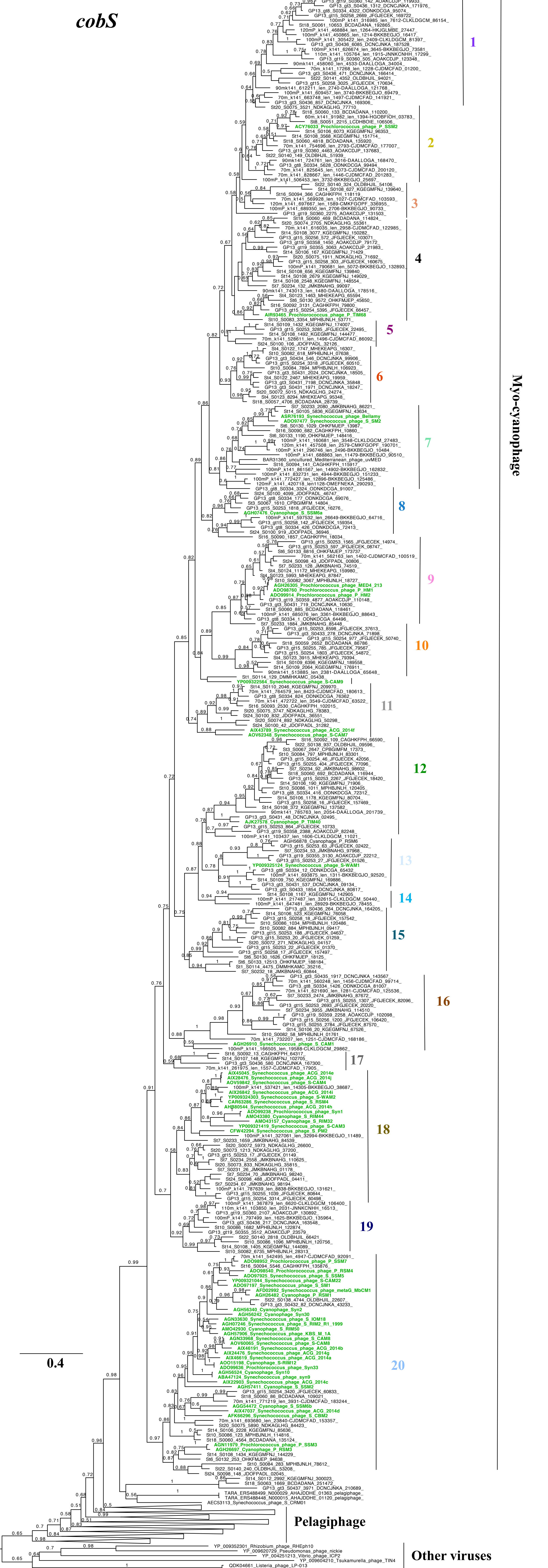


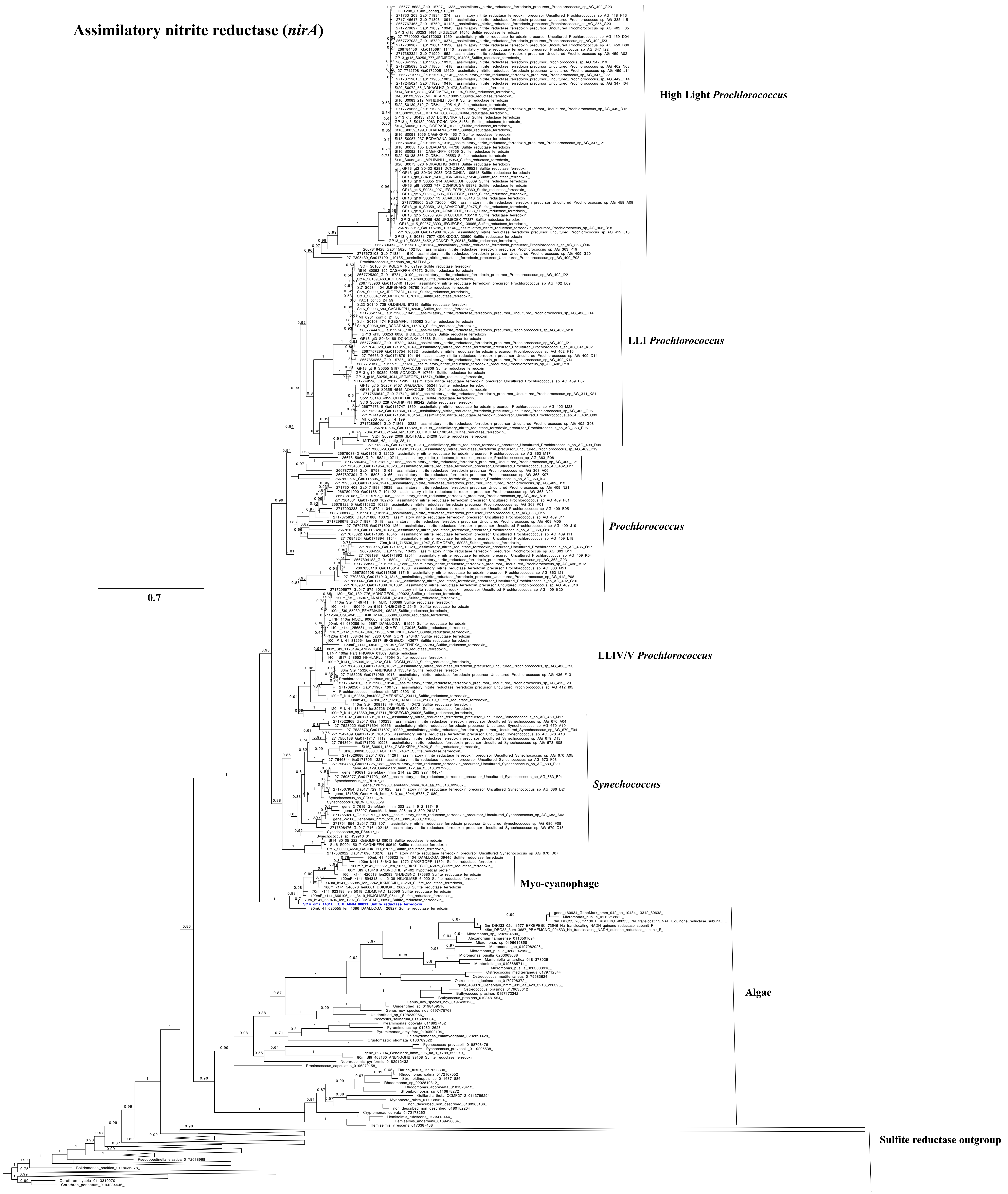
**Supplemental Data for
Associations between picocyanobacterial ecotypes and cyanophage host genes
across ocean basins**

