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Nanoparticles for treating eye infections

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Keratitis is the inflammation of the eye, which starts with redness and itching and might eventually lead to blindness.



Scientists at the Hyderabad-based CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB) have developed a novel way to treat fungal keratitis. Keratitis is the inflammation of the eye, which starts with redness and itching and might eventually lead to blindness.

Keratitis can be caused by both bacteria and fungi. Fungi attach themselves to the cornea and release enzymes that break down the corneal proteins for their nutritional requirements.

Treating keratitis infection is currently a challenge because it is difficult to maintain a therapeutic dose at the corneal surface for long periods as blinking and tear formation washes off the drug. To address this challenge, scientists at CCMB have developed protein-based nanoparticles that encapsulate the drug.

The enzymes secreted by fungi breaks down the gelatine protein of nanoparticles that encapsulates the drug, thus releasing the drug.

Scientists are planning to carry out one more animal trial on monkeys or rabbits before starting trials on humans.