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2023 SEA Symposium Abstract

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Soos: A novel Gordonia rupripertincta bacteriophage in the CP Cluster

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In the Fall of 2022, a section of Introduction to Biological Sciences 1 at Indiana University Southeast participated in the SEA-PHAGES program and isolated eight novel bacteriophages: CasperG, FinalGirl, GrumpyGarfield, Jimbalina, KatieKen, OsoPerro, Soos, and Toddias. These phages were isolated using the soil bacterium *Gordonia rubripertincta* strain NRRL B-16540. These bacteriophages were purified and subsequently imaged by transmission electron microscopy (TEM). Lysates of all eight phages were archived at the University of Pittsburgh and entered into the Actinobacteriophage Database. We obtained a suitable DNA sample from Soos and this genome was sequenced. The genome length of Soos is 57,509 nucleotides with a GC content of 65.5%. The resulting sequence was processed through the Phamerator tool, indicating that Soos is the third member of the CP cluster, along with Sting (90.1% gene content similarity (GCS)) and Clawz (82.7% GCS). Auto-annotation using DNA Master identified 90 features and we are currently undertaking manual annotation in Spring 2023 in a section of Introduction to Biological Sciences 2. Resources such as DNA Master, Genemark, Phamerator, BLAST, Starterator, and HHPred are being utilized to facilitate this analysis. While annotation is still ongoing, interesting features include the possibility of at least one lysin and a probable holin protein.