

Table S1 Strains and plasmids

Strain	Relevant genotype	Construction or reference
CAG18499	<i>zid</i> ::Tn10	(Nichols <i>et al.</i> , 1998)
CAG18500	<i>thiC</i> ::Tn10	(Nichols <i>et al.</i> , 1998)
JJC40	wild-type	Laboratory collection
JJC147	Hfr PK3-PO131 <i>argE86</i> ::Tn10	CGSC6763 Genetic Stock Center
JJC212	<i>uvrD</i> ::Tn5	Laboratory collection
JJC451	<i>recF400</i> ::Tn5	Laboratory collection
JJC754	Δ <i>ruvABC</i> :: <i>cm</i>	(Seigneur <i>et al.</i> , 1998)
JJC760	Δ <i>rep</i> :: <i>cam</i> [pGBts-rep+]	(Petit and Ehrlich, 2002)
JJC213	Δ <i>rep</i> :: <i>kan</i>	(Uzest <i>et al.</i> , 1991)
JJC1086	Δ <i>recB</i> :: <i>kan</i> [pDWS2]	Δ <i>recB</i> :: <i>kan</i> (Murphy, 1998) pDWS2: pBR322-RecBCD ⁺ (G. Smith)
JJC1177	<i>rep</i> :: <i>Ap</i>	Laboratory collection
JJC1519	Hfr PK3-PO131 <i>argE86</i> ::Tn10 <i>recF400</i> ::Tn5	JJC147 * P1 JJC450
JJC1706	Δ <i>rep</i> :: <i>cam</i> <i>uvrD</i> ::Tn5 <i>recO</i> ::Tn5 <i>metE</i> ::Tn10 [pGBts-rep+]	MAC569 in (Petit and Ehrlich, 2002)
JJC1707	Δ <i>rep</i> :: <i>cam</i> <i>uvrD</i> ::Tn5 <i>recR</i> ::Tn5 <i>metE</i> ::Tn10 [pGBts-rep+]	MAC 574 in (Petit and Ehrlich, 2002)
JJC1708	Δ <i>rep</i> :: <i>cam</i> <i>uvrD</i> ::Tn5 [pGBts-rep+]	MAC 556 in (Petit and Ehrlich, 2002)
JJC1857	Δ <i>dinG</i> :: <i>kan</i>	Gene replacement of <i>dinG</i> by Kan ^R of pKD4 (Datsenko and Wanner, 2000)
JJC1861	Δ <i>dinG</i> :: <i>cm</i>	(Boubakri <i>et al.</i> , 2010)
JJC1892	<i>rep</i> :: <i>Ap</i> [pAM-rep+]	Laboratory collection
JJC1945	<i>sfIA11</i>	(Grompone <i>et al.</i> , 2004)
JJC1960	<i>uvrD</i> ::Tn5 <i>rep</i> :: <i>Ap</i> [pAM-rep+]	Laboratory collection
JJC2062	<i>recF400</i> ::Tn5 <i>zid501</i> ::Tn10	Laboratory collection
JJC2177	Hfr PK3-PO131 <i>recF400</i> ::Tn5	JJC1519* P1 JJC40
JJC2230	Δ <i>ruvABC</i> :: <i>cm</i> [pGB-ruvABC+]	(Lestini and Michel, 2008)
JJC2386	Δ (<i>uvrD-yigB</i>):: <i>cam</i>	(Flores <i>et al.</i> , 2005)
JJC2418	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 [pGBts-rep+]	JJC1708 P1 JJC1177
JJC2451	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 [pGBts-rep+]	JJC2418 * PA JJC451
JJC2488	<i>sfIA11</i> <i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam</i> <i>recO</i> ::Tn5 [pGBts-rep+]	Laboratory collection
JJC2634	Δ <i>uvrD294</i> :: <i>Kan</i>	(Lestini and Michel, 2007)
JJC3122	Δ <i>rep</i> :: <i>cam</i> <i>uvrD</i> ::Tn5 <i>recQ1803</i> ::Tn3 [pGBts-rep+]	(Lestini and Michel, 2008)
JJC3870	Δ <i>rep</i> :: <i>kan</i> [pAM-rep+]	JJC213 transformed with [pAM-rep+]
JJC3971	Δ <i>rep</i> :: <i>kan</i> Δ <i>uvrD294</i> :: <i>kan</i> [pAM-rep+]	JJC3870 * P1 JJC2634
JJC3998	Hfr PK3-PO131 <i>recF400</i> ::Tn5 <i>rep</i> :: <i>Ap</i>	JJC2177 * P1 JJC1177
JJC4013	Hfr PK3-PO131 <i>recF400</i> ::Tn5 <i>rep</i> :: <i>Ap</i> [pAM-rep]	JJC3998 transformed with pAM-rep
JJC4035	Hfr PK3-PO131 <i>recF400</i> ::Tn5 <i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam</i> [pAM-rep]	JJC4013 * P1 JJC2386
JJC4038	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 <i>rpoC</i> ^{P451L} (S1)	LB- resistant derivative of JJC4048
JJC4039	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 <i>rpoC</i> ^{H113R} (S2)	LB- resistant derivative of JJC4048
JJC4040	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 <i>rpoB</i> ^{H447R} (S3m)	LB- resistant derivative of JJC4048
JJC4041	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 <i>rpoB</i> ^{D444G} (S3a)	LB- resistant derivative of JJC4048
JJC4043	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 <i>rpoC</i> ^{H113R} [pAM-rep] Δ <i>dinG</i> :: <i>cm</i>	JJC4039 * pAM-rep * P1 JJC1861
JJC4044	<i>rep</i> :: <i>Ap</i> <i>uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 <i>rpoB</i> ^{H447R} [pAM-rep] Δ <i>dinG</i> :: <i>cm</i>	JJC4040 * pAM-rep * P1 JJC1861

