(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :10/08/2023

(21) Application No.202331053726 A

(43) Publication Date : 01/12/2023

(54) Title of the invention : A TOPICAL SOLID LIPID NANO-PARTICULATE SYSTEM AND METHOD OF FOR FORMULATION AND EVALUATION OF ACECLOFENAC

(51) International classification :A61K0031216000, A61K0009000000, A61K0009510000, A61P0029000000, A61K0047320000

(86) International Application No :PCT//
Filing Date :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
The present invention relates to a novel topical solid lipid nanoparticulate system of aceclofenac, an anti-inflammatory drug. The formulation involves encapsulating aceclofenac in solid lipid nanoparticles (SLNs) with an average particle size ranging from 50 to 500 nanometers, stabilized by surfactants such as polysorbate 80, poloxamer 188, or sodium lauryl sulfate. The SLNs are further dispersed in a pharmaceutically acceptable carrier for topical application. The invention aims to enhance drug solubility, improve skin permeation, and provide controlled drug release for enhanced therapeutic efficacy. The topical formulation is evaluated for its physicochemical characteristics, in vitro drug release profile, skin permeation, and stability, demonstrating its potential as an effective and innovative solution for topical administration of aceclofenac.

No. of Pages : 21 No. of Claims : 10