

IS02-2 **Role of Sigma-1 Receptors in Neurodegenerative Diseases**

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Neurodegenerative diseases with distinct genetic etiologies and pathological phenotypes may share common mechanisms of cellular dysfunction, including excitotoxicity, calcium dysregulation, oxidative stress, ER stress and mitochondrial dysfunction. The role of glial cells, including microglia and astrocytes, is also increasingly recognized in both the promotion and prevention of neurodegeneration. Accumulating evidence suggests that sigma receptors, particularly the sigma-1 receptor subtype, expressed in both neurons and glial of multiple regions in the central nervous system, are a unique class of intracellular proteins that can modulate multiple mechanisms of neurodegeneration across different cell types and are therefore a compelling new class of putative pharmacological targets for treating neurodegenerative disorders. This talk will provide an overview of common mechanisms associated with neurodegeneration and discuss how sigma-1 receptors may modulate these mechanisms in order to preserve or restore neuronal function. In addition, their therapeutic potential in the treatment of various neurodegenerative disorders will be discussed.