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Poster abstract submission

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Poster title
Precision Antimicrobials: Harnessing Phages and Tailocins for AMR Control and Diagnostic Development

Poster abstract
Antimicrobial resistance (AMR) poses a growing global health threat with urgent clinical and commercial implications. Our work focuses on innovative phage-based and phage-derived solutions to combat multidrug-resistant (MDR) pathogens, including Klebsiella pneumoniae, Pseudomonas aeruginosa, and Acinetobacter baumannii. Environmental bacteriophages are systematically isolated and characterized for host specificity, genomic features, and therapeutic potential, enabling the identification of high-efficacy candidates. Genomic analyses uncover antibacterial effectors that enhance potency and broaden pathogen coverage. In parallel, tailocins, phage-derived bacteriocin-like complexes, are investigated as highly specific, precision antimicrobial proteins capable of eliminating target pathogens while preserving beneficial microbiota. Beyond therapeutics, complementary efforts explore phage- and tailocin-based technologies with potential diagnostic applications, highlighting the versatility and translational promise of this approach. Our research brings together discovery, functional testing and translational work to develop targeted, scalable and affordable alternatives to conventional antibiotics. Using natural phages and engineered bacterial effectors, our aim is to generate rapid, customizable tools to tackle multidrug-resistant infections and move promising candidates toward preclinical development and industry collaboration. Our work highlights how phage biology drives new therapeutic and diagnostic options in the fight against antimicrobial resistance.

Research topic Phage or phage products