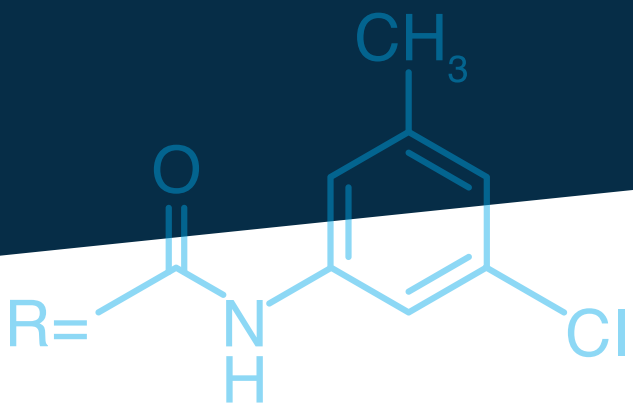
The best separations demand the best columns

INTRODUCING DAICEL'S NEW CHIRALPAK® IK



Companion column to our versatile CHIRALPAK IG

Complementary selectivity with the benefits of our immobilized phases

5 micron available – other particle sizes to follow

Item Code	Description
91311	CHIRALPAK IK, Guard Cartridge (3)
91324	CHIRALPAK IK, 4.6x150mm, 5µm
91325	CHIRALPAK IK, 4.6x250mm, 5µm
91335	CHIRALPAK IK, 10x250mm, 5µm
91337	CHIRALPAK IK, 10x20mm, 5µm Guard
91342	CHIRALPAK IK, 20x50mm, 5µm Guard
91345	CHIRALPAK IK, 20x250mm, 5µm
91355	CHIRALPAK IK, 50x250mm, 5µm
91372	CHIRALPAK IK, 30x50mm, 5µm Guard
91375	CHIRALPAK IK, 30x250mm, 5µm
91394	CHIRALPAK IK, 2.1x150mm, 5µm
91422	CHIRALPAK IK SFC, 4.6x50mm, 5µm
91423	CHIRALPAK IK SFC, 4.6x100mm, 5µm
91432	CHIRALPAK IK/SFC, 10x50mm, 5µm Guard
91435	CHIRALPAK IK SFC, 10x250mm, 5µm
91442	CHIRALPAK IK/SFC, 21x50mm, 5µm Guard
91445	CHIRALPAK IK SFC, 21x250mm, 5µm
91455	CHIRALPAK IK/SFC, 50x250mm, 5µm
91472	CHIRALPAK IK/SFC, 30x50mm, 5µm Guard
91475	CHIRALPAK IK/SFC, 30x250mm, 5µm

DAICEL
Chiral Technologies

The Chiral Resolution of β-blocker Acebutolol on CHIRALPAK® IK

INTRODUCTION

Acebutolol (Figure 1) is a commonly prescribed β-blocker for the treatment of hypertension and arrhythmias. This is the first reported chiral separation of acebutolol on Daicel polysaccharide chiral stationary phases, and comes on the newest immobilized chiral selector, CHIRALPAK® IK. IK is a cellulose tris(3-chloro-5-methylphenyl)carbamate immobilized on nominal 5 µm spherical silica gel. The simplicity of the mobile phase (alkane/alcohol) and the robustness of the immobilized phase, are marked improvement over what is current available.

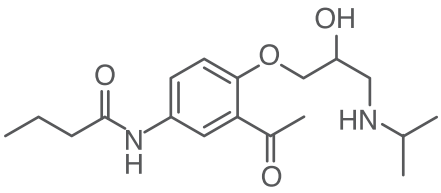


Figure 1: Acebutolol

Chromatographic Conditions for the Separation of Acebutolol	
Column	CHIRALPAK® IK (150mm x 4.6 mm i.d., 5 µm) Part #: 91324
Mobile Phase	70-30-0.1 = Hex-IPA-DEA
Flow Rate	1.0 ml/min
Detection	UV 254 nm ref. 450 nm
Temperature	25°C
Sample	1.2 mg/ml in EtOH
Injection Volume	5.0 µl

EXPERIMENTAL

Acebutolol and Diethylamine (DEA) were purchased from Sigma Aldrich (St. Louis, MO) and used as is. The solvents used were all purchased from Pharmco, were HPLC-grade or higher, and were used as-is. Specifically, the Hexanes (Hex) used contained 95% n-hexane. All screening and optimization were performed on an Agilent 1200 equipped with a quaternary mixing pump, and utilized a DAD.

RESULTS AND CONCLUSIONS

Acebutolol was screening on Daicel's library of immobilized CSPs with starting conditions of 70-30-0.1 = Hex-IPA-DEA. Without any additional optimization, CHIRALPAK® IK provided a baseline resolution of the enantiomers of acebutolol. Figure 2 shows the chromatographic overlay of the screening (with a 20% off-set). The total analysis time was 15 minutes for all methods. The elution times for peak 1 and peak 2 of the separation on IK were 5.65 mins and 7.19 mins respectively.

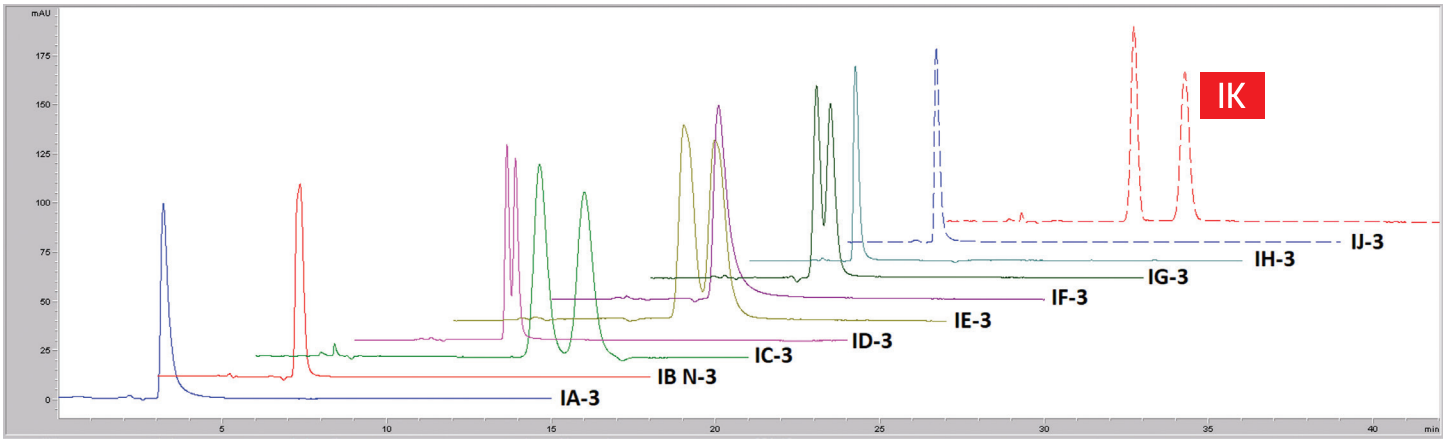


Figure 2: Chromatographic Overlay of the Separation of Acebutolol on Daicel's Library of Immobilized CSPs

Although further optimization could be performed to reduce the analysis time, this was not necessary in this case. It represents the first reported polysaccharide separation of acebutolol, and can be adapted in several ways to other applications, including the use of a longer 250 mm length column, or altering the mobile phase ratio to increase or decrease retention.