

SAMPLE NAME: RELIEVE

Infused, Non-Inhalable

CULTIVATOR / MANUFACTURER

Business Name:

License Number:

Address:

DISTRIBUTOR

Business Name: Kota Botanics

License Number:

Address: 2511 Kirsten Ln. Ste 104
Fargo ND 58104



SAMPLE DETAIL

Batch Number: KO-RELIEVE-B6-0001

Sample ID: 201104W011

Date Collected: 11/04/2020

Date Received: 11/04/2020

Batch Size:

Sample Size: 1.0 units

Unit Mass: 30 milliliters per Unit

Serving Size:



Scan QR code to verify authenticity of results.

CANNABINOID ANALYSIS - SUMMARY

Total THC: 44.880 mg/unit

Total CBD: 982.500 mg/unit

Sum of Cannabinoids: 1082.640 mg/unit

Total Cannabinoids: 1082.640 mg/unit

Total THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during the decarboxylation step:
 Total THC = $\Delta 9\text{THC} + (\text{THCa} \cdot 0.877)$
 Total CBD = $\text{CBD} + (\text{CBDa} \cdot 0.877)$
 Sum of Cannabinoids = $\Delta 9\text{THC} + \text{THCa} + \text{CBD} + \text{CBDa} + \text{CBG} + \text{CBGa} + \text{THCV} + \text{THCVa} + \text{CBC} + \text{CBCa} + \text{CBDV} + \text{CBDVa} + \Delta 8\text{THC} + \text{CBL} + \text{CBN}$
 Total Cannabinoids = $(\Delta 9\text{THC} + 0.877 \cdot \text{THCa}) + (\text{CBD} + 0.877 \cdot \text{CBDa}) + (\text{CBG} + 0.877 \cdot \text{CBGa}) + (\text{THCV} + 0.877 \cdot \text{THCVa}) + (\text{CBC} + 0.877 \cdot \text{CBCa}) + (\text{CBDV} + 0.877 \cdot \text{CBDVa}) + \Delta 8\text{THC} + \text{CBL} + \text{CBN}$

Moisture: NT

Density: 0.957 g/mL

Viscosity: NT

SAFETY ANALYSIS - SUMMARY

$\Delta 9\text{THC}$ per Unit: ✔ PASS

Foreign Material: NT

Water Activity: NT

Vitamin E Acetate: NT

Pesticides: NT

Mycotoxins: NT

Residual Solvents: NT

Heavy Metals: NT

Microbial Impurities (PCR): ✔ PASS

Microbial Impurities (Plating): NT

TERPENOID ANALYSIS - SUMMARY

36 TESTED, TOP 3 HIGHLIGHTED

● **α Bisabolol** 0.21 mg/g

● **Camphene** 0.15 mg/g


● **Limonene** 0.06 mg/g


For quality assurance purposes. Not a Pre-Harvest Hemp Lab Test Report. These results relate only to the sample included on this report. This report shall not be reproduced, except in full, without written approval of the laboratory.

Sample Certification: California Code of Regulations Title 16 Effect Date January 16, 2019. Authority: Section 26013, Business and Professions Code. Reference: Sections 26100, 26104 and 26110, Business and Professions Code.

Decision Rule: Statements of conformity (e.g. Pass/Fail) to specifications are made in this report without taking measurement uncertainty into account. Where statements of conformity are made in this report, the following decision rules are applied: PASS - Results within limits/specifications, FAIL - Results exceed limits/specifications.

References: limit of detection (LOD), limit of quantification (LOQ), not detected (ND), not tested (NT)


 LQC verified by: Josh Antunovich
 Date: 11/24/2020


 Approved by: Josh Wurzer, President
 Date: 11/24/2020



Cannabinoid Analysis

Tested by high-performance liquid chromatography with diode-array detection (HPLC-DAD).

