



Mitochondrial Oxidative Metabolism in Heart and Muscle

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Message from the Guest Editor

Beyond their well-known role in ATP production, mitochondria take part in many cellular processes, such as apoptosis, ion homeostasis, thermogenesis, and production of radical oxygen species (ROS). In cardiac muscle cells and skeletal muscle slow twitch fibers, mitochondria are the main energy producers and occupy a large volume of intracellular medium. Consequently, these myocytes are particularly exposed to mitochondrial ROS, which are inevitably produced when the mitochondrial electron transfer chain is working. While low production of ROS is an essential intracellular signal and participates in cellular homeostasis in cells with an appropriate antioxidant defense system, dysregulation of ROS production and/or degradation leads to oxidative stress, which can be a key element in the pathophysiology of cardiac and muscular diseases. This Special Issue focuses on recent research advances made to better understand mitochondrial oxidative metabolism in heart and skeletal muscle in physiology and pathophysiology and how this could be impacted by potential antioxidant compounds. We warmly welcome the submission of original papers and reviews addressing these topics.





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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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