

Introduction

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This Special Issue on “Inflammation in Neurodegeneration and Neuroprotection” evolved from a 2011 Society for Neuroscience satellite symposium sponsored by the Neurotoxicity Society in conjunction with Georgetown University Medical Center and Howard University Medical School. At that symposium, leading experts reported on the potential role for neuroinflammation in Alzheimer’s disease, Parkinson’s disease, hippocampal injury, aging and alcohol abuse including discussions on the mechanisms of pathology and protection. Over 20 universities as well as industry were represented adding to the stimulating scientific discussions. The message from this symposium is clear; there is an ever-expanding interest in the role of neuroinflammation in the initiation and progression of injury and disease and in the development of novel strategies to control gliosis. Inflammation in neurodegenerative disorders such as Alzheimer’s and Parkinson’s disease, aging and injury (i.e., alcohol and substance abuse) has

continued to gain attention. However, whether activation of microglia and astrocytes is part of the disease process or a consequence following the death of neurons is an ongoing point of debate. Furthermore, the effect of inflammation in one setting of neural injury may not be the same as in another setting. In this symposium researchers also considered the benefits of neuroinflammation as a protective mechanism against disease. It is evident that we are only beginning to decipher the myriad of complex pathways involved in the activation of these neuroimmune cells. This Special Issue is a compilation of studies focused on neuroinflammation in aging, neurodegeneration, drug abuse including reviews, mechanistic studies, and novel therapeutics.

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