Scientists are making strides in the fight against HIV/AIDS, and the
Glow-In-The-Dark Cats Help With AIDS Research

The latest involves … glow-in-the-dark cats.

A Mayo Clinic team has successfully engineered cats to produce a protein that helps their bodies resist the feline immunodeficiency virus (FIV), which causes AIDS in cats. Researchers were able to do this by inserting a monkey gene into feline eggs before they were fertilized with sperm. The genetic engineering has the potential to protect the cats from being infected by FIV.

FIV and the human immunodeficiency virus (HIV) are very similar diseases, in that they both deplete the body’s own immune cells from fighting off infection. So, the finding that it's possible to insert protective genes -- though in cats -- is also a step forward for HIV research for humans, researchers said.

The team engineered a jellyfish gene into the feline eggs so that they could see if the gene engineering worked -- and it did, as evidenced by the cats' ability to glow in the dark.

The scientists also learned that this genetic protection in the cats can be passed on through generations, because the engineered cats had kittens that were also able to produce proteins that protect against virus invasion.

However, it still remains to be seen if the genetically engineered cats are actually able to resist FIV, though the science is promising, LiveScience reported.

"We haven't shown cats that are AIDS-proof," study researcher Eric Poeschla, a molecular biologist and infectious disease specialist at the Mayo Clinic College of Medicine, told LiveScience. "We still have to do infection studies involving whole cats. That the protection gene is expressed in the cat lymphoid organs, where AIDS virus spread and cell death mostly play out, is encouraging to us, however."

This isn't the first time a cat has been engineered to glow in the dark. In 2008, TODAY reported that Audubon Nature Institute scientists were able to engineer an orange tabby cat to glow fluorescent green in the darkness. The purpose of that experiment was to see if they could successfully perform gene implantation. Cats and humans have a similar genetic makeup, TODAY reported.

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