

Special Issue on
**Cell Signaling in Stem Cell-Mediated Skeletal Tissue
Regeneration**

CALL FOR PAPERS

Loss of skeletal tissue as a consequence of trauma, injury, or disease is a significant cause of morbidity in clinic. As stem cells are self-renewing cells with the ability to regenerate a complete organ *in vivo*, in the past decade, research in developing stem cell-mediated therapy to enhance skeletal tissue repair has increased significantly. Although stem cells exhibit multipotential proliferation and are capable of differentiating into a variety of skeletal cell-lineages, relatively few preclinical or clinical trials are underway for the direct regeneration of injured skeletal tissues due to inappropriately differentiate *in vivo*. In order to guide stem cells towards defined fates, it will be essential to know how these changes are regulated and how to manipulate the stem cells in such a way that they change in a predictable and reproducible way. Various cell signaling pathways that define or control stem cell maintenance and differentiation have been discovered, including bone morphogenetic proteins (BMPs), epidermal growth factors (EGF), transforming growth factors (TGF), wingless type MMTV integration site (Wnt) proteins, fibroblastic growth factor (FGF), and Notch and transcriptional regulating factors. To better understand the signaling mechanisms underlying regulation of stem cell differentiation will help us to develop more effective therapeutic approaches for skeletal tissue regeneration by targeting stem cells.

The purpose of this special issue is to discuss and present novel research and concepts that advance our understanding of cellular signaling regulation in stem cell differentiation towards skeletal tissues. Therefore, high-quality research papers as well as review articles focusing on this topic will be suitable for this special issue. Here we invite and encourage researchers to submit original relevant research articles and reviews that are not yet published or that are not currently under review by other journals.

Potential topics include but are not limited to the following:

- ▶ Cellular mechanisms in regulation of stem cell chondroosteogenic differentiation
- ▶ Methods to isolate and *ex vivo* maintain stem cell stemness or induce stem cell differentiation
- ▶ Signaling cross-talk in control of stem cell proliferation and differentiation
- ▶ Role of stem cells in skeletal tissue regeneration, including ligament, tendon, bone, and cartilage

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

Lead Guest Editor

Yufeng Dong, Louisiana State University, Shreveport, USA
ydong@lsuhsc.edu

Guest Editors

Roman Eliseev, University of Rochester, Rochester, USA
roman_eliseev@urmc.rochester.edu

Pei Ming, West Virginia University, Morgantown, USA
mpei@hsc.wvu.edu

Yue Zhang, Virginia Commonwealth University, Richmond, USA
yzhang29@vcu.edu

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First Round of Reviews

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Publication Date

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