

Table S2 Bacterial strains and plasmids used in this study

Strains/plasmids	Genotype or description	Reference
<i>Serratia</i> sp.		
ATCC39006	From ATCC	Parker WL 1982
LacA (WT)	Laboratory strain, referred to as wild type (WT) in text, Lac-derivative of ATCC S39006	
$\Delta$ gvpA1	In-frame <i>gvpA1</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpA1	This study
$\Delta$ avoA2	In-frame <i>avoA2</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ avoA2	This study
$\Delta$ avoA3	In-frame <i>avoA3</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ avoA3	This study
$\Delta$ gvpC	In-frame <i>gvpC</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpC	This study
$\Delta$ gvpF1	In-frame <i>gvpF1</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpF1	This study
$\Delta$ avoF2	In-frame <i>avoF2</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ avoF2	This study
$\Delta$ avoF3	In-frame <i>avoF3</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ avoF3	This study
$\Delta$ gvpG	In-frame <i>gvpG</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpG	This study
$\Delta$ gvpH	In-frame <i>gvpH</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpH	This study
$\Delta$ gvpK	In-frame <i>gvpK</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpK	This study
$\Delta$ gvpN	In-frame <i>gvpN</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpN	This study
$\Delta$ gvpV	In-frame <i>gvpV</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpV	This study
$\Delta$ gvpW	In-frame <i>gvpW</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpW	This study
$\Delta$ gvpX	In-frame <i>gvpX</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpX	This study
$\Delta$ gvpY	In-frame <i>gvpY</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpY	This study
$\Delta$ gvpZ	In-frame <i>gvpZ</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvpZ	This study
$\Delta$ gvrA	In-frame <i>gvrA</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvrA	This study
$\Delta$ gvrB	In-frame <i>gvrB</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvrB	This study
$\Delta$ gvrC	In-frame <i>gvrC</i> mutant derivative of WT, made using plasmid pKNG101- $\Delta$ gvrC	This study
GPA1	<i>gvpA1</i> ::Tn-DS1028- <i>uidA</i> derivative of WT, Cm <sup>R</sup>	Ramsay JP 2011
$\Delta$ gvrA <i>gvpA1</i> :: <i>uidA</i>	In-frame <i>gvrA</i> mutant derivative of GPA1	This study
$\Delta$ gvrB <i>gvpA1</i> :: <i>uidA</i>	In-frame <i>gvrB</i> mutant derivative of GPA1	This study
$\Delta$ gvrC <i>gvpA1</i> :: <i>uidA</i>	In-frame <i>gvrC</i> mutant derivative of GPA1	This study
<i>Escherichia coli</i>		
DH5 $\alpha$	<i>supE44</i> , $\Delta$ <i>lac</i> U169, $\Phi$ 80 <i>lacZ</i> $\Delta$ M15, <i>hsdR17</i> , <i>recA1</i> , <i>endA1</i> , <i>gyrA96</i> , <i>thi-1</i> , <i>relA1</i> , <i>luxS</i>	
$\beta$ 2163	(F-) RP4-2-Tc::Mu <i>dapA</i> ::( <i>erm</i> - <i>pir</i> )	
Plasmids		
pQE80oriT	Expression vector pQE80L containing the RK2 origin, Ap <sup>R</sup>	Ramsay JP 2011
pKNG101	Marker exchange suicide vector, <i>sacBR</i> , <i>mobRK2</i> , <i>oriR6K</i> , Sm <sup>R</sup>	Kaniga 1991
pKNG101- $\Delta$ gvpA1	pKNG101 marker exchange construct containing $\Delta$ <i>gvpA1</i>	This study
pKNG101- $\Delta$ gvpA2	pKNG101 marker exchange construct containing $\Delta$ <i>gvpA2</i>	This study
pKNG101- $\Delta$ gvpA3	pKNG101 marker exchange construct containing $\Delta$ <i>gvpA3</i>	This study
pKNG101- $\Delta$ gvpC	pKNG101 marker exchange construct containing $\Delta$ <i>gvpC</i>	This study
pKNG101- $\Delta$ gvpF1	pKNG101 marker exchange construct containing $\Delta$ <i>gvpF1</i>	This study