JJC4045	<i>rep::Ap uvrD::Tn5 recF400::Tn5 rpoB^{D444G} [pAM-rep] ΔdinG::cm</i>	JJC4041 * pAM-rep * P1 JJC1861
JJC4047	<i>rep::Ap uvrD::Tn5 recF400::Tn5 rpoC^{P451L} [pAM-rep] ΔdinG::cm</i>	JJC4038 * pAM-rep * P1 JJC1861
JJC4048	<i>rep::Ap uvrD::Tn5 recF400::Tn5</i>	JJC2451 cured of pBGts-rep
JJC4053	<i>rep::Ap uvrD::Tn5 recF400::Tn5 rpoC^{H113R} (S3b)</i>	LB- resistant derivative of JJC4048
JJC4100	Hfr PK3-PO131 <i>recF400::Tn5 rep::Ap Δ(uvrD-yigB)::cam rpoB^{N518D}</i>	Fast growing segregant of JJC4035
JJC4107	<i>relA::kan</i>	RLG3373 (Dr. R. Gourse)
JJC4108	<i>relA::kan spoT::cam</i>	RLG3373 (Dr. R. Gourse)
JJC4109	<i>rpoC^{Δ215-220} thiC::Tn10</i>	RLG3381 in (Bartlett <i>et al.</i> , 1998)
JJC4112	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ</i>	RLG5950 in (Bartlett <i>et al.</i> , 1998)
JJC4113	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ greA::cam</i>	RLG7239 (Dr. R. Gourse)
JJC4114	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ greB::kan</i>	RLG7240 (Dr. R. Gourse)
JJC4124	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoC^{P451L}</i>	JJC4038 * Hfr4100 selection for Cm ^R Tet ^R , screening for Rif ^S
JJC4125	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoB^{H447R}</i>	JJC4040 * Hfr4100 selection for Cm ^R Tet ^R , screening for Rif ^S
JJC4126	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoB^{D444G}</i>	JJC4041 * Hfr4100 selection for Cm ^R Tet ^R , screening for Rif ^S
JJC4141	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoC^{H113R}</i>	JJC4039 * Hfr4100 selection for Cm ^R Tet ^R , screening for Rif ^S
JJC4142	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoC^{H113R}</i>	JJC4053 * Hfr4100 selection for Cm ^R Tet ^R , screening for Rif ^S
JJC4162	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoC^{P451L} thiC::Tn10</i>	JJC4124 * P1 CGA18500
JJC4163	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoB^{H447R} thiC::Tn10</i>	JJC4125 * P1 CAG18500
JJC4164	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoB^{D444G} thiC::Tn10</i>	JJC4126 * P1 CAG18500
JJC4170	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoC^{H113R} thiC::Tn10</i>	JJC4141 * P1 CAG18500
JJC4174	<i>sfiA11 ΔrecQ6215::Cm</i>	(Lestini and Michel, 2007)
JJC4186	<i>recF400::Tn5 rep::Ap Δ(uvrD-yigB)::cam rpoB^{N518D}</i>	JJC4048 * Hfr4100 selection for Cm ^R Tet ^R , screening for Rif ^R
JJC4200	<i>recF400::Tn5 rep::Ap Δ(uvrD-yigB)::cam rpoB^{N518D} thiC::Tn10</i>	JJC4186 * P1 CAG18500
JJC4215	<i>Δrep::kan ΔuvrD294::kan [pAM-rep+] rpoC^{Δ215-220} thiC::Tn10</i>	JJC3971 * JJC4109
JJC4247	<i>rep::Ap Δ(uvrD-yigB)::cam zid::Tn10 rpoC^{P451L} [pAM-rep]</i>	JJC4124 * P1 CAG18999
JJC4248	<i>rep::Ap Δ(uvrD-yigB)::cam zid::Tn10 rpoB^{H447R} [pAM-rep]</i>	JJC4125* P1 CAG18999
JJC4249	<i>rep::Ap Δ(uvrD-yigB)::cam zid::Tn10 rpoB^{D444G} [pAM-rep]</i>	JJC4126*P1 CAG18999
JJC4251	<i>rep::Ap Δ(uvrD-yigB)::cam zid::Tn10 rpoC^{H113R} [pAM-rep]</i>	JJC4442 * P1 CAG18999
JJC4252	Hfr PK3-PO131 <i>zid::Tn10 rep::Ap Δ(uvrD-yigB)::cam rpoB^{N518D} [pAM-rep]</i>	JJC4100 * P1 CAG18999
JJC4257	<i>sfiA11 rep::Ap Δ(uvrD-yigB)::cam recO::Tn5 rpoB^{N518D} thiC::Tn10</i>	JJC2488 * P1 JJC4200 cured of pGBts-rep
JJC4281	<i>Δrep::kan ΔuvrD294::kan [pAM-rep+] rpoB^{H447R} thiC::Tn10</i>	JJC3971 * P1 JJC4163
JJC4283	<i>sfiA11 rep::Ap Δ(uvrD-yigB)::cam recO::Tn5 rpoC^{P451L} thiC::Tn10</i>	JJC2488 * P1 JJC4162 cured of pGBts-rep
JJC4304	<i>Δrep::kan ΔuvrD294::kan [pAM-rep+] rpoB^{D444G} thiC::Tn10</i>	JJC3971 * P1 JJC4164
JJC4324	<i>sfiA11 rep::Ap Δ(uvrD-yigB)::cam recO::Tn5 rpoB^{D444G} thiC::Tn10</i>	JJC2488 * P1 JJC4164 cured of pGBts-rep
JJC4340	<i>rep::Ap Δ(uvrD-yigB)::cam recF400::Tn5 rpoC^{H113R} thiC::Tn10</i>	JJC4142 * P1 CAG18500
JJC4342	<i>sfiA11 rep::Ap Δ(uvrD-yigB)::cam recO::Tn5 rpoB^{H447R} thiC::Tn10</i>	JJC2488 * P1 JJC4163 cured of pGBts-rep
JJC4344	<i>sfiA11 rep::Ap Δ(uvrD-yigB)::cam recO::Tn5 rpoC^{H113R} thiC::Tn10</i>	JJC2488 * P1 JJC4170 cured of pGBts-rep
JJC4354	<i>Δrep::kan ΔuvrD294::kan [pAM-rep+] rpoC^{P451L} thiC::Tn10</i>	JJC3971 * P1 JJC4162

