

Table S1 – Name abbreviations, cassette configurations and loci for all bacterial species and genes analyzed in this work.

Code	Microorganism	Phylogenetic Class	Genome status (Database)	Genes (locus) ^a
Aca	<i>Acidobacterium capsulatum</i> ATCC 51196	Acidobacteria	Unfinished (JGI)	<i>dnaE1</i> (contig:83(4042146-4045646)) [1] <i>imuA-imuB-dnaE2*</i> (contig:83(3697911-3703675)) [2] <i>imuA-imuB-dnaE2*</i> (contig:83(1798056-1800681))
Ade	<i>Anaeromyxobacter dehalogenans</i> 2CP-C	Delta Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (adeh_Contig57_or0691) <i>imuA-imuB-dnaE2*</i> (adeh_Contig78_or1753_or1754_or1755)
Afe	<i>Acidithiobacillus ferrooxidans</i> ATCC 23270	Gamma Proteobacteria	Unfinished (TIGR)	<i>lexA</i> (contig:10428(1183578-1182973)) <i>dnaE1</i> (contig:10428(1538883-1535695)) <i>imuA-imuB-dnaE2*</i> (contig:10428(1180782-1183938))
Acn	<i>Actinomyces naeslundii</i> MG1	Actinobacteria	Unfinished (TIGR)	<i>dnaE1</i> (contig:1063(1165855-1162328)) <i>dnaE2</i> (contig:1063(677485-680893))
Atu	<i>Agrobacterium tumefaciens</i> C58	Alpha Proteobacteria	Finished (TIGR)	<i>lexA</i> (AGR_C_2577) <i>dnaE1</i> (AGR_C_2379) [1] <i>imuA-imuB-dnaE2^{EXP}</i> (AGR_L_3170;AGR_L_3171;AGR_L_3173) [2] <i>imuA-imuB-dnaE*</i> [P](AGR_pT1_172; AGR_pT1_174; AGR_pT1_175) [3] <i>imuA-imuB-dnaE*</i> [P](AGR_pAT_143; AGR_pAT_144; AGR_pAT_bx5)
Avi	<i>Azotobacter vinelandii</i> AvOP	Gamma Proteobacteria	Unfinished (JGI)	<i>lexA-sulA</i> (avin_Contig60_or7543; or7544)
Azo	<i>Azoarcus</i> sp. EbN1	Beta Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (ebA4398) <i>lexA-imuA-imuB-dnaE2*</i> (ebA3086; ebA3084; ebA3079; ebA3077)
Bba	<i>Bdellovibrio bacteriovorus</i> HD100	Delta Proteobacteria	Finished (TIGR)	<i>dnaE1</i> (Bd2078) <i>lexA-imuA-imuB-dnaE2^{EXP}</i> (Bd0386; Bd0385; Bd0384)
Bbr	<i>Bordetella bronchiseptica</i> RB50	Beta Proteobacteria	Finished (NCBI)	<i>lexA</i> (BB2271) <i>dnaE1</i> (BB3401) <i>imuA-imuB-dnaE2*</i> (BB3086; BB3087; BB3088)
Bfu	<i>Burkholderia fungorum</i> LB400	Beta Proteobacteria	Unfinished (JGI)	<i>lexA</i> (Bcep02001088) <i>dnaE1</i> (Bcep02004347)
Bja	<i>Bradyrhizobium japonicum</i> USDA 110	Alpha Proteobacteria	Finished (NCBI)	<i>imuA-imuB-dnaE2</i> (Bcep03_11(284253-283371); Bcep02005997; Bcep02005996) <i>dnaE1</i> (bjk4866) <i>imuA-imuB-dnaE2*</i> (bjr3024; bjr3025; bjr3026)
Bli	<i>Brevibacterium linens</i> BL2	Actinobacteria	Unfinished (JGI)	<i>dnaE1</i> (BlinB01002773) <i>imuA-imuB-dnaE2*</i> (BlinB01000045; BlinB01000044; BlinB01000043)
Bma	<i>Burkholderia mallei</i> ATCC 23344	Beta Proteobacteria	Finished (NCBI)	<i>lexA</i> (BMA1211) <i>dnaE1</i> (BMA1913) <i>imuA-imuB-dnaE2*</i> (BMA3143; BMA3144; BMA3145)
Bme	<i>Brucella melitensis</i> 16M	Alpha Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (BMEI1137) <i>imuA-imuB-dnaE2*</i> (BMEI1874; BMEI1875; BMEI1876)
Bpa	<i>Bordetella parapertussis</i> 12822	Beta Proteobacteria	Finished (NCBI)	<i>imuA-imuB-dnaE2*</i> (BPP1642; BPP1641; BPP1640)
Bth	<i>Burkholderia thailandensis</i> E264	Beta Proteobacteria	Unfinished (NCBI)	<i>lexA</i> (BTH_12481) <i>dnaE1</i> (BTH_10984) <i>imuA-imuB-dnaE2*</i> (BTH_10443; BTH_10444; BTH_10445)

Table S1 Microorganism abbreviations (cont.)

