



Stem Cells International

Special Issue on
**Stem Cells in Musculoskeletal Regeneration: From
Benchtop to Bedside**

CALL FOR PAPERS

Age-related skeletal diseases such as osteoarthritis and osteoporosis are affecting millions of people in the world. In the last decades, advances in discovering and implementing mesenchymal stem cells, embryonic stem cells, and induced pluripotent stem cells have spurred stem cell-based therapies in musculoskeletal repair including cartilage, bone, tendon, ligament, meniscus, adipose, and muscle. However, the success of translating stem cells to clinical application needs further understanding of fundamental stem cells biology, development of tissue engineering, and appropriate animal model.

Natural, synthetic, or nanoscale scaffolds that have capability of conductivity or inductivity have been used to deliver stem cells and inductive factors (gene, DNA, and protein) for tissue engineering approach. The deep understanding of interaction of biomaterials and stem cells will promote stem cells-based tissue engineering in musculoskeletal regeneration. In addition, further investigation of how stem cells niche regulates progenitor cells in musculoskeletal tissue maintenance and repair will play an important role in developing novel stem cells approach in clinic.

In this special issue, we cordially invite experts in the fields of stem cells biology, tissue engineering, biomaterials, drug delivery, and orthopaedic surgery to report their latest research and review work on stem cells in musculoskeletal tissue regeneration and fundamental stem cells biology (regulatory mechanisms of self-renewal and differentiation).

Potential topics include, but are not limited to:

- ▶ Interaction of biomaterials and stem cells in musculoskeletal regeneration
- ▶ Stem cells niche (biomechanical, structure, and signaling) affects stem cells in musculoskeletal tissue maintenance and repair
- ▶ Delivery of inductive factors and stem cells using bioscaffold or nanoparticle for musculoskeletal regeneration
- ▶ Novel stem cells-based tissue engineering strategy (autologous or allogeneic stem cells)
- ▶ Stem cells for the treatment of musculoskeletal diseases (osteoarthritis, osteoporosis, and Duchenne muscular dystrophy)
- ▶ Musculoskeletal animal models and clinical trials

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

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