JJC4355	$\Delta rep::kan \Delta uvrD294::kan$ [pAM-rep+] <i>rpoC</i> ^{H113R} <i>thiC::Tn10</i>	JJC3971 * P1 JJC4170
JJC4488	<i>rpoB</i> ^{N518D} <i>thiC::Tn10</i>	JJC40 * P1 JJC4200
JJC4489	<i>rpoC</i> ^{P451L} <i>thiC::Tn10</i>	JJC40 * P1 JJC4162
JJC4490	<i>rpoB</i> ^{D444G} <i>thiC::Tn10</i>	JJC40 * P1 JJC4164
JJC4491	<i>rpoB</i> ^{H447R} <i>thiC::Tn10</i>	JJC40 * P1 JJC4163
JJC4512	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ rpoC</i> ^{P451L} <i>thiC::Tn10</i>	JJC4112 * P1 JJC4162
JJC4514	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ rpoB</i> ^{H447R} <i>thiC::Tn10</i>	JJC4112 * P1 JJC4163
JJC4515	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ rpoC</i> ^{N518D} <i>thiC::Tn10</i>	JJC4112 * P1 JJC4200
JJC4525	<i>lacZ lacI lambda::P1₋₆₁₊₁ rrmB lacZ rpoC</i> ^{H113R} <i>thiC::Tn10</i>	JJC4112 * P1 JJC4170
JJC4528	<i>rpoC</i> ^{$\Delta 215-220$} <i>thiC::Tn10</i>	JJC40 * P1 JJC4109
JJC4531	<i>rpoC</i> ^{H113R} <i>thiC::Tn10</i>	JJC40 * P1 JJC4340
JJC4532	<i>rpoC</i> ^{H113R} <i>thiC::Tn10</i>	JJC40 * P1 JJC4170
JJC4547	<i>rpoC</i> ^{N518D} <i>thiC::Tn10</i> $\Delta ruvABC::cm$	JJC4488 * P1 JJC2230
JJC4548	<i>rpoC</i> ^{P451L} <i>thiC::Tn10</i> $\Delta ruvABC::cm$	JJC4488 * P1 JJC2230
JJC4549	<i>rpoB</i> ^{D444G} <i>thiC::Tn10</i> $\Delta ruvABC::cm$	JJC4490 * P1 JJC2230
JJC4553	<i>rpoC</i> ^{N518D} <i>thiC::Tn10</i> <i>relA::kan</i>	JJC4488 * P1 JJC4107
JJC4554	<i>rpoC</i> ^{P451L} <i>thiC::Tn10</i> <i>relA::kan</i>	JJC4489 * P1 JJC4107
JJC4555	<i>rpoB</i> ^{D444G} <i>thiC::Tn10</i> <i>relA::kan</i>	JJC4490 * P1 JJC4107
JJC4556	<i>rpoB</i> ^{H447R} <i>thiC::Tn10</i> <i>relA::kan</i>	JJC4491 * P1 JJC4107
JJC4557	<i>rpoC</i> ^{H113R} <i>thiC::Tn10</i> <i>relA::kan</i>	JJC4531 * P1 JJC4107
JJC4558	<i>rpoC</i> ^{H113R} <i>thiC::Tn10</i> <i>relA::kan</i>	JJC4532 * P1 JJC4107
JJC4719	<i>rep::cam uvrD::Tn5 rpoC</i> ^{$\Delta 215-220$} <i>thiC::Tn10</i> [pGBts-rep+]	JJC1708 * P1 JJC4528
JJC4818	<i>rpoB</i> ^{N518D} <i>thiC::Tn10 greB::kan greA::cam</i>	[JJC4488 *P14205] * P1 4204
