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iBio Discovers Novel Antibody Targeting Activin E in Collaboration with AstralBio

Achievement strengthens iBio's partnered cardiometabolic and obesity program while showcasing its proprietary AI-driven drug and target discovery platform potential

SAN DIEGO, Jan. 07, 2025 (GLOBE NEWSWIRE) -- iBio, Inc. (NYSEA: IBIO), an AI-driven innovator of precision antibody immunotherapies, in collaboration with AstralBio Inc., announced today the development of an antibody that inhibits the function of Activin E, a promising therapeutic target for cardiometabolic disorders and obesity using iBio's patented Machine-Learning Antibody Engine. Developing an antibody against Activin E, a challenging and elusive target, highlights the robust capabilities of the technology to deliver innovative therapeutics, and contributes to iBio's pipeline of development candidates. iBio plans to rapidly advance testing of this molecule and additional candidates in more complex and disease relevant models.

"Developing a functional antibody against Activin E, an achievement we believe to be an industry first, is a significant milestone for iBio," said Martin Brenner, Ph.D., DVM, iBio's Chief Executive Officer and Chief Scientific Officer. "This breakthrough strengthens our efforts to expand our therapeutics pipeline for the treatment of cardiometabolic disorders and obesity with innovative next-generation solutions. We are excited about this program's advancement and our recently announced programs targeting Myostatin and Activin A as we build a pipeline of development candidates to address areas of high unmet need. This accomplishment also underscores the power and potential of our Machine Learning Antibody Engine in overcoming hard-to-drug targets and addressing some of the most pressing challenges in antibody discovery and development."

Human genetics provide strong evidence for Activin E as a therapeutic target. Individuals with a protective loss-of-function (pLOF) mutation in the INHBE gene have a healthier cardiometabolic profile, including less abdominal fat, lower triglycerides, and lower risk of type 2 diabetes and cardiovascular disease[1,2]. Targeting Activin E directly poses technical challenges for antibody discovery due to its extreme difficulty to produce outside the human body. Traditionally, antibody discovery requires direct injection of the target protein into the body. iBio overcame this challenge with its cutting-edge platform, which identified five critical epitope regions on the Activin E protein. Using its advanced epitope engineering technology, iBio developed synthetic epitopes replicating these regions. This groundbreaking method facilitated the creation of antibodies targeting all five epitopes without producing Activin E itself.

Data collected from preclinical studies conducted by iBio show strong antibody binding to

Activin E and the ability to block its signaling. The compound discovered by iBio demonstrates exceptional potency, with binding experiments indicating sub-nanomolar kinetics. In multiple cell-based assays, including studies on human adipocytes, the antibody has achieved complete blockade of Activin E-mediated signaling. Activin E plays a significant role in regulating energy homeostasis in adipose tissue and overall metabolic health. While the current GLP-1 class of therapeutics has successfully reduced weight, next-generation therapeutics are needed to reverse the detrimental effects of obesity and improve overall health and quality-of-life for patients. By reducing the activity of Activin E and its receptors, researchers believe it may be possible to develop therapeutics that could decrease internal abdominal fat, while preserving muscle mass to reverse obesity, protect against diabetes, and improve overall metabolic health.

Under terms of their collaboration, AstralBio has an exclusive license to iBio's Drug Discovery Platform to engineer four targets for treating cardiometabolic disease, along with the option to continue preclinical development. iBio also has the exclusive option to license three cardiometabolic targets from AstralBio, and will receive the rights to develop, manufacture and commercialize those targets upon exercise. In October of last year, the companies announced that they had rapidly advanced the joint myostatin program and just last week, iBio licensed an anti-myostatin from AstralBio and announced the development of a myostatin and Activin A bispecific antibody designed to promote weight loss, prevent muscle loss and weight regain, potentially enabling less frequent dosing than current obesity treatments.

"We're very pleased with the progress we're making in our collaboration with iBio to develop novel therapeutics for cardiometabolic disease and obesity," said Patrick Crutcher, AstralBio's Chief Executive Officer. "In less than a year, we have created a new antibody against an incredibly challenging target and identified a differentiated molecule for treating muscle wasting and obesity. This rapid pace of development showcases the technological innovation and efficiency of iBio's platform and the scientific caliber of our teams. We look forward to continuing our work together."

References

[1] https://pmc.ncbi.nlm.nih.gov/articles/PMC9399235/

[2] https://pmc.ncbi.nlm.nih.gov/articles/PMC9329324/

About iBio, Inc.

iBio (NYSE: IBIO) is a cutting-edge biotech company leveraging AI and advanced computational biology to develop next-generation biopharmaceuticals for cardiometabolic diseases, obesity, cancer and other hard-to-treat diseases. By combining proprietary 3D modeling with innovative drug discovery platforms, iBio is creating a pipeline of breakthrough antibody treatments to address significant unmet medical needs. Our mission is to transform drug discovery, accelerate development timelines and unlock new possibilities in precision medicine. For more information, visit www.ibioinc.com or follow us on LinkedIn.

About AstralBio

AstralBio is a privately held biotechnology company founded by Patrick Crutcher and several

former team members of ValenzaBio and AlmataBio. AstralBio's mission is to develop first-in-class or best-in-class medicines to treat cardiometabolic and immune-mediated diseases. The company plans to leverage iBio's proven machine learning-enabled platform to accelerate the progression of novel therapeutic targets to transform patient care.

FORWARD-LOOKING STATEMENTS

Certain statements in this press release constitute "forward-looking statements" within the meaning of the federal securities laws. Words such as "may," "might," "will," "should," "believe," "expect," "anticipate," "estimate," "continue," "predict," "forecast," "project," "plan," "intend" or similar expressions, or statements regarding intent, belief, or current expectations, are forward-looking statements. These forward-looking statements are based upon current estimates and assumptions and include statements such as Activin E being a promising therapeutic target for obesity and metabolic disorders, developing a functional antibody against Activin E, being an industry first; the Company's potential to address the broader quality-of-life challenges associated with obesity, including diabetes and muscle loss, with first-in-class solutions; developing therapeutics that could decrease internal abdominal fat and while preserving muscle mass to reverse obesity, protect against diabetes, and improve overall metabolic health by reducing the activity of Activin E and its receptors; and new therapeutics that inhibit Activin E holding great potential for increasing insulin sensitivity, decreasing fat accumulation, and improving muscle mass. While the Company believes these forward-looking statements are reasonable, undue reliance should not be placed on any such forward-looking statements, which are based on information available to us on the date of this release. These forward-looking statements are subject to various risks and uncertainties, many of which are difficult to predict that could cause actual results to differ materially from current expectations and assumptions from those set forth or implied by any forward-looking statements. Important factors that could cause actual results to differ materially from current expectations include, among others, the Company's ability to develop Activin E being a promising therapeutic target for obesity and metabolic disorders and its ability to develop a therapeutic that addresses the broader quality-of-life challenges associated with obesity, including diabetes and muscle loss; and the other factors discussed in the Company's filings with the SEC including the Company's Annual Report on Form 10-K for the year ended June 30, 2024. The information in this release is provided only as of the date of this release, and the Company undertakes no obligation to update any forward-looking statements contained in this release on account of new information, future events, or otherwise, except as required by law.

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