FLORA RESEARCH LABORATORIES, LLC

ANALYTICAL REPORT

June 3, 2020 FRL ID: 200518002 & 200518003

DATE: June 3, 2020

REPORT: Phytoforensic Quantification of Cannabidiol (CBD) by High Performance Liquid Chromatography-Ultraviolet Detection (HPLC-UV)

CLIENT: Buddha Teas

JOB: J20-0518-B

FRL Sample ID	Client Sample ID	Client Sample Description
200518002	A5641	Golden Milk Powder
200518003	34290	CBD Isolate

INTRODUCTION:

The client contacted FRL to outline and run a multi-step project surrounding the client's Cannabidiol (CBD) isolate raw material and one Golden Milk Powder blend. In finished product form, the Golden Milk Powder blend should contain 10mg of CBD per serving. The three phases of the project are defined below:

1. Analysis of powdered CBD raw material for potency by HPLC-UV
2. Matrix blank analysis of the Golden Milk Powder blend without the CBD ingredient (the Golden Milk Powder blend was provided to FRL without the CBD)
3. Analysis of the lab mixed Golden Milk Powder blend matrix blanks with CBD ingredient spiked in on the bench (prepared at the same relative concentration as would be found in the finished product form)

PHASE 1 RESULTS:

Cannabidiol	Result (%w/w)
200518003 Sample	99.6
200518003 Duplicate	98.2
200518003 Triplicate	99.9
200518003 Mean	99.2

%w/w = Percent by Weight

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PHASE 2 RESULTS:

Cannabidiol (CBD)	Result
200518002 Golden Milk Powder	ND

ND = No peak detected in blank matrix within the retention window of CBD

PHASE 3 RESULTS: (Average of Triplicate Analyses)

Cannabidiol (CBD)	Results (mg/serving)	% Recovery
200518002 Golden Milk Powder	10.1	99.5

mg/serving = milligrams per serving
Based on a serving size of 1 Tsp (2.575 grams), per client specification
% Recovery = Percent CBD recovered from spiked matrix

DISCUSSION:

For Phase 1 testing, 50mg of the CBD raw material was extracted in 50mL of Methanol mixed by vortexing for 30 seconds and sonicating for 15 minutes. This extraction protocol yielded a triplicate average of 99.2%w/w for the CBD raw material. See Phase 1 Results Table for replicate data. This extraction protocol was used going forward for Phase 2 & 3 testing. For Phase 2 testing, 250mg of non-spiked Golden Milk Powder were weighed into 50mL centrifuge tubes, extracted, and analyzed by HPLC-UV for any potential peaks within the retention window of CBD. Running the blank, non-spiked Golden Milk Powder allowed for FRL to rule out any potential co-eluting peaks, which could interfere with an accurate quantification of CBD in Phase 3 testing. No peaks were observed within the retention window of CBD for the Golden Milk Powder. For Phase 3 testing, lab bench mixes were prepared by mixing the CBD raw material and the blank Golden Milk Powder using the client provided finished product specifications. Once mixed and homogenized, 250mg of the lab prepared bench mix was taken and extracted using the protocol defined in Phase 1. The spiked Golden Milk Powder meet allowable percent recovery requirements for data reporting. See Phase 3 Results Table for data.

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CONCLUSION:

Based on the data analyzed from Phase 1, the CBD raw material is consistent with the client specified value of 99.3% (reported value = 99.2%). The chromatographic method used by FRL separates analytes in matrix in such a way that allows for no co-eluting peaks with CBD. This allows for an accurate quantification of CBD by HPLC-UV. The spiking study performed in Phase 3 suggests that both the extraction and instrument method of analysis used by FRL are sufficient for the analysis of CBD in the matrices submitted by the client. If additional matrices are to be tested for routine CBD potency in the future, it is suggested to submit a blank tea blend in order to determine potential co-eluting compounds, similar to what was done in Phase 2 of this project.

Assayed/Reported By:

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Date: 6-3-20

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Date: 06/03/20