



Enzymatic and Non-Enzymatic Molecules with Antioxidant Function

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Message from the Guest Editors

Reactive oxygen species (ROS) are naturally produced during several cellular pathways of aerobic metabolism, including oxidative phosphorylation, electron transport chains in mitochondria, the activity of oxido-reductase enzymes, and immunological reactions. Under basal conditions, the adverse effects of oxyradicals are prevented by the antioxidant system, which defend the cells against excess production of ROS and the risk of oxidative stress. A good antioxidant should: (1) specifically quench free radicals; (2) chelate redox metals; (3) interact with other antioxidants within the “antioxidant network”; (4) have a positive effect on gene expression; (5) be readily absorbed; and (6) work in both the aqueous and/or membrane domains.

This Special Issue examines some of the aspects surrounding the fields of oxidative stress risk and ROS scavenging, including gene expression and molecular evolution of antioxidant proteins, physiological responses and pathological effects of ROS, and ecotoxicological application of antioxidant biomarkers. Discussions of the various protective pathways that may be provided by the antioxidant network against oxidative damage are addressed.





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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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