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NSX and OTCQX Announcement

Beroni Group to Launch its Advanced US FDA-Approved Virus Diagnostic Kit to Help Combat Global Outbreaks of Zika, Dengue, Chikungunya and West Nile Viruses

In April 2019, Beroni Group Limited ("Beroni" or the "Company") (NSX: BTG; OTCQX: BNIGF) signed an exclusive license agreement with Columbia University whereby Columbia University grants to Beroni and its affiliates, an exclusive license to distribute the patented **CII-ArboViroPlex rRT-PCR** assay on a worldwide basis. The CII-ArboViroPlex rRT-PCR assay is an effective means to detect four viruses - Zika (ZIKV), Dengue (DENV), Chikungunya (CHIKV), and West Nile (WNV) - that may be present in areas where arboviruses are endemic. It was developed by Professor W. Ian Lipkin of Columbia University who is internationally recognized as an authority on the use of molecular methods for pathogen discovery and was the first to use purely molecular methods to identify an infectious agent and a pioneer in the use of high throughput sequencing in pathogen discovery.

Advantages of CII-ArboViroPlex rRT-PCR Assay

This assay method has advantages over traditional methods of serological viral detection methods based primarily on ELISA (enzyme-linked immunosorbent assays) technology which contains several inherent limitations i.e.

- Due to antibody cross-reactivity, each kit is usually only capable of separating a single virus. In the case of ZIKV, it is impossible to differentiate it from DENV, CHIKV and WNV viruses;
- ELISA methods are only suitable during the acute infection period (usually 5-10 days after infection), thus cannot be used for early detection, whilst RT-PCR methods can immediately detect viral DNA;
- ELISA assays are prone to false positives outside of the test period; and
- ELISA experimental procedure can be cumbersome.

In comparison with other RT-PCT products, the CII-ArboViroPlex rRT-PCR assay has the following advantages:

- ✓ It can detect and differentiate four viruses – ZIKV, DENV, CHIKV, WNV – without interference. The four viruses share some clinical signs and can be misdiagnosed in areas where they are common.
- ✓ It uses rRT-PCR technology which can detect the viruses within 3 to 4 hours.
- ✓ It can be used for early detection and differentiation of Zika virus, without considering incubation period and moreover, it can remain effective even after the acute period, where viral titer is highest. This is especially important for Zika virus, as the virus remains in semen much longer than blood, and thus can still be sexually transmitted.
- ✓ With its ability to detect and differentiate between 4 separate viruses, the volume of sample needed for testing is significantly reduced leading to reduction in cost and time needed for testing. In addition, it is optimized for diagnostic testing with a high degree of automation and ability for high throughput processing.
- ✓ It is effective at all stages of infection.

"The CII-ArboViroPlex rRT-PCR assay is probably the most advanced diagnostic tool in the market with the ability to detect the four viruses in almost real time mode. The closest product using similar methodology can only detect and differentiate 3 separate viruses which is however listed only for research purposes,

whilst the CII-ArboViroPlex rRT-PCR assay is approved by the US FDA for emergency use. It is effective, efficient, accurate and simple to use.” said Jacky Zhang, CEO of Beroni Group Limited.

A Growing Global Health Burden

Due to climate change which provides the optimum environment for proliferation of mosquitoes, the incidence and scale of mosquito-borne diseases have been rising dramatically over the past 60 years. ZIKV has caused large outbreaks in the Pacific region and the Americas since 2013 and is the cause of the Guillain-Barre syndrome and, when infecting pregnant women, causes birth defects such as microcephaly. Outbreaks of WNV in the U.S. have caused illness in tens of thousands of people, including about 20,000 cases of neurological disease, and more than 1,800 deaths through 2015. DENV causes 50-100 million cases of disease and tens of thousands of deaths annually worldwide. It is most prevalent in South East Asia. The first CHIKV outbreak in the Americas began in late 2013 in the Caribbean and quickly spread to South, Central and North American countries, causing more than 2 million cases by mid-2016.

No effective therapies or FDA-licensed vaccines exist for these human infections. With the growing outbreaks and global spread of these viruses, the need for an effective method of detection has come to the forefront of emergency disease management and monitoring.

Commencement of Production

The potential users of the diagnostic kit are government organizations and NGOs which will be mobilized in the event of potential disease outbreaks for testing and quarantine management of infected patients; customs authorities for testing passengers returning from areas of infection, as these are the entry points of potentially infected people; and academic institutions, pharmaceutical companies, and CDCs for research and monitoring purposes.

Beroni is pleased to announce that it has now commenced production of the CII-ArboViroPlex rRT-PCR assay. The Company will approach those countries which have experienced major outbreaks of the four viruses in recent years to promote usage of this assay for early detection and control of the disease outbreaks. Interested parties are welcome to contact the Company for more information and for request of product samples.

About Beroni Group Limited

Beroni Group is an international biotechnological company listed on the National Stock Exchange of Australia and on the OTC markets in the USA. It currently has four core businesses - cell therapies, developing new anti-cancer drugs, e-commerce platform for pharmaceutical and healthcare products, and detection & diagnosis of infectious diseases.

Beroni Group’s overall strategic goal is to become a world’s leading enterprise in the biotechnology, life sciences and environmental science industries.

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