Clara A. Fuchsman, David Garcia-Prieto, Matthew D. Hays, Jacob A. Cram

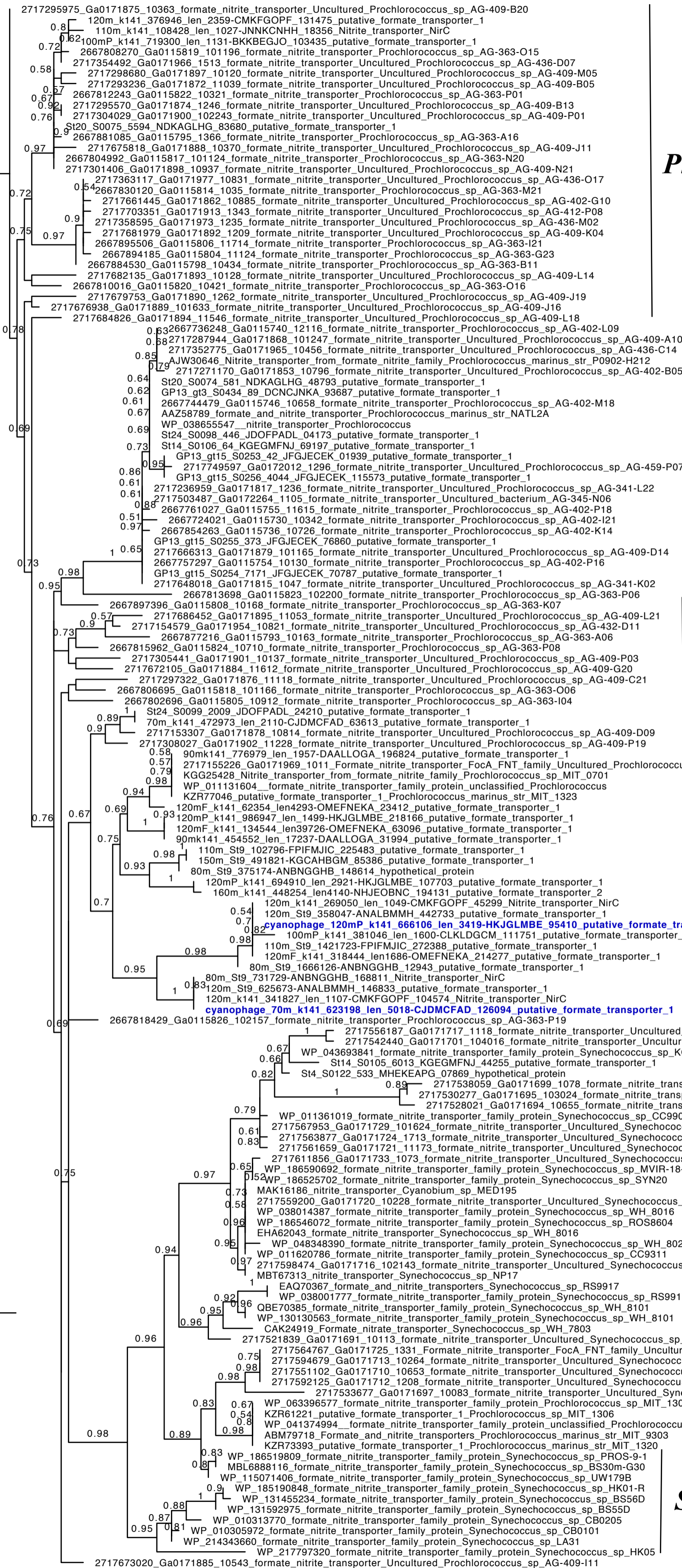
Supplemental Data contains the phylogenetic trees created in this paper. For each tree, bootstraps can be found over the nodes. Bootstraps are between 0-1 and those below 0.50 are not shown. References shown in green are isolates, and sequences shown in blue have been verified to be myo-cyanophage. Most blue sequences were verified in Fuchsman et al (2021).



Assimilatory nitrite reductase (*nirA*)



Nitrite transporter (*nirC*)



Prochlorococcus

LLI Prochlorococcus

Prochlorococcus

LLIV/V Prochlorococcus

Myo-cyanophage

Synechococcus

LLIV Prochlorococcus

Synechococcus

Outgroup

0.2

1

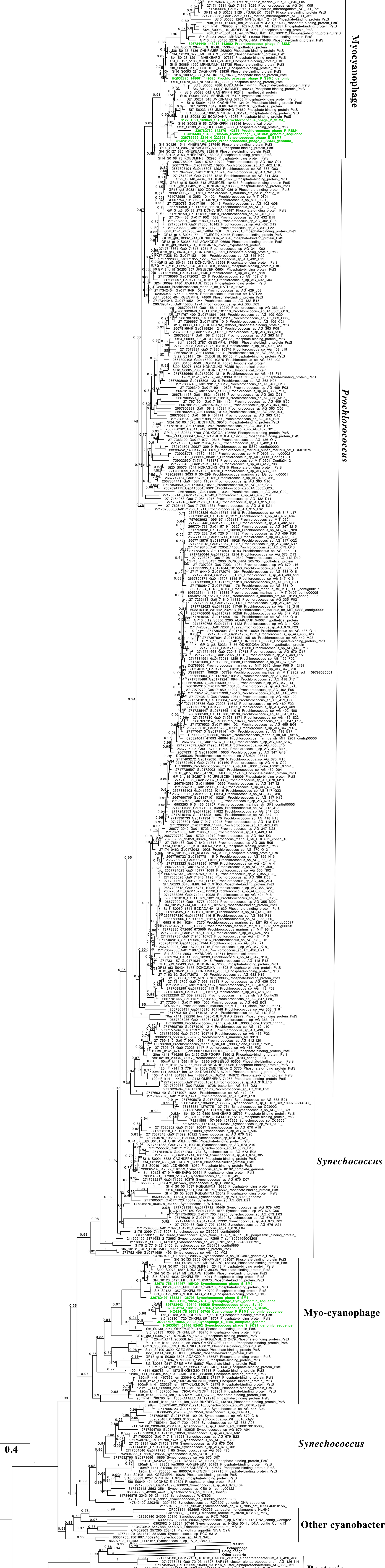
1

1

0.56

1

Phosphate binding subunit phosphate transporter (*psrS*)



