

Special Issue

Osteogenic and Chondrogenic Differentiation of Mesenchymal Stem Cells

Message from the Guest Editor

The concept of stem cells originated at the end of the 19th century because of the ability of certain tissues (blood, skin, etc.) to self-renew during their lifetime. Several years later, these cells were identified and isolated. Since then, methods for mesenchymal stem cell (MSC) isolation, characterization, expansion in culture and evaluation of differentiation abilities have been impressively investigated. In spite of the growing knowledge, several questions still remain open: the identification of the optimal cellular source, the molecular basis for MSC population heterogeneity among tissue sources, parts of the body, as well as different donors and cell phenotypes, the optimization of the expansion and differentiation protocols to achieve stable osteogenic and chondrogenic phenotypes, and the impact of senescence. In addition, signaling pathways, epigenetic regulation and cell-to-cell communications still need to be clarified. We welcome submissions, including original papers and reviews, on these open questions. It is expected that these findings may help to favor skeletal tissue repair and optimize MSC use to efficiently manage joint disease.

Guest Editor

Prof. Dr. Monica de Mattei

Department of Medical Sciences, Section of Experimental, Medicine, School of Medicine, University of Ferrara, 44121 Ferrara, Italy

Deadline for manuscript submissions

closed (15 November 2022)



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/90735

*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*, 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.

Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of Odontostomatologic and Specialized Clinical Sciences,
Sez-Biochimica, Faculty of Medicine, Università Politecnica delle
Marche, Via Ranieri 65, 60100 Ancona, Italy

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, CAPlus / SciFinder, and other databases.

Journal Rank:

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