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Understanding the diversity of local bacteriophages in the Rio Grande Valley

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A virus that infects and replicates within a targeted bacterium by injecting its genetic material is a bacteriophage. The objectives of our research were to 1) isolate bacteriophage from a soil sample, 2) amplify and collect lysate and 3) extract bacteriophage DNA. With the insufficient research in detecting and obtaining these bacteriophages in the Rio Grande Valley (RGV), we decided to gather soil samples from varying locations. The cities of the upper RGV include Edinburg, Palmview, and Pharr Texas. Through a series of lab experiments and by using our host bacteria Microbacterium foliorum, we were able to isolate and then amplify our samples successfully to have a DNA concentration of 42.7, 42.6, and 55.2 ng/ul. The names of the bacteriophages of our samples include “Carrillo”, “Guman”, and “Jakelyne”. The bacteriophages from this project were then sent for DNA sequencing.