

THC, THC-OH, and THC-COOH CONFIRMATIONS IN WHOLE BLOOD BY LC-MS/MS or GC-MS USING 100 mg STYRESCREEN® SSTHC



UCT Featured Products

SSTHC116

Styre Screen® THC
100 mg 6 mL Tube

SBSTFA-1-1

SELECTRA-SIL® BSTFA
w/ 1% TMCS

SMTBSTFA-1-1

SELECTRA-SIL® MTBSTFA
w/ 1% TBDMCS

SPYR-0-50

SELECTRA-SIL® Pyridine

SLDA100ID21-5UM

Selectra® DA HPLC Column,
100 x 2.1mm, 5 µm

Procedure:

1) Sample Preparation

To 1-2 mL whole blood add appropriate internal standards prepared in alcohol.
Add drop-wise 2.5 mL Ice Cold acetonitrile.
Mix thoroughly and centrifuge.
Decant acetonitrile into a clean tube.
Evaporate acetonitrile under a stream of air or nitrogen to ~ 200 µL. Add 2 mL D.I. H₂O (pH of H₂O must be ~6.0-7.0)

2) Apply Sample

Load at 1 to 2 mL/minute.

3) Wash

Wash with 2 mL (84: 15: 1) D.I. H₂O: Acetonitrile: NH₄OH (made fresh daily). Dry column under full vacuum or pressure for 10-15 minutes.

4) Elute THC & Metabolites

1 x 3 mL Hexane/ Ethyl Acetate/ Glacial Acetic Acid (49: 49:2). Collect at 1-2 mL/ minute.

5) Dry Eluate

Evaporate to dryness at < 40 °C.

6) Reconstitute / Derivatize

LC-MS/MS: Reconstitute sample in 100 µL of mobile phase. Inject 5 µL.

GC-MS: Dissolve residue in 50 µL of pyridine and 50 µL BSTFA w/ 1% TMCS. Overlay with N₂ and cap. Mix/vortex. React 30 minutes at 70 °C; Cool and inject 2 µL

Alternate Derivatization

Derivatize with MTBSTFA w/ 1% TBDMCS:

Dissolve residue in 50 µL of pyridine and 50 µL MTBSTFA w/ 1% TBDMCS. Overlay with N₂ and cap. Mix/vortex. React 30 minutes at 70 °C; Cool and inject 2 µL.



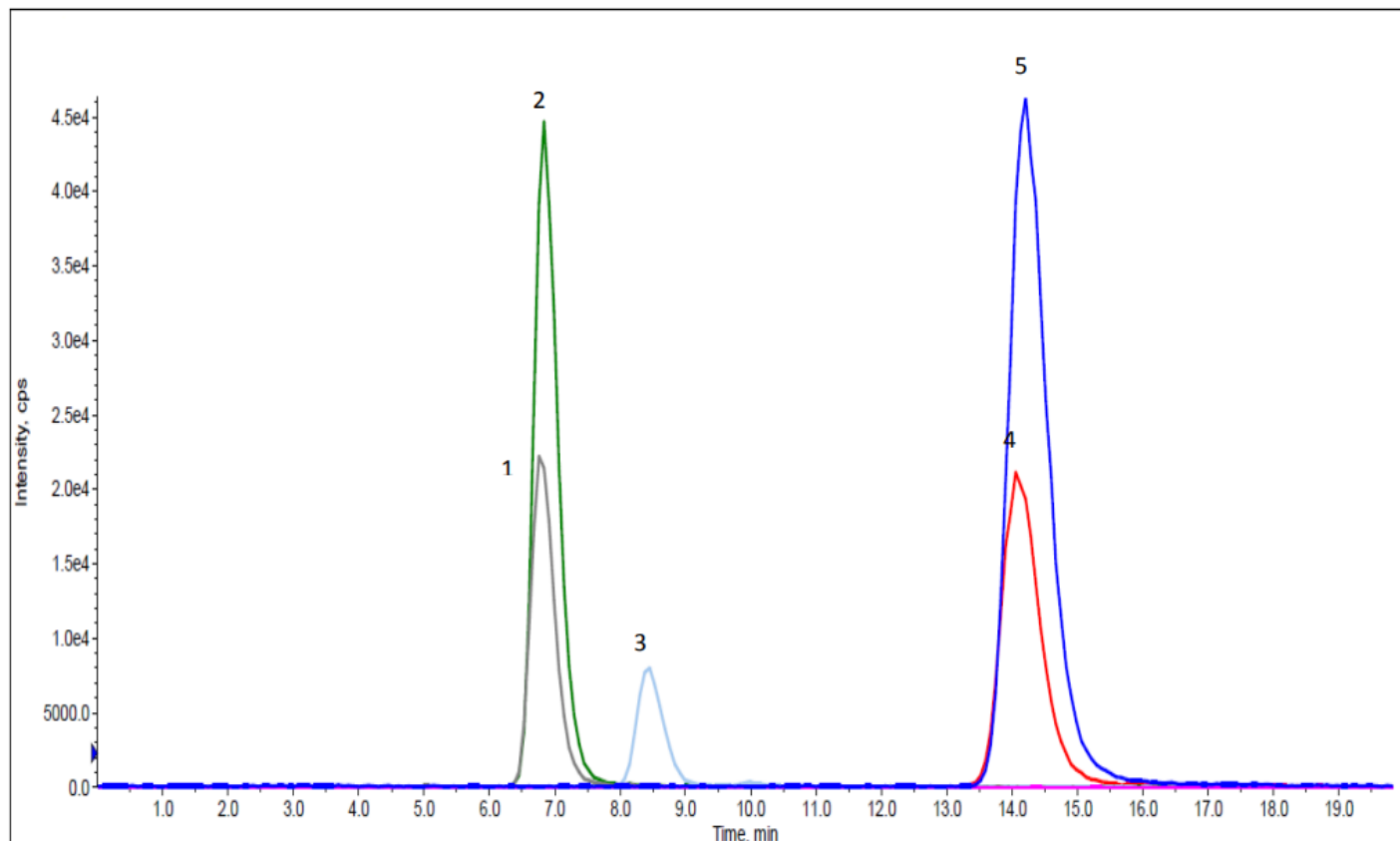
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INSTRUMENT CONDITIONS (LC-MS/MS):



