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The Treatment of Skin Disorders by Formulating Liposomal Gel for Topical Administration

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Acne vulgaris is a common human skin disease, characterized by areas of skin with seborrhea, comedones, papules, pustules, nodules, and possibly scarring. Clindamycin Hydrochloride, a lincosamide antibiotic is used for treatment acne vulgaris. But clindamycin hydrochloride has a major drawback of having low topical bioavailability of only 4-5 %. Liposomal carriers are well known for their potential in topical drug delivery have been chosen to help Clindamycin Hydrochloride molecules in the skin layers. So, the purpose of study was to increase the absorption of drug through the skin using liposomal approach. The liposomes were prepared using different concentrations of phospholipids and cholesterol by thin film hydration method. The prepared liposomes were characterized for particle size and particle size distribution, and entrapment efficiency. Liposomal gel was prepared using optimized gelling agent i.e., carbopol 934. The prepared liposomal gel was further evaluated for drug content, pH, homogeneity, spreadability, consistency, *in-vitro* drug diffusion studies and stability studies. The mean particle size of different formulations was found to be 678-680 nm with the drug entrapment of 54.87% to 61.54%. The drug was found to be uniformly distributed. Data obtained from evaluation of gel was found to be satisfactorily for topical delivery of drug. *In-vitro* studies suggested that the % release of drug from liposomes was more than the available marketed preparation. Stability studies revealed that the formulations are stable for 90 days.

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