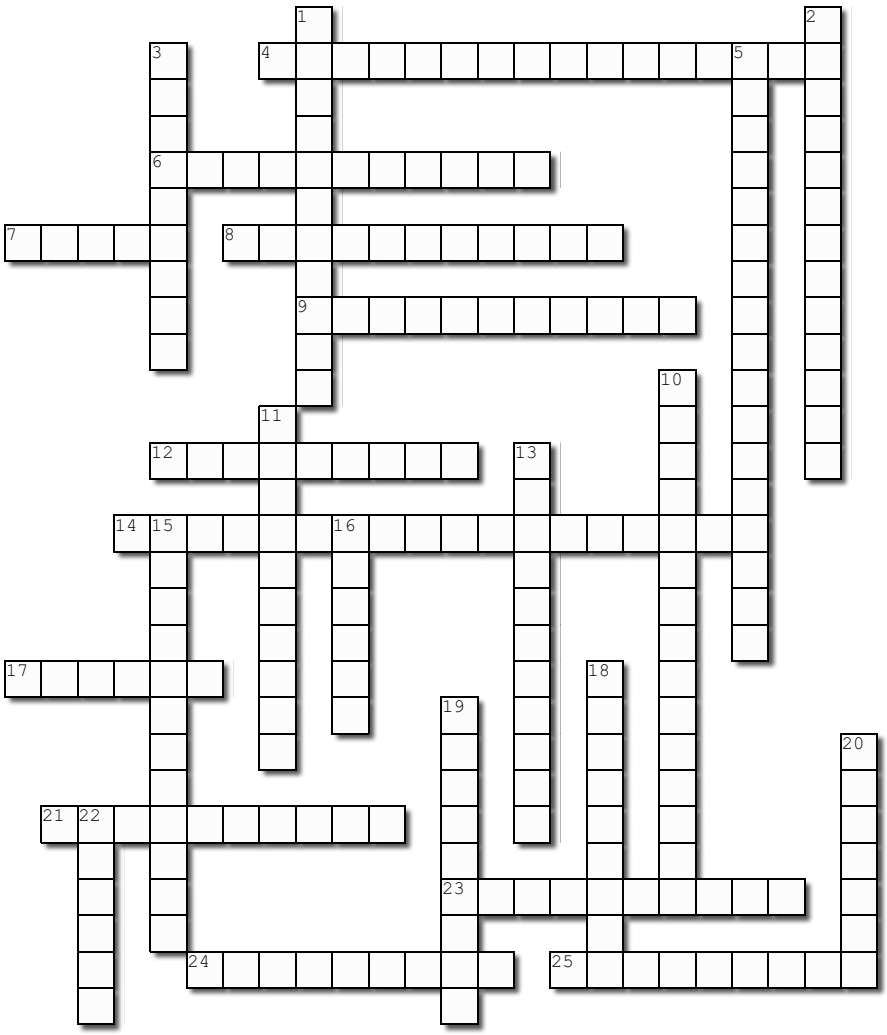
Phage "Phunctions" Crossword Puzzle



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Across

4. every phage should have a version of this protease, which cleaves the scaffolding proteins to give the phage head its final shape (2 words)
6. found in some phage genomes, this protein plays a smaller role in the phage head (2 words)
7. small protein that makes a “hole” in the host membrane; typically has several transmembrane domains
8. enzyme responsible for the unwinding of nucleic acid during replication (2 words)
9. found in most phage genomes, this protein determines the final curvature of the phage head by helping assemble capsid proteins
12. the part of the myoviridae tail that the tail fibers attach to
14. proteins that help facilitate the formation of the tail structure; commonly annotated as a set of frameshift genes (2 words)
17. essential protein that is the genome “door” into the capsid; found in EVERY phage genome
21. found in all sipho- and myoviridae, this protein attaches the capsid to the tail structure; may be called a stopper or adapter (3 words)
23. found within myoviridae, this protein acts like a syringe during infection and remains outside the host (2 words)
24. found within all siphoviridae and some podoviridae, this protein is not made in abundance, as it is only found at the tip of the structure it forms (2 words)
25. temperate phage enzyme that allows for insertion of the phage genome into the host chromosome

Down

1. this primary structural protein of the phage head (2 words)
2. main enzyme that synthesizes a copy of the phage genome (2 words)
3. essential protein motor that uses ATP to package DNA into the capsid
5. protein that prevents expression of lytic phage genes within temperate bacteriophage (2 words)
10. enzyme that assists the DNA packaging motor; typically found at the beginning or at the end of the genome (2 parts)
11. protein near the phage head that caps off the tail after assembly and polymerization of the major tail subunits
13. this protein makes up the tail core and determines its length; longest gene in the genome (2 words)
15. protein that holds the two separated nucleic acid strands apart during replication (2 parts)
16. enzyme that seals nicks or small breaks in the DNA strand
18. protein that disrupts the host cell wall during the lytic cycle; all phage have at least one, but may have two versions.
19. a must-have structural protein for all siphoviridae; the most common protein found within the structure it creates (2 words)
20. enzyme that allows for the DNA polymerase to initiate on a single-stranded DNA strand by creating an initial “starter” oligonucleotide
22. temperate phage enzyme that allows for the prophage to be removed from the host chromosome during lytic transition