

Special Issue

Metabolic Responses to Environmental Challenges: Insights into Cellular Mechanism and Protective Strategy

Message from the Guest Editors

This special issue aims to delve into metabolic responses of organisms to environmental challenges, exploring underlying cellular mechanisms and protective strategies. As the impacts of environmental pollutants, chemicals, and climate change on organisms become increasingly evident, understanding how organisms adjust metabolic pathways, activate antioxidant defense systems, and alter gene expression profiles is crucial. This special issue welcomes original research papers, reviews, and short communications on the following topics, but not limited to:

- The impact of environmental pollutants on cellular metabolism
- The effects of heavy metals and toxins on cellular function and corresponding mechanisms
- The regulation of oxidative stress and antioxidant defense systems
- The role of inflammation in environmental stress
- The effects of environmental pressure on mitochondrial function and energy metabolism
- The role of natural compounds and protective strategies in mitigating environmental stress

Guest Editors

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About the Journal

Message from the Editor-in-Chief

The metabolome is the result of the combined effects of genetic and environmental influences on metabolic processes. Metabolomic studies can provide a global view of metabolism and thereby improve our understanding of the underlying biology. Advances in metabolomic technologies have shown utility for elucidating mechanisms which underlie fundamental biological processes including disease pathology. *Metabolites* is proud to be part of the development of metabolomics and we look forward to working with many of you to publish high quality metabolomic studies.

Editor-in-Chief

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.7 days after submission; acceptance to publication is undertaken in 3.6 days (median values for papers published in this journal in the second half of 2025).