

'Good' mozzie virus might hold key to fighting human disease

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The saltmarsh mosquito *Aedes vigilax*. Credit: Stephen Doggett (NSW Health Pathology)

Australian scientists have discovered a new virus carried by one of the country's most common pest mosquitoes.

The [new virus](#)—known as Parramatta River virus—infests only mosquitoes and doesn't pose any direct health risks to people, according to University of Queensland (UQ) and University of Sydney researchers.

Dr Jody Hobson-Peters, of UQ's Australian Infectious Diseases Research Centre, School of Chemistry and Molecular Biosciences, said the discovery could pave the way to stopping outbreaks of mosquito-borne disease.

"Viruses are typically viewed as harmful," she said.

"Rarely do we consider that some viruses may hold the key to fighting back against human disease.

"The presence of Parramatta River virus or other similar "good" viruses in a mosquito may make it harder for the human disease-causing 'bad' viruses to also infect that mosquito, thus stopping disease transmission.

"This discovery highlights how little we know about mosquitoes and their relationships with pathogens.

By learning about mosquito-borne viruses we may be better able to predict outbreaks of mosquito-borne disease."

University of Sydney medical entomologist Dr Cameron Webb said the saltmarsh *Aedes vigilax* mosquito, responsible for spreading Ross River virus, was one of the most common pest mosquitoes in coastal regions of Australia, including Sydney and Brisbane.

"It probably bites more people than any other mosquito," he said.

"With this discovery, we could find a way to vaccinate mosquitoes and stop their bites making thousands of Australians sick every summer."

Queensland and New South Wales recorded a big outbreak of Ross River virus, with this year thousands of people falling ill.

Parramatta River virus was discovered in saltmarsh mosquitos collected just west of the Sydney CBD in 2007, and its presence was again confirmed last year and this year in Brisbane.

Dr Hobson-Peters and colleagues, including UQ PhD student Breeanna McLean, developed and implemented a new system to rapidly screen thousands of mosquitoes for the new virus.

"It's incredibly exciting that we detected Parramatta River virus using our new virus discovery system," Ms McLean said.

"Never before have we been able to assess mosquito populations for novel [viruses](#) so easily."

The virus was isolated, cultured and described from a "soup" of [mosquitoes](#) collected in the wetlands along the Parramatta River.

The research is published in *Virology* journal.

Provided by University of Queensland

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