JJC4820	<i>rpoB</i> ^{D444G} <i>thiC::Tn10 greB::kan greA::cam</i>	[JJC4490 *P14205] * P1 4204
JJC4821	<i>rpoB</i> ^{H447R} <i>thiC::Tn10 greB::kan greA::cam</i>	[JJC4491 *P14205] * P1 4204
JJC4822	<i>rpoC</i> ^{H113R} <i>thiC::Tn10 greB::kan greA::cam</i>	[JJC4531 * P14205] * P1 4204
JJC4823	<i>rpoC</i> ^{H113R} <i>thiC::Tn10 greB::kan greA::cam</i>	[JJC4532 *P14205] * P1 4204
JJC4824	<i>greB::kan greA::cam</i>	[JJC40 *P14205] * P1 4204
JJC4828	InvA $\Delta dinG \Delta rep::cm^R$ [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC4832	<i>rpoB</i> ^{H447R} <i>thiC::Tn10</i> $\Delta ruvABC::cm$	JJC4491 * P1 JJC2230
JJC4860	<i>rpoB</i> ^{N518D} <i>thiC::Tn10</i> $\Delta recQ::cam$	JJC4488 *P1 JJC4174
JJC4861	<i>rpoC</i> ^{P451L} <i>thiC::Tn10</i> $\Delta recQ::cam$	JJC4489 *P1 JJC4174
JJC4862	<i>rpoB</i> ^{D444G} <i>thiC::Tn10</i> $\Delta recQ::cam$	JJC4490 *P1 JJC4174
JJC4863	<i>rpoB</i> ^{H447R} <i>thiC::Tn10</i> $\Delta recQ::cam$	JJC4491 *P1 JJC4174
JJC4864	<i>rpoC</i> ^{$\Delta 215-220$} <i>thiC::Tn10</i> $\Delta recQ::cam$	JJC4528 *P1 JJC4174
JJC4865	<i>rpoC</i> ^{H113R} <i>thiC::Tn10</i> $\Delta recQ::cam$	JJC4532 *P1 JJC4174
JJC4986	<i>rpoC</i> ^{$\Delta 215-220$} <i>thiC::Tn10</i> $\Delta ruvABC::cm$	JJC4528 * P1 JJC2230
JJC4895	<i>rpoB</i> ^{N518D} <i>thiC::Tn10 rep::Ap uvrD::Tn5</i> [pGBts-rep+]	JJC4488 [pGBts-rep]* P1 JJC2418
JJC4896	<i>rpoB</i> ^{D444G} <i>thiC::Tn10 rep::Ap uvrD::Tn5</i> [pGBts-rep+]	JJC4490 [pGBts-rep]* P1 JJC2418
JJC4897	<i>rpoC</i> ^{$\Delta 215-220$} <i>thiC::Tn10 rep::Ap uvrD::Tn5</i> [pGBts-rep+]	JJC4528 [pGBts-rep]* P1 JJC2418
JJC4898	<i>rpoC</i> ^{H113R} <i>thiC::Tn10 rep::Ap uvrD::Tn5</i> [pGBts-rep+]	JJC4532 [pGBts-rep]* P1 JJC2418
JJC4899	<i>rpoC</i> ^{P451L} <i>thiC::Tn10 rep::Ap uvrD::Tn5</i> [pGBts-rep+]	JJC4489 [pGBts-rep]* P1 JJC2418
JJC4900	<i>rpoB</i> ^{H447R} <i>thiC::Tn10 rep::Ap uvrD::Tn5</i> [pGBts-rep+]	JJC4491 [pGBts-rep]* P1 JJC2418
JJC4901	<i>rpoB</i> ^{N518D} <i>thiC::Tn10</i> $\Delta recQ::cam rep::Ap uvrD::Tn5$ [pGBts-rep+]	JJC4860 [pGBts-rep] * P1 JJC2418

