

## Special Issue

# Bone Tissue Engineering: Opportunities and Challenges

### Message from the Guest Editors

Tissue engineering (TE) aims to repair and regenerate tissues damaged by injury or disease. To this end, bone grafting has emerged as a viable treatment modality. Biomaterials play a key role in this reparative strategy. The burgeoning science of nanomaterials as nanomedicines is growing. Novel biological therapies that can effectively treat bone fracturing or degeneration are of great significance in regenerative medicine. In addition, mesenchymal stem cells (MSCs) isolated from bone marrow (BM-MSCs), adipose tissue (AD-MSCs), and umbilical cord (UC-MSCs) show considerable promise for use in bone repair. The microenvironment, including that of the immune system, influences the state of stem cells in the context of tissue repair and regeneration of bone tissue. Although extensive strides have been made in our collective understanding of the processes governing bone and tissue regeneration within the microenvironment, effective clinical translation of these mechanisms remains a challenge.

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