

APPLICATIONS

Chiral Separation of Tröger's Base with a Lux[®] i-Amylose-3 Chiral Stationary Phase by HPLC under a Normal Phase Mobile Phase Conditions

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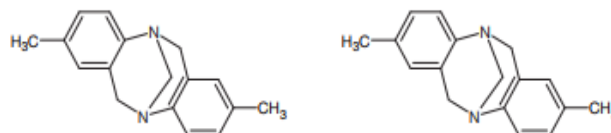
Overview

In this application note, a chiral screening mobile phase conditions was used in conjunction with the Lux i-Amylose-3 immobilized polysaccharide-based chiral stationary phase, to separate a racemic mixture of Tröger's Base. Because of its steric hindrance to nitrogen inversion, Tröger's Base is utilized in diastereoselective synthesis and therefore there is interest in the development of an efficient and fast HPLC method that is able to enantiomerically resolve the compound. A general screening normal phase mobile phase convention of Hexane/Isopropanol (80:20) with 0.1 % Diethylamine added was used. An Agilent[®] 1100 (Santa Clara, CA) HPLC system, with an injection volume of 10 μ L and a flow rate of 1.0 mL/min was used for this example and resulted in a selectivity factor of $\alpha = 1.62$. The Lux i-Amylose-3 chiral selector is a complementary but distinct chiral selectivity in comparison to i-Amylose-1 and i-Cellulose-5. It combines the 5-position methyl group of the i-Amylose-3 chiral selector with electron-withdrawing potential of the i-Cellulose-5, 3-position chlorine group. Combined with the strong solvent flexibility of the immobilization process the Lux i-Amylose-3 column's broad enantioselectivity promotes greater chiral separation success.

LC Conditions

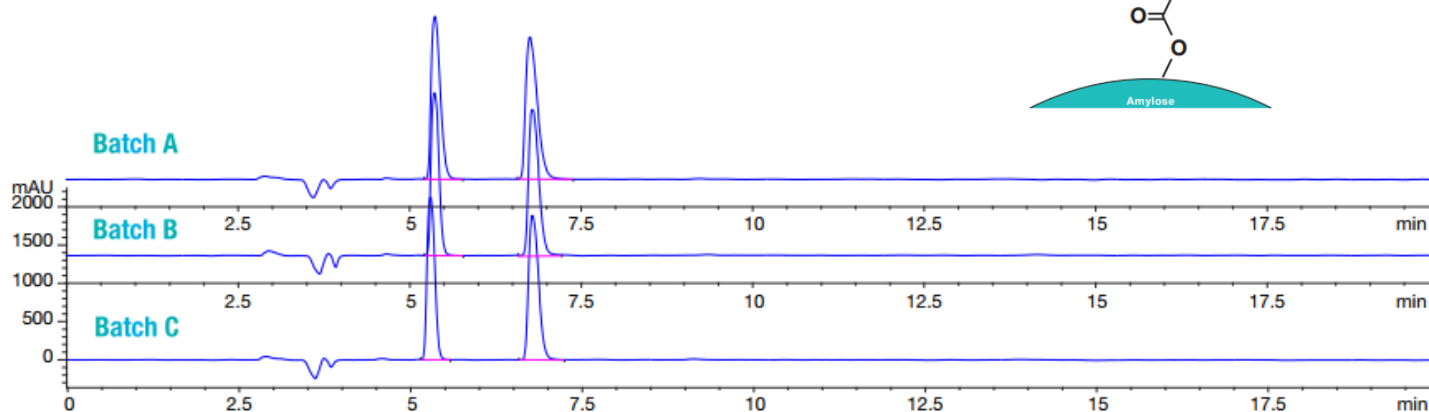
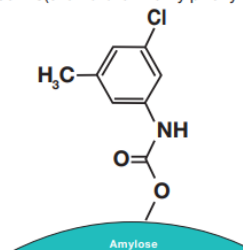
Column: Lux 5 μ m i-Amylose-3
Dimensions: 250 x 4.6 mm
Part No.: 00G-4779-E0
Recommended Guard: SecurityGuard[™]
Guard Holder Part No.: KJ0-4282
Guard Cartridge Part No.: AJ0-8650
Mobile Phase: Hexane/Isopropanol with 0.1 % Diethylamine (80:20)
Flow Rate: 1.0 mL/min
Injection Volume: 10 μ L (2 mg/mL)
Detector: UV-Vis @ 220 nm
Sample: 1. Tröger's Base
 2. Tröger's Base

Enantiomers of Tröger's Base



Lux i-Amylose-3


Amylose tris(3-chloro-5-methylphenylcarbamate)



APPLICATIONS

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