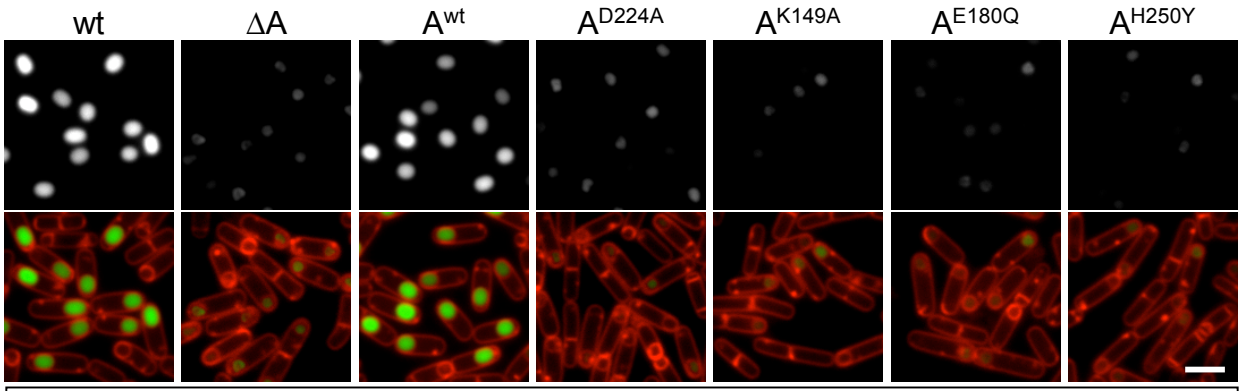
Figure S1
Doan et al.

Figure S2
Doan et al.

A



sporulation efficiency						
100%	0.002%	100 %	0.001%	0.007%	0.007%	0.005%

B

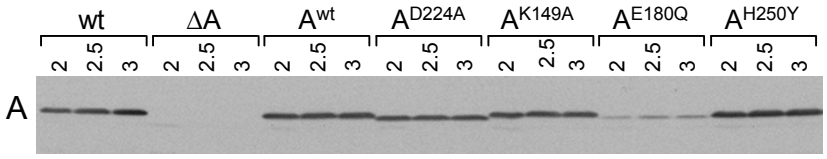


Figure S3
Doan et al.

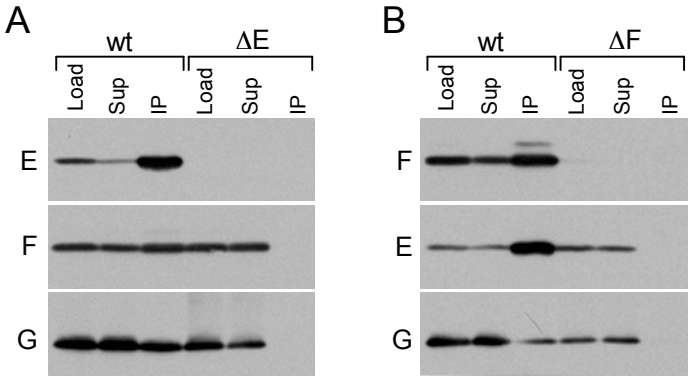


Figure S4
Doan et al.

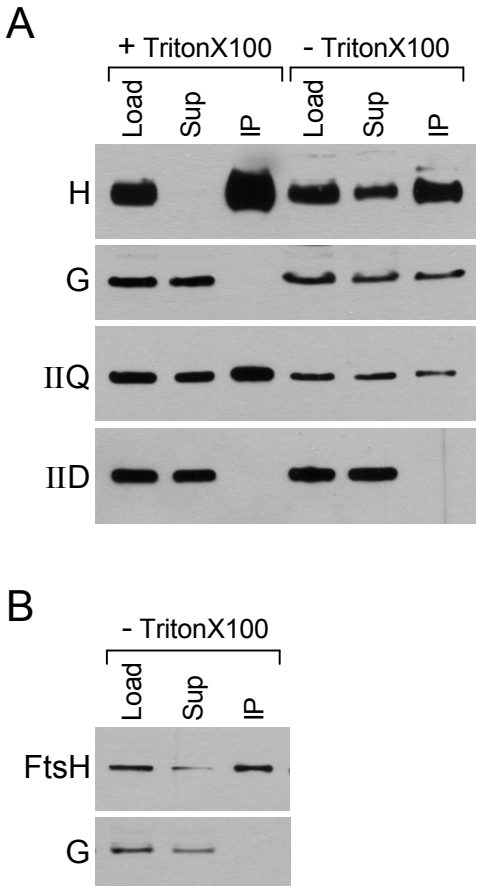


Figure S5
Doan et al.

