

Special Issue on
**Strategies to Enhance the Effectiveness of
 Stem/Progenitor Cell Therapy for Myocardial Repair**

CALL FOR PAPERS

Ischemic heart disease remains as the leading cause of mortality across the world. Stem/progenitor cell based therapies have shown a great therapeutic potential for repairing the damaged heart following ischemia/reperfusion injury in patients. However, the bulk of the clinical data to date suggests that we are still in the early days for cell-based therapy, with a number of negative, marginal, and transient effects recorded in larger-scale double-blind placebo-controlled trials. The major challenges that greatly limited the cell-based therapy include identifying the best cell source/population, determining the optimal route of cell delivery, improving donor cell survival and integration, preventing donor cell aging/senescence, and maintaining long-term electromechanical stability, all of which need to be overcome before this therapy can be successfully implemented.

Many clinicians currently prefer to utilize autologous adult cardiac stem cells due to the relative low cost and higher safety as compared to embryonic/induced pluripotent stem cell. Cardiovascular diseases disproportionately affect elderly patients rather than younger patients. Stem cells harvested from aging patients thus tend to originate from aged niches, a direct effect of senescence-related factors collectively exerting negative effects on the environment, thereby slowing down natural cellular mechanisms. Therefore, the aim of this special issue is to explore the novel therapeutic strategies of enhancing the effectiveness of stem/progenitor cell therapy for myocardial repair. Specifically, it is critical to identify novel biological factors that could bridge the existing challenges being faced in the field.

We invite original research articles as well as review articles that would elucidate new discoveries and describe exciting progress in the field with possible solutions to enhance the effectiveness of stem/progenitor cells for cardiac repair after injury.

Potential topics include but are not limited to the following:

- ▶ Genetic modification of stem/progenitor cells
- ▶ Supplements of paracrine/growth factors for myocardial repair
- ▶ Preconditioning stem/progenitor cells with cytoprotective small molecules
- ▶ Strategies to prevent the aging/senescence of stem/progenitor cells
- ▶ Approaches to restore the aging stem/progenitor cells to a youthful stage
- ▶ Novel approaches to enhance electromechanical conduction of stem cells with host myocardium
- ▶ Mechanisms underlying the barriers or beneficial effect of cell-based therapies in heart diseases
- ▶ Novel delivery strategies for the transplantation of stem/progenitor cells
- ▶ New cell lineages/subpopulations of stem/progenitor cells with cardiac regenerative potential
- ▶ Novel approaches to boost the endogenous cardiac regeneration following myocardial infarction
- ▶ Developing novel biomaterial scaffolds and other bioactive agents for culturing stem cells or facilitating the cellular delivery

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

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

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