

# CERTIFICATE OF ANALYSIS

PREPARED FOR:



RELIV INTERNATIONAL, INC.  
136 CHESTERFIELD INDUSTRIAL BLVD.  
CHESTERFIELD, MO 63005

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**TEST BATCH ID: RLV-FS.750.018**

Including Lot:

**20LL063K11**

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## RELIV RLV 750mg FULL SPECTRUM TINCTURE

<b>Batch ID:</b>	RLV-FS.750.018	<b>Certificate ID:</b>	040320SR004
<b>Received:</b>	02-Apr-2020	<b>Test Type:</b>	Potency
<b>Test Date:</b>	03-Apr -2020	<b>Method:</b>	Tested in accordance of the requirements of ISO/IEC 17025:2005/2017
<b>Matrix:</b>	Concentrates/Extracts		

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Test Sample

The data presented in this report has been reviewed in an accredited laboratory. I attest that the information herein has been checked for accuracy and against quality control requirements for each test method used. These results pertain only to the test materials listed in this report. This report may not be reproduced except in its complete entirety.

Dan Krist

*Dan Krist*  
Lab Manager



Inspire Park – University of North Texas  
6170 Research Road, Suite 102  
Frisco, TX 75033

**T1: CANNABINOID PROFILE & POTENCY**

The tested sample was analyzed (using Liquid Chromatography-Mass Spectrometry, LC-MS) for plant-based cannabinoids. All collected data was compared to laboratory certified reference standards at known concentrations.

ID	Weight %	Conc. mg/mL	ID	Weight %	Conc. mg/mL
D9-THC	0.069	0.694	CBN	N/D	N/D
THCV	N/D	N/D	THCA	N/D	N/D
CBD	3.015	30.149	CBDA	0.013	0.128
CBDV	N/D	N/D	CBGA	N/D	N/D
CBG	0.029	0.288	D8-THC	N/D	N/D
CBC	0.115	1.149	exo-THC	N/D	N/D
			<b>TOTAL:</b>	<b>3.241</b>	<b>32.408 mg/mL</b>
			<b>Max THC:</b>	<b>0.069</b>	<b>0.694 mg/mL</b>
			<b>Max CBD:</b>	<b>3.015</b>	<b>30.149 mg/mL</b>

Max THC and Max CBD are calculated values for total cannabinoids assuming complete decarboxylation of the acid to the neutral form. Calculation is based on the weight loss of the acid group during decarboxylation.  
 THC Minimum Detectable Limit = 0.001 ng/mL  
 N/D = Not detected above the limits of detection (LLD)  
 trace = <0.15 mg/mL

**SUMMARY: Active Diols**

using Ultra Performance Liquid Chromatography (UPLC)

	Potency	Results per 30mL	Status
CBD	30.149 mg/serving	904.47 mg	PASS
CBG	0.288 mg/serving	8.64 mg	PASS
CBC	1.149 mg/serving	34.47 mg	PASS
CBDA	0.128 mg/serving	3.84 mg	PASS
D-9 THC	0.694 mg/serving	20.82 mg	PASS

**T2: TERPENE PROFILE**

The tested sample was analyzed (using Head Space Gas Chromatography, HS-GC) for plant-based terpenoids. All collected data was compared to laboratory certified reference standards at known concentrations.

ID	Weight %	Conc. mg/mL	ID	Weight %	Conc. mg/mL
$\beta$ -Caryophyllene	0.822	8.222	Linalool	0.033	0.331
Geraniol	0.009	0.093	Myrcene	0.060	0.601
Humulene	0.097	0.974	Terpinolene	0.054	0.542
Limonene	0.085	0.854	<b>TOTAL WT %:</b>	<b>1.160 %</b>	

Tested for but not present or B/LOQ:

$\alpha$ -Bisabolol, 3-Carene, Caryophyllene-trans, p-Cymene, Eucalyptol, Guaiol, Isopulegol, cis-Nerolidol, trans-Nerolidol,  $\alpha$ -Pinene,  $\beta$ -Pinene,  $\alpha$ -Terpinene,  $\gamma$ -Terpinene

**T3: RESIDUAL SOLVENTS**

using Headspace Gas Chromatography with Mass Spectrometry (GC/MS)

Solvent	Limits	Result	Status	Solvent	Limits	Result	Status
Acetone	5,000 ppm	N/D	PASS	Isopropyl Alcohol	5,000 ppm	N/D	PASS
Acetonitrile	410 ppm	N/D	PASS	Methanol	3,000 ppm	N/D	PASS
Benzene	1 ppm	N/D	PASS	N-Heptane	5,000 ppm	N/D	PASS
Butane	5,000 ppm	N/D	PASS	N-Hexane	290 ppm	N/D	PASS
Chloroform	1 ppm	N/D	PASS	Pentane	5,000 ppm	N/D	PASS
Dichloroethane	1 ppm	N/D	PASS	Propane	5,000 ppm	N/D	PASS
Dichloromethane	1 ppm	N/D	PASS	Toluene	890 ppm	N/D	PASS
Ethanol	5,000 ppm	N/D	PASS	Trichloroethene	1 ppm	N/D	PASS
Ethyl Acetate	5,000 ppm	N/D	PASS	Xylenes	2,170 ppm	N/D	PASS
Ethyl Ether	5,000 ppm	N/D	PASS				

N/D = Not Detected

**T4: MICROBIOLOGICAL/PATHOGENIC CONTAMINANTS<sup>1</sup>**

using Polymerase Chain Reaction (PCR)

