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| **Supplementary Table 1. Bacterial strains, plasmids and primers used in this study.** | | |
| **Item** | **Characteristic and/or sequence** | **Source** |
| **Strain** | |  |
| ***S. suis*** | |  |
| SC19 | Strain of *S. suis* Serovar 2, the wild-type | [32] |
| Δ*arcB* | *S. suis* SC19 *arcB* deleted mutant | SC19-derived mutant |
| CΔ*arcB* | *S. suis* SC19 *arcB* complementary strain | Δ*arcB*-derived complement |
| Δ*ilvC* | *S. suis* SC19 *ilvC* deleted mutant | SC19-derived mutant |
| CΔ*ilvC* | *S. suis* SC19 *ilvC* complementary strain | Δ*ilvC*-derived complement |
| ***E. coli*** | |  |
| DH5α | F-, *endA1*, *glnV44*, *thi-1*, *recA1*, *relA1*, *gyrA96*, *deoR*, *nupG*, Φ80d*lacZ*ΔM15, Δ(*lacZYA-argF*) U169, *hsdR17*(r K-, m K+), λ- | TransGen Biotech |
| **Plasmid** | |  |
| pSET4s | thermosensitive vector: *spc*, *orfC*, *repAts*, *lacZ’*, Spcr | [51] |
| pSET-*arcB*UD | pSET4s carrying the upstream and downstream regions of *arcB* for construction of Δ*arcB* | Constructed from pSET4s |
| pSET-*ilvC*UD | pSET4s carrying the upstream and downstream regions of *ilvC* for construction of Δ*ilvC* | Constructed from pSET4s |
| pSET-C-*arcB*UD | pSET4s carrying the upstream and downstream regions of *arcB* for construction of CΔ*arcB* | Constructed from pSET4s |
| pSET-C-*ilvC*UD | pSET4s carrying the upstream and downstream regions of *ilvC* for construction of CΔ*ilvC* | Constructed from pSET4s |
| **Primers** |  |  |
| **For amplification of upstream and downstream sequences of the Δ*arcB*** | | |
| *arcB*-U-F | CTTGCATGCCTGCAGGTCGACTGGTGGAAAAGTTCCATTGGTT | This study |
| *arcB*-U-R | ATTAGATAGTTAATTTGTCTCTTCTCCTAATGTTTAAATAAAT | This study |
| *arcB*-D-F | TTAGGAGAAGAGACAAATTAACTATCTAATAACGCATCGCAAC | This study |
| *arcB*-D-R | AAAACGACGGCCAGTGAATTCCAGAGTACATCAATAAATAGAAGCCTCA | This study |
| **For identification of the Δ*arcB* andCΔ*arcB*** | | |
| 3130-F | AGCCTCTATCTATGTCCGCTAT | This study |
| 3130-R | GCACCATTCTCCATCTTCTTGA | This study |
| *arcC*-F | GTGGCAATGCCATTTTATCGTC | This study |
| *arcC*-R | ATAGCTGCTTCAACTTTCGGTA | This study |
| *arcB*-2-F | GCAGGCTTTCATCAGTTGAATA | This study |
| *arcB*-2-R | GCGTGATAATAAGGTCATCCCC | This study |
| *arcB*-1-F | AGGTAGACATTTCCTTGCAGAG | This study |
| *arcB*-1-R | AGTAAACCAGAGTCAAGCCTTC | This study |
| **For amplification of upstream and downstream sequences of the Δ*ilvC*** | | |
| *ilvC*-U-F | AAAACGACGGCCAGTGAATTCAGAAGTAATCATCTTTGTTGGTGATGG | This study |
| *ilvC*-U-R | CCTATCCACCATGATAGTGTAATTTTTTCTCTTTTCTATTTTTATTTGTAGTT | This study |
| *ilvC*-D-F | ACACTATCATGGTGGATAGGAGGAT | This study |
| *ilvC*-D-R | CAGGTCGACTCTAGAGGATCCCGACTTACCGACTTTCTGTACCG | This study |
