

Special Issue on
**Physicochemical Regulation of Mesenchymal Stem Cell
Function**

CALL FOR PAPERS

Mesenchymal stem cells, such as bone marrow-derived and adipocyte-derived stem cells (ADSCs), hold great potential for application in tissue engineering and regenerative medicine. However, methods to control stem cell function (stemness, differentiation capacity, migration, proliferation, and viability) are still suboptimal. This issue aims to collect investigations on the biological factors (e.g., cytokines, chemokines) and physicochemical stimuli (e.g., microenvironmental stiffness, temperature, pH, and ultrasound) that can affect stem cell phenotype and functions, including differentiation, proliferation, and trophic/paracrine functions. Understanding the roles and mechanism of function of these signaling molecules, alone or in combination, in stem cell regulation is crucial for further advances in stem cell biology. Additionally, a multidisciplinary approach with integration of different scientific fields (e.g., engineering, biology, biochemistry, and biophysics) is necessary to enable a more comprehensive understanding of the mechanism of stem cell regulation, as well as the development of more robust techniques for in vitro tissue synthesis and regenerative medicine.

In this special issue, we will gather articles that explore the effect of physicochemical external stimuli on the regulation of mesenchymal stem cells. Original articles reporting in vitro and in vivo studies as well as review articles on the current state of the art are welcome.

Potential topics include but are not limited to the following:

- ▶ Novel effects of cytokines, chemokines, or other biological factors on stem cells
- ▶ Effects of chemicals (e.g., drugs, compounds, and amino acids) on stem cells
- ▶ Effects of physical stimuli (e.g., external forces, stiffness, microwaves, ultrasound, or light) on stem cells
- ▶ Effects of chemical properties of the microenvironment (e.g., pH, ionic concentration, and electric charge) on stem cells
- ▶ Combination of different external (biological, chemical, and physical) stimuli on stem cells

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

Papers are published upon acceptance, regardless of the Special Issue publication date.

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