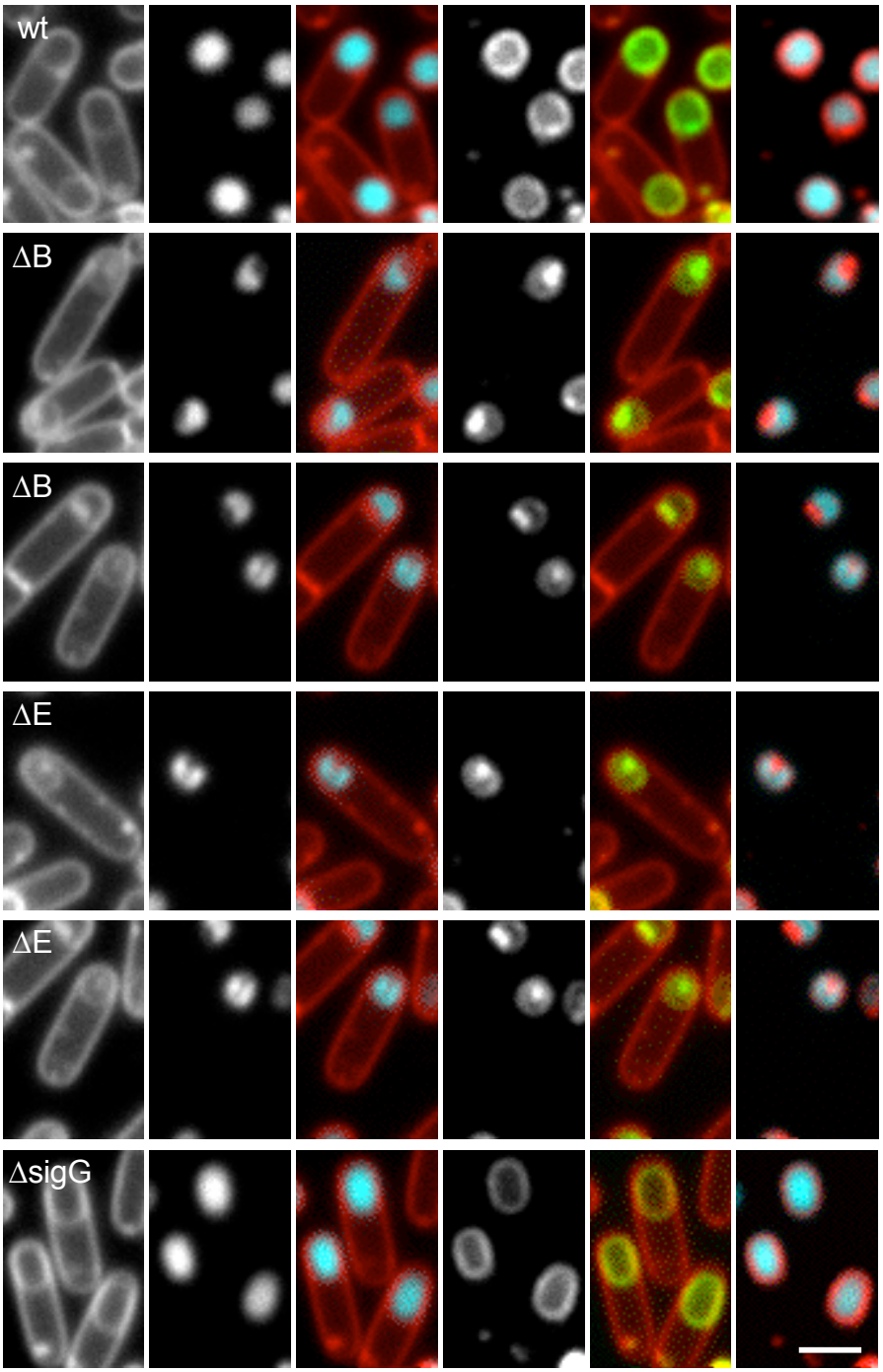


Figure S6
Doan et al.

