

CERTIFICATE OF ANALYSIS

Order Type: Medical Cannabis

Harvest/Extract Lot: None

Cultivar (Strain): Tare 542 **Lab ID:** SA2019-12712 **Sample Matrix:** Concentrate
Sample Date: 09/20/2019 **Date Received:** 09/20/2019 **Date Completed:** 10/01/2019

Remarks:

CANNABINOID (POTENCY) PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** HPLC/DAD (Internal Method-001) **Moisture Content (%):** -
Analyst: OL **Instrument:** Agilent 1100 **Water Activity (aw):** -

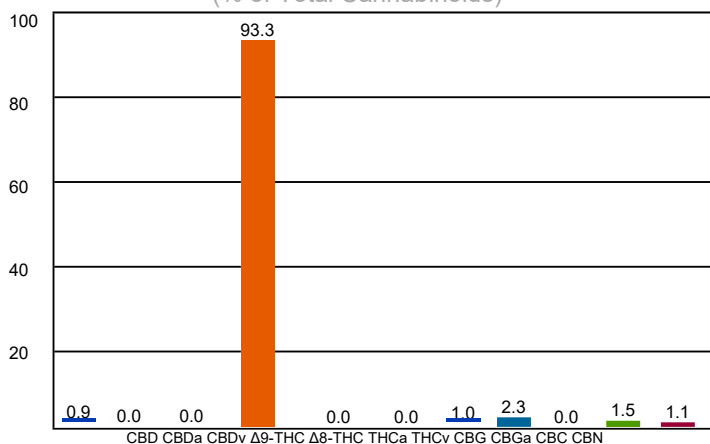
<u>Cannabinoid</u>	<u>Result (%)</u>	<u>Result (mg/g)</u>	<u>Reporting Limit (mg/g)</u>	<u>Result (mg/mL)</u>	<u>Per Unit (mg)</u>
CBD	0.793	7.93	0.491	-	8
CBDa	-	-	0.491	-	-
CBDv	-	-	0.491	-	-
Δ9-THC	86.2	862	0.491	-	862
Δ8-THC	-	-	0.491	-	-
THCa	-	-	0.491	-	-
THCv	0.92	9.2	0.491	-	9
CBC	1.35	13.5	0.491	-	13
CBG	2.09	20.9	0.491	-	21
CBGa	-	-	0.491	-	-
CBN	0.995	9.95	0.491	-	10



TOTAL	92.3	923	-	923	UNIT MASS (g): 1
TOTAL THC	86.2	862	-	862	"-" Not detected above RL.
TOTAL CBD	0.793	8	-	8	

Cannabinoid Distribution

(% of Total Cannabinoids)



Deviations from standard operating procedure: None

Recoveries for all analyte standards: 90-110%
Replicate Uncertainties: <5% RSD, <20% RPD
Sample/Reagent Blanks: <RL for all analytes

Values for plant matter are adjusted for moisture content.

Total THC = (THCa x 0.877) + Δ9-THC
Total CBD = (CBDa x 0.877) + CBD

Percentage results are reported by mass.
mg/g results are reported as mass component per mass material.

Abbreviations: UV - Ultraviolet, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation

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REPORT OF LABORATORY ANALYSIS

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Kyle W. Felling
Kyle W. Felling, Ph.D.
Laboratory Director

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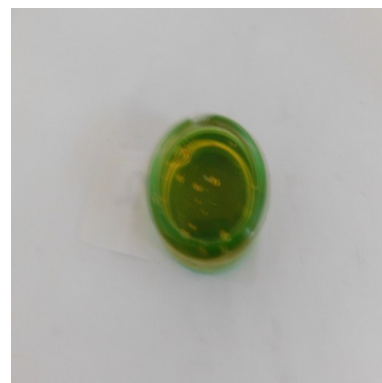
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Remarks:

TERPENOID PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** HS/GC/FID (Internal Method-002) **Deviations from SOP:**
Analyst: OL **Instrument:** Agilent 6890 **None**

Terpene	Result (µg/g)	Result (%)
α-Bisabolol	1938	0.194
Camphene	-	-
δ-3-Carene	-	-
β-Caryophyllene	2400	0.24
Caryophyllene oxide	758	0.0758
p-Cymene	-	-
Eucalyptol	-	-
Geraniol	-	-
Guaiol	280	0.028
α-Humulene	680	0.068
Isopulegol	-	-
d-Limonene	-	-
Linalool	25	0.00248
β-Myrcene	234	0.0234
cis-Nerolidol	-	-
trans-Nerolidol	216	0.0216
α-Ocimene	-	-
β-Ocimene	-	-
α-Pinene	-	-
β-Pinene	-	-
α-Terpinene	-	-
γ-Terpinene	-	-
Terpinolene	-	-



Abbreviations: HS - Headspace, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit

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"-" Not detected above RL.

