

Special Issue on
**Stem Cell-Derived Pancreatic Beta Cells in Regenerative
Medicine**

CALL FOR PAPERS

Diabetes is caused by the loss of functional insulin-producing beta cells in the pancreas. Insulin injection and cadaveric islet transplantation are two current types of treatment, but their ability to regulate blood glucose levels in diabetic patients has certain limitations. Therefore, the development of new therapeutic treatments is an important priority. Beta cell regeneration provides a promising route towards curing diabetes. Beta cells can be regenerated from endogenous acinar cells, duct cells, stomach cells, and intestinal cells. However, the percentage of cells that can be reprogrammed into beta cells is limited. In order to take advantage of unlimited proliferation and differentiation into all type of cells in our body, recent studies have focused on the generation of beta cells from stem cells. Efficient protocols have been developed to generate beta cells, but the huge variation in differentiation efficiency among different cell lines and maturation of stem cell-derived beta cells are two major issues that need to be addressed before their application in cell replacement therapy for diabetic patients.

This special issue aims to provide an overview of the potential sources of beta cell regeneration, potential usage of these cells in cell replacement therapy, and efficient protocols for beta cell regeneration. The special issue welcomes review articles focusing on the current state of beta cell therapy and research papers discussing current strategies for beta cell regeneration.

Potential topics include but are not limited to the following:

- ▶ Differentiation of human embryonic stem cells and induced-pluripotent stem cells into pancreatic beta cells
- ▶ Regeneration of beta cells from adult stem cells (bone marrow mesenchymal stem cells, adipose-tissue-derived stem cells, and other cell types)
- ▶ Maintenance of beta cell survival and identity in vitro and in vivo
- ▶ Optimization of gene editing approach to correct mutation and generate healthy beta cells from patient induced-pluripotent stem cells
- ▶ Safety issues surrounding the transplantation of stem cell-derived beta cells

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

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

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Submission Deadline

Friday, 15 November 2019

Publication Date

April 2020