Special Issue

The Role of Efflux Pump Inhibitor in Bacterial Multidrug Resistance

Message from the Guest Editor

Efflux pumps are protein constituents of all bacterial plasma membranes, and can recognize and extrude toxic compounds to the environment. The over-expression of these pumps is one of the hallmarks of the frequent failure of antimicrobial chemotherapy. For this reason the inhibition of efflux pumps could be an effective strategy to overcome multidrug resistance. Efflux pump inhibitors (EPIs) alone or in combination could restore the sensitivity of resistant strains by increasing the intracellular concentration of antibiotics and decreasing the level of intrinsic resistance. Concerning the chemical nature of EPIs, there are compounds from natural (plant) sources, semi-synthetic derivatives of existing EPIs, and fully synthetic EPIs as well. This Special Issue of *Antibiotics* invites both reviews and original articles that consider efflux pump inhibitors as challenging tools to overcome multidrug resistance in bacteria. **Keywords**: multidrug resistance; multidrug efflux pump; efflux pump inhibitor (EPI); accumulation assay; efflux assay; fluorochromes; ethidium bromide; quorum sensing; biofilm

Guest Editor

Dr. Spengler Gabriella

Department of Medical Microbiology and Immunobiology, University of Szeged, Dóm Square 10, H-6720 Szeged, Hungary

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Antibiotics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
antibiotics@mdpi.com

mdpi.com/journal/antibiotics

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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

Prof. Dr. Nicholas Dixon
School of Chemistry and Molecular Bioscience, University of Wollongong, Wollongong, NSW 2522, Australia

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