Special Issue

The Molecular Mechanisms Regulating Stress-Adaptive Responses in Bacteria

Message from the Guest Editors

Bacteria combat an array of stresses in their natural setting, which elicit a variety of adaptive responses as a survival mechanism. Effective adaptive response ensues in bacterial persistence, antibiotic resistance, biofilm formation and resistance development. Understanding the intricacy of mechanisms governing the adaptation can support the advancement of suitable antimicrobials. This Special Issue brings together the cutting-edge research studies exploring the molecular mechanisms in bacterial stress adaptation, emphasizing signal transduction pathways, transcriptional and translational regulations, metabolic reprogramming, etc. Key topics include two component regulatory systems, toxin–antitoxin systems and small regulatory RNAs in coordinating stress response. We also feature insights on bacterial persistence strategies, such as biofilm formation and virulence development and their implications on antibiotic resistance and pathogenesis. By elucidating these mechanisms, this collection aims to expand our knowledge about bacterial resilience and inform novel antimicrobial strategies.

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"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

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