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Bvi	<i>Burkholderia vietnamiensis</i> strain G4 (R1808)	Beta Proteobacteria	Unfinished (JGI)	<i>lexA</i> (bcep_1808_contig153_or1754) <i>dnaE1</i> (bcep_1808_contig181_or4508) [1] <i>imuA-imuB-dnaE2*</i> (bcep_1808_contig169_or3127_or3126_or3125) [2] <i>imuA-imuB-dnaE2*</i> (bcep_1808_contig189_or6053_or6054_or6056) [3] <i>imuA-imuB-dnaE2*</i> (bcep_1808_contig190_or6286_or6284_or6283)
Ccr	<i>Caulobacter crescentus</i> CB15	Alpha Proteobacteria	Finished (TIGR)	<i>dnaE1</i> (CC1926) <i>imuA-imuB-dnaE2*</i> (CC3213; CC3212; CC3211)
Cdi	<i>Corynebacterium diptheriae</i> NCTC 13129	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (DIP1580) <i>imuA-imuB* // dnaE2*</i> (DIP0603; DIP0604; DIP0612)
Cef	<i>Corynebacterium efficiens</i> YS-314	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (CE2029) <i>imuA-imuB* // dnaE2*</i> (CE0627; CE0628; CE0632)
Dar	<i>Dechloromonas aromatica</i> RCB	Beta Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (Dar03003504) <i>lexA-imuA-imuB-dnaE2*</i> (Dar03000438; Dar03000439; Dar03000440; Dar03000441)
Eca	<i>Erwinia carotovora</i> subsp. <i>atroseptica</i> SCR11043	Gamma Proteobacteria	Finished (NCBI)	<i>lexA</i> (ECA0630) <i>suIA</i> (ECA1752)
Hdu	<i>Haemophilus ducreyi</i> 35000HP	Gamma Proteobacteria	Finished (NCBI)	<i>lexA</i> (HD0545)
Hin	<i>Haemophilus influenzae</i> Rd KW20	Gamma Proteobacteria	Finished (NCBI)	<i>lexA</i> (HI0749)
Hne	<i>Hyphomonas neptunium</i> ATCC 15444	Alpha Proteobacteria	Unfinished (TIGR)	<i>dnaE1</i> (contig:1064(1808598-1811798)) <i>imuA-imuB-dnaE2*</i> (contig:1064(2586708-2592563))
Ilo	<i>Iliomarina loliensis</i> L2TR	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-sulA</i> (ILO262; ILO261) <i>dnaE1</i> (IL1689) <i>imuA-imuB-dnaE2*</i> (IL2568; IL2567; IL2566)
Jan	<i>Jannaschia</i> sp. CCS1	Alpha Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (jann_contig27_or3832) <i>imuA-imuB-dnaE2*</i> (jann_contig21_or1135_or0974_or0973)
Kra	<i>Kineococcus radiotolerans</i> SRS30216	Actinobacteria	Unfinished (NCBI)	<i>dnaE1</i> (KradDRAFT_1996) <i>dnaE2</i> (KradDRAFT_4570)
Mav	<i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i> str. K10	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (MAP1257) <i>imuA-imuB* // dnaE2*</i> (MAP3488c; MAP3487c; MAP3476c)
Mbo	<i>Mycobacterium bovis</i> AF2122197	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (Mb1574) <i>imuA-imuB // dnaE2</i> (Mb3427c; Mb3426c; Mb3405c)
Mca	<i>Methylococcus capsulatus</i> str. Bath	Gamma Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (MCA1286)
Mde	<i>Microbulbifer degradans</i> 2-40	Gamma Proteobacteria	Finished (JGI)	<i>lexA-imuA-imuB-dnaE2*</i> (MCA2167; MCA2166; MCA2165; MCA2164) <i>dnaE1</i> (Mdeg02002690; Mdeg02002691) <i>dnaE1</i> (Mdeg02003964)
Mlo	<i>Mesorhizobium loti</i> MAF303099	Alpha Proteobacteria	Finished (NCBI)	<i>imuA-imuB-dnaE2*</i> (Mdeg02003698; Mdeg02003699; Mdeg02003700) <i>dnaE1</i> (ml0870) <i>imuA-imuB-dnaE2*</i> (mlr4426; mlr4427; mlr4428)
Msm	<i>Mycobacterium smegmatis</i> str. MC2 155	Actinobacteria	Finished (TIGR)	<i>dnaE1</i> (MSMEG3185) <i>imuA-imuB* // dnaE2*</i> (MSMEG1619; MSMEG1620; MSMEG1631)
Msu	<i>Mannheimia succiniciproducens</i> MBEL55E	Gamma Proteobacteria	Finished (JGI)	<i>lexA</i> (MS0744)

