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Special Issue Reprint

Targeting Oxidative Stress for Disease

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Oxidative stress (OS), representing an imbalance between the production of reactive oxygen species (ROS) and the body's antioxidant defense systems, is a critical factor in the pathogenesis of numerous diseases, including neurodegenerative and psychiatric disorders, as well as cancer and cardiovascular and inflammatory conditions. The Special Issue, "*Targeting Oxidative Stress for Disease*", brings together recent findings exploring the contribution of ROS and disturbed redox balance in disease development and progression, as well as potential approaches to counteract their effects. Highlighted topics include the impact of OS on neurodevelopment and psychiatric conditions, such as autism spectrum disorder (ASD), where OS markers may serve as early diagnostic tools or therapeutic targets. Studies featured in this Special Issue investigate the regulatory role of circular RNAs in response to OS during neuronal differentiation, and the contribution of ferroptosis to ASD pathology. Furthermore, this issue addresses the dual roles of neuropsychiatric medications in modulating redox balance and emphasizes the need for rigorous clinical trials to evaluate the efficacy of antioxidant and anti-inflammatory interventions. This Special Issue advances our understanding of OS-related pathophysiology and paves the way toward innovative redox-based therapeutic approaches.

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