

Researchers develop first lab-on-chip for detection of multiple tropical infectious diseases

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The Agency for Science, Technology and Research (A*STAR) and Veredus Laboratories, a leading supplier of innovative molecular diagnostic tools, announced the launch of VereTrop, the first biochip in the molecular diagnostics market that can identify 13 different major tropical diseases from a single blood sample.

With its high level of automation, this lab-on-chip diagnostic kit is poised to transform the quality and efficiency of testing tropical [infectious diseases](#), including dengue fever, malaria, [chikungunya](#) and hand, [foot and mouth disease](#), in the field.

The lead [virologist](#) in this project, Associate Professor Lisa F.P. Ng from A*STAR's Singapore Immunology Network (SIgN) said, "[Tropical diseases](#) often reflect common symptoms like fever, and may not be accurately diagnosed early by doctors. This portable test kit is a rapid and reliable method to accurately test for multiple pathogenic targets from just one blood sample in a matter of hours."

Together with Professor Laurent Renia, an expert in Malaria Immunobiology at SIgN, the team from SIgN has successfully validated the kit on patient samples in the external fields of Northern Thailand, at the Thai-Myanmar border.

Professor François H Nosten, the clinical collaborator at the Oxford

Clinical Unit in Mae Sot and Director of the Shoklo Malaria Research Unit said, "This technology opens new possibilities for the accurate and rapid diagnostic of important infectious diseases that remain the main causes of illness in the tropics. Its versatility and ease of use will change the approach to diagnostics at the periphery of health care system."

Developed with infectious disease expertise from A*STAR's SIgN, this biochip, which operates on STMicroelectronics' Lab-on-Chip platform, was initiated between ETPL, the technology transfer arm of A*STAR and Veredus in 2009. Prior to this, Veredus had licensed diagnostic technology from A*STAR in the areas of influenza and malaria.

"Veredus and A*STAR have worked on several collaborative projects dating back to 2004," said Dr. Rosemary Tan, CEO of Veredus Laboratories, a Singapore-based, majority owned subsidiary of STMicroelectronics. "This latest project on VereTrop Lab-on-Chip has combined the strengths and expertise of A*STAR, Veredus, and STMicroelectronics to create a powerful multiplexed molecular product that can rapidly detect and differentiate symptomatically similar tropical infectious diseases and enable timely proper treatment."

"After this journey of more than three years, we are glad that such a compelling technologically-advanced product with global healthcare benefits is ready to be launched to the market. Veredus is a good example of how local companies can work with A*STAR for a consistent stream of technology to develop products that can enhance their offerings and level them up to be competitive and relevant globally," said Philip Lim, Chief Executive Officer of ETPL.

Provided by Agency for Science, Technology and Research (A*STAR), Singapore

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