

## Gene-drive off-switch addresses concerns of releasing ‘genocidal’ mosquitoes into nature to control pests and disease

Researchers in the UK have developed the first ‘switchable’ gene drive system, potentially addressing fears that the use of gene drives to control malaria [carried by mosquitoes] or eliminate invasive species might run out of control and have devastating unintended consequences.

Gene drives work by...ensuring that virtually all offspring inherit the intended gene, spreading it rapidly through the entire target population.

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The new study...[published in the Nature journal Scientific Reports](#), demonstrates the effectiveness of a gene drive on-off switch delivered by the presence of a cheap and environmentally-friendly amino acid.

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In other words, the gene drive will only work if [the amino acid] BOC is ingested by the target organism so that it is present in the cells. This would theoretically allow scientists to regulate a gene drive in the wild merely by adding or withdrawing the amino acid BOC from the environment.

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However, campaigners against genetic engineering have warned of the “dangers of irretrievably releasing genocidal genes into the natural world” and called for a moratorium on gene drive development.

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More research will be needed to demonstrate how deployable it might be at the scale needed to control a gene drive targeting a wide geographical area.

**Read full, original article:** [New gene drive ‘off-switch’ could assuage fears of critics](#)