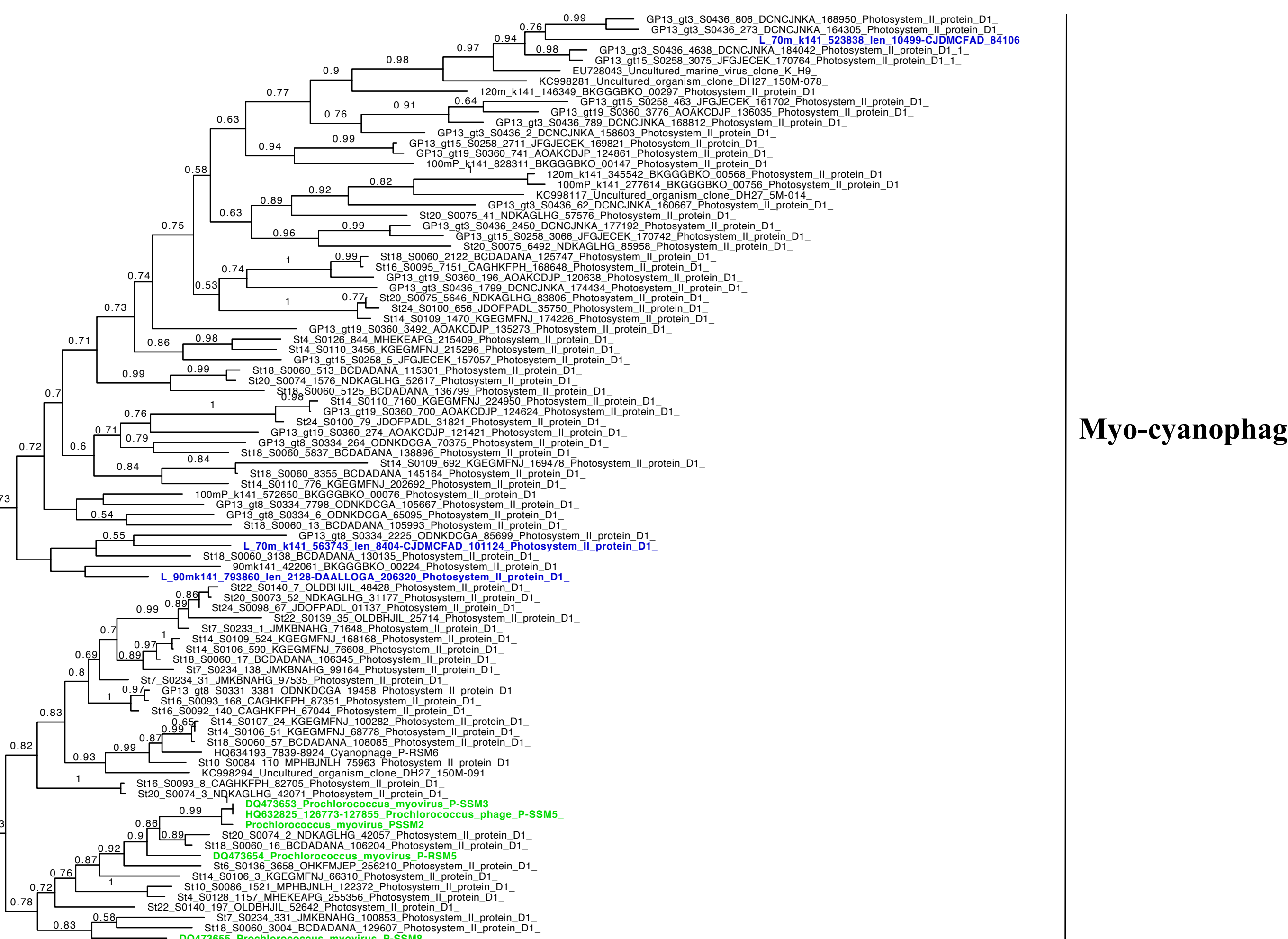
EF601159_Pseudomonas_aeruginosa_strain_MDR25_PstS

Mycoyanophage
Prochlorococcus
Synechococcus
Myo-cyanophage
Other cyanobacteria
Bacteria

