

## Special Issue

# Calpain Family in Health and Diseases: The Road Ahead

### Message from the Guest Editor

Calpains, Ca<sup>2+</sup>-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](https://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](mailto: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)