| **For identification of the Δ*ilvC* andCΔ*ilvC*** | | |
| *ilvN*-F | TGCGAAATTCATCTGGTGTTC | This study |
| *ilvN*-R | TAAGGCTGAATCACACGCAG | This study |
| *ilvA*-F | TATGCCCATTACAACTCCGC | This study |
| *ilvA*-R | GTAGATAAGCGCACGTTCCT | This study |
| *ilvC*-2-F | CAGGTGATGGAGATAAGATTGACG | This study |
| *ilvC*-2-R | AAAAGAGCCGGAAAAAACCAG | This study |
| *ilvC*-1-F | GCGTGCAGGTAAGTCATTTGAC | This study |
| *ilvC*-1-R | AGACAAGGTCAACGATGAGTTTCA | This study |
| **For identification of *S. suis*** | | |
| *gdh*-F | GCAGCGTATTCTGTCAAACG | This study |
| *gdh*-R | CCATGGACAGATAAAGATGG | This study |
|  |  |  |
|  |  |  |
| **For qRT-PCR** |  |  |
| 16srRNA-F  (RS00090) | GGTGCTTGCACTAGACGGATGA | This study |
| 16srRNA-R | ACGCAGGTCCATCTCATAGTGA | This study |
| RS06805-F | TGACAAAACACATCGCCCTTGC | This study |
| RS06805-R | GGGAGACAGCGAGTAGATACCT | This study |
| RS06680-F | TTCAAGGTATGACCTGCGCTTC | This study |
| RS06680-R | GCCTTTTCAACTGCCTGACGAA | This study |
| RS09530-F | GAAGTTAAGTGTCGGTGTGGCA | This study |
| RS09530-R | TCTCTACCGCAGAATTTTGCCT | This study |
| RS06770-F | CGCCAGCAACAACTGGTATGTT | This study |
| RS06770-R | CCGCGCAATACTGATAAGCGTT | This study |
| RS10110-F | CAGATGCAGTGTTTGAGCTTCG | This study |
| RS10110-R | ACTATAACCTGCTGGCGCACTA | This study |
| RS10105-F | TAATTCTGCCGTGGAAGTTGCG | This study |
| RS10105-R | GCTAGAGTGAATGTTGCACCGT | This study |
| RS10095-F | ATCATTGCCCTCGCTTTCACTC | This study |
| RS10095-R | AAGAAACGGGTTCTTCTGAAGC | This study |
| RS09190-F | AATTTGCCTACTCCTGCGTGAC | This study |
| RS09190-R | CATCGATGTTTTTCGGTGCGTC | This study |
| RS01200-F | CCTGTTGGACCAGTTGGTCATT | This study |
| RS01200-R | ACTAAGAGGGTGGACTACGTCT | This study |
| RS01165-F | TTTGAAAGCAGTTCGTGACGGT | This study |
| RS01165-R | CCCCAACAAACCAATTTGCTCT | This study |
| RS03585-F | AATCGGTGAAGTGTTGGGAACC | This study |
| RS03585-R | GGGCAGTTCCCAATAAACCACT | This study |
| RS09420-F | TACTTGGAAACGGTGTGGTTGC | This study |
| RS09420-R | CATTGCGATAGTGACAGCTGGA | This study |
| RS00995-F | ATGTGTTGACGGTCTTGCCTAA | This study |
| RS00995-R | AGGATTGGCATATTGGAGCGAA | This study |
| RS00985-F | AATGAGGCAATTTGGGGATGGG | This study |
| RS00985-R | ATGCGTTGGTAATTTGCCAAGC | This study |
| RS05070-F | ATCTTTGGCAAGGAGAACCGAC | This study |
| RS05070-R | TTCTCACAAGTCCATGCCTTGG | This study |
| RS01045-F | TTTGTGGGGATCCTCCACTTCA | This study |
| RS01045-R | AAAGTCGATGTTTGTTCCGGTC | This study |
| *ACTB*-F  (Gene ID: 11461) | GGCTGTATTCCCCTCCATCG | This study |
| *ACTB*-R | CCAGTTGGTAACAATGCCATGT | This study |
| *HIF1A*-F  (Gene ID: 15251) | ACCTTCATCGGAAACTCCAAAG | This study |
| *HIF1A*-R | CTGTTAGGCTGGGAAAAGTTAGG | This study |

Spcr, spectinomycin resistant.