**SUPPLEMENTARY**

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**Figure S1. The Sanger sequence of the PCR product from ∆*rpoS* strain confirms kanamycin cassette removal.** The parts of the nucleotide sequence highlighted in blue are regions that matched up with the WT *rpoS* gene. The sequence highlighted in yellow is the FRT (FLP recognition target) sequence and the purple regions are the flanking region of FRT. Together with the flanking region, the FRT creates a scar sequence. Based on the sequence alignment, the kanamycin cassette was confirmed to be removed, leaving a non-functional *rpoS* gene.

**Table S1. The T7 phage stock concentration is determined using double agar overlay and plaque count.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Dilution Plated**  | **Replicate**  | **Volume of Dilution Plated** | **Plaque count** | **Number of plaque/mL diluted T7 solution** | **Average Number of T7 phage/mL stock solution** |
| 10-6 | 1 | 0.1 mL | TNTC | N/A | → $(1.0 ×10^{10})+(1.3 ×10^{10})+(1.3 ×10^{10})+(1.0 ×10^{12}) =1.036×10^{12}$→ $(1.036×10^{12})/4 = 2.59×10^{11} $plaque/mL |
| 2 | TNTC | N/A |
| 3 | TNTC | N/A |
| 10-8 | 1 | 10 | 1.0 x 1010 |
| 2 | 13 | 1.3 x 1010 |
| 3 | 13 | 1.3 x 1010 |
| 10-10 | 1 | 1 | 1.0 x 1012 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 10-12 | 1 | 0 | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |

**Table S2. The dilution scheme for various different T7 phage concentration used for each treatment in the lysis curve assay**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [T7 phage]$(T7 phage/mL)$ | $$3.6×10^{7}$$ | $$7.2×10^{7}$$ | $$2.16×10^{8}$$ | $$4.32×10^{8}$$ |
| Amount of diluted T7 phage solution (µL) | 10 | 20 | 100 | 200 |
| Amount of LB media (µL) | 710 | 700 | 1100 | 1000 |

\*\* Perform 1:100-fold dilution on the original T7 phage stock solution before proceeding to dilute the T7 phage using this scheme

**Table S3. The loading scheme for samples in all treatments onto 96-well plate for the phage lysis curve**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| B |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| C |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| D |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| E |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| F |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| G |  |  |  |  | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 | 0.05 | 0.1 |
| H | LB | LB | LB | LB | LB |  |  |  |  |  |  |  |

\*\*\* The types of cells loaded into each well is labelled using colours of the well

\*\*\* 0.05 and 0.1 is indicating the MOI of the T7 phage to cells in the wells

\*\*\* LB means that the well is loaded with sterile LB and is used as blank

Red = WT in exponential phase

Blue =WT in stationary phase

Green = ∆*rpoS* strain in exponential phase

Yellow = ∆*rpoS* strain in stationary phase

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**Figure S2. Up-regulation of *rpoS* in the stationary phase results in delay in T7 phage lysis.** The T7 phage lysis growth curve shows that stationary phase cells have delay in T7 phage lysis compared to the cells in exponential phase. The *rpoS* knockout strain also shows an impairment in delay lysis, which indicate the importance of RpoS in the cells to delay in T7 phage-induced lysis.