

APPLICATION

Extraction and LC/MS/MS Analysis of PCP from Human Urine Using Strata[®]-X-C Microelution 96-Well Solid Phase Extraction (SPE) Plates and a Kinetex[®] 2.6 μm Biphenyl HPLC Column

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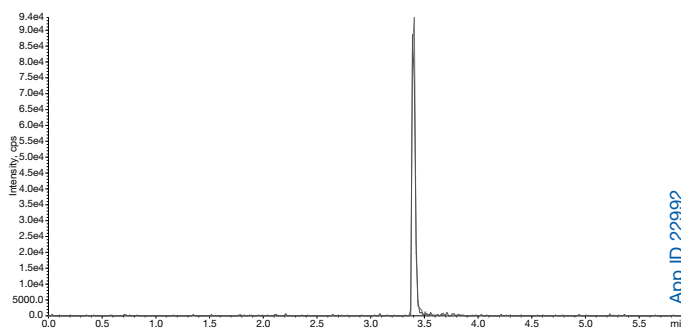
Overview

This application note describes an ultra-sensitive extraction method to isolate Phencyclidine (PCP) from urine using Strata-X-C Microelution 96-well SPE plates followed by LC/MS/MS analysis using a Kinetex 2.6 μm Biphenyl HPLC column. By using the Microelution SPE format, we were able to skip the dry down step saving at least 30 minutes without negatively impacting the sensitivity of our analysis. PCP was accurately quantified at detection levels down to 25 % below the cutoff levels specified by the Substance Abuse and Mental Health Services Administration (SAMHSA).

Extraction Procedure

Microelution 96-Well Plate: Strata-X-C Microelution 96-Well Plate, 2 mg/well
Part No.: 8M-S029-4GA
Condition: 200 μL Methanol
Equilibrate: 200 μL Water
Load: 400 μL diluted urine (200 μL urine diluted 1:1 with water)
Wash 1: 200 μL 2% Formic acid in water
Wash 2: 200 μL Methanol
Elute: 2x 25 μL 5% Ammonium hydroxide in acetonitrile/methanol (60:40)
Injection: 2 μL

Representative Chromatogram of PCP Extracted from Human Urine



Column: Kinetex 2.6 μm Biphenyl
Dimensions: 50 x 2.1 mm
Part No.: 00B-4622-AN
Mobile Phase: A: 0.1 % Formic acid in Water
 B: 0.1 % Formic acid in Methanol
Gradient:

Time (min)	% B
0.00	10
3.00	95
4.00	95
4.01	10
6.00	10



Flow Rate: 500 μL/min
Temperature: Ambient
Detection: MS/MS, Triple Quad™ 4500 (SCIEX), ESI+

Absolute Recovery of PCP Extracted from Human Urine

	Concentration (ng/mL) (25% below SAMHSA cut off)	RT (min)	% Absolute Recovery	% CV (N=8)
PCP	6.25	3.37	99	9.2

Ordering Information

Strata-X-C Solid Phase Extraction (SPE)

Format	Sorbent Mass	Part Number	Unit
Microelution 96-Well			
	2 mg	8M-S029-4GA	1 Plate/Box
96-Well Plate			
	10 mg	8E-S029-AGB	2 Plates/Box
	30 mg	8E-S029-TGB	2 Plates/Box
	60 mg	8E-S029-UGB	2 Plates/Box
Tube			
	30 mg	8B-S029-TAK*	1 mL (100/box)
	30 mg	8B-S029-TBJ	3 mL (50/box)
	60 mg	8B-S029-UBJ*	3 mL (50/box)
	100 mg	8B-S029-EBJ	3 mL (50/box)
	100 mg	8B-S029-ECH	6 mL (30/box)
	200 mg	8B-S029-FBJ	3 mL (50/box)
	200 mg	8B-S029-FCH	6 mL (30/box)
	500 mg	8B-S029-HBJ	3 mL (50/box)
	500 mg	8B-S029-HCH	6 mL (30/box)

*tab-less tubes available

Ordering Information (cont'd)



APPLICATION

Ordering Information (cont'd)

Kinetex[®] Core-Shell HPLC/UHPLC Columns

Phase	5 µm Minibore Columns (mm)			SecurityGuard [™] ULTRA Cartridges [†]
	50 x 2.1	100 x 2.1	3/pk	
Biphenyl	00B-4627-AN	00D-4627-AN	AJ0-9209	for 2.1 mm ID

Phase	5 µm MidBore [™] Columns (mm)			SecurityGuard [™] ULTRA Cartridges [†]
	50 x 3.0	100 x 3.0	3/pk	
Biphenyl	00B-4627-Y0	00D-4627-Y0	AJ0-9208	for 3.0 mm ID

Phase	5 µm Analytical Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
Biphenyl	00B-4627-E0	00D-4627-E0	00F-4627-E0	00G-4627-E0	AJ0-9207 for 4.6 mm ID

Phase	2.6 µm Minibore Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
Biphenyl	00A-4622-AN	00B-4622-AN	00D-4622-AN	00F-4622-AN	AJ0-9209 for 2.1 mm ID

Phase	2.6 µm MidBore Columns (mm)			SecurityGuard [™] ULTRA Cartridges [†]
	50 x 3.0	100 x 3.0	150 x 3.0	3/pk
Biphenyl	00B-4622-Y0	00D-4622-Y0	00F-4622-Y0	AJ0-9208 for 3.0 mm ID

Phase	2.6 µm Analytical Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
	50 x 4.6	100 x 4.6	150 x 4.6	3/pk	
Biphenyl	00B-4622-E0	00D-4622-E0	00F-4622-E0	AJ0-9207	for 4.6 mm ID

Phase	1.7 µm Minibore Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
	50 x 2.1	100 x 2.1	150 x 2.1	3/pk	
Biphenyl	00B-4628-AN	00D-4628-AN	00F-4628-AN	AJ0-9209	for 2.1 mm ID

[†] SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000



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Strata-X is patented by Phenomenex. U.S. Patent No. 7,119,145

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