

Special Issue

Next-Generation Antibiotic Strategies Against Drug-Resistant Bacteria

Message from the Guest Editors

Antimicrobial resistance (AMR) remains one of the greatest global threats to public health, complicating the treatment of bacterial infections and increasing morbidity, mortality, and healthcare costs. The rapid emergence of multidrug-resistant (MDR), extensively drug-resistant (XDR), and pan-drug-resistant (PDR) pathogens, coupled with the phenomena of heteroresistance and bacterial persistence, presents significant challenges in combating AMR. These persister cells, capable of surviving antibiotic treatment without genetic resistance, contribute to chronic infections and relapses, making effective eradication even more difficult. Despite advancements in drug discovery, the pipeline for novel antibiotics remains limited, necessitating innovative strategies to optimize existing treatments and develop next-generation therapeutics. This issue will focus on novel and repurposed antibiotics, synergistic combination therapies, antimicrobial adjuvants, pharmacokinetic/pharmacodynamic (PK/PD) optimization, and non-traditional approaches such as bacteriophage therapy and anti-virulence strategies.

Guest Editors

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Editor-in-Chief

Prof. Dr. Amélia Pilar Rauter

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