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2021 SEA Symposium Abstract

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Isolation and Basic Sequence Analysis of Gordonia rubripertincta Phage AJGECKO

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Mycobacterium tuberculosis resistance is a growing problem and pressing concern in the health
and scientific communities. We believed testing the local sewage would reveal novel
bacteriophages that may be more medically relevant for exploring both the evolution of
pathogenic strains as well as potential candidates for phage therapy. Our goal was to isolate
bacteriophages that infect mycobacterium tuberculosis or its close relatives, such as Gordonia
rubripertincta from raw sewage. We were able to isolate a phage for Gordonia rubripertincta,
named AJGECKO, through a sample of raw sewage. After purification through streaking, we
created a high titer lysate from which the phage DNA was isolated. This isolated DNA was then
sequenced to analyze the genes. Following annotation of the DNA, preliminary results suggest
this phage is extremely novel and uncharacterized. This discovery will add to the growing library
of phage knowledge and aid in the understanding of proteins and their function. In addition, with
the rise of antibiotic resistant bacteria, phage therapy has been proposed as a possible solution to
combat this issue. Further characterization of AJGECKO could be beneficial in determining
whether it could be useful in the development of phage therapy or in research applications.