# Special Issue

# The Role of Metabolites and the Gut Microbiota in Development, Homeostasis, and Diseases

## Message from the Guest Editors

The gut microbiota and its associated metabolites play a crucial role in regulating host development and maintaining physiological homeostasis. This complex and dynamic ecosystem influences diverse biological processes, including immune system maturation, nutrient processing, and metabolic regulation. Through primary and secondary metabolic pathways, intestinal microbes produce numerous metabolites that act as key signaling molecules, modulating host cellular pathways and contributing to both health and disease. Disruptions in microbiome composition or function—dysbiosis—are linked to metabolic syndrome, inflammatory diseases, and developmental disorders via the gut–organ axis, i.e., the two-way interaction between the gut microbiota and other organs. This Special Issue aims to advance understanding of the intricate crosstalk between microbial communities, their metabolic outputs, and host physiology, with emphasis on mechanisms underlying systemic homeostasis. We welcome original research from basic models to epidemiological studies, as well as novel measurement techniques, bioinformatics tools, and innovative data analysis approaches.

## Guest Editors


Dr. Miriam Di Mattia

1. Department of Medicine and Ageing Sciences, “G. d'Annunzio” University of Chieti-Pescara, 66100 Chieti, Italy
2. Center for Advanced Studies and Technology (CAST), “G. d'Annunzio” University of Chieti-Pescara, 66100 Chieti, Italy

Dr. Valentina Petito

CeMAD Translational Research Laboratories, Digestive Disease Center (CeMAD), Department of Medical and Surgical Sciences, Fondazione Policlinico Universitario “A. Gemelli” IRCCS, 00146 Rome, Italy


## Deadline for manuscript submissions

30 September 2026


**Metabolites**

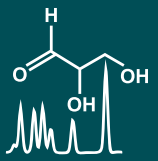
**an Open Access Journal by MDPI**

**Impact Factor 3.7**
**CiteScore 8.1**
**Indexed in PubMed**

mdpi.com/si/251234

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

mdpi.com/journal/metabolites




# Metabolites

an Open Access Journal by MDPI

Impact Factor 3.7
CiteScore 8.1
Indexed in PubMed

mdpi.com/journal/metabolites

# 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

Dr. Amedeo Lonardo
Internal Medicine, Ospedale Civile di Baggiovara, Azienda Ospedaliero-Universitaria, 41126 Modena, Italy

## Author Benefits

**High Visibility:**

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

**Journal Rank:**

JCR - Q2 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Endocrinology, Diabetes and Metabolism)

**Rapid Publication:**

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).

MDPI