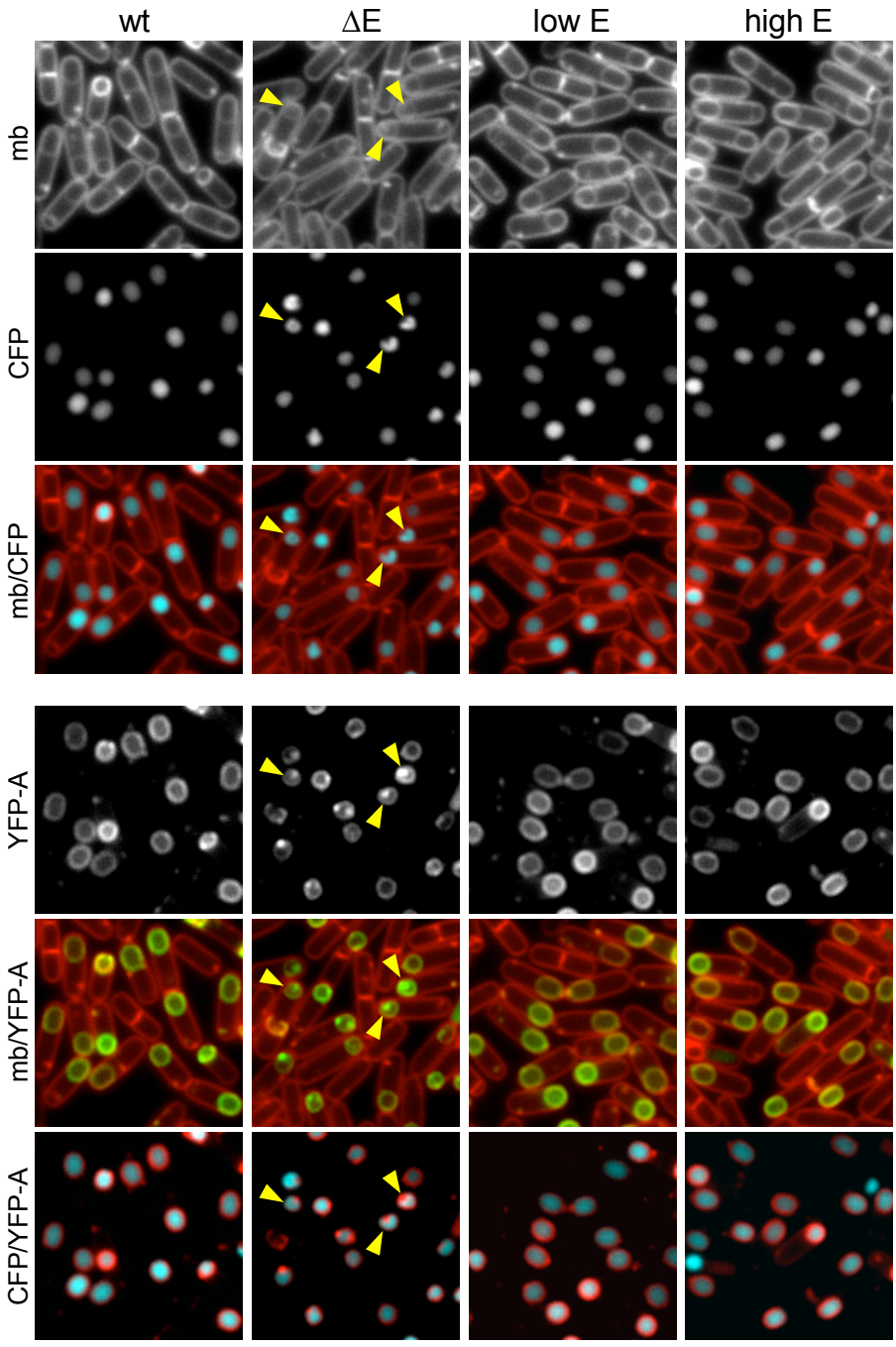


Figure S7A
Doan et al.

