

# A Mathematical Tool to Study Drug Delivery to the Eye in Case of Glaucoma

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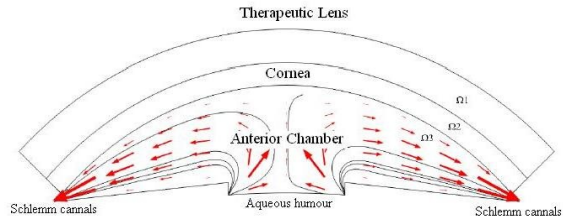
## Abstract

The aim of the poster is to present a coupled 2D mathematical model to predict the evolution of drug concentration - in the cornea and in the anterior chamber of the eye - when therapeutic lenses are used (Figure 1). The mathematical model takes into account (i) diffusion processes in several compartments of the eye (therapeutic lens, cornea and anterior chamber); (ii) metabolic consuming processes of the drug in the cornea and anterior chamber; (iii) convection processes induced by the circulation of aqueous humour in the anterior chamber. Numerical simulations, obtained with COMSOL, are presented in healthy and pathological situations. Particular attention is devoted to the evolution of drug concentration in the anterior chamber (Figure 2) when high values of intra ocular pressure occur due to the obstruction of the trabecular mesh.

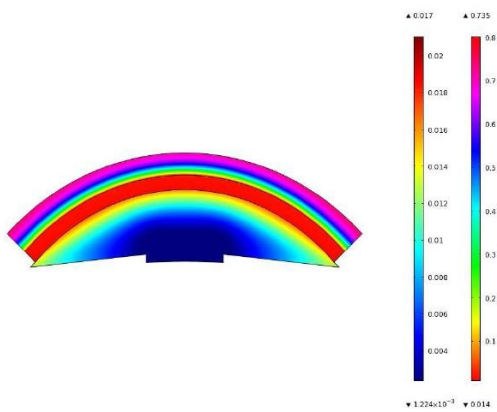
## Reference

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## Figures used in the abstract



**Figure 1:** Geometry.



**Figure 2:** Drug Concentration at 1 hour in therapeutic lens, cornea and anterior chamber.