



Stem Cells International

Special Issue on **Stem Cell Differentiation and Therapeutic Use**

CALL FOR PAPERS

With increased funding efforts by governments and private agencies to produce patient-ready stem cell therapies, the age of the stem cell in the clinic has clearly arrived. The awarding of the 2012 Nobel Prize in Physiology or Medicine to two stem cell biologists (Sir John Gurdon and Shinya Yamanaka) highlights the efforts of stem cell biologists to determine what factors define a stem cell from a somatic cell. Recently, the Japanese government announced a significant investment of funds to fast-track iPS-cell based therapies for clinical use in patients (<http://www.nature.com/news/stem-cells-cruise-to-clinic-1.12511>). Although one must emphasize caution for unproven stem cell “clinics” and treatments that are based on dubious science, there is a growing demand for both therapeutic application and understanding of what applications stem cells might be used for the amelioration and potentially curing of disease. The rise in the number of suspect stem cell clinics and therapies correlates with patient frustration over the speed at which new stem cell therapies are approved.

Additionally, newer whole genome/transcriptome technologies that have emerged over the past few years (RNA-seq, genome editing with TALENs or CRISPRs, etc.) made our understanding of how stem cells come to exist in the embryo and how they can be manipulated easier and more time-efficient. Whole signaling pathways involved in stem cell regulation can be quickly identified and manipulated in cell culture using various new screening platforms. With all of these new emerging technologies, an emphasis on their use to identify new compounds to correct disease, understand the mechanisms of disease, and form new tissues/organs must be made clear to the public to ensure their trust in well-vetted and scrutinized stem cell therapies.

In this special issue of Stem Cells International, we invite investigators to contribute original research articles and reviews on the topic of “Stem Cell Differentiation and Therapeutic Use.” We are especially seeking articles on the clinical use and/or application of stem cells for the treatment of human diseases.

Potential topics include, but are not limited to:

- ▶ Differentiation of stem cells (adult, iPS, embryonic stem (ES), and germ cells) in somatic cells
- ▶ Mechanisms underlying the maintenance of stem cell pluripotency
- ▶ The screening of stem cells using small molecules or drug compounds
- ▶ The use of nonrodent or human models of stem cells (e.g., zebrafish, axolotl, etc.)
- ▶ Epigenetic regulation of stem cell differentiation and maintenance (microRNA, lncRNA, and histone/chromatin modifiers)
- ▶ The aging of stem cells and factors that affect this process
- ▶ Stem cell use in the regeneration of tissues/organs and specific human diseases

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

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First Round of Reviews

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