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• Fungal Keratitis
• Photoactivated Chromophore for Keratitis-Corneal Cross-linking (PACK-CXL)

UV-A light + Riboflavin

Antimicrobial effect
Aims

• Establishing a human *Fusarium* infection model, *in vitro*

• Evaluating the efficacy of the UV-A/riboflavin combination in treating *Fusarium* keratitis

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Methods

• Post-mortem human corneal buttons
• Fluorescent labelled *Fusarium oxysporum*
• Confocal microscope
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Methods

Donor Corneas (n=16)

- Control group (C)
  - Scratch

- Cross-linked group (X)
  - Scratch

- Infected group (I)
  - Scratch
  - Infected

- Infected then cross-linked group (IX)
  - Scratch
  - Infected

24 h

- CXL

24 h

Imaging

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Methods

• CXL procedure
Ex-vivo human *Fusarium* keratitis model

- Confocal Microscopy

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Ex-vivo human *Fusarium* keratitis model

• Confocal Microscopy

merged Bright Field and Green Channels

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Ex-vivo human *Fusarium* keratitis model

- Confocal Microscopy

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3D confocal imaging for an *ex-vivo* human *Fusarium* keratitis model
Results

Infected cornea

Infected then cross-linked cornea

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PACK-CXL is suppressing the *Fusarium* hyphal growth.
PACK-CXL is inhibiting the *Fusarium* sporulation
Conclusion

Corneal collagen cross-linking procedure could be a promising approach in the management of *Fusarium* keratitis.
Acknowledgment

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