Special Issue

Molecular Determinants of Antibiotic Resistance in Methicillin-Resistant *Staphylococcus aureus* (MRSA)

Message from the Guest Editor

Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the most common human bacterial pathogens. Several antibiotics with different mechanisms of action such as ceftaroline, vancomycin, linezolid, and daptomycin have been introduced to treat MRSA infections. However, antimicrobial resistance has emerged in many *S. aureus* clones around the world. This antibiotic resistance can be due to different mechanisms such as target modification where antibiotics bind (PBP2a), mutation of the target site (mutation in PBP4, PBP2a, *gdpP*), drug inactivation through enzymes (β-lactamase hydrolyzes penicillin), or the prevention of drug accumulation or efflux (decreased membrane permeability or increased efflux by efflux pump). Thus, understanding the molecular mechanisms of antibiotic resistance is important for the development of antibiotics with novel mechanisms of action and molecular detection methods of antibiotic resistance. We invite you to contribute papers elucidating the molecular basis of antibiotic resistance in *S. aureus*. Novel computational approaches for antimicrobial resistance determination and genomic characterization will also be considered.

Guest Editor

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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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