

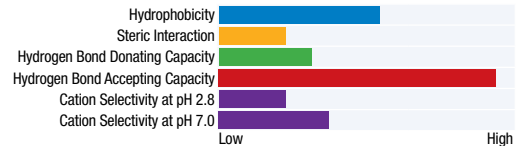
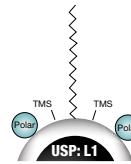
APPLICATIONS

Reference Analysis of Polar Active Ingredients Albuterol and Ambroxol in Oral Solution using a Kinetex[®] 2.6 μm Polar C18 HPLC/UHPLC Column

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Overview

The active ingredients albuterol and ambroxol are relatively polar drug substances that present a reversed phase retention challenge. In order to promote increased retention and selectivity, several methods have outlined the use of ion-pairing agents in the mobile phase. In this application, we investigated a reversed phase method that instead leveraged the increased polar retention and selectivity of the Kinetex Polar C18. The unique dual functional selectivity of this column eliminated the potential need of an ion-pairing agent for this analysis through a combined polar modified surface and hydrophobic selectivity of a bonded C18 chain. Therefore, resulting in a USP classified L1 column that provides both a unique selectivity profile and is 100 % aqueous stable. In addition, the Kinetex solid support is a superficially porous (core-shell) particle morphology that provides ultra-high column efficiency on any HPLC/UHPLC system.¹

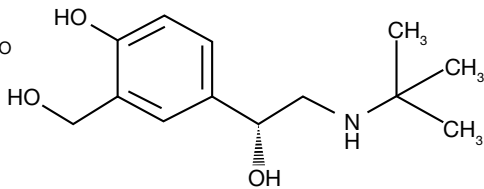


Column: Kinetex 2.6 μm Polar C18
Dimensions: 150 x 4.6 mm
Part No.: 00F-4759-E0
Mobile Phase: A: Water with 30 mM Potassium Phosphate (pH 3.0)
 B: Acetonitrile
Gradient:

Time (min)	% B
0	0
1	0
7	60

Flow Rate: 1.0 mL/min
Injection Volume: 10 μL
Temperature: 40 °C
Detection: UV @ 254 nm
Sample: 1. Albuterol (5.0 min)
 2. Ambroxol (7.1 min)

Albuterol
 Molecular Formula: C₁₃H₂₁NO
 Acidic pKa: 9.4
 LogD: -2.4 (@ pH 3.0)



Ambroxol
 Molecular Formula: C₁₃H₁₈Br₂N₂O
 Acidic pKa: 9.01
 LogD: -0.6 (@ pH 3.0)

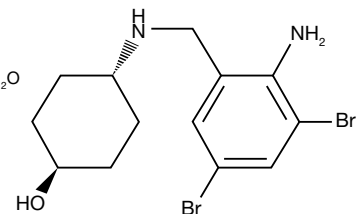
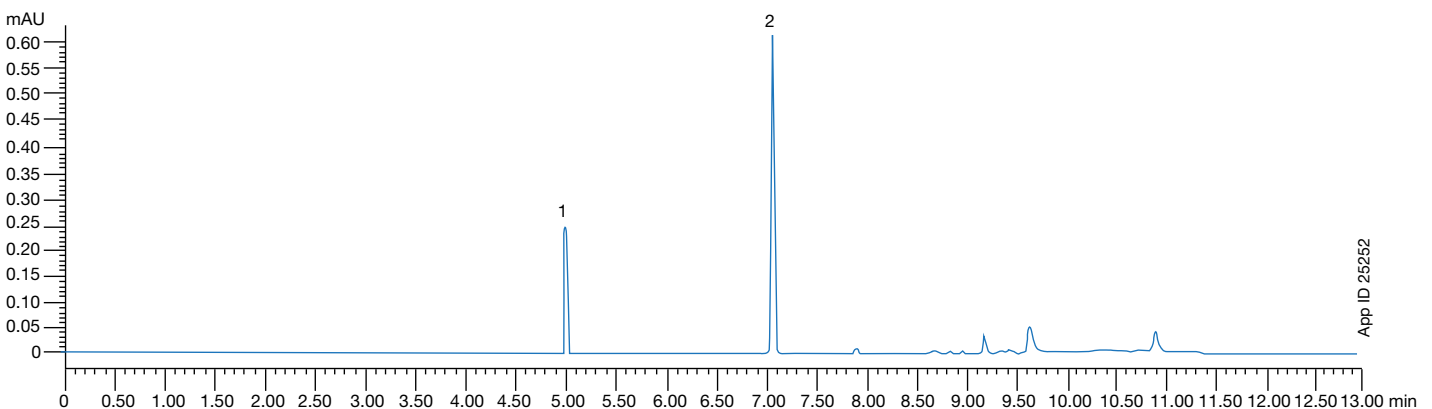


Figure 1.
Representative Separation of Albuterol and Ambroxol



App ID 25252

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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References

1. Fabrice Gritti, Georges Guiochon. Facts and Legends About Columns Packed with sub-3-µm Core-Shell Particles. LC-GC North America. 2012, 30(7), pg. 586-595.

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