Could gene editing and gene drives alter bats to prevent future pandemics?

Amid the devastating Covid-19 pandemic, two researchers are proposing a drastic way to stop future pandemics: using a technology called a gene drive to rewrite the DNA of bats to prevent them from becoming infected with coronaviruses.

The scientists aim to block spillover events, in which viruses jump from infected bats to humans — one suspected source of the coronavirus that causes Covid. Spillover events are thought to have sparked other coronavirus outbreaks as well, including SARS-1 in the early 2000s and Middle East respiratory syndrome (MERS).

This appears to be the first time that scientists have proposed using the still-nascent gene drive technology to stop outbreaks by rendering bats immune to coronaviruses, though other teams are investigating its use to stop mosquitoes and mice from spreading malaria and Lyme disease.

“With a very high probability, we are going to see this over and over again,” argues entrepreneur and computational geneticist Yaniv Erlich… “Maybe our kids will not benefit, maybe our grandchildren will benefit, but if this approach works, we could deploy the same strategy against many types of viruses,” Erlich told STAT.

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