Contaminant	Limits	Result	Status
Total Aerobic Bacterial Count	10,000 CFU/g	Conforms	PASS
Total Coliform Bacterial Count	100 CFU/g	Conforms	PASS
Total Yeast & Mold	1,000 CFU/g	Conforms	PASS
Enterobacteriaceae	100 CFU/g	Conforms	PASS
E. Coli (O157)	Present	N/D	PASS
Salmonella	Present	N/D	PASS

**T5: MYCOTOXIN ANALYSIS<sup>1</sup>**

using Liquid Chromatography with Mass Spectrometry (LC/MS)

Aflatoxin B1	20 ppb	N/D	PASS
Aflatoxin B2	20 ppb	N/D	PASS
Aflatoxin G1	20 ppb	N/D	PASS
Aflatoxin G2	20 ppb	N/D	PASS
Ochratoxin A	20 ppb	N/D	PASS

<sup>1</sup> Contaminant detection conducted in accordance with AOAC – OMA #2014.05, USP 2021, and USP 2022

**T6: HEAVY METAL ANALYSIS**

using Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

Arsenic	200 ppb	Conforms	PASS
Cadmium	200 ppb	Conforms	PASS
Lead	100 ppb	Conforms	PASS
Mercury	500 ppb	Conforms	PASS

**T7: PESTICIDE ANALYSIS**

using Liquid Chromatography with Mass Spectrometry (LC/MS)

Pesticide	Limits	Result	Status	Pesticide	Limits	Result	Status
Abamectin B1a	0.100 ppm	N/D	PASS	Imazalil	0.100 ppm	N/D	PASS
Abamectin B1b	0.100 ppm	N/D	PASS	Imidacloprid	5.000 ppm	N/D	PASS
Acephate	0.100 ppm	N/D	PASS	Kresoxim-methyl	0.100 ppm	N/D	PASS
Acequinocyl	0.100 ppm	N/D	PASS	Malathion	0.500 ppm	N/D	PASS
Aldicarb	0.100 ppm	N/D	PASS	Metalaxyl	2.000 ppm	N/D	PASS
Azoxystrobin	0.100 ppm	N/D	PASS	Methiocarb	0.100 ppm	N/D	PASS
Bifenazate	0.100 ppm	N/D	PASS	Methomyl	1.000 ppm	N/D	PASS
Bifenthrin	3.000 ppm	N/D	PASS	Mevinphos	0.100 ppm	N/D	PASS
Boscalid	0.100 ppm	N/D	PASS	Myclobutanil	0.100 ppm	N/D	PASS
Carbaryl	0.500 ppm	N/D	PASS	Naled	0.100 ppm	N/D	PASS
Carbofuran	0.100 ppm	N/D	PASS	Oxamyl	0.500 ppm	N/D	PASS
Chlorantraniliprole	10.00 ppm	N/D	PASS	Paclobotrazol	0.100 ppm	N/D	PASS
Chlorpyrifos	0.100 ppm	N/D	PASS	Permethrins	0.500 ppm	N/D	PASS
Cyfluthrin	0.100 ppm	N/D	PASS	Phosmet	0.100 ppm	N/D	PASS
Daminozide	0.100 ppm	N/D	PASS	Piperonyl Butoxide	3.000 ppm	N/D	PASS
Diazinon	0.100 ppm	N/D	PASS	Prallethrin	0.100 ppm	N/D	PASS
Dichlorvos	0.100 ppm	N/D	PASS	Propiconazole	0.100 ppm	N/D	PASS
Dimethoate	0.100 ppm	N/D	PASS	Propoxur	0.100 ppm	N/D	PASS
Dimethomorph	2.000 ppm	N/D	PASS	Pyrethrins	0.500 ppm	N/D	PASS
Ethoprophos	0.100 ppm	N/D	PASS	Pyridaben	0.100 ppm	N/D	PASS
Etofenprox	0.100 ppm	N/D	PASS	Spinetoram	0.100 ppm	N/D	PASS
Etoxazole	0.100 ppm	N/D	PASS	Spinosad	0.100 ppm	N/D	PASS
Fenhexamid	0.100 ppm	N/D	PASS	Spiromesifen	0.100 ppm	N/D	PASS
Fenoxycarb	0.100 ppm	N/D	PASS	Spirotetramat	0.100 ppm	N/D	PASS
Fenpyroximate	0.100 ppm	N/D	PASS	Spiroxamine	0.100 ppm	N/D	PASS
Fipronil	0.100 ppm	N/D	PASS	Tebuconazole	0.100 ppm	N/D	PASS
Flonicamid	0.100 ppm	N/D	PASS	Thiachloprid	0.100 ppm	N/D	PASS
Fludioxonil	0.100 ppm	N/D	PASS	Thiamethoxam	5.000 ppm	N/D	PASS
Hexythiazox	0.100 ppm	N/D	PASS	Trifloxystrobin	0.100 ppm	N/D	PASS

N/D = Not Detected

**T8: WATER ACTIVITY ANALYSIS**

using HD-3A Water Activity Meter (Measuring Range: 0.00aw – 0.98aw, no condensing)

Water	0.58	Conforms	PASS
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**T9: FILTH AND FOREIGN MATERIALS ANALYSIS**

using Microscope

No Filth Detected		Conforms	PASS
No Foreign Materials Detected		Conforms	PASS

**-END OF REPORT-**

Inspire Park – University of North Texas  
6170 Research Road, Suite 102  
Frisco, TX 75033