Actinobacteriophage Genome Annotation Submission Cover Sheet

This Cover Sheet will accompany each genome’s annotation file(s) submission and succinctly describe the work that your students and you have done. This document ensures that the work done was as complete and thorough as it could be. Most important to the QC reviewer, denote where the trouble spots were in your annotation and how they were resolved.

Phage Name. Zabiza

Your Name. Allison Johnson

Your Institution. Virginia Commonwealth University

Your email. aajohnson@vcu.edu

Additional emails. (for correspondence).

Describe any issues or specific genes that you would like to highlight for the QC reviewer. This includes any genes that you had questions about or received help with or that warrant further inspection in the QC review process. Include those genes that you deliberated on and/or want to strongly advocate for. If you contacted SMART, workshop facilitator, or a buddy school for help, please document.

Gp8 , start at 3020, Portal protein, start is not -4. Best RBS, covers all coding potential, start is nicely aligned with where coding potential begins.

Gp77, start at 49256. Not sure if there is a -4 vs -7 rule, like the -1 vs -4. Similar RBS and either are o.k. For coding potential. 22 blastp matches for -4, 11 matches for -7. Starterator has these evenly split.

Gp91, start at 55577. Same as above.

Gp 10, function. We called this Hypothetical Protein. This is called muF-like minor capsid protein in many K phages, which is a “do not use” in the official function list.

Gp 29, function. This protein is at the end of the string of minor tail proteins. We called this Hypothetical Protein but this should probably be called something like tail fiber. This is a Ralstonia phage GP4 podovirus tail fiber with a 2023 publication. HHPred probability of 99.9% and E value 10^-24. <https://www.rcsb.org/structure/8JOU>

Gp88, function. We called this HicA-like toxin to align with subcluster but please check? This protein hits interesting things in HHPred like [this](https://www.rcsb.org/structure/6U0I), [this](https://www.rcsb.org/structure/6G1C) and [this](https://www.rcsb.org/structure/4P78), which look like HicB hits. This pham is annotated in the subcluster as HicA-like toxin. I don’t know hicA vs B so maybe there is a reason we do this. No sequence similarity with Xeno 30 or 32, which is in the approved name guidelines.

Please record yes/no for each of the questions below. If further explanation is needed, please add this item to the above box.

In the submitted DNA Master file (Yes/No):

Yes 1. Does the genome sequence in your submitted DNA Master file match the nucleotide fasta file posted on phagesDB (same number of bases, no N bases, etc.)?

Yes 2. Are all the genes ‘Valid” when you click the [Validation button](https://seaphagesbioinformatics.helpdocsonline.com/article-84)?

Yes 3. Are the genes (and matching LocusTag numbers) [sequential](https://seaphagesbioinformatics.helpdocsonline.com/article-77), starting with #1, counting by 1s.

Yes 4. Are the Locus Tags the “[SEA\_PHAGE NAME](https://seaphagesbioinformatics.helpdocsonline.com/article-77)” format?

Yes 5. Has the [documentation been recreated](https://seaphagesbioinformatics.helpdocsonline.com/article-86) from the Feature Table to match the latest file version?

N/A 6. Have tRNAs followed the [tRNA protocol](https://seaphagesbioinformatics.helpdocsonline.com/undefined), **COPYING** tRNA-AMINOACID type (DNA equivalent of the anti-codon) from Aragorn output - ﻿tRNA-Gln(ctg) - AND the ends been adjusted to match the Aragorn output?

Yes 7. Has the [frameshift in the tail assembly chaperone](https://seaphagesbioinformatics.helpdocsonline.com/article-54) been annotated correctly (if applicable)?

Yes 8. Have you cleared your Draft\_Blast data and have you [re-Blasted](https://seaphagesbioinformatics.helpdocsonline.com/article-57) the submitted DNA Master file?

Yes 9. Has every gene been [described and supported in your Supporting Data file](https://seaphagesbioinformatics.helpdocsonline.com/article-44)?

Yes 10. Did you investigate ‘[gaps](https://seaphagesbioinformatics.helpdocsonline.com/article-31)’?

Yes 11. Did you [delete the genes](https://seaphagesbioinformatics.helpdocsonline.com/article-65) that you meant to delete?

Now, [make a profile of the file](https://seaphagesbioinformatics.helpdocsonline.com/article-64) you plan to send. (And you can save this file for [Review to Improve!)](https://seaphagesbioinformatics.helpdocsonline.com/untitled-18)

N/A 1. Have any duplicate genes been deleted?

Yes 2. Has the Notes field been cleared (using the automated buttons)?

Yes 3. Do the gene numbers and locus tags match?

Yes 4. Are the correct Feature\_Types correctly selected (most will be ORFs, but check that tRNAs and tmRNAs are correctly labeled)?

Yes 5. Do the function names in the Product field either match the official function list or say “Hypothetical Protein”?

Yes 6. Has the Function field been cleared (using the automated buttons)?

How are you documenting your gene calls in class? Choose any/all that apply:

X PECAAN output

      DNA Master shorthand (previously used format)

      Spreadsheet

      Powerpoint

      Word document (must be easily searchable)

X Other: Describe. Students document annotation in a wiki-based electronic notebook

What is the file type (sort) submitted for QC to document your gene calls? Choose only one.:

X PECAAN output

      DNA Master shorthand (previously used format)

      Spreadsheet

      Powerpoint

      Word document (must be easily searchable)

      Other: Describe.