# Certificate of Quality Assurance

**PRODUCT NAME:** Orange Tincture
**PRODUCT STRENGTH:** 500 mg
**LOT NUMBER:** TO500-407
**OIL BATCH NUMBER:** CON018-100
**DATE OF MANUFACTURE:** 1/31/19
*Expiration date is 18 months under sealed conditions.*
**DATE OF ANALYSIS:** 1/31/19
**ACTIVE INGREDIENT:** Phytocannabinoid-Rich Hemp Oil
**INACTIVE INGREDIENTS:** Fractionated Coconut Oil (MCT), Orange Essential Oil

## Physical Attributes of Raw Hemp Oil

| Attribute | Acceptance Criteria | Result |
|---|---|---|
| Appearance | Viscous Dark Amber Oil Possible Crystal Formation | Conforms |
| Aroma | Characteristic Hemp Aroma | Conforms |
| Dissolution | Not Cloudy or Turbid, Characteristic Color | Conforms |
| Microbial Testing | Total Aerobic Count <2000 cfu/g Total Yeast and Mold <2000 cfu/g | Conforms |

## Potency of Raw Hemp Oil

| Cannabinoid | Weight % |
|---|---|
| CBD | 92.12 |
| CBG | <0.03 |
| CBN | <0.03 |
| THC | ND |
| CBC | <0.03 |
| THC-A | ND |
| CBD-A | <0.03 |

## Pesticides*

| Compound | Result | Compound | Result |
|---|---|---|---|
| Acequinocil | ND | Spinosad | ND |
| Pyrethrium | ND | Spirotetramat | ND |
| Spiromesifin | ND | Bifenazate | ND |
| Abamectin | ND | Fenoxycarb | ND |
| Imidacloprid | ND | Paclobutrazol | ND |

## Terpene Results*

| Compound | Weight % | Compound | Weight % |
|---|---|---|---|
| β-Bisabolene | 1.0-3.0 | Camphene | 0.1-0.2 |
| β-Farnesene | 1.0-2.0 | E-Farnesene | 0.1-0.2 |
| Gualol | 0.5-2.0 | Farnesol | 0.1-0.2 |
| β-Maaliene | 0.5-2.0 | α-Bisabolol | < 0.1 |
| Calarene | 0.5-1.5 | p-Cymene | < 0.1 |
| β-Caryophyllene | 0.1-1.0 | Linalool | < 0.1 |
| α-Humulene | 0.1-1.0 | Myrcene | < 0.1 |
| Cadinene | 0.1-1.0 | Phytol | < 0.1 |
| α-Gurjunene | 0.1-0.5 | Isopulegol | < 0.1 |
| d-Limonene | 0.1-0.5 | Terpinene | < 0.1 |
| Nerolidol | 0.1-0.5 | Geraniol | < 0.1 |
| α-Pinene | 0.1-0.5 | Myrcene | < 0.1 |
| Aristolene | 0.1-0.3 | γ-Terpinene | < 0.1 |
| Eucalyptol | 0.1-0.2 | δ-3-Carene | < 0.1 |

## Residual Solvents*

| Solvent | Weight % |
|---|---|
| Acetone | Compliant with USP<467> |
| Butane | Compliant with USP<467> |
| Ethanol | Compliant with USP<467> |
| Hexane | Compliant with USP<467> |
| Isobutane | Compliant with USP<467> |
| Isopropanol | Compliant with USP<467> |
| Pentane | Compliant with USP<467> |

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**Heavy Metals***

| Metal | Result |
|---|---|
| Cadmium | Compliant with USP<233> |
| Lead | Compliant with USP<233> |
| Arsenic | Compliant with USP<233> |
| Mercury | Compliant with USP<233> |

**Analysis Results for Finished Product**

| Attribute | Acceptance Criteria | Result |
|---|---|---|
| Appearance | Clear Colorless to Light Yellow Liquid | Conforms |
| Aroma | Characteristic Orange Aroma | Conforms |
| Cannabidiol Content | Label Claim ± 10% | Conforms |
| THC Content | None Detected | Conforms |

* Results based on testing of multiple batches of hemp oil raw material.

Certified by: 2-5-19

Matthew Plenert, Ph.D
Head Chemist and Quality Manager

Date