

Scientists working on “undo button” if genome modifications go awry

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Eradicating malaria and dengue has been a dream for quite some time, and there are plenty of humans who wouldn't mind if mosquitoes disappeared along with those diseases. A new genetic editing technique may make that future possible. But what if playing God over nature goes wrong? Well, then we can engineer new organisms that can reverse any damage we've done — and so on, and so on.

CRISPR/Cas9, a bioengineering technique that uses RNA to target and edit specific regions of genetic code, [has been everywhere lately](#), and for good reason: It's more powerful, cheaper, and easier to work with than previous genome editing techniques. The technology also enables a [technique proposed in 2003](#) called a “gene drive” to become a reality.

A gene drive uses CRISPR to force a genetically modified trait onto a wild population, by hacking that trait to be inherited more readily than a wild-type trait. In practice, this would mean that you could make a mosquito's immunity to malaria more dominant than the non-immune gene. You'd then release these genetically modified mosquitoes into the wild and, within a couple generations, have an entire population of malaria-immune mosquitoes.

As you can imagine, the ability to purposefully push a trait upon a wild population has a number of people worried. Eliminating an invasive species sounds like a great idea, but ecosystems may have already evolved to rely on that invasive species, for instance.

And so, scientists are also working on a “reverse” gene drive: Essentially, an “undo” button that requires more CRISPR to change things back to normal.

Read full, original post: [Scientists Are Working on an 'Undo Button' For Genetic Experiments Gone Wrong](#)