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Poster #102: Exploring auxiliary metabolic genes (AMGs) from cyanophage Syn9

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Auxiliary Metabolic Genes (AMGs) are found in the genomes of many phages that infect cyanobacteria. While their activities in the virocell during infection still need to be elucidated, it is thought that they are involved in reprogramming the host
metabolism rather than directly affecting viral replication.
AMGs often encode proteins involved in photosynthesis and light-harvesting and seem to have originated from a bacterial host.
In order to investigate the function of AMGs in the bacterial host during infection, we use Synechococcus WH8109 as a host and the phage Syn9, a T4 like Myovirus, to study different aspect of infection. One of the fairly abundant AMGs in cyanophage genomes is cpeT. This gene has sequence similarities to so-called phycobiliprotein lyases, proteins that in the host cell serve as assembly factors for the light harvesting phycobilisome.
In summary, our objective is to elucidate the role of AMGs from cyanophages and understand their impact on the interaction with the host.

Reference #1

Gasper R, Schwach J, Hartmann J, Holtkamp A, Wiethaus J, Riedel N, Hofmann E, Frankenberg-Dinkel N. Biol C

Reference #2

D. Lindell, J.D. Jaffe, Z.I. Johnson, G.M. Church, S.W. Chisholm. Nature, 2005, 438(7064), 86-89.

Reference #3

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