TOTAL6531

0.653

Reporting Limit (µg/g): 2

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RESIDUAL SOLVENT PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** USP <467> **Deviations from SOP:**
Analyst: OL **Instrument:** Agilent 6890 **None**

<u>Solvent</u>	<u>Result (µg/g)</u>	<u>Action Level (µg/g)</u>
Acetone (67-64-1)	-	1000
Benzene (71-43-2)	-	2
n-Butane (106-97-2)	-	1000
2,2-Dimethylbutane (75-83-2)	-	60
2,3-Dimethylbutane (79-29-8)	-	60
Ethyl benzene (100-41-4)	-	430
n-Heptane (142-82-5)	-	1000
n-Hexane (110-54-3)	-	60
Isobutane (75-28-5)	-	1000
Isopropanol (67-63-0)	-	1000
2-Methylbutane (78-78-4)	-	1000
2-Methylpentane (107-83-5)	-	60
3-Methylpentane (96-10-0)	-	60
n-Pentane (109-66-0)	-	1000
n-Propane (74-98-6)	-	1000
Toluene (108-88-3)	-	180
o-Xylene (95-47-6)	-	430
m,p-Xylene (108-38-3 or 106-42-3)	-	430
Xylenes* (1330-20-7)	-	430

Color Key
RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL
Reporting Limit (µg/g)
 1/2 of AL
 "-" not detected above reporting limit
 "*" - o,m,p-Xylene and Ethylbenzene



<u>Solvent</u>	<u>Synonym(s)</u>	<u>Solvent</u>	<u>Synonym(s)</u>	<u>Solvent</u>	<u>Synonym(s)</u>
Acetonitrile	Methyl Cyanide, ACN	2-Ethoxyethanol	Cellosolve, Ethyl glycol	Methanol	Methyl alcohol
1-Butanol	n-Butanol, Butyl Alcohol	Ethyl ether	Diethyl ether, Ether	2-Methylbutane	Isopentane
2-Butanol	sec-Butyl alcohol	Ethyl acetate	EtOAc	Methylene chloride	Dichloromethane
2-Butanone	Methyl ethyl ketone, MEK	Ethyl benzene	Phenylethane	2-Methylpentane	Isohexane
1,2-Dimethoxyethane	Monoglyme	Ethylene glycol	1,2-Ethanediol	1-Pentanol	n-Amyl alcohol
2,3-Dimethylbutane	Neohexane	Ethylene oxide	Oxirane	1-Propanol	Propyl alcohol
2,3-Dimethylbutane	Diisopropyl	Isobutane	2-Methylpropane	Tetrahydrofuran	THF
N,N-Dimethylformamide	DMF	Isopropanol	2-Propanol, IPA	Tetramethylene sulfone	Sulfolane
Dimethylsulfoxide	DMSO	Isopropyl Acetate	Acetic acid isopropyl ester	Xylene	Dimethylbenzene

Abbreviations: HS-Headspace, GC-Gas Chromatography, MS-Mass Spectrometry, RL-Reporting Limit, AL-Action Level
CAS-Chemical Abstract Services

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Remarks:

PESTICIDES PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** LC/MS/MS and GC/MS **Deviations from SOP:**

Analyst: OL

Instrument: Waters Acquity/TQD

None

<u>Pesticide</u>	<u>Result (µg/g)</u>	<u>Action Level (µg/g)</u>
Abamectin (71751-41-2)	-	0.5
Azoxystrobin (131860-33-8)	-	0.5
Bifenazate* (149877-41-8)	-	0.5
Etoxazole (153233-91-1)	-	0.5
Imazalil (35554-44-0)	-	0.5
Imidacloprid (138261-41-3)	-	0.5
Malathion (121-75-5)	-	0.5
Myclobutanil (88671-89-0)	-	0.5
Permethrins* (52645-53-1)	-	0.5
Spinosad A (168316-95-8)	-	0.5
Spinosad D (168316-95-8)	-	0.5
Spiromesifen (283594-90-1)	-	0.5
Spirotetramat (203313-25-1)	-	0.5
Tebuconazole (80443-41-0)	-	0.5

