

APPLICATIONS

LC-MS/MS analysis of 23 Synthetic Cathinones (Bath Salts) from Urine using Luna[®] Omega 3 μm Polar C18



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Overview

This application features an expanded bath salt panel that includes recently DEA-scheduled bath salts 4-MEC, alpha-PVP, butylone, 3-FMC, and 4-FMC¹ from urine. This method is a simple dilute and shoot sample preparation followed by HPLC using Luna Omega 3 μm Polar C18. Polar C18 phase chemistry achieved great peak shape and resolution of isomeric pairs 3-MEC/4-MEC and ethylone/butylone.

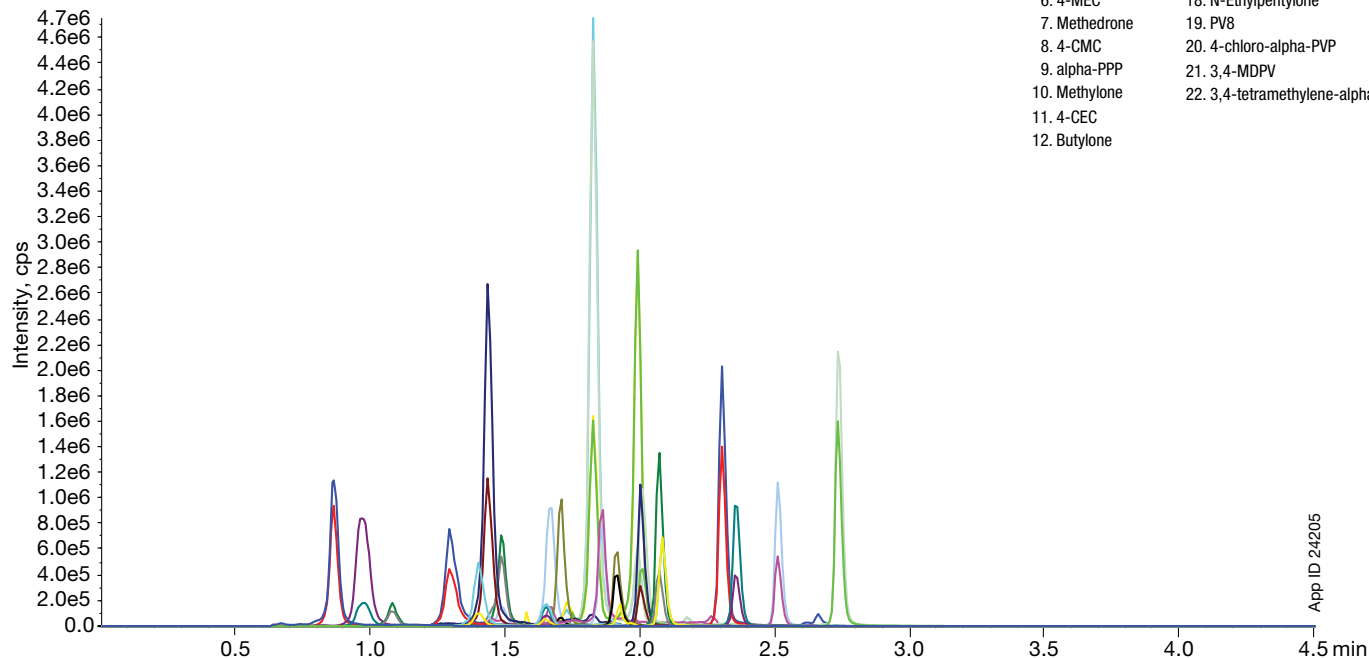
Sample Preparation

“Dilute-and-Shoot” method without enzymatic hydrolysis. Donor urine sample was spiked with standards at 25 ng/mL and diluted 1:4 with mobile phase A prior to injection.

LC-MS/MS Conditions

Column:	Luna Omega 3 μm Polar C18	
Dimension:	50 x 2.1 mm	
Part No.:	00B-4760-AN	
Recommended Guard:	SecurityGuard™ Ultra Cartridges: AF0-7600	
Mobile Phase:	A: 0.1 % Formic acid in Water B: 0.1 % Formic acid in Methanol	
Gradient:	Time (min)	B (%)
	0.01	15
	2	75
	3	75
	3.1	15
	4.5	controller stop
Flow Rate:	0.5 mL/min	
Temperature:	40 °C	
Injection Volume:	5 μL	
Instrument:	Agilent® 1260	
Detection:	MS/MS 4500 Triple Quad (SCIEX), ESI+	
Sample:	1. Methcathinone	13. Ethylone
	2. Buphedrone	14. alpha-PVP
	3. Mephedrone	15. Pentylone
	4. 3-FMC/4-FMC	16. 4-chloro-alpha-PPP
	5. 3-MEC	17. Pyrovalerone
	6. 4-MEC	18. N-Ethylpentylone
	7. Methedrone	19. PV8
	8. 4-CMC	20. 4-chloro-alpha-PVP
	9. alpha-PPP	21. 3,4-MDPV
	10. Methylone	22. 3,4-tetramethylene-alpha-PVP
	11. 4-CEC	
	12. Butylone	

