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Cantabio Announces Publication of Novel Study Demonstrating the Importance of the DJ-1 Protein in the Onset and Pathology of Alzheimer's and Parkinson's disease

Study shows that DJ-1 misfolds to form b-sheet structured fibrillar aggregates that co-localize with pathological amyloid deposits characteristic of Parkinson's and Alzheimer's disease in patients' post-mortem brain tissues

PALO ALTO, CA / ACCESSWIRE / November 13, 2019 /Cantabio Pharmaceuticals, Inc. ("Cantabio" or the "Company"), a preclinical stage pharmaceutical company developing disease modifying therapeutics for Alzheimer's (AD), Parkinson's (PD) and Type II diabetes, today announced the publication of a peer-reviewed article lead authored by Cantabio's CEO, Dr Gergely Tóth, along with collaborators at University of Cambridge (Cambridge, UK), Research Centre of Natural Sciences (Budapest, Hungary) and Purdue University (West Lafayette, USA) in the journal Neurobiology of Disease.

The publication is entitled "*DJ-1 can form b-sheet structured aggregates that co-localize with pathological amyloid deposits"* reports novel findings that DJ-1, a protein genetically linked to early-onset Parkinson's disease (PD), can aggregate into b-sheet structured fibril-like aggregates, similar to those formed by beta amyloid peptide and tau protein in Alzheimer's disease (AD) and alpha-synuclein in PD. DJ-1 is a vital defensive protein that protects cells from damage caused by biochemical stress such as oxidative stress and protein aggregation, which can lead to neurodegenerative disorders such as AD and PD, as well as Type 2 Diabetes and diseases related to aging. The aggregation of DJ-1 was shown to be promoted by oxidization of its catalytic Cys106 residue by oxidative stress, and resulted in the loss of DJ-1's native protective function. This research is the first to show that oxidized DJ-1 aggregates were observed to localize within Lewy bodies, neurofibrillary tangles and amyloid plaques, in human PD and AD patients' post-mortem brain tissue.

The findings of the article report for the first time that the aggregation of DJ-1 may be a critical factor in the development of the pathology of PD and AD and demonstrate that loss of DJ-1 function can happen through DJ-1 aggregation in disease conditions. The article concludes that drug discovery approaches that aim to stabilize the native functional structure of DJ-1 to reduce its aggregation are likely to have wide ranging therapeutic implications for AD and PD. The article is available online at the Neurobiology of Disease website:

https://www.sciencedirect.com/science/article/pii/S0969996119303043

Roger A. Barker, Professor of Clinical Neurosciences at University of Cambridge, a co-

author of the article commented, "this new discovery on the critical role that DJ-1 plays in common degenerative diseases of the brain opens up exciting new therapeutic avenues. For many years DJ-1 was thought to really only be relevant to very rare inherited forms of PD, but now we have shown that this protein is intimately related to diseases that are more common and prevalent. This finding, coupled to the mechanism by which it may go wrong in these diseases, open up new areas of treatment with widespread clinical application."

Cantabio's CEO, Dr. Gergely Toth stated. "We are delighted to have the results of this study published, as it demonstrates a clear and previously undescribed DJ-1 associated pathology in AD and PD and suggests this protein has a major role in the onset and progression of these diseases. These results provide additional confirmation of the potential of the drug discovery approach employed by Cantabio, to develop effective disease modifying therapeutics for PD and AD by targeting DJ-1 with small molecule stabilizers, enhancing and preserving the neuroprotective function of this protein. Given the strong progress of our therapeutic programs targeting DJ-1, we believe this approach has enormous potential to lead to new drugs which can tackle the root causes of AD, PD and related diseases."

About Neurobiology of Disease

Neurobiology of Disease is a major international journal at the interface between basic and clinical neuroscience. The journal provides a forum for the publication of top quality research papers on: molecular and cellular definitions of disease mechanisms, the neural systems and underpinning behavioral disorders, the genetics of inherited neurological and psychiatric diseases, nervous system aging, and findings relevant to the development of new therapies.

About Cantabio Pharmaceuticals

Cantabio is focused on bringing novel, first-in-class drug candidates into clinical trials and beyond through the discovery and development of innovative pharmacological chaperone and protein delivery-based therapeutics aimed at addressing the reduction of biochemical stress such as protein aggregation, oxidative and glyoxal stress, the root causes of various diseases. Cantabio's programs focus on protein systems implicated in neurodegenerative disorders, including Alzheimer's and Parkinson's, as well as Type II diabetes. The company is currently engaged in advanced pre-clinical trials of its therapeutic candidates and is focused on developing these towards clinical trials. More information is available at www.cantabio.com.

Contacts:

Company contact:
Thomas Sawyer, Ph.D., M.B.A.
COO
Cantabio Pharmaceuticals, Inc.
844-200-CTBO
ir@cantabio.com

Investors and Media Relations:
ir@cantabio.com
(844) 200-CTBO

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