

Table S1. *E. coli* strains used in this study

Strains	Genotype/relevant characteristics	Source
BW25113	wild type, weak swarmer	Datsenko and Wanner, 2005
CAT	<i>flhDC:cat:flhC:motA/Cm^R</i> , used as a wild type	This study
CAT_Km ^R	Km ^R , in a wild type background	This study
CAT2	$\Delta P_{flhDC-flhD-5'}-flhC$; $P_{flhDC}:flhD:flhC:cat$ located in the <i>intS/yfdG</i> intergenic region, used as a wild type	This study
CAT_IS1	CAT strain with IS1 upstream of the <i>flhD</i> promoter	This study
CAT_IS5	CAT strain with IS5 upstream of the <i>flhD</i> promoter	This study
CAT_ Δ AB	CAT, in which <i>motAB</i> is not expressed; this study nonmotile	
CAT_ Δ fliC	CAT, in which <i>flic</i> is not deleted; this study nonmotile	
IS1(-107 rev)	IS1 insertion into the -107 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS1(-120 rev)	IS1 insertion into the -120 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS1(-180 rev)	IS1 insertion into the -180 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS1(-214 rev)	IS1 insertion into the -214 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS1(-415)	IS1 insertion into the -415 bp position relative to the <i>flhD</i> start site (+1) in direct orientation	This study
IS1(-469 rev)	IS1 insertion into the -469 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS3(-199 rev)	IS3 insertion into the -206 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS5(-99)	IS5 insertion into the -99 bp position relative to the <i>flhD</i> start site (+1) in direct orientation	This study
IS5(-99rev)	IS5 insertion into the -99 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS5(-169)	IS5 insertion into the -169 bp position relative to the <i>flhD</i> start site (+1) in direct orientation	This study
IS5(-169 rev)	IS5 insertion into the -169 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study
IS5(-318)	IS5 insertion into the -318 bp position relative to the <i>flhD</i> start site (+1) in direct orientation	This study
IS5(-318rev)	IS5 insertion into the -318 bp position relative to the <i>flhD</i> start site (+1) in reverse orientation	This study

Table S2. Oligonucleotides used in this study

Name	Sequence	Use
PflhDC-Xho-F	atactcgagcttattctgtgaacttcaggtgac	Amplification of the <i>flhDC</i> promoter
PflhDC-Rn	tgcagatcacacaaaactcaattac	Amplification of the <i>flhDC</i> promoter
FlhC.cat-P1	gatattatcccacaactgctggatgaacagagagtacaggtgtttaactgaaggagctaaggaa gctaaaatggag	Integration of <i>cat</i> downstream of <i>flhC</i>
FlhC.cat-P2	catcatcctccactgttgaccatgacaggatgttcagtcgctcaggcgttaactgtgtaggctggag ctgcttc	Integration of <i>cat</i> downstream of <i>flhC</i>
motA-ver-R	gtagctggcgaagatctcgtctcac	Verification of <i>cat</i> integration
flhC-Xho-F	tatctcgagcggaatgattactgcaactttccagctgcaac	Cloning the 3' region of <i>flhC</i> and the 5' region of <i>motA</i> to pKDT
motA-Bam-R	aatggatccgtatttgagcgcgacgaaacagcaacggcagc	Cloning the 3' region of <i>flhC</i> and the 5' region of <i>motA</i> to pKDT
PmotAB-P1	gaattacaacagtactgcatgagtgccagggcggggcgtaaggcgcgccattgtgtaggctg gagctgcttc	Integration of the 3' region of <i>flhC</i> and the <i>flhC/motA</i> intergenic region upstream of <i>motA</i>
PmotAB-P2	gtatttgagcgcgacgaaacagcaacggcagc	Integration of the 3' region of <i>flhC</i> and the <i>flhC/motA</i> intergenic region upstream of <i>motA</i>
ycaD-P1	atcagacgcgatgcattgctctgaaagcatagacgggaaatagagttgctgtgtaggctggag ctgcttc	Insertion of <i>km^r</i> gene into <i>ycaD/intS</i> intergenic region
ycaD-P2	ggtgaaaatacgcgatatcccagcggcgggtattatcgatttatattaccatagaatcctccttag	Insertion of <i>km^r</i> gene into <i>ycaD/intS</i> intergenic region
ycaD-ver-R	gccagagtcaacaaaagcaggc	Verification of <i>km^r</i> gene insertion into <i>ycaD/intS</i> intergenic region
Cat-Sal-R	atagtcgacattacgccccgcctgccactc	Cloning <i>PflhDC-flhDC.cat</i> into pKDT
intC-P1	tgagaaggtggagtgagcgcacttaacaactatcgaatagcacaagtcttgtgtaggctggag ctgcttc	Integration of <i>PflhDC-flhDC.cat</i> into <i>intS/yfdG</i> intergenic region
intC-P2	ttctctatcagctaataatcaaaggaatgaagtctatcatccaagtcttcatgagaattaattccggg gatcc	Integration of <i>PflhDC-flhDC.cat</i> into <i>intS/yfdG</i> intergenic regions

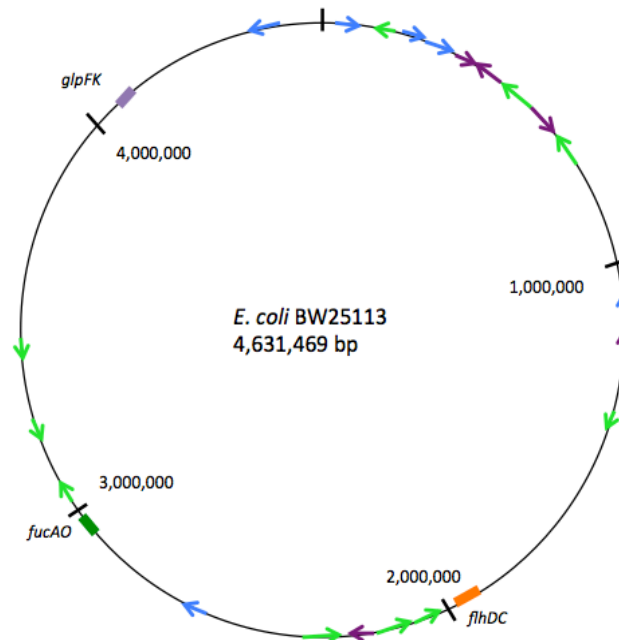


Figure S1. Original locations of relevant IS elements on the *E. coli* K12 chromosome. Figure S1

The original locations of IS elements and related genes at the beginning of this study are indicated on the *E. coli* K-12 BW25113 (GCA_000750555.1) chromosome. Green arrows correspond to IS5, purple to IS3, and blue to IS1. The heads of the arrows indicate the orientations of transcription of the transposase genes. The *flhDC* operon is located between 1972344 and 1973236 bp.