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Investigating Gene Functions in Mycobacteriophage Island3​

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Island3 is a temperate Cluster I1 mycobacteriophage that infects Mycobacterium smegmatis mc2155. Its genome consists of 76 protein-coding genes, only 17 of which have known functions. Towards the goal of identifying additional gene functions, we amplified, cloned, and assayed 14 genes for host cytotoxicity and the ability to render the host resistant to infection by other phages (defense). We analyzed genes 10, 11, 12, 13, 14, 15, 21, 22, 25, 50, 51, 57, 60, and 61 and concluded that none of these genes exhibited either host cytotoxicity or defense against phage infection. We are in the process of assaying the remaining genes of Island3.​