JJC4902	<i>rpoC</i> ^{P451L} <i>thiC</i> ::Tn10 Δ <i>recQ</i> :: <i>cam rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+]	JJC4861 [pGBts-rep] * P1 JJC2418
JJC4903	<i>rpoB</i> ^{D444G} <i>thiC</i> ::Tn10 Δ <i>recQ</i> :: <i>cam rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+]	JJC4862 [pGBts-rep] * P1 JJC2418
JJC4904	<i>rpoB</i> ^{H447R} <i>thiC</i> ::Tn10 Δ <i>recQ</i> :: <i>cam rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+]	JJC4863 [pGBts-rep] * P1 JJC2418
JJC4905	<i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10 Δ <i>recQ</i> :: <i>cam rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+]	JJC4864 [pGBts-rep] * P1 JJC2418
JJC4906	<i>rpoC</i> ^{H113R} <i>thiC</i> ::Tn10 Δ <i>recQ</i> :: <i>cam rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+]	JJC4865 [pGBts-rep] * P1 JJC2418
JJC4911	<i>rpoB</i> ^{D444G} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>dinG</i> :: <i>cm</i>	JJC4896 * P1 JJC1861
JJC4912	<i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>dinG</i> :: <i>cm</i>	JJC4897 * P1 JJC1861
JJC4913	<i>rpoC</i> ^{H113R} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>dinG</i> :: <i>cm</i>	JJC4898 * P1 JJC1861
JJC4918	<i>rpoB</i> ^{H447R} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>dinG</i> :: <i>cm</i>	JJC4900 * P1 JJC1861
JJC4940	<i>InvA</i> Δ <i>dinG</i>	(Boubakri <i>et al.</i> , 2010)
JJC4962	<i>InvA</i> Δ <i>dinG</i> <i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10	(Boubakri <i>et al.</i> , 2010)
JJC5136	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF400</i> ::Tn5 [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC5151	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF400</i> ::Tn5 Δ <i>dinG</i> ::Cm ^R [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC5152	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF400</i> ::Tn5 <i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10 [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC5153	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF400</i> ::Tn5 <i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10	(Boubakri <i>et al.</i> , 2010)
JJC5166	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF</i> ::Tn5 <i>zid</i> ::Tn10 [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC5169	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF400</i> ::Tn5 Δ <i>dinG</i> ::Cm ^R <i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10 [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC5170	Δ <i>rep</i> ::kan ^R Δ <i>uvrD294</i> ::kan ^R <i>recF400</i> ::Tn5 <i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10 Δ <i>dinG</i> ::Cm ^R [pAM-rep]	(Boubakri <i>et al.</i> , 2010)
