

## Special Issue

# Cellular and Molecular Basis of Metabolic Alterations in Transplantation

### Message from the Guest Editors

The cellular and molecular landscape of organ transplantation is defined by profound metabolic alterations that begin at organ procurement and surgery, continue through immunomodulation during immunosuppressive treatment and ultimately contribute to the risk of allograft failure and rejection. Indeed, the ischemia-to-reperfusion transition triggers a cascade of energetic crises. In the long term, allograft rejection events are closely related to a metabolically driven activation of effector T cells. Furthermore, current immunosuppressive therapies also have profound metabolic impacts. This Special Issue aims to highlight recent advances in the cellular and molecular basis of metabolic alterations in transplantation. We invite researchers to contribute to understanding these crucial mechanisms, such as the interplay between metabolite flux and molecular signaling and the immune-metabolic crosstalk, that are key determinants of the metabolic health of donor organs and, ultimately, of long-term graft survival.

---

### Guest Editors

Dr. Valentina Vaira

1. Department of Pathophysiology and Transplantation, Università degli Studi di Milano, 20122 Milan, Italy
2. OMIC Science Lab, Scientific Direction, Fondazione IRCCS Ca' Granda, 20122 Milan, Italy

Dr. Alessandro Gambella

Pathology Unit, Department of Surgical Sciences and Integrated Diagnostics (DISC), University of Genoa, Genoa, Italy

---

### Deadline for manuscript submissions

30 June 2027



## Biomolecules

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.8  
CiteScore 9.2  
Indexed in PubMed



[mdpi.com/si/280837](https://mdpi.com/si/280837)

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

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





# Biomolecules

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.8  
CiteScore 9.2  
Indexed in PubMed



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



## About the Journal

### Message from the Editorial Board

*Biomolecules* is a multidisciplinary open-access journal that reports on all aspects of research related to biogenic substances, from small molecules to complex polymers. We invite manuscripts of high scientific quality that pertain to the diverse aspects relevant to organic molecules, irrespective of the biological question or methodology. We aim for a competent, fair peer review and rapid publication. Please look at some of the exciting work that has been published in *Biomolecules* so far. We would be delighted to welcome you as one of our authors.

---

### Editors-in-Chief

Prof. Dr. Peter E. Nielsen

Department of Cellular and Molecular Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Blegdamsvej 3C, DK-2200 Copenhagen, Denmark

Prof. Dr. Lukasz Kurgan

Department of Computer Science, Virginia Commonwealth University, Richmond, VA 23284, USA

---

### 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, MEDLINE, PMC, Embase, CAPIus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q1 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Biochemistry)