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A novel approach of piperine incorporated cubosomal preparations for vitiligo therapy

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The aim of the present work was to develop cubosomes, a novel vesicular system loaded with bioactive drug, piperine and formulate into a suitable topical formulation intended for vitiligo. Cubosomes are the liquid crystalline cubic nanoparticles share features from both liquids and crystalline substances having cavities which can accommodate both lyphophilic and hydrophilic drugs. Cubosomes were prepared by using polaxamer and glyceryl monooleate excipients employing rotary evaporator. By keeping the drug concentration constant (100 mg) polaxamer concentration and glyceryl monooleate concentration were increased proportionally which was subsequently coded as C1,C2 and C3 respectively. Cubosomes were incorporated into carbopol hydrogels of varying concentrations. Ex-vivo skin permeation and deposition studies were conducted by indigenously fabricated students diffusion cell and tape stripping method respectively. FTIR studies were performed on the drug and excipients. order 46.82±0.07, 62.54±0.09 and 76.25±0.13 for C1,C2 and C3respectively. It was observed that piperine was able to target upto 88.03% in deep epidermis were melanocytes are lodged contradictory to less drug retention when non cubosomal drug-hydrogel (18.01%) was used. This clearly indicates that by using cubosomes we could achieve better tissue drug bioavailability at the target site.

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