

Special Issue

Survival of the Fittest: Physiological Adaptations of Insects in Hostile Environments

Message from the Guest Editors

Insects have developed an array of abilities to endure hostile climates, such as extreme temperatures, arid environments, and high altitudes. These adaptations can be physiological, behavioural, or morphological, allowing insects to thrive in conditions challenging for many other organisms. For instance, insects can adjust their metabolisms, water balances, and other physiological processes to cope with climatic extremes. Developing adaptive behaviours can enable them to find more favourable microclimates, reduce exposure to extremes, and conserve energy. Interestingly, insects that live at high altitudes encounter unique challenges, such as low oxygen levels, cold temperatures, and increased ultraviolet (UV) radiation. They have evolved specific adaptations to thrive under such conditions. Last but not least, insects evolve adaptations to cope with host allelochemicals.

Guest Editors

Dr. Amit Roy

Faculty of Forestry and Wood Sciences, Czech University of Life Sciences Prague, Kamýcká 129, 165 00 Prague, Czech Republic

Dr. Amrita Chakraborty

Faculty of Forestry and Wood Sciences, Czech University of Life Sciences Kamýcká 129, Suchbát, 165 21 Prague, Czech Republic

Deadline for manuscript submissions

20 May 2026



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/216485

*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)