

S1 Table. Strains used in this study

Strain	Genotype^a	Source/Reference^b
DH5α	<i>F– hsdR17 deoR recA1 endA1 phoA supE44 thi-1 gyrA96 relA1 Δ(lacZYA-argF)U169 ϕ80dlacZΔM15</i>	Gibco BRL
BL21(λDE3)	<i>ompT rB– mB– (PlacUV5::T7gene1)</i>	Novagen
MG1655	<i>rph-1 ilvG rfb-50</i>	[1]
AAY22	TB28 <i>ΔamiC::frt ΔyraP::Kan^R</i>	P1(MT129) x TB143
MT46	TB28 <i>ΔSSnlpD::Kan^R</i>	P1(λRed) x TB28
MT47	TB28 <i>ΔSSnlpD::frt</i>	MT46/pCP20
MT50	TB28 <i>ΔSSnlpD::frt ΔenvC::Kan^R</i>	P1(TB134) x MT47
MT51	TB28 <i>ΔtolQ-pal::Kan^R</i>	P1(λRed) x TB28
MT53	TB28 <i>ΔSSnlpD::frt ΔtolQ-pal::Kan^R</i>	P1(λRed) x MT47
MT55	TB28 <i>ΔenvC::frt ΔtolQ-pal::Kan^R</i>	P1(λRed) x TB140
MT56	TB28 <i>ΔamiC::frt ΔtolQ-pal::Kan^R</i>	P1(MT51) x TB143
MT92	TB28 <i>ΔSSnlpD::frt ΔtolQ-pal::frt</i>	MT53/pCP20
MT96	TB28 <i>ΔSSnlpD::frt ΔtolQ-pal::frt ΔenvC::Kan^R</i>	P1(TB134) x MT92
MT121	MG1655 <i>ΔSSnlpD::Kan^R</i>	P1(MT46) x MG1655
MT122	MG1655 <i>ΔSSnlpD::frt</i>	MT121/pCP20
MT123	MG1655 <i>ΔSSnlpD::frt ΔamiC::Kan^R</i>	P1(TB137) x MT122
MT129	TB10 <i>ΔyraP::Kan^R</i>	λRed
MT135	TB28 <i>ΔenvC::frt ΔyraP::Kan^R</i>	P1(MT129) x TB140
MT140	TB28 <i>ΔyraP::Kan^R</i>	P1(MT129) x TB28
MT141	TB28 <i>ΔSSnlpD::frt ΔyraP::Kan^R</i>	P1(MT129) x MT47
MT147	TB28 <i>ΔSSnlpD::frt ΔtolQ-pal::frt ΔyraP::Kan^R</i>	P1(MT129) x MT92
MT149	TB28 <i>ΔamiC::frt ΔtolQ-pal::Kan^R</i>	P1(MT51) x TB143
MT150	TB28 <i>ΔamiC::frt ΔyraP::Kan^R</i>	P1(MT129) x TB143
MT174	TB28 <i>ΔamiC::frt ΔtolQ-pal::frt</i>	MT56/pCP20

Strain	Genotype ^a	Source/Reference ^b
MT176	TB28 $\Delta^{SS}nlpD::frr \Delta amiC::Kan^R$	P1(TB137) x MT47
MT177	TB28 $\Delta^{SS}nlpD::frr \Delta yraP::frr$	MT141/pCP20
MT178	TB28 $\Delta amiC::frr \Delta tolQ-pal::frr \Delta yraP::Kan^R$	P1(MT129) x MT174
MT179	TB28 $\Delta^{SS}nlpD::frr \Delta yraP::frr \Delta envC::Kan^R$	P1(TB134) x MT177
TB10	MG1655 $\lambda\Delta cro-bio nad::Tn10$	[2]
TB28	MG1655 $\Delta laclZYA::frr$	[3]
TB134	TB28 $\Delta envC::Kan^R$	[4]
TB137	TB28 $\Delta amiC::Kan^R$	[4]
TB140	TB28 $\Delta envC::frr$	[4]
TB143	TB28 $\Delta amiC::frr$	[5]

^a The Kan^R cassette is flanked by *frr* sites for removal by FLP recombinase. An *frr* scar remains following removal of the cassette using FLP recombinase expressed from pCP20.

^b Strain constructions by P1 transduction are described using the shorthand: P1(donor) x recipient. Transductants were selected on LB Kan, LB Tet, or LB Cm plates where appropriate. λ Red indicates strains constructed by recombineering (see Experimental Procedures for details). Strains resulting from the removal of a drug resistance cassette using pCP20 are indicated as: Parental strain/pCP20.