



The Evolution of Plasmid-Mediated Antimicrobial Resistance

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Deadline for manuscript
submissions:

closed (20 May 2024)

Message from the Guest Editors

Antimicrobial resistance is a global problem of great public health concern. Bacteria infections caused by multidrug-resistant bacteria have increased over the last few decades and the WHO has forecasted that, by 2050, bacterial infections could become the leading cause of death for human beings. The spread of antimicrobial resistance is mainly mediated by the intra- and inter-species horizontal transfer of resistance genes. In this regard, plasmids play a key role. Indeed, their ability to spread among different bacteria-inhabiting environments, to acquire exogenous DNA sequences from chromosomes, as well as other plasmids and genetic elements, makes these extra-chromosomal DNA molecules ideal vectors for the wide spread of antimicrobial resistance. Plasmid classification and organization have also recently been the subject of reviews and new lines of investigation. Adjacent to their role in antimicrobial resistance, plasmids represent a major driving force of prokaryote evolution. This Special Issue aims to collect new insights into their evolving role in the diffusion of antimicrobial resistance, and, more generally, to further extend the overall view of plasmids.





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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.

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