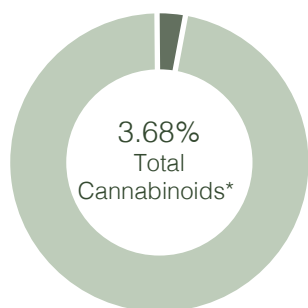


# Hugs Mango & Raspberry Tinctures Certificate of Analysis

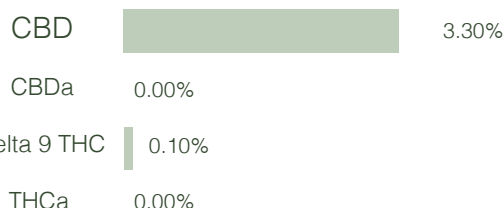
## 1000mg

**Batch ID:** Hug-MANGO1000-001    **Test ID:** 5423200.002  
**Reported:** 26-Apr-2019    **Method:** TM14  
**Type:** Concentrate  
**Test:** Potency

## CANNABINOID PROFILE



Compound	LOQ(%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.15	0.0	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.07	0.10	1.0
Cannabidiolic Acid (CBDA)	0.07	0.0	0.0
Cannabidiol (CBD)	0.04	3.30	33.1
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.08	0.0	0.0
Cannabinolic Acid (CBNA)	0.20	0.0	0.0
Cannabinol (CBN)	0.09	0.0	0.0
Cannabigerolic Acid (CBGA)	0.13	0.0	0.0
Cannabigerol (CBG)	0.07	0.14	1.4
Tetrahydrocannabivarinic Acid (THCVA)	0.13	0.0	0.0
Tetrahydrocannabivarin (THCV)	0.07	0.0	0.0
Cannabidivarinic Acid (CBDVA)	0.06	0.0	0.0
Cannabidivarin (CBDV)	0.03	0.0	0.0
Cannabichromenic Acid (CBCA)	0.11	0.0	0.0
Cannabichromene (CBC)	0.13	0.14	1.4
<b>Total Cannabinoids</b>		<b>3.68</b>	<b>36.80</b>
Total Potential THC**		0.10	1.00
Total Potential CBD**		3.30	33.00



% = % (w/w) = Percent (Weight of Analyte / Weight of Product)  
 \* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected  
 \*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.  
 Total THC = THC + (THCa \*(0.877)) and Total CBD = CBD + (CBDa \*(0.877))

## Pesticides

Sample ID	Analyzed	Sample Description	Analysis	Result	Units	Method Code
1904904-001	4/24/2019	Hug_Mango1000_001	Salmonella spp.	Negative	/10g	Salm.1a
	4/24/2019		Listeria spp.	Negative	/10g	List.2
	4/24/2019		Aerobic Plate Count	< 10	CFU/g	APC.1a
	4/24/2019		Total Coliform Bacteria	< 10	CFU/g	TC.1a
	4/24/2019		Escherichia coli	< 10	CFU/g	EC.1a
	4/24/2019		Yeast and Mold	< 10	CFU/g	Y&M.1a

## Metals

\*ND: Detected or below reportable threshold  
 All data in the following table is in parts per million (ppm)

Sample	METRC #	Arsenic	Lead	Cadmium	Mercury
295973	00120	ND	ND	ND	ND

Notes: The State of Colorado mandates the following levels for heavy metals:  
 Lead (1 ppm), Arsenic (0.4 ppm), Cadmium (0.4 ppm) and Mercury (0.2 ppm).  
 This testing is for R&D purposed only.

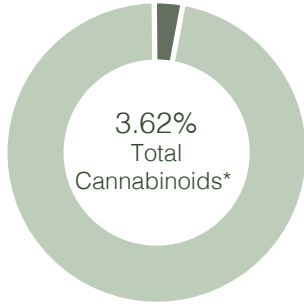
## Solvents

**Date Lab Test:** 06-Jun-2019  
**Lot Number:** IL19051-029

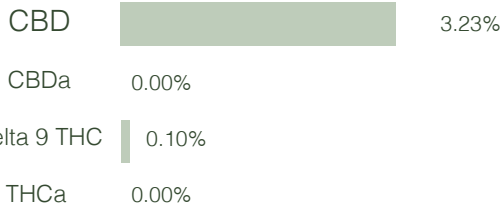
Test	Methodology	Specification	Test Results	Pass/Fail
Residual Pentane	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Acetone	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Isopropyl Alcohol	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Hexane	Headspace GC-FID	≤ 25 ppm	ND	Pass

