

1B: Drug Discovery: From Antivirals to Antibiotics?

Pillar: Treatment Optimization

Theme: Innovation and Commercialization

Keywords: Drug Discovery; Transcription; Replication;
Translation; Enzymology



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AIM

The major objective of this project is to identify novel compounds that interfere with replication and translation of important pathogens including but not limited to multi-resistant *Mycobacterium tuberculosis*.

WHY IS THIS IMPORTANT?

The WHO created a priority list of antibiotic-resistant bacteria to support drug discovery efforts in important areas. The ultimate aim of the proposed research is to identify novel classes of inhibitors against these pathogens.

OUTCOMES

- 1 Develop inhibitors that are more effective by studying antibiotics and related antivirals.
- 2 Establish systems to study bacterial targets that are crucial for genome replication and translation and discover “hits” that interfere with the function of these targets.

RESEARCH QUESTION

Can we apply knowledge in antiviral drug discovery to bacterial targets?

OUR APPROACH

We will use biochemistry to study the molecular basis for drug action and resistance to antivirals. Primarily we will look into enzymes like polymerases or nucleases that depend on divalent metal ions. We will then use this knowledge and apply it to functionally equivalent targets in bacteria.

ALIGNMENT WITH THE AMR - ONE HEALTH CONSORTIUM

LEVERAGED SOURCES OF SUPPORT

Canadian Institutes of Health Research • Natural Sciences and Engineering Research Council of Canada

KNOWLEDGE & TECHNOLOGY EXCHANGE AND EXPLOITATION

- New partnerships with the private sector

TRAINING OF HIGHLY QUALIFIED PERSONNEL

- 1 PhD
- 1 MSc
- 1 Research Associate

AFFILIATIONS:

