CTInstruments

CTInstruments Ltd. is ASTM International Organizational Member (www.astm.org)

CTInstruments Ltd. is a member of ASTM Committee D37 on Cannabis

ASTM Organizational Member

Determination of Cannabinoids in Extracts using HPLC from CTInstruments

Accurate determination of cannabinoids in extracts is important from pricing and 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 cannabis extracts.

HPLC Features

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

HPLC Specifications

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

HPLC Column Specifications

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

CTInstruments Ltd. Commercial Cannabis Awards 2020 Best Cannabinoids Potency Testing Solutions Manufacturer - North America

2020 COMMERCIAL CANNABIS AWARDS WINNER

Best Cannabinoids Potency Testing Solutions Manufacturer - North America

cannabishplcanalyzer.com

Web: cannabishplcanalyzer.com

Email: support@cannabistestingsimplified.com

Tel: +1 (941) 467-8386

CTInstruments Ltd.

100-111 5th Ave SW, Suite 396

Calgary, AB T2P 3Y6 Canada

CTInstruments

CTInstruments Ltd. is ASTM International Organizational Member (www.astm.org)

CTInstruments Ltd. is a member of ASTM Committee D37 on Cannabis

Sample Information

Sample Type	Shatter
Strain	Ayahuasca Purple
Condition	Dry

PROCESS

1. Extraction

Extraction of cannabinoids from shatter is the initial step in the analysis.

Extraction Parameters

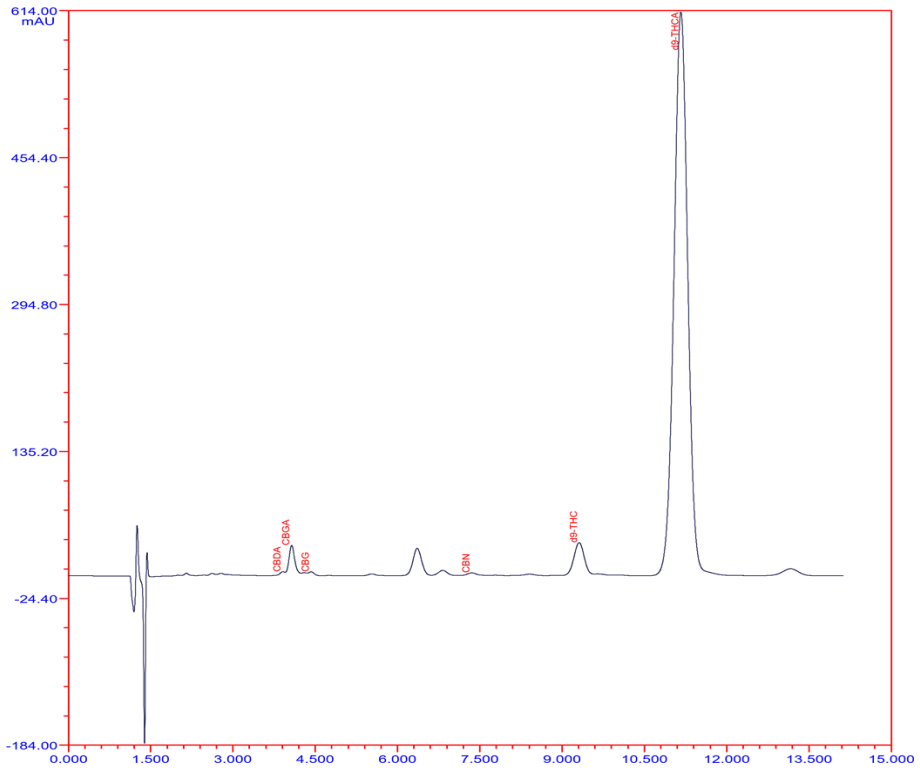
Sample Weight	60mg
Sample Preparation	none
Extraction Solvent	acetonitrile
Extraction Conditions	dissolved at room temperature
Dilution	in acetonitrile

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



Web: cannabishplcanalyzer.com

Email: support@cannabistestingsimplified.com

Tel: +1 (941) 467-8386

CTInstruments Ltd.

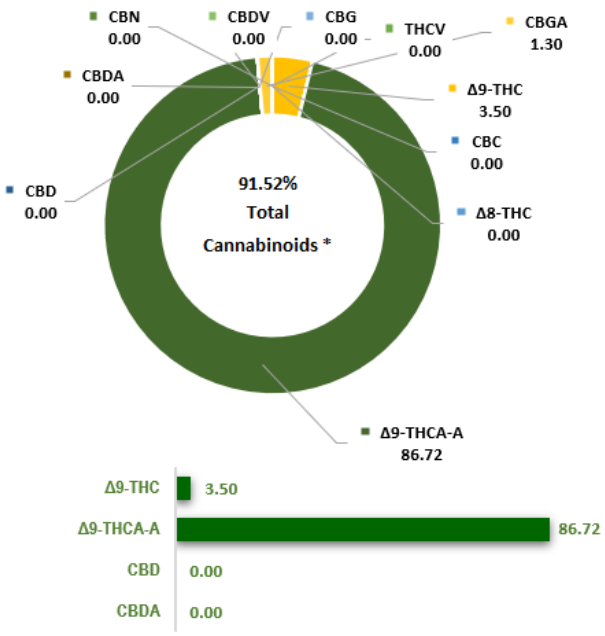
100-111 5th Ave SW, Suite 396

Calgary, AB T2P 3Y6 Canada

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



Compound		Result (%, w/w)	mg/gram of sample
THCV	Tetrahydrocannabivarin	NR	NR
Δ8-THC	(-)-Δ8-THC	NR	NR
Δ9-THC	(-)-Δ9-THC	3.50	34.96
Δ9-THCA-A	(-)-trans-Δ9-THC acid A	86.72	867.19
CBD	Cannabidiol	NR	NR
CBDA	Cannabidiolic acid	<0.06	<0.56
CBDV	Cannabidivarin	NR	NR
CBG	Cannabigerol	<0.06	<0.63
CBGA	Cannabigerolic acid	1.30	13.03
CBN	Cannabinol	<0.05	<0.53
CBC	(+/-) Cannabichromene	NR	NR

Total Cannabinoids *	**91.52**	**915.18**
Total Potential THC	79.57	795.69
Total Potential CBD	0.00	0.03
Total Potential CBG	1.14	11.43

NOTES

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	Tetrahydrocannabivarin	0.09
Δ8-THC	(-)-Δ8-THC	0.16
Δ9-THC	(-)-Δ9-THC	0.11
Δ9-THCA-A	(-)-trans-Δ9-THC acid A	0.14
CBD	Cannabidiol	0.07
CBDA	Cannabidiolic acid	0.06
CBDV	Cannabidivarin	0.05
CBG	Cannabigerol	0.06
CBGA	Cannabigerolic acid	0.05
CBN	Cannabinol	0.05
CBC	(+/-) Cannabichromene	0.14

Instr

Date of Quality Control	Standard	Standard Concentration (ug/mL)	Measured Concentration (ug/mL)	Delta (%)	PASS/FAIL	Notes
28-Mar-21	Benzoic acid	1002.9	1012.0	0.9%	PASS	
28-Mar-21	(-)-Δ9-THC	100.5	100.4	-0.1%	PASS	