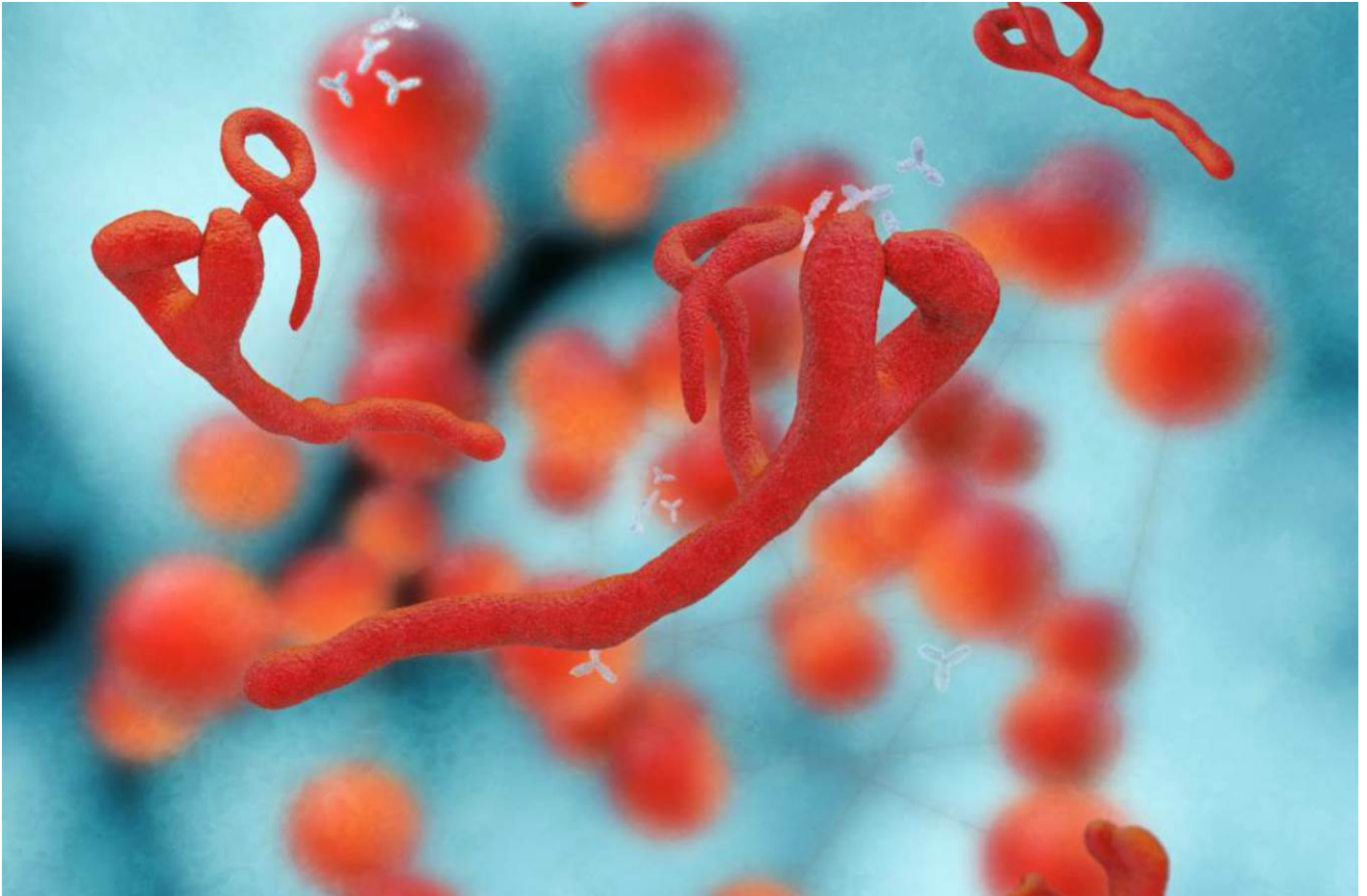


## Diagnostic Kits Speed Detection Of Infectious Diseases

National University of Singapore



Malaria and dengue fever are mosquito-borne diseases that affect millions of people in the tropics, with malaria killing about three million people worldwide every year. Rapid, accurate diagnosis is paramount for timely treatment or emergency response/containment procedures. The standard test for the malarial *Plasmodium* parasite is time-consuming, laborious, and can produce false negatives. Testing for dengue fever takes up to eight days and may also deliver inaccurate results. However, a Singapore medical diagnostics company, using breakthrough molecular technology from the National University of Singapore, has developed rapid-assay test kits that detect killer parasites in a matter of hours.

National University of Singapore researchers Ursula Kara, Robert Ting, Jill Tham, James Nelson and Theresa Tan discovered and patented the unique nucleic acid diagnostic primers for these organisms over a 10 year period. The technology was announced in 1998.

“ A primer is a short strand of DNA/RNA that is required for the formation of longer chains of DNA/RNA. Using a single drop of blood, the highly sensitive polymerase chain reaction (PCR) technology can distinguish between different *Plasmodium* species within three hours.

The dengue fever kit can detect the virus within three to five days after it first appears in the bloodstream, compared to the usual eight days using standard immunodiagnostic methods. Early detection enables earlier medical attention, which can be critical for preventing serious complications, such as dengue hemorrhagic fever and dengue shock syndrome.

The National University of Singapore has licensed its technology to Veredus Laboratories, which is manufacturing and selling several diagnostic kits. Singapore's National University Hospital has used the Veredus dengue fever kit for more than three years as a routine diagnostic tool. In addition, Veredus has produced the world's first validated commercial avian flu diagnostic kit, which has cut the time required to accurately detect the H5N1 virus from seven days to as short as two days. The company is also developing kits for encephalitis, SARS, yellow fever, Japanese encephalitis, and chicken pox.

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