Special Issue

Mesenchymal Stem/Stromal Cells: Mechanisms and Applications in Tissue Regeneration

Message from the Guest Editor

Mesenchymal stem/stromal cells (MSCs) have emerged as a cornerstone of regenerative medicine due to their multipotency, immunomodulatory properties, and ability to promote tissue repair. This Special Issue, brings together cutting-edge research and comprehensive reviews on the biology, therapeutic potential, and translational challenges of MSCs. Key topics include the molecular mechanisms underlying MSC differentiation, their interactions with the immune system, and their role in modulating the microenvironment for tissue repair in model systems in vitro and in vivo. The issue also explores innovative approaches for enhancing MSC efficacy, including genetic modifications, biomaterial scaffolds, and extracellular vesicle-based therapies. Additionally, clinical applications in the regeneration of musculoskeletal, cardiovascular, and other tissues are discussed, alongside emerging regulatory and manufacturing considerations. By integrating fundamental insights with translational advancements, this Special Issue provides a holistic perspective on the evolving landscape of MSC-based therapies and their future in regenerative medicine.

Guest Editor

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Message from the Editor-in-Chief

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Editor-in-Chief

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