



Beejan Asady, PhD

PATENT AGENT

617-248-5201 | basady@choate.com

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

Industry Experience

Beejan received his bachelor of science in biology from the University of Georgia. After his undergraduate degree, he worked as a research professional with Dr. Silvia Moreno and Dr. Roberto Docampo in the Center for Tropical and Global Emerging Disease, where he studied host pathogen interactions involving unicellular parasites such as *T. gondii*, *P. falciparum*, and *T. brucei*, the causative agents of Toxoplasmosis, Malaria, and African Sleeping Sickness respectively. Beejan also assessed phenotypic effects of targeting biochemical pathways involved in calcium, proton, and zinc signaling and homeostasis in these organisms in order to discover potential therapeutic drug targets. His research led to numerous publications that showed the importance of ionic signaling and homeostasis in parasite virulence and also led to the publication of the first methods (SOP) paper on performing in-situ ionic signaling measurements in protozoans.

Beejan received his PhD in molecular microbiology and immunology at Johns Hopkins University. He conducted his thesis in the lab of Dr. Isabelle Coppens at the Bloomberg School of Public Health, where he helped identify a mechanism of protection offered by NIH provided monoclonal antibodies that are in clinical trials to prophylactically treat Malaria. He also identified and characterized the role of a cytochrome P450 enzyme, important in metabolism of drugs to combat cancer in humans, and involved in steroidogenesis in *T. gondii*. Continuing his work studying host-pathogen interactions, Beejan determined mechanisms by which *Toxoplasma* persists in its mammalian host via the acquisition of phosphate for ionic homeostasis and osmoregulatory purposes as well as the selective hijacking of host endocytic cargo for scavenging of host nutrients needed for its pathogenesis. Furthermore, he landscaped the cardiac specific immune responses in mice chronically infected with *Toxoplasma* and created a methodology to study parasite encystation in cardiomyocytes beating in-vitro.

Publications and Presentations

- "The Rab11-Family Interacting Proteins reveal selective interaction of mammalian recycling endosomes with the *Toxoplasma* parasitophorous vacuole in a Rab11- and Arf6-dependent manner," co-first author, *Molecular Biology of the Cell*, April 2022
- "Endothelial thrombomodulin downregulation caused by hypoxia contributes to severe infiltration and

Focus Areas

Intellectual Property
IP Counseling

coagulopathy in COVID-19 patient lungs," co-author, *Ebiomedicine*75, January 2022

- "The *P. falciparum* CSP repeat region contains three distinct epitopes required for protection by antibodies in vivo," co-author, *PLoS Pathogens*, November 2021
- "A plastid two-pore channel essential for inter-organelle communication and growth of *Toxoplasma gondii*," co-author, *Nature Communications*, October 2021
- "TbVps41 regulates trafficking of endocytic but not biosynthetic cargo to lysosomes of bloodstream forms of *Trypanosoma brucei*," co-author, *FASEB Journal*, June 2021
- "A single Na⁺-Pi cotransporter in *Toxoplasma* plays key roles in phosphate import and control of parasite osmoregulation," first author, *PLoS Pathogens*, December 2020
- "An endoplasmic reticulum CREC family protein regulates the egress proteolytic cascade in malaria parasites," co-author, *MBio*, February 2020
- "Genetic Indicators for Calcium Signaling Studies in *Toxoplasma gondii*," co-first author, *Methods in Molecular Biology*, January 2020
- "The *Toxoplasma* Vacuolar H⁺-ATPase Regulates Intracellular pH and Impacts the Maturation of Essential Secretory Proteins," co-author, *Cell Reports*, May 2019
- "The Vacuolar Zinc Transporter TgZnT Protects *Toxoplasma gondii* from Zinc Toxicity," co-author, *MSphere*, May 2019.
- "Acidocalcisome-mitochondrion membrane contact sites in *Trypanosoma brucei*," co-author, *Pathogens*, June 2018
- "Glycosylphosphatidylinositol-Anchored Carbonic Anhydrase-Related Protein of *Toxoplasma gondii* Is Important for Rhoptry Biogenesis and Virulence," co-author, *MSphere*, May 2017

Education & Credentials

- Johns Hopkins University, PhD (2022) Molecular Microbiology and Immunology
- University of Georgia, BS (2014) Biology

Admissions

- U.S. Patent & Trademark Office