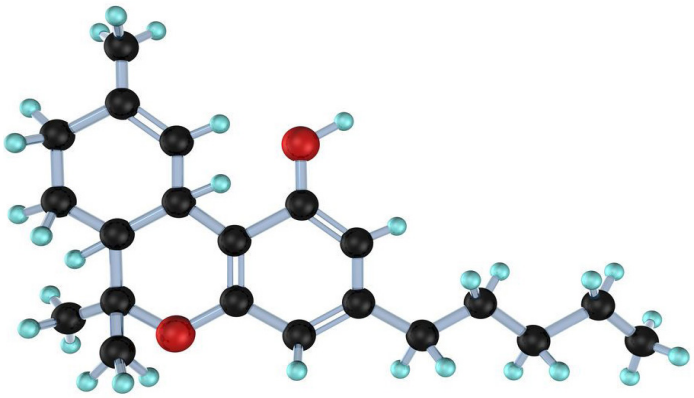
Determination of THC in Marijuana Samples Using Solid Phase Extraction and LC-MC/MS



UCT Part Numbers

CSTHC206
Clean Screen® THC
200 mg, 6 mL

SLDAGDC21-5UM
Selectra® DA Guard Column
10 x 2.1 mm, 5 µm

SLDA100ID21-5UM
Selectra® DA Column
100 x 2.1 mm, 5 µm

SPHPHO7001-5
0.1M Phosphate Buffer pH 7

Procedure:

1. Extraction

a) Add 100 mg of marijuana sample into a clean glass sample tube
b) Add 5 mL of methanol and cap
c) Sonicate for approximately 60 minutes at room temperature
d) Centrifuge for 10 minutes at 3000 rpm
e) Aliquot 0.5 to 1 mL of methanol extract into a clean glass sample tube
f) Add internal standard and mix
g) Add 4 mL of 0.1 M phosphate buffer (pH 7) and mix

2. Condition Clean Screen® THC Extraction Column

a) 1 x 3 mL CH_3OH
b) 1 x 3 mL D.I. H_2O
c) 1 x 1 mL 0.1 M phosphate buffer (pH = 7.0)

Note: Aspirate at < 3 inches Hg to prevent sorbent drying out.

3. Apply Sample

a) Load sample at 1-2 mL / minute.

4. Wash Column

a) 1 x 3 mL D.I. H_2O
b) 1 x 3 mL 0.1 M phosphate buffer (pH 7.0)
c) Dry column (5 minutes at > 10 inches Hg)

5. Elute THC

a) 1 x 3 mL hexane/ethyl acetate/acetic acid (49:49:2)
b) Collect eluate at 1 to 2 mL / minute.

6. Dry Eluate

a) Evaporate to dryness under nitrogen < 40°C
b) Reconstitute in 100 µL of mobile phase

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Instrument Conditions	
Column	Selectra® DA 100 x 2.1 mm, 5 µm
Column Temperature	40 °C
Mobile phase	CH_3OH w/ 0.1% formic acid: DI H_2O w/ 0.1% formic acid (75:25)
Flow rate	0.5 mL/ minute
Detector	API 4000 MS/MS

MS Parameters	
Polarity	ESI^+
Spray Voltage V	4500 V
Source Temperature	650 °C
Curtain Gas	10
Gas 1	40
Gas 2	40
CAD Gas	Medium
Dwell Time	150 ms

Compound	Q1	Q3	Time/ms	DP/volts	EP/volts	CXP/volts	CE/volts
THC (1)	315.2	193.2	46	4	18.8	29	4
THC (2)	315.2	123.1	46	4	18.8	45	4
*THC-D3 (1)	318.2	196.2	46	4	18.8	29	4
*THC-D3 (2)	318.2	123.2	46	4	18.8	43	4

Note: Q1=Precursor Ion; Q3=Product Ion; DP= Declustering Potential; EP= Entrance Potential; CEP= Collision Entrance Potential; CE= Collision Energy; CXP= Collision Exit Potential
*Internal Standard

