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Research Article

Formulation And Evaluation of Anti-Diabetic Ethosomes

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ABSTRACT

The present work deals with the preparation of Glimeperide (GP) ethosomes and study of effect of alcohol and phospholipid on systemic as well as topical delivery of drug. Glimepride loaded ethosomes were prepared by cold method by using different concentrations of alcohol (20-30% w/w) and soya lecithin (3.5-4% w/w) in different ratios and propylene glycol (10% w/w). In the present work ethanol and isopropyl alcohol both alcohol are used at different concentration. Total eight formulations (F1-F8) of ethosomes were prepared. They were evaluated for FTIR, vesicular shape, size, entrapment efficiency, turbidity, zeta potential, *In- vitro* and stability studies. Vesicle size and of the ethosomal formulation was found to be range between 22 to 105 nm and the Entrapment efficiency for Glimepiride in ethosomal formulation in ethanol was found to be 47.91±0.3 to 58.4±0.3 and in Isopropyl alcohol was found to be 43.4±0.5 to 57.6±0.5 % respectively. FT-IR and zeta potential studies revealed the integrity of the drug in the formulations. The cumulative percentage of drug release of prepared formulation F1 to F8 was in range 34.34±0.01% to 49.01±0.03% respectively at end of 24 h. The value for drug permeation (release) for optimized formulation F4 and F8 through the egg membrane after 24 h was found to be 49.01±0.03% and 47.03±0.02%. Stability studies indicated that, the prepared ethosomes remained stable at refrigeration (4±2˚C) and room (25±2˚C) temperature. The prepared ethosomes showed promising results under *in vitro* conditions.

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