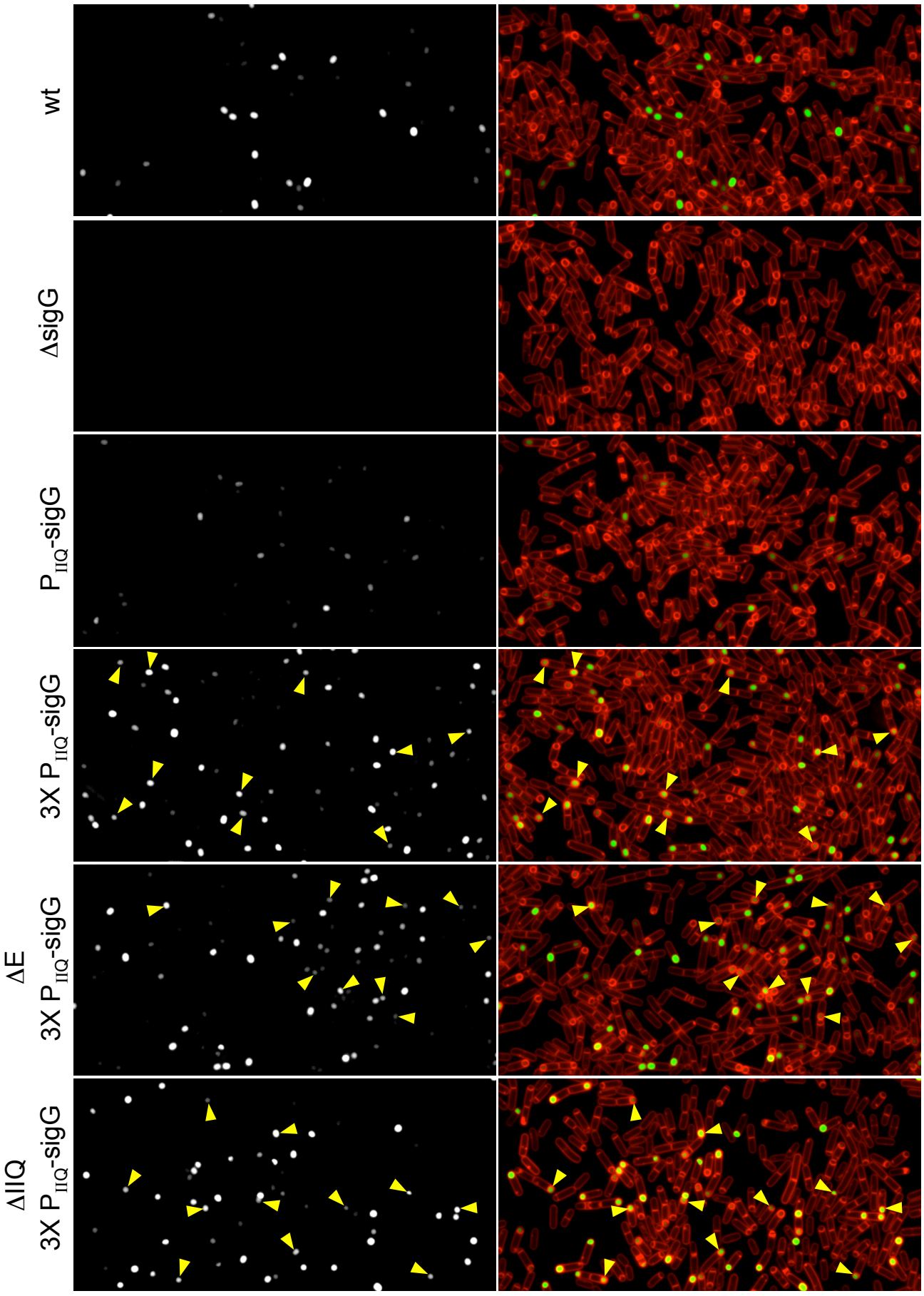


Figure S7B
Doan et al.

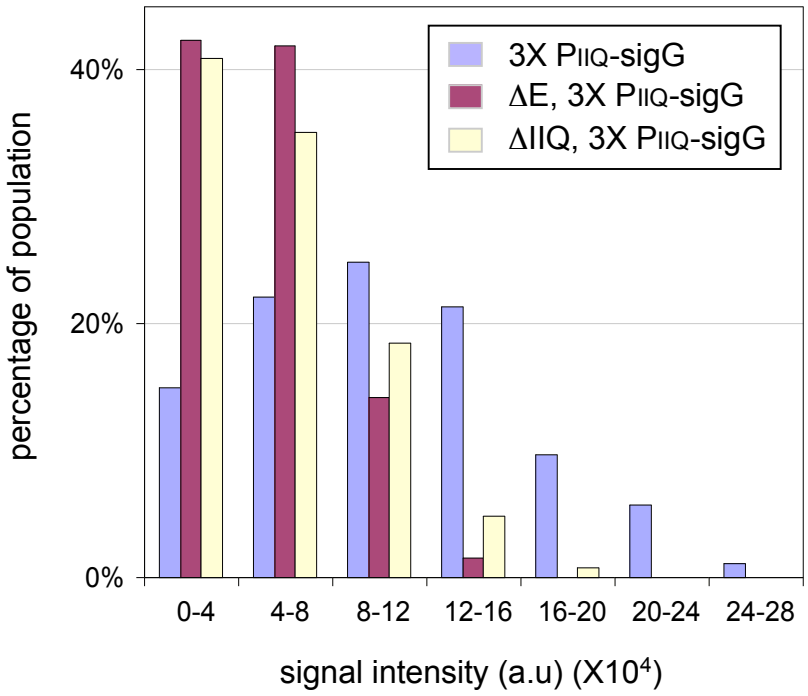


Figure S8
Doan et al.

