HiGH NORTH
LABORATORIES

High North Inc.
241 Hanlan Rd, Unit 7
Woodbridge, ON, L4L 3R7
1-416-864-6119
LIC-P4PNJMAC20-2019

Client:	Grow Cup	Strain:	Pinapple Express
	241 Hanlan Rd, Unit 7&8,	Lot:	Adam Badari
	Woodbridge, ON, L4L 3R7	Matrix:	Flower
Name:	Grow Cup	Sub-matrix:	Dried Flower
	416-864-6119	Sampled:	2021-11-12
	rick+growcup@highnorth.com	Received:	2021-11-12

Certificate of Analysis

Cannabinoid Analysis	LOD (%)	LOQ (%)	wt%	mg/g
Total THC [(THCA x 0.877) + D9-THC]			22.746	227.457
Total CBD [(CBDA x 0.877) + CBD]			0.094	0.937
THCA-A	0.0090	0.03	24.881	248.807
CBGA	0.0041	0.03	1.086	10.861
D9-THC	0.0093	0.03	0.925	9.253
CBG	0.0094	0.03	0.236	2.362
CBDA	0.0100	0.03	0.107	1.068
CBC	0.0060	0.03	ND	ND
D8-THC	0.0137	0.03	ND	ND
CBN	0.0067	0.03	ND	ND
CBD	0.0069	0.03	ND	ND
THCV	0.0093	0.03	ND	ND
CBDV	0.0090	0.03	ND	ND
Total of all quantified cannabinoids:			27.235	272.351

Terpene Analysis	LOD (%)	LOQ (%)	wt%
Trans-Caryophyllene	0.0002	0.005	0.781
Farnesene*	0.0009	0.005	0.711
Beta-Myrcene	0.0003	0.005	0.461
(R)-(+)-Limonene	0.0001	0.005	0.445
Alpha-Humulene	0.0010	0.005	0.142
Linalool	0.0003	0.005	0.13
Terpineol*	0.0001	0.005	0.053
Beta-Pinene	0.0002	0.005	0.046
alpha-Bisabolol	0.0003	0.005	0.045
(R)-Endo-(+)-Fenchyl	0.0003	0.005	0.037
Alpha-Pinene	0.0003	0.005	0.034

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:

Amrita Naidu
QA Specialist

Terpene Analysis

	LOD (%)	LOQ (%)	wt%
trans-Nerolidol	0.0004	0.005	0.017
Caryophyllene oxide	0.0008	0.005	0.009
Camphene	0.0002	0.005	0.009
Terpinolene	0.0003	0.005	0.006
Fenchone*	0.0003	0.005	BLQ
Gamma-Terpinene	0.0003	0.005	BLQ
Alpha-Terpinene	0.0003	0.005	BLQ
Phytol*	0.0013	0.010	ND
(+)-Cedrol	0.0010	0.005	ND
Guaiol	0.0003	0.005	ND
Valencene	0.0002	0.005	ND
cis-Nerolidol	0.0003	0.005	ND
Eugenol	0.0004	0.010	ND
Geranyl acetate	0.0002	0.005	ND
Alpha-Cedrene	0.0002	0.005	ND
Geraniol	0.0007	0.005	ND
Pulegone	0.0002	0.005	ND
Citronellol	0.0003	0.005	ND
Nerol	0.0002	0.005	ND
Camphor + Borneol*	0.0003	0.010	ND
Hexahydrothymol	0.0005	0.005	ND
Isoborneol	0.0002	0.005	ND
Isopulegol	0.0004	0.005	ND
Sabinene Hydrate	0.0001	0.005	ND
Ocimene*	0.0004	0.005	ND
Eucalyptol	0.0007	0.005	ND
p-Cymene	0.0003	0.005	ND
(1S)-3-Carene	0.0007	0.005	ND
Alpha-Phellandrene	0.0002	0.005	ND
Sabinene	0.0013	0.005	ND

Total of all quantified terpenes: 2.926

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Details of Testing

Cannabinoid Analysis
Analysis of 11 Cannabinoids by HPLC & UHPLC
Method LAB-MTD-020: Flower (LOQ 0.06%), Oil (LOQ 0.03%), Extracts (LOQ 0.6%)
Method LAB-MTD-021: Isolates (LOQ 0.06%)
Method LAB-MTD-023: Tablets & Granules (LOQ 0.025%)
Method LAB-MTD-030: Topicals (LOQ 0.005%)

Terpene Analysis
Profile of 42 terpenes by GC/MS
Method LAB-MTD-035: Cannabis Flower, Oil

Pesticide Analysis
Determination of 96 Pesticide Residues by LC/MS/MS and GC/MS/MS
Method LAB-MTD-010: Cannabis Flower, Oil

Mycotoxin Analysis
Determination of Aflatoxins B1, B2, G1, G2 and Ochratoxin-A by LC/MS/MS
Method LAB-MTD-010: Cannabis Flower, Oil
Method LAB-MTD-029: Tablets
Method LAB-MTD-037: Topicals

Heavy Metal Analysis
Determination of Heavy Metal contamination (Arsenic, Cadmium, Lead & Mercury) by ICP/MS
Method LAB-MTD-027: Cannabis Flower, Oil, Topicals, Tablets

Residual Solvents Analysis
Determination of 24 Residual Solvents by GC/MS
Method LAB-MTD-036: Cannabis Oil
Method LAB-MTD-028: Tablets

Determination of Butane and Propane Residual Solvents in Cannabis Oil
Method LAB-MTD-034 (GC/MS): Cannabis Oil

Microbial Analysis, Powdery Mildew & Gender Determination
Molecular detection and quantitation by PCR & qPCR
Cannabis Flower, Oil, Cannabis-Infused Products
Method MIC-MTD-001 (TAMC, TYMC, BTGN, E.coli, Salmonella, Staph/Pseudomonas)
Method MIC-MTD-005: (Powdery Mildew & Gender Determination)

Moisture Analysis
Water Activity & Moisture Content (Loss on Drying)
Method LAB-MTD-017 (Loss on Drying; Dry flower only)
Method LAB-MTD-031 (Water activity, a_w)

Foreign Matter Analysis
Visual/Magnified Inspection for Foreign Matter
Method LAB-MTD-022

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