Table S1 Microorganism abbreviations (cont.)

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Mlu	<i>Mycobacterium tuberculosis</i> H37Rv	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (Rv1547) <i>imuA-imuB</i> ^{EXP} // <i>dnaE</i> ^{EXP} (Rv3395c; Rv3394c; Rv3370c)
Mxa	<i>Mycococcus xanthus</i> DK 1622	Delta Proteobacteria	Finished (TIGR)	<i>dnaE1</i> (MXAN5844) <i>dnaE2</i> (MXAN3982)
Nar	<i>Novosphingobium aromaticivorans</i> DSM 12444	Alpha Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (Saro02001581) <i>imuB-dnaE2</i> (Saro02001815; Saro02001814)
Nfa	<i>Nocardia farcinica</i> IFM 10152	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (nfa18000) <i>imuA-imuB</i> * // <i>dnaE2</i> * (nfa9050; nfa9060; nfa9150)
Nha	<i>Nitrobacter hamburgensis</i>	Alpha Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (nham_Contig31_or3119) <i>imuA-imuB-dnaE2</i> * (nham_Contig32_or4111; or4112; or4113)
Noc	<i>Nocardioides</i> sp. JS614	Actinobacteria	Unfinished (JGI)	<i>imuA-imuB-dnaE2</i> * (NocaDRAFT_0716-0715-0714)
Nwi	<i>Nitrobacter winogradskyi</i> Nb-255	Alpha Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (Nwi1860) <i>imuA-imuB-dnaE2</i> * (Nwi2257; Nwi2256; Nwi2255)
Pac	<i>Propionibacterium acnes</i> KPA171202	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (PPA1150) <i>imuA-imuB-dnaE2</i> (PPA1652; PPA1651; PPA1650)
Pae	<i>Pseudomonas aeruginosa</i> PA01	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-sulA</i> (PA3007; PA3008) <i>dnaE1</i> (PA3640) <i>imuA-imuB-dnaE2</i> ^{EXP} (PA0671; PA0670; PA0669)
Pde	<i>Paracoccus denitrificans</i> 1222	Alpha Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (pden_Contig65_or3675) <i>imuA-imuB-dnaE2</i> * (pden_Contig47_or0508; or0509; or0510)
Pfi	<i>Pseudomonas fluorescens</i> PfO-1	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-sulA</i> (Pfi3872; Pfi3873) <i>dnaE1</i> (Pflu02000786)
Plu	<i>Photobacterium luminescens laumondii</i> TTO1	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-imuA-imuB-dnaE2</i> * (Pflu02001451; Pflu02001450; Pflu02001449) <i>lexA</i> (plu4374) <i>sulA</i> (plu1776)
Pmu	<i>Pasteurella multocida</i> Pm70	Gamma Proteobacteria	Finished (NCBI)	<i>lexA</i> (PM1181)
Pol	<i>Polaromonas</i> sp. JS666	Beta Proteobacteria	Unfinished (JGI)	<i>lexA</i> (PJS6w01000717) <i>dnaE1</i> (PJS6w01000655) <i>imuA-imuB-dnaE2</i> * (PJS6w01001324; PJS6w01001323; PJS6w01001322)
Ppu	<i>Pseudomonas putida</i> KT2440	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-sulA</i> (PP2143; PP2142) <i>dnaE1</i> (PP1606) <i>lexA-imuA-imuB-dnaE2</i> ^{EXP} (PP3116; PP3117; PP3118; PP3119)
Psy	<i>Pseudomonas syringae</i> pv. tomato str. DC3000	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-sulA</i> (PSPTO3510; PSPTO3511) <i>dnaE1</i> (PSPTO1549) <i>lexA-imuA-imuB-dnaE2</i> * (PSPTO2792; PSPTO2793; PSPTO2794; PSPTO2795)
Rba	<i>Rhodospirillum rubrum</i> sp. SH 1	Planctomycetacia	Finished (NCBI)	<i>dnaE1</i> (RB3103) <i>imuA-imuB</i> // <i>dnaE2</i> (RB11894; RB11891; RB1262)
Reu	<i>Ralstonia eutropha</i> JMP134	Beta Proteobacteria	Finished (NCBI)	<i>lexA</i> (Raeuf03005043) <i>dnaE1</i> (Raeuf03003398) <i>imuA-imuB-dnaE2</i> * (Raeuf03000580; Raeuf03000579; Raeuf03000578)

Table S1 Microorganism abbreviations (cont.)

