**Supplementary File 1. *E. coli* strains and plasmids used in this study**

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| **Strain** | **Relevant characteristic** | **Reference** |
| REL607 | LTEE ancestor, Ara+, Cit– | (Lenski et al., 1991) |
| ZDB564 | 31,500 generation Ara­–3 clone, Ara–, Cit+ | (Blount et al., 2012) |
| ZDB765 | ZDB564 Ara+, Cit+ | This work |
| ZDB706 | ZDB564 Ara–, Cit– revertant | This work |
| EQ1129 | ZDB706 Ara+, Cit– | This work |
| EQ1207 | ZDB564 Ara+, *gltAwt*, Cit+ | This work |
| EQ1208 | ZDB706 Ara+ *gltAwt*, Cit– | This work |
| ZDB478 | 25,000 generation Ara–3 clone, Ara–, Cit– | (Blount et al., 2012) |
| EQ1159 | ZDB478 Ara+, Cit– | This work |
| EQ1158 | ZDB478 Ara– *gltAwt*, Cit– | This work |
| ZDB483 | 25,000 generation Ara–3 clone, Ara–, Cit– | (Blount et al., 2012) |
| EQ1163 | ZDB483 Ara+, Cit– | This work |
| EQ1151 | ZDB483 Ara–, *gltAwt*, Cit– | This work |
| EQ119 | REL607 Ara+, *dctA\**, Cit– | (Quandt et al., 2014) |
| EQ120 | REL607 Ara+, *dctA\*,* *gltA1*, Cit– | This work |
| EQ121 | REL607 Ara+, *dctA\**, *gltA1*, *gltA2-R*, Cit– | This work |
| EQ128 | REL607 Ara+,*iclR*, Cit– | This work |
| EQ129 | REL607 Ara+, *arcB*, Cit– | This work |
| EQ131 | REL607 Ara+, *iclR*, *arcB,* Cit– | This work |
| **Plasmid** | **Relevant characteristic** | **Reference** |
| gltA1-pKO3 | pKO3 derivative for introduction of *gltA1*(A258T) mutation | This work |
| gltAwt-pKO3 | pKO3 derivative for introduction of *gltAwt* (A258) mutation | This work |
| iclR-pKO3 | pKO3 derivative for introduction of *iclR* (L201R) mutation | This work |
| arcB-pKO3 | pKO3 derivative for introduction of *arcB* (Q79L) mutation | This work |
| pCitT | pSB3K3 derivative containing *rnk*-*citT* mutation | (Quandt et al., 2014) |
| His6-gltA-pET28b | pET28b derivative for inducible expression of His6-WT GltA protein | This work |
| His6-gltA(A258T)-pET28b | pET28b derivative for inducible expression of His6-GltA(A258T) protein | This work |
| His6-gltA(A258T, A162V)-pET28b | pET28b derivative for inducible expression of His6-GltA(A258T, A162V) protein | This work |
| His6-gltA(A258T, A124T)-pET28b | pET28b derivative for inducible expression of His6-GltA(A258T,A124T) protein | This work |