JJC5236	<i>InvA</i> Δ <i>dinG</i> <i>rpoB</i> ^{H447R} <i>thiC</i> ::Tn10	JJC4940 * P1 JJC4163
JJC5237	<i>InvA</i> Δ <i>dinG</i> <i>rpoC</i> ^{H113R} <i>thiC</i> ::Tn10	JJC4940 * P1 JJC4170
JJC5238	<i>InvA</i> Δ <i>dinG</i> <i>rpoC</i> ^{H113R} <i>thiC</i> ::Tn10	JJC4940 * P1 JJC4340
JJC5239	<i>InvA</i> Δ <i>dinG</i> <i>rpoB</i> ^{D444G} <i>thiC</i> ::Tn10	JJC4940 * P1 JJC4164
JJC5241	<i>InvA</i> Δ <i>dinG</i> <i>rpoB</i> ^{N518D} <i>thiC</i> ::Tn10	JJC4940 * P1 JJC4200
JJC5253	<i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam zid</i> ::Tn10 Δ <i>dinG</i> :: <i>kan rpoC</i> ^{P451L} [pAM-rep]	JJC4247 * P1 JJC1857
JJC5254	<i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam zid</i> ::Tn10 Δ <i>dinG</i> :: <i>kan rpoB</i> ^{H447R} [pAM-rep]	JJC4248 * P1 JJC1857
JJC5255	<i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam zid</i> ::Tn10 Δ <i>dinG</i> :: <i>kan rpoB</i> ^{D444G} [pAM-rep]	JJC4249 * P1 JJC1857
JJC5257	<i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam zid</i> ::Tn10 Δ <i>dinG</i> :: <i>kan rpoC</i> ^{H113R} [pAM-rep]	JJC4251 * P1 JJC1857
JJC5258	Hfr PK3-PO131 <i>zid</i> ::Tn10 <i>rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam rpoB</i> ^{N518D}	JJC4253 * P1 JJC1857
JJC5259	<i>rep</i> :: <i>Ap uvrD</i> ::Tn5 <i>recF400</i> ::Tn5 [pGBts-rep+] [pEM001]	JJC2451 transformed with pEM001
JJC5261	<i>sfiA11 rep</i> :: <i>Ap</i> Δ (<i>uvrD-yigB</i>):: <i>cam recO</i> ::Tn5 <i>rpoC</i> ^{Δ215-220} <i>thiC</i> ::Tn10 [pGBts-rep+]	JJC2488 * P JJC4528
JJC5267	<i>InvA</i> Δ <i>dinG</i> Δ <i>rep</i> ::cm ^R <i>rpoB</i> ^{H447R} <i>thiC</i> ::Tn10 [pAM-rep]	JJC4828 * P1 JJC4163
JJC5268	<i>InvA</i> Δ <i>dinG</i> Δ <i>rep</i> ::cm ^R <i>rpoC</i> ^{H113R} <i>thiC</i> ::Tn10 [pAM-rep]	JJC4828 * P1 JJC4340
JJC5269	<i>InvA</i> Δ <i>dinG</i> Δ <i>rep</i> ::cm ^R <i>rpoB</i> ^{N518D} <i>thiC</i> ::Tn10 [pAM-rep]	JJC4828 * P1 JJC4200
JJC5308	<i>InvA</i> Δ <i>dinG</i> Δ <i>rep</i> ::cm ^R <i>rpoB</i> ^{D444G} <i>thiC</i> ::Tn10 [pAM-rep]	JJC4828 * P1 JJC4164
JJC5309	<i>rpoB</i> ^{N518D} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>recQ</i> :: <i>cam</i>	JJC4895 * P1 JJC4174
JJC5310	<i>rpoB</i> ^{N518D} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>dinG</i> :: <i>cm</i>	JJC4895 * P1 JJC1861
JJC5312	<i>rpoC</i> ^{P451L} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>dinG</i> :: <i>cm</i>	JJC4899 * P1 JJC1861
JJC5313	<i>rpoC</i> ^{P451L} <i>thiC</i> ::Tn10 <i>rep</i> :: <i>Ap uvrD</i> ::Tn5 [pGBts-rep+] Δ <i>recQ</i> :: <i>cam</i>	JJC4899 * P1 JJC4174
JJC5344	<i>InvA</i> Δ <i>dinG</i> Δ <i>rep</i> ::cm ^R <i>rpoC</i> ^{P451L} <i>thiC</i> ::Tn10 [pAM-rep]	JJC4828 * P1 JJC4162

