

# Determination of 11 cannabinoids in Biomass using \$14,990 HPLC from CTInstruments

Accurate determination of cannabinoids in biomass, such as cannabis or industrial hemp flower, is important from sales to regulatory compliance point of view. We present an easy-to-use, accurate, reliable, and affordable HPLC for measuring 11 cannabinoids in a variety of samples. This application note describes analysis of biomass.

## HPLC Features

- Reciprocating Pump
- Rheodyne 7725i Injector
- CTI HPLC Software
- UV/VIS Detector
- Temperature-controlled Column Compartment

## HPLC Specifications

<b>Flow Rate</b>	0.001 - 5mL/min
<b>Max Pressure</b>	6,300 psi
<b>Flow Accuracy</b>	±1%
<b>Flow Precision</b>	RSD <0.1%
<b>Qualitative Repeatability</b>	RSD ≤0.2% (Naphthalene/ Methanol standards)
<b>Quantitative Repeatability</b>	RSD ≤0.5% (Naphthalene/ Methanol standards)
<b>Wavelength Range</b>	180 - 680nm
<b>Spectrum Bandwidth</b>	8nm
<b>Wavelength Accuracy</b>	±1nm
<b>Wavelength Precision</b>	Below 0.1nm
<b>Noise</b>	≤0.25X10 <sup>-5</sup> AU

## HPLC Column Specifications

<b>Column Type</b>	C18, SS body
<b>Dimensions</b>	150x4.6mm
<b>Packing</b>	5µm particles
<b>Guard Column</b>	C18



**2020 COMMERCIAL CANNABIS AWARDS WINNER**

Best Cannabinoids Potency Testing Solutions Manufacturer - North America



[cannabishplcanalyzer.com](http://cannabishplcanalyzer.com)

## Biomass Sample

Sample Type	Cannabis Flower
Strain	Meat Breath
Condition	Dry



## PROCESS

### 1. Extraction

Extraction of cannabinoids from dry biomass is the initial step in the analysis.

#### Extraction Parameters

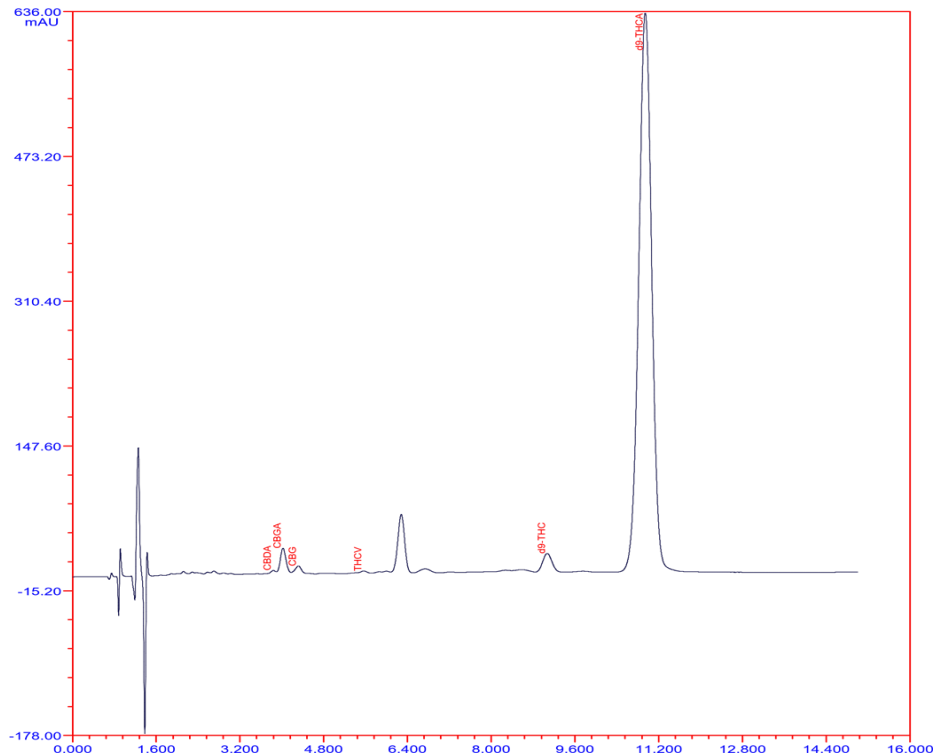
Sample Weight	200mg
Sample Preparation	Grinding/Homogenization
Extraction Solvent	Methanol
Extraction Conditions	15 minutes at room temperature
Dilution	In acetonitrile

### 2. Injection and HPLC Analysis

After the extraction is completed, diluted extract is injected into HPLC for analysis.

