

| Gene/Symbol |         | Primer Sequence (5'–3')                         | Purpose of use          | Source     |
|-------------|---------|---|-------------------------|------------|
| SPD1506     | Forward | TACAGACAAGCCTGACGATAGC                          | Mutation                | This study |
|             | Reverse | TGCATTGATTACATAGATATGC                          | Mutation                | This study |
| SPD0534     | Forward | GTATCAGGGCACGGAAATGT                            | Mutation                | This study |
|             | Reverse | CCACTCTCTTACTGCGAGCAT                           | Mutation                | This study |
| SP1408      | Forward | CGTCACCAAGAGTGTTGGAA                            | Mutation                | This study |
|             | Reverse | CCGGTTTTGAAAGTCGTCAT                            | Mutation                | This study |
| SP1052      | Forward | GATAGCGTTGAATACACCAAAGATT                       | Mutation                | This study |
|             | Reverse | GAGTTCCTCATCCGCTATATATGG                        | Mutation                | This study |
| MP127 *     | Reverse | CCGGGGACTTATCAGCCAACC                           | Transposon specific     | [1]        |
| MP128 *     | Forward | TACTAGCGACGCCATCTATGTG                          | Transposon specific     | [1]        |
| SPD1506p/F  | Forward | <b>**TACTTCCAATCCATGAAAAATCCAGCTTTGCTA</b>      | Cloning                 | This study |
| SPD1506p/R  | Reverse | <b>**TATCCACCTTACTGTCATTTTAGATATTTAAAAGGAAT</b> | Cloning                 | This study |
| SPD0534p/F  | Forward | <b>**TACTTCCAATCCATGGCAGTGATGAAAATCGAGTA</b>    | Cloning                 | This study |
| SPD0534p/R  | Reverse | <b>**TATCCACCTTACTGTCAAGTCAGTCTCTCTTCTAATT</b>  | Cloning                 | This study |
| SPD0534C/F  | Forward | <b>***CATGCCATGGTCGTTGAAATAAACAGAGAG</b>        | Genetic complementation | This study |

|                  |         |                                    |                         |            |
|------------------|---------|------------------------------------|-------------------------|------------|
| SPD0534C/R       | Reverse | ***ACGGGATCCCTAAGTCAGTCTCTCTTCTAAT | Genetic complementation | This study |
| SPD1506C/F       | Forward | ***CATGGTATACGCTTTCTCTAAGGAAAACCTT | Genetic complementation | This study |
| SPD1506C/R       | Reverse | ***ACGGGATCCTTATTTTAGATATTTAAAAG   | Genetic complementation | This study |
| malF2            | Forward | GTCAACTGTAGTGGGTTGAAGTCAGC         | pCEP sepcific           | [2]        |
| pCEPR2           | Reverse | CCTTTTCCCGTTCCACATCATAGGTG         | pCEP sepcific           | [2]        |
| SPD0534S-<br>A/F | Forward | ****CGCTGGTCTTCTATGGGAGGCT         | Sequencing              | This study |
| SPD0534S-<br>A/R | Reverse | ****AGCCTCCCATAGCAAGACCAGCG        | Sequencing              | This study |
| SPD1506S-<br>A/F | Forward | ****CTATGGTGCCGCACAAGGAGGGG        | Sequencing              | This study |
| SPD1506S-<br>A/R | Reverse | ****CCCCTCCTTGTGCGGCACCATAG        | Sequencing              | This study |
| SPD1239-<br>RT/F | Forward | GAAACGGAAGCCTTGAG CTA              | Gene expression         | This study |
| SPD1239-<br>RT/R | Reverse | CGGTCCATGAGAACAAA GGT              | Gene expression         | This study |

|              |         |                          |                 |            |
|--------------|---------|--------------------------|-----------------|------------|
| EstA-RT/F    | Forward | GGCTTAAGCGGACCAAT GTA    | Gene expression | This study |
| EstA-RT/R    | Reverse | CAGAACCTGTGGCAATTC CT    | Gene expression | This study |
| SPD0932-RT/F | Forward | AGTGCAGCAGATAAATTG CAT   | Gene expression | This study |
| SPD0932-RT/R | Reverse | AGTGCAGCAGATAAATTG CAT   | Gene expression | This study |
| Axe-RT/F     | Forward | GGGATGGGGAAGTGAAA AAT    | Gene expression | This study |
| Axe-RT/R     | Reverse | ATGCGTGCATAGACCTTT CC    | Gene expression | This study |
| NanA-RT/F    | Forward | GTGAAAATGGGATGGTCCAC     | Gene expression | This study |
| NanA-RT/R    | Reverse | CACTTTCGCTTCGGTAGG AG    | Gene expression | This study |
| gyrB-F       | Forward | TGATGACCGATGCCGATG       | Gene expression | This study |
| gyrB-R       | Reverse | TTGGGCAATATAAACATAACCAGC | Gene expression | This study |

**Supporting references:**

1. Terra VS, Homer KA, Rao SG, Andrew PW, Yesilkaya H. Characterization of novel beta-galactosidase activity that contributes to glycoprotein degradation and virulence in *Streptococcus pneumoniae*. *Infect Immun*. 2010;78(1):348-57.
2. Guiral S, Henard V, Laaberki MH, Granadel C, Prudhomme M, Martin B, et al. Construction and evaluation of a chromosomal expression platform (CEP) for ectopic, maltose-driven gene expression in *Streptococcus pneumoniae*. *Microbiology*. 2006;152(Pt 2):343-9.