Cedasite annotation

This is a Smeg phage.

Cedasite was very similar to Halo, Liefie, and BPs.

The genome had 2 independent teams working on the annotation, and then I merged these two annotations and reconciled any differences between them (or any differences with prior annotated G phages).

Items to focus on:

Genes with changed starts:

12 – has a 1:1 match to Clark, but has a 1:11 aa match to BPs. Autoannotated made it even shorter. Cedasite does not appear to have a start that would match BPs’s.

18 – used genemark start. Makes a 1:1 aa match to BPs and Liefie.

32 – used start that was not called by glimmer or genemark. Gives 1:1 match to Chy2. Now longest ORF. Longer gene than autoannotated, but not nearly as long as Halo.

33 – not called by genemark and did not use the glimmer start. The autoannotated start would have overlapped with the next gene, but this is a switching spot from forward to reverse and it seemed unlikely that they would overlap. Additionally, changing the start gave it a 1:1 aa match to Halo.

46- used genemark start. Allowed the addition of gene 45. New start a 1:1 aa match to BPs.

57 – start not called by either. Gave 1:1 match to Leo. Best SD score. Longest ORF. 1:12 match to Halo, but does not have Halo’s start.

58 - the removal of reverse gene 56 allowed this gene to be expanded. Gave 1:1 aa match to BPs, Liefie. 1:3 match to Halo.

Added genes:

Gene 45 – not auto-annotated, but gives 1:1 match to Halo. And is a DNA helicase.

Gene 47 – not auto-annotated, but gap. Gives 1:1 match to Halo. But only found in Halo by blast…

Gene 56 – added after removal of reverse gene 54. Gave 1:1 aa match to multiple phages. Filled gap.

Gene 63 – added after the removal of reverse gene 61. 1:1 aa match to BPs and Liefie.

Deleted auto-annotated genes (original numbering)

54 – reverse gene and small. Still had large gap. Removing it allowed the addition of new gene 56.

56 – reverse gene. Allowed expansion of Gene 58 in forward orientation. Would have had a 23 bp over lap with next gene – unlikely when switching from forward to reverse.

61 – did not make sense. Large reverse gene that overlapped with several forward genes. Allowed addition of gene 63.