

Determination of Amphetamines in Urine Samples Using Solid Phase Extraction and LC-MS/MS



UCT Part Numbers

CSDAU206
Clean Screen® DAU
200 mg, 6 mL

SLPFP50ID21-3UM
Selectra® PFPP (50 x 2.1 mm,
3 µm) HPLC Column

SPPHO6001-5
Select pH buffer pouch
100 mM phosphate pH 6.0

Procedure:

1. Sample Preparation

- Add 1 mL of pH 6 phosphate buffer (100 mM) into a clean sample tube and add internal standards.
- Add 1 mL of urine and mix.
- 2 mL of pH 6 phosphate buffer (100 mM) and mix.
- Centrifuge for 10 minutes at 3000 rpm.

2. SPE Column Conditioning

- 1 x 3 mL Methanol.
- 1 x 3 mL D.I. H₂O.
- 1 x 1 mL 100 mM phosphate buffer (pH 6.0).

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

3. Apply Sample

- Load sample at 1 to 2 mL/minute

4. Wash Column

- 1 x 3 mL D.I. H₂O.
- 1 x 3 mL 1 M Acetic Acid.
- 1 x 3 mL Methanol.
- Dry column (5 minutes at > 10 inches Hg).

5. Elute Amphetamines

- Add 1 x 3 mL methylene chloride:
Isopropanol: ammonium hydroxide (78:20:2).
Note: Prepare a fresh solution of the methylene chloride: isopropanol: ammonium hydroxide mixture by adding 2 mL of ammonium hydroxide to 20 mL of isopropanol. Mix and add 78 mL of methylene chloride.
- Collect eluate at a rate of 1 to 2 mL / minute.
- Add 100 µL of 1% HCl in methanol to eluate.
- Vortex mix.

6. Dry Eluate

- Evaporate to dryness under nitrogen < 40°C.
- Add 100 µL of mobile phase and vortex mix.



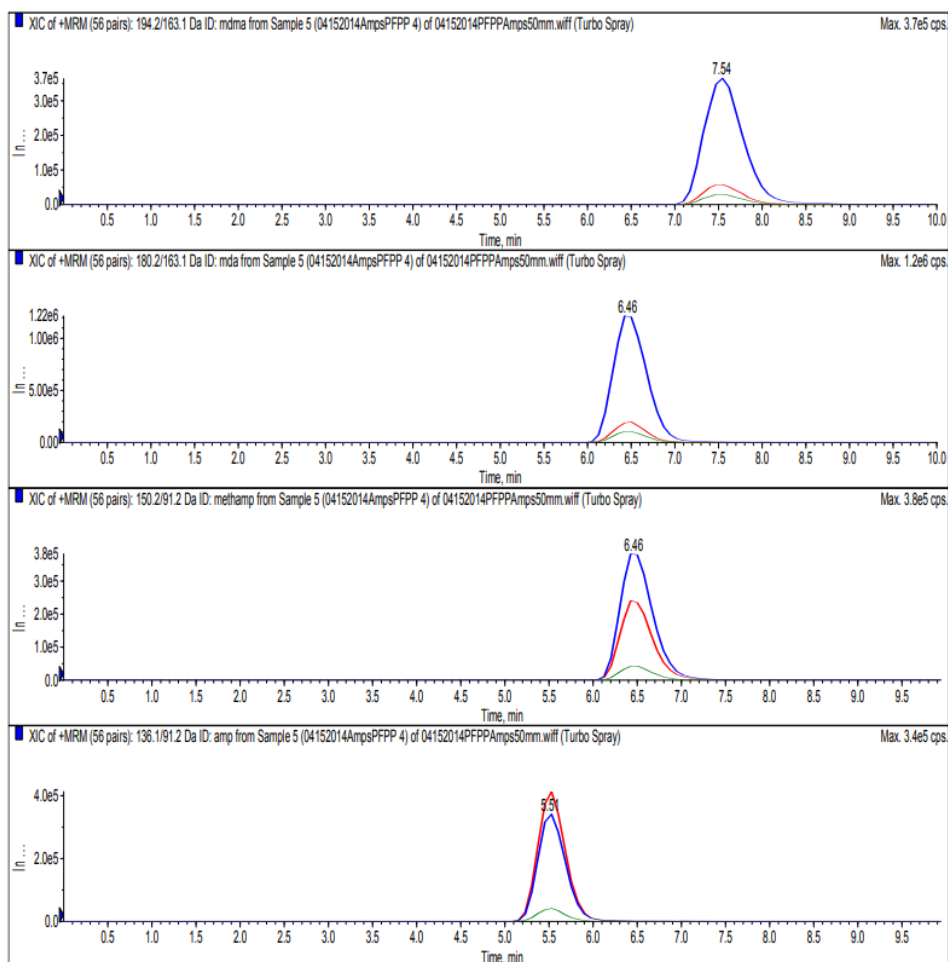
Instrument Conditions

Column	Selectra® PFPP 50 x 2.1 mm; 3 µm
Column Temperature	40 °C
Gradient/Mobile Phase	Isocratic - H ₂ O with 1% Formic Acid: MeOH with 1% Formic acid (70:30)
Flow Rate	0.3 mL/ minute
Detector	API 4000 MS/MS

Mass Spec Table

Compound	RT (min)	Precursor Ion	Product Ion 1	Product Ion 2	DP	EP	CE 1	CE 2	CXP 1	CXP 2
Amphetamine	5.51	136.1	91.2	119.1	51	10	23	13	16	8
Methamphetamine	6.46	150.1	91.2	119.1	61	10	29	17	16	8
MDA	6.46	180.2	163.1	105.1	46	10	15	31	10	6
MDMA	7.54	194.2	163.1	105.1	76	10	19	63	12	14

Chromatogram of Select Amphetamines



4104-02-01

UCT, LLC • 2731 Bartram Road • Bristol, PA 19007 800.385.3153 • 215.781.9255

www.unitedchem.com Email: methods@unitedchem.com

©UCT, LLC 2014 • All rights reserved

