD-049: Determination of Peroxide Value, p-Anisidine, and Acidity (FFA)

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Details of Testing

Microbial Analysis

MIC-MTD-001: Microbial Analysis of Cannabis Flower and Oil by qPCR
MIC-MTD-006: Determination of Viruses in Cannabis via qPCR and ELISA
MIC-MTD-007: Microbial Analysis of Cannabis by Culture Techniques
MIC-MTD-009: Cannabis Gender Determination by qPCR
MIC-MTD-010: Identification A and Identification B of Cannabis by DAB Monograph
MIC-MTD-011: Analysis of Shigella Species in Cannabis and Cannabis Infused Products
MIC-MTD-008: Analysis of Listeria Monocytogenes in Cannabis and Cannabis Infused Products
MIC-MTD-012: Microbial Analysis of Cannabis and Cannabis Infused Products by TEMPO

Moisture Analysis

LAB-MTD-017: Determination of Moisture Content in Cannabis Flower
LAB-MTD-031: Water Activity Meter Setup and Operation
LAB-MTD-053: Determination of Moisture Content by Loss on Drying Technique using Vacuum Oven
LAB-MTD-056: Determination of Moisture Content by Karl Fischer Titration

Sample Appearance and Foreign Matter

LAB-MTD-022: Sample Appearance and Detection of Foreign Matter Content in Cannabis Samples

Total Ash Analysis

LAB-MTD-043: Total Ash by Muffle Furnace in Cannabis Products

Residual Solvents Analysis

LAB-MTD-036: Determination of Residual Solvents in Cannabis Oil by GC-MS
LAB-MTD-028: Determination of Residual Solvents in Tablet Samples by GC-MS
LAB-MTD-034: Determination of Propane and Butane in Cannabis Oil by GC-MS
LAB-MTD-038: Determination of Toluene in Cannabis Isolate by GC-MS
LAB-MTD-054: Determination of Acetic Acid in Flavour, Cannabis Vape Mix Oil and Cannabis Infused Flower by GC-MS

Heavy Metal Analysis

LAB-MTD-027: Determination of Heavy Metals in Cannabis Samples (Cream/Topicals, Tablets and Edibles) by ICP-MS
LAB-MTD-050: Multi-Element Analysis of Cannabis Dried Flower, Fresh Flower, Extracts, and Rolling Papers by ICP-MS
LAB-MTD-058: Determination of Palladium (Pd) in Cannabis Dried Flower, Fresh Flower and Extracts by ICP-MS

pH Analysis

MIC-MTD-013: Determination of pH using pH Meter

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