**Batch ID:** Hug -RASP-1000-001 **Test ID:** 5423200.004  
**Reported:** 26-Apr-2019 **Method:** TM14  
**Type:** Concentrate  
**Test:** Potency

## CANNABINOID PROFILE



Compound	LOQ(%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.15	0.0	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.07	0.10	1.0
Cannabidiolic Acid (CBDA)	0.07	0.0	0.0
Cannabidiol (CBD)	0.04	3.23	32.3
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.08	0.0	0.0
Cannabinolic Acid (CBNA)	0.20	0.0	0.0
Cannabinol (CBN)	0.09	0.0	0.0
Cannabigerolic Acid (CBGA)	0.13	0.0	0.0
Cannabigerol (CBG)	0.07	0.15	1.5
Tetrahydrocannabivarinic Acid (THCVA)	0.13	0.0	0.0
Tetrahydrocannabivarin (THCV)	0.07	0.0	0.0
Cannabidivarinic Acid (CBDVA)	0.06	0.0	0.0
Cannabidivarin (CBDV)	0.03	0.0	0.0
Cannabichromenic Acid (CBCA)	0.11	0.0	0.0
Cannabichromene (CBC)	0.13	0.14	1.4
<b>Total Cannabinoids</b>		<b>3.62</b>	<b>36.20</b>
Total Potential THC**		0.10	1.00
Total Potential CBD**		3.23	32.30



% = % (w/w) = Percent (Weight of Analyte / Weight of Product)

\* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.

Total THC = THC + (THCa \*(0.877)) and Total CBD = CBD + (CBDa \*(0.877))

### NOTES

N/A

## Pesticides

Sample ID	Analyzed	Sample Description	Analysis	Result	Units	Method Code
1904904-002	4/24/2019	Hug_Rasp1000_001	Salmonella spp.	Negative	/10g	Salm.1a
	4/24/2019		Listeria spp.	Negative	/10g	List.2
	4/24/2019		Aerobic Plate Count	< 10	CFU/g	APC.1a
	4/24/2019		Total Coliform Bacteria	< 10	CFU/g	TC.1a
	4/24/2019		Escherichia coli	< 10	CFU/g	EC.1a
	4/24/2019		Yeast and Mold	< 10	CFU/g	Y&M.1a

## Metals

\*ND: Detected or below reportable threshold  
 All data in the following table is in parts per million (ppm)

Sample	METRC #	Arsenic	Lead	Cadmium	Mercury
295973	00120	ND	ND	ND	ND

Notes: The State of Colorado mandates the following levels for heavy metals: Lead (1 ppm), Arsenic (0.4 ppm), Cadmium (0.4 ppm) and Mercury (0.2 ppm). This testing is for R&D purposes only.

## Solvents

**Date Lab Test:** 06-Jun-2019  
**Lot Number:** IL19051-029

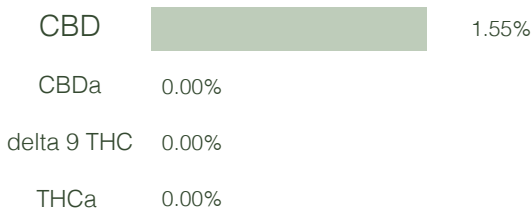
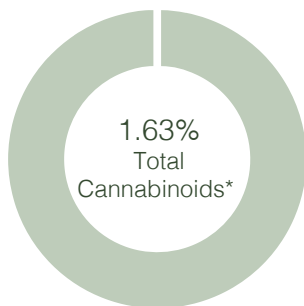
Test	Methodology	Specification	Test Results	Pass/Fail
Residual Pentane	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Acetone	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Isopropyl Alcohol	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Hexane	Headspace GC-FID	≤ 25 ppm	ND	Pass

# Hugs Mango & Raspberry Tinctures Certificate of Analysis

500mg

**Batch ID:** Hug-MANGO500-001 **Test ID:** 5423200.003  
**Reported:** 26-Apr-2019 **Method:** TM14  
**Type:** Concentrate  
**Test:** Potency

