

Special Issue on
Autophagy in Stem Cell Biology: A Perspective of Stem Cell Self-Renewal and Differentiation

CALL FOR PAPERS

Autophagy is a lysosome-dependent degradation pathway that allows cells to recycle damaged or superfluous cytoplasmic content, such as proteins, lipids, and organelles. As a consequence of autophagy, the cells generate metabolic precursors for macromolecular biosynthesis or ATP generation. Deficiencies in autophagy pathway were associated with several pathological conditions, such as neurodegenerative and cardiac diseases, cancer, and aging. Stem cells are unique in their ability to self-renew and differentiate into various cells in the body, which are important in the development, tissue renewal, and a range of disease pathology. Therefore, it is believed that autophagy would be crucial for the quality control mechanisms and maintenance of cellular homeostasis in various stem cells given their relatively long life in the organisms. In contrast to the extensive body of knowledge available for somatic cells, the role of autophagy in the maintenance and function of stem cells is only beginning to be revealed.

Potential topics include but are not limited to the following:

- ▶ Autophagy and stem cell homeostasis
- ▶ Autophagy in pluripotent stem cells
- ▶ Autophagy in adult stem cells
- ▶ Autophagy in cancer stem cells
- ▶ Autophagy in stem cell niches
- ▶ Autophagy in stem cell maintenance
- ▶ Autophagy in stem cell differentiation
- ▶ Roles of autophagy in pluripotency
- ▶ Autophagy in stem cell senescence and aging
- ▶ Autophagy in stem cell cycle and division
- ▶ Autophagy in reprogramming process
- ▶ Autophagy in stem cell signaling
- ▶ Autophagy in embryo development
- ▶ Autophagy in mitophagy of stem cells
- ▶ Autophagy and developmental disorders

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