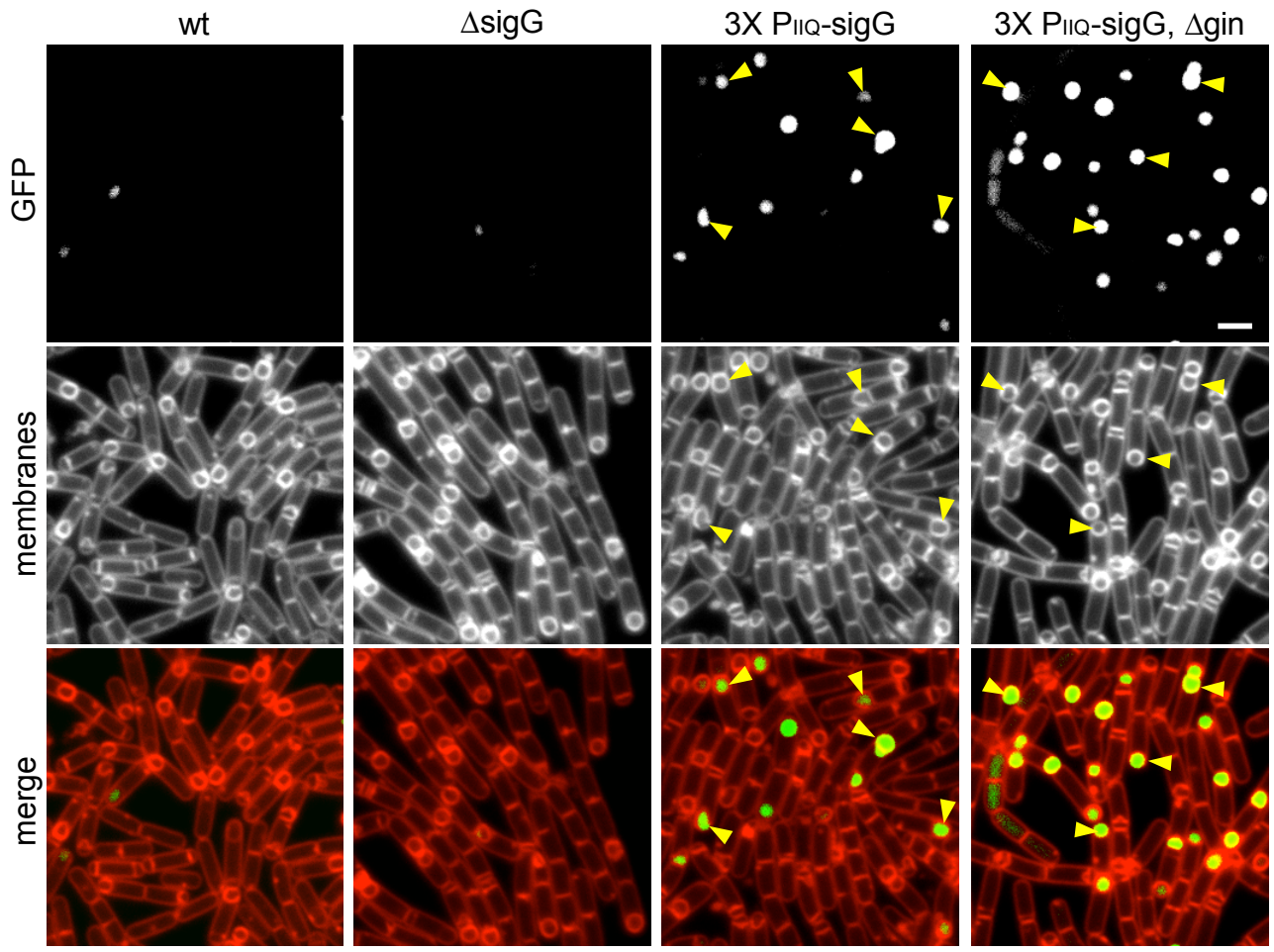


Figure S9
Doan et al.

