

Supplementary Tables

Table S1. *Escherichia coli* strains and plasmids used in this study

Strain or plasmid	Genotype or phenotype	Source or reference
Strains		
MG1655	F ⁻ λ <i>ilvG</i> ⁻ <i>rfb</i> -50 <i>rph</i> -1. Wild type <i>E. coli</i> K-12	Blattner et al. (1997)
MG1655 $\Delta ompC$	MG1655 <i>ompC</i> :: <i>frt</i>	Choi and Lee (2019)
MG1655 $\Delta ompF$	MG1655 <i>ompF</i> :: <i>frt</i>	Choi and Lee (2019)
MG1655 $\Delta yhdP$	MG1655 <i>yhdP</i> :: <i>frt</i>	Sung et al. (2020)
MG1655 $\Delta clsA$	MG1655 <i>clsA</i> :: <i>frt</i>	This study
MG1655 $\Delta ompC \Delta clsA$	MG1655 <i>ompC</i> :: <i>frt</i> <i>clsA</i> :: <i>frt</i>	This study
MG1655 $\Delta ompC \Delta clsA \Delta clsB$	MG1655 <i>ompC</i> :: <i>frt</i> <i>clsA</i> :: <i>frt</i> <i>clsB</i> :: <i>frt</i>	This study
MG1655 $\Delta ompC \Delta clsA \Delta clsB \Delta clsC$	MG1655 <i>ompC</i> :: <i>frt</i> <i>clsA</i> :: <i>frt</i> <i>clsB</i> :: <i>frt</i> <i>clsC</i> :: <i>frt</i>	This study
MG1655 $\Delta yhdP \Delta clsA$	MG1655 <i>yhdP</i> :: <i>frt</i> <i>clsA</i> :: <i>frt</i>	This study
MG1655 $\Delta yhdP \Delta clsA \Delta clsB$	MG1655 <i>yhdP</i> :: <i>frt</i> <i>clsA</i> :: <i>frt</i> <i>clsB</i> :: <i>frt</i>	This study
MG1655 $\Delta yhdP \Delta clsA \Delta clsB \Delta clsC$	MG1655 <i>yhdP</i> :: <i>frt</i> <i>clsA</i> :: <i>frt</i> <i>clsB</i> :: <i>frt</i> <i>clsC</i> :: <i>frt</i>	This study
Plasmids		
pACYC184	A low copy number cloning vector; Cm ^R , Tet ^R	Schottel et al. (1981)
pACYC184-OmpC	pACYC184-based expression vector for OmpC, Cm ^R	This study
pKD13	Template plasmid for the amplification of the kanamycin-resistance gene bordered by FRT sites, Km ^R	Datsenko and Wanner (2000)

pKD46	λ Red recombinase expression plasmid Ts replicon, Amp ^R	Datsenko and Wanner (2000)
pCP20	FLP helper plasmid Ts replicon, Amp ^R , Cm ^R	Datsenko and Wanner (2000)
pRL27	Tn5-RL27 (Km ^R - <i>oriR6</i> K) delivery vector: circularized PCR fragment from pRL23 (primers <i>tetAp</i> -for and <i>oriT</i> -rev)	Larsen et al. (2002)

Supplementary references

- Blattner FR, Plunkett G 3rd, Bloch CA, Perna NT, Burland V, et al. 1997. The complete genome sequence of *Escherichia coli* K-12. *Science*. 277: 1453–1462.
- Choi U, Lee CR. 2019. Distinct roles of outer membrane porins in antibiotic resistance and membrane integrity in *Escherichia coli*. *Front Microbiol*. 10: 953.
- Datsenko KA, Wanner BL. 2000. One-step inactivation of chromosomal genes in *Escherichia coli* K-12 using PCR products. *Proc Natl Acad Sci USA*. 97: 6640–6645.
- Larsen RA, Wilson MM, Guss AM, Metcalf WW. 2002. Genetic analysis of pigment biosynthesis in *Xanthobacter autotrophicus* Py2 using a new, highly efficient transposon mutagenesis system that is functional in a wide variety of bacteria. *Arch Microbiol*. 178: 193–201.
- Schottel JL, Bibb MJ, Cohen SN. 1981. Cloning and expression in *Streptomyces lividans* of antibiotic resistance genes derived from *Escherichia coli*. *J Bacteriol*. 146: 360–368.
- Sung CG, Choi U, Lee CR. 2020. Phenotypic characterization of a conserved inner membrane protein YhcB in *Escherichia coli*. *J Microbiol*. 58: 598–605.