ORIGINAL RESEARCH ARTICLES

CO-DELIVERY OF BEAUVERICIN AND MICONAZOLE VIA MOUTH DISSOLVING FILM FOR THE ACTIVE MANAGEMENT OF ORAL CANDIDIASIS

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ABSTRACT

Oral candidiasis is a type of yeast infection of the oral mucosa caused by *Candida albicans*. India has the highest prevalence of Candida bloodstream infections. The first line treatment of this infection includes miconazole, fluconazole, itraconazole, nystatin and clotrimazole. Among all, miconazole is the safest medicine with high therapeutic index. However, its efficacy is compromised because of multidrug resistance and low bioavailability. Beauvericin, a cyclic hexadepsipeptide with exceptional antifungal action against Candida, can be combined with miconazole to increase its potency. The mouth dissolving film (MDF) of this drug combination was prepared by quality by design approach and statistically optimized by the 3^2 full factorial design. The developed films were evaluated for surface morphology, mechanical strength and dissolution time. The developed optimized formulation exhibited lowest disintegration time (19 sec) with a high drug release (92.78±0.49 % for miconazole and 89.78±0.78 % for beauvericin) and an average tensile strength of 2.69MPa. These findings proved the efficiency of developed mouth dissolving films bearing miconazole and beauvericin in the treatment of oral candidiasis.