## CANNABINOID PROFILE



Compound	LOQ(%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.15	0.0	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.07	0.00	0.0
Cannabidiolic Acid (CBDA)	0.07	0.0	0.0
Cannabidiol (CBD)	0.04	1.55	15.5
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.08	0.0	0.0
Cannabinolic Acid (CBNA)	0.20	0.0	0.0
Cannabinol (CBN)	0.09	0.0	0.0
Cannabigerolic Acid (CBGA)	0.13	0.0	0.0
Cannabigerol (CBG)	0.07	0.08	0.8
Tetrahydrocannabivarinic Acid (THCVA)	0.13	0.0	0.0
Tetrahydrocannabivarin (THCV)	0.07	0.0	0.0
Cannabidivarinic Acid (CBDVA)	0.06	0.0	0.0
Cannabidivarin (CBDV)	0.03	0.0	0.0
Cannabichromenic Acid (CBCA)	0.11	0.0	0.0
Cannabichromene (CBC)	0.13	0.00	0.0
<b>Total Cannabinoids</b>		<b>1.63</b>	<b>16.30</b>
Total Potential THC**		0.00	0.00
Total Potential CBD**		1.55	15.50

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)

\* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.

Total THC = THC + (THCa \*(0.877)) and Total CBD = CBD + (CBDa \*(0.877))

## NOTES

N/A

## Pesticides

Sample ID	Analyzed	Sample Description	Analysis	Result	Units	Method Code
1904904-003	4/24/2019	Hug_Mango500_001	Salmonella spp.	Negative	/10g	Salm.1a
	4/24/2019		Listeria spp.	Negative	/10g	List.2
	4/24/2019		Aerobic Plate Count	< 10	CFU/g	APC.1a
	4/24/2019		Total Coliform Bacteria	< 10	CFU/g	TC.1a
	4/24/2019		Escherichia coli	< 10	CFU/g	EC.1a
	4/24/2019		Yeast and Mold	< 10	CFU/g	Y&M.1a

## Metals

\*ND: Detected or below reportable threshold  
 All data in the following table is in parts per million (ppm)

Sample	METRC #	Arsenic	Lead	Cadmium	Mercury
295973	00120	ND	ND	ND	ND

Notes: The State of Colorado mandates the following levels for heavy metals:  
 Lead (1 ppm), Arsenic (0.4 ppm), Cadmium (0.4 ppm) and Mercury (0.2 ppm).  
 This testing is for R&D purposed only.

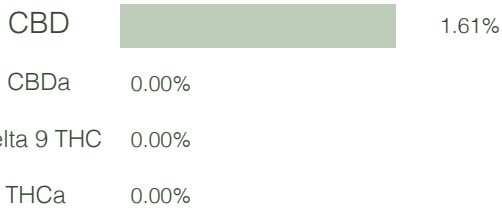
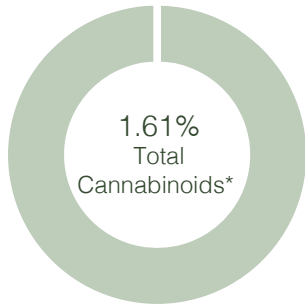
## Solvents

**Date Lab Test:** 06-Jun-2019  
**Lot Number:** IL19051-029

Test	Methodology	Specification	Test Results	Pass/Fail
Residual Pentane	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Acetone	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Isopropyl Alcohol	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Hexane	Headspace GC-FID	≤ 25 ppm	ND	Pass

**Batch ID:** Hug -RASP-500-001      **Test ID:** 5423200.005  
**Reported:** 26-Apr-2019      **Method:** TM14  
**Type:** Concentrate  
**Test:** Potency

## CANNABINOID PROFILE



Compound	LOQ(%)	Result (%)	Result (mg/g)
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.15	0.0	0.0
Delta 9-Tetrahydrocannabinol (Delta 9THC)	0.07	0.00	0.0
Cannabidiolic Acid (CBDA)	0.07	0.0	0.0
Cannabidiol (CBD)	0.04	1.61	16.1
Delta 8-Tetrahydrocannabinol (Delta 8THC)	0.08	0.0	0.0
Cannabinolic Acid (CBNA)	0.20	0.0	0.0
Cannabinol (CBN)	0.09	0.0	0.0
Cannabigerolic Acid (CBGA)	0.13	0.0	0.0
Cannabigerol (CBG)	0.07	0.00	0.0
Tetrahydrocannabivarinic Acid (THCVA)	0.13	0.0	0.0
Tetrahydrocannabivarin (THCV)	0.07	0.0	0.0
Cannabidivarinic Acid (CBDVA)	0.06	0.0	0.0
Cannabidivarin (CBDV)	0.03	0.0	0.0
Cannabichromenic Acid (CBCA)	0.11	0.0	0.0
Cannabichromene (CBC)	0.13	0.00	0.0
<b>Total Cannabinoids</b>		<b>1.61</b>	<b>16.10</b>
Total Potential THC**		0.00	0.00
Total Potential CBD**		1.61	16.10

% = % (w/w) = Percent (Weight of Analyte / Weight of Product)

\* Total Cannabinoids result reflects the absolute sum of all cannabinoids detected

\*\* Total Potential THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step.

