



Appendix A PCR analysis of mutants by using gDNA as template. The size differences of PCR products from wild-type, $\Delta rpoN1$, $\Delta rpoN2$ and $\Delta rpoN1N2$ were revealed using primer sets rpoN1.1.F/rpoN1.2.R and rpoN2.1.F/rpoN2.2.R. PCR products were sequenced to confirm that the target genes were deleted from chromosome. M, Marker DL5000; 1, PCR product produced by primer set rpoN1.1.F/rpoN1.2.R ; 2, PCR product produced by primer set rpoN2.1.F/rpoN2.2.R.

Appendix B Primers for real-time PCR analysis in this study

Gene products	Gene ID	Primer	Product Sizes
XAC1935	<i>flhF</i>	5' CTGCTGTCCAAGCGTCTGCC 3' 5' TTGGCGATGGTGGTGGTCTT 3'	107 bp
XAC1937	<i>flhB</i>	5' GCTGATGAACCCGACCCACT 3' 5' GAAGGCCATTTTCGTCCACCC 3'	100 bp
XAC1942	<i>fliQ</i>	5' TGACTGAATTGCGTGGTGGC 3' 5' GGTTTCGTTCAACTGGGTGGC 3'	121bp
XAC1948	<i>fliL</i>	5' CACCTGCTGATGCTGCTGTC 3' 5' GCAATTCTTCGACGCACTTC 3'	142bp
XAC1955	<i>fliE</i>	5' ACCGAGCTTCAGCGAGACCT 3' 5' GACCATGACCCGTGCCAGAT 3'	127bp
XAC1974	<i>fliD</i>	5' TCGGTGGAAGTGGTCTCGTT 3' 5' GTCGGTGCCGCTGATGTCTA 3'	138bp
XAC1981	<i>flgG</i>	5' CAACAACCTGGCCAATACCAATAC 3' 5' TGGTACAACAGGTCTTCGAACGC 3'	72 bp
XAC1986	<i>flgB</i>	5' GACCACCGACGCAAGCATT 3' 5' ATCGGGATCGACGGTATTGC 3'	112 bp
<i>gyrA</i>	<i>gyrA</i>	5' TGGCCTCAAGCCTGTGCACCGG3' 5' GACGATACGCGCCGACTTGAAG3'	100bp