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Recycling Preparative HPLC  
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## Separation of Stereoisomers by GPC by Column 1

**Keyword:**GPC Column, SEC Column, Separation by Size Exclusion  
Chromatography, Recycling Preparative HPLC

### Introduction

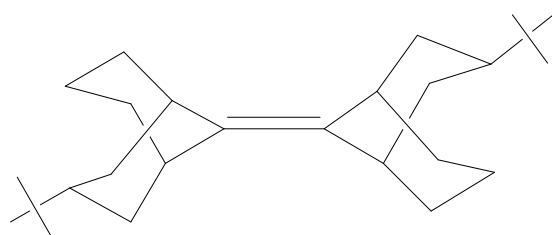
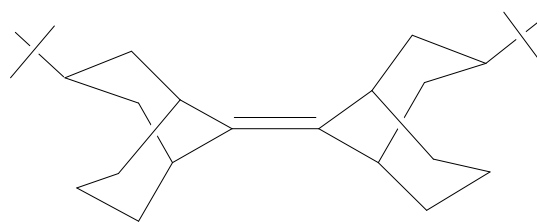
Separation of stereoisomers usually requires columns designed exclusively for them. In separation of enantiomers and diastereomers, such special columns are often used in combination with recycling preparative HPLC. However, the problem is that loading capacity of such columns is extremely small. You can normally inject only 1 or 2mg at most even with 20mm inside diameter column.

GPC column is not good for separation of enantiomers but can easily separate cis/trans isomers and process as much as 200mg at a time when used with recycling Preparative HPLC.

### Experiment

It was reported that compounds 18 and 19 were inseparable with usual LC and GC using OV-1 packed column. So we tried to separate the isomers by Recycling Preparative HPLC using GPC column.

Instrument : LC-908 (Detector : RI)  
Column : JAIGEL-1H + JAIGEL-1H in series  
Mobile phase : Chloroform  
Flow rate : 3.5 mL/min  
Injection qty. : 400 mg

trans18cis19

### Result

A sample containing 400 mg was injected at a time and the isomers were separated at 20th cycle.

### References

Yoshio Kabe, Toshikazu Takata, Katsuhiko Ueno, and Wataru Ando,

J. Am. Chem. Soc., Vol. 106, No 26, pp 8174-8180