# Clinical Studies of CBD and CBMP

Presented by Botanics & Health Inc. December 12, 2019





## Clinical Studies by Type

	Whole plant	Sativex	тнс	CBD
Total number of studies Positive trials Negative trials Mixed results Positive trials with >100 patients	<b>14</b> 11 (79%) 2 1	<b>17</b> 11 (65%) 1 4	<b>36</b> 16 (44%) 12 7	<b>3</b> 3 (100%) 0 0
Pain conditions improved in positive trials	Chronic pain, neuropathic pain, fibromyalgia, spinal cord injury, diabetic neuropathy, pain associated with Multiple sclerosis, HIV-associated neuropathy	Pain associated with Multiple sclerosis, cancer- related pain, neuropathic pain, diabetic neuropathy, pain due to rheumatoid arthritis	Multiple sclerosis, chest pain, diabetic neuropathy, headache, neuropathic pain, spasticity-related pain, chronic pain, cancer-related pain	Post-operative pain, dysautonomic syndrome, neuropathic pain
Route of administration	Tea, smoked, vapourised, inhaled	Sublingual spray	Oral (tablets, capsules, solution, sublingual spray)	Sublingual spray or oil





### Clinical Studies of CBD/CBMP

- When the evidence base for the use of CBMPs in patients with pain is considered, a total of 69 clinical studies that have been published between 1975 and 2018 were identified.
- Only 11 of these studies involved more than 100 patients, the majority being small in size.
  - In general, large patient numbers are required to sufficiently establish the effectiveness of a drug, especially when the outcome measure is subjective.
  - Nine of these larger trials reported positive effects in reducing pain.

THE USE OF CANNABIS-BASED MEDICINAL PRODUCTS (CBMPS) IN PAIN BY DR SAOIRSE O'SULLIVAN

Professor at the University of Nottingham and Science Lead of the CMC

June 27, 2019





### Transdermal Absorption CBD and THC

- The peer reviewed study published on August 21, 2007 by PMC, US National Library of Medicine, National Institutes of Health titled 'Human Cannabinoid Pharmacokinetics' by Dr. Marilyn Huestis, PhD concludes:
  - The formation of THC from CBD neither occurs by heat during smoking [22] nor by human metabolism. [section 2.1.5]
  - Cannabinoids are highly hydrophobic, making transport across the aqueous layer of the skin the rate-limiting step in the diffusion process [44][45]. [section 2.1.5]
  - Permeabilities of CBD and CBN were found to be 10-fold higher than for  $\Delta^8$ -THC. [section 2.1.5]
  - Complete Study can be found here https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2689518/





# Ingredients that promote CBD absorption through skin

- Capsaicin
  - Capsaicin is robustly absorbed from the skin upon topical administration.<sup>1</sup> Several capsaicin-based creams or patches are available as over-the-counter medications containing 0.025%-1% capsaicin and are commonly used for pain relief.
- Menthol
  - I-menthol has been shown to increase skin absorption by altering the barrier properties of the SC [21] and has acted as an enhancer of drug skin permeation.<sup>2</sup>
- Arnica Montana
  - ► A 2014 systematic review found that the available evidence did not support its effectiveness of *A. montana* at concentrations of 10% or less for pain, swelling, and bruises.<sup>3</sup>
- Noriaki Nagai, Fumihiko Ogata, Mizuki Yamaguchi, Yuya Fukuoka, Hiroko Otake, Yosuke Nakazawa and Naohito Kawasaki <u>Combination with</u> <u>I-Menthol Enhances Transdermal Penetration of Indomethacin Solid Nanoparticles International Journal of Molecular Sciences (juky 25 2019)</u>
- 2. Cameron, M; Chrubasik, S (May 31, 2013). "Topical herbal therapies for treating osteoarthritis". The Cochrane Database of Systematic Reviews (5): CD010538. doi:10.1002/14651858.CD010538. PMC 4105203. PMID 23728701.
- 3. Brito, Noe; Knipschild, Paul; Doreste-Alonso, Jorge (April 11, 2014). "Systematic Review on the Efficacy of Topical Arnica montana for the Treatment of Pain, Swelling and Bruises". Journal of Musculoskeletal Pain. 22 (2): 216-223. doi:10.3109/10582452.2014.883012.





