Stem Cells International

Special Issue on
# Materials for Controlling Stem Cells

# CALL FOR PAPERS

Stem cells can self-renew and differentiate into a variety of cell types. Pluripotent stem cells could be found in and isolated from early embryos, which have the ability to differentiate into all cell types of the body. Recent studies also demonstrate existence of quiescent stem cells in nonregenerating tissue such as neural cells or cardiac cells, which contribute to repair or regeneration of specific tissues. In addition, the recent discoveries of reprogramming somatic cells into stem cells and transdifferentiation of one cell type to another cell type through stem cell-like states provided exciting opportunities of transplantation therapy, tissue regeneration, and disease modelling studies. The next challenge will be to develop methods to control stem cells in a safe, efficient, and cost-effective way. Utilization of materials, including chemical substrates, polymers, and other synthetic molecules, will be a great advantage in further development of robust systems to control and manipulate stem cells, which is important for realising the medical potential of stem cells.

In this special issue, we welcome review and original papers of how materials can be applied for controlling stem cells within the context of isolation, derivation, reprogramming, self-renewal, quality control, differentiation, transplantation, and other studies.

Potential topics include, but are not limited to:

- Materials for controlling self-renewal and/or differentiation of pluripotent/multipotent stem cells
- Materials for replacing biomaterials, such as proteins or transgenes, required for stem cells
- Materials for checking quality controls and/or selecting cell types
- Materials for understanding biology in stem cells
- Materials for generating disease models with stem cell-derived cells
- Materials for enhancing efficiency of transplantation
- Materials for diagnosis and targeting cancer and disease stem cells

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

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