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(57) Abstract :

This study aimed to develop voriconazole-loaded chitosan-coated cationic microemulsions (CVME) for treating fungal keratitis. Microemulsions were prepared via water titration and optimized before being coated with chitosan. The CVME displayed favorable physicochemical properties, mucoadhesive behavior, and a sustained release profile. Ocular irritation potential, in vitro antifungal efficacy, and in vitro release studies were conducted, alongside in vivo antifungal efficacy studies using a rabbit eye model with induced fungal infection. Results showed that CVME had higher permeability and improved antifungal efficacy compared to drug suspension (DS). The study concluded that CVME7 is a promising alternative for treating fungal keratitis, as it offers better adhesion to the eye's surface, prolonged drug release, and enhanced antifungal activity. The findings suggest that CVME7 could potentially improve treatment outcomes for fungal keratitis over current methods.

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