

# THE STRAITS TIMES

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Zika outbreak

## Kit can test for seven diseases with a drop of blood



Veredus Laboratories' fingernail-size microchip can test for Zika, dengue, malaria, chikungunya, West Nile, Yellow Fever and Japanese encephalitis. PHOTOS: VEREDUS LABORATORIES

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Carolyn Khew (mailto:kcarolyn@sph.com.sg)

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A Singapore-based firm has developed a test that can detect seven major tropical diseases, including Zika and dengue, from just a drop of blood.

The fingernail-size microchip was developed about a year ago by Veredus Laboratories, a Singapore-based medical diagnostics company, according to its press statement yesterday. It can also detect malaria, chikungunya, West Nile, Yellow Fever and Japanese encephalitis.

Dr Rosemary Tan, chief executive officer and founder of Veredus, told The Straits Times that the test has been sold to hospitals, clinical laboratories and organisations in Indonesia and China. Local hospitals have also expressed interest.

Each kit costs about \$100, and it takes about two to three hours to identify the pathogen.

"Zika is now becoming very famous in Singapore due to the outbreak, but we developed this chip more than a year ago which can detect different species of malaria, serotypes of dengue, chikungunya and other flaviviruses," said Dr Tan.

Zika and dengue are spread by the *Aedes aegypti* mosquito and cause similar symptoms such as fever and joint pain.

As of yesterday, the number of dengue cases this year had exceeded the number for the whole of last year, while the health authorities confirmed 17 new cases of locally transmitted Zika virus infection.

With its capabilities for polymerase chain reaction (PCR) and microarray, the chip does away with the need for large machines required by typical diagnostic tests, said Dr Tan.

PCR allows for a single copy of a gene to be copied in the millions so the gene can be analysed, while the microarray is a "library of different virus sequences" that helps to identify the virus.

Veredus research and development director Mitsuharu Sato said: "With the capability of (the diagnostic test) to detect and differentiate malaria, dengue, chikungunya and Zika in high sensitivity and specificity, we are now better equipped to make earlier informed decisions."

Dr Tan said the chip had been tested on different DNA sequences and showed high accuracy and specificity.