

**Supplementary Table 1.** Oligonucleotide primers used in this study for cloning DNA fragments harboring *cepA*, *mac*, *covR/S*, *speB*, *emm*, *Rgg*, *RocA* genes from GAS genome.

Primer	Direction	Sequence	Gene
Cep F1	Forward	TTCAGGTGCTGACCTTGTTG	<i>Cep(SpyCep)</i>
Cep R1	Reverse	TCAGTTGTGGTTGGCTCAG	<i>Cep(SpyCep)</i>
Cep F2	Forward	AGGAAGCGTTTTCTTGGTG	<i>Cep(SpyCep)</i>
Cep R2	Reverse	CGGCTTCTTTGCTATTACCG	<i>Cep(SpyCep)</i>
Cep F3	Forward	GTTTGATGCAGAGGCAGAGC	<i>Cep(SpyCep)</i>
Cep R3	Reverse	CCCGCATCAGTTGACTCTTTG	<i>Cep(SpyCep)</i>
Cep F4	Forward	TATGGTTTGGTCGTTTCTCC	<i>Cep(SpyCep)</i>
Cep R4	Reverse	GGTGAGGTGGTCGTTTTTGT	<i>Cep(SpyCep)</i>
Cep F5	Forward	TGGTAGCCAAACAGGAACAAG	<i>Cep(SpyCep)</i>
Cep R5	Reverse	TGGTCTCTGAACCAAGAGTG	<i>Cep(SpyCep)</i>
Cep F6	Forward	GAAGGTTTTGTCCGCTTTAG	<i>Cep(SpyCep)</i>
Cep R6	Reverse	CACCAGCTAATCCACGGTCT	<i>Cep(SpyCep)</i>
Cep F7	Forward	CCCTGTTAGGCACAGCATT TTC	<i>Cep(SpyCep)</i>
Cep R7	Reverse	ACACTAGCGCCTGCTTGACT	<i>Cep(SpyCep)</i>
Cep F8	Forward	TCACAAATCAAGCCCAGCT	<i>Cep(SpyCep)</i>
Cep R8	Reverse	CCCGCACAAAGGTAGGTAAAG	<i>Cep(SpyCep)</i>
Cep F9	Forward	CCTTGTCGAAGATAGAGCTGGT	<i>Cep(SpyCep)</i>
Cep R9	Reverse	ACTATGCGCAACTTGAGAC	<i>Cep(SpyCep)</i>
Cep F10	Forward	TGCCTCAGATTCAACTGGTG	<i>Cep(SpyCep)</i>
Cep R10	Reverse	TCACTGCGCACGTAGAAATC	<i>Cep(SpyCep)</i>
Mac F1	Forward	ACCTCTCCAATAACCCATAC	<i>Mac(IdeS)</i>
Mac R1	Reverse	CATACCATCCTTGGTTAGC	<i>Mac(IdeS)</i>
Mac F2	Forward	GCAGTATTGGCAGCAGTGAC	<i>Mac(IdeS)</i>
Mac R2	Reverse	TAGAGCCTTGCCTTCGGTT	<i>Mac(IdeS)</i>
Mac F3	Forward	AACGGCTACCGCCTTAGTCT	<i>Mac(IdeS)</i>
Mac R3	Reverse	GCTATTGGGTTTTGCGTCAT	<i>Mac(IdeS)</i>
Mac F4	Forward	TGTTAATTCCGCTGGAAAAGT	<i>Mac(IdeS)</i>
Mac R4	Reverse	TGGAGATGCCTTTTTCCATT	<i>Mac(IdeS)</i>
CovRS F1	Forward	GCTATTCCGGTACAGGTCT	<i>CovR</i>
CovRS R1	Reverse	GCGGAAAATAGCACGAATAC	<i>CovR</i>
CovRS F2	Forward	GTCAATGGTCGTGAAGGGT	<i>CovR</i>
CovRS R2	Reverse	AGGCAATCAGTGTAAGGCA	<i>CovR</i>
CovRS F3	Forward	GATGTCTATATTCGTTATCTCC	<i>CovS</i>
CovRS R3	Reverse	TTGTACGCGAACCATGTC	<i>CovS</i>

CovRS F4	Forward	GCATATTGGTCTCTTACAAC	<i>CovS</i>
CovRS R4	Reverse	TTGCTCTCGTGTGCCATCT	<i>CovS</i>
SpeB F1	Forward	TTTCTTGTCAACTGAAATGAGC	<i>SpeB</i>
SpeB R1	Reverse	TTGTAAACATACATATTAGAGCC	<i>SpeB</i>
SpeB F2	Forward	ACCCAGTATTTGCCGATC	<i>SpeB</i>
SpeB R2	Reverse	GAACGTTAGATTCTCTTCCGCTAT	<i>SpeB</i>
SpeB F3	Forward	TGCAGCTACAGGATGTGTTG	<i>SpeB</i>
SpeB R3	Reverse	GTGTTTTTCGGCACAAAAGGT	<i>SpeB</i>
SpeB F4	Forward	GTGGAGTCTCTGACGGCTTC	<i>SpeB</i>
SpeB R4	Reverse	GTTTTCTTGCCACGGTATGG	<i>SpeB</i>
Emm F1	Forward	TATTCGCTTAGAAAATTA AAAACAG	<i>Emm</i>
Emm R1	Reverse	GCGAGTTCTTCAGCTTG	<i>Emm</i>
Rgg1 F1	Forward	CGAAACATTCAACTTGTTACG	<i>Rgg1</i>
Rgg1 R1	Reverse	GCTGTTGAGATAAACTACACC	<i>Rgg1</i>
Rgg2 F1	Forward	TTTCATGACTGTCTCCTTTCTG	<i>Rgg2</i>
Rgg2 R1	Reverse	GGCTACTGACTGCGTTTC	<i>Rgg2</i>
Rgg3 F1	Forward	CATAAGCGGACTTCCTTTCAG	<i>Rgg3</i>
Rgg3 R1	Reverse	TGATTGGCGTTTTCGTTAAAAG	<i>Rgg3</i>
Rgg4 F1	Forward	AGGTTAGTTTTTAATTAGACGCTG	<i>Rgg4</i>
Rgg4 R1	Reverse	TTTTAACATGGATAAAAACTCC	<i>Rgg4</i>
Rgg4 F2	Forward	TGATGATATTTTTAAGCGTTTAGG	<i>Rgg4</i>
Rgg4 R2	Reverse	TTTAACATGGATAAAAACTCCTTAAT	<i>Rgg4</i>
RocA F1	Forward	TTACGGAGTTCGAAATGAAAAG	<i>RocA</i>
RocA R1	Reverse	CAAGTTAAATCAAGTCTGTCATC	<i>RocA</i>
RocA F2	Forward	CTTGTGTGTCCAAGGGATAG	<i>RocA</i>
RocA R2	Reverse	TTGGCAAAGCGGAAATTTAAC	<i>RocA</i>