Extracted Ion Chromatogram of Bath Salts in Urine



App ID 24205

¹Office of the Federal Register. Schedules of Controlled Substances: Placement of 10 Synthetic Cathinones into Schedule I. March 01, 2017. Available at <https://www.gpo.gov/fdsys/pkg/FR-2017-03-01/pdf/2017-03974.pdf>.

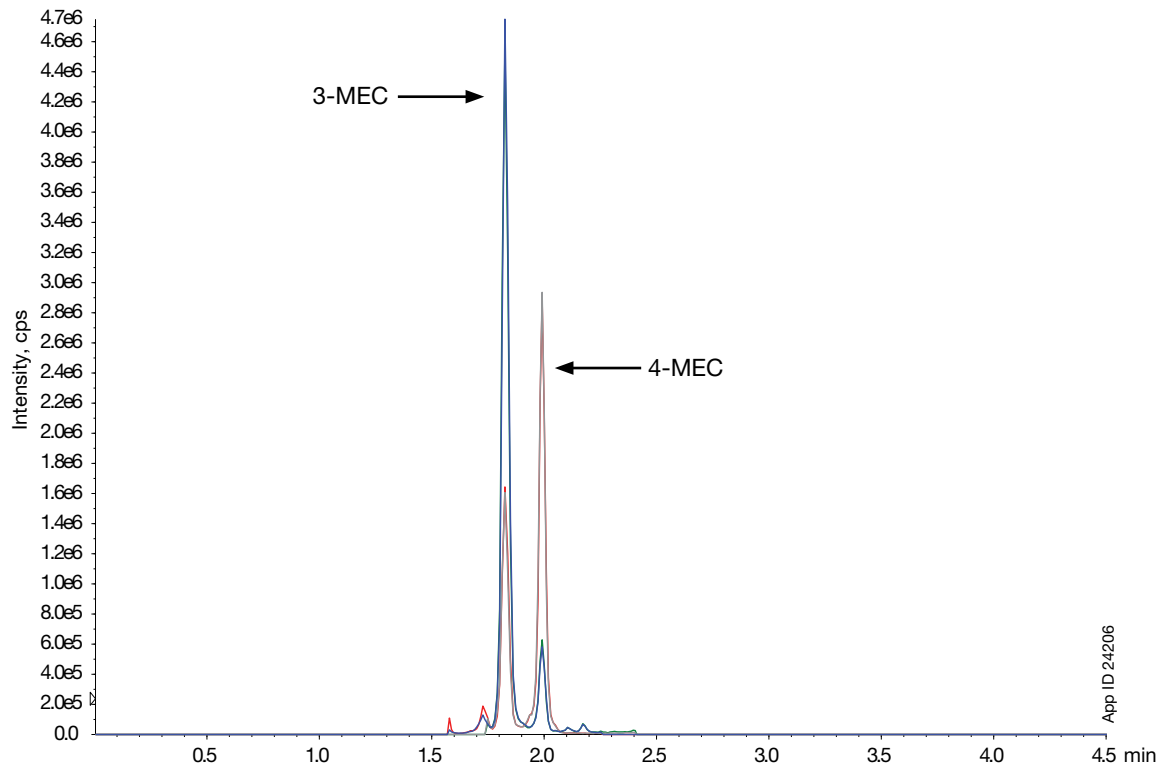
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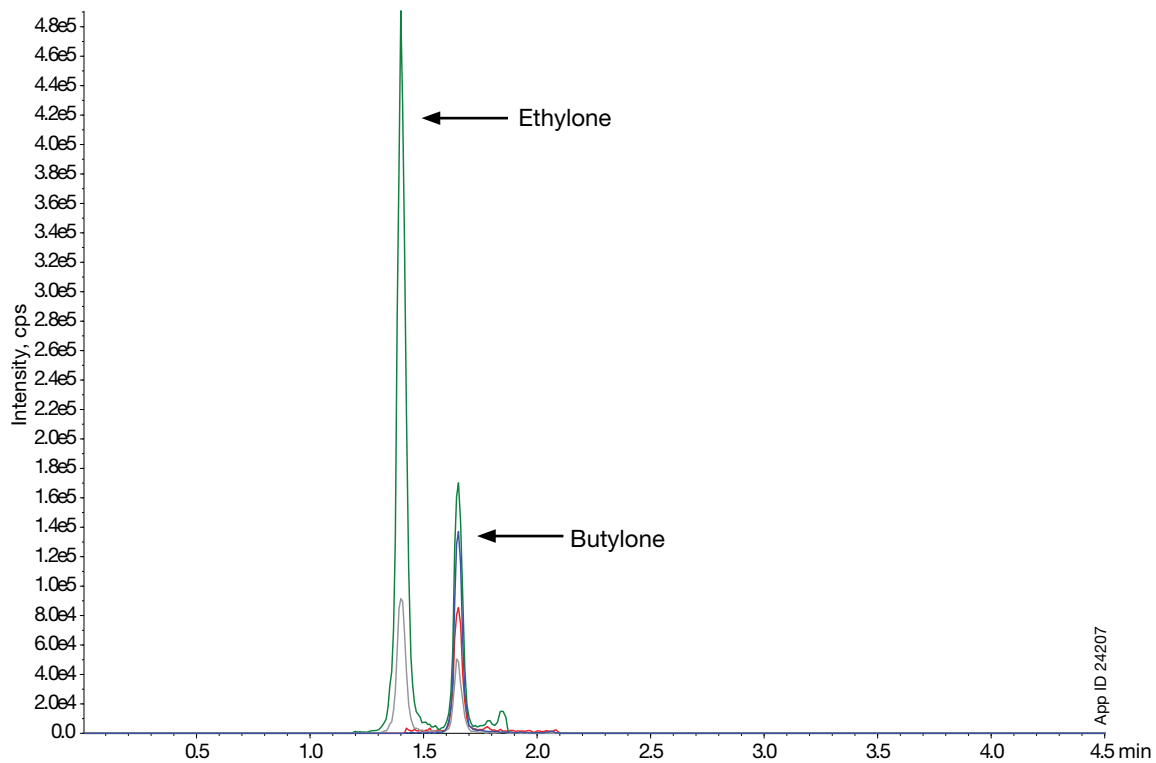


