

Preface

Autophagy is an intracellular catabolic mechanism mediated by lysosomes, which is responsible for most of the degradation and recycling of cytoplasmic components and intracellular dysfunctional or damaged organelles. Increasing evidences suggest that autophagic deregulation causes accumulation of abnormal proteins or damaged organelles, which is a characteristic of chronic neurodegenerative conditions, such as Parkinson's disease (PD), Alzheimer's disease (AD), Huntington's disease (HD) or amyotrophic lateral sclerosis. Indeed, promoting the clearance of aggregate prone proteins via pharmacological induction of autophagy has proved to be an useful mechanism for protecting cells against the toxic effects of these proteins in the context of neurodegenerative diseases and protecting neurons from apoptosis.

This book focused is composed of thirteen excellent reviews addressing different aspects of autophagy and its relation with neurodegenerative disorders. Chapters 1–3 are devoted to explain general aspects of autophagy as macroautophagy, chaperone-mediated autophagy or mitophagy. Chapters 4–7 are dedicated to detail the role of autophagy in the principal neurodegenerative disorders and finally Chaps. 8–13 show the implication of autophagy in the toxicity of several substances related to the etiology of neurodegenerative diseases.

The compilation of these reviews included in this book show that there is much controversy in this field. Currently there are many research lines that require a lot of work to get there someday to be able to clarify a possible route of finding treatments against neurodegenerative diseases based on the mechanism of autophagy.

Toxicity and Autophagy in Neurodegenerative Disorders

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