

Special Issue

Biomaterials for Bone Tissue Engineering 3.0

Message from the Guest Editor

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 Editor

Dr. Mike Barbeck
Institute of Materials Science and Technology, Chair of Advanced Ceramic Materials, Technical University Berlin, Hardenbergstr. 40, 10623 Berlin, Germany

Deadline for manuscript submissions

closed (28 February 2023)



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/116872

*International Journal of
Molecular Sciences*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
ijms@mdpi.com

[mdpi.com/journal/
ijms](https://mdpi.com/journal/ijms)





International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



[mdpi.com/journal/
ijms](https://mdpi.com/journal/ijms)



About the Journal

Message from the Editor-in-Chief

The *International Journal of Molecular Sciences (IJMS)* 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, and molecular biophysics. *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.

Editor-in-Chief

Prof. Dr. José L. Quiles
Department of Physiology, Institute of Nutrition and Food Technology
"Jose Mataix", Biomedical Research Center, University of Granada,
Avda. Conocimiento s/n, 18100 Armilla, Granada, Spain

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, MEDLINE, Embase, CAPus / SciFinder, and other databases.

Journal Rank:

JCR - Q1 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Organic Chemistry)