Comparative Study on the Effect of Natural Cyclodextrins and Surfactants on the Solubility of Isoxsuprine Hydrochloride

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Abstract:

The aim of current work is to compare the impact of nano-cavity size of natural cyclodextrins (CDs) and nano-micelle size of certain non-ionic surfactants on the solubility of isoxsuprine HCl (IXP HCl). The results showed that the solubility of IXP HCl increased with β-CD more than with α-CD which might be due to the larger cavity size of β-CD than that of α-CD. In case of surfactants, it was found that the solubilizing power of surfactants increased with surfactant having shorter hydrocarbon chain in a homologous series. While, in case of polyoxyethylene fatty alcohol ethers, the longer the hydrophilic chain and shorter lipophilic chain, the solubility capacity was greater. These results conclude that micellar solubilization of IXP HCl by non-ionic surfactants was occurred.Comparatively, the solubilizing efficiency of CDs toward IXP HCl was greater than non-ionic surfactants.

Keywords:

Complexation, Cyclodextrins, Solubility, Soxsuprine, Surfactant.

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