

APPLICATION

Extraction and Analysis of Urinary Catecholamines by LC-MS/MS Using Strata[®]-X-CW Microelution Solid Phase Extraction and Luna[®] Omega and Kinetex[®] Polar C18 LC Columns

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Overview

This application describes a fast and effective method for extracting and analyzing urinary catecholamines. Strata-X-CW weak cation exchange solid phase extraction (SPE) was utilized for the extraction of catecholamines from urine which was then ran on both a thermally modified fully porous Luna Omega 3 μ m Polar C18 and a core-shell Kinetex 2.6 μ m Polar C18 to display the differences in retention profiles between these two useful solid supports.

SPE Protocol

96-Well Microelution Plate: Strata-X-CW
Part No.: 8M-S035-4GA
Condition: 200 μ L Methanol
Equilibrate: 200 μ L 50 mM Ammonium acetate, pH 7
Load: 1 mL of pretreated sample (500 μ L urine and 500 μ L 50 mM Ammonium acetate, pH 7)
Wash 1: 200 μ L of 50 mM Ammonium acetate, pH 7
Wash 2: 200 μ L Acetonitrile/IPA (1:1)
Dry: 3 min under high vacuum
Elute: 2x 25 μ L of Water/Acetonitrile/Formic acid (85:10:5)
Inject: Dilute eluent with 100 μ L of 0.1% Formic acid in water

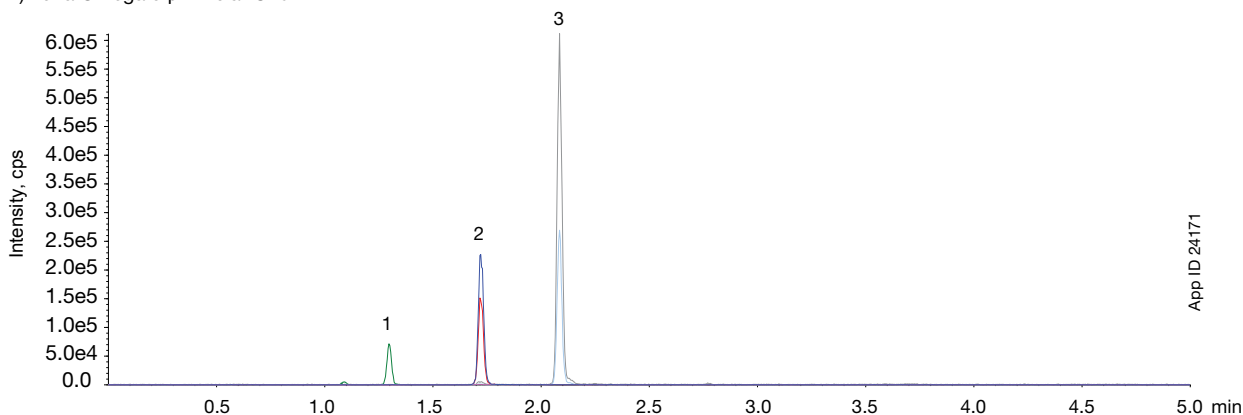
LC-MS/MS Conditions

Column: 1) Luna Omega 3 μ m Polar C18
 2) Kinetex 2.6 μ m Polar C18
Dimensions: 50 x 4.6 mm
Part No.: 1) 00B-4760-E0
 2) 00B-4759-E0
Mobile Phase: A: 0.1% Formic Acid in Water
 B: 0.1% Formic Acid in Methanol

| Gradient Time (min) | % B |
|---------------------|-----|
| 0 | 0 |
| 3 | 100 |

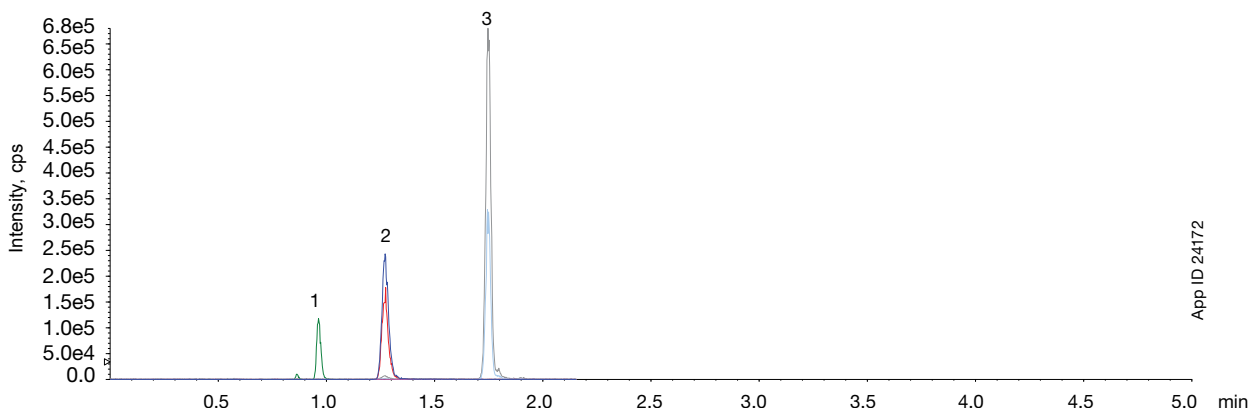
Injection Volume: 5 μ L
Flow Rate: 0.7 mL/min
Temperature: 22 $^{\circ}$ C
Detection: MS/MS (SCIEX API 4000[™])
Analytes: 1. Metanephrine
 2. Normetanephrine
 3. 3-Methoxytyramine

1) Luna Omega 3 μ m Polar C18



App ID 24171

2) Kinetex 2.6 μ m Polar C18



App ID 24172

Revision: 0
PHEN-RUO-00105



APPLICATION

Kinetex® Core-Shell LC Column Ordering Information

| 2.6 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-4759-AN | 00B-4759-AN | 00D-4759-AN | 00F-4759-AN | AJO-9532 for 2.1 mm ID |

| 2.6 µm MidBore™ Columns (mm) | | | | SecurityGuard ULTRA Cartridges† |
|------------------------------|-------------|-------------|-------------|------------------------------------|
| Phases | 50 x 3.0 | 100 x 3.0 | 150 x 3.0 | 3/pk |
| Polar C18 | 00B-4759-Y0 | 00D-4759-Y0 | 00F-4759-Y0 | AJO-9531 for 3.0 mm ID |

| 2.6 µm Analytical Columns (mm) | | | | SecurityGuard ULTRA Cartridges† |
|--------------------------------|-------------|-------------|-------------|------------------------------------|
| Phases | 50 x 4.6 | 100 x 4.6 | 150 x 4.6 | 3/pk |
| Polar C18 | 00B-4759-E0 | 00D-4759-E0 | 00F-4759-E0 | AJO-9530 for 4.6 mm ID |

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

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Luna® Omega LC Column Ordering Information

| 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-Y0 | 00D-4760-Y0 | 00F-4760-Y0 | 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 |

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

Strata®-X-CW SPE Ordering Information

| 96-Well Microelution Plate | Sorbent Mass | Part Number | Unit |
|---|--------------|-------------|-------|
|  | 2 mg | 8M-S035-4GA | 1/box |



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

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

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