

Title: Nanocarrier Peptide Targeting Corneal Stroma

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KEYWORDS: Cell Penetrating Peptide, Corneal stroma, Drug delivery

DOMAIN: Healthcare (Drug Delivery)

SUMMARY:

The novel synthetic peptide acts as a non-invasive nanocarrier of cargo molecules to manage corneal disease. It can penetrate across the corneal epithelium, specifically targeting the stromal region of the cornea. The synthetic peptide is designed using an optimal support vector medium score, indicating improved cellular uptake and effective penetration ability. The target-specific delivery of the peptide has a wide scope of application in corneal disorders, gene therapy, delivery of antimicrobials for microbial infections, management of stromal dystrophies, maintaining and modifying corneal collagen structure, etc.

ADVANTAGES:

1. Transfer of cargo molecules in their biologically active form.
2. High retention of the peptide in the corneal stroma showing probable candidate for disease management.
3. Improved peptide penetration across the cell membrane.

APPLICATION: Nanocarrier for ocular drug delivery.

SCALE OF DEVELOPMENT: Lab-scale experiments were performed on the goat eye.

TECHNOLOGY READINESS LEVEL: TRL 3

IP STATUS: Indian Patent Application No. (202111002997)