Special Issue

Drivers of Virulence and Antimicrobial Resistance in Emerging and Re-Emerging Pathogens

Message from the Guest Editors

The rise of antimicrobial resistance (AMR) and virulence among emerging and re-emerging pathogens poses a significant threat to global health. These "hotspots" for the evolution of resistance and virulence include healthcare facilities, agricultural settings, urban wastewater systems, soil matrices, and aquatic ecosystems. This Special Issue, will explore the folliwng key areas: the ecological and environmental factors that contribute to the evolution and spread of pathogens with enhanced virulence and resistance profiles; the molecular and genetic mechanisms underlying virulence and AMR; host–pathogen interactions that drive immune evasion and adaptation strategies; and innovative approaches that utilize advanced genomics tools, artificial intelligence, and machine learning technologies to monitor AMR hotspots and develop predictive models. By addressing these critical aspects, this Special Issue aims to advance our understanding of the drivers of virulence and AMR, ultimately informing strategies to combat these urgent public health challenges.

Guest Editors

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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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