XBiotech Announces Discovery that Blocking Interleukin-1a Reduces Brain Injury and Neurological Deficit After Stroke

July 14, 2020

Antibody Therapy Targeting Interleukin-1a significantly reduced stroke related brain injury in animals and points to new potential blockbuster therapy

AUSTIN, Texas, July 14, 2020 (GLOBE NEWSWIRE) -- XBiotech Inc. (NASDAQ: XBIT) announced today findings published in the prestigious American Heart Association's journal, Circulation. The publication titled, *Post-Ischemic Administration of IL-1a Neutralizing Antibody Reduces Brain Damage and Neurological Deficit in Experimental Stroke*, points to a use for XBiotech's drug candidate antibody that blocks interleukin-1 alpha (IL-1 α) for use as a therapeutic to reduce brain damage and neurological deficit after stroke. The research was headed by a world-leading cardiovascular researcher, Dr. Giovanni Camici, Director for the Center for Molecular Cardiology at the University of Zurich in Switzerland. Dr. Camici's research team tested an anti-IL-1α antibody provided by XBiotech to evaluate its ability to reduce brain injury in animals subjected to an experimental stroke and reperfusion injury. About 15 million people worldwide suffer from a stroke each year. Approximately 795,000 of these people are in the United States. Stroke is the second leading cause of death worldwide.

Dr. Camici commented, "This study demonstrates the importance of IL-1α in mediating the damages caused by ischemic stroke and the efficacy of IL-1α blockade in improving outcome after transient cerebral ischemia in mice. The availability of a clinically approved anti-human IL-1α antibody could offer the possibility to establish new treatment strategies for the management of ischemic stroke patients. Based on our results, randomized clinical trials should be designed to assess the potential of anti-IL-1α therapy as an adjuvant to interventional or thrombolytic treatment of acute ischemic strokes."

Dr. Camici's research team focused on a particular difficult aspect of ischemic stroke, so called reperfusion injury. When patients suffer from a stroke, or a blockage in an artery that provides crucial blood and oxygen to the brain, a portion of the brain typically suffers irreparable damage. However, there is also typically a portion of the brain that has been deprived of oxygen but is functional and may be rescued if the blood clot is removed and normal circulation can be restored. Unfortunately, when the blood clot is removed and blood supply resumes into areas of the brain where oxygen had been deprived, a massive inflammatory response occurs. This ensuing inflammation is believed to be responsible for the so called "reperfusion injury" that is observed with the returning blood supply. The result is widening destruction of brain tissue upon opening of the clogged artery and associated irreparable neurologic deficits. Therefore, decreasing this inflammatory response by inhibiting IL-1α holds promise as an effective treatment for reperfusion injury. There is currently no therapy to treat reperfusion injury.

Peter Libby, M.D., Mallinckrodt Professor of Medicine at Harvard Medical School and clinical cardiologist at Brigham and Women's Hospital and a contributing author on the publication, and consultant to and XBiotech Director stated, "We urgently need adjunctive therapies to contemporary reperfusion strategies to minimize the potentially devastating brain damage in patients with acute strokes. These events too often rob people of their ability to function independently, to communicate, and can also contribute to cognitive decline. The benefits of anti-IL-1α therapy, if replicated in humans, could have immense consequences for patients, families, and society at large."

Dr. Camici's group blocked an artery in the brain in animals to simulate a human stroke. Then after time, researchers reopened the artery to mimic the reperfusion treatment (and subsequent injury) a stroke patient may receive in a hospital. The brains and function of the animals treated with anti-IL-1α antibody were compared to control animals to observe the extent of reperfusion injury. The findings were significant: animals treated with anti-IL-1α antibody had a 36% reduction in brain damage (ie, reduction in reperfusion injury) and these antibody treated animals retained significantly better neurological function, as measured by activity tests, compared to controls.

XBiotech is developing True Human antibody therapies targeting IL-1a and plans to enter into human clinical studies with a new product candidate for stroke in 2021. Despite the enormous unmet medical need for therapies, there remains today no approved therapy to reduce brain damage caused by reperfusion injury.

