



Special Issue on

Redox-Activated Signal Transduction Pathways Mediating Cellular Functions in Inflammation, Differentiation, Degeneration, Transformation, and Death

CALL FOR PAPERS

Reactive oxygen and nitrogen species (ROS and RNS) are needed for normal cellular functions. The unbalanced production of ROS and RNS is characteristic of abnormal cellular conditions where they may function as second messengers activating or inactivating cellular messaging networks. The effects of ROS and RNS can be mediated through tyrosine kinase receptors, receptor serine/threonine kinases, and cytoplasmic protein kinase signaling molecules. Functionally ROS and RNS participate in a large number of mechanisms ranging from inflammation related cellular responses, differentiation, migration, degeneration, transformation, and death to more specific phenomena, such as oncogene-induced senescence (OIS) and excitotoxicity mediated neuronal cell damage.

As ROS and RNS are needed for normal cellular functions and their effects depend on their localization and concentration, the direct targeting of ROS and RNS in pathological conditions to selectively prevent abnormal functions is challenging. Thus, elucidation of the signal transduction pathways and small molecules mediating ROS and RNS-induced redox imbalance could indicate druggable target molecules that then could be potentially used to enhance the effect of drugs in preclinical and clinical combination trials.

The scope of this special issue is to highlight ROS and RNS as signaling mediators and to describe signal transduction pathways mediating the effects of ROS and RNS in pathological conditions. We invite authors to submit both original research articles and review articles.

Potential topics include, but are not limited to:

- ▶ Redox molecules in cell proliferation, cell differentiation, cell migration, cellular dysfunction, neurodegeneration, and inflammation related cellular response
- ▶ ROS and RNS as signaling intermediates in cellular responses
- ▶ Tyrosine kinase receptors, serine/threonine kinase receptors, and cytoplasmic protein kinase signaling molecules as mediators of redox signaling
- ▶ Novel techniques to study ROS and RNS signaling intermediates and their interaction with tyrosine kinase receptors, serine/threonine kinase receptors, and cytoplasmic protein kinase signaling molecules
- ▶ Preclinical studies on redox-related kinase inhibitors used alone or in combination with conventional drugs in the treatments of cancer, cardiovascular diseases, lung diseases, and neurodegeneration
- ▶ Clinical studies reporting the use of antioxidants or related molecules and their relevance to signal transduction

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