

## Special Issue

# Synthetic Biology Brings New Opportunity for Antibiotics Discovery, 2nd Edition

### Message from the Guest Editors

Antimicrobial resistance has emerged as one of the most pressing challenges to global health. Decades of antibiotic overuse and limited innovation have steadily eroded our therapeutic arsenal, while multidrug-resistant pathogens continue to proliferate across ecosystems and borders. Yet this crisis is also catalyzing a new scientific awakening. The convergence of genomics, genome mining, synthetic biology, advanced gene editing, and artificial intelligence is redefining how we discover, optimize, and manufacture antibiotics. By rationally rewiring microbial systems, we are entering an era where next-generation therapeutics can be designed, produced, and evolved with unprecedented precision and sustainability. This Special Issue builds upon the success of its first edition, uniting leading voices and pioneering research from across disciplines and continents. Together, these studies illuminate how technological integration and global collaboration are reshaping the future of anti-infective innovation. Through continued creativity and partnership, the scientific community can transform today's antibiotic crisis into an opportunity for lasting resilience in human health.

### Guest Editors

Dr. Yaojie Gao

Dr. Yaojun Tong

Prof. Dr. Zixin Deng

Prof. Dr. Lixin Zhang

Prof. Dr. Shuangjun Lin

### Deadline for manuscript submissions

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## Antibiotics

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## About the Journal

### 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 disciplines 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.

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### Editor-in-Chief

Prof. Dr. Nicholas Dixon  
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