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Rfe	<i>Rhodoferrax ferritducens</i> DSM 15236	Beta Proteobacteria	Unfinished (JGI)	<i>lexA</i> (rfer_Contig120_or0680) <i>dnaE1</i> (rfer_Contig128_or1225) <i>imuA-imuB-dnaE2*</i> (rfer_Contig129_or1329; or1330; or1331)
Rge	<i>Rubrivivax gelatinosus</i> PM1	Beta Proteobacteria	Unfinished (JGI)	<i>lexA</i> (Rgel02000775) <i>dnaE1</i> (Rgel02000390)
Rpa	<i>Rhodopseudomonas palustris</i> CGA009	Alpha Proteobacteria	Finished (NCBI)	[1] <i>imuA-imuB-dnaE*</i> (Rgel02001694; Rgel02001693; Rgel02001692) [2] <i>imuA-imuB-dnaE*</i> (Rgel02004204; Rgel02004205; Rgel02004206)
Rso	<i>Ralstonia solanacearum</i> GMI1000	Beta Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (RPA2924) <i>imuA-imuB-dnaE2*</i> (RPA1801; RPA1802; RPA1803)
Rsp	<i>Rhodobacter sphaeroides</i> 2.4.1	Alpha Proteobacteria	Unfinished (JGI)	<i>lexA</i> (RS02826)
Rxy	<i>Rubrobacter xylanophilus</i> DSM9941	Actinobacteria	Unfinished (JGI)	<i>dnaE1</i> (RSc2205) <i>imuA-imuB-dnaE2*</i> [P] (RSp0798; RSp0799; RSp0800)
Sal	<i>Sphingopyxis alaskensis</i> RB2256	Alpha Proteobacteria	Unfinished (JGI)	<i>dnaE2*</i> (Rsp3001842) <i>dnaE1</i> (Rxy02001647) <i>dnaE2</i> (Rxy02001858)
Sam	<i>Shewanella amazonensis</i> SB2B	Gamma Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (sala_Contig53_or1622) <i>imuA-imuB-dnaE2*</i> (sala_Contig54(55834-56634); sala_Contig54_or1789; or1790)
Sav	<i>Streptomyces avermitilis</i> MA4680	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (sama_Contig94_or2941) <i>imuA-imuB-dnaE2*</i> (sama_Contig89_or2565; or2564; or2563)
Sco	<i>Streptomyces coelicolor</i> A3(2)	Actinobacteria	Finished (NCBI)	<i>dnaE1</i> (SAV6143) <i>dnaE2-imuB*</i> (SAV6556; SAV6555)
She	<i>Shewanella</i> sp. PV 4	Gamma Proteobacteria	Unfinished (JGI)	<i>dnaE1</i> (SCO2064) <i>dnaE2-imuB*</i> (SCO1738; SCO1739)
Sil	<i>Silicibacter</i> sp. TM1040	Alpha Proteobacteria	Unfinished (JGI)	<i>lexA-sulA</i> (shew_Contig149_or1969; or1970) <i>dnaE1</i> (shew_Contig136_or1059) <i>imuA-imuB-dnaE2*</i> (shew_Contig147_or1815; or1814; or1813)
Sme	<i>Sinorhizobium meliloti</i> 1021	Alpha Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (rose_tm1040_Contig54_or2345) <i>imuA-imuB-dnaE2</i> (rose_tm1040_Contig54_or2641or2642_or2643)
Spo	<i>Silicibacter pomeroyi</i> DSS-3	Alpha Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (SMc01375) [1] <i>imuA-imuB-dnaE^{EXP}</i> (SMc03790; SMc03789; SMc03788) [2] <i>imuA2-imuB2-dnaE^{EXP}</i> [P] (SMa0888; SMa0890; SMa0892)
Sth	<i>Symbiobacterium thermophilum</i> IAM 14863	Actinobacteria	Finished	<i>dnaE1</i> (SPO0656) <i>imuA-imuB-dnaE2*</i> (SPO0672; SPO0671; SPO0670)
Sth	<i>Symbiobacterium thermophilum</i> IAM 14863	Actinobacteria	Finished	<i>dnaE1</i> (STH659) <i>dnaE2</i> (STH1885)
Stm	<i>Salmonella enterica</i> serovar Typhimurium LT2	Gamma Proteobacteria	Finished (NCBI)	<i>lexA</i> (STM4237) <i>sulA</i> (STM1071)

Table S1 Microorganism abbreviations (cont.)

