

1A: Validation of Novel Targets

Pillar: Treatment Optimization

Theme: Innovation and Commercialization

Keywords: Bacterial Pathogenesis; Phage Therapy



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AIM

The focus of this project is to examine alternatives to antibiotics as antimicrobial strategies. We will explore the use of phage or pathogenesis inhibitors in this context.

WHY IS THIS IMPORTANT?

We know that the rampant use of antibiotics is contributing to resistance against these drugs. We aim to develop non-antibiotic strategies to disarm AMR bacterial pathogens and prevent AMR transfer from the environment to people.

OUTCOMES

- 1 Publications and/or IP identifying targets that subvert bacterial pathogenesis or mediate phage toxicity.
- 2 Proof-of-principle therapeutics that validate targets.

RESEARCH QUESTIONS

- 1 Can we target bacterial pathogenesis as an antimicrobial strategy?
- 2 Can phage be used to combat AMR, or prevent its transfer?

OUR APPROACH

- 1 We will combine structural biology and biochemistry to study virulence factors from bacteria and examine small molecule and protein-based inhibition strategies.
- 2 We will examine environmental phage and their interactions with important AMR bacterial pathogens at the cellular and molecular levels.

ALIGNMENT WITH THE AMR - ONE HEALTH CONSORTIUM

LEVERAGED SOURCES OF SUPPORT

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KNOWLEDGE & TECHNOLOGY EXCHANGE AND EXPLOITATION

- Catalyze new research partnerships
- Develop new antimicrobial targets that can be exploited by other researchers or industry

HIGHLY QUALIFIED PERSONNEL

- 1 PhD
- 6 MSc
- 5 Undergraduate students
- 1 Research Associate

AFFILIATIONS:

