Supplemental Table 1: Primers used for the mutagenesis of *E. coli nuoI* Gene. The underlined bases were altered from *E. coli* DNA.

C60A : 5'-GGACGGCGAAGAGCGTGCCGTAGCCTGTAACCTCTGCGC-3'
C60S : 5'-GACGGCGAAGAGCGTTCCGTAGCCTGTAACCTCTG-3'
C60H : 5'-GGACGGCGAAGAGCGTCACGTAGCCTGTAACCTCTGCGC-3'
C63A : 5'-CGAAGAGCGTTGCGTAGCCGCTAACCTCTGCGCGGTAGCCTG-3'
C63S : 5'-GAAGAGCGTTGCGTAGCCTCTAACCTCTGCGCGGTAG-3'
C66S : 5'-GCGTAGCCTGTAACCTCTCCGCGGTAGCCTGC-3'
C66H : 5'-GCGTAGCCTGTAACCTCCACGCGGTAGCCTGC-3'
C70S : 5'-CTGTAACCTCTGCGCGGTAGCCTCCCCGGTCGGC-3'
C70H : 5'-GTAACCTCTGCGCGGTAGCCCACCCGGTCGGCTGTATCTCG-3'
C99S : 5'-CGCATCAACTTCTCACGCAGCATTTTCTGTGGTCTGTGCG-3'
C99H : 5'-GCATCAACTTCTCACGCCACATTTTCTGTGGTCTGTGCG-3'
C102S: 5'-CTCACGCTGCATTTTCAGTGGTCTGTGCGAAGAAGCCTG-3'
C102H: 5'-CACGCTGCATTTTCCATGGTCTGTGCGAAGAAGC-3'
C105S: 5'-CTGTGGTCTGAGCGAAGAAGCCTGTCCGACCACGG-3'
C109S: 5'-GTGGTCTGTGCGAAGAAGCCAGTCCGACCACGGCG-3'
T30A : 5'-CGCGTTCGCCAAACGCGAAGCGCGAATGTACCCGGAAGAGC-3'
P34A : 5'-GCGAAACGCGAATGTACGCGGAAGAGCCGGTCTATC-3'
P42A : 5'-GAGCCGGTCTATCTGCCGGCCCGTTATCGTGGTCGTATCG-3'
R43A : 5'-GGTCTATCTGCCGCCCGCTTATCGTGGTCGTATCGTTCTG-3'
Y44A : 5'-GGTCTATCTGCCGCCCCGTGCTCGTGGTCGTATCGTTCTG-3'
G46A : 5'-CTGCCGCCCCGTTATCGTGCTCGTATCGTTCTGACC-3'
R52A : 5'-GTGGTCGTATCGTTCTGACCGCCGACCCGGACGGCG-3'
P54A : 5'-CGTATCGTTCTGACCCGCGACGCGGACGGCGAAGAGCGTTGC-3'
G56A : 5'-CGTTCTGACCCGCGACCCGGACGCCGAAGAGCGTTGCGTAG-3'
E58A : 5'-GACCCGGACGGCGAAGCGCGTTGCGTAGCCTGTAACC-3'
V61A : 5'-CGAAGAGCGTTGCGCAGCCTGTAACCTCTGCG-3'
L65A : 5'-GCGTAGCCTGTAACGCCTGCGCGGTAGCCTGCCCGGTCG-3'
P71A : 5'-CTGCGCGGTAGCCTGCGCGGTCGGCTGTATCTCGC-3'
I75A : 5'-GCCTGCCCGGTCGGCTGTGCCTCGCTGCAAAAAGCAG-3'
G85A : 5'-GCAGAAACCAAAGACGCTCGCTGGTACCCGGAATTTTTCCGCATC-3'
F92A : 5'-GACGGTCGCTGGTACCCGGAATTTGCCCGCATCAACTTCTCACG-3'
R93A : 5'-GCTGGTACCCGGAATTTTTCGCCATCAACTTCTCACGCTGC-3'
I94A : 5'-CGCTGGTACCCGGAATTTTTCCGCGCCAACTTCTCACGCTGC-3'
I94G : 5'-CGCTGGTACCCGGAATTTTTCCGCGGCAACTTCTCACGCTGC-3'
R98A : 5'-TCCGCATCAACTTCTCAGCCTGCATTTTCTGTGGTCTGTGC-3'
I100A: 5'-CCGCATCAACTTCTCACGCTGCGCTTTCTGTGGTCTGTGCG-3'
I100G: 5'-CCGCATCAACTTCTCACGCTGCATTTTCTGTGGTCTGTGCG-3'
G103A: 5'-CACGCTGCATTTTCTGTGCTCTGTGCGAAGAAGCCTGTCC-3'
E107A: 5'-GTGGTCTGTGCGAAGCAGCCTGTCCGACCACGGCG-3'
P110A: 5'-GGTCTGTGCGAAGAAGCCTGTGCGACCACGGCGATTCAG-3'
I114A: 5'-CCTGTCCGACCACGGCGGCTCAGTTAACCCCGGATTTCG-3'
E121A: 5'-CCCGGATTTCGCAATGGGGGAATACAAGCGCCAGG-3'
Y132A: 5'-CAAGCGCCAGGATCTGGTTGCCGAGAAAGAGGATCTGCTG-3'