

# APPLICATIONS

## Chiral Separation of Thalidomide with a Lux<sup>®</sup> i-Amylose-3 Chiral Stationary Phase by HPLC under General Polar Organic Mobile Phase Conditions

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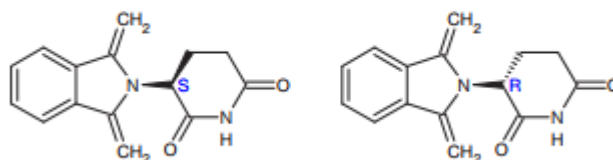
### Overview

In this application note, a general 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 Thalidomide. (S)-(-)-thalidomide was originally marketed for its antiemetic effects, however, the (R)-(-)-thalidomide enantiomer has been associated with phocomelia in infants. The pharmacological difference in the enantiomers of thalidomide has increased interest in the development of an efficient and fast HPLC method that could resolve the enantiomeric compounds. A general screening polar organic mobile phase conditions of Acetonitrile with 0.1 % Diethylamine was used. An Agilent<sup>®</sup> 1100 (Santa Clara, CA) HPLC system, with an injection volume of 10  $\mu$ L and a flow rate of 1.0 mL/min was used for this example. 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

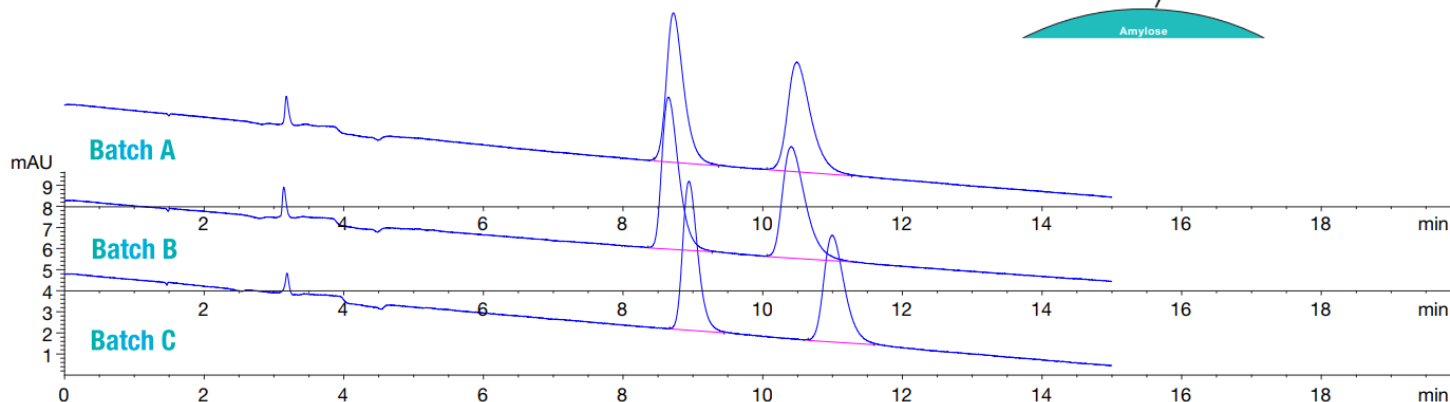
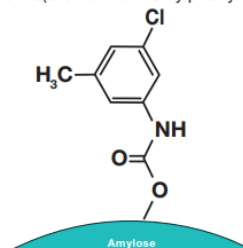
**Column:** Lux 5  $\mu$ m i-Amylose-3  
**Dimensions:** 250 x 4.6 mm  
**Part No.:** 00G-4779-E0  
**Recommended Guard:** SecurityGuard<sup>™</sup>  
**Guard Holder Part No.:** KJ0-4282  
**Guard Cartridge Part No.:** AJ0-8650  
**Mobile Phase:** Acetonitrile with 0.1 % Diethylamine  
**Flow Rate:** 1.0 mL/min  
**Injection Volume:** 10  $\mu$ L (2 mg/mL)  
**Detector:** UV-Vis @ 254 nm  
**Sample:** 1. Thalidomide  
2. Thalidomide

### Enantiomers of Thalidomide



### Lux i-Amylose-3

Amylose tris(3-chloro-5-methylphenylcarbamate)



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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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