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 Recycling Preparative HPLC
LaboACE LC-5060

Recycling by GPC Column 2

Separation of Esters with Different Alkoxy Group

Keyword:

Esters with different alkoxy group, SEC column, Size Exclusion Chromatography

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.

Moreover, combined use of SEC column, which separates compounds by their size, has gained great popularity among synthetic organic chemists since it can considerably save labor and time for method development work as far as the sample is dissolved in some solvent.

Here is an example of recycling preparative HPLC using organic GPC column.

Experiment and Results

Sample: Mixture of 1-Benzyl-3-carboethoxy-4-piperidone hydrochloride (A) and 1-Benzyl-3-carbomethoxy-4-piperidone hydrochloride (B)

We tried to separate the compounds with recycling preparative HPLC using organic GPC column.

Instrument : LC-9101 (Detector : UV (254 nm))
 Column : JAIGEL-1H + JAIGEL-2H in series
 Mobile phase : Chloroform
 Flow rate : 3.5 mL/min

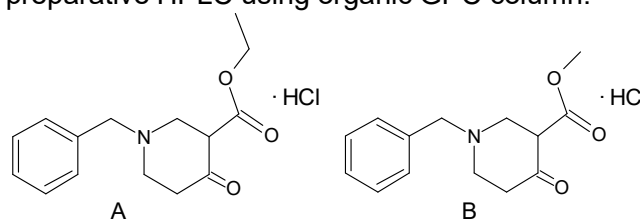


Fig. 1

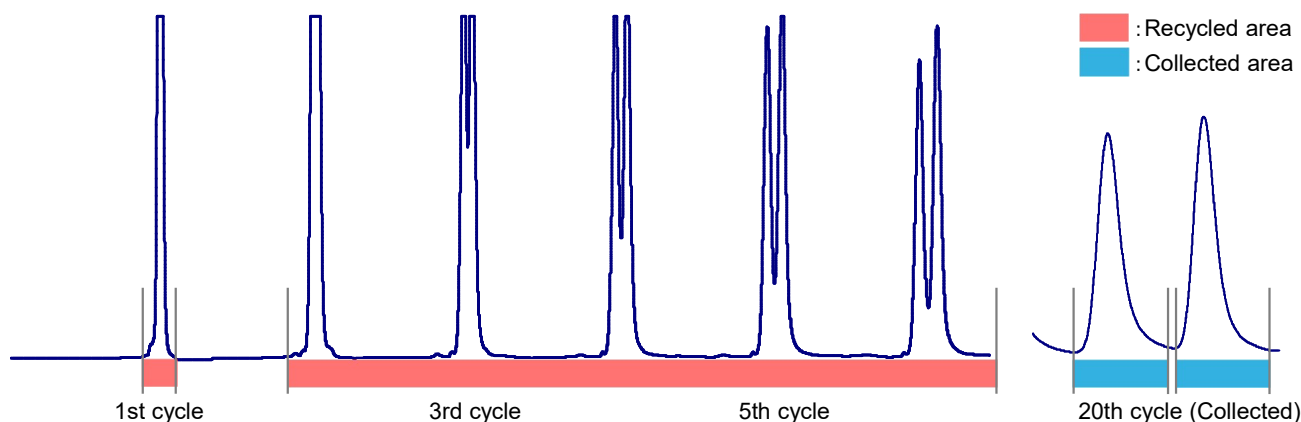


Fig. 2

Conclusion

The two compounds were separated almost perfectly at the 20th cycle.