



## Innovations in Antibacterial Agents: Combating Resistance, Improving Efficacy and Exploring New Mechanisms

Guest Editors:

**Dr. Rok Frlan**

The Department of  
Pharmaceutical Chemistry,  
Faculty of Pharmacy, University  
of Ljubljana, Ljubljana, Slovenia

**Dr. Martina Hrast**

Faculty of Pharmacy, University  
of Ljubljana, Ljubljana, Slovenia

Deadline for manuscript  
submissions:

**30 April 2025**

### Message from the Guest Editors

Dear Colleagues,

The inappropriate use of antibacterial agents has promoted the emergence of resistant strains of bacteria and poses a significant threat to public health. The pervasive problem of antimicrobial resistance is exacerbating healthcare crises worldwide, leading to increased mortality rates and rising healthcare costs.

This Special Issue aims to present a broad spectrum of research in the field of medicinal chemistry of antibacterial compounds and we welcome manuscripts that address both traditional and computational drug design strategies, from target identification to the application of machine learning and the screening of diverse chemical libraries in the discovery processes. In terms of publication priorities, modern methods, including virulence factor inhibitors, nanoparticles, antimicrobial peptides, phage therapy, and antisense oligonucleotides, are at the forefront. Papers dealing with the design and synthesis of new classes of antibacterial agents that introduce novel mechanisms of action, as well as studies focusing on the chemical synthesis and optimization of existing antibacterial agents, whether semi-synthetic or fully synthetic, are also welcome.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Nicholas Dixon

School of Chemistry and  
Molecular Bioscience, University  
of Wollongong, Wollongong, NSW  
2522, Australia

## Message from the Editor-in-Chief

There are very few fields that attract as much attention as scientific endeavor related to antibiotic discovery, use and preservation. The public, patients, scientists, clinicians, policy-makers, NGOs, governments, and supra-governmental organizations are all focusing intensively on it: all are concerned that we use our existing agents more effectively, and develop and evaluate new interventions in time to face emerging challenges for the benefit of present and future generations. We need every discipline to contribute and collaborate: molecular, microbiological, clinical, epidemiological, geographic, economic, social scientific and policy disciples are all key. *Antibiotics* is a nimble, inclusive and rigorous indexed journal as an enabling platform for all who can contribute to solving the greatest broad concerns of the modern world.

## 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, Embase, CAPlus / SciFinder, and other databases.

**Journal Rank:** JCR - Q1 (Pharmacology and Pharmacy) / CiteScore - Q1 (General Pharmacology, Toxicology and Pharmaceutics)

## Contact Us

---

*Antibiotics* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/antibiotics  
antibiotics@mdpi.com  
X@antibioticsmdpi