CONSIDER FOR TALK

9th Annual SEA-PHAGES Symposium Abstract

College of William & Mary

Williamsburg VA

Corresponding Faculty Member: Margaret Saha (mssaha@wm.edu)



Destiny Cates



Justin Reed

Analysis of Skysand, a Novel CR Cluster Gordonia Phage

Destiny Cates, Justin Reed, Olivia Allison, Ahlexus D Bailey, Sarah Belay, Monica E Bonilla, Yessica V Bonilla, Danielle S Brown, Ezekial I Carrothers, Joseph Chibueze, Michaela L Davis, Briana L DelaEspriella, Alicia Draper, Jessica A Fleury, Kayla Gibbs, Victoria Guillen, Stephanie Guzman, David Hibbitts, Ivy J Johnson, Autumn Liu, Sarah Jo McGeady, Sarah Modlin, Tanner K Nelson, Meadow E Parrish, Sudip Paudel, Alexandria Pete, Xavier S Burgos, Divinity S Summers, Alexander O Washington, William J Buchser, Mark H Forsyth, Margaret S Saha

Following over 100 unsuccessful attempts to isolate phages from several species of Corynebacteria from a vast array of diverse locations near Williamsburg, Virginia, in the fall of 2016, the William & Mary Phage Lab then switched to a new host - *Gordonia terrae*. Using standard procedures, no phages were isolated via direct plating but twelve out of twenty students easily isolated phages from various campus locations following enrichment. One phage, Skysand, was selected for sequencing and further analysis; Skysand is 67,359 bp in length with 65.5% GC content and is a member of the CR cluster. It is most closely related to the phage Patio with which it shares 97% identity, and based on sequence comparisons, it is possible that Patio and Skysand may constitute a new subcluster. Annotation of Skysand revealed the expected classes of metabolic and structural genes as well as those for infection, and DNA replication, however 31% of Skysand genes have no known function. In addition, we note some interesting findings such as the presence of genes that might encode proteins related to Colicin A and the HicA toxin. Notably, based on Phamerator results, Skysand has 13 genes that are not present in any other phage, thus suggesting that Skysand represents a novel phage.