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**Studying the influence of formulation and process variables on Vancomycin-loaded polymeric nanoparticles as potential carrier for enhanced ophthalmic delivery**

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**Abstract:**

Ocular topically applied Vancomycin (VCM) suffers poor bioavailability due to its high molecular weight and hydrophilicity. In the Present investigation, VCM-loaded polymeric nanoparticles (PNPs) were developed aiming to enhance its ocular bioavailability through prolonging its release pattern and ophthalmic residence. PNPs were prepared utilizing double emulsion (W/O/O), solvent evaporation technique.  $2^3 \times 4^1$  full factorial design was applied to

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