Analyte	MRM Transitions		Relative Retention Time (min)
	Q1	Q3	
1. HYDROXY DELTA 9-THC D ₃	334.0	152.0	1.21
2. HYDROXY DELTA 9-THC	330.9	227.0	1.30
3. CARBOXY DELTA 9-THC	334.0	185.0	1.60
4. CARBOXY DELTA 9-THC D ₃	348.3	152.0	2.65
5. DELTA 9-THC	318.2	165.1	2.75
6. DELTA 9-THC D ₃	315.2		

LC-MS/MS Parameters	
Mobile Phase A	0.1% Formic Acid in D.I. H ₂ O
Mobile Phase B	0.1% Formic Acid in Methanol
Flow Rate	0.5 mL/minute
Reconstitute	100 µL
Instrument	API 4000 Qtrap MS/MS with Agilent 1200 Binary Pump SL
LC Column	Selectra® DA HPLC Column 100 x 2.1 mm 5 µm
Polarity	Negative/Positive
Injection Volume	5 µL



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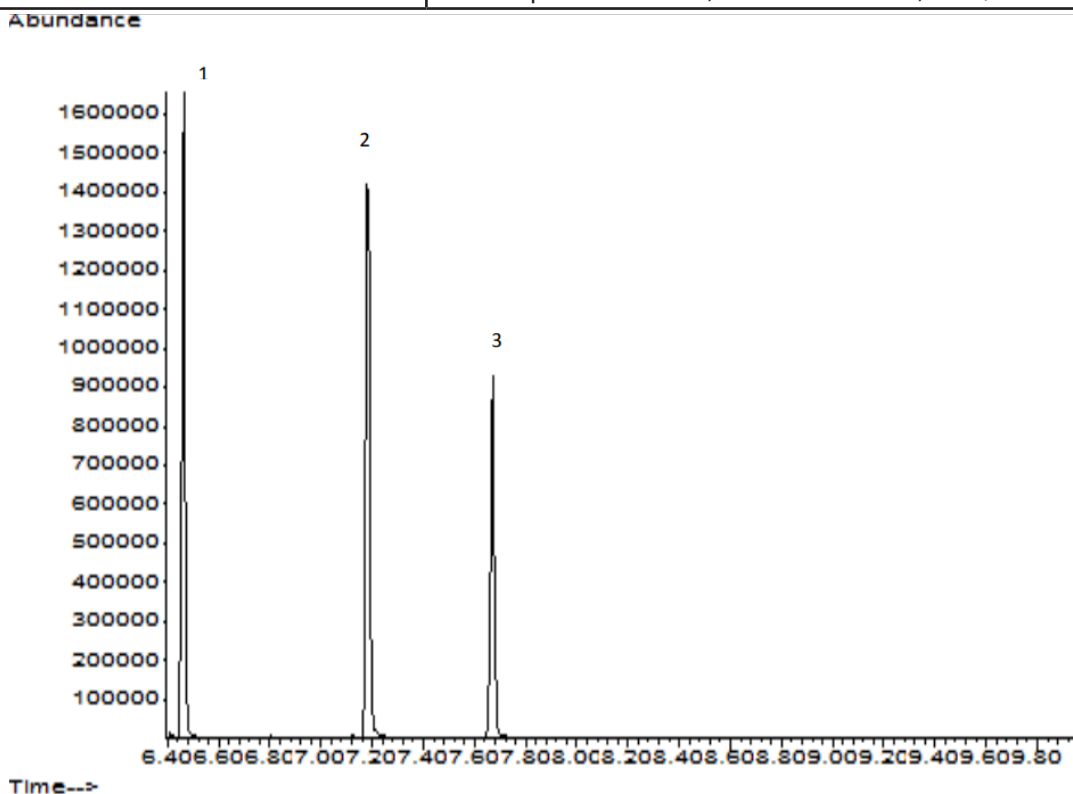
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Isocratic		
Time	%A	%B
0.00	25	75
20.00	STOP	STOP

