**Table S1. List of strains used in this study.**

| Strain | Description | Designation | Source |
|---|---|---|---|
| USA300 LAC | *S. aureus* USA300 Strain LAC (AH-1263). Plasmid cured. | AH-LAC (WT) | (1) |
| DH5α | *E. coli* strain for recombinant plasmids | DH5α | (2) |
| RN4220 | Restriction-deficient *S. aureus* | RN4220 | (3) |
| RN6390 | *S. aureus* 8325 derivative | RN6390 | (4, 5) |
| Newman | Osteomyelitis isolate - 1952 | Newman | (6) |
| COL | Early MRSA isolate | COL | (7) |
| BK2395 | USA500 clinical Isolate | USA500 | (8, 9) |
| RN9011 | RN4220 + pRN7203 expressing SaPI integrase | RN9011 | (10) |
| FA-S1176 | AH-LAC Δ*lipL* | Δ*lipL* | (11) |
| FA-S1178 | AH-LAC Δ*lipA* Δ*lplA1* Δ*lplA2* | Δ*lipA* Δ*lplA1* Δ*lplA2* | (12) |
| FA-S973 | AH-LAC Δ*geh*::*kan* | Δ*geh* | (13) |
| FA-S2192 | AH-LAC Δ*bmfBB*::*kan* | Δ*bmfBB*::*kan* | This work |
| FA-S2143 | AH-LAC Δ*lipL* Δ*geh*::*kan* | Δ*lipL* Δ*geh* | This work |
| FA-S2167 | AH-LAC Δ*lipL* Δ*geh*::*kan* containing pJC1112-*geh* | Δ*lipL* Δ*geh* + *geh* | This work |
| FA-S2304 | AH-LAC Δ*bmfBB* Δ*pdhC*::*kan* | Δ*bmfBB* Δ*pdhC* | This work |
| FA-S2230 | AH-LAC Δ*fakB1* | Δ*fakB1* | This work |
| FA-S2232 | AH-LAC Δ*fakB2* | Δ*fakB2* | This work |
| FA-S2242 | AH-LAC Δ*bmfBB*::*kan* Δ*fakB1* | Δ*bmfBB*::*kan* Δ*fakB1* | This work |
| FA-S2244 | AH-LAC Δ*bmfBB*::*kan* Δ*fakB2* | Δ*bmfBB*::*kan* Δ*fakB2* | This work |
| FA-S2260 | AH-LAC Δ*bmfBB*::*kan* Δ*fakB2* containing pJC1111-*fakB2* | Δ*bmfBB*::*kan* Δ*fakB2* + *fakB2* | This work |
| FA-S2351 | RN4220 Δ*bmfBB*::*kan* | RN4220 Δ*bmfBB* | This work |
| FA-S2358 | RN6390 Δ*bmfBB*::*kan* | RN6390 Δ*bmfBB* | This work |
| FA-S2354 | Newman Δ*bmfBB*::*kan* (*geh* disrupted) | Newman Δ*bmfBB* | This work |
| FA-S2355 | COL Δ*bmfBB*::*kan* (*geh* disrupted) | COL Δ*bmfBB* | This work |
| FA-S2356 | BK2395 Δ*bmfBB*::*kan* | USA500 Δ*bmfBB* | This work |

**Table S2. List of oligonucleotides used in this study.**

| Name | Sequence |
|---|---|
| bmfBBSOE1-**KpnI** | CCC**GGTACC**GCTAAAGGGCTTTTATTATCA |
| bmfBBSOE2-**KasI** | ATAGATGCATCTATGTTATCA**GGCGCC**ACTTTCCCTCCCTAGAATT |
| bmfBBSOE3-**KasI** | AATTCTAGGGAGGGAAAGT**GGCGCC**TGATAACATAGATGCATCTAT |
| bmfBBSOE4-**SacI** | CCC**GAGCTC**GCTGGTCTGGCGATACCA |
| kanF-**KasI** | TCCC**GGCGCC**CTCGACGATAAACCCAGCGAAC |
| kanR-**KasI** | TCCC**GGCGCC**CTTTTTAGACATCTAAATCTAGGTAC |
| fakB1SOE1-**KpnI** | ATAT**GGTACC**AGCACCGCTATAGGCG |
| fakB1SOE2 | CGAGAGATAATTTCCAATTACAATATAGACTCTTTTATTAAAATTTTATAA AGTCGTCCTCCTAAAATATACTCATAGC |
| fakB1SOE3 | GCTATGAGTATATTTTAGGAGGACGACTTTATAAAATTTTAATAAAAGAG TCTATATTGTAATTGGAAATTATCTCTCG |
| fakB1SOE4-**SacI** | ATAT**GAGCTC**TGTCTCTTTCTAATGGCTCGAAC |
| fakB2SOE1-**KpnI** | ATAT**GGTACC**ATAATTATGACTTTATCCATTCTAGTTGCACATG |
| fakB2SOE2 | TGAAATGGAAGTAATTAACACTGAAAAGATTAAATGGTCGTTTTCCCCCT TATTTTTTAC |
| fakB2SOE3 | GTAAAAAATAAGGGGGAAAACGACCATTTAATCTTTTCAGTGTTAATTAC TTCCATTTCA |
| fakB2SOE4-**SacI** | ATAT**GAGCTC**GATAGAAATTTTTATATGGTTTAATAGGTGTAATCACTGG |
| UniCompSOE1-**PstI** | ATAT**CTGCAG**ATCCCATTATGCTTTGGCA |
| fakB2CompSOE2 | GAGTCTGTTACTATAATCTGTTTTGTCATGGGTTTCACTCTCCTTCTAC |
| fakB2CompSOE3 | GTAGAAGGAGAGTGAAACCCATGACAAAACAGATTATAGTAACAGACTC |
| fakB2CompSOE4-**SacI** | ATAT**GAGCTC**GATGTAAATGGTTTAACCATGCAC |

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