Supplementary Methods

Growth Rate Measurement. For each strain, 3 overnight cultures were inoculated into 2 ml TSB and grown for 16 hours. Cultures were diluted 100-fold in TSB and incubated at 37 ºC with shaking. At the indicated time points, the OD600 was measured and the number of viable colony forming units (cfu) per ml was determined by dilution plating.

Sensitivity to ultraviolet light and methyl methanesulfonate. To determine ultraviolet (UV) light sensitivity, 3 cultures of each strain were grown overnight in TSB. Appropriate dilutions were plated onto TSA and UVC irradiations were performed using a G8T5 germicidal tube (Ushio America, Cypress, CA) with a UV fluence of 0.86 $Jm^{-2}s^{-1}$, as determined using a UVX radiometer with a UVX-25 sensor (Ultraviolet Products). After irradiation, plates were protected from light and incubated for 2 days before colonies were counted. To determine the sensitivity to methyl methanesulfonate (MMS, Aldrich), 3 cultures of each strain were grown overnight in TSB. Appropriate dilutions were plated onto TSA containing MMS at the indicated concentrations; colonies were counted after 2 days.

MIC determination. To determine the ciprofloxacin minimum inhibitory concentration (MIC) in liquid media, 3 cultures of each strain were grown for 18 h at in TSB. From each culture, ~10^5 cfu were used to inoculate TSB containing increasing concentrations of ciprofloxacin in 96-well flat bottom plates.

Inoculations were done in duplicate to yield a total of 6 data points per strain. After 18 h of incubation, growth was measured by reading OD_{650} using a Vmax Kinetic Microplate Reader (Molecular Devices, CA). The MIC was defined as the lowest concentration of ciprofloxacin that prevented any detectable growth. In addition, to determine solid media MICs, 3 cultures of each strain were grown for 18 h in TSB. Each culture was diluted in TSB, and 10 μl containing ~10^5 cfu was spotted onto TSA containing increasing amounts of ciprofloxacin. The MIC was defined as the concentration that prevented any detectable growth after 24-48 h.

TABLE S1. Oligonucleotide primers used in this study

Primer	Sequence (5′ – 3′)
SA_Spec_ICF	GAT CCT CTA GAG TAA AAG GAT CTA GGT
SA_Spec_ICR	TAG GCT AAT TTT ATT GCA ATA ACA GGT
SA_SpecF-BglII	AGA AGA TCT CAC CTA GAT CCT TTT GAC TC
SA_SpecR-XhoI	CTC CTC GAG AAA GTA AGC ACC TGT TAT TGC
SA_DBH_CR-BamHI	TTG GTT GGA TCC GAT GCG TTT GTT GCA CTT GAT TTT G
SA_DBH_NF-BamHI	TTG GTT GGA TCC CAT GAA CTT ATC CAT AGA GCA TTA
SA_DBH_Nconf	CGT TAG GTG TCA CAG CGG TTG TCG
SA_DBH_IntConfR	GGA TGC CGT AGA GAC AAC ACC
SA_DBH_NR-Spec	GAG TCA AAA GGA TCT AGG TGA GAT CTT CT - CTC AGT CAA GTG CTC ACC TCC
SA_DBH_CF-Spec	GCA ATA ACA GGT GCT TAT TTC TCG AGG AG - GAC TTT ATA TAA AAT AAA GCT CCC
SA_DBH_Cconf	C ATT TAA TTA ATT GAA AGG ATT GAC TAC ATG
SA_DBH_IntConfF	GAG ATT CGG TTA GTT CTG AAG AAG
SA_LexA_CR2-BamHI	TTG GTT GGA TCC GCA TCG ACG TAA TAA TGT AAC AGC TGT TTT ACA AG
SA_LexA_NF14-BamHI	TTG GTT GGA TCC GAG AAT TAA CAA AAC GAC AAA GCG AAA
SA_LexA_IR13-Spec	GAG TCA AAA GGA TCT AGG TGA GAT CTT CT - GAG ATT ATC TAA CAA TTC GCA ATT TC
SA_LexA_IF13-Spec	GCA ATA ACA GGT GCT TAT TTC TCG AGG AG - CTC ATT CTT TAA TAT AAA TTT TGA ATT ACA G
SA_LexA_S125A_QCF	C ATA TTA AAC GTC GTA GGC GAC gcT ATG ATT GAG GCT GGT ATA TTA G
SA_LexA_S125A_QCR	C TAA TAT ACC AGC CTC AAT CAT Agc GTC GCC TAC GAC GTT TAA TAT G
SA_LexA_S130A_Seq2	TAA GAA GA GAT CCA ACG AAA CCA CGT GC TAT AG
SA_LexA_ICF3	GTT GCT GTA ATT GGG AAA GTA ATT GG
SA_LexA_CC3	ATC ACA TTT ATA CGA CGG TAT
SA_LexA_Nconf-Short	CGT TGT GAC AAT GTA TCA ATT TAT TAA AGC
SA_UCH_NF-BamHI	TTG GTT GGA TCC CAG GTT TGA GTT TTG GCA TCC
SA_UCH_NR-Spec	GAG TCA AAA GGA TCT AGG TGA GAT CTT CT - ATT ATA CAC TGT TAT TCC TCC
SA_UCH_CF-Spec	GCA ATA ACA GGT GCT TAT TTC TCG AGG AG - ATG TAA TGA CTA TAC GGT TTA AG
SA_UCH_CR-BamHI	TTG GTT GGA TCC CTT GCA GCT GGT GGT TTT CGT G
SA_UCH_NConf2	AGA ACA GTT GTT AAA TTA CC AAA AGT TGC AGG
SA_UCH_IntConfR2	CCC TGA CGC TTA GTA TCT GCA ACA ACA GC
SA_UCH_IntConfF	GAG CGA CAG TTA AGT CTG TTT GAA G
SA_UCH_Cconf	GTA ACT ACT GCT GAA GAA CAC GAC TAC G
SA_16s_RTF2	GAA AGC CAC GGC TAA CTA CG
SA_16s_RTR2	CAT TTC ACC GCT ACA CAT GG
SA_recA_RTF	GTA GCG CTT CAC GCT ATT GCT
SA_recA_RTR	TTC AAG ACC TTG TTC ACC ATG ATC
SA_lexA_RTF	GAA ACG ATT CAT GTG CCA GTT ATT
SA_lexA_RTR	GTC GCT ATT ATG TGT CGA TGT TAA
SACOL1400_RTF2	CTT GCG AGA TTT TTG GGG TA