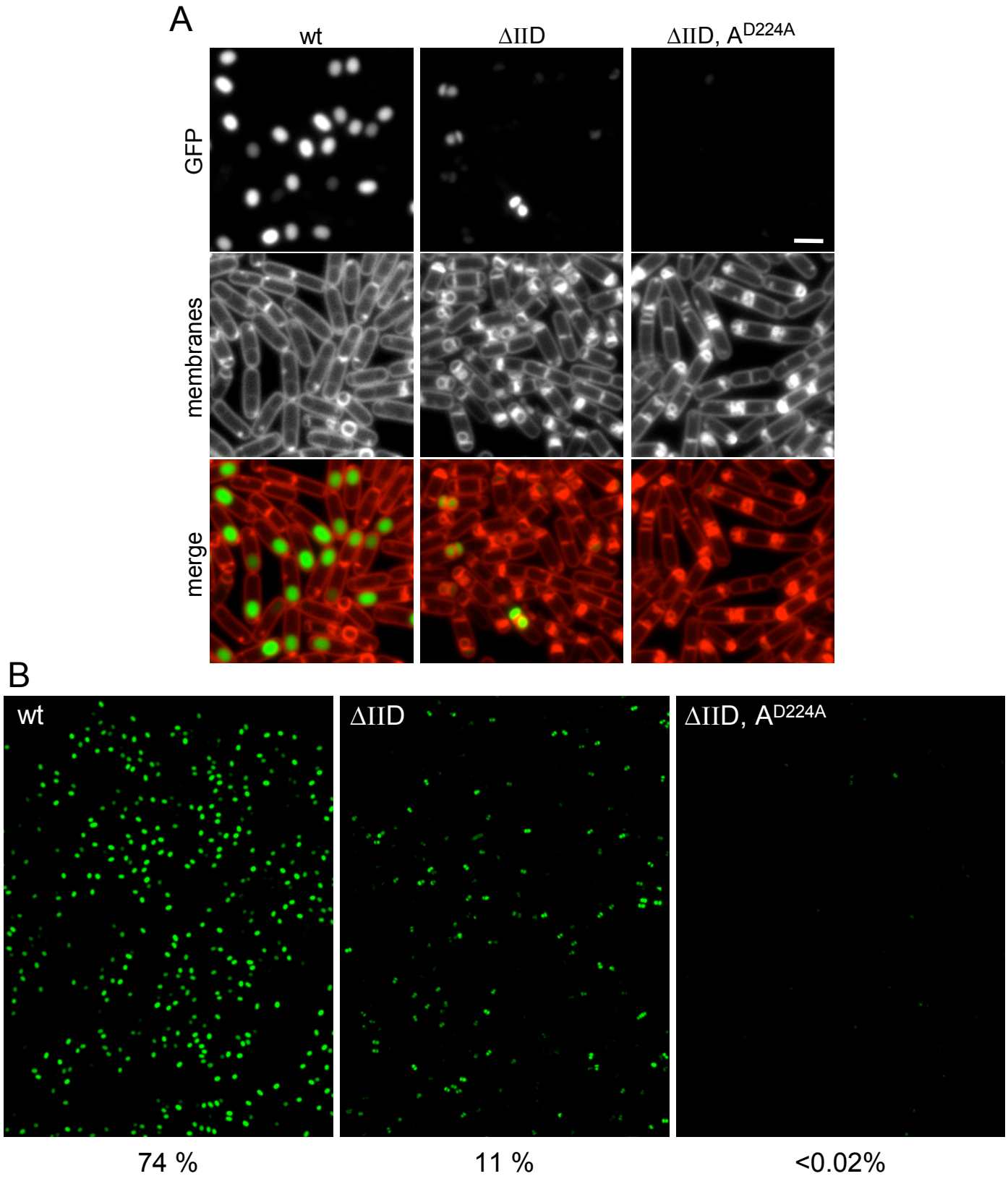


Table S1
Doan et al.

strain	spore efficiency
wt	100 %
ΔA	0.003 %
ΔA, P_{IIIA}-A	84 %
ΔB	0.002 %
ΔB, P_{IIIA}-B	94 %
ΔCD	0.001 %
ΔCD, P_{IIIA}-CD	94 %
ΔE	0.001 %
ΔE, P_{IIIA}-E	100 %
ΔF	0.003 %
ΔF, P_{IIIA}-F	100 %
ΔG	0.003 %
ΔG, P_{IIIA}-G	76 %
ΔH	5 %
ΔH, P_{IIIA}-H	91 %

