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Oxidative Stress and Neurodegenerative Disorders

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Message from the Guest Editors

Increased oxidative stress levels have been found to greatly contribute to the onset and progression of neurodegenerative disorders, i.e., Alzheimer's disease, Parkinson's disease, Down syndrome, and Huntington disease. Loss of physiological equilibrium between antioxidant and pro-oxidant stimuli, which normally contribute to the maintenance of low free radical levels, leads to increased generation of reactive oxygen species (ROS) and reactive nitrogen species (RNS) that are toxic for brain cells in several ways. Recent findings suggest the crucial role of metabolic networks in the regulation of neuronal tolerance against oxidative stress. Furthermore, emerging evidence highlights the impact of metabolism and redox signaling on genetic and epigenetic regulation of gene expression. Collectively, these elements indicate the extraordinary complexity of the multileveled molecular mechanisms deployed by brain cells to cope with oxidative stress.

This research topic will discuss preclinical and clinical evidence highlighting the central role of oxidative stress in the progression of neurodegenerative disorders and which are current strategies adopted to protect the brain.



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Message from the Editor-in-Chief

It has been recognized in medical sciences that in order to prevent adverse effects of "oxidative stress" a balance exists between prooxidants and antioxidants in living systems. Imbalances are found in a variety of diseases and chronic health situations. Our journal *Antioxidants* serves as an authoritative source of information on current topics of research in the area of oxidative stress and antioxidant defense systems. The future is bright for antioxidant research and since 2012, *Antioxidants* has become a key forum for researchers to bring their findings to the forefront.

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