### Transdermal cannabidiol reduces inflammation and pain-related behaviours in a rat model of arthritis

- D.C. Hammell L.P. Zhang F. Ma S.M. et. al. Published: 30 October 2015
- Funding by American Cancer Society award (RGS-00-027-04-CDD) to A.L. Stinchcomb, University of Kentucky
- Transdermal CBD gel significantly reduced joint swelling, limb posture scores as a rating of spontaneous pain, immune cell infiltration and thickening of the synovial membrane in a dose-dependent manner.
- Measurement of plasma CBD concentration provided by transdermal absorption revealed linearity with 0.6-6.2 mg/day doses
  - These data indicate that topical CBD application has therapeutic potential for relief of arthritis pain-related behaviours and inflammation without evident side-effects.





### How does CBD Stop Pain

- 2-Arachidonoylglycerol (2-AG) is an endocannabinoid, an endogenous agonist of the CB<sub>1</sub> receptor and the primary endogenous ligand for the CB2 receptor.
  - Normal level of 2-AG used to stop pain about 3 micrograms (3/1000<sup>th</sup> of a mg or 0.003mg)
- CBD is absorbed by CB receptor to promote the "STOP PAIN" response through the calcium channel.
- To create a "STOP PAIN" response
  - By mouth dosage of 10-20mg CBD, wait 2-4 hours for pain relief
  - Topical dosage of 5-10 micrograms (.005-.010 mg) required, pain relief in 10 minutes

Tru-Releaf delivers 40 micrograms CBD, THC-free per pump and each bottle contains 250 measured pumps.

Normally a One Month supply





### Current Dept of Agriculture Regulations

- Allows Hemp to contain up to 0.3% THC
- Establishes framework for destruction of non-compliant hemp
  - Most states do not destroy the non-compliant material but allows the producer to dispose and verify destruction.
- Does not establish post-harvest processing





### **Current CBD Extraction**

- Extraction of CBD from Cannabis (marijuana or Hemp) is done by:
  - ► Full spectrum
    - ► Supercritical CO<sup>2</sup> extraction
    - Chemical extraction
      - Butane
      - Alcohol
    - Infusion
  - Isolate
    - ► Supercritical CO<sup>2</sup> extraction
- During the extraction process, in a full spectrum extraction the concentration of THC and CBD may increase over the harvest test results. Typical results are 0.2 to 0.26% by weight THC





### Oral CBD THC Build Up

- Assume 0.2% THC by weight in a CBD tincture
  - This assumption is on the low side for today's products, see supplemental reports
- With a 1mL dosing, this equate to 2mg of THC ingested every day.
- In perspective, 2mg ingested is equivalent to 13mg smoked.
- At that ingestion rate a urine test will result positive for up to 36 days after ceasing ingestion.
  - Independent calculations can be done here

https://calculator.marijuanacentral.com/





## Topical CBD and THC Build Up

- Cannabinoids can be absorbed by the skin but not through the skin, unless aided as with a pico or transdermal patch.
- As stated in 'Human Cannabinoid Pharmacokinetics' the absorption of THC is ten-fold less than that of CBD
- Cannabinoids absorbed by the skin will be absorbed by CB receptors
- Topical application of cannaboids do not enter the bloodstream
- Daily, regular use of a topical CBD lotion will not affect the results of a urine test for THC.





### Tru-Releaf Topical CBD Lotion

- We grow our own special strain of hemp containing high CBD and below limit THC
  - Weekly test to confirm growth within regulation
  - Pre-harvest testing by DATCP-Wisconsin confirms commercial acceptability
- We extract the CBD from our harvest in-house.
  - Extracted CBD oil is tested for potency and purity as well as complete pesticide/toxicity/bacteria screens
- We formulate Tru-Releaf in-house
  - Tested to conform potency and purity as well as ZERO THC.
- All testing done by independent labs ISO 72015 certified. DEA-compliant and pending USDA certification

## Tru-Releaf Independent Test Results

### Tru-Releaf Test Results - Hemp Flower





BOTANICS & HEALTH INC

Samn	le CM	/32057502
ound		

Taxas Taxasa				
	Sample Name:	2 weeks		
-7.4	Submitted On:	2018-11-29		
AN	Expiration Date:	2019-11-29	Moisture:	11.5%
(http://www.cwcannalytical.com	<sup>r</sup> Sample Type:	Flower		
/image/samples/import	No. Tests:	1		