pKNG101- $\Delta$ gvpF2	pKNG101 marker exchange construct containing $\Delta$ <i>gvpF2</i>	This study
pKNG101- $\Delta$ gvpF3	pKNG101 marker exchange construct containing $\Delta$ <i>gvpF3</i>	This study
pKNG101- $\Delta$ gvpG	pKNG101 marker exchange construct containing $\Delta$ <i>gvpG</i>	This study
pKNG101- $\Delta$ gvpH	pKNG101 marker exchange construct containing $\Delta$ <i>gvpH</i>	This study
pKNG101- $\Delta$ gvpK	pKNG101 marker exchange construct containing $\Delta$ <i>gvpK</i>	This study
pKNG101- $\Delta$ gvpN	pKNG101 marker exchange construct containing $\Delta$ <i>gvpN</i>	This study
pKNG101- $\Delta$ gvpV	pKNG101 marker exchange construct containing $\Delta$ <i>gvpV</i>	This study
pKNG101- $\Delta$ gvpW	pKNG101 marker exchange construct containing $\Delta$ <i>gvpW</i>	This study
pKNG101- $\Delta$ gvpX	pKNG101 marker exchange construct containing $\Delta$ <i>gvpX</i>	This study
pKNG101- $\Delta$ gvpY	pKNG101 marker exchange construct containing $\Delta$ <i>gvpY</i>	This study
pKNG101- $\Delta$ gvpZ	pKNG101 marker exchange construct containing $\Delta$ <i>gvpZ</i>	This study
pKNG101- $\Delta$ gvrA	pKNG101 marker exchange construct containing $\Delta$ <i>gvrA</i>	This study
pKNG101- $\Delta$ gvrB	pKNG101 marker exchange construct containing $\Delta$ <i>gvrB</i>	This study
pKNG101- $\Delta$ gvrC	pKNG101 marker exchange construct containing $\Delta$ <i>gvrC</i>	This study
pQE80oriT-gvpA1	pQE80oriT containing SD sequence and ORF of <i>gvpA1</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpA2	pQE80oriT containing SD sequence and ORF of <i>gvpA2</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpA3	pQE80oriT containing SD sequence and ORF of <i>gvpA3</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpC	pQE80oriT containing SD sequence and ORF of <i>gvpC</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpF1	pQE80oriT containing SD sequence and ORF of <i>gvpF1</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpF2	pQE80oriT containing SD sequence and ORF of <i>gvpF2</i> as a EcoRI-Sall fragment	This study
pQE80oriT-gvpF3	pQE80oriT containing SD sequence and ORF of <i>gvpF3</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpG	pQE80oriT containing SD sequence and ORF of <i>gvpG</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpK	pQE80oriT containing SD sequence and ORF of <i>gvpK</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpN	pQE80oriT containing SD sequence and ORF of <i>gvpN</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvpV	pQE80oriT containing SD sequence and ORF of <i>gvpV</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvrA	pQE80oriT containing SD sequence and ORF of <i>gvrA</i> as a EcoRI-HindIII fragment	This study
pQE80oriT-gvrB	pQE80oriT containing SD sequence and ORF of <i>gvrB</i> as a BamHI-HindIII fragment	This study
pQE80oriT-gvrC	pQE80oriT containing SD sequence and ORF of <i>gvrC</i> as a EcoRI-HindIII fragment	This study
pQE80-SmaR	pQE80 plasmid containing SmaR, Ap <sup>R</sup>	Slater et al. 2003
pBLUEScript SK+	Cloning vector, ColE1 replicon, Ap <sup>R</sup>	Stratagene
pBluescript +gvpA1 5'RAC	pBLUEScript SK+ containing the product of 5'RACE beginning at the transcription start site of <i>gvpA1</i>	This study
pBluescript +gvrA 5'RACE	pBLUEScript SK+ containing the product of 5'RACE beginning at the transcription start site of <i>gvrA</i>	This study
pRW50	promoterless <i>lacZ</i> reporter, Tet <sup>R</sup>	Lodge et al. 1992
pRW50- <i>gvpA1</i> <sub>pro</sub>	pRW50 derivative containing <i>gvpA1</i> promoter as an EcoRI/HindIII fragment	This study
pRW50- <i>gvrA</i> <sub>pro</sub>	pRW50 derivative containing <i>gvrA</i> promoter as an EcoRI/HindIII fragment	This study