

Table S1 Primers for *nuoA* knockout and identification

Primers	DNA Sequence ( 5'-3 ')
Primers for knock out	
Target-S	GATGACTAGTATTATACCTAGGACTGAG
Target <i>nuo-A</i>	CTAGACTAGTCTGAAGTCATCGCTCATCACGTTTTAGAGCTAGAAATAG CAAG
<i>nuo-5-S</i>	GTCGGTGCTTTTTTTGAATTCATAAAGCAGATATTCCATGGCGAC
<i>nuo-5-A</i>	GATCTATGCGGGTGAGCGTATAATGTAGCAGGTGATTTTTTTCAGGC
<i>nuo-3-S</i>	GCCTGAAAAAATCACCTGCTACATTATACGCTCACCCGCATAGATC
<i>nuo-3-A</i>	CAGGTCGACTCTAGAGAATTCTAGATTCCTGCAACAGCATCAGTG
<i>nuo-V-S</i>	CCATCGTCCTTCAGCGTTTA
<i>nuo-V-A</i>	AGGTTAGTTACGGCAATGCGTTC

Table S2 Primers for construction of plasmid pTrc-*fxpk-fbp*

Primers	DNA Sequence ( 5'-3 ')
<i>fxpk</i> -S	TTTCACACAGGAAACAGACCATGGAATTCATGACGAGTCCTGTTATT GGCACC
<i>fxpk</i> -A	GCATGCCTGCAGGTCGACTCTAGACTCGTTATCGCCAGCGGTT
<i>fbp</i> -S	CCGCCGAACCGCTGGCGATAACGAGATGAAAACGTTAGGTGAATTT ATTGTCG
<i>fbp</i> -A	GCATGCCTGCAGGTCGACTCTAGATTACGCGTCCGGGAACTCA

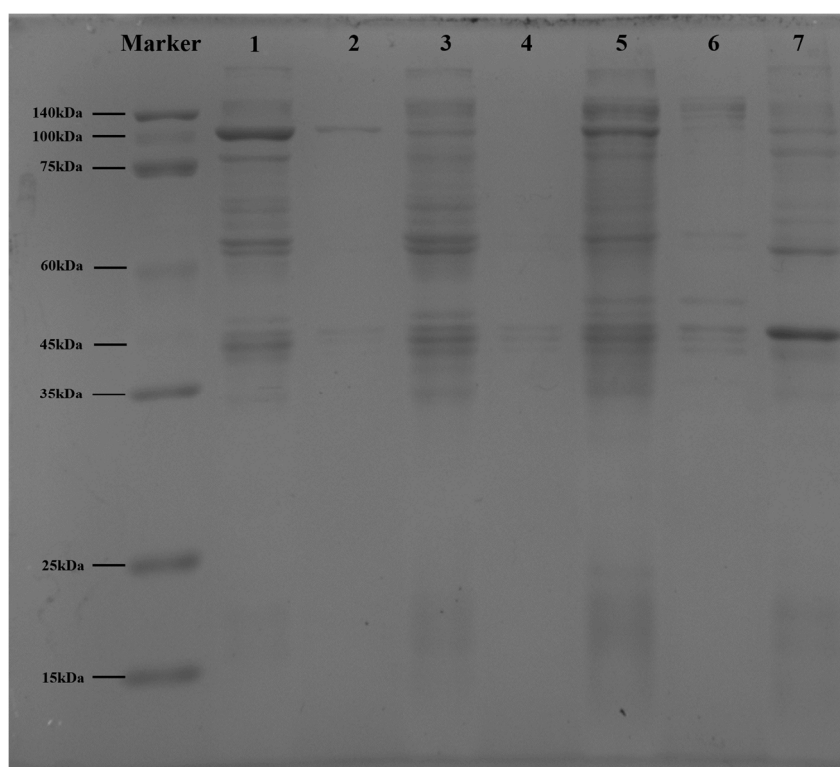


Figure S1 SDS-PAGE protein electrophoresis of recombinants of *E. coli* E23. Sample 1 and 2 are the supernatant and pellets of E23 (pTrc-*fxpk*). Sample 3 and 4 are the supernatant and pellets of E23 (pTrc99a). Sample 5 and 6 are the supernatant and pellets of E23 (pTrc-*fxpk-fbp*). Sample 7 is the supernatant of E23 (pTrc-*fbp*).