ENA RESPIRATORY

Media Release

New Data From an Influenza Challenge Study Further Support the Prophylactic Potential of INNA-051 to Accelerate Viral Clearance

-- INNA-051 increased early expression of multiple antiviral effector genes compared with placebo and shortened viral shedding duration in participants with confirmed influenza infection

Melbourne, Australia and Milan, Italy, 11 September 2023 – ENA Respiratory, a clinical-stage pharmaceutical company, announced positive data from the Phase 2a flu challenge study of INNA-051, a first-in-class, broad-spectrum, innate immunomodulator in development for the prophylaxis of complications associated with respiratory viral infections. As previously reported, data from post-hoc analyses excluding those with pre-existing immunity against the challenge virus strain showed that INNA-051-treated participants with laboratory-confirmed infection had a statistically significant shorter duration of infection. New data reported today show that in this population, INNA-051 resulted in early stimulation of multiple genes that play important roles in the response to viral infections, including type I and III interferons. These results support the observed accelerated viral clearance. The biomarker data were presented in a late-breaking abstract oral session and the clinical data were discussed at a poster session at the European Respiratory Society meeting, which is taking place in Milan, Italy, September 9-13.

"The data presented today support the clinical potential of INNA-051 in individuals at risk for more severe outcomes resulting from viral respiratory infections," said Christophe Demaison PhD, Managing Director and CEO of ENA Respiratory. "These data provide important insights into the molecular mechanisms that underlie the observed decrease in duration of infection in this flu challenge study. Together with our Phase 1 and preclinical data, the results provide a clear rationale for the continued clinical development of INNA-051 in the context of natural respiratory tract infections in individuals with increased risk of severe illness."

The Phase 2a flu challenge study included 123 adults (ages 19 to 53) randomized to receive two doses of INNA-051 (low and high dose) or placebo, then challenged with a substantial dose of H3N2 (A/Perth/16/2009) influenza A virus.

Clinical results from the study were presented in a poster titled "INNA-051 pre-exposure prophylaxis in a human influenza infection model" (Poster #40831). INNA-051 safety and tolerability profile in the influenza challenge study was found to be consistent with data from Phase I in adults aged 18-80 and further supports its use in a prophylaxis setting.

Key findings from post hoc analyses conducted on participants with PCR-confirmed infection and no or low antibody titer against the challenged virus at quarantine admission, include:

- Statistically significant reduction in the duration of viral shedding as measured by qRT-PCR detectable viral nucleic acid in the INNA-051 high-dose group relative to placebo.
- Trend towards a shorter duration of clinical symptoms with the INNA-051 high dose.

Additional data from the study were presented in a late-breaking oral presentation titled "INNA-051 prophylaxis enhances innate immune responses confirming accelerated viral clearance in a human influenza challenge model" (Abstract #42457). Expression of 730 immune genes was assessed in nasal swabs obtained following influenza challenge from participants included in the post-hoc analysis. Key findings include:

- Early increase in the expression of genes involved in the influenza host response in the INNA-051 treatment group compared to placebo, including genes for proteins known to have direct antiviral effects against influenza.
- Higher early expression of key interferon genes in the INNA-051 treatment group compared to placebo.

"These findings clearly demonstrate that INNA-051 is associated with increased stimulation of multiple genes and pathways known to play essential roles in the innate immune response against influenza and is consistent with the accelerated viral clearance observed in the clinical efficacy data," said Ruth Tal-Singer PhD, Medicine Development Leader, ENA Respiratory. "The continued evolution of respiratory viruses like those that cause long-COVID or influenza complications further underscores the critical need for novel approaches to boosting innate immunity against respiratory infections in vulnerable populations The data reported today increase our confidence that INNA-051 has the potential to play an important role in preventing or mitigating the severity of viral respiratory diseases."

A Phase 2b study in community-acquired infections in people at risk of complications is planned.

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Notes to Editors

If you would like to arrange an interview, please contact:

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About ENA Respiratory and INNA-051

ENA Respiratory is a clinical-stage pharmaceutical company developing innate immune modulators for the prevention of complications associated with respiratory viral infections in at-risk populations, including the elderly, those with chronic lung conditions and individuals with occupational risk (e.g. first responders, military or essential services personnel). The company is also developing its innate immune modulators as vaccine adjuvants. ENA Respiratory is based in Melbourne and Sydney, Australia, and it has secured a Series A investment from Brandon Capital Partners' managed funds, the Minderoo Foundation, and Uniseed.

In 2022, ENA Respiratory partnered with the US-based COPD Foundation to accelerate the clinical development of INNA-051 in COPD through its access to patients, a global network of accredited centres, scientific expertise, and patient investigators. That year, the company was also the first in the Asia Pacific region to be selected to join BLUE KNIGHT™, a joint initiative between Johnson & Johnson Innovation and BARDA designed to accelerate next-gen potential solutions for future pandemics. In 2023, the company was additionally awarded a USD4.38 million contract from the U.S. Department of Defense to support the ongoing development of INNA-051

INNA-051 is a potent TLR2/6 agonist that is delivered using a convenient nasal spray to target the preferential site of initial replication of viral respiratory infections. Fast-acting and inducing a durable biologic response supporting weekly administration, INNA-051 works by recruiting innate immune cells and priming epithelial cells of the nasal mucosa to respond more quickly to infections, rapidly eliminating viruses and other pathogens before they spread throughout the body. In preclinical studies, INNA-051 and close analogues were shown to be effective against multiple respiratory viruses, including SARS-CoV-2, influenza (H1N1 and seasonal H3N2), and rhinovirus.

For more information, please visit https://enarespiratory.com.