Structure-solubility relationships among inclusion complexation of hydroxypropyl-β-cyclodextrin with bicyclic drugs

中文摘要

英文摘要

The complexation of hydroxypropyl-β-cyclodextrin with bicyclic compounds was studied. 5,8-Dihydroxy-1,4-naphthoquinone derivatives(6+6 ring structure) and indole derivatives (6+5 ring structure) were used as the model chemicals and the solubility increment was employed as an indicator to monitor the complexation progress. The solubility experiments revealed that the position and 3-dimensional structure of the substituents provided more impact on the solubility increment than the polarity and chain length did. This result indicated that both the position and 3-dimensional structure were the major determinants affecting the complexation among the factors studied. The control study with monocyclic compounds, using p-hydroxybenzoic acid esters as the model chemicals, showed opposite results. These results suggested that complexation of hydroxypropyl-β-cyclodextrin with monocyclic compounds had a different complexation mechanism with the bicyclic compounds.