

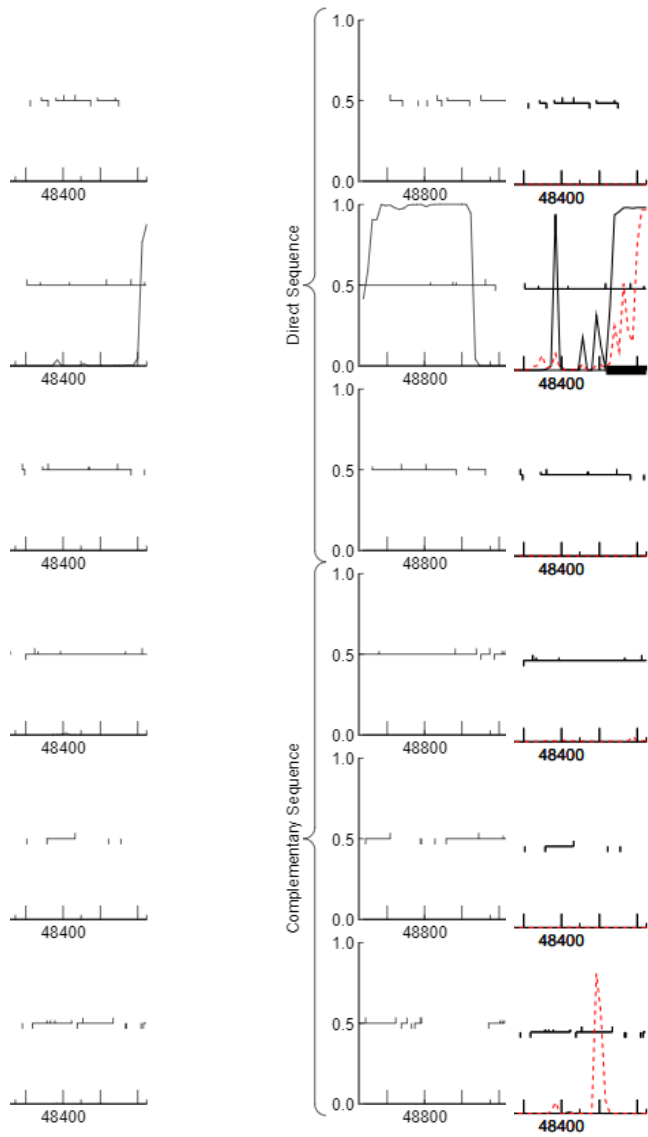
PhagesDB forum post

Hey Y'all,

I am a student at UCLA and we are working on phage JulietS (C1). One of the genes I am annotating is 48994@ F and I am having some problems with it. There is coding potential in both the host trained (start site around 48600) and Self trained (start site around 48500). Glimmer and GeneMark call the start site at 48518 but this provides a gap of 297. The smallest gap is 84 with a start site of 48305 but that isn't covered in the coding potential. Moreover, there are only 2 non-draft genomes in this pham (54797 1/23/23). One of these phages, Rabinovish, called the function as Holliday junction resolvase. This phage has a gene downstream which isn't found in JulietS and has an overlap of -91 bp. The other phage, ScottMcG, does not call a function and has a gap of 328 bp.

Where this gets extra complicated is looking at Phagesdb BLAST on PECAAN. There are several non-draft phages (EmmaElysia C1, Melpomini C1, Napoleon13 C1) and called the function as Holliday Junction resolvase but have the pham as 3757. Changing the start site does not change the pham sadly.

I was hoping to get some help on figuring out this tricky gene. All help is appreciated and thank you for your time!



Phagesdb Function Frequency

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| Function Name | Pham | Subcluster | Count | Frequency (%) |
|--------------------------------|------|------------|-------|---------------|
| holliday junction resolvase | 3757 | C1 | 18 | 51 |
| holliday junction resolvase | 1046 | C1 | 14 | 40 |
| dna binding protein | 1046 | C1 | 1 | 3 |
| major capsid protein | 1046 | C1 | 1 | 3 |
| zinc-finger dna binding domain | 1046 | C1 | 1 | 3 |

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Phagesdb BLAST Rerun

Last Job Status:
 FINISHED at 1/8/2023, 2:35:48 PM
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 1/8/2023, 2:35:48 PM

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| Evidence | Name | Protein Number | Function | Sequence Length | Score | e-value | Cluster | Pham |
|--------------------------|----------------|----------------|-----------------------------|-----------------|-------|---------|---------|-----------------------|
| <input type="checkbox"/> | Babyland_Draft | 99 | function unknown | 158 | 338 | 3e-93 | C1 | 54797 |
| <input type="checkbox"/> | Dietrick | 92 | function unknown | 229 | 338 | 3e-93 | C1 | 3757 |
| <input type="checkbox"/> | EmmaElysia | 100 | holliday junction resolvase | 229 | 338 | 3e-93 | C1 | 3757 |
| <input type="checkbox"/> | JulietS_Draft | 95 | function unknown | 158 | 338 | 3e-93 | C1 | 54797 |
| <input type="checkbox"/> | Melpomini | 94 | holliday junction resolvase | 229 | 338 | 3e-93 | C1 | 3757 |
| <input type="checkbox"/> | Napoleon13 | 96 | holliday junction resolvase | 229 | 338 | 3e-93 | C1 | 3757 |
| <input type="checkbox"/> | Yucca | 100 | holliday junction resolvase | 229 | 335 | 2e-92 | C1 | 3757 |
| <input type="checkbox"/> | Stubby | 93 | holliday junction resolvase | 229 | 333 | 1e-91 | C1 | 3757 |
| <input type="checkbox"/> | Koguma | 97 | holliday junction resolvase | 229 | 332 | 2e-91 | C1 | 3757 |
| <input type="checkbox"/> | Bread | 100 | holliday junction resolvase | 229 | 330 | 6e-91 | C1 | 3757 |

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