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Resistance of topical Ophthalmic Drug Products in the novel *in vitro* **OphthalMimic** device

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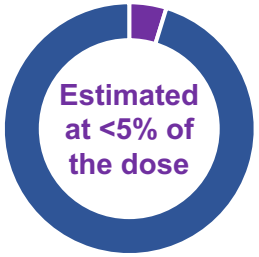
Poster number 890

Introduction

Biggest Challenges for Topical Ophthalmic Formulations

- Dynamic eye protection mechanisms affect penetration of topical ophthalmic formulations

Drug penetration



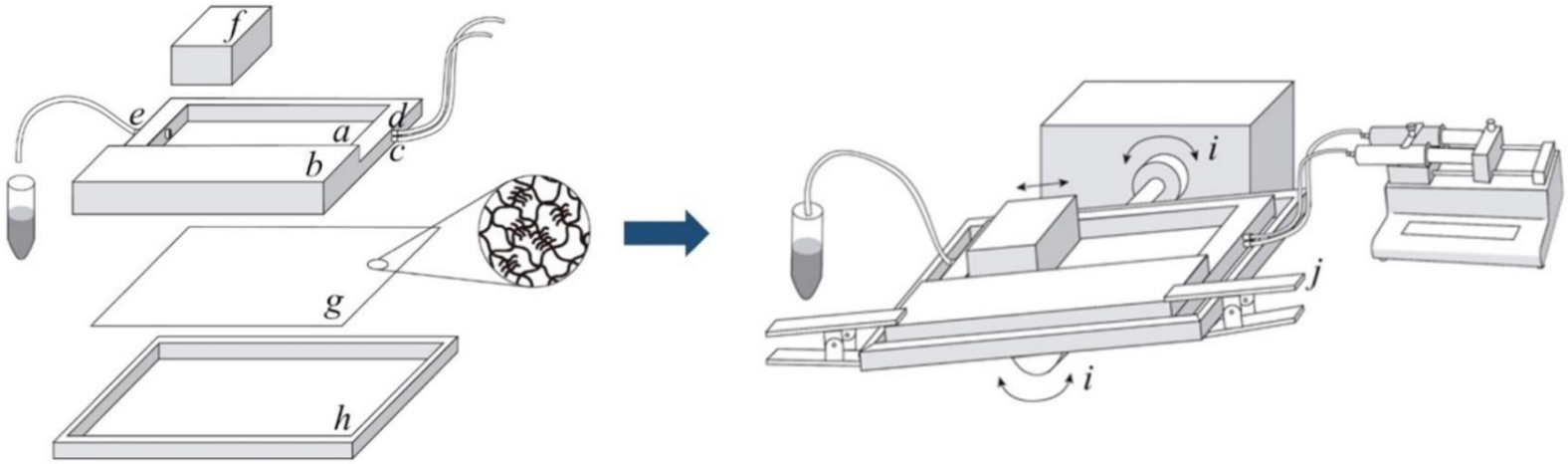
Current Tests for Formulation Performance Assessment

- Time test
- Cost
- Dynamic eye protection mechanisms

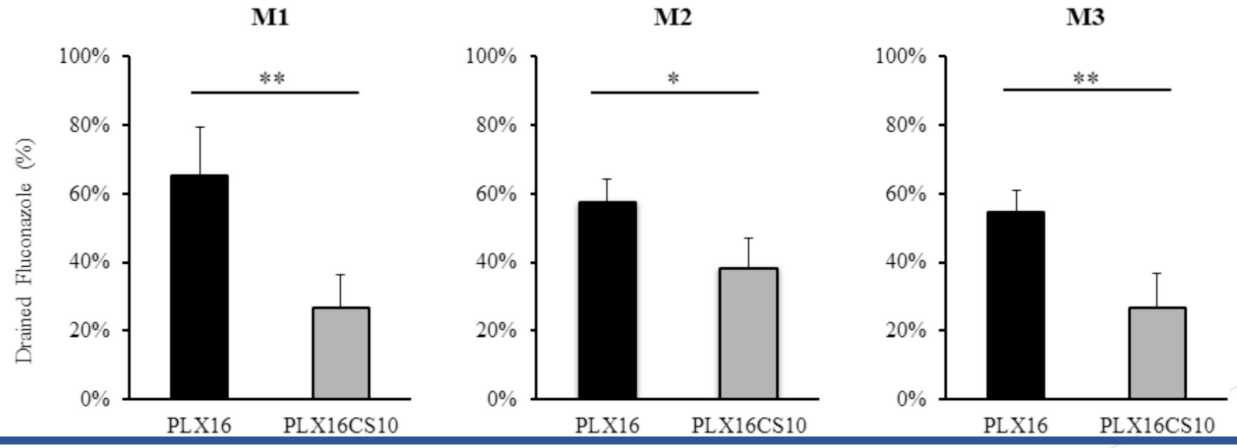
Concept

OphthalMimic can reproduce in vitro the dynamic eye protection mechanisms,

- Tear Flow and Drainage
- Blinking Movement



and incorporates a polymeric membrane that can evaluate the residence time capacity of formulations in the eye.



