氫氧丙基-??-環糊精與雙環藥物間包覆錯合之研究

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

中文摘要

本論文主要的研究目是探討氫氧丙基-β-環糊精與雙環藥物包覆錯合的模式。因此，以 5,8-二氫氧基-1,4-酮類衍生物(6+ 6 環)、 ㄱ!類衍生物類(6+ 5 環)做爲實驗的模式藥，並且以所增加的溶解度作爲監測其包覆錯合的工具。依溶解度實驗顯示，取代基所在的位置與本身形成的立體結構對於溶解度的增加之影響性，較取代基的極性與碳鏈長度重要。此一結果表示，取代基所在的位置與自身的立體結構才是影響包覆錯合的最主要因素。此外，以單環的對位-氫氧基苯甲酸酯類做爲與雙環藥物對照比較的模式藥，卻得到相反的結果。此一結果暗示氫氧基丙基-β-環糊精與單環藥物或與雙環藥物的包覆錯合，二者的機轉是不相同的。

英文摘要

The complexation of hydroxypropyl-ㄐ-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-ㄐ-cyclodextrin with monocyclic compounds had a different complexation mechanism with the bicyclic compounds.