INSTRUMENT CONDITIONS (GC/MS):

GC/MS Parameters	
GC/MS	Agilent - 5975C XL / 6890N GC/MS System with 7683B ALS System
GC capillary column	Rxi-5sil MS 30m X 0.25 mm, 0.25 μ m
Injector	2 μ L Splitless, 250 $^{\circ}$ C
Oven temperature program	100 $^{\circ}$ C for 1 min; 40 $^{\circ}$ C/min to 280 $^{\circ}$ C; 10 $^{\circ}$ C/min to 310 $^{\circ}$ C for 1.5 min
Carrier gas	Helium
MSD condition	Aux temperature: 280 $^{\circ}$ C, MS Source: 250 $^{\circ}$ C, MS Quad: 150 $^{\circ}$ C



TMS IONS:

Analyte	Quantify Ion	Qualifier Ion 1	Qualifier Ion 2	Relative Retention Time (min)
THC-D ₃	389.25	374.3		
THC	386.30	371.3	303.15	6.463
THC-OH D ₃	374.30	477.4		
THC-OH	371.3	474.4	459.3	7.178
THC-COOH D ₃	374.3	491.4		
THC-COOH	371.2	488.4	473.3	7.670



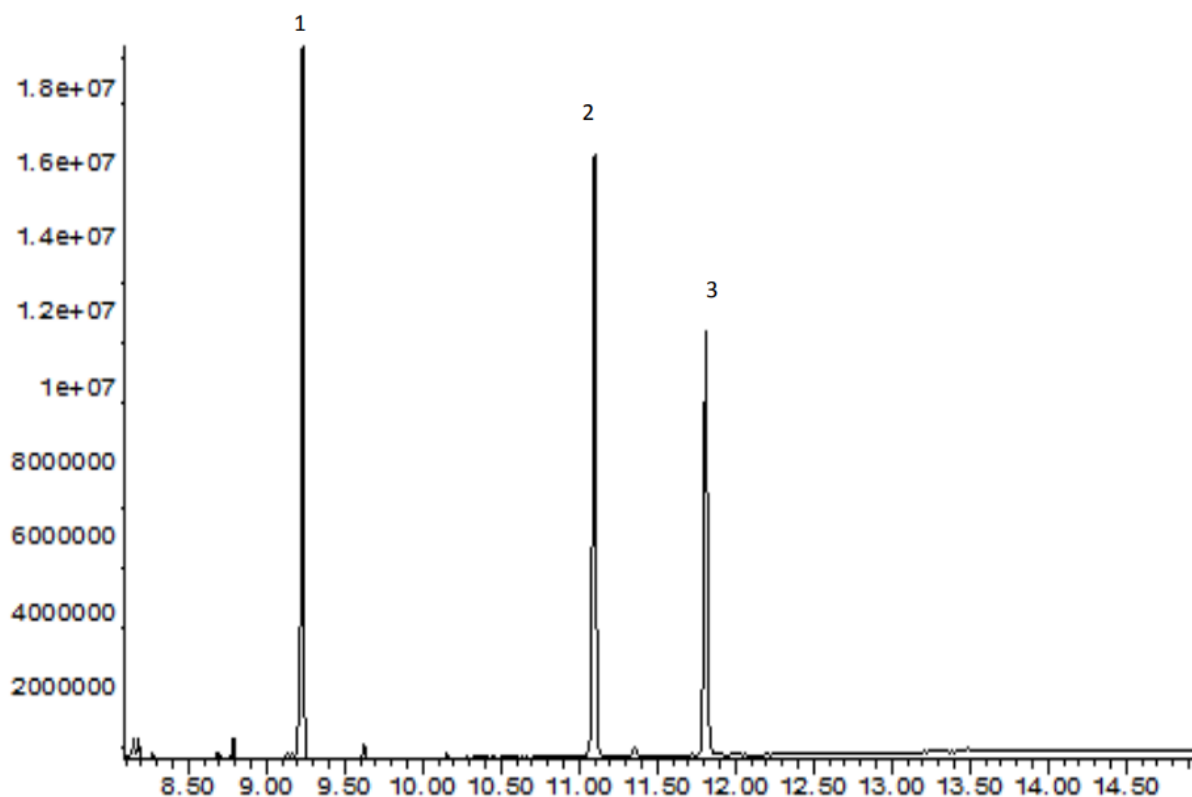
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Abundance



Time-->

TBDMS IONS:

Analyte	Quantify Ion	Qualifier Ion 1	Qualifier Ion 2	Relative Retention Time (min)
THC-D ₃	374.2	431.3		
THC	371.2	428.3	372.2	9.209
THC-OH D ₃	416.3	417.3		
THC-OH	413.3	369.2	414.3	11.075
THC-COOH D ₃	416.3	518.3		
THC-COOH	413.3	515.3	572.4	11.783



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