Method: QSP 1157 - Analysis of Cannabinoids by HPLC-DAD

TOTAL THC: 44.880 mg/unit

Total THC ($\Delta 9\text{THC} + 0.877 * \text{THCa}$)

TOTAL CBD: 982.500 mg/unit

Total CBD ($\text{CBD} + 0.877 * \text{CBDa}$)

TOTAL CANNABINOIDS: 1082.640 mg/unit

Total Cannabinoids (Total THC) + (Total CBD) + (Total CBG) + (Total THCV) + (Total CBC) + (Total CBDV) + $\Delta 8\text{THC}$ + CBL + CBN

TOTAL CBG: 13.680 mg/unit

Total CBG ($\text{CBG} + 0.877 * \text{CBGa}$)

TOTAL THCV: ND

Total THCV ($\text{THCV} + 0.877 * \text{THCVa}$)

TOTAL CBC: 34.620 mg/unit

Total CBC ($\text{CBC} + 0.877 * \text{CBCa}$)

TOTAL CBDV: 4.830 mg/unit

Total CBDV ($\text{CBDV} + 0.877 * \text{CBDVa}$)

CANNABINOID TEST RESULTS - 11/06/2020

COMPOUND	LOD/LOQ (mg/mL)	MEASUREMENT UNCERTAINTY (mg/mL)	RESULT (mg/mL)	RESULT (%)
CBD	0.004 / 0.011	± 1.5687	32.750	3.4222
$\Delta 9\text{THC}$	0.002 / 0.005	± 0.1055	1.496	0.1563
CBC	0.003 / 0.010	± 0.0478	1.154	0.1206
CBG	0.002 / 0.005	± 0.0284	0.456	0.0476
CBDV	0.002 / 0.007	± 0.0084	0.161	0.0168
CBL	0.003 / 0.008	± 0.0019	0.041	0.0043
CBN	0.001 / 0.004	± 0.0011	0.030	0.0031
$\Delta 8\text{THC}$	0.01 / 0.02	N/A	ND	ND
THCa	0.001 / 0.002	N/A	ND	ND
THCV	0.002 / 0.008	N/A	ND	ND
THCVa	0.002 / 0.005	N/A	ND	ND
CBDa	0.001 / 0.003	N/A	ND	ND
CBDVa	0.001 / 0.003	N/A	ND	ND
CBGa	0.002 / 0.006	N/A	ND	ND
CBCa	0.001 / 0.004	N/A	ND	ND
SUM OF CANNABINOIDS			36.088 mg/mL	3.771%

Unit Mass: 30 milliliters per Unit

$\Delta 9\text{THC}$ per Unit	1100 per-package limit	44.880 mg/unit	PASS
Total THC per Unit		44.880 mg/unit	
CBD per Unit		982.500 mg/unit	
Total CBD per Unit		982.500 mg/unit	
Sum of Cannabinoids per Unit		1082.640 mg/unit	
Total Cannabinoids per Unit		1082.640 mg/unit	

MOISTURE TEST RESULT

Not Tested

DENSITY TEST RESULT

0.957 g/mL
Tested 11/06/2020
Method: QSP 7870 - Sample Preparation

VISCOSITY TEST RESULT

Not Tested



Terpenoid Analysis

Terpene analysis utilizing gas chromatography-flame ionization detection (GC-FID). Terpenes are the aromatic compounds that endow cannabis with their unique scent and effect. Following are the primary terpenes detected.

Method: OSP 1192 - Analysis of Terpenoids by GC-FID

1 α Bisabolol

A sesquiterpene alcohol with a fragrance that can be described as floral, peppery, sweet and clean. Found in chamomile, figwort, yarrow, skullcaps, lavender, ironwort, germander...etc.

2 Camphene

A monoterpene with a fragrance that can be described as cool, piney, woody, spicy with a hint of citrus and mint. It is a minor constituent of turpentine. Found in fennel, marjoram, nutmeg, ginger, rosemary, conifers, carrot, dill, parsley, pepper, tarragon, thyme...etc.