/2018/11292018/11292018

/11292018\_017\_29\_November\_2018\_November\_29\_Thursday.jpg)

ND<sup>1</sup>

ND1

#### Share These Results Here →

Cannabinoid	%	mg/g	LOQ (mp/g)	LOD (mg/g)	L.C. <sup>A1</sup>	Status
d9-THC	ND <sup>1</sup>	ND <sup>1</sup>	1.50	0.50	1.7	Pass
d8-THC	ND <sup>1</sup>	ND <sup>1</sup>	1.50	0.50		Pass
THCA	0.25	2.46	1.50	0.50	1.71	Pass
THCV	ND <sup>1</sup>	ND <sup>1</sup>	1.50	0.50		Pass
CBG	ND <sup>1</sup>	ND <sup>1</sup>	1.50	0.50	1.2	Pass
CBGA	0.34	3.36	1.50	0.50		Pass
CBN	ND <sup>1</sup>	ND <sup>1</sup>	1.50	0.50	-	Pass
CBD	0.15	1.53	1.50	0.50	1.21	Pass

Cannabinoid	2	mg/g		LOD imp/si	LC. <sup>AI</sup>	Status	
CBDA	6.37	63.66	1.50	0.50	-	Pass	
Total	7.10	71.01	NA	NA	NA	14	
Total THC	0.22	2.16	672	3.70	5 <b>.</b> 5	Pass	
Total CBD	5.74	57.36	-	-		Pass	

0.50

1.50

<sup>1</sup>ND = Not Detected

CBDV

A1L.C. = Label Claim in mg/g

O Percent Decarboxylated: -0%

Total THC: ((THCA\*0.877)+ d9-THC)

3 Total CBD: ((CBDA\*0.877)+ CBD)



Pass

-



#### Tru-Releaf Test Results - CBD OIL Page 1 of 3 TRU-RELEAF



10 22 10 10 10 10 10 10 10 10 10 10 10 10 10	
Camplo	CIND 170 1000
SUITUR	64434704300

DT S	Sample Name:	BH3 2019-03-25 2020-03-25 Infusedoil 3	
Exercise and a second	Submitted On:	2019-03-25	
III III III III II	Expiration Date:	2020-03-25	
(http://www.cwcannalytica	<sup>l.cor</sup> Sample Type:	Infusedoil	
/image/samples/import	No. Tests:	3	

/03252019

/03252019\_014\_25\_March\_2019\_March\_25\_Monday.jpg)

Share	These	Results	Here →

#### Profiling by Liquid Chromatography

Cannabinaid	%	mg/g	LOQ (mp/g)	LOD (mp/g)	LC. <sup>A1</sup>	Status
d9-THC	1.53	15.27	0.05	0.02		Pass
d8-THC	ND1	ND <sup>1</sup>	0.05	0.02		Pass
THCA	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	5	Pass
THCV	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
CBG	0.20	2.04	0.05	0.02	-	Pass
CBGA	ND1	ND <sup>1</sup>	0.05	0.02	2	Pass
CBN	0.05	0.53	0.05	0.02	2	Pass
CBD	6.95	69.49	0.05	0.02	-	Pass
CBDV	0.10	1.00	0.05	0.02	ē.	Pass

Cannabinoid	7.	mg/g	LDQ impipi	LOD (matp)	LC. <sup>A3</sup>	Status
CBDA	0.01	0.12	0.05	0.02	-	Pass
Total	8.85	88.45	NA	NA	NA	() <b>•</b> )
Total THC	1.53	15.27	-		-	Pass
Total CBD	6.96	69.60			(1993)	Pass

#### <sup>1</sup>ND = Not Detected

- <sup>A)</sup>L.C. = Lobel Claim in mg/g
- Percent Decarboxylated: ~100%
- Total THC: ((THCA\*0.877)+ d9-THC) G Total CBD: ((CBDA\*0.877)+ CBD)
- O Results are not moisture normalized. (ie., percent of total weight)









