

Table S1: Strains and plasmids used in this study

Strains	Description	Reference
MG1655	<i>E. coli</i> K12 F ⁻ λ^- <i>rph</i>	
MG1655 pydeP-lacZ	Chromosomal <i>ydeP-lacZ</i> operon fusion with linked <i>kan^R</i> marker	Eguchi and Utsumi, 2014
MG1655 $\Delta\text{evgS::cat}$	Chromosomal <i>evgS</i> gene inactivation by insertion of chloramphenicol resistance gene	Eguchi and Utsumi, 2014
MG1655 $\Delta\text{evgS::cat pydeP-lacZ}$	Strain carrying <i>ydeP-lacZ</i> operon fusion and inactivation of <i>evgS</i> on chromosome	Eguchi and Utsumi, 2014
MG1655 ΔgadC	Gene for GadC antiporter (required for AR2) deleted by P1 transduction from Keio library	Burton <i>et al.</i> , 2010
BW25113	F ⁻ $\Delta(\text{araD-araB})$ <i>lacZ</i> λ^- <i>rph</i> $\Delta(\text{rhaD-rhaB})$ <i>hsdR</i>	Datsenko and Wanner, 2000
BW25113 pydeP-lacZ kan^R	Constructed from BW25113 by P1 transduction	This work
BW25113 $\Delta\text{tnaA::kan}^R$	From Keio collection	Baba <i>et al.</i> , 2006
BL21(DE3)	Strain for protein expression	Novagen
Plasmids	Description	Reference
pBAD24	Cloning vector for expression from pBAD promoter, encodes ampicillin resistance	Guzman <i>et al.</i> , 1995
pBAD24-EvgS	His-tagged EvgS expressed from pBAD promoter in pBAD24	Eguchi and Utsumi, 2014

pBAD24-EvgS.S600I	EvgS-S600I expressed from pBAD promoter in pBAD24	Johnson <i>et al.</i> 2014
pLux-xxx	Family of plasmids expressing bacterial luciferase under the control of promoter for gene xxx	Burton <i>et al.</i> , 2010
pETevgS(557-1197)D1009A	Cytoplasmic region of EvgS with D1009A mutation expressed from T7 promoter in pET21a(+)	Kinoshita-Kikuta <i>et al.</i> , 2015