CONSIDER FOR TALK

2023 SEA Symposium Abstract

Lee University

Cleveland TN

Corresponding Faculty Member: Joseph Daft (jdaft@leeuniversity.edu)

Isolation and Characterization of the Novel Phage Schimmels22

Jessie K Holsombeck, Amanda D Ledford, Joseph G Daft, Lori G West, Dana M Perry

Our knowledge of phages that attack bacteria in the phylum Actinobacteria has grown exponentially over the last 15-20 years. However, there are still many genra within this phylum that warrant further investigation, one of which is Microbacterium foliorum. To isolate phages that infect M. foliorum, protcol from the Phage Discovery Guide (HHMI-SeaPhage) was followed. The novel phage Schimmels22 was isolated from Schimmels Park (35.16937 N, 84.86664 W), Cleveland, TN. Sequencing of Phage DNA (Dan Russel, University of Pittsburgh) and genomic analysis (Phamerator, Steven Cresawn) revealed a phage with a lytic life cycle in the Cluster EA, Subcluster EA11, belonging to the family Siphovirdidae. Gene location in Schimmells22 is being mapped with the use of Glimmer, Genemark and Starterator databases as well as ribosomal binding sequence information found in DNA Master software. Other annotated genomes in Subcluster EA11 include HerculesXL and Ixel. These genomes along with the software HHpred and blastp (NCBI) are currently being used to assign gene functions. Continued analysis and review of gene function will be used to identify any unique features of Schimmles22 within its cluster and subcluster.