化学学报 2007 65 (11): 1045—1050 ISSN: 0567-7351 CN: 31-1320/06

研究论文

六、七元瓜环与苯二胺及硝基苯胺异构体相互作用的**HPLC**研究

董南[1,2], 薛赛凤*,[2], 陶朱[2], 赵昱[1]

([1]浙江大学药学院天然产物研究室 杭州 310058)

([2]贵州大学应用化学研究所 贵阳 550025)

收稿日期 2006-11-10 修回日期 2006-12-20 网络版发布日期 2007-6-1 接受日期 2007-2-1

摘要 利用HPLC法考察了六、七元瓜环(Q[6], Q[7])与邻苯二胺(**g1**)、间苯二胺(**g2**)、对苯二胺(**g3**)、邻硝基苯胺(**g4**)、间硝基苯胺(**g5**)、对硝基苯胺(**g6**)的相互作用. 实验结果表明: Q[6]可与客体**g1**～**g3**, **g5**形成1∶1的包结配合物; Q[7]与客体**g1**～**g6**形成1∶1包结配合物, 同时计算了包结配合物的包结稳定常数, 探讨了主-客体的相互作用模式, 并利用^{1}H NMR、紫外吸收光谱法进行了佐证.

关键词 HPLC 紫外吸收光谱 ^{1}H NMR 瓜环 包结稳定常数

分类号

HPLC Study on Interaction of Cucurbit(*n*)uril (*n*＝6,7) with Phenylenediamine and Nitroaniline Isomers

DONG Nan[1,2], XUE Sai-Feng*,[2], TAO Zhu[2], ZHAO Yu[1]

([1] *Institute of Natural Product, College of Pharmacy, Zhejiang University, Hangzhou 310058*)

([2] *Institute of Applied Chemistry, Guizhou University, Guiyang 550025*)

Abstract Interaction of cucurbit(*n*)uril (*n*＝6,7) with aniline and its derivatives was studied by using high performance liquid chromatography (HPLC). The guests are *o*-phenylenediamine (**g1**), *m*-phenylenediamine (**g2**), *p*-phenylenediamine (**g3**), *o*-nitroaniline (**g4**), *m*-nitroaniline (**g5**) and *p*-nitroaniline (**g6**). The experimental results revealed that Q[6] bound only **g1**～**g3** and **g5** respectively to form the inclusion complex in a rario of 1∶1; while Q[7] was observed to form a 1∶1 host-guest product with guests **g1**～**g6** respectively. The stability constants and ratio of host∶guest were determined. And the interaction model of the inclusion complexes was proposed, which were further confirmed by UV absorption spectroscopy and ^{1}H NMR technique.

Key words HPLC UV absorption spectroscopy ^{1}H NMR cucurbit(*n*)uril stability constant

DOI:

通讯作者 薛赛凤 gzutao@263.net