Supplementary Table S8. *Staphylococcus aureus* SarA locus proteins amino acid sequence: localization of amino acid substitutions and deletions.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Strain | Sar A | | | Sar R | | | Sar S (SarH1) | | | | SarT | | | |
| Protein accession number | Aa1 | Per.  Ident  (%) | Protein accession number | Aa1 | Per.  Ident  (%) | Protein accession number | Aa1 | Per. Ident  (%) | Aa sub-stitu-tions | Protein accession number | Aa1 | Per.Ident  (%) | Aa sub-stitu-tions |
| NCTC  8325 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | [WP\_000876758.1](https://www.ncbi.nlm.nih.gov/protein/WP_000876756.1) | 250 | 100 | no | SQF74841.1 | 118 | 100 | no |
| Newman | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | [WP\_000876758.1](https://www.ncbi.nlm.nih.gov/protein/WP_000876756.1) | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| Col | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | AAW38739.1 | 250 | 99.20 | **D221N**  **D243N** | WP\_000998869.1 | 118 | 100 | no |
| FPR3757 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | [WP\_000876758.1](https://www.ncbi.nlm.nih.gov/protein/WP_000876756.1) | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| N315 | BAB41805.1 | 124 | 100 | BAB43387.1 | 115 | 100 | [BAB41327.1](https://www.ncbi.nlm.nih.gov/protein/BAB41327.1) | 250 | 99.20 | **D221N**  **D243N** | BAB43589.1 | 119 | 99,15 | **D75E** |
| MW2 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | [WP\_000876758.1](https://www.ncbi.nlm.nih.gov/protein/WP_000876756.1) | 250 | 100 | no | BAB58660.1 | 119 | 99,15 | **D75E** |
| 55/2053 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | WP\_000876758.1 | 250 | 100 | no | n/d | - | - | - |
| MRSA252 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | [WP\_000876758.1](https://www.ncbi.nlm.nih.gov/protein/WP_000876756.1) | 250 | 100 | no | n/d | - | - | - |
| T0131 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | AEB87224.1 | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| TW20 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | WP\_000876758.1 | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| JKD6008 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | WP\_000876758.1 | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| Z172 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | WP\_000876758.1 | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| Bmb9393 | WP\_001018677.1 | 124 | 100 | [WP\_000036076.1](https://www.ncbi.nlm.nih.gov/protein/WP_000036076.1) | 115 | 100 | WP\_000876758.1 | 250 | 100 | no | WP\_000998869.1 | 118 | 100 | no |
| V521 | n/d |  |  | AND37114.1 | 115 | 100 | AND34701.1 | 250 | 100 | no | n/d |  |  |  |
| Be62 | ALY22452.1 | 124 | 100 | ALY24202.1 | 115 | 100 | ALY21934.1 | 250 | 100 | no | ALY24402.1 | 118 | 100 | no |
| SA943 | RAM46821.1 | 124 | 100 | RAM46294.1 | 115 | 100 | RAM47915.1 | 250 | 100 | no | RAM47202.1 | 118 | 100 | no |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Strain | Sar X  (HTH-type transcriptional regulator SarX) | Aa1 | Sar Z  (MarR family transcriptional regulator) | Aa1 | Aa sub-stitu-tions | SarV  (MarR family transcriptional regulator**)** | Aa1 | SarU (sarH2) (HTH-type transcriptional regulator SarU) | Aa1 | Repressor of toxin Rot  (MarR family transcriptional regulator) | Aa1 | Query  Cover  (%) | Per  Ident  (%) |
| NCTC 8325 | n/d | - | WP\_000289213.1 | 148 | * no | * [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | WP\_000757543.1 | 133 | 100 | 100 |
| Newman | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | * no | * [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | n/d | - | WP\_000757543.1 | 133 | 100 | 100 |
| Col | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | * no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | n/d | - | Q5HF12.1 | 1665 | 80 | 90.25 |
| FPR3757 | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | * no | * [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386366.1 | 2472 | WP\_000757543.1 | 133 | 100 | 100 |
| N315 | WP\_001090985.1 | 119 | BAB43476.1  WP\_000289215.1 | 148\* | * **K147R** | * BAB43359.1 | 116 | WP\_000386367.1 | 247 | BAB42851.1  WP\_000757543.1 | 1533  133 | 86  100 | 100  100 |
| MW2 | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | BAB95570.1 WP\_000757543.1 | 1533  133 | 86  100 | 100  100 |
| 55/2053 | n/d | - | n/d | - | - | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | n/d | - | EEV03715.1 | 1664 | 80 | 100 |
| MRSA252 | n/d | - | n/d | - | - | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | n/d | - | Q6GFT9.1 WP\_000757543.1 | 1664  133 | 80  100 | 100  100 |
| T0131 | WP\_001090985.1 | 119 | AEB89486.1 | 148 | no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | AEB88851.1 WP\_000757543.1 | 133 | 100 | 100 |
| TW20 | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | WP\_000757543.1 | 133 | 100 | 100 |
| JKD6008 | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | WP\_000757543.1 | 133 | 100 | 100 |
| Z172 | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | WP\_000757543.1 | 133 | 100 | 100 |
| Bmb9393 | WP\_001090985.1 | 119 | WP\_000289213.1 | 148 | no | [WP\_000066900.1](https://www.ncbi.nlm.nih.gov/protein/WP_000066900.1) | 116 | WP\_000386367.1 | 247 | WP\_000757543.1 | 133 | 100 | 100 |
| V521 | AND37581.1 | 119 | n/d | - | - | AND37084.1 | 116 | AND37117.1 | 247 | n/d | - | - | - |
| Be62 | ALY22503.1 | 119 | ALY24649.1 | 148 | no | ALY24173.1 | 116 | ALY24403.1 | 247 | n/d | - | - | - |
| SA943 | RAM47004.1 | 119 | ? | - | - | RAM46266.1 | 116 | RAM46810.1 | 247 | RAM45395.1 | 133 | 100 | 100 |

Supplementary Table S8. *Staphylococcus aureus* SarA locus proteins amino acid sequence: localization of amino acid substitutions and deletions (continued).

Note: 1- Aa1- number of amino acids; 2- identities - 99,6; aa substitution **L211H**; 3 – BAB42851.1 and BAB95570.1 are identical and have 20 amino acids additionally at the N-terminus, the remaining 133 amino acids are common with WP\_000757543.1; 4 Q6GFT9.1 and EEV03715.1 are identical and have 30 amino acids additionally at the N-terminus, the remaining 133 amino acids are common with WP\_000757543.1; Q5HF12.1 is more different, has 30 amino acids additionally at the N-terminus and amino acid substitution **S51F.** The localization of this substitution is indicated when aligned with the protein WP\_000757543.1 in reference genome NCTC 8325.