Special Issue

Surveillance and Detection of the Antimicrobial Resistance

Message from the Guest Editors

Antimicrobial resistance (AMR) has become a pressing global concern and escalating threat, affecting human, animal, and environmental health. Recent breakthroughs in microbiology, genomics, molecular diagnostics, and environmental monitoring provide new opportunities to characterize resistance mechanisms and identify critical intervention points. This Special Issue invites original research and reviews that contribute to a deeper understanding of AMR surveillance and detection, bridging the gap between technological innovation and practical applications. Topics may include, but are not limited to, the following: development and validation of rapid phenotypic and molecular diagnostic methods; application of whole genome sequencing (WGS) and metagenomic tools; pathogen and resistome monitoring in clinical, agricultural, and environmental settings; wastewater- and environmental-based surveillance; biosensors and rapid detection platforms; integration of bioinformatics, machine learning, and predictive modeling to assess AMR monitoring; and One Health perspectives integrating cross-sectoral information.

Guest Editors

Dr. Eduardo Torres

1. Ciencias Ambientales, Instituto de Ciencias, Benemérita Universidad Autónoma de Puebla, Puebla 72570, Mexico
2. Centro de Quìmica, Benemérita Universidad Autónoma de Puebla, Puebla 72570, Mexico

Dr. Reynoso Eduardo Canek

Centro de Investigación en Salud Poblacional, Instituto Nacional de Salud Pública (INSP), Morelos 62100, Mexico

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
microorganisms@mdpi.com

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Message from the Editor-in-Chief

"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.

Editor-in-Chief

Dr. Nico Jehmlich
Department of Molecular Toxicology, UFZ-Helmholtz Centre for Environmental Research, 04318 Leipzig, Germany

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