Special Issue

Recent Advances in the Development of Beta-Lactamase Inhibitors

Message from the Guest Editors

In bacteria, a major resistance mechanism to beta-lactam antibiotics is the production of one or more beta-lactamases. These enzymes are classified in two structurally and mechanistically unrelated families, serine-beta-lactamases and the metallo-beta-lactamases. The interest in discovering novel inhibitors has recently been renewed to counter the threat from extended-spectrum beta-lactamases (ESBLs) and carbapenemases which are not inhibited by the classical SBL inhibitors clavulanic acid and tazobactam. Recently, two novel BL inhibitors, the diazabicyclooctane (DBO) avibactam and the boronate vaborbactam, have been reported and are currently applied in clinic in combination with ceftazidime and meropenem, respectively. Beta-lactamases are a wide family of enzymes, thus, the development of effective pan-class inhibitors is particularly challenging. This Special Issue is focused on beta-lactamases and, more specifically, on the prominent advances made in recent years on the development of molecules able to effectively block the activity of these enzymes to fight bacteria resistance to beta-lactam antibiotics.

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Deadline for manuscript submissions

closed (30 October 2022)

Antibiotics

an Open Access Journal by MDPI

Impact Factor 4.6
CiteScore 8.7
Indexed in PubMed

mdpi.com/si/114391

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

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