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(57) Abstract :
ABSTRACT DEVELOPMENT AND EVALUATION OF VORICONAZOLE LOADED NANOSTRUCTURED LIPID CARRIER BASED IN-SITU GEL OCULAR DRUG DELIVERY
The invention discloses, voriconazole loaded nanostructured lipid carrier NLCs based in-situ gel formulation drug delivery system, which is subsequently evaluated for ex-vivo ocular penetration trials vs pure drug solution. The ideal NLC Ig 3 formulation demonstrated 65.87% drug release in 12 hours, indicating a much-sustained release of the drug through in-situ gel, which was then assessed for release kinetics and determined to be the best-fitting in the first order kinetics with an R2 value of 0.995. The effect of drug-loaded NLC based on in-situ gel on sustained release rises when the gelling agent is increased. The ex-vivo corneal permeability of this improved NLC Ig 3 formulation was compared to pure drug, and it was discovered that the permeation of drug in cornea was raised by 2.4 folds compared to pure medication of voriconazole in 4 hrs. These findings suggested that a voriconazole loaded NLC based in-situ gel might be used as a new drug delivery method with improved drug penetration through the cornea and prolonged drug release, resulting in a lower dosage and higher patient compliance by lowering the dosing frequency.

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