The findings demonstrate a crucial role for IL-1α related inflammation in brain injury, which occurs after a blocked artery in the brain is opened and blood returns to the affected area. In patients that suffer a stroke, the opening of a blocked artery in the brain is performed as soon possible using catheter devices and clot inhibiting drug therapy. However, artery reopening and resumption of blood supply is associated with expanded injury and loss of brain function, such as cognitive or physical impairment.

In this research, treatment with an antibody that blocks IL-1α was given after artery blockage and just prior to resumption of blood supply to simulate a stroke. The antibody treatment was found to inhibit inflammation in blood vessels and brain cells that had suffered a lack of oxygen supply as a result of the blocked artery. Decreased inflammation caused by IL-1α blockade is believed to be the contributing factor for the reduction in brain damage and improvement in neurological function observed in the animals that received the IL-1a blocking antibody treatment.

About XBiotech

XBiotech is a fully integrated, global biopharmaceutical company dedicated to pioneering the discovery, development and commercialization of therapeutic antibodies. XBiotech currently is advancing a pipeline of therapies by harnessing naturally occurring antibodies from patients with immunity to certain diseases. Utilizing natural human immunity as a source of new medicines offers the potential to redefine the standards of care for a wide range of diseases.

On December 30, 2019 XBiotech sold an IL-1α blocking True Human™ antibody that had been used successfully in a number of clinical trials. The

sale of the antibody generated $750 million in upfront cash and up to $600 million in potential milestone payments. The Company retained the right to pursue the development of True Human™ antibodies targeting IL-1α for all areas of medicine outside of dermatology. While the Company previously was focused on a single True Human™ antibody targeting IL-1α, it now plans to develop multiple product candidates, which will target IL-1α in specific areas of medicine.

In addition to recent sale of its anti-IL-1α antibody, XBiotech now has other revenue sources. Commencing January 1, 2020 XBiotech began using its proprietary manufacturing technology to produce clinical drug product for a major Pharmaceutical Company under a two-year supply agreement. In addition, XBiotech is providing clinical trial contract research operations to conduct two large, double-blind placebo-controlled Phase II clinical studies. The financial strength generated from the sale and contract operations is enabling XBiotech to expand both its anti-IL-1α product development and infectious disease programs.

To accelerate advance of the Company's pipeline, the Company is expanding its existing manufacturing and research center, and planning to build an additional 30,000ft^2 infectious disease research & development center on its 48-acre property in Austin, TX which is wholly owned by the Company. The expansion and new building will be in addition to the present custom-built 33,000ft^2 combined manufacturing and R&D facility that currently exists on the campus. XBiotech owns the 48-acre campus—and all structures on the property—debt-free and envisions further expansion of facilities. For more information, visit www.xbiotech.com.

About True Human™ Therapeutic Antibodies
XBiotech's True Human™ antibodies are the only available antibodies derived without modification from humans who possess natural immunity to certain diseases. (Unlike all commercially available antibodies, which are called "Humanized" or "Fully Human," XBiotech's True Human™ antibodies are directly sourced from the natural human immune response for specific diseases without modification.) XBiotech's True Human antibodies have the potential to harness the body's natural immunity to fight disease with unprecedented safety, efficacy, and tolerability.

Cautionary Note on Forward-Looking Statements
This press release contains forward-looking statements, including declarations regarding management's beliefs and expectations that involve substantial risks and uncertainties. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "would," "could," "expects," "plans," "contemplate," "anticipates," "believes," "estimates," "predicts," "projects," "intend" or "continue" or the negative of such terms or other comparable terminology, although not all forward-looking statements contain these identifying words. Forward-looking statements are subject to inherent risks and uncertainties in predicting future results and conditions that could cause the actual results to differ materially from those projected in these forward-looking statements. These risks and uncertainties are subject to the disclosures set forth in the "Risk Factors" section of certain of our SEC filings. Forward-looking statements are not guarantees of future performance, and our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate, may differ materially from the forward-looking statements contained in this press release. Any forward-looking statements that we make in this press release speak only as of the date of this press release. We assume no obligation to update our forward-looking statements whether as a result of new information, future events or otherwise, after the date of this press release.

Contact XBiotech
Ashley Otero
aotero@xbiotech.com
512-386-2930

Source: XBiotech Inc.