Heme Oxygenase (*pbsA*)



Photosystem II protein D1 (psbA)



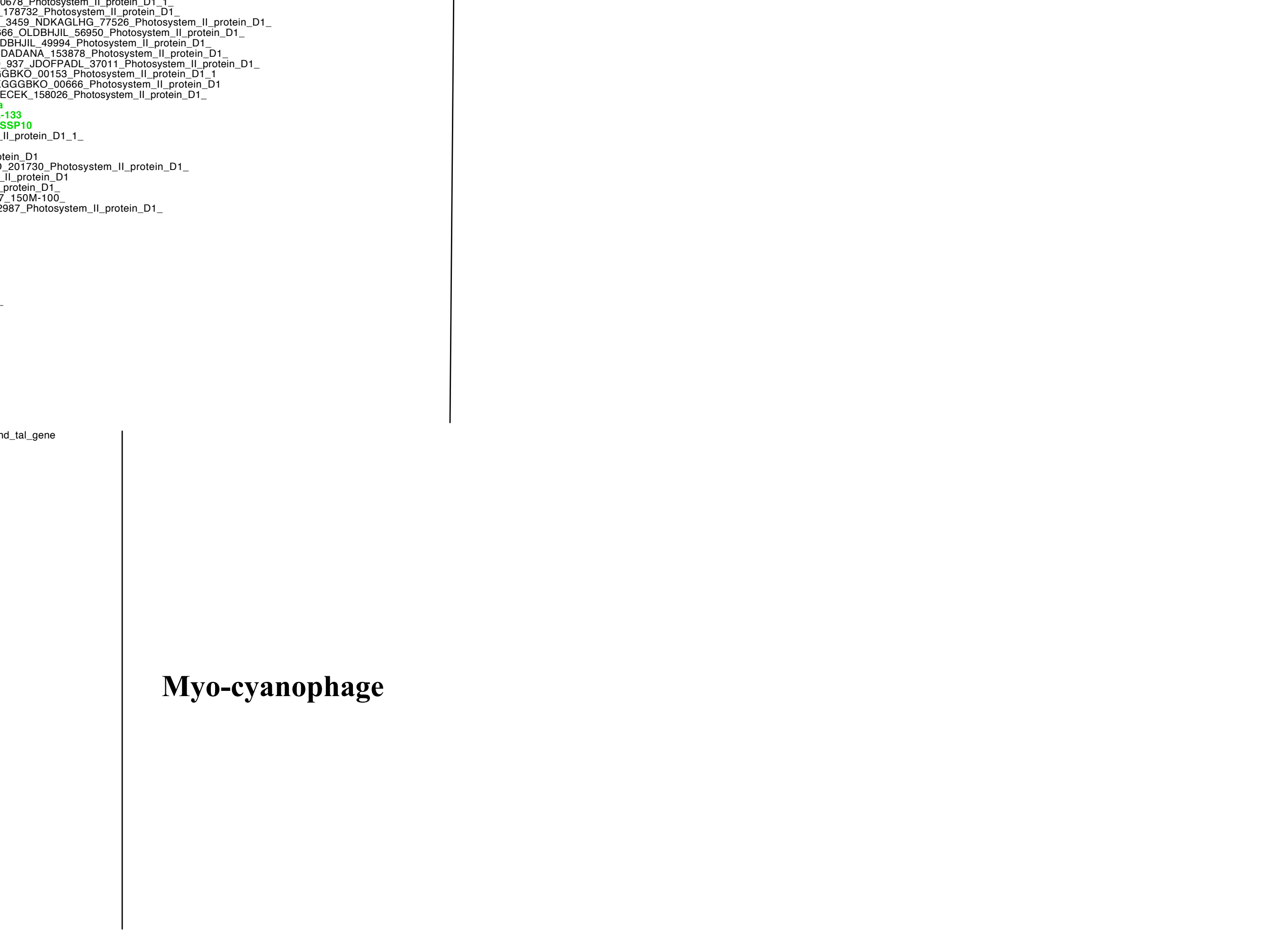
Myo-cyanophage



Prochlorococcus



Myo-cyanophage



Podo-cyanophage

0.2



Myo-cyanophage

Synechococcus

LLIV Prochlorococcus

Synechococcus

Chloroplast

Other Cyanobacteria

Photosystem II D2 (*psbD*)

