

Special Issue on ROS and Oxidative Stress in Stem Cells

CALL FOR PAPERS

Reactive oxygen species (ROS) are well known to be implicated in various important processes including cell signaling, regulation of homeostasis, or induction of cell death.

Oxidative stress resulting from increased ROS production and impaired free radical scavenging systems can cause severe damage to biological macromolecules affecting cell proliferation and causing genomic instability. Although ROS are involved in a wide range of cellular processes, a limited number of studies have examined the generation and function of ROS in stem cells. It is known that reactive oxygen species may enhance differentiation of stem cells and facilitate reprogramming into induced pluripotent stem cells (iPSC), but on the other hand they are also associated with malignant transformation or premature aging. Stem cells have been also shown to possess defective DNA repair machinery which upon extensive oxidative stress may have serious consequences for cells.

Since stem cells (and especially iPSC) are considered as a promising tool in regeneration medicine, it is crucial to know and better understand all processes related to ROS to prevent potential generation of mutations causing genomic instability and to avoid unwanted ROS driven differentiation. Thus, the mechanisms by which genomic integrity of stem cells is maintained under oxidative stress and the role of ROS should be elucidated until stem cells finally find their place in clinical applications.

We would like to invite authors to contribute original research articles as well as review articles that will explore and help to understand the various roles of ROS in stem cell biology. Particular interest will be given to papers describing the molecular mechanisms of action by which ROS modulate stemness, affect differentiation, and alter reprogramming of somatic cells into iPSC. We are also interested in articles that explore aspects of ROS and oxidative stress in cancer stem cells.

Potential topics include but are not limited to the following:

- ▶ Redox regulation in stem cells
- ▶ Role of reactive oxygen species in cellular reprogramming
- ▶ Role of reactive oxygen species in stem cell differentiation and stemness maintenance
- ▶ Role of reactive oxygen species in normal and malignant hematopoiesis
- ▶ Role of reactive oxygen species in cell cycle regulation of stem cells
- ▶ Effects of oxidative stress on (cancer) stem cells biology
- ▶ DNA damage and DNA repair in (cancer) stem cells
- ▶ Mitochondrial dysfunctions in (cancer) stem cells
- ▶ Role of reactive oxygen species in cell death and senescence of stem cells

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/omcl/roso/>.

Lead Guest Editor

Artur Cieřlar-Pobuda, University of Oslo, Oslo, Norway
artur.cieslar-pobuda@ncmm.uio.no

Guest Editors

Jianbo Yue, City University of Hong Kong, Kowloon, Hong Kong
jbyue@me.com

Hsin-chen Lee, National Yang-Ming University, Taipei, Taiwan
hlee2@ym.edu.tw

Magdalena Skonieczna, Silesian University of Technology, Gliwice, Poland
magdalena.skonieczna@polsl.pl

Yau-Huei Wei, National Yang-Ming University, Taipei, Taiwan
yhweibabi@gmail.com

Manuscript Due

Friday, 20 January 2017

First Round of Reviews

Friday, 14 April 2017

Publication Date

Friday, 9 June 2017