



## Targeting $\beta$ -Lactamases to Fight Antimicrobial Resistance

Guest Editor:

**Prof. Dr. Malcolm Page**

Life Sciences & Chemistry,  
Jacobs University Bremen  
gGmbH, 28759 Bremen, Germany

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### Message from the Guest Editor

Dear colleagues,

$\beta$ -Lactamases constitute the primary means of resistance that bacteria have towards the widely used  $\beta$ -lactam antibiotics. These enzymes hydrolyze not only the amide bond of the four-membered  $\beta$ -lactam ring that gives its name to this class of antibiotics, but also the larger  $\beta$ -lactam ring found in some natural products and derivatives. Only a handful of  $\beta$ -lactamases were known in the early 1970s, but the number of  $\beta$ -lactamases has increased dramatically in the face of intense selection pressure imposed by the human use of  $\beta$ -lactam antibiotics.

Starting with clavulanic acid, a natural inhibitor of the serine enzymes discovered in the 1970s and introduced into clinical practice in 1981 combined with amoxicillin, combinations of a  $\beta$ -lactamase-labile antibiotic with a specific  $\beta$ -lactamase inhibitor have now become an important way to combat the growing threat from  $\beta$ -lactamase-mediated resistance. In this Special Issue, we will explore different approaches to developing inhibitors that will overcome the broad array of  $\beta$ -lactamases now distributed in pathogenic bacteria.





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## Editor-in-Chief

### Prof. Dr. Nicholas Dixon

School of Chemistry and  
Molecular Bioscience, University  
of Wollongong, Wollongong, NSW  
2522, Australia

## 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 disciplines 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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*Antibiotics* Editorial Office  
MDPI, St. Alban-Anlage 66  
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