Special Issue

Recent Advances in Efflux Pump Inhibitors and Their Role in Combatting Multidrug Resistance

Message from the Guest Editors

Antibiotic resistance poses an increasing challenge in modern medicine. Efflux pumps play a crucial role in bacterial resistance by expelling antibiotics out of the cells, thereby reducing their efficacy. Efflux pump inhibitors (EPIs) offer a promising solution to counteract this mechanism, enhancing the effectiveness of existing antibiotics. This Special Issue aims to gather the latest research on EPIs, focusing on molecular mechanisms, novel inhibitors, clinical applications, and resistance patterns. Efflux pumps contribute significantly to bacterial multidrug resistance via various mechanisms, including biofilm formation and horizontal gene transfer. Recent studies have highlighted novel EPIs and their potential applications:

- *New Efflux Systems*
- *Biofilm Inhibition*
- *RND Efflux Pump Inhibitors*
- *Clinical Applications*

Research on EPIs remains critical for addressing multidrug-resistant bacterial infections. The findings published in this Special Issue will contribute significantly to the development of new therapeutic strategies and the enhancement of antibiotic efficacy.

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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.

Editor-in-Chief

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