

**Table S1.** Strains and plasmids used in this study.

<b>S. Typhimurium strains</b>	<b>Relevant genotype</b>	<b>Method of construction</b>	<b>Reference</b>
4/74	Wild-type strain	N/A	[22]
AT3385	4/74 $\Delta aceA::Cm$	$\lambda$ Red mutagenesis*: pKD3 PCR product using primers aceAredf and aceAredr	This study
AT3448	4/74 $\Delta sucAB::Kn$	$\lambda$ Red mutagenesis*: pKD4 PCR product using primers sucAredf and sucBredr	<i>ibid</i>
AT3449	4/74 $\Delta sucCD::Kn$	$\lambda$ Red mutagenesis*: pKD4 PCR product using primers sucCredf and sucDredr	<i>ibid</i>
AT3462	4/74 $\Delta sdhCDAB::Kn$	$\lambda$ Red mutagenesis*: pKD4 PCR product using primers sdhCredf and sdhBredr	<i>ibid</i>
AT3469	4/74 $\Delta aceA$	Transformed JH3385 with pCP20 to excise the Cm <sup>R</sup> cassette from the chromosome. The plasmid was cured from the strain.	<i>ibid</i>
AT3496	4/74 $\Delta sucCD::Kn, \Delta aceA$	P22 transduced $\Delta sucCD::Kn$ from JH3449 into JH3469	<i>ibid</i>
AT3472	4/74 $\Delta sucAB$	Transformed JH3448 with pCP20 to excise the Kn <sup>R</sup> cassette from the chromosome. The plasmid was cured from the strain.	<i>ibid</i>

AT3475	4/74 $\Delta$ <i>sdhCDAB</i>	Transformed JH3462 with pCP20 to excise the Kn <sup>R</sup> cassette from the chromosome. The plasmid was cured from the strain.	<i>ibid</i>
AT3477	4/74 $\Delta$ <i>sucCD</i>	Transformed JH3449 with pCP20 to excise the Kn <sup>R</sup> cassette from the chromosome. The plasmid was cured from the strain.	<i>ibid</i>
AT3505	4/74 $\Delta$ <i>gltA::</i> Kn	$\lambda$ Red mutagenesis*: pKD4 PCR product using primers <i>gltAredf</i> and <i>gltAredr</i>	<i>ibid</i>
AT3508	4/74 $\Delta$ <i>mdh::</i> Kn	$\lambda$ Red mutagenesis*: pKD4 PCR product using primers <i>mdhredf</i> and <i>mdhredr</i>	<i>ibid</i>

### Plasmids

pKD46	$\lambda$ Red recombinase expression plasmid	N/A	[23]
pKD3	Cm <sup>R</sup> resistance cassette-containing plasmid	N/A	<i>ibid</i>
pKD4	Kn <sup>R</sup> resistance cassette-containing plasmid	N/A	<i>ibid</i>
pCP20	FLP-recombinase expression plasmid	N/A	<i>ibid</i>
pWKS30	Ap <sup>R</sup> low-copy-number vector, pSC101 origin of replication	N/A	[25]
pWKS30:: <i>sucCD</i>	Ap <sup>R</sup> low-copy-number vector, pSC101 origin of replication, expresses <i>sucCD</i>	2,056 bp <i>sucF-sucR</i> PCR product cloned into pWKS30 BamHI-HindIII sites	This study

\*The  $\lambda$ Red mutagenesis method is described in Materials and Methods