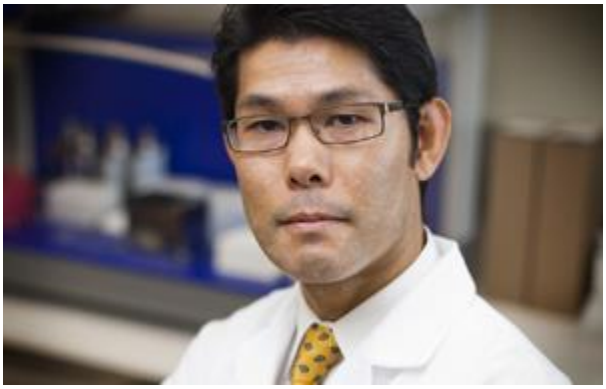
Dr. Tsuneya Ikezu of Boston University is the recipient of one of the four CART Fund Research Grants awarded for 2014. [The 4 grants in 2014 totaled $500,000.]



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Research Interests: Dr. Ikezu's Laboratory of Molecular NeuroTherapeutics primarily focuses on Neuroimmunology and how the innate immune-related molecules in the central nervous system (CNS) influence the pathology and progression of select neurodegenerative disorders e.g. Alzheimer's Disease (AD). Further, the lab investigates pharmacological means to suppress the innate immune response in the CNS with the goal of enhancing neuronal protection and minimizing collateral damage from an activated immune response in the CNS. Specifically we are investigating the role of the signaling cytokine IL-4/10/CD200 and its potential anti-inflammatory/neuroprotective role between microglia and both neurons and astrocytes during active CNS inflammation. Further, we are exploring IL-4/10/CD200 as a potential therapeutic in chronic inflammatory states within the CNS, such as seen in Alzheimer's disease, to minimize neuronal cell loss.

A second focus of our lab is the investigation of tau-tubulin kinases (TTBK1 and 2) and their role in hyper-phosporylating tau protein leading to the formation of tau and alpha-synuclein tangles within neurons, a key pathology observed in AD, Amyotrophic lateral sclerosis (ALS)/Lou Gehrig's Disease, Spinocerebellar Ataxia, and Frontotemporal Dementia (FTD). We are currently performing a cutting-edge drug discovery program to identify potential inhibitors to TTBK1 with the goal of identifying potential new therapeutic(s) that could prevent the formation of tangle formation within neurons in these neurodegenerative states. We primarily use novel gene-targeted/transgenic mouse models to characterize our studies by employing a mix of assays including: standard biochemical assays, gene expression analyses, tissue cultures from both primary cells and cell lines, immunohistochemistry, gene-delivery vectors, and animal behavioral testing.