Supplemental Table 2. *Strains used in this study*

Strain	Genotype	Source
PY79	Prototrophic wild-type strain	Youngman *et al.*, 1983
BTD117	Δ*spoIIIAAΩpDT21 (phleo)*	This work
BTD119	Δ*spoIIIABΩpDT21 (phleo)*	This work
BTD121	Δ*spoIIIACDΩpDT21 (phleo)*	This work
BTD113	Δ*spoIIIAEΩpDT21 (phleo)*	This work
BTD115	Δ*spoIIIAFΩpDT21 (phleo)*	This work
BTD123	Δ*spoIIIAGΩpDT21 (phleo)*	This work
BTD125	Δ*spoIIIAHΩpDT21 (phleo)*	This work
BTD2341	Δ*spoIIIAAΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIAA (erm)*	This work
BTD2345	Δ*spoIIIABΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIAB (erm)*	This work
BTD2371	Δ*spoIIIACDΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIACD (erm)*	This work
BTD2349	Δ*spoIIIAEΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIAE (erm)*	This work
BCM75	Δ*spoIIIAFΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIAF (erm)*	This work
BTD2353	Δ*spoIIIAGΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIAG (erm)*	This work
BTD2357	Δ*spoIIIAHΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIIIAA-spoIIIAH (erm)*	This work
BTD2713	*yycR::PsspE-RBSopt-cfp (cat),* Δ*spoIIIAAΩpDT21 (phleo),*	This work
BTD2775	*yycR::PsspE-RBSopt-cfp (cat),* Δ*spoIIIAAΩpDT21 (phleo), amyE::PspoIIIA-RBSIIIAA-spoIIIAA^{D224A} (spec)*	This work
BTD2779	*yycR::PsspE-RBSopt-cfp (cat),* Δ*spoIIIAAΩpDT21 (phleo), amyE::PspoIIIA-RBSIIIAA-spoIIIAA^{wt} (spec)*	This work
BTD1331	*sspB-lacZ (cat), sigG::neo*	This work
BTD2917	*sspB-lacZ (cat),* Δ*spoIIIAAΩpDT21 (phleo)*	This work
BTD2919	*sspB-lacZ (cat),* Δ*spoIIIAAΩpDT21 (phleo), amyE::PspoIIIA-RBSIIIAA-spoIIIAA^{wt} (spec),*	This work
BTD2920	*sspB-lacZ (cat),* Δ*spoIIIAAΩpDT21 (phleo), amyE::PspoIIIA-RBSIIIAA-spoIIIAA^{D224A} (spec)*	This work
BTD2867	*spoIVB::cat, amyE::PspoIIIA-RBSA-myc3-spoIIIAD (spec),* Δ*spoIIIAGΩpDT21 (phleo)*	This work
BTD2869	*spoIVB::cat, amyE::PspoIIIA-RBSA-myc3-spoIIIAD (spec)*	This work
BTD665	*spoIIQ::spec, spoIVB::erm, sacA::PspoIIQ-RBSopt-cfp-spoIIQ (tet)*	Campo *et al.*, 2008
BDR94	*spoIVB::spec*	Doan and Rudner, 2007
BTD49	*amyE::PspoIIIA-RBSspoIIIAA-cfp-spoIIIAG (spec)*	This work
BCM575	*amyE::PspoIIIA-RBSspoIIIAA-cfp-spoIIIAG (spec),* Δ*spoIIIAHΩpDT21 (phleo)*	This work
BCM736	*amyE::PspoIIIA-RBSspoIIIAA-cfp-spoIIIAG (spec),spoIIQ::cat*	This work
BCM703	*yvbJ::PspoIIQ-RBSopt-cfp (spec), lacA::PspoIVF-RBSopt-yfp-spoIVFA (erm)*	This work
BCM704	*yvbJ::PspoIIQ-RBSopt-cfp (spec), lacA::PspoIVF-RBSopt-yfp-spoIVFA (erm),* Δ*spoIIIABΩpDT21 (phleo)*	This work
BCM706	*yvbJ::PspoIIQ-RBSopt-cfp (spec), pelB::PspoIVF-RBSopt-yfp-spoIVFA (cat), spoIIIA::erm*	This work
BCM708	*yvbJ::PspoIIQ-RBSopt-cfp (spec), lacA::PspoIVF-RBSopt-yfp-spoIVFA (erm), sigG::neo*	This work
BCM716	*yvbJ::PspoIIQ-RBSopt-cfp (spec), lacA::PspoIVF-RBSopt-yfp-spoIVFA (erm), spoIIQ::cat*	This work
BCM810	*amyE::PspoIIIA-RBSspoIIIAA-cfp-spoIIIAG (spec),* Δ*spoIIIAEΩpDT21 (phleo)*	This work
BDR841	*spoIIIA::erm*	This work
BTD141	*spoIIQ::cat*	This work

BDR104	*sigG::neo*	Margolis P. *et al.*, 1991
BTD2683	Δ*spoIIIAAΩpDT21 (phleo), amyE::PspoIIIA-RBSspoIIIAA-spoIIIAA*^{D224A} *(cat)*	This work
BTD3019	Δ*spoIIIAEΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIVFA-ttg-spoIIIAE (erm)*	This work
BTD3023	Δ*spoIIIAAΩpDT21 (phleo), ycgO::PspoIIIA-RBSspoIVFA-ttg-spoIIIAA (erm)*	This work
BTD3002	*ycgO::PsspE-RBSopt-gfp (spec)*	This work
BTD3004	*ycgO::PsspE-RBSopt-gfp (spec), sigG::neo*	This work
BTD3007	*ycgO::PsspE-RBSopt-gfp (spec), sigG::neo, amyE::PspoIIQ-sigG (cat)*	This work
BCM791	*ycgO::PsspE-RBSopt-gfp (spec), sigG::neo, amyE::PspoIIQ-sigG (cat), lacA::PspoIIQ-sigG (tet), yhdG::PspoIIQ-sigG (tet)*	This work
BCM816	*ycgO::PsspE-RBSopt-gfp (spec), sigG::neo, amyE::PspoIIQ-sigG (cat), lacA::PspoIIQ-sigG (tet), yhdG::PspoIIQ-sigG (tet),* Δ*spoIIIAEΩpDT21 (phleo)*	This work
MO1194	Δ*spoIIIAA, trpC2, pheA1*	Gift from P. Stragier
MO1195	Δ*spoIIIAB, trpC2, pheA1*	Gift from P. Stragier
MO1227	Δ*spoIIIACD, trpC2, pheA1*	Gift from P. Stragier
MO1179	Δ*spoIIIAE, trpC2, pheA1*	Gift from P. Stragier
MO1180	Δ*spoIIIAF, trpC2, pheA1*	Gift from P. Stragier
MO1422	Δ*spoIIIAG, trpC2, pheA1*	Gift from P. Stragier
MO1429	Δ*spoIIIAH, trpC2, pheA1*	Gift from P. Stragier
PM8	*sspB-lacZ (cat)*	Mason *et al.*, 1988
MO2021	*spoIIQ::spec, trpC2, phe A1*	Londono-Vallejo *et al.*, 1997
MO3196	*sigG::erm, amyE::PspoIIQ-sigG (cat), trpC2, pheA1*	Gift from P. Stragier
MO1433	*spoIIIA::erm, trpC2, pheA1*	Gift from P. Stragier

