



AVA and Veredus Laboratories Launch World's First Poultry Biochip "VereVet™ Lab-on-Chip"

Portable application capable of detecting multiple Avian Diseases using one sample

Singapore, June 16 2015 – The Agri-Food and Veterinary Authority of Singapore (AVA) and Veredus Laboratories, a leading supplier of innovative molecular diagnostic tools, today announced the launch of VereVet™, a portable Lab-on-Chip application that can detect, differentiate and identify nine major poultry infectious disease agents in one sample using a single disposable biochip.

2. The launch of this Poultry "laboratory on a chip" (Lab-on-Chip) application was made possible by the collaborative efforts of the team of scientists from AVA and Veredus, who began working on the project in 2010. Unlike the conventional method of testing which requires different samples for different tests, the portable Lab-on-Chip application is able to detect multiple infectious disease agents affecting poultry using only one sample. These disease agents include Newcastle Disease virus, *Salmonella Pullorum*, *Salmonella Enteritidis*, *Campylobacter* and Avian Influenza (bird flu) virus^[1].

3. Dr Huangfu Taoqi, Principal Scientist at the Animal Health Laboratory of AVA, led a team from AVA and Veredus to successfully validate the performance of the Poultry Lab-on-Chip. Extensive evaluations on the Avian Influenza virus and Newcastle Disease virus were conducted at the Australian Animal Health Laboratory in Geelong, Australia. Scientific details will be presented at the 17th International

^[1] *The detection of Avian Influenza virus includes all subtypes with special emphasis on H5, H7 and H9.*

Symposium of World Association of Veterinary Laboratory Diagnosticians in Saskatoon, Canada, on 16th June, 2015.

4. Emphasising the significance of the breakthrough especially in view of the economic and trade impact of bird flu, CEO of AVA, Ms Tan Poh Hong, said, “Singapore is free from bird flu. However it continues to plague other countries in the region as well as other parts of the world. With the emergence of new strains, it may be a challenge to quickly identify the strain in question. The new Lab-on-Chip, capable of rapidly identifying multiple poultry pathogens in one sample, enables authorities to take appropriate actions. This will, in turn, strengthen animal and public health for the region.”

5. “Veredus is proud to collaborate with AVA on this project to develop a chip to detect Poultry Diseases”, said Dr Rosemary Tan, CEO of Veredus Laboratories. “Veredus has developed other chips to detect human and bio-terror infectious diseases and is pleased to now introduce a chip for the detection of Poultry Diseases and related sample sources. We continue to look for partners where multiplexing molecular testing can provide a solution to animal and public health issues.”

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About Agri-Food & Veterinary Authority of Singapore

The **Agri-Food and Veterinary Authority of Singapore (AVA)** is the national authority for food safety and animal health. It ensures a supply of safe food, safeguards the health of animals and plants and facilitates agri-trade for the well-being of the nation.

AVA's role in safeguarding animal health

In safeguarding animal health, AVA administers a programme to prevent the introduction of animal diseases. The programme entails:

- Regulating the import of animals and their products, and implementing quarantine measures to prevent the introduction and spread of animal diseases in Singapore,
- Carrying out animal disease surveillance programmes to detect and control animal diseases,
- Providing services for the diagnosis, treatment and prevention of animal diseases,
- Facilitating Singapore's international trade through export health certification,
- Emergency preparedness to detect exotic animal diseases early and implementing eradication and control measures to stop the transmission of such diseases in Singapore.

AVA also engages in R&D projects and develops testing capabilities to detect animal diseases.

For more information about AVA, please visit www.ava.gov.sg

About Veredus Laboratories Pte Ltd

Veredus Laboratories Pte Ltd was founded in 2004 and launched its first products in 2005. Veredus is a Singapore-based majority-owned subsidiary of Accuron Technologies Limited, a precision engineering and technology group wholly-owned by Temasek Holdings.

Veredus develops, manufactures, and markets innovative multiplexed molecular solutions in the clinical, specialty, and custom testing markets based on STMicroelectronics' Lab-on-Chip platform. The Lab-on-Chip platform, marketed as the VerePLEX™ biosystem, combines Micro-Electro Mechanical Systems (MEMS) with micro-fluidics to integrate multiplexed DNA amplification with microarray detection for rapid, cost-effective, and accurate analysis of biological materials.

Further information on Veredus can be found at www.vereduslabs.com.

About Australian Animal Health Laboratory

Officially opened in 1985, CSIRO's **Australian Animal Health Laboratory (AAHL)** was built to help protect Australia's multi-billion dollar livestock and aquaculture industries, and the general public, from emergency and zoonotic disease threats.

As one of only six high-containment animal research centres in the world, AAHL works with national and international human and animal health organisations as part of a global One Health network.

Regionally, Australian Animal Health Laboratory (AAHL) supports Southeast Asian countries in their efforts to control and eradicate infectious animal diseases.

AAHL also provides the Australian government and industry groups with advice on exotic and emerging disease issues and advice in the general areas of biosecurity and counter-bioterrorism.

As part of a global role, this expertise is also used to assist countries in the Asia Pacific region to deal with animal disease issues contributing to regional food security and biosecurity. This support not only reduces the disease risks to the countries themselves but also assists the preparedness of Australian biosecurity through better threat assessment and preparedness.

