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Characteristics of Mycobacteriophage Eurydice and Paraselene

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The Eurydice and Paraselene phages were isolated from M. smegmatis mc2155. The phages were annotated using the PECAAN program.
Eurydice was isolated from a water sample from West Liberty, KY. The Eurydice genome is 51, 408 bp long and has 85 protein-encoding genes. Eurydice is a temperate phage related to the A cluster phages Ohfah, Nebs and Morrow with a 99% similarity as evidenced by NCBI-BLAST. The lysis cassette comprising the Lysin A, holin and lysin B genes (genes 8-10) was located between 3921bp-6821bp. The genome comprised of several well-characterized genes in reverse orientation such as helix-turn-helix DNA binding domain, ThyX-like thymidylate synthase, Ribonucleotide kinase, metallophosphoesterase, DNA methylases, DNA methyl transferase and SprT-like protease.
Paraselene was isolated from a water sample taken off the bank where Bear Creek and Green River converged at Brownsville, KY. The phage name reflects the morphology of the plaques resembling the bright moonlike spot on a lunar halo. The Paraselene genome is 51, 176 bp long and has 87 protein-encoding genes. Paraselene is a temperate phage related to the A cluster phages Euphoria, Barriga and Rohr with a 97% similarity as evidenced by NCBI-BLAST. The lysis cassette comprising the Lysin A and lysin B genes (genes 8-9) was located between 4349bp-6728bp. The genome comprised of several well-characterized genes in reverse orientation such as helix-turn-helix DNA binding domain, Endonuclease VII, NrdH-like glutaredoxin, DNAB-like ds DNA helicase, and cas4 exonuclease. The 3’ terminal end (genes 70 and 76) housed the genes involved in life cycle regulation, the immunity repressor and the recombination directionality factor.