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IIT-D develops novel strategy for fungal eye infection treatment

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The team has successfully developed a novel peptide-based antifungal strategy for enhanced Natamycin penetration



In an effort to develop a better anti-fungal strategy for fungal keratitis, a leading cause of monocular blindness i.e, blindness in one eye, in the developing world, an all-women team of the Indian Institute of Technology Delhi (IIT-D) researchers has been working in collaboration with Dr CM Shah Memorial Charitable Trust and Eye Life, Mumbai.

The team has successfully developed a novel peptide-based antifungal strategy for enhanced Natamycin penetration. The developed peptide-drug conjugate showed an appreciable antifungal effect in the lab.

US FDA-approved Natamycin is employed as a primary line of treatment for fungal keratitis but due to poor ocular penetration, it requires prolonged and frequent dosing, causing discomfort to patients.

In their research study, the scientists found that conjugate drug penetration was 5-fold higher than Natamycin in rabbits, thus enabling lowering of the dosage frequency. Further, 44% of mice showed complete resolution of fungal infection with the novel conjugate as compared with 13% of mice that were treated with Natamycin suspension only.

The research team is now looking forward to initiating a clinical trial with the participation of the industry and other relevant agencies.