Synthesis and Characterization of Novel Etodolac Transdermal Prodrugs

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Abstract

Etodolac belongs to a class of drugs called non steroidal anti-inflammatory drugs (NSAIDs). These drugs are used for the management of mild to moderate pain, fever, and inflammation by reducing the levels of prostaglandins. The skin is a barrier to prevent drugs from entering the body especially polar ones, so for the topical formulation, lipid solubility of the drug is test taken into consideration when it is formulated for topical application.
In this study we synthesized a group of etodolac prodrugs by increasing its lipophlicity through derivatization of etodolac by esterification with series of alkanoic acid. The study showed success of the synthesis of the aimed prodrugs. The synthesized drugs showed increased lipophilicity and the enhanced drug release when tested on mouse skin by Franz diffusion technique. Isopropyl etodolac prodrug showed the best features to be formulated as topical dermal ointment as it release was much improved compared with the parent drug.