CONSIDER FOR TALK

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Annotation of genes associated with lytic life cycle of a cluster B1 lytic bacteriophage, Eugenia

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A bacteriophage, Eugenia, was successfully isolated from soil samples collected in Akron, OH. It has been identified as a lytic phage and is classified within the B1 cluster. Its predicted genome size is 69,139 bp, featuring 104 predicted protein-encoding genes, with 32 of these genes assigned putative functions. This study specifically focuses on annotating genes associated with the lytic life cycle in phage Eugenia. Utilizing bioinformatics tools available from the Howard Hughes Medical Institute (HHMI), we identified several key proteins. Five minor tail proteins, two lysins (A & B), and a holin were among the proteins identified. Additionally, two capsid proteins, namely major capsid hexamer- and pentamer-proteins, were annotated. Our findings suggest that Eugenia possesses the potential to lyse other bacterial hosts sharing similar phage receptors. This discovery opens paths for further exploration in phage therapy applications.