Total THC = THC + (THCa \*(0.877)) and Total CBD = CBD + (CBDa \*(0.877))

### NOTES

N/A

## Pesticides

Sample ID	Analyzed	Sample Description	Analysis	Result	Units	Method Code
1904904-004	4/24/2019	Hug_Rasp500_001	Salmonella spp.	Negative	/10g	Salm.1a
	4/24/2019		Listeria spp.	Negative	/10g	List.2
	4/24/2019		Aerobic Plate Count	< 10	CFU/g	APC.1a
	4/24/2019		Total Coliform Bacteria	< 10	CFU/g	TC.1a
	4/24/2019		Escherichia coli	< 10	CFU/g	EC.1a
	4/24/2019		Yeast and Mold	< 10	CFU/g	Y&M.1a

## Metals

\*ND: Detected or below reportable threshold  
All data in the following table is in parts per million (ppm)

Sample	METRC #	Arsenic	Lead	Cadmium	Mercury
295973	00120	ND	ND	ND	ND

Notes: The State of Colorado mandates the following levels for heavy metals: Lead (1 ppm), Arsenic (0.4 ppm), Cadmium (0.4 ppm) and Mercury (0.2 ppm). This testing is for R&D purposes only.

## Solvents

**Date Lab Test:** 06-Jun-2019  
**Lot Number:** IL19051-029

Test	Methodology	Specification	Test Results	Pass/Fail
Residual Pentane	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Acetone	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Isopropyl Alcohol	Headspace GC-FID	≤ 500 ppm	< LOQ	Pass
Residual Hexane	Headspace GC-FID	≤ 25 ppm	ND	Pass

# Hugs Drink Mix

## 75mg

**Batch No:** COWSPA18-03  
**Reported:** 27-Mar-2018  
**Type:** Phytocannabinoid-Rich Water Soluble Powder  
**Test ID:** 032318KM

### Potency Results

Cannabinoid	Wt. (%)	(mg/g)
CBD	20.55	205.48
CBG	< 0.01	< 0.1
CBN	< 0.01	< 0.1
THC	ND**	ND**
CBC	< 0.01	< 0.1
THC-A	ND**	ND**
CBD-A	< .1	< 0.1
MAX THC	ND**	ND**
MAX CBD	20.55	205.48
TOTAL ACTIVE	20.55	205.48

### Residual Solvents\*

Propane	Compliant with USP<467>	Pentane	Compliant with USP<467>
Isobutane	Compliant with USP<467>	Isopropanol	Compliant with USP<467>
Butane	Compliant with USP<467>	Hexane	Compliant with USP<467>
Ethanol	Compliant with USP<467>	Acetone	Compliant with USP<467>

### Heavy Metals\*

Cadmium	Compliant with USP<233>
Lead	Compliant with USP<233>
Arsenic	Compliant with USP<233>
Mercury	Compliant with USP<233>

### Infused II Lab Report

Acidic Compound	mg/unit	Neutral Compound	mg/unit	Conversion Ratio <sup>1</sup>	
CBDVA	ND*	CBDV	ND*	CBDVA	ND*
THCVA	ND*	THCV	ND*	THCVA	ND*
CBDA	ND*	CBD	10.92	CBDA	100%
THCA	ND*	THC	ND*	THCA	ND*
CBCA	ND*	CBC	ND*	CBCA	ND*
CBGA	ND*	CBG	ND*	CBGA	ND*
CBNA	ND*	CBN	ND*	CBNA	ND*

\* None Reported (NR) because the compound exists at or below the limit of quantitation but above the limit of detection.

\* None Detected (ND) because the compound exists at or below the limit of detection.

\* Potency (SOP 020)

\* Units of % are (mass/mass) and reflect numbers as a fraction of 100.

<sup>1</sup> Conversion ratio indicates the amount of neutral cannabinoid compared directly to its acidic counterpart. A number close to 1 means a high neutral content. A number close to 0 indicates a high acidic cannabinoid content.

