

APPLICATIONS

Determination of Tricyclic Antidepressants (TCAs) from Urine using Luna® Omega and Kinetex® Polar C18 Columns

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Overview/Summary

Tricyclic antidepressants are a class of compounds with three rings in their chemical structure. Here we present a fast, reproducible method for analysis of this class of drugs in urine. A donor urine sample was spiked with standards to 100 ng/mL, and subsequently diluted 1:5 with mobile phase A prior to injection. Utilizing the Luna Omega Polar C18 column, compounds were separated in 3 minutes. The thermally modified fully porous Polar C18 particles successfully resolved the isobaric pair, protriptyline and nortriptyline. By utilizing the core-shell particles of the Kinetex Polar C18 column the method runtime was further decreased and greater efficiency was achieved, with a small sacrifice in backpressure.

LC-MS/MS Conditions

Conditions for both columns:

Columns: Luna Omega 3 µm Polar C18
Kinetex 2.6 µm Polar C18

Dimensions: 50 x 2.1 mm

Part No.: OOB-4760-AN
OOB-4759-AN

Mobile Phase: A: 10 mM Ammonium formate in Water
B: 0.1 % Formic acid in Methanol

Gradient	Time (min)	% B
	0	45
	2	65
	2.5	95
	3	95
	3.1	45
	4.5	45

Flow Rate: 0.5 mL/min

Temperature: 40 °C

Detection: Tandem Mass Spec MS-MS (600 °C)

Instrument: SCIEX Triple Quad™ 4500

Sample: 1. Nortriptyline
2. Protriptyline
3. Desmethyldoxepin
4. Desipramine
5. Amitriptyline
6. Doxepin
7. Imipramine
8. N-Desmethyldoxepin
9. Clomipramine

Figure 1.
Luna Omega 3 µm Polar C18, 50 x 2.1 mm (100 ng/mL)

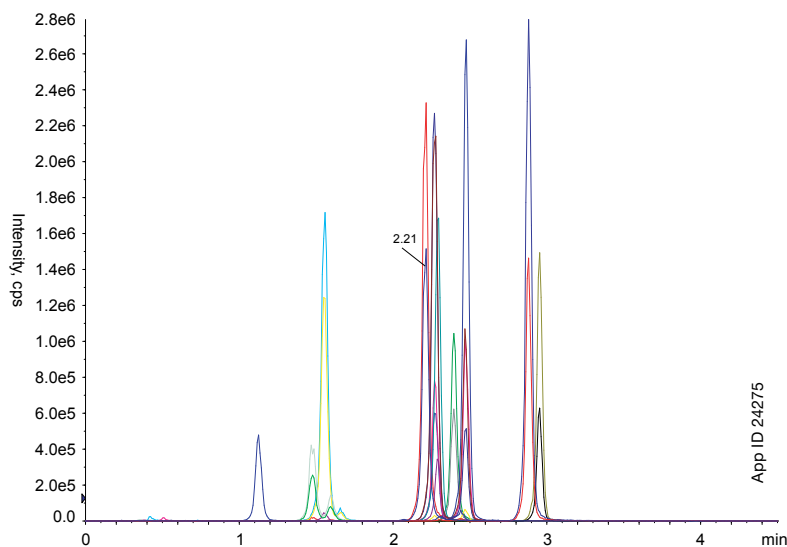
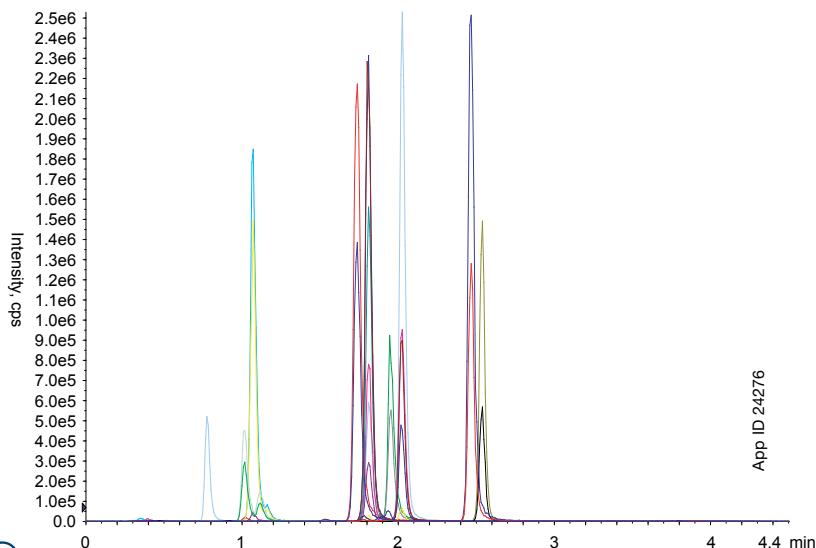


Figure 2.
Kinetex 2.6 µm Polar C18, 50 x 2.1 mm (100 ng/mL)



APPLICATIONS

Kinetex[®] 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	AJ0-9532 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	AJ0-9531 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	AJ0-9530 for 4.6 mm ID

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

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Luna[®] Omega 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	AJ0-7600 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	AJ0-7600 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	AJ0-7601 for ID: 3.2-8.0 mm

*SecurityGuard Analytical Cartridges require holder, Part No.: KJ0-4282



If Kinetex and Luna analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

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Subject to Phenomenex Standard Terms and Conditions which may be viewed at www.phenomenex.com/TermsAndConditions.

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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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