

键合型纤维素类手性固定相高效液相色谱法拆分对映异构体

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摘要 制备了一种键合型纤维素-三苯基氨基甲酸酯手性固定相。在正相色谱条件下,拆分了九种结构不同的外消旋对映体,实验发现,在流动相中添加四氢呋喃有利于手性化合物拆分,而衍生化官能团可参与手性识别过程,在反相色谱条件下,此固定相同样具有手性拆分能力。研究表明,随着流动相中乙腈浓度的增加,对映体的保留值明显减小,

但对映异构体的选择性却变化不大。在流动相中使用低pH值,能有效抑制酸性化合物的解离,

从而显著增强其手性识别能力;对于中性化合物,流动相中pH对手性分离影响不大。

关键词 [纤维素](#) [固定相](#) [高速液体色谱](#) [对映体](#) [拆分](#) [三苯基氨基甲酸酯](#) [四氢呋喃](#)

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Separation of enantiomers on bonded cellulose trisphenylcarbamate stationary phase by high-performance liquid chromatography

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Abstract Cellulose trisphenylcarbamate was regioselectively bonded to 3-aminopropyl silica gel at 6-position of the primary hydroxyl group on the glucose unit of cellulose with 4, 4'-diphenylmethane diisocyanate as a spacer. Nine racemates were resolved on the prepared stationary phase under normal-HPLC mobile phases. It was observed that enantioseparations on the bonded-phase showed higher efficiency by using tetrahydrofuran as a component of the mobile phase, and the structure of the derivative agent reacted with the amino acids played a role for the enantioseparation. Chiral separation on the bonded phase under reversed-HPLC mobile phase was also performed successfully. It has been shown that the retention factors of the racemates decreased appreciably with the increment of the concentration of acetonitrile in the mobile phase, while no significant change was observed for the enantioselectivity. Separation of enantiomer for the acidic racemate could be improved with a lower pH value of the mobile phase since the dissociation of acidic compound was impressed, but it did not affect significantly the resolution of neutral compounds.

Key words [CELLULOSE](#) [STATIONARY PHASE](#) [HIGH SPEED LIQUID CHROMATOGRAPHY](#) [ENANTIOMORPH](#) [TETRAHYDROFURAN](#)

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