### Terpene Results\*

	Wt. (%)		Wt. (%)
β-Bisabolene	< 0.1	Camphene	< 0.1
β-Farnesene	< 0.1	E-Farnesene	< 0.1
Guaiol	< 0.1	Farnesol	< 0.1
β-Maaliene	< 0.1	α-Bisabolol	< 0.1
Calarene	< 0.1	P-Cymene	< 0.1
β-Caryophyllene	< 0.1	Linalool	< 0.1
α-Humulene	< 0.1	Myrcene	< 0.1
Cadinene	< 0.1	Phytol	< 0.1
α-Gurjunene	< 0.1	Isopulegol	< 0.1
d-Limonene	< 0.1	Terpinene	< 0.1
Nerolidol	< 0.1	Geraniol	< 0.1
α-Pinene	< 0.1	Myrcene	< 0.1
Aristolene	< 0.1	γ-Terpinene	< 0.1
Eucalyptol	< 0.1	δ-3-Carene	< 0.1

### Pesticides\*

Acequinocyl	ND**	Spinosad	ND**
Pyrethrium	ND**	Spirotetramat	ND**
Spiromesifen	ND**	Bifenazate	ND**
Abamectin	ND**	Fenoxycarb	ND**
Imidacloprid	ND**	Pacllobutrazol	ND**
Azoxystrobin	ND**	Etoazole	ND**
Imazalil	ND**	Malathion	ND**
Myclobutanil	ND**	Permethrin	ND**
Tebuconazole	ND**		

\*Batches are sent out regularly for testing, not all batches tested  
 \*\* ND = Not Detected

### Microbial Contamination

STEC	ND
Salmonella	ND
Total Yeast & Molds	ND cfu/g

# Hugs CBD Infused Gummies

**Lot No:** 050720  
**Date of Analysis:** 21-May-2019  
**Type:** CBD Infused Gummy  
**Total Active CBD per gummy:** 9.23mg

## Potency Results

Cannabinoid	Wt. (%)	(mg/g)
CBD	0.24	2.35
CBG	< 0.03	< 0.30
CBN	< 0.03	< 0.30
THC	ND**	ND**
CBC	< 0.03	< 0.30
THC-A	ND**	ND**
CBD-A	< 0.03	< 0.30
CBDV	< 0.03	< 0.30
THCV	ND**	ND**
MAX THC	ND**	ND**
MAX CBD	0.24	2.35
TOTAL ACTIVE	0.24	2.35

## Terpene Results\*

	Wt. (%)		Wt. (%)
β-Bisabolene	< 0.1	Camphene	< 0.1
β-Farnesene	< 0.1	E-Farnesene	< 0.1
Guaiol	< 0.1	Farnesol	< 0.1
β-Maaliene	< 0.1	α-Bisabolol	< 0.1
Calarene	< 0.1	P-Cymene	< 0.1
β-Caryophyllene	< 0.1	Linalool	< 0.1
α-Humulene	< 0.1	Myrcene	< 0.1
Cadinene	< 0.1	Phytol	< 0.1
α-Gurjunene	< 0.1	Isopulegol	< 0.1
d-Limonene	< 0.1	Terpinene	< 0.1
Nerolidol	< 0.1	Geraniol	< 0.1
α-Pinene	< 0.1	Myrcene	< 0.1
Aristolene	< 0.1	γ-Terpinene	< 0.1
Eucalyptol	< 0.1	δ-3-Carene	< 0.1

## Residual Solvents\*

Propane	Compliant with USP<467>	Pentane	Compliant with USP<467>
Isobutane	Compliant with USP<467>	Isopropanol	Compliant with USP<467>
Butane	Compliant with USP<467>	Hexane	Compliant with USP<467>
Ethanol	Compliant with USP<467>	Acetone	Compliant with USP<467>

## Pesticides\*

Acequinocyl	ND***	Spinosad	ND***
Pyrethrium	ND***	Spirotetramat	ND***
Spiromesifen	ND***	Bifenazate	ND***
Abamectin	ND***	Fenoxycarb	ND***
Imidacloprid	ND***	Paclobutrazol	ND***

## Heavy Metals\*

Cadmium	Compliant with USP<233>
Lead	Compliant with USP<233>
Arsenic	Compliant with USP<233>
Mercury	Compliant with USP<233>

## Microbial Contamination

STEC	None detected****
Salmonella	None detected****
Total Yeast & Molds	None detected****

\*Batches are sent out regularly for testing, not all batches tested

\*\*ND = Not Detected using a validated high-performance liquid chromatography test method, LOD = 0.03%

\*\*\*Pesticides are tested by a third party lab, ND = Not Detected at Reporting Limit (RL)

\*\*\*\*Microbial analysis performed by a third party lab, None detected reported because the presence of microbiological organisms was not detected using qPCR (STEC and Salmonella) or plating (total yeast and mold) techniques