

Separation of Fexofenadine Enantiomers Using Beta Cyclodextrin as Chiral Counter Ion in Mobile Phase

Authors : R. Fegas, S. Zerkout, S. Taberkokt, M. Righezza

Abstract : The present work demonstrate the potential of Betacyclodextrine (BCD) for the chiral analysis of a drug .Various separation mechanisms were applied and several parameters affecting the separation were studied, including the type and concentration of chiral selector, and pH of buffer. A simple and sensitive high-performance liquid chromatography (HPLC) method was developed as an assay for fexofenadine enantiomers in pharmaceutical preparation. Fexofenadine enantiomers were separated using a mobile phase of 0.25mM NaH₂PO₄-acetonitrile (65:35, v/v) - Betacyclodextrine on achiral phenyl-urea column at a flow rate of 1ml/min and measurement at 220nm. The chiral mechanism of separation was mainly based on specific interaction between the solute and the stationary phase. The retention was directly controlled by mobile phase composition but not the selectivity which results of the two mechanisms, electrostatic interactions and partition mechanism.

Keywords : fexofenadine enantiomer, HPLC, achiral phenyl-urea column

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