Cover Letter

Annotation: Stratus

We reanalyzed our Stratus annotation work based on our analysis with other Arthrobacter phage genomes using GeneMarkS Output. This output consistently gave us better coding potential to genes in other phage genomes as well as for phage Stratus. Upon reannotation, we deleted the reverse gene and added some additional forward genes based on GeneMarkS Output coding potential.

Gene gp8 appears to be a fusion prohead protease-major capsid subunit protein gene.

Gp14 is the tape measure protein. We looked to see if there was any potential for a frameshift with gene gp12 & 13 since these genes are candidates for tail assembly chaperones. There is a slippery sequence of a run of four A’s right after the stop codon of gp12 but before the start codon of gp13. However, it doesn’t look like frameshifting can occur unless the last codon of the stop codon in gp12 is skipped (a +1 frameshift).

It also looks like genes gp17, 18 and 19 make up the lysis cassette. Gp19 has a 65% probability to a holin gene via HHPred and we annotated gp19 as the holin gene based on its syntenic location with gp17 and gp18 (clearly genes encoding lysis enzymes).

Lastly, we were unable to detect any tRNA or tmRNA genes using either web-based Aragorn or tRNA scan programs.