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Formulation and Characterization of Drug Loaded Niosomal Gel for Anti-Inflammatory Activity

Authors : Sunil Kamboj, Vipin Saini, Suman Bala, Gaurav Sharma

Abstract : The main aim of the present research was to encapsulate mefenamic acid in niosomes and incorporate the prepared niosomes in the carbopol gel base for sustained therapeutic action. Mefenamic acid loaded niosomes were prepared by thin film hydration technique and evaluated for entrapment efficiency, vesicular size and zeta potential. The entrapment efficiency of the prepared niosomes was found to increase with decreasing the HLB values of surfactants and vesicle size was found to increase with increasing the cholesterol concentration. Niosomal vesicles with good entrapment efficiencies were incorporated in carbopol gel base to form the niosomal gel. The prepared niosomal gel was evaluated for pH, viscosity, spreadability, extrudability and skin permeation study across the rat skin.The results of permeation study revealed that the gel formulated with span 60 niosomes sustained the drug release for 12 h. Further the in vivo study showed the good inhibition of inflammation by the gel prepared with span 60 niosomes.

Keywords : mefenamic acid, niosomal gel, nonionic surfactants, sustained release
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