



Stem Cells International

Special Issue on

Vascular Diseases and Metabolic Disorders

CALL FOR PAPERS

Maintenance of endothelium integrity is critical for prevention and treatment of vascular diseases. Unfortunately, endothelial cells undergo dysfunction and apoptosis when triggered by oxidative stress, inflammation, and some adverse metabolites. Stem and progenitor cells hold tremendous therapeutic potential for cell renewal. After decades of investigation, much knowledge has been gained regarding stem and progenitor cell differentiation into vascular cells. These include differentiation capacity, pathways modulating lineage specification, and genetic/phenotypic properties under both physiological and pathological conditions.

Nevertheless, given the complexity of disease pathogenesis, our understanding of how vascular cells act in diseases is still limited. And it becomes more complicated when combined with metabolic disorders. Therefore, therapeutic application of stem and progenitors-derived vascular cells in vascular diseases combined with metabolic disorders is still to be testified. For instance, reprogramming protocols used in the generation of induced pluripotent stem cells (iPSC) require further optimization to enhance production efficiency, improve safety, and acquire developmentally sufficient homogenous cell-derived products. Likewise, it is yet unknown how to accurately control stem and progenitor cell differentiation toward vascular lineages *in vitro* and *in vivo*. Thus, there remains a substantial gap between basic research and clinical practice in cell based therapies.

In this special issue, we invite original articles and reviews related to vascular biology and pathology. *In vitro* work as well as animal and clinical studies are all encouraged.

Potential topics include but are not limited to the following:

- ▶ New findings of vascular cell biology and pathology in vascular diseases and metabolic disorders
- ▶ Advanced strategies and technologies in stem cell reprogramming and differentiation toward vascular cells
- ▶ Functional exploration and assessment of stem cell-derived vascular cells in the treatment of vascular diseases and metabolic disorders
- ▶ Clinical findings and description of stem cells that might participate in vascular diseases and metabolic disorders
- ▶ The discovery, isolation, characterization, and differentiation of novel adult stem cell populations that could generate vascular system

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

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First Round of Reviews

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