#### Chemical Residue Screening

	hð/ð	LOQ (µg/g)	LOD (µg/g)	Action Limit µg/g	Status
Abamectin	ND1	0.02	0.01	0.30	Pass
Acephate	ND1	0.12	0.04	5.00	Pass
Acequinocyl	ND1	0.01	0.01	4.00	Pass
Acetomiprid	ND1	0.01	0.01	5.00	Pass
Aldicarb	ND <sup>1</sup>	0.02	0.01	0.00	Pass
Azoxystrobin	ND1	0.01	0.01	40.00	Pass
Bifenazate	ND1	0.01	0.01	5.00	Pass
Bifenthrin	ND <sup>1</sup>	0.07	0.02	0.50	Poss
Boscalid	ND <sup>1</sup>	0.01	0.01	10.00	Poss
Captan	ND <sup>1</sup>	0.03	0.01	5.00	Pass
Carbaryl	ND1	0.01	0.01	0.50	Pass
Carbofuran	ND <sup>1</sup>	0.01	0.01	0.00	Poss
Chlorantraniliprole	ND1	0.02	0.01	40.00	Pass
Chlordane	ND1	0.05	0.02	0.00	Pass
Chlorfenapyr	ND <sup>1</sup>	0.02	0.01	0.00	Pass
Chlorpyrifos	ND1	0.05	0.02	0.00	Poss
Clofentezine	ND1	0.02	0.01	0.50	Pass
Coumaphos	ND1	0.02	0.01	0.00	Pass
Cyfluthrin	ND1	0.05	0.02	1.00	Pass
Cypermethrin	ND <sup>1</sup>	0.04	0.01	1.00	Pass
Daminozide	ND <sup>1</sup>	0.02	0.01	0.00	Pass
Diazinon	ND <sup>1</sup>	0.01	0.01	0.20	Pass
Dichlorvos	ND <sup>1</sup>	0.01	0.01	0.00	Pass

	hð/ð	LOQ (µg/g)	LOD (µg/g)	Action Limit µg/g	Status
Dimethoote	ND <sup>1</sup>	0.02	0.01	0.00	Pass
Dimethomorph	ND <sup>1</sup>	0.01	0.01	20.00	Pass
Ethoprophos	ND1	0.02	0.01	0.00	Pass
Etofenprox	0.05	0.01	0.01	0.00	Fail
Etoxazole	ND1	0.01	0.01	1.50	Pass
Fenhexamid	ND <sup>1</sup>	0.01	0.01	10.00	Pass
Fenoxycorb	ND1	0.01	0.01	0.00	Pass
Fenpyroximate	ND <sup>1</sup>	0.01	0.01	2.00	Pass
Fipronil	ND1	0.02	0.01	0.00	Pass
Flonicamid	ND <sup>1</sup>	0.02	0.01	0.20	Pass
Fludioxonil	ND <sup>1</sup>	0.01	0.01	30.00	Pass
Hexythiozox	ND <sup>1</sup>	0.02	0.01	2.00	Pass
Imazalil	ND <sup>1</sup>	0.00	0.00	0.00	Pass
Imidacloprid	ND <sup>1</sup>	0.01	0.01	3.00	Pass
Kresoxim-methyl	ND <sup>1</sup>	0.01	0.01	1.00	Pass
Malathion	ND1	0.03	0.01	5.00	Pass
Metalaxyl	ND <sup>1</sup>	0.00	0.00	15.00	Pass
Methiocarb	ND <sup>1</sup>	0.01	0.01	0.00	Poss
Methomyl	ND1	0.01	0.01	0.10	Pass
Mevinphos	ND1	0.01	0.01	0.00	Pass
Myclobutanil	ND <sup>1</sup>	0.01	0.01	9.00	Pass
Noled	ND <sup>1</sup>	0.02	0.01	0.50	Pass
Oxamyl	ND1	0.02	0.01	0.20	Pass
Paclobutrazol	ND <sup>3</sup>	0.01	0.01	0.00	Pass
Parathion methyl	ND1	0.06	0.02	0.00	Pass