Myo-cyanophage

Prochlorococcus

Myo-cyanophage

Synechococcus

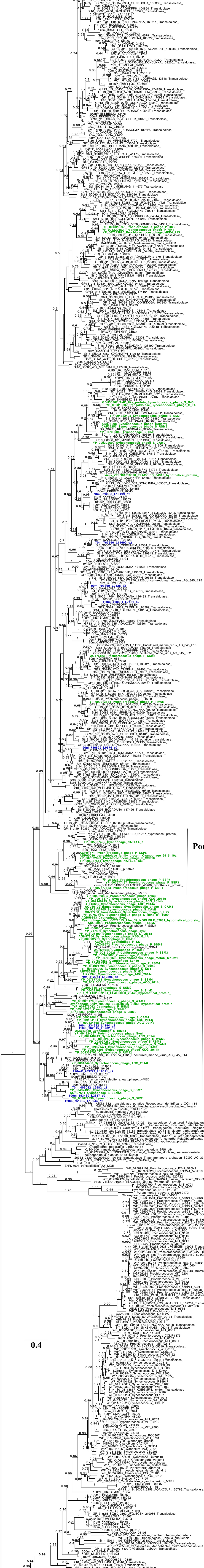
Other cyanobacteria

Eukaryotic algae



Transaldolase

(talC)



Myo-cyanophage

Podo-cyanophage

Myo-cyanophage

Bacteria

0.4

Cyanobacteria

Bacteria

NCLD.V. ERX55254.13.contig.4500.78

Thymidylate synthase (*thyX*)

