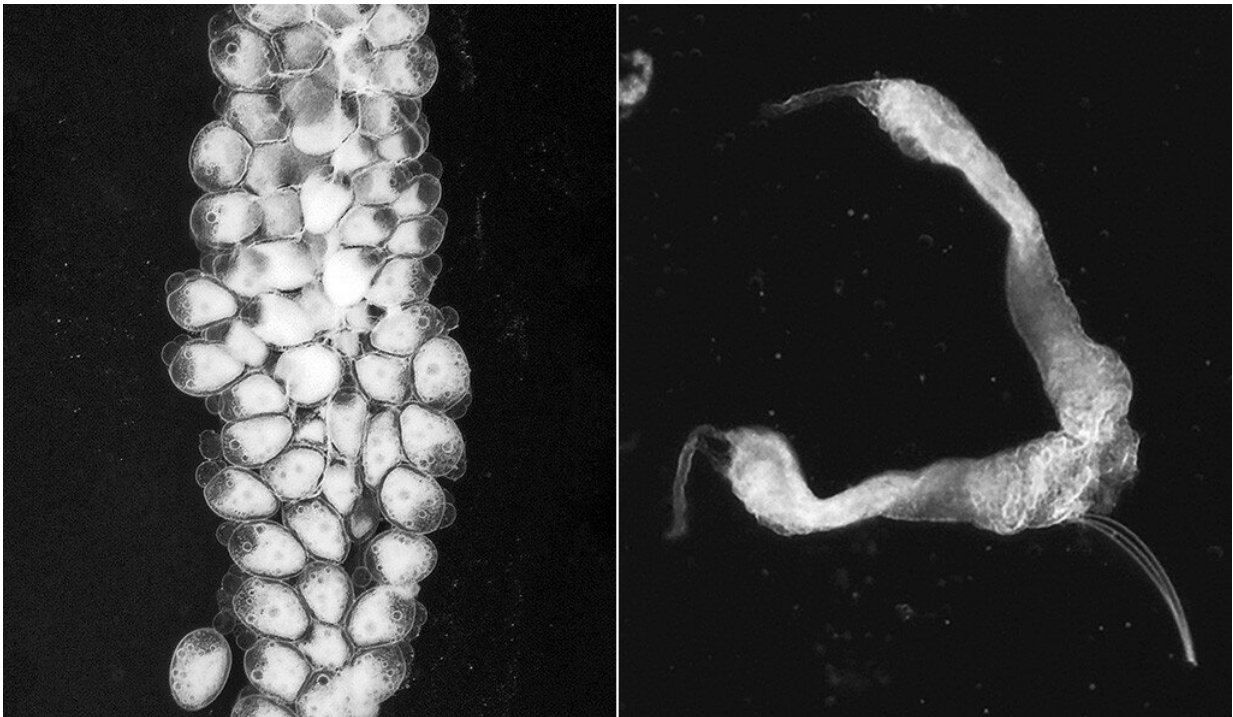


Editing mosquito's gene wards off malaria and halts reproduction

October 29 2019, by Bill Hathaway



Anopheles mosquito ovaries before (left) and after Yale researchers removed a single gene from the female genome, dramatically reducing fertility and the ability of the mosquitos to host the parasites that cause malaria. Credit: Yale University

Scientists have looked for immune system factors that might help mosquitoes ward off pathogens such as malarial parasites and indirectly protect humans from infection. Yale researchers found one by editing a

single gene, which turns out to be crucial for female reproduction.

Researchers in the lab of Erol Fikrig, the Waldemar Von Zedtwitz Professor of Medicine ([infectious diseases](#)) and professor of epidemiology and of microbial pathogenesis, edited out a gene suspected of suppressing the mosquito immune system in females of the species *Anopheles*. They found that the reproductive systems of the mutant mosquitoes were severely disrupted and that the level of parasites that cause malaria was dramatically reduced, researchers report Oct. 28 in the *Journal of Experimental Medicine*.

"When a mosquito does not have functional ovaries, the parasite that causes malaria will not survive well in the mosquito," Fikrig said. "If we understand how malaria interacts with a mosquito, we can perhaps interfere with that process. However that is a long, long way off. This is not a new vaccine or treatment."

More information: Jing Yang et al. Disruption of mosGILT in *Anopheles gambiae* impairs ovarian development and Plasmodium infection, *The Journal of Experimental Medicine* (2019). [DOI: 10.1084/jem.20190682](#)

Provided by Yale University

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