



Cellular and Molecular Regulation of Genomic and Epigenetic Integrity by ROS/RNS

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Message from the Guest Editors

Reactive oxygen species (ROS) and reactive nitrogen species (RNS) may have both beneficial and harmful roles in cell physiology and pathology. It is important to elucidate how genome and epigenetic integrity are maintained in the cellular and molecular responses to ROS/RNS. Within cells, ROS/RNS may affect macromolecules, including nucleic acids (DNA/RNA), proteins, and lipids. At the level of genome integrity, DNA lesions induced by ROS/RNS can be repaired by a variety of different DNA repair and DNA damage response pathways. At the level of epigenetic regulation, ROS/RNS may induce or regulate the gene expression of certain stress response pathways that, in turn can protect against subsequent stresses. Conversely, excessive or poorly regulated activation can lead to potentiation of inflammation and be counter-regulatory. As such, these regulatory mechanisms not only change nuclear and mitochondria functions within the cells but also affect the functionalities of tissues and organs. Both review articles and original research articles within this area of research are welcome to submit in response to this Special Issue.





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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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