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2025 SEA Symposium Abstract

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DillyDally: A Singleton Arthrobacter globiformis Bacteriophage

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In the fall of 2024 at Chatham University, many of the BIO143 Lab class sections attempted to find phage using *Arthrobacter* *globiformis* B-2979, an aerobic, Gram-positive bacteria. Many students were successful in finding phage through collecting environmental soil samples. Thus, the class carried on with trying to isolate, purify, amplify, and extract. After successful extraction, the phage samples were sent to the Pittsburgh Bacteriophage Institute at the University of Pittsburgh for sequencing. Genome analysis revealed that phage DillyDally is a singleton, meaning it does not have any closely related sequences or homologous genomes in existing viral databases such as PhagesDB.com. This classification indicates that DillyDally represents a unique genetic lineage, lacking clear phylogenetic ties to known phage clusters or families. The discovery of singleton phages contributes to our understanding of bacteriophage diversity, evolution, and genetic novelty. After using multiple bioinformatic tools such as Phamerator and PECAAN to annotate the genes of DillyDally, it provided an insight into its biology, gene function, and potential biotechnological applications like phage therapy.