

Supplementary file 1. Oligonucleotides and plasmids used in this study.

Oligonucleotides	Source	Lab Stock #
ePEC non-template DNA (consensus) GGTCAGTACGTCCGGCATAGTTGCGCCCGTAAATTCAGATCTTCC AGTGG	IDT	#9563
ePEC non-template DNA (bubble scaffold) GGTCAGTACGTCCGGTTCGATCTTCGCCCGTAAATTCAGATCTTCC AGTGG	IDT	#8333
ePEC template DNA (consensus) CCACTGGAAGATCTGAATTTACGGGCGCAACTATGCCGGACGTA CTGACC	IDT	#8334
ePEC RNA -11G (consensus) UUUUUUUGCAUAGUU	IDT	#8342
ePEC RNA -11U UUUUUUUGCAUAGUU	IDT	#10797
ePEC non-template DNA (Bochkareva <i>et al.</i> , 2012) ACTTACAGTAATCCGAAGTACACACGGCGAATAGCCA	IDT	#8195
ePEC template DNA (Bochkareva <i>et al.</i> , 2012) TGGCTATTCGCCGTGTGTACTTCGGATTACTGTAAGT	IDT	#8196
ePEC non-template long DNA (Bochkareva <i>et al.</i> , 2012) ACTTACAGTAATCCGAAGTACACACGGCGAATAGCCATTCCAGTG G	IDT	#8289
ePEC template long DNA (Bochkareva <i>et al.</i> , 2012) CCACTGGAATGGCTATTCGCCGTGTGTACTTCGGATTACTGTAAG T	IDT	#8290
ePEC RNA (Bochkareva <i>et al.</i> , 2012) AAUAAUCCGAAGU	IDT	#7974
ePEC tandem scaffold non-template DNA GGTACCGGCATAGTTGCGCCCGCAAAGATGCGCCCGTAAATTC AGATCTTCCAGTGG	IDT	#12623
ePEC tandem scaffold template DNA CCACTGGAAGATCTGAATTTACGGGCGCATCTTTGCCGGGCGCA ACTATGCCGGTACC	IDT	#12624
EC non-template DNA for DS-6MI control GGTGATCTAAGGTTCCAGAGGAGCGTTCATGTCAGTAGAGTAGC GAGTGG X=6-MI	Fidelity Systems	#11159
EC template DNA for DS-6MI control CCACTCGCTACTCTACTGACATGACCGCTCCTCTGGAACCTTAGA TCACC	IDT	#11242
EC RNA for DS-6MI control CUCACAACCAGAGGAG	IDT	#8106
ePEC non-template DNA for DS-6MI pause GGTCAGTACGTCCGGCATAGTTGCGTTCGTAAATTCAGATCTTCC AGTGG	Fidelity Systems	#11156

ePEC template DNA for DS-6MI pause CCACTGGAAGATCTGAATTTACGACCGCAACTATGCCGGACGTAC TGACC	IDT	#11241
ePEC RNA for DS-6MI pause UUUUUUGGCAUAGUUG	IDT	#8401
ePEC non-template DNA for US-6MI control ACTTGTAGCGATCTAAGGTTCCAGAGGAGCGGTCATGTCAGTAGA GTAGC	IDT	#8102
ePEC template DNA for US-6MI control GCTACTCTACTGACATGACCGCTCCTCTGAACCTTAGATCGCTA CAAGT	Fidelity Systems	#8110
ePEC non-template DNA for US-6MI pause GGTCAGTACGTCCGCCATAGTTGCGCCCGTAAATTCAGATCTTCC AGTGG	IDT	#8399
ePEC template DNA for US-6MI pause CCACTGGAAGATCTGAATTTACGGGCGCAACTATGCGGACGTA CTGACC	Fidelity Systems	#8385
ePEC RNA for US-6MI pause UUUUUUGGCAUAGUUG	IDT	#8402
ePEC template DNA (usFJ variant) CCACTGGAAGATCTGAATTTACGGGCGCAACTATGGCGGACGTA CTGACC	IDT	#9762
ePEC RNA (usFJ variant) UUUUUUGGCAUAGUU	IDT	#8763
ePEC template DNA (Hyb variant) CCACTGGAAGATCTGAATTTACGGGCGCGAGTATGCCGGACGTA CTGACC	IDT	#11639
ePEC RNA (Hyb variant) UUUUUUGGCAUACUC	IDT	#11640
ePEC non-template DNA (dsFJ variant) GGTCAGTACGTCCGGCATAGTTGTGCCCGTAAATTCAGATCTTCC AGTGG	IDT	#10806
ePEC non-template DNA (DSDNA variant) GGTCAGTACGTCCGGCATAGTTGCGGTCGTAAATTCAGATCTTCC AGTGG	IDT	#11178
ePEC template DNA (DSDNA variant) CCACTGGAAGATCTGAATTTACGACCGCAACTATGCCGGACGTAC TGACC	IDT	#11241
ePEC template DNA (usFJ+Hyb variant) CCACTGGAAGATCTGAATTTACGGGCGCGAGTATGGCGGACGTA CTGACC	IDT	#11951
ePEC RNA (usFJ+Hyb variant) UUUUUUGGCAUACUC	IDT	#11952
ePEC non-template DNA (usFJ+dsFJ variant) GGTCAGTACGTCCGCCATAGTTGTGCCCGTAAATTCAGATCTTCC AGTGG	IDT	#11533

