



### Certificate of Analysis

Name of Client:	Hempworks
Sample Name:	500 mg (15 mL) Tincture
Date of Analysis	6/5/2019
Batch Number:	60519

Results		
	wt %	mg/g
Cannabidiolic acid - CBDA	ND	ND
Cannabigerol - CBG	0.07%	0.7
Cannabidiol - CBD	2.83%	28.3
Cannabinol - CBN	0.02%	0.2
Delta-9-Tetrahydrocannabinol - d9-THC	0.26%	2.6
Tetrahydrocannabinolic acid - THCA	ND	ND

CBD and THC Equivalents		
	wt %	mg/g
CBD Equivalents	2.83%	28.3
THC Equivalents	0.26%	2.6

<b>CBD:THC Ratio</b>	<b>11:1</b>
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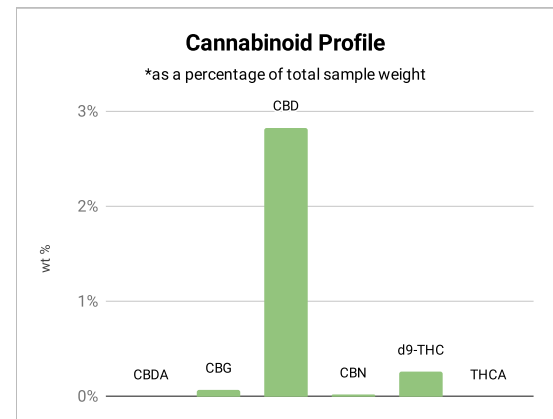
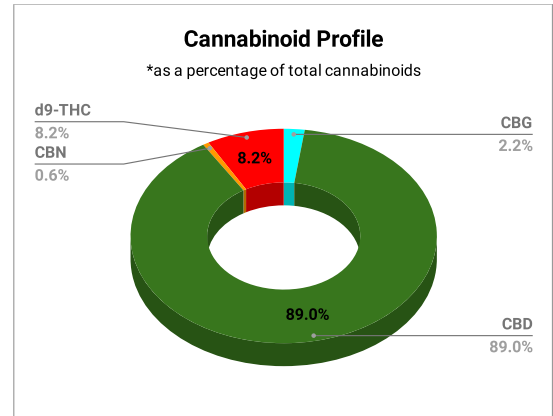
#### CBD and THC Equivalents Explained

CBD Equivalents = 0.877\*CBDA + CBD  
 THC Equivalents = 0.877\*THCA + d9-THC

Upon heating CBDA and THCA transform into CBD and d9-THC, respectively. This process is called decarboxylation because a carboxyl group is lost in the process. It is standard to calculate the actual weight percent/concentration of both CBD and THC as the weight percent/concentration assuming all of the CBDA and THCA are decarboxylated.

Lab Personnel Signature: *Griffin Lynch*  
 Date: 6/5/2019

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#### Details of Testing

High performance liquid chromatography (HPLC) was used to determine concentrations of CBD, CBG, CBDA, CBN, d9-THC, and THCA. Any result reported back as ND (not detected) is below our lower limit of detection. Our lower limit of detection is 0.005%. Results are reported on a dry weight basis.

#### Disclaimer

These results are solely for the purposes of research and development. This report is only for the sample listed above and may not be reproduced except in its entirety.