SACOL1400_RTR2	TCG ATG GAT TGC TGA TCT TG

Restriction sites are underlined, mutation sites are shown in lowercase

TABLE S2. Ciprofloxacin MICs

Strain	Relevant Genotype	Ciprofloxacin MIC (□g/ml) Liquid	Solid
8325	wild-type	0.20	0.20
RTC3001	Spec^R *lexA* control strain	0.20	0.20
RTC3002	*lexA*(S130A)	0.20	0.20
RTC3003	ΔSACOL1955	0.20	0.20
RTC3004	ΔSACOL1400	0.20	0.20

TABLE S3. Comparison of microarray-based whole genome transcription and real-time PCR data at 120′ post addition of ciprofloxacin

ORF	Gene	Microarray-based transcription 8325 vs. LexA(S130A) ratio	Real-time PCR transcription 8325 vs. LexA(S130A) ratio
SACOL1304	*recA*	5.8	4.9
SACOL1374	*lexA*	5.4	5.4
SACOL1400		9.6	52.0

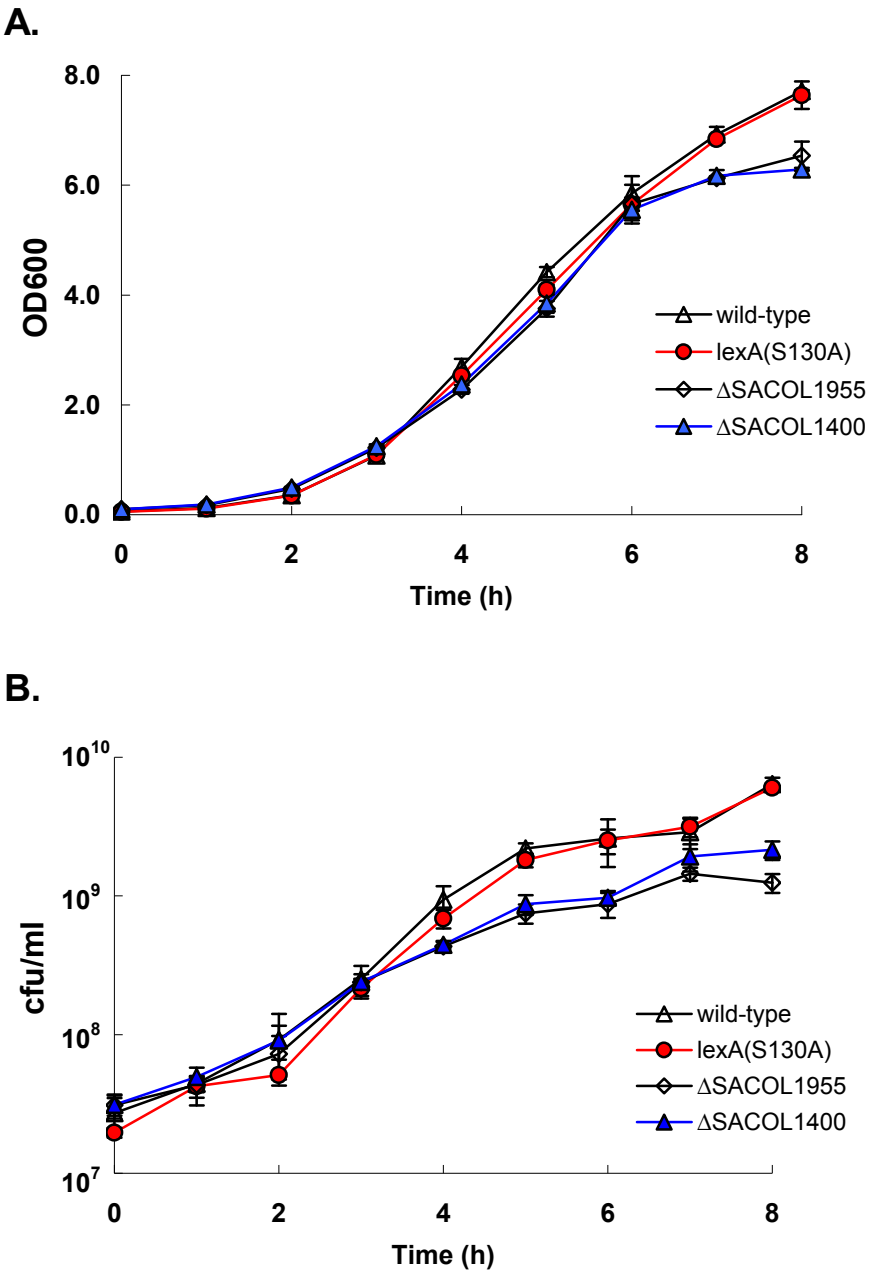

Figure S1. Growth of 8325 strain and constructed mutants.