

## Special Issue

# Neurodegenerative Diseases: Molecular Mechanisms and Therapeutic Applications

### Message from the Guest Editors

Neurodegenerative disease is a group of heterogeneous neural disorders, characterized by the progressive dysfunction and death of neurons. Most neurodegenerative diseases are complex diseases, associated with both genetic and environmental factors.

Major neuron death pathways include apoptosis, necroptosis, pyroptosis and ferroptosis. Accumulated data from in vitro and in vivo studies suggest that oxidative stress, endoplasmic reticulum (ER) stress and inflammation contribute to neuron loss. A number of small chemicals and natural products have shown therapeutic potential for neurodegenerative diseases, while cell replacement and gene therapy have shown promise for certain types of condition. However, a more comprehensive understanding of the pathogenesis and the development of new strategies for their treatment are urgently needed.

The purpose of this special issue is to collect recent developments in the elucidation of the pathophysiology of different neurodegenerative diseases and in the appraisal of therapeutic options. It provides an opportunity for researchers in the field to submit their invaluable studies. We look forward to receiving your contribution.

---

### Guest Editors

Prof. Dr. Xinhua Shu

Prof. Dr. Zhiming He

Prof. Dr. Mustafa Naziroglu

---

### Deadline for manuscript submissions

closed (31 October 2022)



## Biology

---

an Open Access Journal  
by MDPI

---

**Impact Factor 3.5**  
**CiteScore 7.4**  
**Indexed in PubMed**



[mdpi.com/si/56963](https://mdpi.com/si/56963)

*Biology*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[biology@mdpi.com](mailto:biology@mdpi.com)

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





# Biology

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.5  
CiteScore 7.4  
Indexed in PubMed



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



## About the Journal

### Message from the Editorial Board

A major strength of biological science is the diversity of approaches that biological scientists apply to their research problems. *Biology* reflects this diversity and brings together studies employing the varied experimental and theoretical approaches that are fueling biological discovery. *Biology*, the journal, is a fully peer-reviewed publication with a rapid and economical route to open access publication and is listed on PubMed. All articles are peer-reviewed and the editorial focus is on determining that the work is scientifically sound rather than trying to predict its future impact.

---

### Editors-in-Chief

Prof. Dr. Jukka Finne

Research Programme in Molecular and Integrative Biosciences, Faculty of Biological and Environmental Sciences, University of Helsinki, P.O. Box 56, FI-00014 Helsinki, Finland

Prof. Dr. Andrés Moya

Integrative Systems Biology Institute, University of Valencia and CSIC, 46980 Valencia, Spain

---

### Author Benefits

#### High Visibility:

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

#### Journal Rank:

JCR - Q1 (Biology) / CiteScore - Q1 (General Agricultural and Biological Sciences)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.4 days after submission; acceptance to publication is undertaken in 2.5 days (median values for papers published in this journal in the first half of 2025).