



Interplay between Gut Microbiota and Antimicrobial Resistance

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Message from the Guest Editors

The gut microbiota is a stable and diverse ecosystem that provides important benefits to human health, such as promoting innate and adaptive immunity, synthesizing certain vitamins and amino acids, and protecting against pathogens. Antibiotic treatment, a crucial therapeutic intervention, may disrupt taxonomic species within the gut microbiota, creating opportunities for pathogen colonization and subsequently impacting host metabolism and physiology. This imbalance, commonly termed "dysbiosis", opens the door to the potential colonization by antimicrobial-resistant bacteria and increases the load of antimicrobial resistance genes (ARGs). Antimicrobial resistance (AMR) substantially threatens public health, resembling a silent pandemic. This challenge necessitates targeted interventions within the human health, food production, animal and environmental sectors, requiring a coordinated and intersectoral approach. The gut microbiome, a critical reservoir for ARGs, underscores the urgency of understanding and addressing this intricate interplay to preserve human health.





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