

Researchers obtain first Zika sequence isolated from semen

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Transmission electron micrograph (TEM) of Zika virus. Credit: Cynthia Goldsmith/Centers for Disease Control and Prevention

A team of researchers from the United Kingdom has obtained the first complete genome sequence of Zika virus that was isolated from a semen sample. The research is published this week in *Genome Announcements*,

a journal of the American Society for Microbiology.

The motivation for this investigation was a 2011 case report in the US suggesting that Zika virus could be transmitted sexually. "Based on this report, we requested [semen samples](#) from all cases of Zika imported into the UK, in order to provide further evidence for this potential," said corresponding author Barry Atkinson, PhD, of Public Health England. Atkinson and his collaborators obtained this semen sample from a convalescent UK resident who had just returned from Guadeloupe, in the Caribbean.

Although the risk of sexual transmission has been well publicized during the current outbreak, few scientists have reported success in isolating Zika virus from the semen of infected males, said Atkinson. "Isolating Zika virus from semen has been a major challenge and little information has been published on this specific topic, so the methods we adopted may provide a template for others to follow," he said.

Part of the problem may relate to the types of cells scientists use to try to grow the virus. Many researchers use 'Vero' cells as these typically allow Zika virus to replicate at high efficiency, but that may not be the best choice for semen samples, said Atkinson. "We tried to isolate the virus in two cell lines, the standard Vero cells, which are mammalian in origin, and in C6/36 cells, which are derived from mosquitoes," he explained. Isolation of the virus from this semen sample was successful only in the mosquito cells, he said.

The successful isolation of Zika virus from this semen sample allowed the investigators to sequence the virus, resulting in the first genome of Zika virus isolated from semen. "We have many unanswered questions about how Zika virus is able to be transmitted sexually, whereas similar viruses are not," said Atkinson. "It is possible that the answers to these questions lie in the [viral genome](#), but many more sequences from semen

are required before scientists can see if there are any changes that shed light on this topic."

"This is the first Zika virus genome isolated from semen, but we need many more," said Atkinson. "Hopefully this success will enable others to follow suit."

Provided by American Society for Microbiology

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