Special Issue

The Role of the Thioredoxin System in Redox Signaling

Message from the Guest Editors

Redox signaling is mediated by reactive oxygen species through the reversible oxidation of cysteines. These redox signals can modulate several signaling pathways and the whole cellular metabolism. In the field of redox regulation, a central role is played by the thiol redox systems which rely on NADPH as an electron source and that include glutathione and thioredoxin systems. Regarding the thioredoxin system, the principal enzymes involved are thioredoxin reductases, thioredoxins, and peroxiredoxins. In addition, other related proteins such as glutaredoxins and thioredoxin interacting protein constitute an interplay between the thioredoxin and glutathione systems. Of these proteins, isoenzymes are often present with specific cellular localization and/or tissue specificity. It is apparent that these systems are complex and sometimes redundant, indicating the importance of a fine redox regulation. These enzymes and their signaling network are of interest in this Special Issue. In this Special Issue, original research articles and focused reviews dealing with the involvement of the thiol redox system in the modulation of physiological or pathological conditions are welcomed.

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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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