色谱 » 2010, Vol. 28 » Issue (4) :413-421 DOI: 10.3724/SP.J.1123.2010.00413

β-环糊精衍生物的超分子体系识别机理及其在手性分离中的应用

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Recognition mechanism of supramolecular systemsof β-cyclod applications in chiral separation

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摘要 为了深入系统地研究和揭示β-CD衍生物对客体分子的作用机制和一般规律,本文综合评述了β-环糊精 (β-CD) 衍生物超分子体理,分析了主客体结构、溶剂小分子、溶液pH值及固定相链接方式对其机理的影响,以及紫外-可见光谱、荧光光谱、圆二色光谱、核学分析、X-射线及分子动力学模拟等机理研究方法,并介绍了β-CD衍生物在色谱手性分离中的应用。

关键词： β-环糊精衍生物 超分子体系 识别机理 手性分离

Abstract： β-cyclodextrin (β-CD) has the cavity in which the exterior is relatively hydrophilic and the interior is lipophilic and multi-hydroxyl groups on it. So β-CD can be modified by different substituent groups and form supramolecular systems with guests, and are applied to many fields. Recognition mechanism of β-CD derivativ supramolecular systems is reviewed herein. Effects of structures of host and guest, solvent, buffer pH and lin of stationary phase and study methods of ultraviolet-visible, fluorescence spectroscopy, circular dichroism spe nuclear magnetic resonance, thermodynamics, X-ray and molecular dynamics simulation on mechanism are ex The applications in chiral separation are also introduced. This might lay a foundation for studying the general recognition mechanism.

Keywords： β-cyclodextrin derivatives supramolecular system recognition mechanism chiral separation

Received 2009-11-05; published 2010-04-28

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引用本文:

李霞,周智明*,孟子晖.β-环糊精衍生物的超分子体系识别机理及其在手性分离中的应用[J] 色谱, 2010,V28(4): 413-421