Special Issue

Reactive Oxygen Species and Oxidative Stress in Cellular Homeostasis and Pathophysiology

Message from the Guest Editor

Reactive oxygen species (ROS) represent the main group of cellular oxidants, and are free radicals generated within cells. ROS are key components of cellular (redox) signaling and play important roles in cellular homeostasis. They are involved in cell survival (including processes such as wound healing) and cell death (e.g., apoptosis, ferroptosis), as well as immunological responses (e.g., cell proliferation, pathogen elimination), in addition to having key roles in vascular homeostasis (by regulation of endothelial and smooth-muscle-cell functions). To counteract the action of ROS and avoid oxidative injury, cells utilize antioxidant mechanisms which have evolved as defenses that detoxify oxidants to prevent or repair oxidative damage. Oxidative stress represents a shift in the dynamic balance between the production of oxidants and antioxidant defenses.

In this Special Issue, we overview the multiplicity of roles for ROS in human health and disease by highlighting the molecular functions of ROS in normal redox signaling as well as discussing how the deregulation of redox signaling can underpin pathophysiology.

Guest Editor

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Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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