

Traces of Zika Found in Asian tiger mosquito in Brazil

April 14 2017



Transmission electron microscope image of negative-stained, Fortaleza-strain Zika virus (red), isolated from a microcephaly case in Brazil. The virus is associated with cellular membranes in the center. Credit: NIAID

In a recent test of Asian tiger mosquitoes collected in Brazil, researchers found fragments of Zika virus RNA, raising concerns that it may be carried by species other than Zika's known primary vector, the yellow fever mosquito.

The research does not conclude that the Asian tiger mosquito (*Aedes albopictus*) can transmit Zika to humans, but it highlights the need for deeper research into additional potential vectors for the virus that has rapidly spread through the Americas since its initial outbreak in 2015, says Chelsea Smartt, Ph.D., associate professor at the Florida Medical Entomology Laboratory at the University of Florida and lead author on the study to be published this week in the Entomological Society of America's *Journal of Medical Entomology*.

"Our results mean that *Aedes albopictus* may have a role in Zika virus transmission and should be of concern to public health," Smartt says. "This mosquito is found worldwide, has a wide range of hosts and has adapted to colder climates. The role of this mosquito in Zika virus transmission needs to be assessed."

Smartt and an international team of researchers collected the [mosquitoes](#) from homes in Brazil and hatched eggs from those mosquitoes in the lab. Male *Ae. albopictus* mosquitoes that hatched tested positive for Zika RNA (ribonucleic acid), meaning that females collected in the field had encountered Zika and passed fragments of the virus to their offspring. Whether that means *Ae. albopictus* can "vertically transmit" live Zika virus to its offspring is still unclear. "Detecting Zika RNA fragments without finding live Zika virus suggests that either the female parent was not itself infected with live Zika virus or it was not able to transfer live Zika virus to her eggs," Smartt says.

Thus far, the yellow fever mosquito (*Aedes aegypti*) is the species known to be the primary transmitter of Zika to humans, though

researchers suspect other species may be involved. However, Smartt says "extensive research still needs to be done" to confirm whether the Asian tiger mosquito is also a culprit.

Meanwhile, though, the current findings emphasize the need for abundant caution among insect scientists and medical researchers, as well. "It is important to test all mosquitoes collected in areas with a high number of Zika cases for Zika RNA, and if the mosquitoes are positive for Zika RNA they must be tested for live Zika [virus](#) prior to transport or use in a laboratory for experiments."

More information: "Evidence of Zika Virus RNA Fragments in *Aedes albopictus* (Diptera: Culicidae) Field-Collected Eggs From Camaçari, Bahia, Brazil," *Journal of Medical Entomology*. [DOI: 10.1093/jme/tjx058](#)

Provided by Entomological Society of America

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