



Stem Cells International

Special Issue on
**Cytoprotective Mediators and Signaling Pathways in
Cardiovascular Stem Cell Therapy**

CALL FOR PAPERS

Even though the mortality following acute myocardial infarction (MI) has declined over the last decades, ischemic heart failure still remains widely prevalent. Great expectations emerged when it was discovered that the injection of bone marrow stem cells reduced ventricular remodeling after MI in animal models. In contrast, many clinical trials failed to show beneficial effects of stem cell administration in humans. It was speculated that the way of cell administration (i.e., by intracoronary delivery) has many limitations and only a small percentage of the injected cells might remain in the ischemic heart. The mechanistic principles of cardiac stem cell therapy still remain unclear as many other interactions such as proangiogenic effects; immunomodulatory or paracrine signaling might also be involved. Over the last few years a new concept was developed in the field of regenerative therapies, namely, that the main therapeutic effect seen in studies investigating stem cell therapy is conferred by paracrine factors that are secreted by the injected cells. For example, prosurvival growth factors such as vascular endothelial growth factor (VEGF) or hepatocyte growth factor (HGF) have been shown to play a major role in conferring cytoprotective signals to neighboring cells by upregulation of intracellular prosurvival kinases and signaling factors. Over the last years, paracrine effects in the field of cell therapy for MI and heart failure have received more and more attention. Even more recently, also micro-RNAs (miRNAs) have been investigated as major players in conferring protective signals to hypoxic cells.

In this current special issue, reviews and original articles about novel studies focusing on new treatment strategies employing paracrine signaling pathways for cytoprotection in cardiovascular regenerative medicine are welcomed.

Potential topics include, but are not limited to:

- ▶ Analysis of new cytoprotective factors in cardiovascular regenerative medicine
- ▶ Intracellular myocardial signaling pathways affected by paracrine factors
- ▶ Development of new protocols for optimal stem cell procession
- ▶ Stem cell microenvironment: influence of paracrine growth factors for angiogenesis and improved cell engraftment in the ischemic myocardium
- ▶ Analysis of miRNAs influencing cytoprotective pathways in cardiovascular stem cell therapy
- ▶ Translational studies employing paracrine factor based treatment strategies

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

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