Myo-cyanophage

Prochlorococcus

Myo-cyanophage

Myo-cyanophage

Myo-Cyanophage

Outgroup

Sipho-cyanophage

LLIV *Prochlorococcus*

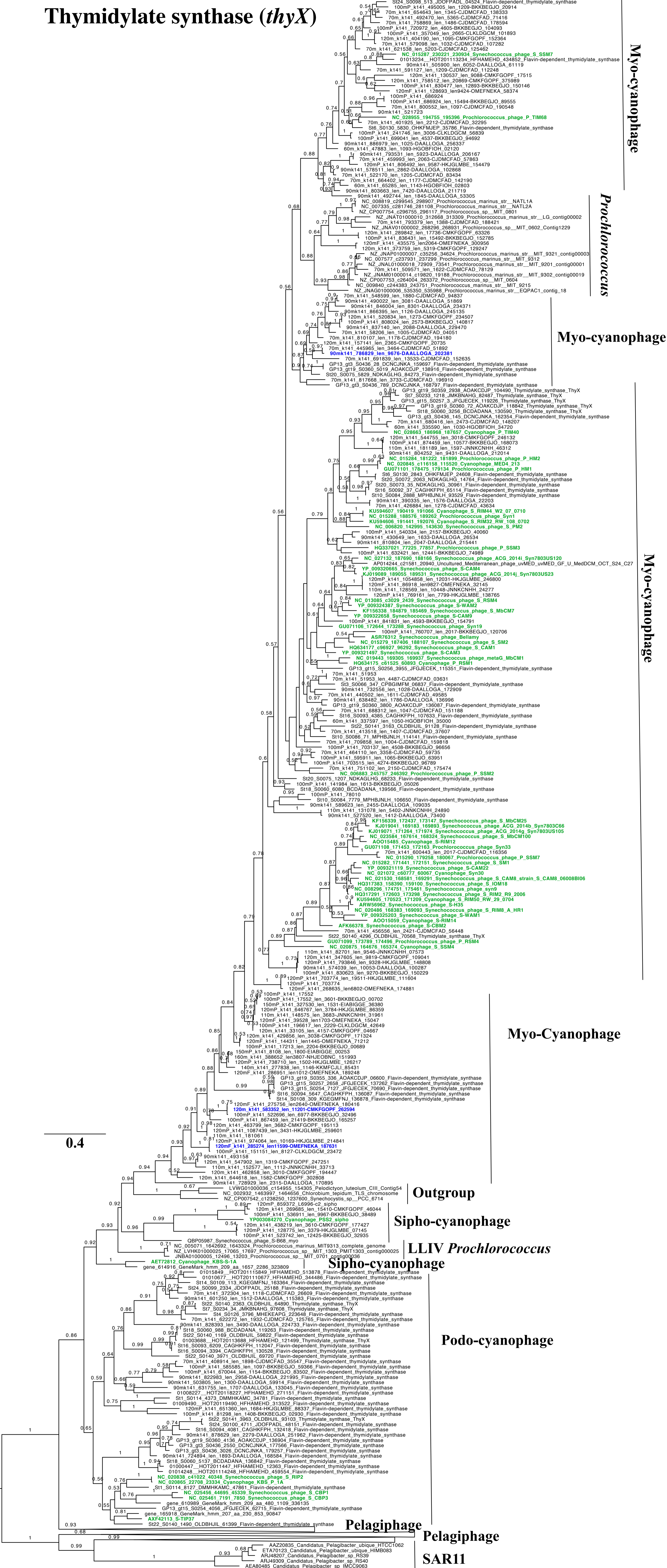
Sipho-cyanophage