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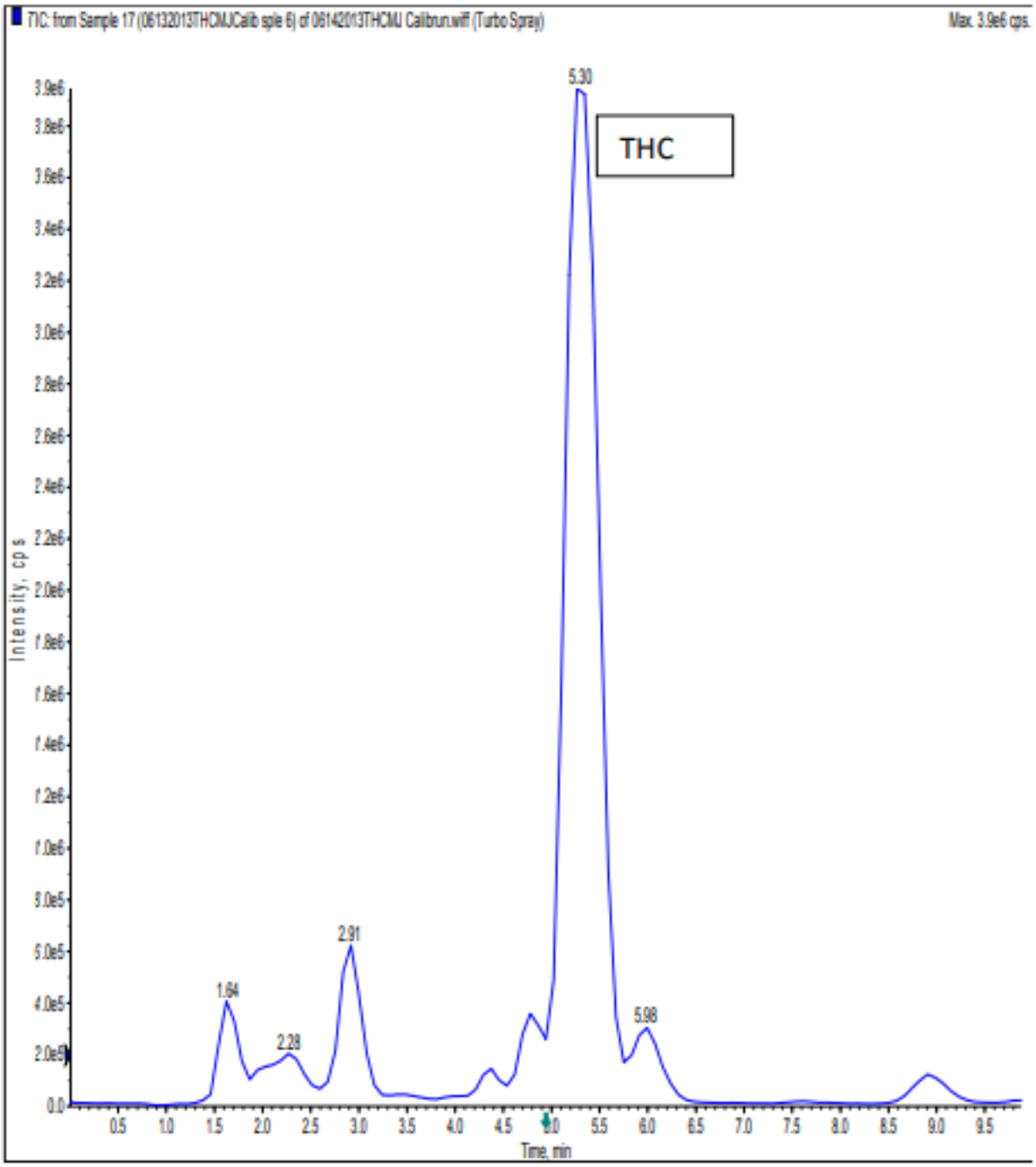
Chromatogram of THC extracted from Marijuana Sample



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UCT, LLC • 2731 Bartram Road • Bristol, PA 19007 800.385.3153 • 215.781.9255
www.unitedchem.com Email: methods@unitedchem.com

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