Discovery and Investigation of Novel Bacteriophage DuncansLeg

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Introduction

- **What is the SEA-PHAGES Program?**
  - A national program that allows students to conduct research on bacteriophages.
- **What is a bacteriophage?**
  - A virus that infects bacteria.
- **How is a bacteriophage discovered?**
  - By collecting a soil sample and performing a series of techniques to isolate and determine if a phage is present.
- **Why is it important to discover bacteriophages?**
  - Antibiotics are becoming less effective, and bacteriophages can be used as a new treatment.
- **What is unique about DuncansLeg?**
  - Temperate phage
  - L3 Subcluster
  - 75,593 base pairs

Results

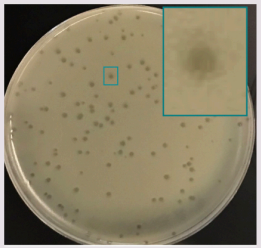


Figure 1: An isolated plaque was picked to retrieve phage particles and create a liquid sample.

Figure 3: Webbed plate used to collect a large volume lysate.

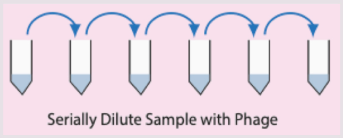


Figure 2: Serial dilutions were performed to collect a high titer lysate.

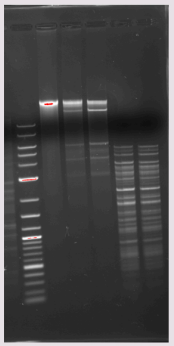


Figure 4: Gel Electrophoresis Image of DNA with different enzymes. Order: Ladder > Uncut> EcoRI Trial 1 > EcoRI Trial 2 > PVUII Trial 1> PVUII Trial 2

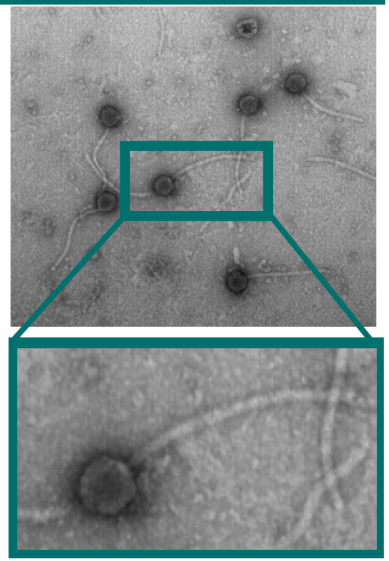
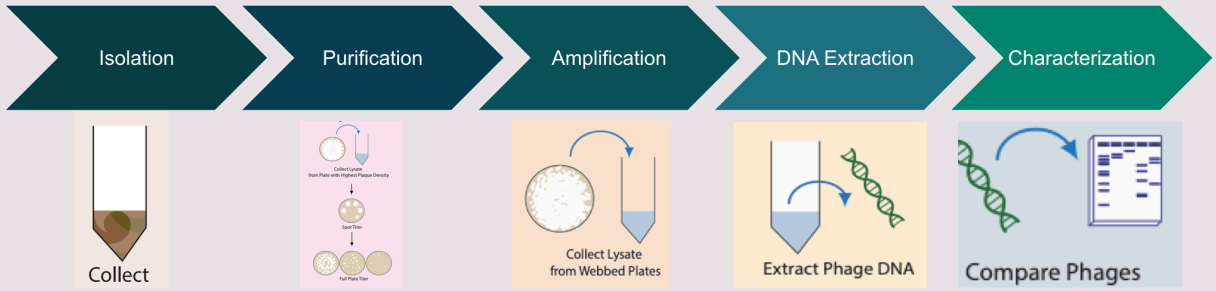


Figure 5: Electron Microscopy

DuncansLeg EM Image can be seen in Figure 5.

- Morphotype: *Siphoviridae*
  - Capsid size: 78 nm
  - Tail length: 278 nm

Methods



Further Research

After sequencing the DNA, the DNA is further analyzed and annotated in BIOL 303: Phage Bioinformatics to discover functions of the genome.

Acknowledgements

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