Preface

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Special Issue of *Molecular Neurobiology*, Grace Y. Sun and W. Gibson Wood, Guest Editors

ISN Satellite Meeting on Novel Strategies for Intervention in Neurodegenerative Diseases in Taiwan (August 2009)
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Dedication

This Special Issue of *Molecular Neurobiology* is dedicated to the late Professor Lloyd A. Horrocks, 1932–2007. Dr. Horrocks obtained his Ph.D. in Physiological Chemistry from Ohio State University, Columbus, Ohio. After serving

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the US Air Force as a project engineer, he joined the Cleveland Psychiatric Institute in 1960 as a research associate and started to investigate complex lipids in the brain. In 1965, he furthered his training in neurochemistry with the late Professor Brian Ansell (the father of plasmalogen) at the University of Birmingham in England. After returning to Cleveland, he recruited Dr. Grace Sun as his first postdoctoral fellow to investigate fatty acids in brain phospholipids. In 1968, Dr. Horrocks returned to Ohio State University and devoted his life to academia in the Department of Physiological Chemistry. He was promoted to full Professor in 1973, and after retiring in 1992, he served as Professor Emeritus. Dr. Horrocks contributed greatly to our understanding of the different types of phospholipids in the central nervous system (CNS), and in particular, the structure, biosynthesis, and metabolism of plasmalogens, a type of phospholipids enriched in myelin. Over the course of 40+ years, he trained numerous students and post-docs, and his laboratory was frequently the hub for many international scientists from all parts of the world. Dr. Horrocks published over 350 papers, edited seven books, wrote two monographs, and served as editor for *J. Neurochemistry*, *J. Lipid Research*, *Lipids*, and *Neurochemical Research*. He was a pioneer and founding member of International Society for Neurochemistry (ISN), ASN, and the Society of Neuroscience, and was active in these societies by holding many administrative positions. He is remembered as a role model, highly respected scientist, mentor, teacher, and friend.

Acknowledgments

This Special Issue is based on a satellite symposium of ISN/Asian-Pacific Society for Neurochemistry meeting that was held in Busan, Korea, August 22–29, 2009. The satellite symposium was entitled “Novel strategies for intervention in neurodegenerative diseases,” and was held at the Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan,

August 30–September 2, 2009. This meeting was attended by over 300 participants with 45 invited speakers from the USA, China, England, Switzerland, Germany, Italy, Poland, Singapore, Japan, Taiwan, and South Africa. The success of this satellite meeting was due in part to the generous support from the International Society for Neurochemistry, grants from the National Science Council (Taiwan), Academia Sinica, and grants from the National Institutes of Health/National Institute on Aging (1R13AG033953 and 2P01AG018357). Support was also provided by grants from Covance, Novartis, CAP, and Senofi-Adventis. A special note of appreciation is extended to Dr. Yuan-Tsong Chen, distinguished research fellow and director of Institute of Biomedical Sciences, Academia Sinica, to the local organizers chaired by Dr. Teng-Nan Lin, and to the administrative and technical staff of Academia Sinica for their outstanding support that contributed to the overall success of the symposium.

Content of This Issue

The number of individuals 65 years of age and older has grown markedly in this decade and has resulted in an upsurge in the prevalence of neurodegenerative diseases, including Alzheimer's disease, Parkinson's disease, Huntington disease, alcoholism, and cerebrovascular diseases such as stroke. There have been important advancements made toward understanding the mechanisms of these diseases as well as emerging therapies. This special issue examines recent developments in understanding oxidative

mechanisms and contributions of glial cell activation, mitochondrial dysfunction, and lipids and signaling pathways to neurodegenerative diseases.

The section on "Alzheimer's Disease" includes recent developments on mitochondrial function, cell signaling, amyloid-beta protein processing, and membrane biophysics. The second section comprises papers on "ischemia and stroke," examining neurovascular dysfunction, the roles of PPAR-gamma, poly(ADP-ribose), and proteins whose neuroprotective function is stimulated in response to cerebral ischemia. The third section on "glial cells and inflammation" includes astrocytes and microglia in neurodegeneration, neuronal death caused by microglia, and involvement of glial cells in Huntington's disease and brain P2Y2 receptors. The fourth section on "lipids and signaling pathways" includes papers on phospholipase A2 and neurodegeneration, docosahexaenoic acid and macular degeneration, sphingolipid metabolism and membrane dynamics, brain cholesterol metabolome, and regulation and function of farnesyl and geranylgeranyl-pyrophosphates in the CNS. Lastly, the fifth section on "neuroprotective agents" plays special emphasis on compounds or drugs, such as neuroprotectin D1, resveratrol, curcumin and docosahexaenoic acid, granulocyte colony-stimulating factor, P2X7 receptor antagonists, the phospholipase inhibitor D609, and simvastatin stimulation of Bcl-2. It is our intention that this special issue provides a useful resource and fresh perspective on different approaches toward understanding the mechanisms and promising treatments in neurodegeneration.

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