GENE EDITING

Gene drives tested in mammals for first time

Technology worked inconsistently in mice.

BY EWEN CALLAWAY

A controversial technology that can alter the genomes of entire species has been applied to mammals for the first time. In a preprint published on 4 July, researchers describe developing 'gene drives' in mice using CRISPR gene editing — and say that the technique works inconsistently in the animals.

Gene drives ensure that more of an organism's offspring inherit a certain, 'selfish' gene than would happen by chance, allowing a mutation or foreign gene to spread quickly through a population. They occur naturally in some animals, including mice. But the CRISPR–Cas9 gene-editing tool has allowed the creation of synthetic gene drives designed to eliminate problem species by, for instance, making offspring infertile. They have already been created in mosquitoes in the lab, as a potential malaria-control strategy, and researchers have suggested that the technology could help to kill off rodent pests. The technique has attracted controversy — and even a failed attempt to ban its global use — because, if released in the wild, organisms carrying gene drives might be hard to contain.

The researchers behind the latest study, led by Kim Cooper, a developmental geneticist at the University of California, San Diego, say their goal was to create a test bed for the technology in mammals (H. A. Grunwald *et al*. Preprint on bioRxiv http://doi.org/crw3; 2018). Working in mouse embryos, they biased the inheritance of a mutation that gives mice all-white coats. The mutation was not always copied correctly, and the process worked only in female embryos. The team estimated that this could lead to a mutation being transmitted to 73% of a female mouse's offspring, on average, instead of the usual 50% for most genes. Cooper declined to comment on the work, because it has not yet been published in a peer-reviewed journal.

There is an indication that the technology could work, but the study is also sobering, says Paul Thomas, a developmental geneticist at the University of Adelaide in Australia. "There is a lot more to do before you could consider gene drives for a useful tool for population control of rodents," he says. ■

CORRECTIONS

Due to a misunderstanding from our reporter, the Editorial 'Military work threatens science' (*Nature* **556**, 273; 2018) incorrectly implied that the Astronomical Society of Japan formally advocates the use of funding from the country's military research fund to support academic researchers. While some members agree with that view, the society as a whole has no such position. On the contrary, it is discussing how basic science can be protected from the influence of military funds. We apologize.

The News story 'Mysteries of Indian monsoon probed' (*Nature* **558**, 493–494; 2018) gave the incorrect name for the 5-year study. MISO-BOB was the name of just one component, not the whole study.