3 Limonene

A monoterpene with a fragrance that can be described as orangey, citrusy, sweet and tart. It is most commonly found in nature as D-Limonene and is a primary contributor to the distinct scent of orange peels, from which it is commonly derived. Found in numerous pines, red maple, silver maple, aspens, cottonwoods, hemlocks, sumac, cedar, junipers...etc.

TERPENOID TEST RESULTS - 11/07/2020

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
α Bisabolol	0.02 / 0.07	± 0.009	0.21	0.021
Camphene	0.04 / 0.11	± 0.011	0.15	0.015
Limonene	0.02 / 0.05	± 0.002	0.06	0.006
α Pinene	0.03 / 0.09	N/A	<LOQ	<LOQ
Eucalyptol	0.03 / 0.08	N/A	<LOQ	<LOQ
Guaiol	0.03 / 0.09	N/A	<LOQ	<LOQ
Sabinene	0.04 / 0.11	N/A	ND	ND
β Pinene	0.04 / 0.11	N/A	ND	ND
Myrcene	0.04 / 0.11	N/A	ND	ND
α Phellandrene	0.05 / 0.1	N/A	ND	ND
3 Carene	0.04 / 0.1	N/A	ND	ND
α Terpinene	0.04 / 0.1	N/A	ND	ND
Ocimene	0.03 / 0.09	N/A	ND	ND
γ Terpinene	0.04 / 0.1	N/A	ND	ND
Sabinene Hydrate	0.02 / 0.07	N/A	ND	ND
Fenchone	0.04 / 0.12	N/A	ND	ND
Terpinolene	0.03 / 0.09	N/A	ND	ND
Linalool	0.03 / 0.08	N/A	ND	ND
Fenchol	0.03 / 0.09	N/A	ND	ND
(-)-Isopulegol	0.02 / 0.05	N/A	ND	ND
Camphor	0.1 / 0.2	N/A	ND	ND
Isoborneol	0.04 / 0.1	N/A	ND	ND
Borneol	0.1 / 0.2	N/A	ND	ND
Menthol	0.03 / 0.09	N/A	ND	ND
Terpineol	0.02 / 0.07	N/A	ND	ND
Nerol	0.03 / 0.09	N/A	ND	ND
R-(+)-Pulegone	0.03 / 0.09	N/A	ND	ND
Geraniol	0.02 / 0.07	N/A	ND	ND
Geranyl Acetate	0.02 / 0.06	N/A	ND	ND
α Cedrene	0.02 / 0.07	N/A	ND	ND
β Caryophyllene	0.02 / 0.07	N/A	ND	ND
α Humulene	0.02 / 0.05	N/A	ND	ND
Valencene	0.01 / 0.03	N/A	ND	ND
Nerolidol	0.3 / 0.8	N/A	ND	ND
Caryophyllene Oxide	0.04 / 0.11	N/A	ND	ND
Cedrol	0.04 / 0.11	N/A	ND	ND
TOTAL TERPENOIDS			0.42 mg/g	0.042%



 **Microbial Impurities Analysis**
 PCR AND PLATING

Analysis conducted by polymerase chain reaction (PCR) and fluorescence detection of microbial impurities.

Method: QSP 1221 - Analysis of Microbial Impurities

Analysis conducted by 3M™ Petrifilm™ and plate counts of microbial impurities.

Method: QSP 6794 - Plating with 3M™ Petrifilm™

MICROBIAL IMPURITIES TEST RESULTS (PCR) - 11/06/2020 ✔ PASS

COMPOUND	ACTION LIMIT	RESULT	RESULT
Shiga toxin-producing <i>Escherichia coli</i>	Detect	ND	PASS
<i>Salmonella</i> spp.	Detect	ND	PASS
<i>Aspergillus fumigatus</i>		NT	
<i>Aspergillus flavus</i>		NT	
<i>Aspergillus niger</i>		NT	
<i>Aspergillus terreus</i>		NT	

MICROBIAL IMPURITIES TEST RESULTS (PLATING)

COMPOUND	RESULT (cfu/g)
Aerobic Plate Count	NT
Total Yeast and Mold	NT

NOTES

COA amended to update distributor license.