	µg∥g	LOQ (µg/g)	LOD (µg/g)	Action Limit µg/g	Status
PCNB	ND <sup>1</sup>	0.02	0.01	0.20	Pass
Permethrin	ND <sup>1</sup>	0.02	0.01	20.00	Pass
Phosmet	ND <sup>1</sup>	0.01	0.01	0.20	Pass
Piperonyl butoxide	ND <sup>1</sup>	0.01	0.01	8.00	Pass
Prallethrin	ND <sup>1</sup>	0.03	0.01	0.40	Pass
Propiconazole	ND <sup>1</sup>	0.01	0.01	20.00	Pass
Propoxur	ND <sup>1</sup>	0.01	0.01	0.00	Pass
Pyrethrin	ND <sup>1</sup>	0.04	0.01	1.00	Pass
Pyridaben	ND <sup>1</sup>	0.00	0.00	15.00	Pass
Spinetoram	ND <sup>1</sup>	0.01	0.01	3.00	Pass
Spinosad	32.28	0.01	0.01	3.00	Fail
Spiromesifen	ND <sup>1</sup>	0.03	0.01	12.00	Pass
Spirotetramat	ND <sup>1</sup>	0.01	0.01	13.00	Pass
Spiroxamine	ND <sup>1</sup>	0.01	0.01	0.00	Pass
Tebuconazole	ND <sup>1</sup>	0.03	0.01	2.00	Pass
Thiacloprid	ND <sup>1</sup>	0.01	0.01	0.00	Pass
Thiamethoxam	ND <sup>1</sup>	0.01	0.01	4.50	Pass
Trifloxystrobin	ND <sup>1</sup>	0.01	0.01	30.00	Pass

\*ND = Non-Detect



### Tru-Releaf Test Results - Lotion 10mg CBD /bottle 250 measured pumps



-		Sample CW34784S01		
	States and States	Sample Name:	0B1	
oB1	MINIMUM	Submitted On:	2019-03-25	
		Expiration Date:	2020-03-25	
http://ww sites/def	vw.cwcannalytical	<sup>COI</sup> Sample Type:	Topical	
'image/so '03252019	amples/import	No. Tests:	1	

/03252019\_007\_25\_March\_2019\_March\_\_25\_Monday.jpg)

#### Share These Results Here →

#### Profiling by Liquid Chromatography

Cannabinoid	%	mg/g	Total mg <sup>A</sup>	LOQ (mg/g)	LOD (mp/g)	L.C. <sup>A1</sup>	Status
d9-THC	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
d8-THC	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
THCA	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
THCV	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
CBG	0.01	0.06	2	0.05	0.02	-	Pass
CBGA	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
CBN	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	0.05	0.02	-	Pass
CBD	0.03	0.29	5	0.05	0.02	-	Pass
CBDV	<l0q< td=""><td>&lt;1 mg/g</td><td><loq< td=""><td>0.05</td><td>0.02</td><td>÷</td><td>Pass</td></loq<></td></l0q<>	<1 mg/g	<loq< td=""><td>0.05</td><td>0.02</td><td>÷</td><td>Pass</td></loq<>	0.05	0.02	÷	Pass

Cannabinoid	%	mg/g	Total mg <sup>A</sup>		LOO Imgigi	LC. <sup>AI</sup>	Status
CBDA	0.01	0.12		0.05	0.02	( <del>*</del>	Pass
Total	0.05	0.47	0.47	NA	NA	NA	-
Total THC	ND <sup>1</sup>	ND1	ND <sup>1</sup>		(5)		Pass
Total CBD	0.04	0.40	0.40	3 <b></b> 33	127	-	Pass

<sup>1</sup>ND = Not Detected

<sup>A1</sup>L.C. = Label Claim in mg/g

O Percent Decorboxylated: ~0%

G Total THC: ((THCA\*0.877)+ d9-THC)

Totol CBD: ((CBDA\*0.877)+ CBD)

Results are not moisture normalized. (ie., percent of total weight)



# Publicly Available <u>Other</u> CBD Oil Test Results







#### CERTIFICATE OF ANALYSIS

prepared for: BALANCED HEALTH BOTANICALS 3900 S. MARISPOSA ENGLEWOOD, CO 80110

#### 1000mg Full Spectrum Tincture

Batch ID:	EV19007F3	Test ID:	2710813.037
Reported:	21-Jan-2019	Method:	TM01
Туре:	Solution		
Test:	Potency		

