Altimmune Demonstrates Strong Neutralization of South African Variant in Preclinical Study of Intranasal AdCOVID™

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Similar Neutralization Titers Observed for Both Ancestral and B.1.351 South African Variant

Phase I Clinical Trial of AdCOVID Expected to Report Data in June 2021

GAITHERSBURG, Md., May 26, 2021 (GLOBE NEWSWIRE) -- Altimmune, Inc. (Nasdaq: ALT), a clinical-stage biopharmaceutical company, today announced new results from a preclinical study demonstrating the ability of its AdCOVID vaccine candidate to neutralize the rapidly emerging SARS-CoV-2 B.1.351 variant of concern that originated in South Africa. B.1.351 carries multiple mutations in the receptor binding domain (RBD) including the E484K mutation that has been shown to substantially decrease the ability of authorized vaccines to neutralize the virus.

In the current study, performed in collaboration with investigators at Saint Louis University, the neutralizing titer against the B.1.351 variant virus was only 4.4-fold lower than the neutralizing titer against an original or ancestral Wuhan-like isolate when measured seven weeks after a single intranasal dose of AdCOVID. Furthermore, in mice that received a booster dose of AdCOVID, the reduction in the neutralizing titer against the B.1.351 variant was only 1.8-fold lower at seven weeks post vaccination; statistically the same as the neutralization titer against the Wuhan isolate. The serum neutralizing antibody titers were determined using a live virus focus reduction neutralization titer (FRNT) assay with a 50% neutralization endpoint.

“These data are impressive considering the B.1.351 variant has been consistently difficult to neutralize following vaccination with the original prototype vaccines,” said James Brien, Ph.D., Assistant Professor, Molecular Microbiology and Immunology at Saint Louis University. “If the simple addition of an AdCOVID booster dose is able to provide effective coverage against variants of concern it would greatly simplify our response to the challenge presented by this virus by eliminating the need to develop new variant adapted vaccines.”

Importantly, AdCOVID also promoted a strong mucosal neutralizing response to the B.1.351 virus in the respiratory tract with bronchoalveolar lavages showing neutralization of the variant virus. These preclinical data suggest that vaccination with AdCOVID leads to a cross-neutralizing antibody response both systemically and locally within the respiratory tract that can effectively neutralize the B.1.351 virus.

“We believe that our selection of the RBD of the spike protein as the vaccine antigen was key in obtaining these impressive results,” said Scot Roberts, Ph.D., Chief Scientific Officer at Altimmune. “From a neutralization perspective, AdCOVID is designed to focus the immune response on RBD, the most important part of the SARS-CoV-2 virus. The likely result is the development of antibodies to sub-dominant or cryptic neutralizing epitopes not readily recognized when presented in the context of the entire spike protein, which is targeted by most other vaccine candidates.”

About AdCOVID

AdCOVID is a single-dose intranasal vaccine candidate for COVID-19 currently being evaluated in a Phase 1 clinical trial. It is designed to stimulate a broad immune response including both systemic immunity (neutralizing antibody) and local immunity (mucosal IgA, resident memory T cells) in the nasal cavity and respiratory tract.

In published preclinical studies (www.biorxiv.org/content/10.1101/2020.10.10.331348v1) conducted in collaboration with the University of Alabama at Birmingham, potent serum neutralizing antibody responses, T cell responses, and a robust induction in mucosal immunity were observed in mice following a single intranasal dose of AdCOVID. Mucosal immunity was characterized by IgA antibody and resident memory T cell responses in the respiratory tract, both of which are believed to be important in fighting infection, and importantly, transmission. In preclinical efficacy studies, AdCOVID provided 100% protection against lethal SARS-CoV-2 challenge.

Based on data from Altimmune’s other intranasal platform vaccine candidates, AdCOVID is expected to have extended stability at room temperature that would allow for cold chain-free shipment of the vaccine. If demonstrated, AdCOVID could be stored in the common refrigerators found in community-based doctors’ offices and pharmacies for two years or more. The Company believes that these simple and convenient handling requirements, together with the potential ability to block SARS-CoV-2 transmission, could position AdCOVID as a leading intranasal COVID-19 vaccine.

About Altimmune

Altimmune is a clinical stage biopharmaceutical company focused on developing intranasal vaccines, immune modulating therapies and treatments for liver disease. Our diverse pipeline includes proprietary intranasal vaccines for COVID-19 (AdCOVID™), anthrax (NasoShield™) and influenza (NasoVAX™); an intranasal immune modulating therapeutic for COVID-19 (T-COVID™); and next generation peptide therapeutics for NASH (ALT-801) and chronic hepatitis B (HepTcell™). For more information on Altimmune, please visit www.altimmune.com.

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Forward-Looking Statement

Any statements made in this press release relating to future financial or business performance, conditions, plans, prospects, trends, or strategies and other financial and business matters, including without limitation, the timing of key milestones for our clinical assets, the timing of the data readout from the AdCOVID Phase 1 clinical trial in June 2021, the potential immunization effects of AdCOVID, the potential of AdCOVID to block SARS-CoV-2 transmission, the shipping and storage requirements for AdCOVID, our ability to manufacture AdCOVID for our clinical trials and commercial needs, the prospects for regulatory approval of our product candidates and commercializing or selling any product or drug candidates, are forward-looking

statements within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, when or if used in this press release, the words "may," "could," "should," "anticipate," "believe," "estimate," "expect," "intend," "plan," "predict" and similar expressions and their variants, as they relate to Altimmune, Inc. (the "Company") may identify forward-looking statements. The Company cautions that these forward-looking statements are subject to numerous assumptions, risks, and uncertainties, which change over time. Important factors that may cause actual results to differ materially from the results discussed in the forward looking statements or historical experience include risks and uncertainties, including risks relating to: potential impacts due to the COVID-19 pandemic such as delays in regulatory review, manufacturing and supply chain interruptions, access to clinical sites, enrollment, adverse effects on healthcare systems and disruption of the global economy; the reliability of the results of studies relating to human safety and possible adverse effects resulting from the administration of the Company's product candidates; the Company's ability to manufacture clinical trial materials and commercial supply on the timelines anticipated; the Company's ability to secure manufacturing approval from its SARS-CoV-2 cell licensor on the timelines anticipated; and the success of future product advancements, including the success of future clinical trials. Further information on the factors and risks that could affect the Company's business, financial conditions and results of operations are contained in the Company's filings with the U.S. Securities and Exchange Commission, including under the heading "Risk Factors" in the Company's annual report on Form 10-K for the fiscal year ended December 31, 2020 filed with the SEC, which is available at www.sec.gov.

Altimmune Investor & Media Contacts:

Will Brown	Stacey Jurchison
Chief Financial Officer	Sr. Dir, Investor Relations
Phone: 240-654-1450	Phone : 410-474-8200
wbrown@altimmune.com	sjurchison@altimmune.com

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