Editorial

Drug Discovery for Neurodegenerative Diseases: Challenges and Novel Biochemical Targets

Dedicated to the memory of Mark A. Smith for his inspiring contribution to Alzheimer’s disease

We are delighted to guest edit this special issue on Drug Discovery for Neurodegenerative Diseases: Challenges and Novel Biochemical Targets. With the major achievements in sanitation and antibiotics and the consequent drop in infectious diseases, the world population has yielded an unprecedented rise in the number of elderly people. With successful management of diabetes and cardiovascular diseases, the brain remains the final frontier, particularly with respect to treatment of the neurodegeneration that accompanies aging. Failure of neurons in the central nervous system is a fairly common phenomenon in aging and causes diseases such as Alzheimer’s disease (AD), Parkinson’s disease (PD), Lewy body dementia, amyotrophic lateral sclerosis, and multiple sclerosis. Focus on these diseases has been relatively recent and has led to major advances in our understanding of the inner working of the brain, and has uncovered possible mechanisms of neurodegeneration. Due to high levels of redundancy there is usually extensive degeneration before the onset of symptoms. Thus early diagnosis is critical to ensure successful treatment and even this has been elusive. Despite this major challenge, the combination of pathology, genetics, molecular biology, cell biology, and epidemiology has resulted in the discovery of novel mechanisms of neurodegeneration ranging from protein misfolding (prion-like) disorders to oxidative stress, DNA damage, and other metabolic and epigenetic changes. This special issue focuses on AD and PD and examines the potential for pharmacological treatments targeting the pathways described above. The range of targets and leads covered represent the state of the art in the field and present paradigms that may be extended to other neurodegenerative diseases. This special issue of JAD should therefore be a valuable reference point for drug discovery researchers in neurodegeneration.

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We profoundly thank Beth Kumar for her marvelous job in coordinating this issue on behalf of JAD.

Finally we feel honored to dedicate this special issue in the loving memory of our beloved friend and ener-
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getic visionary in AD research, Prof. Mark A. Smith, who was not only a lead editor of JAD but also a great source of inspiration for this special issue.

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