#### CANNABINOID PROFILE



\*\* 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))

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

#### NOTES:

Free from visual mold, mildew, and foreign matter. Density = 0.9421g/mL

#### FINAL APPROVAL





David Green

21-Jan-2019

8:01 AM

Testing results are based solely upon the sample submitted to Botanacor Services, LLC, in the condition it was received. Botanacor Services, LLC warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of Botanacor Services, LLC. ISO/IEC 17025:2005 Accredited A2LA Certificate Number 4329.02



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PROVI LABORATORIES	ERDE		Test Certifi	cate
Certificate ID: 30706 Client Sample ID: 2,500mg 3 Lot Namber: Matrix: Tincture	Ecceived:5/14/2 0ml Full Spectrum Tincture MCT Oil		CBOI	STILLERY
Authorization: Matthew Silva, Che	Signatu mical Engineer	re: <i>MHH</i> A	Lila	Date: 5/25/2018
CN: Cannabinoid Profill	e & Potency [WI-10-04] d for plant-based cannabinoids by	PJLA Acce # 8 // Convergence Chromutograp	Testing official of the reproduction restriction restr	Test Date : 5/25/2018 Test Date : 5/25/2018 Test Date : 5/25/2018 Test Date : 5/25/2018 Test Date : 5/25/2018 ed data was compared to data
collected for certified reference 30706-CN	e standards at known concentratio	ns.		
ID	Weight %	Conc.		
Δ9-THC	0.22 wt %	2.07 mg/mL	•	
THCV	ND	ND		
CBD	8.86 wt %	84.85 mg/mL		
CBDV	0.09 wt %	0.85 mg/mL		
CBG	0.04 wt %	0.38 mg/mL		
CBC	0.17 wt %	1.58 mg/mL		
CBN	ND	ND		
THCA	ND	ND		
CBDA	0.15 wt %	1.41 mg/mL		
CBGA	ND	ND		
Total	9.52 wt%	91.16 mg/mL	0% C	annabinoids (wt%) 8.9%
Max THC	0.22 wt%	2.07 mg/mL		

Max THC (and Max CBD) are calculated values for total cannab inoids a fter heating, assuming complete decarbox ylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC. ND = None detected above the limits of detection (LLD)





**HEMPWORX** 

Certificate ID: **15184** Client Sample ID: **MCT #2** Matrix: **Butter/Cooking Oil - MCT Oil** Date Received: **1/20/2017**  Hemp Worx, LLC 9205 West Russell Road, Suite 240 Las Vegas, NV 89129 Contact@HempWorx.com

Analyst: LA

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.



CN: Cannabinoid Profile & Potency [WI-10-04]

Test Date: 1/25/2017

The client sample was analyzed by Convergence Chromatography (CC). The collected data was compared to data collected for certified reference standards at known concentrations.

#### 15184-CN



ID	Weight %	Conc.
$\Delta 9$ -THC	0.21 wt %	2.00 mg/mL
THCV	-	-
CBD	5.28 wt %	49.61 mg/mL
CBDV	0.01 wt %	0.12 mg/mL
CBG	0.04 wt %	0.39 mg/mL
CBC	0.26 wt %	2.42 mg/mL
CBN	0.01 wt %	0.07 mg/mL
THCA	0.03 wt %	0.27 mg/mL
CBDA	0.16 wt %	1.52 mg/mL
CBGA	-	
Total	6.00 wt%	56.40 mg/mL
Max THC	0.24 wt%	2.23 mg/mL
Max CBD	5.42 wt%	50.95 mg/mL

#### Ratio of Total CBD to THC 22.6:1

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Max THC = (0.877 x THCA) + THC.





Froper Lab Testing Procedures				
APLE: 1285	800 Entourage	e Batch 7		
Compound	Values (mg/g)	Mass %		
CBD	35	3.5		
CBDA	8.8	0.88		
THCA	0.24	0.024		
Δ9-THC	0.28	0.028		
CBG	< 0.060	0.0060		
CBDV	0.86	0.086		
CBN	0.13	0.013		
Pb	<0,00010	<0,000010		
Cd	<0,00010	<0,000010		
As	<0.00020	<0.000020		
Lin.	<0.000010	<0.0000010		

Lab tests edited for brevity