

**Table S2.** Strains used in this study.

Strain	Genotype
ATCC 14028	Wild type
ST4/74	Wild type
SV4231 <sup>b</sup>	<i>recF522::Tn5</i>
SV4212 <sup>b</sup>	<i>recD543::Tn10</i>
SV10037/42	14028 [SNP4/74]- <i>yebG::gfp</i>
SV10043/44	4/74 [SNP14028]- <i>yebG::gfp</i>
SV9012	<i>yebG::gfp</i>
SV9063	<i>yebG::gfp lexA(Ind<sup>-</sup>)</i>
SV9407	<i>umuC::gfp</i>
SV9408	<i>uvrD::gfp</i>
SV9409	<i>ruvA::gfp</i>
SV9410	<i>recA::gfp</i>
SV9453	<i>recN::gfp</i>
SV9454	STM14_3210:: <i>gfp</i>
SV9455	STM14_1156:: <i>gfp</i>
SV9462	<i>dinI::gfp</i>
SV9463	<i>yigN::gfp</i>
SV9464	<i>dinP::gfp</i>
SV9465	<i>nlhH::gfp</i>
SV9467	<i>recA::gfp lexA(Ind<sup>-</sup>)</i>
SV9468	<i>uvrD::gfp lexA(Ind<sup>-</sup>)</i>
SV9469	<i>umuC::gfp lexA(Ind<sup>-</sup>)</i>
SV9470	<i>ruvA::gfp lexA(Ind<sup>-</sup>)</i>
SV9471	<i>recN::gfp lexA(Ind<sup>-</sup>)</i>
SV9472	<i>dinI::gfp lexA(Ind<sup>-</sup>)</i>
SV9473	<i>yigN::gfp lexA(Ind<sup>-</sup>)</i>
SV9474	<i>dinP::gfp lexA(Ind<sup>-</sup>)</i>
SV9475	STM14_3210:: <i>gfp lexA(Ind<sup>-</sup>)</i>
SV9476	<i>nlhH::gfp lexA(Ind<sup>-</sup>)</i>
SV9477	STM14_1156:: <i>gfp lexA(Ind<sup>-</sup>)</i>
SV9479	<i>sulA::gfp</i>
SV9480	<i>sulA::gfp lexA(Ind<sup>-</sup>)</i>
SV9546	STM14_1156:: <i>gfp ΔrecA::Cm</i>
SV9618	<i>ΔrecA::Cm</i>
SV9635	<i>yebG::gfp ΔrecA::Cm</i>
SV9636	<i>sulA::gfp ΔrecA::Cm</i>
SV9637	<i>dinI::gfp ΔrecA::Cm</i>

SV9638	<i>uvrD::gfp ΔrecA::Cm</i>
SV9639	<i>STM14_3210::gfp ΔrecA::Cm</i>
SV9671	<i>ssb::gfp</i>
SV9673	<i>STM14_3214::gfp</i>
SV9674	<i>lexA::gfp</i>
SV9675	<i>IstR-1,2::gfp</i>
SV9676	<i>polB::gfp</i>
SV9677	<i>yqaB::gfp</i>
SV9678	<i>uvrA::gfp</i>
SV9679	<i>lexA::gfp ΔrecA::Cm</i>
SV9680	<i>IstR-1,2::gfp lexA(Ind<sup>-</sup>)</i>
SV9681	<i>polB::gfp lexA(Ind<sup>-</sup>)</i>
SV9682	<i>yqaB::gfp lexA(Ind<sup>-</sup>)</i>
SV9683	<i>uvrA::gfp lexA(Ind<sup>-</sup>)</i>
SV9685	<i>ssb::gfp lexA(Ind<sup>-</sup>)</i>
SV9687	<i>STM14_3214::gfp lexA(Ind<sup>-</sup>)</i>
SV9697	<i>yejL::gfp</i>
SV9698	<i>yejL::gfp lexA(Ind<sup>-</sup>)</i>
SV9708	<i>msgA::gfp</i>
SV9709	<i>msgA::gfp lexA(Ind<sup>-</sup>)</i>
SV9710	<i>corE::gfp</i>
SV9711	<i>corE::gfp lexA(Ind<sup>-</sup>)</i>
SV9712	<i>sbmC::gfp</i>
SV9713	<i>sbmC::gfp lexA(Ind<sup>-</sup>)</i>
SV9719	<i>uvrB::gfp</i>
SV9722	<i>STM14_1432::gfp</i>
SV9725	<i>uvrB::gfp lexA(Ind<sup>-</sup>)</i>
SV9728	<i>STM14_1432::gfp lexA(Ind<sup>-</sup>)</i>
SV9731	<i>ST4/74 yebG::gfp</i>
SV9733	<i>yqaB::gfp ΔrecA::Cm</i>
SV9736	<i>msgA::gfp ΔrecA::Cm</i>
SV9737	<i>yejL::gfp ΔrecA::Cm</i>
SV9738	<i>STM14_3214::gfp ΔrecA::Cm</i>
SV9740	<i>ssb::gfp ΔrecA::Cm</i>
SV9741	<i>IstR-1,2::gfp ΔrecA::Cm</i>
SV9742	<i>nlhH::gfp ΔrecA::Cm</i>
SV9743	<i>polB::gfp ΔrecA::Cm</i>
SV9747	<i>sbmC::gfp ΔrecA::Cm</i>
SV9748	<i>ruvA::gfp ΔrecA::Cm</i>
SV9749	<i>umuC::gfp ΔrecA::Cm</i>
SV9750	<i>uvrA::gfp ΔrecA::Cm</i>
SV9752	<i>uvrB::gfp ΔrecA::Cm</i>
SV9753	<i>corE::gfp ΔrecA::Cm</i>
SV9754	<i>dinP::gfp ΔrecA::Cm</i>

SV9755	<i>yigN::gfp ΔrecA::Cm</i>
SV9756	<i>recN::gfp ΔrecA::Cm</i>
SV9757	<i>STM14_1432::gfp ΔrecA::Cm</i>
SV10122	<i>sulA::gfp ΔrecF522::Tn5</i>
SV10037/42	[SNP4/74]- <i>yebG::gfp</i>
SV10043/44 c	[SNP14028]- <i>yebG::gfp</i>
SV10123	<i>sulA::gfp ΔrecD543::Tn10</i>

<sup>a</sup> Allele originally described by Bunny et al. 2002 [18]

<sup>b</sup> Alleles originally described by Cano et al. 2002 [20]

<sup>c</sup> 4/74 derivative