

整体柱专栏

## 分子印迹整体柱在高效液相色谱和电色谱手性分离中的应用

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### 摘要

在常规不锈钢色谱管中以甲基丙烯酸为功能单体, 采用原位聚合法制备了(5S,11S)-特罗格尔碱(S-TB)的印迹整体柱。考察了流动相中添加不同量的醋酸和水对分离的影响,结合台阶梯度洗脱模式在S-TB整体柱上实现了对TB消旋体的快速分离。另外,以碱性单体2-二甲基乙基胺甲基丙烯酸酯(DAMA)为功能单体,在毛细管中采用原位聚合法制备了毛细管分子印迹整体柱,用于在毛细管电色谱(CEC)中对消旋体1,1'-联-2-萘酚(BNL)进行手性分离。结果表明,以AMA为功能单体可以制备其他酸性模板的分子印迹聚合物,从而扩大了分子印迹聚合物(MIP)在CEC分离中的应用范围。

关键词 [分子印迹](#) [整体柱](#) [高效液相色谱](#); [电色谱](#) [手性分离](#) [特罗格尔碱](#) [1,1'-联-2-萘酚](#)

分类号

## Applications of Molecularly Imprinted Column for Chiral Separation by High Performance Liquid Chromatography and Capillary Electrochromatography

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### Abstract

The molecularly imprinted polymer (MIP) monolithic column was firstly in situ polymerized in a traditional stainless-steel chromatographic column by using methylacrylic acid and S-Tröger's base as the functional monomer and rinated template molecules, respectively. The effects of the content of acetic acid and water in mobile phase on the separation were systematically investigated. The fast enantioseparation of the racemate on monolithic column was successfully realized by stepwise gradient elution. The MIP monolithic capillary column was also synthesized in a fused-silica capillary by in situ polymerization with 2-(dimethylamino) ethyl methacrylate (DAMA) as functional monomer. The enantioseparation of 1,1'-bi-2-naphthol (BNL) on the obtained MIP capillary column was achieved in capillary electrochromatography (CEC). The results indicated that other acidic template can be imprinted by using basic DAMA as functional monomer, which enlarge the application fields of imprinting molecules.

### Key words

[molecular imprinting](#) [monolithic column](#) [high performance liquid chromatography \(HPLC\)](#) [capillary](#)

[electrochromatography \(CEC\)](#) [chiral separation](#) [Tröger's base](#) [1,1'-bi-2-naphthol](#)

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