# PREFACE

Inflammation is a complex biological response to harmful stimuli such as cellular damage and pathogens. In general, it is a protective effort of the organism to remove the harmful stimuli. However, when it occurs chronically, inflammation can lead to a number of adverse effects. Inflammatory responses in the brain have been recognized for years as critical in neurodegeneration and behavior in some neurological disorders (e.g., multiple sclerosis, Alzheimer's disease). However, in recent years, researchers discovered that certain inflammatory responses are involved in correct development of the brain and in neurogenesis as well as in the protection of our brain from neurodegeneration. The presence or absence of some of the inflammatory responses in the brain often can be a result of a particular combination of polymorphisms in groups of genes controlling signaling pathways and/or protein activation cascades such as complement system. These findings suggest the important role of inflammation in neurodevelopmental disorders which has been largely overlooked so far. Now it becomes more obvious that inflammation plays a dual role in our brain and therefore further in-depth studies on the role of inflammation in neuropsychiatric disorders are urgently required. These will allow the correct design of drugs targeting the adverse effect from inflammation while maintaining the benefits for the brain.

The goal of this thematic volume of the *Advances in Protein Chemistry and Structural Biology* is to provide a comprehensive view of the mechanisms triggering inflammatory responses in the brain and leading to different neuropsychiatric disorders as well as some novel approaches for their treatment. This thematic volume provides a rationale for future studies on the relationship between inflammation and neuropsychiatric disorders with intent to inspiring the development of new agents for a more efficient management and prevention.

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