

APPLICATIONS

Chiral Separation of Nicotine Enantiomers with Polysaccharide-based Lux[®] 3 μm AMP Column

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Overview

Nicotine is a colorless alkaloid chemical that is generally sourced from the tobacco plant. It is most commonly known as the addictive ingredient in tobacco products such as cigarettes and cigars. When nicotine reaches the brain, adrenaline is released, increasing heart rate, blood pressure, and restricting blood flow to the heart. Because of its widespread impact on health, it is necessary for researchers to have a fast and reliable form of analysis. A simple HPLC method was developed for the identification of each Nicotine enantiomer using a Lux AMP chiral column. The unique chiral selector is able to efficiently separate these structurally similar compounds while maintaining a reasonable analysis time. The Lux AMP column was specially designed for amine derivatives and is stable under reversed phase condition at pH 1-11.5 which makes it unique for separation of basic analytes.

Figure 1.
Chemical Structure of (-) Nicotine

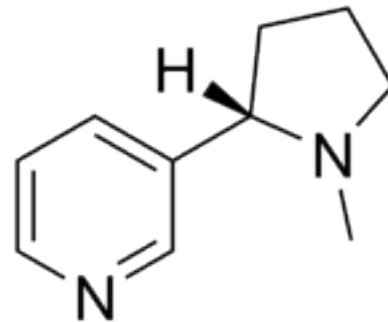
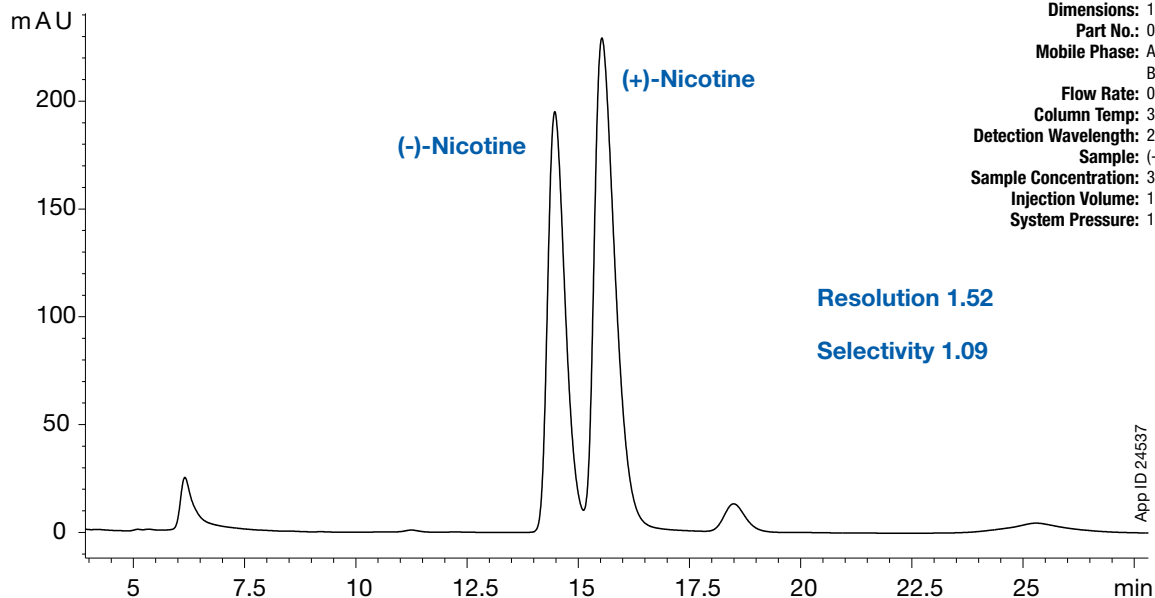


Figure 2.
Representative chromatogram of the separation of Nicotine enantiomers.



HPLC Conditions

Column: Lux 3 μm AMP
Dimensions: 150 x 4.6 mm
Part No.: 00F-4751-E0
Mobile Phase: A: 80 % 5mM Ammonium Bicarbonate [pH 11]
B: 20 % 2-Propanol
Flow Rate: 0.7 mL/min
Column Temp: 30°C
Detection Wavelength: 254nm
Sample: (-)-Nicotine/ (+)-Nicotine Mix
Sample Concentration: 3.0 mg/mL in Ethanol
Injection Volume: 1.0 μL
System Pressure: 176 bar



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Ordering Information

Lux [®] 3 µm Analytical Columns		SecurityGuard [™] ULTRA Cartridges [†]		
Phase	150 x 3.0	150 x 4.6	3/pk	3/pk
AMP	00F-4751-Y0	00F-4751-E0	AJ0-9510 for 3.0 mm ID	AJ0-9509 for 4.6 mm ID

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

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