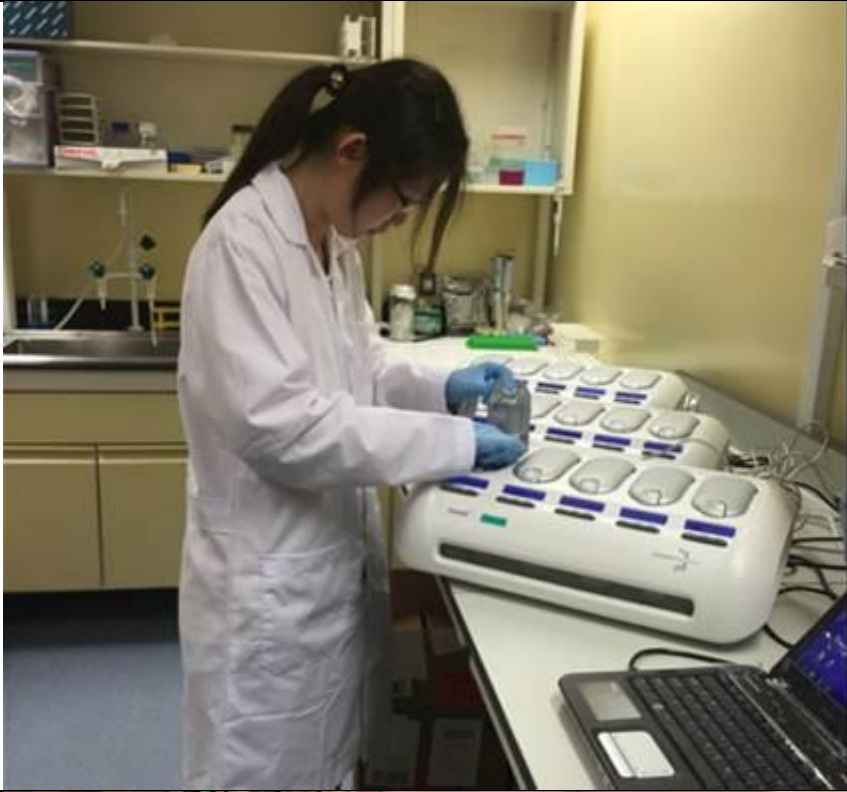
For more information about AAHL, please visit
<http://www.csiro.au/en/Research/Facilities/AAHL>

ANNEX

Photographs

No	Image	Caption
1	 A close-up photograph of a Lab-on-Chip (LOC) device. The device is a small, dark, rectangular chip with a central square area, mounted on a white plastic tray. The tray has a barcode and the number '10003103-000' printed on it. The background is a plain, light-colored surface.	Close-up of the Lab-on-Chip.
2	 A photograph showing a scientist in a white lab coat and blue gloves working at a laboratory bench. The scientist is using a pipette to transfer a sample into a Lab-on-Chip device. The bench is cluttered with various laboratory equipment, including pipettes, a red rack, and a white container. A poster with text and diagrams is visible in the background.	AVA scientist transferring a sample to the Lab-on-Chip.

3



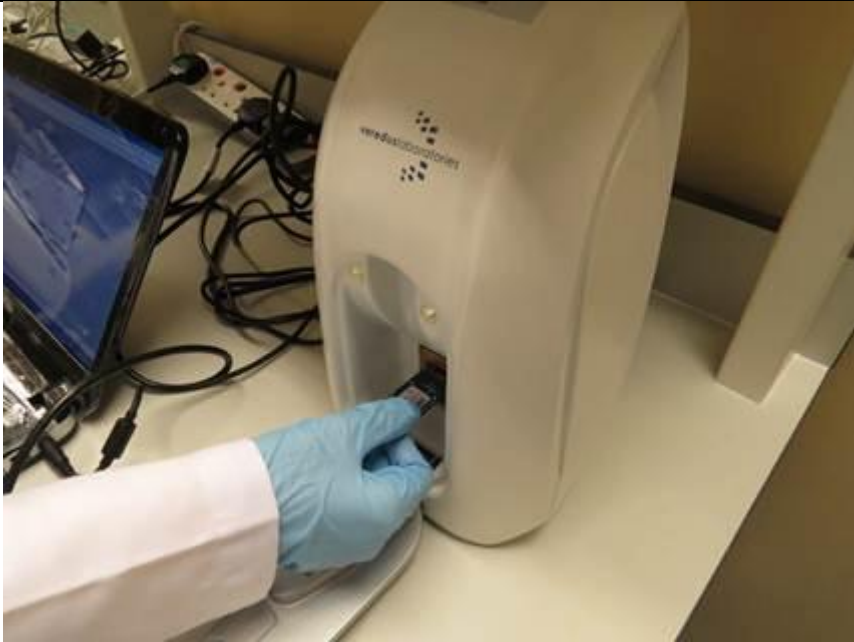
Conducting multiplex polymerase chain reaction (PCR) and hybridisation to amplify and detect nucleic acids of pathogens.

4



Scanning the barcode of the Lab-on-Chip to the programme.

5



Running the test.

6



Analysing results of the test.