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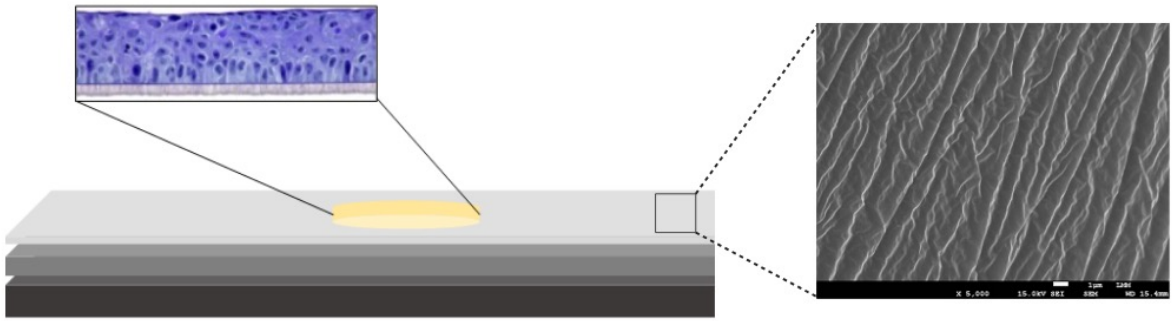
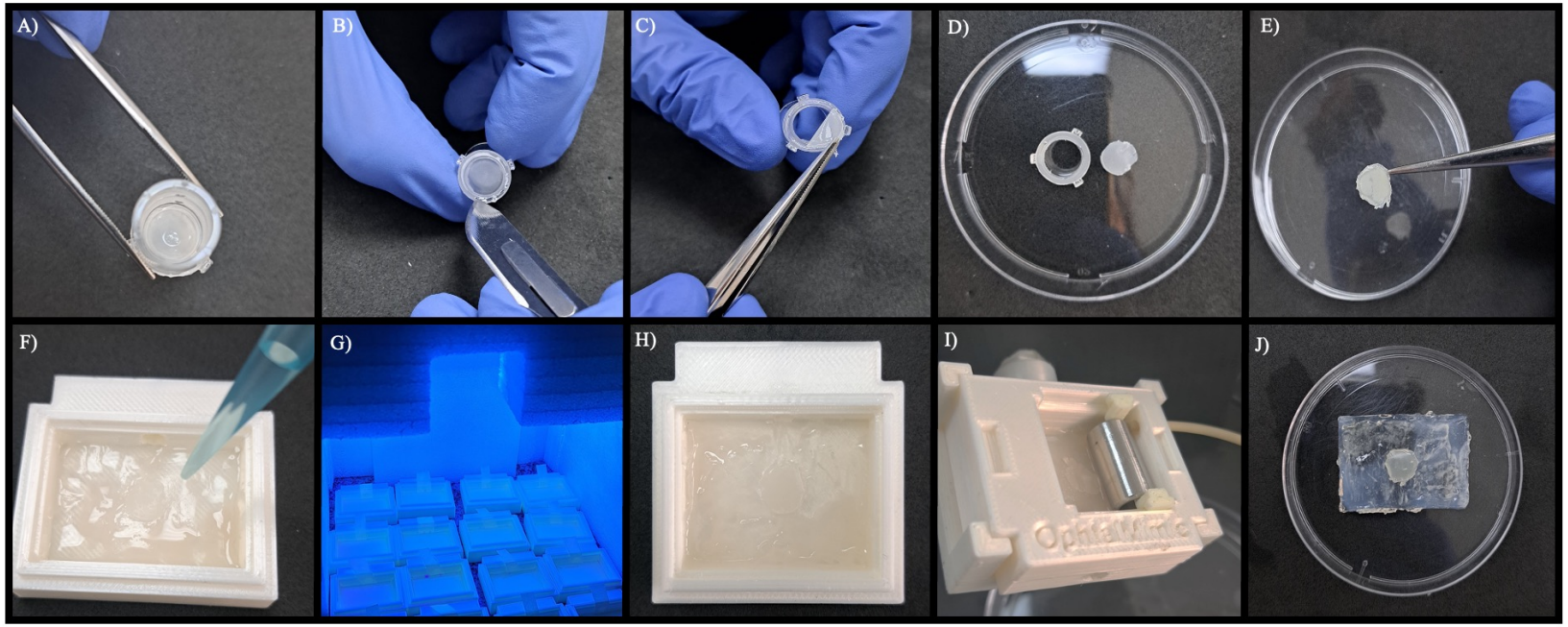
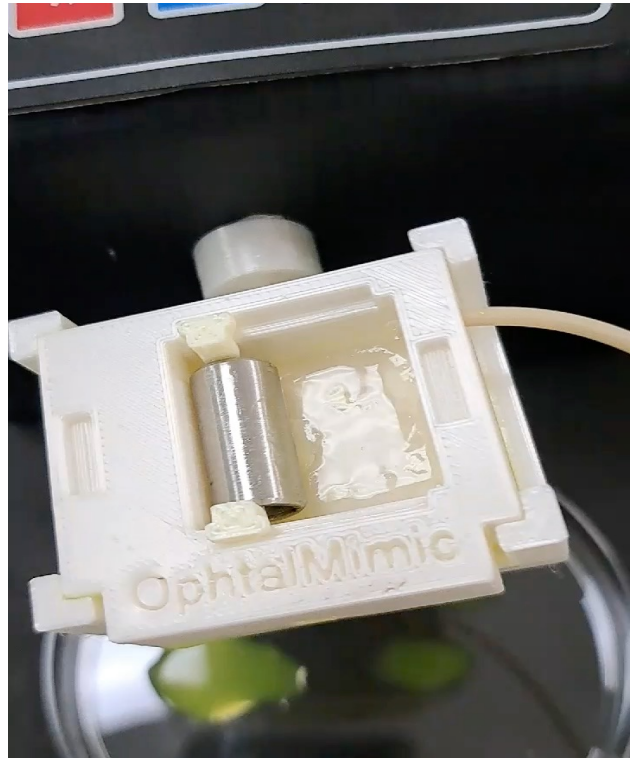
Incorporation of Reconstructed Human Cornea (SkinEthic HCE) into OphtalMimic Model

