Supplementary Material

Table 1S: List of pair strains with their EOP to Sb-1 and their MIC values.

| Isolate | Phenotype | Strain Type | Sb-1 | VAN² | DAP | CPT |
|---------|-----------|-------------|------|------|-----|-----|
| D712    | DNS-VISA  | USA100/ST5  | 1    | 4    | 4   | 0.5 |
| D592    | hVISA     | USA100/ST5  | 0.869855 | 2 | 0.5 | 2 |
| 8015    | DNS-VISA  | USA100/ST5  | 0.946242 | 4 | 4   | 1 |
| 8014    | MRSA      | USA100/ST5  | 0.893186 | 4 | 0.5 | 1 |
| 684     | DNS       | USA100/ST5  | 1.206012 | 2 | 4.2 | 0.5 |
| 675     | MRSA      | USA100/ST5  | 1.174767 | 0.5 | <0.13 | 0.5 |
| JH9     | VISA      | USA100/ST5  | 1.015945 | 8 | 1   | 0.5 |
| JH1     | VSSA      | USA100/ST5  | 1.028677 | 1 | 0.25 | 0.25 |
| 306     | DNS-VISA  | USA300/ST8  | 1.039276 | 4 | 4   | 0.5 |
| 305     | MRSA      | USA300/ST8  | 1.015945 | 1 | 0.25 | 0.5 |
| R6913   | VISA      | USA100/ST5  | 1.02263 | 8 | 4   | 1 |
| R6911   | hVISA     | USA100/ST5  | 1.039276 | 2 | 2   | 1 |
Table 2S. Experimental design for various propagation method

| Experiment details (CFU and PFU are at time of phage addition) | MOI/phage quantity | Average PFU/mL |
|---------------------------------------------------------------|--------------------|---------------|
| Planktonic time kill (10^6 CFU/mL+10^5 PFU/mL)^1             | 0.1                | 4*10^6        |
| Liquid (phage and bacteria, 10^7 CFU/mL+10^6 PFU/mL)^2        | 0.1                | 1.4*10^8      |
| Liquid culture (phage and bacteria, 10^7 CFU/mL+10^7 PFU/mL)^3| 1                  | 3.4*10^6      |
| GSTSB (after biofilms are formed on the beads, 10^7 of bacteria in biofilm CFU/mL+10^5 PFU/mL)^4 | 0.1                | 1.2*10^7      |
| GSTSB (after biofilms are formed on the beads, 10^7 of bacteria in biofilm CFU/mL+10^7 PFU/mL)^5 | 1                  | 9*10^5        |
| Biofilm-MHB After biofilms are formed on the beads (24 h culture) and GSTSB is replaced with MHB (10^7 of bacteria in biofilm CFU/mL+10^8 PFU/mL)^6 | 0.1                | 5.2*10^10     |

^1TKA plate well: 1.98 mL MHB + 20 µL (MOI 0.1), incubate for 24 h in shaker incubator, aspirate 1 mL from well for phage propagation.

^2Overnight liquid culture: 1 colony D712 into 3 mL HIB, incubate for 16-18 hours in shaker incubator, add 100 µL of overnight culture and 20 µL phage (MOI 0.1) to 9.88 mL MHB broth and incubate for 24 hours in shaker incubator, aspirate 1 mL for phage propagation.

^3Overnight liquid culture: 1 colony D712 into 3 mL HIB, incubate for 16-18 hours in shaker incubator, add 100 µL of overnight culture and 20 µL phage (MOI 1) to 9.88 mL MHB broth and incubate, for 24 hours in shaker incubator, aspirate 1 mL for phage.

^4TKA plate well: 1.98 mL TSB, incubate for 24 h, add 20 µL phage (MOI 0.1), incubate for 24 h in shaker incubator, remove 1 mL from well for phage propagation.

^5TKA plate well: 1.80 mL TSB, incubate for 24 h, add 200 µL phage (MOI 1), incubate for 24 h in shaker incubator, remove 1 mL from well for phage propagation.

^6TKA plate well: 2 mL TSB, incubate for 24 h, aspirate TSB and replace with 1.98 MHB, add 20 µL phage (MOI 0.1), incubate x 24 hours in shaker incubator, aspirate 1 mL from well for phage propagation.

^7Round HiB plate: add 100 µL D712 overnight culture to 3 mL HiB overlay and pour over HiB plate, allow to dry for 10 minutes. Pour 400 µL phage (10^8 PFU/mL) over plate, incubate for 24 h, scrape lawn with T loop and place in 3 mL PBS buffer. Centrifuge for 2 min, remove and filter supernatant for phage propagation.

Abbreviations: GSTSB, glucose-supplemented tryptic soy broth; MHB, Mueller-Hinton broth