

Special Issue on Stem/Progenitor Cells in Cardiopulmonary Health, Disease, and Treatment

CALL FOR PAPERS

Cardiopulmonary system comprises various organs, structures, and substances from both the heart and lung system. Since the cardiopulmonary system interacts intimately with every other system in the body, and our health is closely related to the functioning of the cardiopulmonary system, its health and maintenance was always in center of attention by scientists and clinicians. Despite the plentiful research in this area, cardiopulmonary diseases still remain widely prevalent and are known as a significant and devastating cause of morbidity and mortality in the globe. The most common cardiopulmonary diseases are hypertension, chronic obstructive pulmonary disease, coronary heart disease, and rheumatic heart fever. Generally, cardiopulmonary disorders have a poor prognosis and current treatments only offer a modest improvement in symptoms without repairing the damaged tissues in the heart or lung system. But recent progress in the field of stem cell science, regenerative medicine, and tissue engineering offered a new perspective in the treatment of cardiopulmonary disorders.

This great achievement provided tremendous potential to develop disease- and patient-specific induced pluripotent stem (iPS) cells as well as organoid cultures for understanding a detailed insight into the pathomechanisms of various cardiopulmonary disorders which is important in drug discovery and treatment of patients. Furthermore, this revolutionized progress in the stem cells field has opened a great opportunity for novel personalized regenerative therapeutic approaches of cardiopulmonary disorders. There is abundant and even growing number of evidence in stem/progenitor cell therapy of various cardiopulmonary disorders of which some generated controversy information. To summarize and incorporate these scattered data and develop a more comprehensive understanding on impact of stem/progenitor cells in cardiopulmonary health and treatment, the present special issue is initiated to cover research from diverse disciplines related to the cardiopulmonary health.

Goal of this special issue is to gather the necessary perspectives to direct future scientific efforts toward the clinical application of stem/progenitor cells in treatment of cardiopulmonary disorders. Therefore, we would like to invite investigators in the related fields to contribute their original insights as well as in depth review articles which will support our goal for more comprehensive understanding and identification of the impact of stem/progenitor cells in treatment of cardiopulmonary disorders as well as cardiopulmonary disease modelling using disease- and patient-specific generated iPS cells and heart as well as lung organoid culture approaches.

Potential topics include but are not limited to the following:

- ▶ Characterization of tissue specific stem cells as well as progenitor cells in the cardiopulmonary system
- ▶ Stem/progenitor cells in the health of cardiopulmonary system
- ▶ Infection, stem/progenitor cells, and the cardiopulmonary system
- ▶ Cardiopulmonary disease modeling (disease- as well as patient-specific iPS cells, organoid cultures)
- ▶ Biomaterials in cardiopulmonary regenerative therapy
- ▶ Epigenetics as well as microRNAs in regenerative therapy
- ▶ Mitochondria, stem/progenitor cells, and the cardiopulmonary system
- ▶ Physiology and pathophysiology of cardiopulmonary diseases (using specific disease model approaches such as patient-specific iPS cells or organoid culture)
- ▶ Clinical applications of stem/progenitor cells in the treatment of various cardiopulmonary diseases

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

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline

Friday, 2 February 2018

Publication Date

June 2018