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## Oxidative Stress and Antioxidant Strategies: Relationships and Cellular Pathways for Human Health

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### Message from the Guest Editors

Among the key factors influencing human health are the chronic diseases and aging, which have been increasing in the last decades. These pathological states are produced by several causes, and a common factor involved in most of them is oxidative stress. Oxidative stress is defined as an imbalance between oxidative status, mainly by the formation of reactive species (RS), and antioxidant defence mechanisms. Nevertheless, when oxidants are produced in excess, or when the antioxidant defenses that regulate them are ineffective, this balance can be perturbed, thus resulting in oxidative condition. Oxidative products are highly reactive, and can directly or indirectly modulate the functions of many enzymes and transcription factors through a complex signaling cascades. This phenomenon increases with age and affects the normal functioning of several cells and tissues. Due to the broad and profound biological effects of RS, numerous experimental and clinical studies have focused their attention on the participation of oxidative stress as a key regulator in chronic pathological status and aging.



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# Special Issue



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