January 27, 2022

NRx Announces Publication of Initial Findings of BriLife® Vaccine-produced Antibodies Against Omicron Variant

- Israel Institute for Biological Research files initial scientific results of BriLife vaccine effectiveness in producing neutralizing antibody against Omicron Variant
- Neutralizing antibody level against Omicron is approximately 1/3 of the comparable antibody level against the original Corona Virus
- Ten of 13 tested patients vaccinated during phase 2 trials demonstrated measurable level of Omicron neutralizing antibody.
- Detected evidence that BriLife vaccine spontaneously acquired Omicron mutation suggests that vaccine will continue to evolve immunity towards future variants

RADNOR, Pa., Jan. 27, 2022 /PRNewswire/ -- NRx Pharmaceuticals (NASDAQ: NRXP), a clinical-stage, biopharmaceutical company has received scientific evidence from the Israel Institute for Biological Research (IIBR) that the BriLife® vaccine may produce effective levels of neutralizing antibody against the Omicron variant of the SARS-CoV-2 virus.1 More importantly, many of the mutations (alterations) that cause the Omicron variant spike protein to differ from the spike protein of the original SARS-CoV-2 virus that causes COVID-19 have been identified in the spike protein of the BriLife vaccine. This natural evolution of the BriLife vaccine suggests that the vaccine may continue to evolve to address future Variants of Concern (VOCs). Unlike the current mRNA vaccines and attenuated virus vaccines, the BriLife vaccine is a live, viral vector vaccine in which the spike protein of the SARS-CoV-2 virus has been added to a benign virus, called VSV. A similar viral vector was used to create the successful, FDA-approved vaccine against Ebola virus.

The findings released yesterday were based on blood samples (sera) of patients vaccinated during the phase 2 trial of the BriLife vaccine conducted in Israel. These sera indicated a mean neutralization titer (NT50) of 53 against Omicron vs. a titer of 152 against the original wild-type virus and 131 against the Delta variant. This 3-fold change against the wild-type virus may be compared to the 20-fold decrement associated with mRNA vaccines, which helps explain the high infectivity of Omicron in currently vaccinated individuals.2 The IIBR report documents that 10 of 13 tested sera demonstrated clinically detectable levels of Omicron-neutralizing antibody.

The IIBR report concludes that, "Taken together, our data indicates that BriLife®-induced antibodies maintain neutralizing potential against all tested variants, and most importantly against delta, and the recently emerged omicron VOCs. We suggest that spontaneously-acquired mutations that occurred during BriLife® development and correspond to naturally-occurring mutations of SARSCoV-2 variants, may increase the potential of BriLife® to maintain effectiveness against current SARS-CoV-2 variants, and potentially against future VOCs."

"We are enormously encouraged by the recent findings of the IIBR," said Prof. Jonathan Javitt, MD, MPH, CEO and Chairman of NRx. "At a time when the majority of western populations have been vaccinated with mRNA vaccines, there is a clear need for a booster vaccine that can broaden immunity against current and future variants of concern. The BriLife vaccine has now demonstrated potential to continue to evolve in a manner that has the potential to protect against variants that are not yet known, and is planned to be tested as a booster in a phase 2 trial that will include Israel and other partner countries,"

About NRx Pharmaceuticals

NRx Pharmaceuticals (NRx) draws upon more than 300 years of collective, scientific, and drug-development experience to bring improved health to patients. The Company is developing the BriLife™ Covid vaccine, developed by the Israel Institute for Biological Research, under an exclusive license from the Israel Ministry of Defense. NRx is additionally developing ZYESAMI® (aviptadil) for patients with COVID-19, and has been granted Fast Track designation by the US Food and Drug Administration (FDA), and is currently undergoing phase 3 trials funded by the US National Institutes of Health, the Biomedical Advanced Research and Development Authority (BARDA) of the US Department of Health and Human Services, and the Medical Countermeasures program, part of the US Department of Defense. The FDA has additionally granted Breakthrough Therapy Designation, a Special Protocol Agreement, and a Biomarker Letter of Support to NRx for NRX-101, an investigational medicine to treat suicidal bipolar depression. NRX-101 is currently in Phase 3 trials, with readouts expected in 2022.

NRx is led by executives who have held senior roles at Allergan, J&J, Lilly, Novartis, Pfizer, and the US FDA. NRx is chaired by Prof Jonathan Javitt, MD, MPH, who has held leadership roles in six biotechnology startup companies with public exits and been appointed to advisory roles in four US Presidential Administrations. The NRx board includes Dr. Sherry Glied, former US Assistant Secretary for Health (ASPE), Daniel E. Troy, JD, former Chief Counsel of the US FDA, Chaim Hurvitz, former director of Teva and President of the Teva International Group, and General H.R. McMaster, Ph.D. (US Army, Ret.) the 26th United States National Security Advisor.

Cautionary Note Regarding Forward-Looking Statements

This announcement of NRx Pharmaceuticals, Inc. includes "forward-looking statements" within the meaning of the "safe harbor" provisions of the US Private Securities Litigation Reform Act of 1995, which may include, but are not limited to, statements regarding our financial outlook, product development, business prospects, and market and industry trends and conditions, as well as the Company's strategies, plans, objectives, and goals. These forward-looking statements are based on current beliefs, expectations, estimates, forecasts, and projections of, as well as assumptions made by, and information currently available to, the Company's management.

The Company assumes no obligation to revise any forward-looking statement, whether as a result of new information, future events, or otherwise. Accordingly, you should not place reliance on any forward-looking statement, and all forward-looking statements are herein qualified by reference to the cautionary statements set forth above.

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1 doi: https://doi.org/10.1101/2021.11.22.21266673
2 Cole S, et. Al. Omicron extensively but incompletely escapes Pfizer BNT162b2 neutralization. Nature https://doi.org/10/1038/d41586-021-03824-5 (2021).

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