CONSIDER FOR TALK

8th Annual SEA-PHAGES Symposium Abstract

Johns Hopkins University

Baltimore MD

Corresponding Faculty Member: Emily Fisher (efisher@jhu.edu)

Analysis of the differences between Valjean and Zaider, two mycobacteriophages with 98.7% identity

Christine Atik, Mikayla Watt, Emmanuel Osikpa, Ratcliff Jeremy, Gonzalez Vanessa, JHU PhageHunters, Emily Fisher

Two mycobacteriophages of the B1 subcluster were isolated from the Johns Hopkins University in 2016. The genome sequences of Valjean and Zaider showed striking similarity beyond those of other B1 phages when analyzed by Gepard dot plot. Pairwise alignment showed that the genomes are 98.7% identical with only five regions of mismatches longer than 2 nucleotides. In four cases, the Zaider genome contains sequence that is absent from Valjean. In one case, Valjean has a 2 nucleotide sequence that is missing in Zaider. I addition, several single nucleotide differences or gaps were detected. We present these highly similar genomes along with evidence that they are in fact distinct phages with emphasis on the specific differences between them.