

## Localized Treatment of Cutaneous Candidiasis through Cubosomes in vitro Evaluation

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**Abstract :** Cubosomes are nanoparticles but instead of the solid particles, cubosomes are self-assembled liquid crystalline particles of certain surfactant with proper ratio of water with a microstructure that provides unique properties of practical interest. Cubosomes encapsulating Fluconazole were prepared by emulsification method and characterized for particle size, entrapment efficiency. The cubosomes prepared were  $257.2 \pm 2.94$  nm in size with drug entrapment efficiency of  $66.2 \pm 2.69\%$ . The optimized formulation characterized for shape and surface morphology by TEM and SEM analysis. SEM photograph showed the smooth surface of optimized cubosomes and TEM photograph revealed square somewhat circular intact shapes of cubosomes. MIC was determined by XTT based method and antifungal activity was determined in vitro. The cumulative percentage of Fnz from cubosomes permeated via dialysis membrane (MWCO 12-14 KD) showed a percent cumulative drug release of 76.86% while Fnz solution showed release up to 91.04% in 24 hours in PBS (pH 6.5) ( $p < 0.005$ ).

**Keywords :** Candida albicans, cubosomes, fluconazole, topical delivery

**Conference Title :** ICBP 2014 : International Conference on Bioscience, Biochemistry and Pharmaceutical Sciences

**Conference Location :** London, United Kingdom

**Conference Dates :** January 20-21, 2014