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/g)
1/2 of AL

"-" not detected above reporting limit

"*" analyzed by GC/MS (all others analyzed by LC/MS/MS)

Permethrins measured as the cumulative residue of the *cis*- and *trans*-permethrin isomers.



Abbreviations: LC - Liquid Chromatography, GC - Gas Chromatography, MS - Mass Spectrometry, RL - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services

<u>Pesticide</u>	<u>Synonym(s)</u>	<u>Pesticide</u>	<u>Synonym(s)</u>	<u>Pesticide</u>	<u>Synonym(s)</u>
Cyfluthrin	Baythroid	Myclobutanil	Systhane	Propiconazole	Tilt
DDVP	Dichlorvos	Naled	Dibrom	Propoxur	Baygon
Ethoprophos	Prophos	Phosmet	Imidan		

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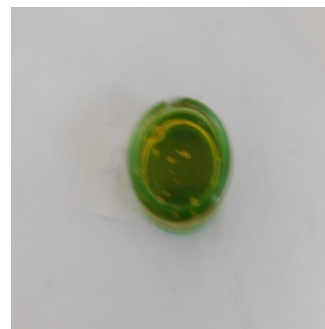
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MYCOTOXIN PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** LC/MS/MS **Deviations from SOP:**
Analyst: OL **Instrument:** Waters Acquity/TQD **None**

<u>Mycotoxin</u>	<u>Result</u> <u>(µg/kg)</u>	<u>Action Level</u> <u>(µg/kg)</u>
Aflatoxin B1	-	20
Aflatoxin B2	-	20
Aflatoxin G1	-	20
Aflatoxin G2	-	20
Ochratoxin A	-	20



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit,
RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)

1

"-" not detected above reporting limit

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Remarks:

HEAVY METAL PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** ICP/MS

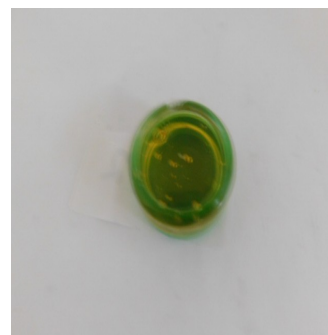
Deviations from SOP:

Analyst: OL

Instrument: PerkinElmer Elan 9000

None

<u>Heavy Metal</u>	<u>Result</u> <u>(µg/kg)</u>	<u>Action Level</u> <u>(µg/kg)</u>
Arsenic (As)	-	400
Cadmium (Cd)	-	440
Lead (Pb)	-	1000
Mercury (Hg)	-	200



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy, MS - Mass Spectroscopy, RL - Reporting Limit, AL - Action Level

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (µg/kg)

50

"-" not detected above reporting limit

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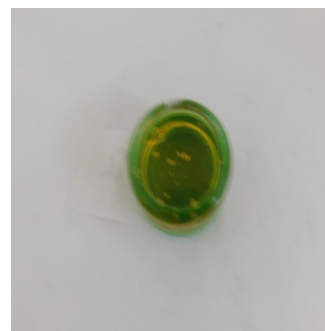
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Remarks:

MICROBIOLOGICAL PROFILE

Analysis Date/Time: 09/23/2019 1710 **Method:** Hardy Diagnostics CompactDry **Deviations from SOP:**
Analyst: OL **Instrument:** Thermo Incubator **None**

<u>Bacteria/Microbe</u>	<u>Result (CFU/g)</u>	<u>Action Level (CFU/g)</u>
Aerobic Plate Count, Total	NT	-
Escherichia Coli (E. Coli)	Absent	1
Mold	Absent	10000
Yeast	Absent	10000
Salmonella spp.	Absent	1



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level, NT - Not Tested

Color Key

RESULT < 1/2 AL
1/2 AL < RESULT < AL
RESULT > AL

Reporting Limit (CFU/g)
1

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