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Liposomal Delivery Enhances Cutaneous Availability of Ciclopirox Olamine

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SUMMARY. **The present study involves development and investigation of liposomal system for improving skin residence of ciclopirox olamine in cutaneous mycosis. Spherical unilamellar liposomes of ciclopirox olamine were prepared by ethanol injection method. The vesicle size and % entrapment efficiency were in the range of 196 ± 1.73 to 1040.66 ± 7.02 nm and 34.28 ± 4.4 to 54.89 ± 1.9 respectively. The electrokinetic potential varied from -52.4 ± 2.0 to -71.7 ± 1.3 mV. A 3^2 factorial design was utilized to optimize the concentrations of cholesterol and Phospholipon® 90H. Cholesterol was found to be primarily responsible for the behaviour of the liposomes as compared to the phospholipid. FTIR study revealed that liposomal encapsulation preserved the principal characteristic group of ciclopirox olamine required for antifungal action. *In-vitro* artificial membrane and ex-vivo excised rat skin studies demonstrated reasonably higher cutaneous deposition of the drug. Liposomes proved interesting tool for maximizing the drug retention in skin, an important requisite in treatment of cutaneous fungal infections.**

KEY WORDS: Antifungal, Cholesterol, Liposome, Skin residence, Topical, Unilamellar.

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