

Special Issue

Calpain Family in Health and Diseases: The Road Ahead

Message from the Guest Editor

Calpains, Ca²⁺-dependent intracellular proteases, are comprised of 15 homologues in mammals, and are classified into conventional and unconventional isozymes. Conventional isozymes are composed of calpain-1 and -2, which are expressed in almost all eukaryotes. Growing evidence suggests that these conventional isozymes modify intracellular signalling molecules, thereby altering cellular processes including inflammatory cascades. Accordingly, defective calpain-mediated proteolysis may be involved in the pathogenesis of human diseases, such as cardiometabolic disease, neurodegenerative disorders, and cancer progression. In contrast to conventional isozymes, unconventional calpains are expressed in a tissue-specific manner. Investigations have identified pathogenic roles of unconventional calpains in a variety of diseases, including cancer and retinal degeneration, targeting calpain-3 can induce limb girdle muscular dystrophy type 2A. The current Special Issue highlights recent advances in molecular-based analyses of conventional and unconventional calpains to elucidate the pathophysiological aspects of these molecules and possible clinical applications.

Guest Editor

Dr. Takuro Miyazaki

Department of Biochemistry, Showa University School of Medicine,
Tokyo 142-8555, Japan

Deadline for manuscript submissions

closed (20 January 2025)



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/166100

*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)