I-Mab Biopharma Announces Development of TJM2 to Treat Cytokine Release Syndrome Associated with Severe and Critically-Ill Patients with Coronavirus Disease (COVID-19)

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-The clinical study will explore the potential of TJM2, a proprietary mAb against GM-CSF, to fight "cytokine storm" during severe COVID-19 disease

-The study to be conducted initially in the United States with planned expansion of study into other countries

SHANGHAI, China and ROCKVILLE, MD., March 13, 2020 (GLOBE NEWSWIRE) -- I-Mab Biopharma (Nasdaq: IMAB), ("I-Mab" or the "Company"), a clinical stage biopharmaceutical company committed to the discovery, development and commercialization of novel or highly differentiated biologics to treat diseases with significant unmet medical needs, particularly cancers and autoimmune disorders, today announced that it is initiating the development of TJM2 (TJ003234) to treat cytokine storm in severe and critically ill patients caused by the coronavirus disease (COVID-19). TJM2 is an I-Mab-discovered neutralizing antibody against human granulocyte-macrophage colony stimulating factor (GM-CSF), an important cytokine that plays a critical role in acute and chronic inflammation.

The development will start following the U.S. Food and Drug Administration's (FDA) acceptance of I-Mab's Investigational New Drug (IND) application, and the study will commence initially in the United States with plans to expand into other hardest-hit countries.

Cytokine storm is characterized by surge of high levels of circulating inflammatory cytokines, and is an overreaction of the immune system under the conditions, such as CAR-T therapy [1] and patients infected with SARS-CoV-2. Recent studies revealed that high levels of GM-CSF, along with a few other cytokines, are critically associated with severe clinical complications in COVID-19 patients. High concentration of GM-CSF was found in the plasma of severe and critically ill patients [2], which account for approximately 20% of all patients [3], especially in those requiring intensive care.

"Research data provide the rationale to use TJM2 as a potential treatment for cytokine storm associated with COVID-19, because the antibody effectively neutralizes circulating GM-CSF to control acute inflammatory responses, and it may also exhibit potential advantages over conventional IL-6 antibodies [4], " said Dr. Joan Shen, CEO of I-Mab. "This expanded IND application of TJM2 would allow us to act timely to help battle the global COVID-19 pandemic."

The Company has successfully completed a Phase I single ascending dose (SAD) study of TJM2 in the United States (NCT03794180), in which TJM2 has exhibited favorable safety, tolerability, PK/PD, and immunogenicity profiles. TJM2 also received IND clearance from China's National Medical Products Administration for a multiple-dose Phase 1b study in patients with rheumatoid arthritis (RA). The results from the planned COVID-19 study will also be used to further evaluate the potential therapeutic role of TJM2 in reducing or preventing cytokine storm and neurotoxicity associated with CAR-T therapy.

According to the WHO, as of March 12, 2020, there were 125,048 confirmed cases and 4,613 deaths of COVID-19 globally.

[1] Shimabukuro-Vornhagen A, Gödel P, Subklewe M et al. (2018) Cytokine release syndrome. Journal for ImmunoTherapy of Cancer (2018) 6:56. doi.org/10.1186/s40425-018-0343-9

[2]. Huang C, Wang Y, Li X et al. (2020) Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020 Jan 24. pii: S0140-6736(20)30183-5.

[3]. Wu Z, McGoogan JM (2020) Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention. JAMA 2020 Feb 24. doi:10.1001/jama.2020.2648

[4] Sterner R, Sakemura R, Cox M et al. (2019) GM-CSF inhibition reduces cytokine release syndrome and neuroinflammation but enhances CAR-T cell function in xenografts. Immunobiology And Immunotherapy 2019 Feb 14. doi.org/10.1182/BLOOD-2018-10-881722

About TJM2

TJM2 is an internally discovered neutralizing antibody against human GM-CSF, an important cytokine that plays a critical role in chronic inflammation and destruction in autoimmune diseases such as RA. GM-CSF can polarize macrophages into the pro-inflammatory M1 phenotype and is known to induce an inflammatory cascade involving other pro-inflammatory cytokines such as tumor-necrosis factor (TNF), interleukin-1 (IL-1), IL-6, IL-12, and IL-23. It is evident that GM-CSF plays a crucial role in the pathogenesis and disease progression of multiple autoimmune conditions.

TJM2 specifically binds to human GM-CSF with high affinity and can block GM-CSF from binding to its receptor, thereby preventing downstream signaling and target cell activation. As a result, it can effectively inhibit inflammatory responses mediated by macrophages, neutrophils, and dendritic cells, leading to reduced tissue inflammation and damage.

TJM2 is expected to be the first antibody of its class to enter clinic trials in China in 2020.

About I-Mab Biopharma

I-Mab Biopharma (Nasdaq: IMAB) is a dynamic, global biotech company exclusively focused on developing novel or highly differentiated biologics in the therapeutic areas of immuno-oncology and autoimmune diseases. I-Mab's mission is to bring transformational medicines to patients through innovation. I-Mab's innovative pipeline of more than 10 clinical and pre-clinical stage drug candidates is driven by the Company's Fast-to-PoC (Proof-of-Concept) and Fast-to-Market development strategies through internal R&D and global partnerships. The Company is on track to become a fully integrated end-to-end global biopharmaceutical company with cutting-edge discovery platforms, proven pre-clinical and clinical development expertise, and world-class GMP manufacturing capabilities. I-Mab has offices in China and the United States. For more information, please visit http://ir.i-mabbiopharma.com

Forward Looking Statements

This press release includes certain disclosures which contain "forward-looking statements." You can identify forward-looking statements because they contain words such as "anticipate" and "expected." Forward-looking statements are based on I-Mab's current expectations and assumptions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that may differ materially from those contemplated by the forward-looking statements, which are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements are set forth in filings with the U.S. Securities and Exchange Commission. I-Mab undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by law.

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