Resolution of Isobaric Pairs

3-MEC / 4-MEC



Ethylone & Butylone



APPLICATIONS

Luna[®] Omega Ordering Information

5 µm Minibore and MidBore™ Columns (mm)								SecurityGuard™ Cartridges (mm)
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	50 x 3.0	100 x 3.0	150 x 3.0	4 x 2.0*
Polar C18	00A-4754-AN	00B-4754-AN	00D-4754-AN	00F-4754-AN	00B-4754-YO	00D-4754-YO	00F-4754-YO	AJO-7600 for ID: 2.0 - 3.0 mm

5 µm Analytical Columns (mm)					SecurityGuard Cartridges (mm)
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*
Polar C18	00B-4754-E0	00D-4754-E0	00F-4754-E0	00G-4754-E0	AJO-7601 for ID: 3.2-8.0 mm

3 µm Minibore Columns (mm)					SecurityGuard Cartridges (mm)
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	4 x 2.0*
Polar C18	00A-4760-AN	00B-4760-AN	00D-4760-AN	00F-4760-AN	AJO-7600 for ID: 2.0 - 3.0 mm

3 µm MidBore Columns (mm)				SecurityGuard Cartridges (mm)
Phases	50 x 3.0	100 x 3.0	150 x 3.0	4 x 2.0*
Polar C18	00B-4760-YO	00D-4760-YO	00F-4760-YO	AJO-7600 for ID: 2.0 - 3.0 mm

3 µm Analytical Columns (mm)					SecurityGuard Cartridges (mm)
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*
Polar C18	00B-4760-E0	00D-4760-E0	00F-4760-E0	00G-4760-E0	AJO-7601 for ID: 3.2-8.0 mm

1.6 µm Microbore Columns (mm)			
Phases	50 x 1.0	100 x 1.0	150 x 1.0
Polar C18	00B-4748-A0	00D-4748-A0	00F-4748-A0

1.6 µm Minibore Columns (mm)					SecurityGuard ULTRA Cartridges [†]
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
Polar C18	00A-4748-AN	00B-4748-AN	00D-4748-AN	00F-4748-AN	AJO-9505 for 2.1 mm ID

* SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

* SecurityGuard Analytical Cartridges require holder, Part No.: KJO-4282



If Phenomenex products in this technical note do not provide at least equivalent separation as compared to other products of the same phase and dimensions, return the product with comparative data within 45 days for a FULL REFUND.

Terms and Conditions

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Trademarks

Luna is a registered trademark, SecurityGuard and MidBore are trademarks of Phenomenex. Agilent is a registered trademark of Agilent Technologies, Inc.

SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362

CAUTION: this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP or ULTRA holders, or to any cartridges.

Disclaimer

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