#### Chromatographic Conditions

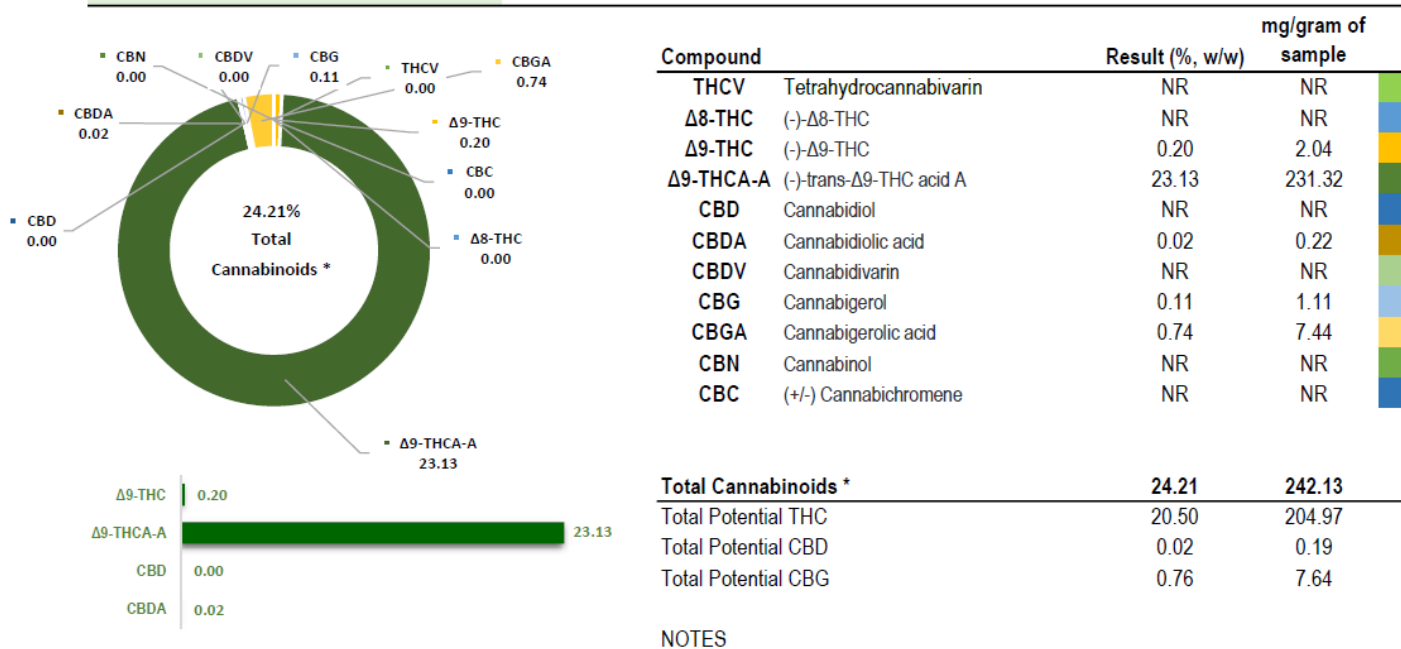
Mode	Isocratic
Temperature	30°C
Detection	UV at 220nm
Mobile Phase	Buffer:Acetonitrile
Flow Rate	1.2mL/min



### 3. Report Generation

After the analysis is completed, CTI HPLC software auto-processes the chromatogram, followed by export to custom lab report generation program in MS Excel (highly customizable and automated report generation for ease of use).

#### CANNABINOID PROFILE



#### Lower Limit of Quantification (LLOQ)

The lower limit of quantification (LLOQ) is the lowest amount of a cannabinoid in a sample that can be quantitatively determined with suitable precision and accuracy using the corresponding method and dilution rates. All values below this threshold are reported as NR - None Reported.

Compound	LLOQ (% w/w)
THCV	0.03
Δ8-THC	0.05
Δ9-THC	0.04
Δ9-THCA-A	0.05
CBD	0.02
CBDA	0.02
CBDV	0.02
CBG	0.02
CBGA	0.02
CBN	0.02
CBC	0.05

#### Instrument Calibration & Quality Control

Date of Quality Control	Standard	Standard Concentration (ug/mL)	Measured Concentration (ug/mL)	Delta (%)	PASS/FAIL	Notes
10-Mar-21	Benzoic acid	1002.9	1016.0	1.3%	PASS	
10-Mar-21	CBD	100.5	100.1	-0.4%	PASS	