Discovery and Analysis of Microbacteriophage Squeegee

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The purpose of this project was to discover and analyze a new phage to continue to add to the scientific community's knowledge of bacteriophages. Using the bacterial host Microbacterium folorium, the novel bacteriophage Squeegee was isolated from a soil sample in Bowling Green, Kentucky. The phage was extracted using an enrichment of the soil sample and host cells. When grown on an agar plate, it exhibited a turbid plaque which indicates a lysogenic life cycle. Transmission electron microscopy was utilized to visualize the morphological characteristics of the phage. An icosahedral head and a tail from the Siphoviridae family was observed. DNA was isolated from the sample, after which a restriction digest was performed. Gel electrophoresis was conducted on the digest to gain a general understanding of the genome. The picture revealed many restriction sites for the HaeIII enzyme. Further genome sequencing must be done to precisely characterize the genotype of Squeegee. Overall, these results most likely confirm that Squeegee is unlike any other bacteriophage.