



## *In vitro In-vivo* Investigation of Topical W/O Microemulsion of Timolol Maleate for Treatment of Glaucoma

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**SUMMARY.** The present study is focused in a w/o microemulsion formulation containing timolol maleate to extend the time of reduced intra-ocular pressure (IOP) of glaucomatous rabbit's eye measured by using a Schiøtz tonometer. The microemulsion composed of purified water, ethyl oleate as oil phase and two non-ionic surfactants, namely sorbitan mono laurate and polyoxyethylene 20 sorbitan monooleate. The colloidal system demonstrates monodisperse distribution behavior and exhibit a uniform size distribution of finite width. *In vitro* drug release was found to follow Higuchi's pattern. *Ex vivo* permeation through goat cornea revealed delayed release of timolol from microemulsion as compared with its aqueous solution. A progressive reduction in IOP is seen lasting for 12 h compared to aqueous eye drop that lasted for only 5 h.

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**KEY WORDS:** Ocular bioavailability, Phase transition, Timolol maleate, W/O microemulsion.

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