



## Osteogenic and Chondrogenic Differentiation of Mesenchymal Stem Cells

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)**

### Message from the Guest Editor

Dear Colleagues,

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.





an Open Access Journal by MDPI

## 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

## 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.

## 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 (Inorganic Chemistry)

## Contact Us

---

*International Journal of Molecular  
Sciences* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/ijms  
ijms@mdpi.com  
X@IJMS\_MDPI