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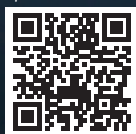
INFECTION
CONTROL
APAC EDITION

Jacky Zhang,
Chairman & CEO

BERONI GROUP

To Be a Global Leader in Virus
Detection and Prevention

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BERONI GROUP

To Be a Global Leader in Virus Detection and Prevention

In the recent past, numerous developments have enhanced infection prevention strategies in various health care settings. With normalcy in living beings disturbed by the COVID-19 crisis, nearly one million people have died so far from the COVID-19 outbreak – infection prevention and control take centre stage in today's modern societies.

Australia-based Beroni Group is committed to developing and manufacturing safe and reliable pharmaceutical and healthcare products. Beroni Group is an international biotechnological company listed on the National Stock Exchange (Australia) and traded on the OTC markets in the US with business presence in Australia, China, Japan and the US. It currently has four core businesses – cell therapies, developing new anti-cancer drugs, an e-commerce platform for pharmaceutical and healthcare products, and detection and 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.

Using Leading Technology to Detect and Treat COVID-19 Virus

In response to the current global SARS-CoV-2 crisis, Beroni Group has developed and validated the SARS-CoV-2 IgG/IgM antibody detection kit (colloidal gold). This detection kit is a rapid in vitro diagnostic based on immunochromatographic detection techniques (lateral flow) developed for the qualitative detection of a patient's antibodies to SARS-CoV-2 in whole blood (including 'fingerstick' whole blood), plasma, and serum. "Our COVID-19 test kit can detect a virus within 10 minutes, whereas the conventional PCR type of test kit for the COVID-19 usually takes a day or two before you get to know the result," states Jacky Zhang, CEO and founder of Beroni Group.

The inadequate number of test kits, delayed test results, lack of vaccine, and lack of medical treatment has already led to about 14.35 million global coronavirus cases. Beroni Group's SARS-CoV-2 IgG/IgM antibody detection kit has received CE-IVD certification in April 2020 and



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is currently under review by the FDA. Beroni Group has started supplying the test kits to the Japanese market which are distributed by two Japanese partners (Forsitech Inc. and Standard Capital Co., Ltd)

Furthermore, Beroni Group has invested in developing a rapid detection method and precision-driven treatment of COVID-19 caused by SARS-CoV-2 infection

using nanobody-based technology. Compared with conventional antibody, the nanobody has the following advantages: high stability, improved screening/isolation techniques, high absorption rates, superior cryptic cleft accessibility, and low immunogenicity. The development of binding nanobodies will significantly improve the detection rate and accuracy of

SARS-CoV-2 and facilitate the treatment of COVID-19. The company aims to launch the nanobody detection kit during Q1-2021 and a nanobody medical solution by Q1-2022.

Developing a Multiple Virus Detection Platform

In addition to its SARS-CoV-2 IgG/IgM antibody detection kit, the company has embarked on a diagnostic kit, CII-ArboViroPlexrRT-PCR assay, used to detect viruses such as Zika, Dengue, Chikungunya, and West Nile. The CII-ArboViroPlexrRT-PCR assay is developed by Columbia University (USA) and is exclusively licensed to Beroni. The assay can simultaneously test for the Zika virus, all Dengue virus serotypes, Chikungunya virus, and West Nile virus within a short time. Specifically, the test detects viral RNA matching Zika, Dengue types 1-4, Chikungunya, and West Nile virus from either human serum or urine (Zika) sample. Already approved by the FDA for emergency use, Beroni Group has a commercial-ready exclusive license viral detection platform with the CII-ArboViroPlexrRT-PCR Assay.

“There is no similar alternative for detecting Zika, Dengue, Chikungunya and West Nile viruses,” states Peter Wong, CFO of Beroni Group. Through its collaboration with Columbia University, Beroni Group has secured the distribution rights to markets like Australia, Kingdom of Saudi Arabia, US, China, Japan, and India to distribute the CII-ArboViroPlexrRT-PCR assay.

Building a Diversified Bio-Pharmaceutical Portfolio

Apart from the detection and diagnosis of infectious diseases, Beroni Group also focuses on cell therapies, developing new anti-cancer drugs, and e-commerce platform for pharmaceutical and healthcare products. Two of the key clinical trials that it is currently embarking on are a new anti-cancer drug called PENAO and a new wave of cell therapies based on a unique type of immune cells, called Gamma Delta T Cells used for cancer treatment.



