

Special Issue

Molecular Insight into Antimicrobial Resistance

Message from the Guest Editors

Antimicrobial resistance (AMR) remains a critical global health threat, driven by complex molecular mechanisms. This Special Issue aims to explore recent advances in understanding the genetic and biochemical basis of resistance in major pathogens, including methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* (VRE), extended-spectrum β -lactamase (ESBL)-producing bacteria, and carbapenem-resistant Enterobacterales (CRE). Of particular interest are emerging resistances such as linezolid resistance in enterococci and reduced susceptibility of Enterobacterales to novel agents and antibiotic combinations. We also welcome studies on resistance to last-resort antimicrobials, horizontal gene transfer, resistance evolution under selective pressure, and molecular surveillance approaches. Contributions involving genomic, transcriptomic, proteomic, or structural insights into AMR mechanisms are encouraged. By shedding light on these molecular underpinnings, this Special Issue aims to inform better therapeutic strategies and guide the development of innovative antimicrobial agents.

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