Comprehensive Analysis in Frontiers in Neuroscience Highlights Acumen Pharmaceuticals' New Approach to Treating Alzheimer's Disease

April 27, 2022

Acumen focused on developing investigational monoclonal antibody targeting amyloid beta oligomers

CHARLOTTESVILLE, Va. and CARMEL, Ind., April 27, 2022 (GLOBE NEWSWIRE) -- Acumen Pharmaceuticals, Inc. (NASDAQ: ABOS), a clinical stage biopharmaceutical company focused on the development of novel targeted therapeutics for Alzheimer's disease (AD), today announced that *Frontiers in Neuroscience* published a summary of preclinical evidence supporting ACU193, a monoclonal antibody that selectively targets toxic soluble Aβ oligomers (AβOs) for the potential treatment of early Alzheimer's disease. The article is titled "ACU193: An immunotherapeutic poised to test the amyloid β oligomer hypothesis of Alzheimer's disease" and can be accessed here.

Studies suggest that AβO-mediated neuronal toxicity is directly responsible for Alzheimer's-associated memory and cognitive problems. AβOs have been found to interact within synapses of brain cells called neurons, which leads to altered neuronal function, and may initiate and perpetuate the process of neurodegeneration, ultimately leading to cell death.

"We are increasingly learning more about the specific roles certain entities in the amyloid cascade, like AβOs, play in Alzheimer's disease pathology," said Eric Siemers, M.D., Chief Medical Officer at Acumen Pharmaceuticals and co-author of the publication. "We believe targeting AβOs remains a promising approach because evidence suggests they are the most toxic form of Aβ and may be responsible for the memory impairment and cognitive decline in Alzheimer's patients. We expect our ongoing Phase I clinical trial of ACU193 to provide further explanatory information and proof of mechanism data that will potentially pave the way towards testing of this hypothesis in larger studies. We look forward to sharing the results from our Phase I clinical trial once available."

Acumen believes ACU193 has many essential properties needed for a successful therapeutic and selectively binds to AβOs. Preclinical data highlights in the publication on ACU193 include:

- ACU193 selectively binds AβOs with 650-fold selectivity compared to Aβ monomers with limited to no binding to fibrillar Aβ *in vitro*
- ACU193 prevents AβO-induced disruption of long-term potentiation (LTP), a process of strengthening synapses that is important for learning and memory
- ACU193 can bind to a wide range of AβOs with varying molecular weights
- The parent of ACU193, called ACU3B3, prevents AβO-induced disruption of calcium homeostasis, an early sign of cellular dysfunction
- ACU3B3 significantly improved behavioral deficits across various assessments when administered to animal models at an age when AβO levels were measurable but prior to plaque deposition

Current therapeutics targeting amyloid plaque cause amyloid related imaging abnormalities (ARIA), including cerebral edema (ARIA-E) or microhemorrhage (ARIA-H), which may complicate the utility of such medicines. Current preclinical data suggest that ACU193 is not expected to elicit ARIA side effects due to its high selectivity for AβOs and limited binding to plaque.

About Acumen Pharmaceuticals, Inc.
Acumen, headquartered in Charlottesville, VA, with clinical operations based in Carmel, IN, is a clinical stage biopharmaceutical company developing a novel disease-modifying approach to treat Alzheimer's disease. Acumen's scientific founders pioneered research on AβOs, which a growing body of evidence indicates are primary triggers of Alzheimer's disease pathology. Acumen is currently focused on advancing its investigational immunotherapy drug, ACU193, a humanized monoclonal antibody that selectively targets toxic AβOs in INTERCEPT-AD, a Phase I clinical trial involving early Alzheimer's disease patients. For more information, visit www.acumenpharm.com.

Forward-Looking Statements
This press release contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Any statement describing Acumen's goals, expectations, financial or other projections, intentions or beliefs is a forward -looking statement and should be considered an at-risk statement. Words such as "believes," "expects," "anticipates," "could," "would," "seeks," "aims," "plans," "potential," "will" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements include statements concerning Acumen's business and the therapeutic potential of Acumen's product candidate, ACU193, including its potential for improved safety and efficacy as compared to other monoclonal antibodies in development, as well as the expectations concerning the INTERCEPT-AD trial and expectations with respect to the role of AβOs in the potential treatment of Alzheimer's disease. These statements are based upon the current beliefs and expectations of Acumen management, and are subject to certain factors, risks and uncertainties, particularly those inherent in the process of discovering, developing and commercializing safe and effective human therapeutics. Such risks may be amplified by the impacts of the COVID-19 pandemic. These and other risks concerning Acumen's programs are described in additional detail in Acumen's filings with the Securities and Exchange Commission ("SEC"), including in Acumen's Annual Report on Form 10 -K for the year ended December 31, 2021, filed with the SEC on March 28, 2021, which is available on the SEC's website at www.sec.gov. Copies of these and other documents are available from Acumen. Additional information will be made available in other filings that Acumen makes from time to time with the SEC. These forward-looking statements speak only as of the date hereof, and Acumen expressly disclaims any obligation to update or revise any

forward-looking statement, except as otherwise required by law, whether, as a result of new information, future events or otherwise.

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