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PENAO: Next-Gen Oncology Drug

Beroni Group is developing a targeted anti-cancer drug, PENAO, which has shown promise as a therapy against solid tumour cancers in, among others, pancreatic and brain cancers that have low 5-year survival rates. PENAO is a second-generation drug developed over more than ten years by Professor Philip Hogg, the inaugural director of the Lowy Cancer Research Centre at the University of New South Wales. PENAO is a novel compound with an active arsenic molecule. The compound has the power to shrink tumours and potentially provide an alternative to chemotherapy.

PENAO enters tumour cells and accumulates in the mitochondria where the arsenic molecule cross-links two amino acids on an enzyme known as adenine nucleotide translocase (ANT). The arsenic molecule inactivates the enzyme and leads to cell proliferation arrest and, ultimately, apoptosis (death) of the cell. PENAO is a unique small molecule and is the only ANT inhibitor in clinical development. Beroni Group will invest a total of \$10.4 million in stages over a two year period until the end of the Phase II trials which are expected to start Q1-Q2 2021 in a multi-centre trial, enrolling 50 patients. Phase II trials will initiate in Sydney, Australia and may expand into China or Japan, with potential in the US. Beroni Group intends to apply for US Orphan Drug Status at an appropriate time.

Gamma Delta TCells Therapy: A New Hope Against Cancer

In pre-clinical trials, Beroni Group has discovered allogeneic gamma delta T cells and these tissue-resident cells have excellent potential for the treatment of solid tumours. Gamma delta T cells are unique lymphocytes, able to attack target cells directly or indirectly through the activation of other immune cells. Beroni Group has set out to now prove effectiveness through large-scale clinical trials targeting different tumour types. Moving to Phase I with a proprietary formula that should improve the tumour-killing capability of gamma delta T cells, the company will focus on lung and breast cancers. The gamma delta T cell trial plan is being developed with expectations to begin Phase I in early 2021.

Collaborating in the International Markets

In 2018, Beroni Group entered into a binding agreement to acquire Medicine Plus Co., Ltd, a pharmaceutical company based in Osaka, Japan, for JPY 1.178 billion (about \$10.8 million) via a combination of cash and shares. Medicine Plus has a significant presence on the popular e-commerce sites in Japan, such as Rakuten, Yahoo, and Amazon. Medicine Plus has an established wholesale network of over 2,000

distributors and 7,500 sales outlets. Once the acquisition is completed, Medicine Plus can greatly expand Beroni Group's existing business into Japan and other markets representing a current opportunity of \$35 million with substantial growth potential. This acquisition will provide further access to broad market opportunities in medical products, health foods, cosmetics, and household goods. Beroni Group currently markets smoking cessation, pollution filtration, health, and cosmetic supplements.

In conjunction with Beijing-based ThorGene, Beroni Group has established a world-leading technological innovative gene detection platform for early-stage detection of tumours, providing precise detection, analysis, and post-interpretation services, including DNA, RNA, and protein. It has been created with top senior biological research scholars from John Hopkins University and Indiana University with leading data scientists from the Chinese Academy of Sciences. Twenty-three invention patents have been filed, and thirty-two software copyrights have been filed. Invention patent spans two significant fields of medicine and data, covering four categories: tumour detection, data platform, analysis algorithm, and life data service. "The liquid biopsy gene detection technology could offer much-needed early-screening for lung, breast, and colorectal cancer," adds Wong.

The Path to Becoming a Global Player in the Biopharmaceutical Industry

Since its inception in 2014, Beroni Group has become a diversified global biopharmaceutical enterprise with a differentiated business model encompassing innovation/R&D and commercial pathways. The company has emerged into an international organization with a world-class team of management and scientists that can become a leading global player in the biopharmaceutical sector.

Beroni Group was listed on the National Stock Exchange of Australia (NSX) on 12th May 2017 and began trading on OTCQX in the US market on 29th April 2019. It is the first company from the National Stock Exchange of Australia to be traded on OTCQX. "Presently, we are in the process of seeking a listing on NASDAQ or NYSE to enhance liquidity and visibility," adds Zhang. Beroni Group is exploring new opportunities to expand itself in the UK, Europe, and Asian countries. The company is also evaluating US or Europe acquisition opportunities to establish a global footprint. "Our goal is not only to sell a wide range of pharmaceutical and healthcare products but also be involved in the latest research and technology, especially on oncology and infectious diseases through international collaboration with reputed companies and universities," concludes Zhang. 

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*The annual listing of 10 companies that are at the forefront of providing
Infection Control solutions and impacting the industry*