

# Test Report

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Test Report No.: FR002224\_S20000106

Date: 16<sup>th</sup> January 2020

Customer:	CiiTECH
Analysis 1:	Cannabinoid screen by HPLC-UV
Analysis 2:	Cannabidiol purity by qNMR
Matrix:	CBD isolate
Received:	6 <sup>th</sup> of January 2020
Analysed	7 <sup>th</sup> to 10 <sup>th</sup> of January 2020

## 1. BACKGROUND

This report describes the analytical testing of a CBD sample product.

The term "CBD" is an acronym for cannabidiol, which is one of several cannabinoids, or chemical compounds, that are found in cannabis and hemp plants.

The sample was analysed for the concentrations of 6 cannabinoids:

- **CBC**, Cannabichromene
- **CBDA**, Cannabidiolic acid
- **CBG**, Cannabigerol
- **CBN**, Cannabinol
- **THC**, Tetrahydrocannabinol
- **THCA**, Tetrahydrocannabinolic acid

The sample was also analysed for the purity of:

- **CBD**, Cannabidiol

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## 2. SAMPLE DESCRIPTION

The sample was received at the laboratory in satisfactory condition and stored at ambient temperature prior to analysis.

The sample was received in the manufacturers (Provacan) packaging with all seals intact.

A unique identifying number was assigned to the sample using the Fera laboratory information management system. The relevant sample details are shown in the table below.

Sample information				
Fera reference	Customer reference	Description	Batch/LOT code	Best before
S20-000106	160	1g Pure CBD Isolate pot	IS0270819B	08/2021

## 3. SAMPLING AND ANALYSIS

### 3.1 Cannabinoids

**Cannabidiol (CBD) Purity** - The sample was analysed in triplicate by quantitative Nuclear Magnetic Resonance spectroscopy (qNMR) to determine purity of CBD. qNMR is a primary ratio method and therefore accurate purity of a known compound can be determined by comparison of its spectral response to that of an internal standard of known purity and concentration.

Average values and confidence intervals (95%) are calculated for the sample and reported.

**Cannabichromene (CBC), cannabidiolic acid (CBD-A), cannabigerol (CBG), cannabinol (CBN) tetrahydrocannabinol (THC) and tetrahydrocannabinolic acid (THC-A)** - The sample was extracted into solvent and diluted before the analytes were determined using LC-UV. Accuracy of the method was assessed by analysing in-house reference material with known concentrations of CBD alongside the sample.

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## 4. RESULTS

### 4.1 Cannabidiol purity

Sample identification			CBD (%)*	95% Confidence Interval
Fera reference	Customer reference	Description		
S20-000106	160	1g Pure CBD Isolate pot	99.2	1.4

\* Average of 3 measurements

### 4.2 Cannabichromene, cannabidiolic acid, cannabigerol, cannabinol, tetrahydrocannabinol and tetrahydrocannabinolic acid

Sample identification			Cannabinoid concentrations (mg/kg)					
Fera reference	Customer reference	Description	CBC	CBD A	CBG	CBN	THC	THC A
S20-000106	160	1g Pure CBD Isolate pot	182	142	ND	ND	307	ND

ND = Not Detected

Limits of detection:

CBC: 50 mg/kg, CBDA: 50 mg/kg, CBG: 50 mg/kg, CBN: 50 mg/kg, THC: 50 mg/kg, THCA: 50 mg/kg

<b>Issuing Officer:</b>	Mark Harrison, Analytical chemist	<b>Date:</b>	15/01/2020
<b>Countersigning Manager:</b>	Michael Dickinson, Senior analytical chemist	<b>Date:</b>	16/01/2020

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