CHOATE

Alan Fowler, PhD

Staff Scientist

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Practice Areas

Intellectual Property Protection

Education

Massachusetts General Hospital & Harvard Medical School
Research Fellow (2024) Neurology

Georgetown University
PhD (2021) Molecular Neuroscience

Georgetown University
MS (2018) Neuroscience

Hampden-Sydney College
BS (2014) Chemistry

Dr. Alan Fowler assists Choate's life sciences clients by utilizing his background in neuroscience and molecular biology to help with the preparation and prosecution of patent applications, as well as freedom-to-operate and patentability analyses.

Industry Experience

Prior to joining Choate, Alan was a Research Fellow in Neurology at the MassGeneral Institute for Neurodegenerative Disease (MIND) at Massachusetts General Hospital and Harvard Medical School, and also, served as a co-director at The Harvard Biotechnology Incubator. At MIND, he lead an investigation of BACE1 enzymatic inhibition as a novel therapy for rare neurological disorders (e.g. Spinocerebellar Ataxia 1). Additionally, he co-developed and filed an international patent application for a novel therapeutic strategy to treat Spinocerebellar Ataxias and related neurodegenerative motor disorders. During this time, Alan was the recipient of the Keystone Symposia Future of Science Scholarship Award for Neurodegenerative Disease Therapeutic Development.

Alan received his PhD from Georgetown University in neuroscience. While there, he was a part of the Translational Neurotherapeutics Program and the Interdisciplinary Program in Neuroscience. His doctoral research established preclinical and clinical stage investigation of DDR1 receptor tyrosine kinase inhibition for the treatment of Parkinson's disease. Alan led the collaboration between the Translational Neurotherapeutics Program and the Medical Chemistry program to design, synthesize, and screen novel small molecule tyrosine kinase inhibitors. He also discovered longitudinal changes in microRNAs regulating angiogenesis and autophagy in the cerebrospinal fluid of Parkinson's disease patients. His research was supported by a NINDS Ruth L. Kirschstein National Research Service Award and a NCATS Translational Biomedical Sciences fellowship from The National Institutes of Health. Prior to Georgetown, Alan worked as a research assistant at Beth Israel Deaconess Medical Center and Harvard Medical School in the Division of Endocrinology, where his research focused on metabolic disease and high energy metabolic states.

Published Patents

- "Modulation of BACE1 as a Therapy for Spinocerebellar Ataxia," co-inventor, US2023/023613, May 2023

Publications and Presentations

- "Reduction of BACE1 expression attenuated motor deficits and neuropathology in spinocerebellar ataxia type 1 mice," presenter, *Keystone Symposium*, May 2022

- "Analysis of brain region-specific mRNA synthesis and stability by utilizing adult mouse brain slice culture," co-author, *STAR Protocols,* June 2022

- "Cerebrospinal fluid microRNAs reveal impairment of angiogenesis and autophagy in Parkinson's disease," first author, *Neurology Genetics*, December 2021

- "Discoidin Domain Receptor 1 is a therapeutic target for neurodegenerative diseases," first author, *Human Molecular Genetics*, October 2020

- "Nilotinib alters microRNAs that regulate specific autophagy and ubiquitination genes in the cerebrospinal fluid of Parkinson's patients," presenter, *Association for Clinical and Translational Science Annual Meeting*, April 2020