Podo-cyanophage

Pelagiphage

Pelagiphage

SAR11



0.4

AA220835 Candidatus Pelagibacter ubique HTCC1062

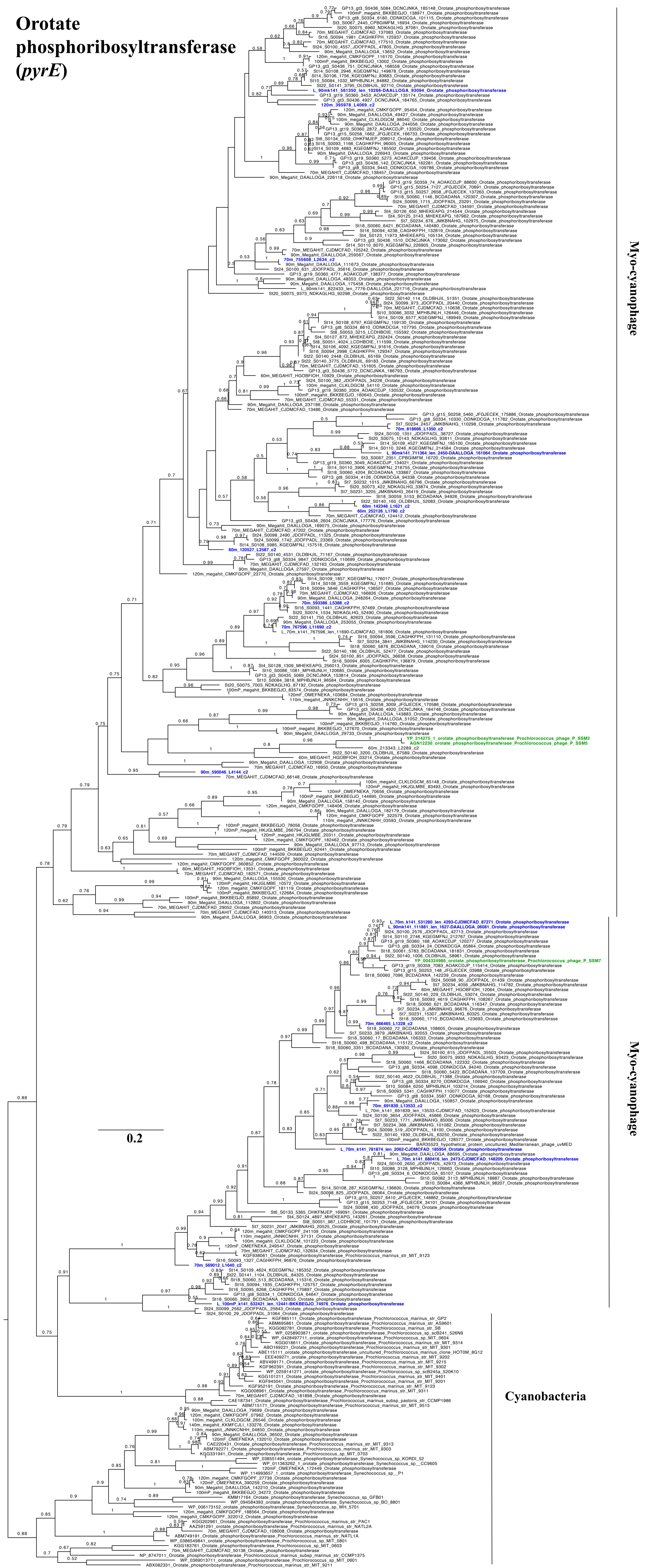
ETA70123 Candidatus Pelagibacter ubique HMB083

