

Special Issue

Vascular and Cardiac Dysfunction in Insulin-Resistant States: The Role of Oxidative Stress

Message from the Guest Editors

Recent evidence suggests that metabolic impairment is associated with reduced mitochondrial ROS production in diabetes and obesity linked to altered activity of the energy sensor AMPK. On the other hand, activation of the endoplasmic reticulum (ER) stress response is also involved in the pathogenesis of metabolic disorders, and cross-talk between ER and mitochondria contributes to oxidative stress underlying endothelial and vascular dysfunction. Metabolic impairment reduces the activity of antioxidant systems such as nuclear factor erythroid 2-like 2 (Nrf2) and activates the redox-sensitive transcription factor NF- κ B signaling pathway that regulates the expression of inflammatory genes in cardiomyocytes as well as endothelial and vascular smooth muscle cells, thus leading to low-grade chronic inflammation associated with endothelial dysfunction and the development of atherosclerotic cardiovascular disease. The aim of this Special Issue is to further elucidate the specific mechanisms and signaling pathways interrelating oxidative stress and inflammation in the pathogenesis of insulin-resistance-associated cardiovascular complications.

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About the Journal

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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