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## Role of Mitochondria and ROS in Health and Disease

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### Message from the Guest Editors

Mitochondria are complex organelles, their principal role is to serve as a primary site for energy production in a process accompanied by the formation of potentially harmful substances, such as radicals and other reactive oxygen species (ROS). Under basal conditions, a low ROS production is critical since ROS function as messenger molecules in various physiological processes, including adaptation to hypoxia, the regulation of autophagy, immunity, differentiation, longevity, and adaptation to exercise. In some circumstances, including mitochondrial DNA mutations, infections, ageing, and a lack of physical activity, ROS production can increase, which may lead to damage to various cellular structures and the development of many non-communicable diseases, including age-related macular disease (AMD), neurological disorders, and metabolic diseases. This observation highlights the urgent need for a comprehensive understanding of the pathways involving ROS, with a particular focus on identifying key targets for effective therapeutic interventions.



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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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