JJC5351	<i>rep::Ap Δ(uvrD-yigB)::cam zid::Tn10 rpoC^{H113R} [pAM-rep]</i>	JJC4141 * P1 CAG18999
JJC5400	<i>InvA ΔdinG rpoC^{P451L} thiC::Tn10</i>	JJC4940 * P1 JJC4162
JJC5405	<i>Δrep ::kanR ΔuvrD294 ::kan^R recF400 ::Tn5 ΔdinG ::Cm^R rpoB^{N518D} thiC::Tn10 [pAM-rep]</i>	JJC5151 * P1 JJC4200
JJC5406	<i>Δrep ::kanR ΔuvrD294 ::kan^R recF400 ::Tn5 ΔdinG ::Cm^R rpoC^{P451L} thiC::Tn10 [pAM-rep]</i>	JJC5151 * P1 JJC4162
JJC5407	<i>Δrep ::kanR ΔuvrD294 ::kan^R recF400 ::Tn5 ΔdinG ::Cm^R rpoC^{H113R} thiC::Tn10 [pAM-rep]</i>	JJC5151 * P1 JJC4340
JJC5425	<i>Δrep ::kanR ΔuvrD294 ::kan^R recF400 ::Tn5 ΔdinG ::Cm^R rpoB^{D444G} thiC::Tn10 [pAM-rep]</i>	JJC5151 * P1 JJC4164
JJC5426	<i>Δrep ::kanR ΔuvrD294 ::kan^R recF400 ::Tn5 ΔdinG ::Cm^R rpoB^{H447R} thiC::Tn10 [pAM-rep]</i>	JJC5151 * P1 JJC4163
JJC5449	<i>greB::kan</i>	JJC40 *P14205
JJC5450	<i>rpoC^{P451L} thiC::Tn10 greB::kan</i>	JJC4489 *P14205
JJC5455	<i>greB::kan greA::cam</i>	JJC5449* P1 4204
JJC5456	<i>rpoC^{P451L} thiC::Tn10 greB::kan greA::cam</i>	JJC5450 * P1 4204
JJC5469	<i>lacZ lacI lambda::P1₋₆₁₊₁ rnhB lacZ rpoB^{D444G} thiC::Tn10</i>	JJC4112 * P1 JJC4164
JJC5523	<i>rpoC^{N518D} thiC::Tn10 relA::kan spoT::kan</i>	JJC4553 * P1 JJC4108
JJC5524	<i>rpoC^{P451L} thiC::Tn10 relA::kan spoT::kan</i>	JJC4554 * P1 JJC4108
JJC5525	<i>rpoB^{D444G} thiC::Tn10 relA::kan spoT::kan</i>	JJC4555 * P1 JJC4108
JJC5526	<i>rpoB^{H447R} thiC::Tn10 relA::kan spoT::kan</i>	JJC4556 * P1 JJC4108
JJC5527	<i>rpoC^{H113R} thiC::Tn10 relA::kan spoT::kan</i>	JJC4557 * P1 JJC4108
JJC5528	<i>rpoC^{H113R} thiC::Tn10 relA::kan spoT::kan</i>	JJC4558* P1 JJC4108
JJC5532	<i>rpoB^{N518D} thiC::Tn10 [pAM-rep] ΔrecB::kan</i>	JJC4488 [pAM-rep] * P1 JJC1086
JJC5533	<i>rpoC^{P451L} thiC::Tn10 [pAM-rep] ΔrecB::kan</i>	JJC4489 [pAM-rep] * P1 JJC1086
JJC5534	<i>rpoC^{H113R} thiC::Tn10 [pAM-rep] ΔrecB::kan</i>	JJC4532 [pAM-rep] * P1 JJC1086
JJC5535	<i>rpoB^{D444G} thiC::Tn10 [pAM-rep] ΔrecB::kan</i>	JJC4490 [pAM-rep] * P1 JJC1086
JJC5536	<i>rpoB^{H447R} thiC::Tn10 [pAM-rep] ΔrecB::kan</i>	JJC4491 [pAM-rep] * P1 JJC1086
JJC5540	<i>rpoC^{Δ215-220} thiC::Tn10 priA2::kan [pAM-priA]</i>	MG1655 priA2::kan [pAM-priA] * P1 JJC4528
JJC5541	<i>rpoC^{H113R} thiC::Tn10 priA2::kan [pAM-priA]</i>	MG1655 priA2::kan [pAM-priA] * P1 JJC4170

