

Special Issue on
**Stem Cells in Airway Epithelial Repair and Pathogenesis
of Lung Diseases**

CALL FOR PAPERS

In unperturbed adult lungs, the pulmonary epithelium is largely quiescent. However, after injury or insult, a specialized group of regional stem/progenitor cells become activated to replace damaged tissue through a reparative process called regeneration. Basal and secretory club cells in the airways and type II pneumocytes in the alveolar region have long been designated as regional stem/progenitor cells due to their self-renewal, proliferation, and differentiation capacity. Their function is regulated by multiple signaling pathways, such as Notch, HDAC1/2, and Wnt signaling. Dysregulation of this stem-cell-mediated repair mechanism causes serious implications for lung health, for instance, pulmonary fibrosis, COPD, and pulmonary neoplasms. The extent of airway injury also determines survival after acute exposure to toxic inhaled chemicals and gases. Early lethality and later complications such as infections develop from loss of normal airway epithelial barrier function, which predominantly occurs due to failure of airway stem cells activation or their ectopic differentiation. Therefore, it is an utmost demand to understand the reparative process of the lungs and to identify the aberrant signaling that hinders lung regeneration and causes lung diseases.

For this special issue, we invite investigators to share their knowledge by contributing original research articles or up-to-date reviews on this topic. The manuscripts submitted should be of high quality and should emphasize the role of airway and lung epithelial stem cells in repair after acute injury due to toxic inhaled chemicals with a focus on the endogenous factors, upstream signaling events, and the possible downstream targets.

Potential topics include but are not limited to the following:

- ▶ Identification of novel airway stem cell populations
- ▶ Stem cell proliferation and differentiation to repair epithelial barrier after injury
- ▶ The regulation of gene expression in airway stem cells
- ▶ Advances in methodologies for imaging airways and airway epithelium after injury
- ▶ Role of airway stem cell adherence/matrix components
- ▶ Assessing signaling modulators as potential drugs to promote development of stem-cell-based therapies
- ▶ Stem cells in translational research and therapeutic strategies toward airway epithelial regeneration and wound healing
- ▶ Biomaterials, biomimetics, scaffolds, and three-dimensional cell culture models to better understand airway epithelial repair and regeneration
- ▶ Regenerative therapeutic advancement for airway and pulmonary diseases

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

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

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