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Discovery of Novel Bacteriophage SantasSleigh

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Bacteriophages, also known as phages, are viruses that infect bacteria. Phages have been used extensively in research to understand viral biology and have recently been used clinically to treat antibiotic resistant bacterial infections. Beginning in the fall semester of 2022, samples of grass and leaves at various locations across Xavier’s campus were collected and incubated in the presence of host bacteria *Microbacterium foliorum* to isolate phages that infect bacteria. The sample used was from mixed grasses and soil near the school’s library at 29.96600N 90.10745W. After the presence of phages was confirmed by a spot assay, the sample was purified to isolate a phage using serial dilution and plaque assays. The found phage was then amplified by generating ‘webbed’ plates. The phage was then named SantasSleigh. The plaques formed were approximately 2.5mm in diameter, round, and clear. After purification and amplification, SantasSleigh was sequenced and is now characterized as cluster EE lytic phage.

Using the generated sequence, SantasSleigh’s genome was auto-annotated using DNAMaster. Changes to the starts of the called genes were made using the various resources provided including DNAMaster, Starterator, and Phamerator. Protocols from SEAPhages were also used. The phage is currently being annotated to determine gene functions.