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Annotation of Mycobacteriophage Heinz

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A bacteriophage is a virus that infects bacteria. The bacteriophage Heinz was discovered in 2022 in Pittsburgh, Pennsylvania, and was isolated by the University of Pittsburgh. This life cycle appears to be lytic based on the clear appearance of its plaques. The isolation host was Gordonia Terre 3612. Heinz is in the cluster DY with a length of 40,092 base pairs. Auto-annotation data was done using DNA Master’s databases: Glimmer and Genemark. Using auto-annotated data, the genome was further investigated to assign functions and determine if genes needed to be inserted or deleted. Auto-annotated data suggested 63 genes, but further investigation concluded that Heinz has 61 genes. Functions were annotated in 39 genes, and 22 genes were called hypothetical proteins. The programs used to determine this were NCBI Blast, PhagesDB, Genemark, HHPRED, Phamerator, Starterator, DNA master, Genemark, and Genmark S. Heinz has no tRNAs or tmRNAs. Additionally, bacteriophages are beginning to play an essential role in the medical field. They can be used to treat antibiotic-resistant bacterial infections. This process is called phage therapy, and it is a treatment plan that is in the early stages of development. Because research and medical treatment surrounding phages are relatively new, there is an incredible amount of potential in the discoveries ahead. Overall, by discovering more phages, this treatment could become more readily available and a viable option with untold impacts.