

2nd International Conference on

Neuroimmunology & Therapeutics

December 01-02, 2016 Atlanta, USA

Inflammasome regulation in the aging brain

Juan Pablo de Rivero Vaccari

University of Miami Miller School of Medicine, USA

The inflammasome plays a key role in the regulation of the innate immune inflammatory response in the central nervous system (CNS). The inflammasome regulates the activation of the inflammatory caspase; caspase-1 and the pro-inflammatory cytokines IL-1beta and IL-18. The inflammatory response is regulated differently at different stages of the aging cycle. This presentation will cover the regulation of the inflammasome in the brain as a result of naturally occurring aging in the brain of aged mice (18 months) when compared to younger mice (3 months). In addition, I will discuss the regulation of the inflammasome in the brain of reproductive senescent female rats when compared to the brain of young female rats. Taken together, our data indicate that the inflammasome is up-regulated in the brain as a result of aging. Importantly, inhibition of the inflammasome in the aging brain results in improvement in cognitive performance as determined by water maze testing in rats. In conclusion, our findings indicate that the inflammasome is a potential therapeutic target to inhibit inflammation in the aging brain, which could further protect from the development of neurodegenerative diseases associated with aging such as Parkinson's disease and Alzheimer's disease.

Biography

Juan Pablo de Rivero Vaccari has received his Bachelor of Science degree in Biology in 2004 from Florida International University, where he graduated Summa Cum Laude and became a Member of Phi Beta Kappa Honor Society. In 2004, he joined the University of Miami as a graduate student in the Department of Physiology and Biophysics where he worked in the laboratory of Dr. Robert W. Keane. He has obtained his PhD in 2007 and joined the laboratory of Dr. W. Dalton Dietrich at the Miami Project to Cure Paralysis as a Postdoctoral Fellow where he continued his studies on innate immune responses after brain trauma. In 2010, he became a Research Assistant Professor in the Department of Neurological Surgery and the Miami Project to Cure Paralysis at the University of Miami. Currently, he works on identifying biomarkers and therapeutic targets in the innate immune response to improve outcomes after central nervous system injury and disease. In addition, his work has resulted in the filing of several patents with the United States Patent and Trademark Office and abroad. To move inventions forward, he co-founded InflamaCORE, LLC, a company dedicated to treating and diagnosing inflammatory injury and disease, as a spin-off company from the University of Miami.

JDeRivero@med.miami.edu

Notes: