Bacterioviruses as Biological Antibiotics Phage Therapy: A cure or an anti-virulence therapy?

Inaugural lecture

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Host: Molecular Microbiology Research Unit Chair: Jakob Møller-Jensen

Pathogenic bacteria continue to acquire resistance to antimicrobial compounds due to their misuse and overuse in human medicine and in agriculture. At the same time, the commercial development of antibiotic drugs has almost been abandoned. Bacterial viruses (also known as phages) have the ability to specifically infect and kill bacteria. Thus, they can be used as biological antibiotics, an approach known as phage therapy. While phage therapy is not a new concept, the approach is becoming a valuable alternative to treat infections. However, phage therapy suffers from drawbacks such as phage resistance.

This talk focuses on the emergence of phage resistance in the pathogen *Acinetobacter baumannii*. While phage resistance might lead to a re-emergence of growth of the bacterial pathogen in a patient, using phages as an anti-virulence strategy might be valuable. Understanding how phage resistance emerges and how it is mediated, might allow us to direct the evolutionary process to yield less virulent or antibiotic re-sensitized strains.



