

Related product : Recycling Preparative HPLC Series

Recycling Preparative HPLC
LaboACE LC-5060

Recycling by Enantioselective Column 1

Keyword:

Separation of Racemic Mixture of Pindolol, Recycling Separation

Introduction

In preparative HPLC, the column length is one of the key factors to get better separation. However, there is a limit in length due to restriction on the pressure the column can endure.

Recycling preparative HPLC is the solution to the problem. By cycling the sample solution back to the same column repeatedly, it causes the same effect as a longer column is used. Further, no solvent is consumed during the cycles. So it is the ideal way to efficiently increase separation (resolution) ability.

For separation of stereoisomers, which normally requires specifically designed columns, recycling preparative HPLC is often used in combination with such columns.

Here is an example of recycling preparative HPLC using an enantioselective column.

Experiment and Results

Sample: Racemic mixture of Pindolol (Fig. 1)

Various trial with chiral chromatography columns did not give good enough separation. So we tried recycling preparative HPLC with the same chiral column.

Instrument : LC-9101 (Detector : UV (254 nm))
Column : JAIGEL-OA4900 - 20
Mobile phase : Hexane / THF / Methanol / TFA (60/30/10/0.5)
Flow rate : 5 mL/min

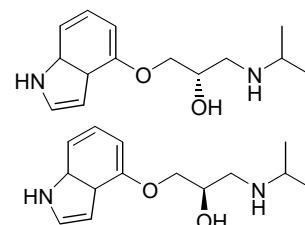


Fig. 1

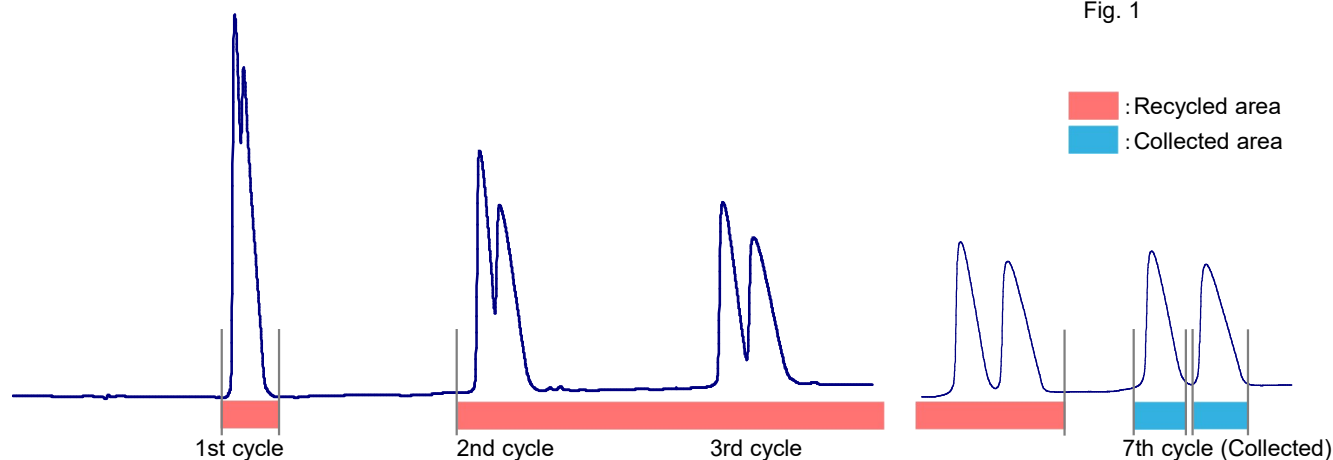


Fig. 2

Conclusion

The enantiomers were separated at the 7th cycle.