ePEC non-template DNA (usFJ+DSDNA variant) GGTCAGTACGTCCGCCATAGTTGCGGTCGTAAATTCAGATCTTCC AGTGG	IDT	#11534
ePEC template DNA (usFJ+DSDNA variant) CCACTGGAAGATCTGAATTTACGACCGCAACTATGGCGGACGTAC TGACC	IDT	#11535
ePEC non-template DNA (Hyb+DSDNA variant) GGTCAGTACGTCCGGCATAGTTGCGGTCGTAAATTCAGATCTTCC AGTGG	IDT	#11178
ePEC non-template DNA (dsFJ+DSDNA variant) GGTCAGTACGTCCGGCATAGTTGTGGTCGTAAATTCAGATCTTCC AGTGG	IDT	#11537
ePEC non-template DNA (Double usFJ variant) GGTCAGTACGTCCGTCATAGTTGCGCCCGTAAATTCAGATCTTCC AGTGG	IDT	#10800
ePEC template DNA (Double usFJ variant) CCACTGGAAGATCTGAATTTACGGGCGCAACTATGACGGACGTA CTGACC	IDT	#10801
ePEC RNA (Double usFJ variant) UUUUUUUUCAUAGUU	IDT	#10798
<i>his</i> PEC1 non-template DNA GCGTCCTATCGATCTTCGGAAGAGATTCAGAG	IDT	#10924
<i>his</i> PEC1 template DNA CTCTGAATCTCTTCCAGCACACATCAGGACGC	IDT	#10919
<i>his</i> PEC1 RNA (pause -2 RNA) UCAUCCGGCGAUGUGUG	IDT	#6593
<i>his</i> PEC1 exit-channel duplex RNA CCGGAUGA	IDT	#6594
Control EC2, <i>his</i> PEC2 non-template DNA GGTCAGTACGTCCTGTTCGATCTTCGGAAGAGAATTCAGATCTTCC AGTGG	IDT	#8847
Control EC2 template DNA CCACTGGAAGATCTGAATTCTCTTCCCCTCTAGCTCAGGACGTAC TGACC	IDT	#8848
Control EC2 RNA UUUUUUUGAGCUAGAGG	IDT	#8855
<i>his</i> PEC2 template DNA CCACTGGAAGATCTGAATTCTCTTCCAGCACACATCAGGACGTAC TGACC	IDT	#8851
<i>his</i> PEC2 RNA (pause RNA) CCUGACUAGUCUUUCAGGCGAUGUGUGCU	IDT	#4865

Plasmids	Source	Lab Stock #
pRM756 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid. His10-ppx tag at <i>rpoC</i> -C-terminus	Windgassen <i>et al.</i> , 2014	#2956
pRM843 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid. HMK-Strep tag at <i>rpoC</i> -C-terminus, <i>rpoB</i> -His10-ppx.	Hein <i>et al.</i> , 2014	#5143
pRM1151 Derivative of pRM843. RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing <i>rpoB</i> substitution R542A.	This work	#5451
pRM 1147 Derivative of pRM756. RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing <i>rpoC</i> substitution K334A	This work	#5447
pDJ115 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing β' substitutions I937C- P1139C with His ₁₀ and HMK tags at β' C-terminus	Nayak <i>et al.</i> , 2013	#4954
pDJ116 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing β' substitutions I937C- T1135C with His ₁₀ and HMK tags at β' C-terminus	Nayak <i>et al.</i> , 2013	#4955
pDJ124 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing β' substitution I937C- Q736C with His ₁₀ and HMK tags on the β' C-terminus	Nayak <i>et al.</i> , 2013	#4963
pDJ129 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing β' substitution I937C- G687C with His ₁₀ and HMK tags on the β' C-terminus	Nayak <i>et al.</i> , 2013	#4968
pRM950 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing substitutions β' 258iC, β' 1045iC, and β' 843C. HMK-Strep tag at β' C-terminus, His ₁₀ -precision protease tag at β N-terminus.	Kang <i>et al.</i> , 2018a	#5250
pRM918 RNAP($\alpha_2\beta\beta'\omega$) overexpression plasmid containing substitutions β' 258iC. β' 1044C. HMK-Strep tag at β' C-terminus, His ₁₀ -precision protease tag at β N terminus	Hein <i>et al.</i> , 2014	#5218

X , 6-Methylisoxanthopterin.