

APPLICATIONS

Fast Screening Method for 86 Forensic Analytes in Human Urine by LC-MS/MS

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Overview

This application demonstrates a rapid screening method of 86 compounds in human urine using a Luna[®] C18(2) LC column and a SCIEX[®] QTRAP[®] 4500 MS/MS system. The combination of liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS) allows for simultaneous screening of across multiple compound classes

Sample Preparation

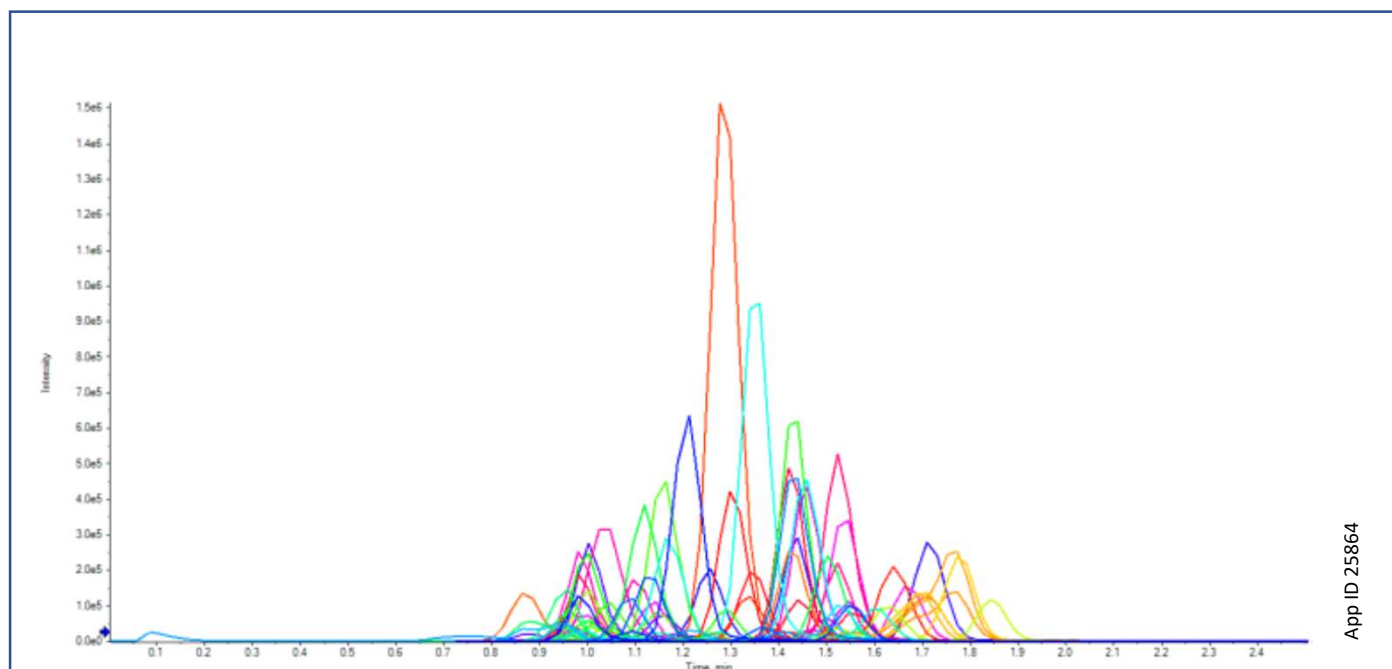
- 100 μ L urine sample was mixed with 25 μ L IMCS RapidHydrolysis Buffer, 20 μ L IMCSzyme and 10 μ L IS. Hydrolysis time was typically between 30 and 60 min at 55°C.
- After hydrolysis was complete, 0.8 mL of diluent was added to the mixture.
- The mixture was then centrifuged at 21,000 g for 15 min.
- The supernatant was transferred to a glass vial with insert for analysis by LC-MS/MS.

LC-MS/MS Conditions

Column: Luna[®] 5 μ m C18(2)
Dimension: 50 x 2.0 mm
Part No.: [00B-4252-B0](#)
Mobile Phase: A: 5 mM Ammonium formate in water
 B: 0.1 % Formic acid in methanol
Gradient:

Time (min)	%B
0.0	5
1.8	95

Flow Rate: 0.2 - 1.0 mL/min
Temperature: Ambient
Injection: 5 μ L
Detection: MS/MS (SCIEX[®] [QTRAP[®] 4500](#))
Sample: See Table 1 for list of 86 compounds



App ID 25864

Table 1. 86 Compounds and Internal Standards

Compounds	Compounds	Compounds	Internal Standards
6-MAM	Gabapentin	Naltrexone	Amphetamine-d5
7-Aminoclonazepam	Hydrocodone	N-desmethyltapentadol	Fentanyl-d5
7-Hydroxymitragynine	Hydromorphone	Norbuprenorphine	JWH 018 4-OH pentyl-d5
Acetyl Fentanyl	Imipramine	Norcodeine	Methadone-d3
Alpha-Hydroxyalprazolam	JWH-018 4-OH pentyl	Nordiazepam	Methamphetamine-d5
Alpha-Hydroxymidazolam	JWH-018 pentanoic acid	Norfentanyl	Morphine-d6
Alpha-Hydroxytriazolam	JWH-019 6-OH hexyl	Norhydrocodone	
Alpha-PPP	JWH-073 3-OH butyl	Nomeperidine	
Alpha-PVP	JWH-073 butanoic acid	Noroxycodone	
Alprazolam	JWH-081 5-OH pentyl	Norpropoxyphene	
AM-2201 4-OH pentyl	JWH-122 5-OH pentyl	Nortriptyline	
Amitriptyline	JWH-210 5-OH pentyl	O-Desmethyltramadol	
Amphetamine	JWH-250 4-OH pentyl	Oxazepam	
Benzoylcegonine	Lorazepam	Oxycodone	
Buphedrone	MDA	Oxymorphone	
Buprenorphine	MDEA	PCP	
Carisoprodol	MDMA	Pregabalin	
Clomipramine	MDPV	Propoxyphene	
Codeine	Mepidine	Protriptyline	
Cotinine	Mephedrone	RCS4-4-OH-pentyl	
Cyclobenzaprine	Meprobamate	Ritalinic Acid	
Desalkylflurazepam	Methadone	Sufentanil	
Desipramine	Methamphetamine	Tapentadol	
Desmethyldoxepin	Methedrone	Temazepam	
Dextromethorphan	Methylone	Tramadol	
Diazepam	Methylphenidate	Zolpidem	
Dihydrocodeine	Midazolam		
Doxepin	Mitragynine		
EDDP	Morphine		
Fentanyl	Naloxone		

Key Features of Luna® LC Media Paired with QTRAP® Technology

- Rapid, robust approach allows direct detection of 86 forensic analytes in human urine with simple sample preparation and fast chromatography.
- *Scheduled* MRM™ Algorithm enables the use of fast chromatography without loss of data integrity, maintaining sufficient data points across the peak for reliable quantification and higher throughput
- Targeted MRM workflow allows sensitive detection with high selectivity, reduced matrix effects and higher confidence in results.
- Additional QTRAP technology allows for enhanced scan functions that further improve confidence in results, by generating high sensitivity MS/MS spectra to enhance confidence of identification of analytes, enabling spectral identification and library searching.

APPLICATIONS

Need a different column size or sample preparation format?

No problem! We have a majority of our available dimensions up on www.phenomenex.com, but if you can't find what you need right away, our super helpful Technical Specialists can guide you to the solution via our online chat portal www.phenomenex.com/ChatNow.

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