

S8 Table. Strains, plasmids and oligonucleotides.

| Description/sequence | Reference | |
|------------------------------------|--|-------------------|
| Bacterial strains | | |
| PW724 | <i>V. cholerae</i> MO10; Sm ^r | [4] |
| PW1640 | MO10 $\Delta gcvT$; Sm ^r | This study |
| PW1658 | MO10 $\Delta gcvP$; Sm ^r | This study |
| PW1695 | MO10 $\Delta VC2638$; Sm ^r | This study |
| PW1698 | MO10 $\Delta gcvH$; Sm ^r | This study |
| PW1692 | MO10 $\Delta glyA 1\Delta glyA2$; Sm ^r | This study |
| PW1405 | MO10 $\Delta acs1$; Sm ^r | [5] |
| SM10 λ pir | <i>E. coli</i> thi thr leu tonA lacY supE recA::RP4-2-Tc::Mu (λ pirR6K) Km ^r | [6] |
| Plasmids | | |
| pWM91 | oriR6K mobRP4 <i>lacI</i> pTac <i>tnp</i> mini-Tn10; Km ^r Ap ^r | [7] |
| pWM91:: $\Delta gcvT$ | pWM91 carrying an unmarked, in-frame deletion in VCA0280 (<i>gcvT</i>); Ap ^r | This study |
| pWM91:: $\Delta gcvP$ | pWM91 carrying an unmarked, in-frame deletion in VCA0276 (<i>gcvP</i>); Ap ^r | This study |
| pWM91:: $\Delta VC2638$ | pWM91 carrying an unmarked, in-frame deletion in VC2638; Ap ^r | This study |
| pWM91:: $\Delta gcvH$ | pWM91 carrying an unmarked, in-frame deletion in VCA0277 (<i>gcvH</i>); Ap ^r | This study |
| pWM91:: $\Delta glyA1\Delta glyA2$ | pWM91 carrying an unmarked, in-frame deletion in VCA0941/VCA0278 (<i>glyA1/glyA2</i>); Ap ^r | This study |
| pBAD-TOPO | arabinose inducible expression vector used to generate His6/V5 epitope tagged proteins; Ap ^r | Life Technologies |
| pBAD-TOPO- <i>lacZ</i> | pBAD-TOPO control vector containing <i>lacZ</i> gene; Ap ^r | Life Technologies |
| pBAD-TOPO- <i>gcvT</i> | pBAD-TOPO containing <i>gcvT</i> gene; Ap ^r | This study |
| Oligonucleotides | | |
| Mutagenesis | | |
| $\Delta VCA0280$ | | |
| <i>gcvT</i> #1 | 5'-CCGCTCGAGGCGAATTTTATGAGCCGTA-3' | This study |
| <i>gcvT</i> #2 | 5'-TAACGAGCGGCCGCATAGCGGTGTCGTCAGTAAGGT-3' | This study |
| <i>gcvT</i> #3 | 5'-TGCGGCCGCTCGTTAGGGAAGATGCTGCCAATGACT-3' | This study |
| <i>gcvT</i> #4 | 5'-GGACTAGTGGACTTTTTGTGGAGGTTGG-3' | This study |
| $\Delta VCA0276$ | | |
| <i>gcvP</i> #1 | 5'-CCGCTCGAGCACTGGTTGAGTCGGTGAAA-3' | This study |
| <i>gcvP</i> #2 | 5'-TAACGAGCGGCCGCAGCGTGCAACGAACCTATTTG-3' | This study |
| <i>gcvP</i> #3 | 5'-TGCGGCCGCTCGTTAAAATACTGGCCAACGGTGAAC-3' | This study |
| <i>gcvP</i> #4 | 5'-GGACTAGTTACTTTGGGCGGAATTATCG-3' | This study |
| $\Delta VC2638$ | | |
| VC2638#1 | 5'-CCGCTCGAGTGTTTATCGAACCGAATGAGC-3' | This study |
| VC2638#2 | 5'-TAACGAGCGGCCGCAGGCGACATCAACGTGAATCTG-3' | This study |
| VC2638#3 | 5'-TGCGGCCGCTCGTTAGGCCCTGAGATGATCAAAC-3' | This study |
| VC2638#4 | 5'-GGACTAGTTAAAGCCCCAAAACCAAATG-3' | This study |
| $\Delta VCA0277$ | | |
| <i>gcvH</i> #1 | 5'-CCGCTCGAGCGGATACGCATCTCATGTTG-3' | This study |
| <i>gcvH</i> #2 | 5'-TAACGAGCGGCCGCAAACCCATTATGGCTTTCTG-3' | This study |
| <i>gcvH</i> #3 | 5'-TGCGGCCGCTCGTTAAAAGACGCGGAAGAGTACC-3' | This study |
| <i>gcvH</i> #4 | 5'-GGACTAGTTTCATCGTTGCCAGCATATC-3' | This study |
| $\Delta VCA0941$ | | |
| <i>glyA1</i> #1 | 5'-CCGCTCGAGCAGAATCGCGATCCAATCTT-3' | This study |
| <i>glyA1</i> #2 | 5'-TAACGAGCGGCCGCATTCCTGAATGGCAGCGTAT-3' | This study |
| <i>glyA1</i> #3 | 5'-TGCGGCCGCTCGTTAGTGATTGAAGCGACGAAAC-3' | This study |
| <i>glyA1</i> #4 | 5'-GGACTAGTATGATGGCCAAGTACGCATT-3' | This study |
| $\Delta VCA0278$ | | |
| <i>glyA2</i> #1 | 5'-CCGCTCGAGATTGTGGCATGAAGCGATTT-3' | This study |
| <i>glyA2</i> #2 | 5'-TAACGAGCGGCCGCACGCCAGTGGGGTAGAGAAGAA-3' | This study |
| <i>glyA2</i> #3 | 5'-TGCGGCCGCTCGTTAGACGTTGAGCAACAAGTGC-3' | This study |
| <i>glyA2</i> #4 | 5'-GGACTAGTCGGACATTTTCACTTTCACG-3' | This study |
| Complementation | | |
| <i>gcvT</i> -Fc | 5'-GAGGAATAATAAATGACTGAACAACACGAAAC-3' | This study |
| <i>gcvT</i> -Rc | 5'-TGCTCCGCGATAATAACGCT-3' | This study |