



Parkinson's Institute and Clinical Center and Axial Biotherapeutics Announce Collaboration to Target Gastrointestinal Metabolites that May Contribute to Parkinson's Disease

SUNNYVALE, Calif. and BOSTON and Pasadena, Calif. June 18, 2018 – Parkinson's Institute and Clinical Center (PICC) and Axial Biotherapeutics announced today a collaboration to investigate interventions targeting gastrointestinal (GI) metabolites that may cause Parkinson's Disease (PD). The interventions, to be developed and identified by Axial, will build on the work of Axial's scientific Co-founder and Caltech Professor, Sarkis Mazmanian, Ph.D. Axial's unique approach to PD interventions is inspired by the effects the microbiome and its metabolites have on PD progression.

As part of the collaboration, Axial and the PICC have formed a joint preclinical research collaboration, studying Axial's microbiome-inspired interventions in the PICC's unique cellular and animal models for PD and its effects over the GI system.

"Our team is conducting advanced clinical research, which suggests that disorders like Parkinson's are not just a brain condition but very likely have origins in the GI system," said Carrolee Barlow, M.D., Ph.D., Chief Executive Officer, Parkinson's Institute and Clinical Center. "We are excited to join forces with Axial Biotherapeutics and their team to investigate an intervention with the potential to eradicate and block these microbial effects and improve GI function. It is our ultimate goal to determine if this approach can stop PD from progressing. Partnerships like this, along with financial donations, will make our goal of finding a solution for PD a reality."

In parallel to the newly formed collaboration, Dr. Barlow has joined Axial's recently formed [Neurology Scientific and Clinical Advisory Board](#), and will help guide the Company's clinical programs.

"The collaboration with Dr. Barlow and her team at the PICC is expected to significantly increase the pace of development for our approach to PD," added David H. Donabedian, PhD, Co-founder and CEO of Axial Biotherapeutics. "We truly appreciate the enthusiasm and collaborative spirit exhibited by Dr. Barlow and her team, and we look forward to seeing the fruits of this partnership, which will hopefully bring us several steps closer to finding a better solution for this disease."

About Axial's Parkinson's research program

Studies performed by Axial's scientific Co-founder and Caltech Professor, Sarkis Mazmanian, Ph.D. and others, have shown that human gut bacteria can potentiate numerous PD-like features in a robust mouse model of the disease, and suggested that alterations in the human microbiome may be a novel and causal risk factor for PD. In mice overexpressing human α -Synuclein (α -Syn), intestinal microbiota were required to induce GI and motor deficits, and α -Syn pathology in the brain. Furthermore, antibiotic treatment ameliorated pathophysiology in adult animals, while microbial colonization promoted it, suggesting disease potentially arises from signaling

between the gut and the brain. Finally, colonization of α -Syn overexpressing mice with microbiota from PD patients enhanced physical impairments compared to microbiota transplants from healthy human donors. These findings powered Axial's search for solutions that will improve PD by affecting the microbiome and its metabolites.

About the Parkinson's Institute and Clinical Center:

The Parkinson's Institute and Clinical Center is at the forefront of patient care and therapy development. We are the nation's only Institute that provides patient care, basic science research, and clinical research in one integrated model. Our unique freestanding organization directly connects research to patient care – from the "lab bench to bedside." For 30 years, our team of epidemiologists, physicians, scientists, and therapists, have been at the forefront of every clinical and scientific discovery in the field of Parkinson's research.

Since our inception, patients have come from 38 states and many foreign countries for their care. We have managed more than 135 clinical research trials, medically evaluating more than 95 different drugs and therapies for Parkinson's. The result: our Institute has been directly involved in bringing every Parkinson's drug currently available to the market. The Institute is at the forefront of discovering and developing the latest, most innovative treatments and therapies for people living with Parkinson's.

For more information visit www.thepi.org or call (408) 734-2800.

About Axial Biotherapeutics:

Axial Biotherapeutics is a leading biopharmaceutical company harnessing the link between the human gut microbiome and the central nervous system to develop a new class of biotherapeutics to improve the quality of life for people with neurological diseases and disorders. www.axialbiotherapeutics.com

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