



## **Beroni Group has Successfully Constructed and Purified 24 Nanobodies for Rapid Detection and Treatment of Coronavirus**

NEW YORK and SYDNEY, Australia, August 4, 2020 (GLOBE NEWSWIRE) - Beroni Group (OTCQX: BNIGF; NSX: BTG) ("Beroni" or the "Company"), an international diversified biopharmaceutical enterprise focused on the research, development, innovation and commercialization of therapies and products for treatment of global diseases, today announced its further progress on the development of a medical solution using nanobody technology for the COVID-19 coronavirus in collaboration with Tianjin University in China.

After identifying the 24 specific nanobodies with high affinity to the new coronavirus N-protein and S-protein antigens through high-throughput screening in May 2020, the R&D team has used structural biology, computational biology and biophysical methods to further analyze and improve the properties of these nanobodies. Through rational design and transformation, the affinity and specificity of these nanobodies have been greatly increased. Out of the 24 nanobodies, 16 deals with the S-protein which can be used as antiviral therapeutics and the other 8 deals with the N-protein, for use as a marker in diagnostic assays. The scientific team has successfully established a prokaryotic expression and purification system for nanobodies *in vitro*. In this respect, they have expressed and purified the 16 S-protein nanobodies with a purity of 98%. For the 8 N-protein nanobodies, the nanobody expression vectors have been constructed, and the antibodies purified. The Elisa and Isothermal Titration Calorimetry (ITC) methods were successfully used to determine the affinities of antigens and antibodies, and nanobodies with good affinity are selected for affinity enhancement and humanization.

After the screening and purification of nano-antibodies, the scientific team is moving ahead with its collaboration with an international CRO, Genscript Biotech, to jointly target the coronavirus-specific nanobodies and conduct pseudovirus neutralization test with the objective of screening out nanobodies with strong affinity and good efficacy to prevent the infection rate of the virus. On this basis, the team will optimize and humanize these nanobodies combining structure-based design and random mutations. At the same time, they will use PML (Precise Mutant Library) database and FASEBA (Fast Screening for Expression, Biophysical-Properties and Affinity) screening technology to carry out the affinity maturation test of the nanobodies, and proceed with further purification and verification to obtain the lead nanobody. The humanized modification and affinity maturation of nanobodies are expected to be completed within the next 3 months. The next stage of the study will further advance the preclinical research study such as live virus testing, animal testing and formulation development. It is expected that the animal

testing will be completed towards end of 2020 and the clinical trials to commence in early 2021. The clinical trials will take about a year to complete. The nanobodies can be used for treatment of coronaviruses, which are not only for SARS-CoV-2 but also for other coronaviruses such as SARS coronavirus of 2003 and MERS coronavirus of 2012 which are members of the same coronavirus family.

“These results from our preclinical study highlight the potential of the nanobody-based approach and represent an important step forward in our development efforts for an effective medical cure and diagnostic assay for the COVID-19 virus. We are committed to the global fight against COVID-19 pandemic, with safety at the forefront,” said **Jacky Zhang, Chairman and CEO of Beroni Group Limited**.

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#### **About Beroni Group Limited**

Beroni Group is an international biopharmaceutical enterprise dedicated to the innovation and commercialization of drugs and therapies to combat various global diseases such as cancer and infectious diseases. Its diversified portfolio is comprised of a US FDA approved virus diagnostic kit, an e-commerce platform for the sale of pharmaceutical products and a development pipeline targeting oncology and cell therapies. Beroni has operations in Australia, United States, China and Japan. It is listed on the National Stock Exchange of Australia and traded on the OTC markets in the USA. To learn more about Beroni, please visit [www.beronigroup.com](http://www.beronigroup.com).

#### **Forward-Looking Statements Disclaimer**

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