

Special Issue

Bacterial Infections: Unraveling Pathogenesis, Resistance, and Therapeutic Frontiers

Message from the Guest Editor

Bacterial infections represent one of humanity's most persistent health challenges, now established as the second leading cause of death globally. The landmark 2022 GRAM Project study revealed that 33 bacterial pathogens were associated with 7.7 million deaths in 2019—approximately one in eight global deaths. The molecular basis behind the virulence and pathogenicity of these bacteria urgently needs to be investigated on the genomic, transcriptomic, and proteomic levels.

Intervention strategies based on molecular insights—from CRISPR-based diagnostics to bacteriophage engineering and novel small-molecule inhibitors targeting resistance mechanisms—show promise for averting millions of deaths.

This Special Issue of *IJMS* will exclusively feature research with robust molecular data exploring bacterial resistance genomics, host–pathogen interactions, molecular epidemiology, and novel antimicrobial targets. As a molecular-focused journal, *IJMS* requires submissions to include comprehensive molecular analyses using techniques such as whole-genome sequencing, transcriptomics, proteomics, or structural biology.

Guest Editor

Dr. Jagoda Jablonska

Department of Biomolecular Sciences, Weizmann Institute of Science, Rehovot 7610001, Israel

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Message from the Editor-in-Chief

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