



COVAXIN® to boost the immune response and longer-lasting immunity with ViroVax's adjuvant

Hyderabad, India, October 5, 2020: Vaccine Innovator, Bharat Biotech has announced its novel Coronavirus vaccine COVAXIN® approved for human trials, will use adjuvant Alhydroxiqum-II to boost immune response and longer lasting immunity. The technology is being used under licensing agreement with Kansas-based ViroVax LLC.

COVAXIN® is an inactivated vaccine derived from a strain of SARS-CoV-2 virus, isolated at the National Institute of Virology (NIV), Pune, an Indian virology research institute. The inactivated virus is formulated with ViroVax's adjuvant to produce the vaccine candidate.

Bharat Biotech is currently conducting Phase II human trials of COVAXIN after receiving approval from the Drug Controller General of India (DCGI).

Dr. Krishna Ella, Chairman and Managing Director of Bharat Biotech, said, "There is critical need for development and availability of adjuvants that elucidate mechanisms of action inducing greater antibody responses to vaccine antigens, thus resulting in long-term protection against pathogens. Adjuvants also enhance the sustainability of the global vaccine supply on account of their antigen-sparing effect. Our partnership with ViroVax resonates with Bharat Biotech's relentless efforts towards developing safe and effective vaccines coupled with long term immunity."

Dr. Ella further added, "The widely used adjuvant Aluminium hydroxide in the development of SARS CoV-2 vaccines is known to induce a Th2 based response (which are important for eradication of extracellular parasites and bacterial infection). The Th2 based response has a theoretical risk of vaccine associated enhanced respiratory diseases (VAERD or ADE). We have used Imidazoquinoline class of adjuvants (TLR7/8 agonists), which are known to induce Th1 based response which further reduces the risk of ADE (Anti Body Dependent Enhancement)."

In our preclinical studies and animal challenge models (Syrian Hamster and Rhesus Macaques) we have shown that COVAXIN® induced Th1 based response due to the use of Algel-IMDG (chemisorbed imidazoquinoline onto the aluminum hydroxide gel) as an adjuvant.

"ViroVax is delighted to partner with Bharat Biotech. This has been possible because of support from the National Institutes of Health," said **Dr. Sunil David of ViroVax.**

In response to the COVID-19 pandemic, ViroVax also received supplemental funding for the development of subunit vaccine constructs for the prevention of COVID-19, and for the discovery and development of therapeutics for treating COVID-19. ViroVax is evaluating a subunit vaccine candidate and has identified potential antiviral therapeutics. It is currently in the process of testing the efficacy of these compounds. ViroVax is supported by contract HHSN272201800049C from the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health.

Please read more:

<https://www.researchgate.net/publication/344248066>;

<https://doi.org/10.21203/rs.3.rs-76768/v1>

About Bharat Biotech

Bharat Biotech has established an excellent track record of innovation with more than 140 global patents, a wide product portfolio of more than 16 vaccines, 4 bio-therapeutics, registrations in more than 116 countries and WHO Pre-qualifications.

Located in Genome Valley, the hub for the global biotech industry, the company has built a world-class vaccine & bio-therapeutics, research & product development, Bio-Safety Level 3 manufacturing, and vaccine supply and distribution.

Having delivered more than 4 billion doses of vaccines worldwide, Bharat Biotech continues to lead innovation and has developed vaccines for influenza H1N1, Rotavirus, Japanese Encephalitis, Rabies, Chikungunya, Zika and the world's first tetanus-toxoid conjugated vaccine for Typhoid.

The company is proficient in conducting extensive multi-centre clinical trials, having completed more than 75 trials enrolling more than 300,000 participants globally.

Our commitment to global social innovation programs and public-private partnerships resulted in the introduction of path-breaking WHO pre-qualified vaccines BIOPOLIO®, ROTAVAC® and Typbar TCV® combatting Polio, Rotavirus and Typhoid infections respectively. Bharat Biotech has successfully partnered with NIV-ICMR having developed JENVAC®, a licensed Japanese Encephalitis vaccine.

The recent acquisition of the Rabies vaccine facility, Chiron Behring, Ankleshwar has positioned Bharat Biotech as the largest Rabies vaccine manufacturer in the world. To learn more about Bharat Biotech visit www.bharatbiotech.com

Media Contact for Bharat Biotech: Sheela Panicker | +91 984 980 9594 | enright@enrightpr.com

About ViroVax LLC

After about 20 years of research and teaching as a faculty member at the University of Kansas and University of Minnesota, Dr. Sunil David founded ViroVax, LLC in 2019 in Lawrence, KS. ViroVax is a biotechnology company focused on research and development of vaccines, adjuvants, and therapeutics to protect and treat people from infectious diseases, including Zika, West Nile, Dengue, and SARS-CoV-2. Dr. David received his training from the Christian Medical College in Vellore, India. Following postdoctoral training stints at the Forschungszentrum Borstel, Germany, and the University of Kansas Medical Center, he joined the faculty at KU before being recruited by the Department of Medicinal Chemistry at the University of Minnesota, where he was Bennet Professor of Medicinal Chemistry until 2019. His research focuses on the modulation of innate immune pathways, and host responses to infectious agents.

Media Contact for ViroVax: sdavid@virovaxllc.com