Plasmids

Name	Description	Reference
pGBts-rep	pGB2ts vector carrying the <i>rep</i> gene under the control of its own promoter	(Petit and Ehrlich, 2002)
pAM-rep	pAM34 vector carrying the <i>rep</i> gene under the control of its own promoter	(Lestini and Michel, 2008)
pAM-priA	pAM34 vector carrying the <i>priA</i> gene under the control of its own promoter	(Grompone <i>et al.</i> , 2004)
pEM001	pACYC184 vector carrying the <i>rnh</i> (RnaseH) gene under the control of its own promoter	(Masse <i>et al.</i> , 1997)
pRL385	pUC vector carrying the <i>rpoB</i> wild-type gene under the control of Pr- <i>lac</i> (IPTG inducible) promoter	(Bartlett <i>et al.</i> , 1998))

Table S2 Complementation of the *rpo*^{sup} mutations with a pUC-RpoB⁺ plasmid

	MM 37°C p-RpoB+		LB 25°C pRpoB+	
	-IPTG	+IPTG	-IPTG	+IPTG
S3m- <i>rpoB</i> ^{H447R}	1.9 10 ⁹ ± 1.5 10 ⁸	1.6 10 ⁹ ± 2.8 10 ⁸	1.8 10 ⁹ ± 2.5 10 ⁸	<1 10 ⁷
S3a- <i>rpoB</i> ^{D444G}	9 10 ⁷ ± 4.2 10 ⁷	2.5 10 ⁸ ± 6.3 10 ⁷	4.4 10 ⁸ ± 3 10 ⁸	2 10 ⁸ ± 1.3 10 ⁸
S1- <i>rpoC</i> ^{P541L}	7.5 10 ⁸ ± 5.3 10 ⁷	1.5 10 ⁹ ± 7.6 10 ⁸	1.4 10 ⁸ ± 8.7 10 ⁷	1.1 10 ⁹ ± 1.5 10 ⁸
S3b- <i>rpoC</i> ^{H113R}	2.1 10 ⁹ ± 4.2 10 ⁸	1.9 10 ⁹ ± 3.5 10 ⁸	9.5 10 ⁸ ± 3.5 10 ⁸	1.7 10 ⁹ ± 2.9 10 ⁸

The plasmid pRL385 (a pUC derived plasmid that carries the *rpoB* wild-type gene under the control of Pr-lac (IPTG inducible) {Bartlett, 1998 #11951}), was introduced by transformation in the four *rep uvrD recF rpo*^{mut} strains, selecting on MM ampicillin (Ap) at 37°C. Transformants were grown ON in MM Ap at 37°C and plated on MM Ap or LB Ap plates, containing (+IPTG) or not (– IPTG) IPTG. MM plates were incubated at 37°C and LB plates at 25°C. The number of colony forming units (cfu) is indicated here. Since the *rep uvrD recF Rpo*⁺ cells are cryo-sensitive on LB at 25°C, complementation of an *rpoB* mutation by the wild-type *rpoB* allele is expected to confer cryo-sensitivity.

Table S3 Out of the 5 different *rpo*^{sup} mutations, only *rpoB*^{H447R} suppresses the auxotrophy of a *relA spoT* mutant.

Strain	genotype	$\Delta spoT::Cm^R$ transductants		Name of the <i>rpoB</i> ^{sup} <i>relA spoT</i> mutant ^(b) and growth on MM ^(a)
		LB	MM ^(a)	
JJC4553	$\Delta relA::Kan^R rpoB^{N518D}$	146	0	JJC5523 -
JJC4554	$\Delta relA::Kan^R rpoC^{P541L}$	148	0	JJC5524 -
JJC4555	$\Delta relA::Kan^R rpoB^{D444G}$	230	0	JJC5525 -
JJC4556	$\Delta relA::Kan^R rpoB^{H447R}$	166	160	JJC5526 +
JJC4557	$\Delta relA::Kan^R rpoC^{H113R}$	172	0	JJC5527 -
JJC4558	$\Delta relA::Kan^R rpoC^{H113R}$	100	0	JJC5528 -
JJC4559	$\Delta relA::Kan^R Rpo+$	60	0	JJC5529 -

(a) Because the experiment is done in a JJC40 background, which requires histidine, leucine and arginine for growth, these three amino acids were included in the MM glucose plates.

(b) The *rpoB*^{sup} *relA spoT* mutants were propagated on LB and tested on MM glucose supplemented with histidine, leucine and arginine; they are also described in Table S1.

Table S4 Oligonucleotides used for checking mutations and sequencing.

Purpose (name)	Sequence (5' to 3')
delta-dinG::kan	TCTCTTATTTGATTCCCGGCATCGCCATTGCCCGCGAAGAGTGTGTAGGCTGGAGCTGCTTC
delta-dinG::kan	AACAAGTCCAGCTGTAGCCGATACCACGGCGCGGTGATTTTCATATGAATATCCTCCTTA
To check dinG (dinG1)	ATGTTGGTGGTTATTGCGAGCC
To check dinG (dinGa)	GCGCAGTATCCCGGTCTAAATC
To check rep (ext1)	CTTACACGCGGTCACATTC
To check rep (int4)	CGGCCTTGATTATTTCCC
To check rpoC ^{Δ215-220} (ext1)	CTGGAAGACGAGTAATTCTCT
To check rpoC ^{Δ215-220} (rpoCi)	GTTTGATACGCTTGGTCAGC
To check recF (recF1)	CGTGTCGCCGATATACA
To check recF (recFa)	GACGTTACCTATAGCGG
To check priA (priA1)	ATCCGCACTCTTCTACGG
To check priA (priAa)	GCGTGAAAACGGTTACAG

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