

**Supplemental Table 2. Primers used in this study**

Name	5' → 3' sequences	Description	Reference
lytA_UP-FW lytA_UP (Spl_EryK7)-RV lytA_DN (Spl_EryK7)-FW lytA_DN-RV	AGCCTCTTGTTGATTTATCG TCTAAGTCTTATTCCCGGGCATATTCTACTCCTTATC TCTAAATTTGGAAGCCGTTGATTACAGTAAAATAATAATG TTTCTCTGATTTCTCAACC	Construction of TIGR4 $\Delta$ lytA	[1]
CmK7-FW CmK7-RV	GTATGTCAAAAAGACCC GCGGCCGCTTATAAAAAGCC	Cassette amplification	[1]
EryK7-FW Ery-K7-RV	CCCGGGAATAAGACTTAGA CGGCTTCCAAATTTACA	Cassette amplification	[1]
cps4A_UP-FW cps4A_UP (Spl_CmK7)-RV Full_CAPS4_Locus_DN (Spl_CmK7)-FW Full_CAPS4_Locus_DN-RV	ATCTAAACAGGTGCTAGG GGTCTTTTGACATAACCATGATTAATACCTATAC GCTTTTATAAGCGGCCGCGTTTGGAGGAAAAGCTGAA TTGTATA TGGGACGGAGTAAAAGAGTCC	Construction of TIGR4 $\Delta$ cps	[1]
licA_UP-FW licA_UP (Spl_SpcK7)-RV licA_DN (Spl_SpcK7)-FW licA_DN-RV	TTGACTCTTGCTCATAGC TCCTCCTCACTATTTTGCACAATTAACCTCCAGT TGGAACACTTCGTGAATGGAGGTTTCAGATGAAAAGTA ATTAACCTGAACCAAGGC	Construction of TIGR4 $\Delta$ licA	[1]
rpsL-FW rpsL-RV	GTG CTG ACA AAT GTT GC TTC TCT TTA TCC CCT TTC C	Cassette amplification	[1]
Janus-FW Janus-RV	GGG AGG ACT GTA TAA AA GAA CCC GAT AAA ACT GA	Cassette amplification	[1]
dexB-FW dexB -(Spl_Janus)-RV aliA (Spl_Janus)-FW aliA-RV	AAG TTA GGA AAC TAC GG AGT CCT CCC GTT CAT CTT CTT TCT CC ATC GGG TTC GGA ACA ATA GGT TGT GG GAT TCA GCA TTC AAG GG	Construction of Spn <sub>SK7</sub>	[1]
2f 2r	TATCCCAGTTCAATATTTCTCCACTACACC ACACAAAATATAGGCAGAGAGAGACTACT		[2]
3f 3r	ATGGTGTGATTTCTCCTAGATTGGAAAGTAG CTTCTCCAATTGCTTACCAAGTGCAATAACG	Serotyping	[2]
4f 4r	CTGTTACTTGTTCTGGACTCTCGATAATTGG GCCCACTCCTGTAAAATCCTACCCGCATTG		[3]
Pcat-FW Pcat-RV	ATTTGTTTGATTTTTAATGGATAATGTGATATAATGGTTCAA TGTTCAATGTATAGGTATTAATCATGAGTAGACGT TGAACCATTATATCACATTATCCATTA AAAATCAAACAAATT ATTTTACTATCTGCATCTTTAAGTATCTTAGTAGACTTCCC	Construction of Pcat-cps	[1]

<sup>a</sup> [1] This study, [2] <sup>(1)</sup>, [3] <sup>(2)</sup>

1. M. da Gloria Carvalho *et al.*, Revisiting pneumococcal carriage by use of broth enrichment and PCR techniques for enhanced detection of carriage and serotypes. *J Clin Microbiol* **48**, 1611-1618 (2010).
2. R. Pai, R. E. Gertz, B. Beall, Sequential multiplex PCR approach for determining capsular serotypes of *Streptococcus pneumoniae* isolates. *J Clin Microbiol* **44**, 124-131 (2006).