

Special Issue

Biomaterials for Bone Tissue Engineering 4.0

Message from the Guest Editors

The worldwide clinical demand for bone regeneration is a problematic issue in orthopaedic and maxillofacial surgery. The application of autologous bone is still the standard in bone transplantation. The ideal grafting material enables the regeneration of bony defects up to the condition of a restitutio ad integrum and should combine the basic mechanism of fracture healing, namely osteogenesis, osteoinduction and osteoconduction. Different tissue engineering strategies have been developed with the aim of improving the regenerative properties of bone substitute materials. However, no alternative to autologous bone has been found. In this context, preclinical in vitro and in vivo studies, as well as clinical trials analyzing fundamental molecular processes, are crucial to define the regeneration mechanisms of new materials and tissue engineering concepts.

This Special Issue focuses on the various aspects of interactions of bone substitutes with cells and tissues. We invite to contributions of reviews and/or original papers reporting new results in the field of bone substitute development and bone tissue engineering concepts with a focus on new molecular insights.

Guest Editors

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Prof. Dr. Reinhard Schnettler

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Deadline for manuscript submissions

closed (20 February 2025)



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Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

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