

研究简报

氧化锆固定相反相高效液相色谱法测定碱性化合物的离解常数

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摘要 研究了烷基键合氧化锆微球固定相(C12-ZrO₂)的化学稳定性及其对碱性化合物的色谱保留特征,发现C12-ZrO₂在pH为2~12时稳定,碱性化合物在该固定相上为典型的反相色谱保留机理。基于对碱性化合物的保留因子与流动相pH关系的考察,建立了碱性化合物离解常数的测定方法。测定了13种典型芳香胺和吡啶衍生物的离解常数,与文献结果对比,其差值在-0.27~0.35 pH单位范围内,说明该方法能够用于碱性化合物离解常数的快速测定。

关键词 [高效液相色谱法](#) [离解常数](#) [碱性化合物](#) [十二烷基键合氧化锆固定相](#)

分类号

Determination of the Dissociation Constants of Basic Compounds by Reversed-Phase High Performance

Abstract

The high performance liquid chromatographic (HPLC) behavior of aromatic amines and pyridine derivatives was studied on a new reversed-phase stationary phase, C12-alkyl-modified zirconia. The effects of mobile phase variables such as methanol content and pH were investigated. The results showed that the stationary phase was stable in the mobile phase with a pH range of 2-12. It was found that on the new stationary phase the bases demonstrated the "traditional" behavior of retention due to their hydrophobicity. The retention factors of these basic compounds on the stationary phase increased rapidly with pH from pH 2-7, and then increased slowly until reaching a constant value. The dissociation constants (pKa) of 13 basic compounds were determined based on the relationship between their retention factors and the pH of mobile phase. Compared with references, the errors of the pKa values obtained by this HPLC method were within 0.35 pH units.

Key words [high performance liquid chromatography](#) [dissociation constant](#) [basic compounds](#) [C12-alkyl modified zirconia stationary phase](#)

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