

Special Issue

Bacterial Pathogens and Antibiotics in Gut and Environmental Microbiomes

Message from the Guest Editor

Bacteria and their genomes circulate among human, animal, and environmental microbiomes. In the gut microbiome, commensal bacteria act as reservoirs for resistance genes, facilitating horizontal gene transfer to pathogens via mobile genetic elements. Environmental microbiomes, such as those in soil, water, and food production, serve as access points for the evolution and spread of antimicrobial resistance (AMR). Antibiotic use across human and veterinary medicine, agriculture, and aquaculture creates selective pressures that drive the emergence of critical public health pathogens. Advances in metagenomics, resistome analysis, and microbial ecology now illuminate how resistance traits spread across communities and ecosystems. This Special Issue invites contributions on molecular, ecological, and epidemiological aspects of AMR in gut and environmental microbiomes. We welcome studies on surveillance, transmission mechanisms, and One Health-based mitigation strategies. We thank Célia P. F. Domingues and João S. Rebelo, PhD candidates at the University of Lisbon, for their valuable work on this issue.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The worldwide impact of infectious disease is incalculable. The consequences for human health in terms of morbidity and mortality are obvious and vast but, when infections of animals and plants are also taken into account, it is hard to imagine any other disease that has such a significant impact on our lives—on healthcare systems, on agriculture and on world economics.

Pathogens is proud to continue to serve the international community by publishing high quality studies that further our understanding of infection and have meaningful consequences for disease intervention.

Editor-in-Chief

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