Article ID: APPSAS000BPR106

FORMULATION AND EVALUATION OF SUSTAINED RELEASE IN SITU OPHTHALMIC GEL OF NEOMYCIN SULPHATE

Bull. Pharm. Res. **2015;5(1):1-5.**

The aim of the present work was to formulate and evaluate *in situ* gelling system of Neomycin sulphate. Neomycin sulphate is an antibacterial agent which exhibits rapid precorneal elimination and poor ocular bioavailability, when given in the form of conventional ophthalmic drops. To overcome this, an attempt has been made to formulate temperature-triggered *in situ* gelling system of Neomycin sulphate to provide sustained release of drug based on polymeric carriers that undergo sol-to-gel transition upon change in temperature. The Neomycin sulphate in situ gelling system was formulated by using Poloxamer 407 in combination with hydroxyl propyl methyl cellulose (HPMC) which acted as viscosity enhancing agent. The formulations were evaluated for clarity, pH measurement, gelling capacity, drug content estimation, rheological study, *in vitro* diffusion study and antibacterial activity. The developed formulation was stable and provided sustained release up to a time period of 8 h and it is a viable alternative to conventional eye drops.

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Research Paper **Received:** Jan 17, 2015; **Accepted:** Feb 02, 2015
Published: Feb 03, 2015

Total pages: 05; References: 13

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