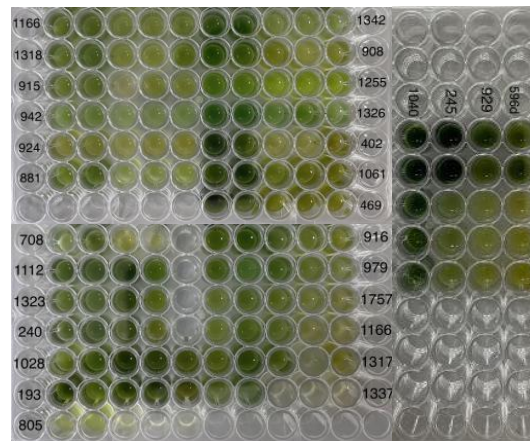
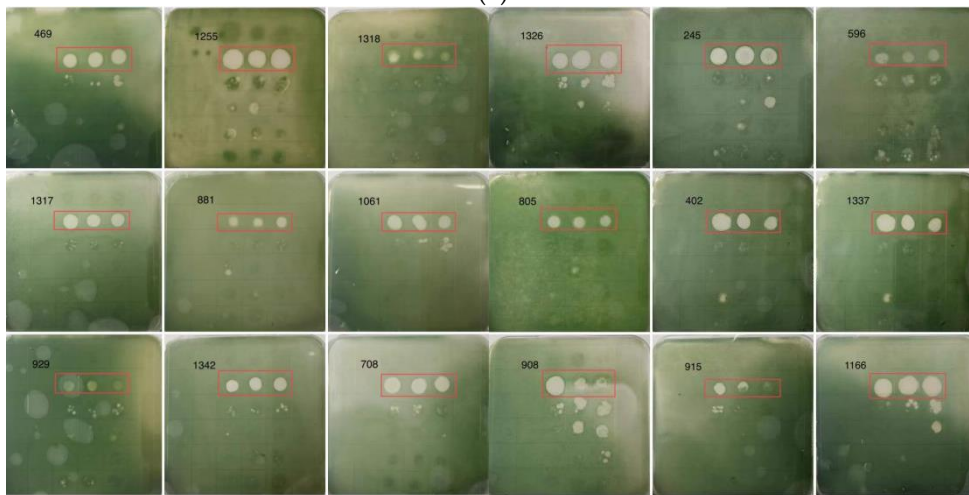


## Supplementary Figures



(a)



(b)

**Figure S1: (a) Phenotypic photographs of cyanobacterial cultures within the host range experiments. (b) Phage spots formed by the cyanophage MinS1 on susceptible cyanobacteria strains.**

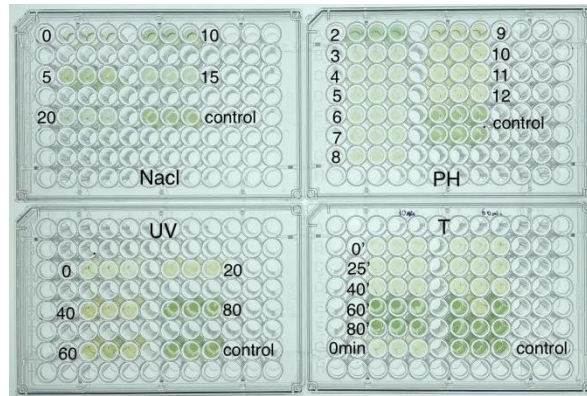


Figure S2: Status of host algae infected by MinS1 treated under different conditions.

### Supplementary Tables

**Table S1: MinS1 classification, general features, and genome sequencing information.**

Item	Description
Classification	Order Caudovirales, Family Siphoviridae
Particle shape	isometric hexagon head with a long non-contractile tail
Submitted to GenBank	MZ923504
Investigation type	Virus
Geographic location	Mayang Stream, Fujian, China
Altitude, latitude and longitude	13m, 24°32'37.81" N, 117°46'26.40" E
Depth	0.2m
Collection date and time	November 23, 2020 at 10:17 am
Temperature	20°C
Environment (material)	Freshwater
Sequencing method	Illumina Miseq
Number of contigs	1
Assembly method	SPAdes 3.13.0
Finishing quality	Finish (complete)