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Sus	<i>Solibacter usitatus</i> sp. Ellin6076	Acidobacteria	Unfinished (JGI)	<i>dnaE1</i> (acid_Contig153_or1903) <i>imuA-imuB-dnaE2*</i> (acid_Contig197_or7377; or7376; or7375)
Tde	<i>Thiobacillus denitrificans</i> ATCC 25259	Beta Proteobacteria	Finished (NCBI)	<i>lexA</i> (TdenA01000303) <i>dnaE1</i> (TdenA01001960)
Tro	<i>Thermomicrobium roseum</i> DSM 5159	Thermomicrobia	Unfinished (TIGR)	<i>imuA-imuB-dnaE2*</i> (TdenA01001988; TdenA01001989; TdenA01001990) <i>dnaE1</i> (TIGR-contig:2179(1745177-1748371)) <i>imuA-imuB-dnaE2*</i> (TIGR-contig:2179(903553-898367))
Vch	<i>Vibrio cholerae</i> strain N16961	Gamma Proteobacteria	Finished (NCBI)	<i>lexA</i> (VP2945)
Vpa	<i>Vibrio parahaemolyticus</i> RIMD 2210633	Gamma Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (VP2303)
Vsp	<i>Verrucomicrobium spinosum</i> DSM 4136	Verrucomicrobiae	Unfinished (TIGR)	<i>imuA-imuB-dnaE2*</i> (VP2034; VP2035; VP2036) <i>dnaE1</i> (TIGR-contig:534(5031804-5028598))
Vvu	<i>Vibrio vulnificus</i> CMCP6	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-imuA-imuB-dnaE2*</i> (TIGR-contig:526(5563779-5568872)) <i>lexA</i> (VV11166) <i>dnaE1</i> (VV11875)
Wme	<i>Wautersia metallidurans</i> CH34	Beta Proteobacteria	Unfinished (NCBI)	<i>imuA-imuB-dnaE2*</i> (VV12987; VV12988; VV12989) <i>lexA</i> (RmetDRAFT_4464)
Xax	<i>Xanthomonas axonopodis</i> pv. <i>citri</i> str. 306	Gamma Proteobacteria	Finished (NCBI)	<i>dnaE1</i> (RmetDRAFT_3458) <i>imuA-imuB-dnaE2*</i> (RmetDRAFT_5017; RmetDRAFT_5018) <i>lexA-recA-recX</i> (XAC1739; XAC1740; XAC1741) <i>dnaE1</i> (XAC1406)
Xca	<i>Xanthomonas campestris</i> pv. <i>campestris</i> ATCC33913	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-imuA-imuB-dnaE2*</i> (XAC1196; XAC1197; XAC1198; XAC1199) <i>lexA-recA-recX</i> (XCC1721; XCC1722; XCC1723) <i>dnaE1</i> (XCC1358)
Xfa	<i>Xylella fastidiosa</i> CVC 8.1.b clone 9.a.5.c	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-imuA-imuB-dnaE2^{EXP}</i> (XCC1098; XCC1099; XCC1100; XCC1101)
Xor	<i>Xanthomonas oryzae</i> pv. <i>oryzae</i> KACC10331	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-recA-recX</i> (XOO2942; XOO2941; XOO2942) <i>dnaE1</i> (XOO1962)
Ype	<i>Yersinia pestis</i> KIM	Gamma Proteobacteria	Finished (NCBI)	<i>lexA-imuA-imuB-dnaE2*</i> (XOO3442; XOO3441; XOO3440; XOO3439) <i>lexA</i> (YPTB0370) <i>suJA</i> (YPTB1454)

^a Numbers between square brackets denote different cassette instances in the same bacterial species. When available, each gene locus is shown between parentheses. For some unfinished genomes, the genes were located using BLASTX searches and, in this case, the contig number and its location relative to contig start are shown between parentheses.

[P] following a cassette instance indicates that it is encoded in a plasmid.

* indicates that LexA-binding motifs have been identified *in silico* in the promoter region of the first cassette gene

^{EXP} stands for experimentally verified LexA-binding motifs in cassette instances.

