



Research Article

Preformulation Studies of Niosomal Gel of Prednisolone & Azithromycin for Topical Drug Delivery System

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Abstract

Azithromycin is a semi-synthetic macrolide antibiotic drug, effective against a wide variety of bacteria. It is primarily used to treat the bacterial infections associated with weaker immune system. Prednisolone is a synthetic corticosteroid, used for suppressing the immune system and inflammation. When used in combination, both the drugs are very much effective in the management of inflammatory conditions or diseases in which the immune system plays an important role. The aim is to study the preformulation parameters for niosomal gel for topical use. The objective of Preformulation study is to generic information useful to the formulator in developing stable and bioavailable dosage form. The use of Preformulation parameter maximize the chances of getting a formulation which is safe, efficacious and stable product and at the same time provide optimization of the drug product quality. Administration of conventional tablets of prednisolone has been reported to exhibit delayed release and unwanted side effects so prednisolone loaded niosomes were developed and azithromycin which tend to cause allergic reaction was incorporated into gel base provide rapid penetration through skin, improve therapeutic performance, restrict action to the target cell and improve patient compliance, hence the objective of the study was made to develop sustained release gel containing azithromycin and niosomal vesicles of prednisolone using Carbopol as a polymer which will controlled the release of drug, increasing the bioavailability of the drug and thus decreasing the dosing frequency of the drug. The Preformulation studies were carried out for identification (physical appearance, melting point, and uv spectrophotometer), solubility profile, TLC, FTIR, compatibility studies, simultaneous estimation. All the observation and results showed that the azithromycin and prednisolone serve as suitable candidate for Topical drug delivery system that may improve the bioavailability.

Key words: Niosome, Topical gel, Preformulation, Compatibility, Simultaneous estimation, sustain

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