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2023 SEA Symposium Abstract

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Investigation of the Function of Five Novel Viral Genes

Rilee Catchpole

I have investigated five different genes (10, 34, 62, 78, and 94) from the bacteriophage Mabel to determine their functions and better understand the Mabel genome. Mabel was isolated in Delaware and it typically infects *Mycobacterium smegmatis*. I have cloned the genes into the pExTra expression vector. A variety of techniques have been used to get to this point in the research including PCR, gel electrophoresis, isothermal assembly, and chemical transformation. We will be performing two phenotypic assays; a cytotoxicity assay and a defense assay. A cytotoxicity assay measures the effect of over expression of the gene on bacterial viability. The defense assay measures how well the expression of a phage gene can protect the cell from infection by the phages. If I am able to determine the phenotype of these genes we will be one step (or five steps) closer to understanding the Mabel gene as a whole and its effect on its host.