ARJ49309 Candidatus Pelagibacter sp. RS4

ARJ49309 Candidatus Pelagibacter sp. RS4

AE80485 Candidatus Pelagibacter sp. IMCC9063

Orotate phosphoribosyltransferase (*pyrE*)

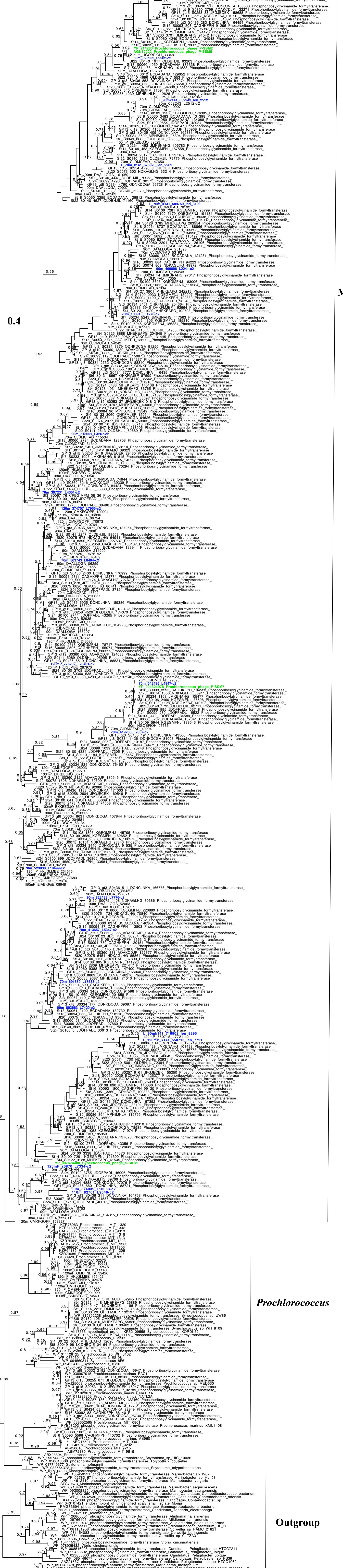


Mycobacterium

Mycobacterium

Cyanobacteria

Phosphoribosyl-glycinamide formyltransferase (purN)



Myo-cyanophage

Prochlorococcus

Outgroup

0.4

0.86

0.87

0.88

0.89

0.9

0.91

0.92

0.93

0.94

0.95

0.96

0.97

0.98

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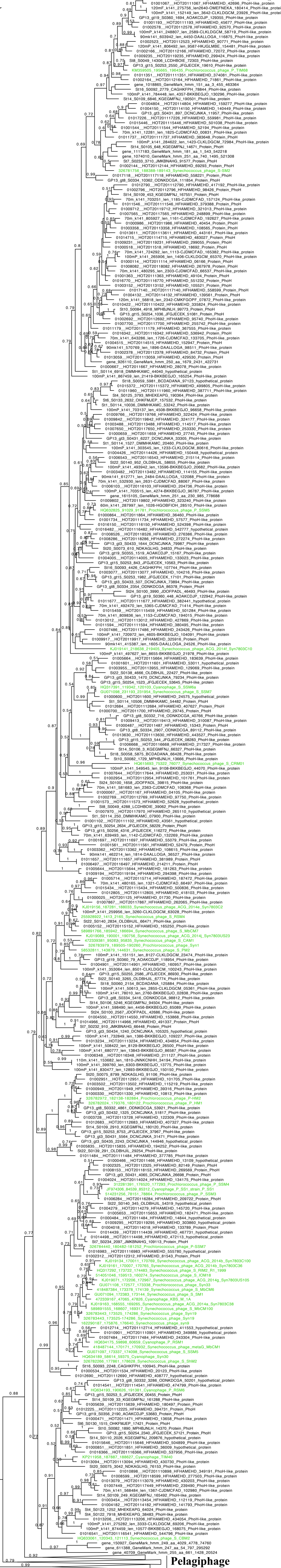
1.0

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1.0

phoH



Myo-cyanophage

Pelagiphage

Bacteria

Eukaryotic Algae Virus

Other Virus

0.3

0.91

0.94

0.97

0.98

0.91

0.8

0.86

0.89

0.91

0.97

0.91