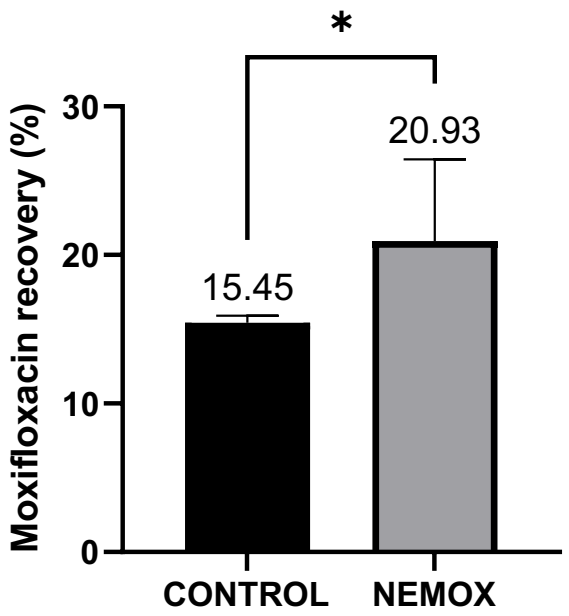




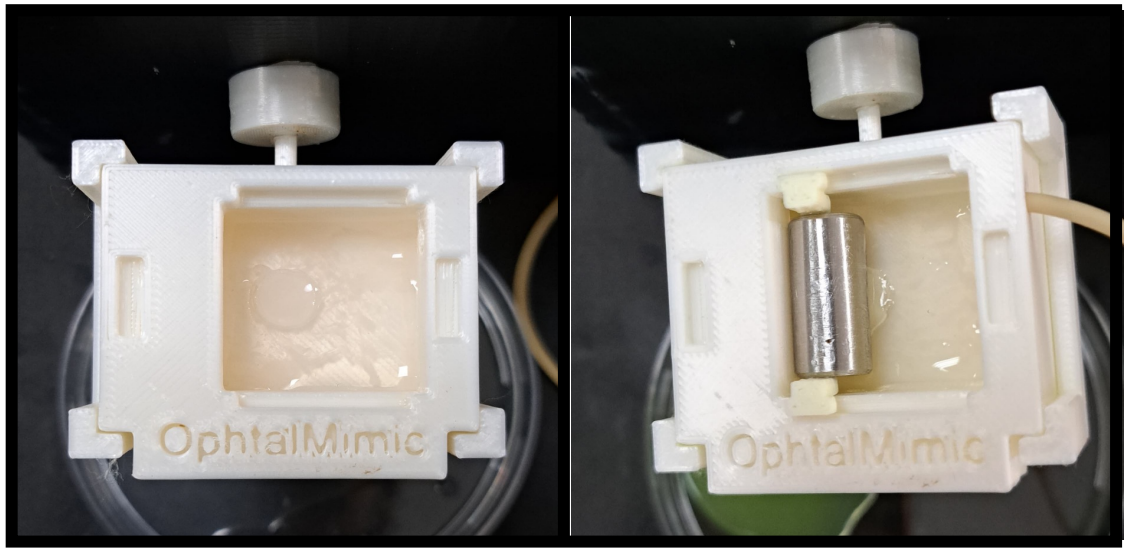


Results

Recovered moxifloxacin in HCE after the test in the Ophthalmimic device



Conclusion



- The “Ophtalmimic” device is a total *in vitro* method that suggests drainage of formulations more faithful to in vivo OCULAR DRAINAGE, in vitro CORNEAL RETENTION with simulated tear flow and a movable eyelid.
- Provide HIGH-THROUGHPUT SCREENING tools for evaluating ophthalmic drug product performance and may reduce the need for animal testing.

CAPES

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