Special Issue

Molecular Mechanisms of Retina Development and Degeneration

Message from the Guest Editor

The retina is the core of vision, a highly specialized and intricately organized tissue composed of multiple neuronal and non-neuronal cell types. Its development from multipotent progenitors requires finely tuned spatiotemporal regulation of molecular and cellular mechanisms to ensure the formation of functional circuits. Conversely, retinal degeneration arises from the progressive dysfunction and loss of these highly differentiated cells, leading to visual impairment. Understanding the molecular mechanisms that govern both retinal development and degeneration is therefore crucial for uncovering the pathogenesis of blinding diseases and for guiding the design of novel therapeutic strategies. This Special Issue welcomes original research articles and comprehensive reviews that highlight recent advances in retinal neuroscience. Contributions may explore signaling pathways, genetic and epigenetic factors, cellular interactions, and molecular determinants of retinal health and dysfunction. We encourage studies using in vitro and in vivo models, to provide an updated and integrated view of the molecular underpinnings of retina development and degeneration.

Guest Editor

Dr. Hélène Léger

1. Coimbra Institute for Clinical and Biomedical Research (iCBR), Faculty of Medicine, University of Coimbra, Azinhaga de Santa Comba, Celas, 3000-548 Coimbra, Portugal
2. Center for Innovative Biomedicine and Bio-technology (CIBB), University of Coimbra, Rua Larga, 3004-504 Coimbra, Portugal
3. Clinical Academic Center of Coimbra (CACC), 3000-370 Coimbra, Portugal
4. Association for Innovation and Biomedical Research on Light and Image (AI-BILI), Coimbra, Portugal

Deadline for manuscript submissions

30 September 2026

Biology

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 7.4
Indexed in PubMed

mdpi.com/si/254634

Biology
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
biology@mdpi.com

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

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, CAPlus / 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 16.8 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).

MDPI