Supplemental Table 2. *Plasmids used in this study*

plasmid	description	source
pDT19	*amyE::PspoIIIA-RBSspoIIIAA-cfp-spoIIIAG (spec)*	This work
pTD21	*spoIIIAH^{wt}ΩphleoΩ*	This work
pDT195	*ycgO::PspoIIIA-spoIIIAA (erm)*	This work
pDT196	*ycgO::PspoIIIA-spoIIIAB (erm)*	This work
pDT199	*ycgO::PspoIIIA-spoIIIAE (erm)*	This work
pDT201	*ycgO::PspoIIIAspoIIIAG (erm)*	This work
pDT202	*ycgO::PspoIIIA-spoIIIAH (erm)*	This work
pDT204	*ycgO::PspoIIIA-spoIIIACD (erm)*	This work
pDT246	*amyE::PspoIIIA-myc$_3$-spoIIIAD (spec)*	This work
pDT257	*amyE::spoIIIAA^{D224A} (cat)*	This work
pDT259	*yycR::PsspE-cfp (cat)*	This work
pDT266	*amyE::spoIIIAA^{wt} (spec)*	This work
pDT267	*amyE::spoIIIAA^{D224A} (spec)*	This work
pDT307	*ycgO::PsspE-gfp (spec)*	This work
pDT326	*ycgO::PspoIIIA-RBSspoIVFA-ttg-spoIIIAE (erm)*	This work
pDT330	*ycgO::PspoIIIA-RBSspoIVFA-ttg-spoIIIAA (erm)*	This work
pCM16	*ycgO::PspoIIIA-spoIIIAF (erm)*	This work
pNS38	*yvbJ::PspoIIQ-cfp (spec)*	Sullivan et al., submitted
pKM30	*lacA::PspoIVF-yfp-spoIVFA (erm)*	Doan et al., 2004
pKM108	*his$_6$-spoIIIAG$_{(fragment)}$*	This work
pDT152	*his$_6$-spoIIIAA*	This work
pDT170	*his$_6$-spoIIIAF$_{(fragment)}$*	This work
pDT178	*GST-spoIIIAE$_{(fragment)}$*	This work

Supplemental Table 4. *Oligonucleotide primers used in this study*

primer	sequence
oTD1	*gccGAATTCtgacggcagcaattgtcatgc*
oTD2	*gccGGATCCatactcgagtctaagcttggcttctttaaaatgtatgatgtg*
oTD3	*cgcAAGCTTagaaaggaggaggctctgatggtttcaaaaggcgaagaactg*
oTD4	*gcgCTCGAGcttataaagttcgtccatgcc*
oTD6	*gcgCTCGAGatgaataaaaacggattatggaatg*
oTD7	*gccGGATCCttatgaatcctcctttatttttttagg*
oDT8	*gcgCTCGAGttgaatgaaatcgctgaggttctc*
oDT9	*gccGGATCCtcagcatgttttcacgcccgtcgtcc*
oDT11	*cgcGGATCCttatttagagggttcaaatgtgac*
oDT15	*cgcAAGCTTagaaaggaggaggctctgttgaatgaaatcgctgaggttctc*
oDT135	*ttccatacgcccgatttctgcgacaatcatcacctcagg*
oDT136	*cctgaggtgatgattgtcgcagaaatcgggcgtatggaa*
oDT150	*gccGCTAGCatgaatgaaatcgctgaggttctc*
oDT151	*cggCTCGAGttagcatgttttcacgcccgtcgt*
oTD164	*cggCTCGAGttacacttcatgaaacaaataagaa*
oTD169	*cgcGCTAGCaagacagaccccgaagtc*
oTD170	*cggCTCGAgttattcattgccgacactctc*
oDT176	*gccGGATCCgaaattgtacaagcagctggt*
oDT181	*gccGCTAGCagaaaggaggaggctctgatgctgaagctgctgggc*
oDT182	*gccGGATCCttacatcaatagaagaatgagtaac*
oDT184	*cgcAAGCTTagaaaggaggaggctctgatgggagtagacgtgaatg*
oDT188	*gccGGATCCttatgacatagaaggtataagtcc*
oTD190	*cgcAAGCTTagaaaggaggaggctctgttgaagcgctttcaatgggtt*
oTD191	*gccGGATCCttattgcctgcctccttcattt*
oTD196	*cgcAAGCTTagaaaggaggaggctctgatgaataaaaacggattatgg*
oDT198	*cgcAAGCTTagaaaggaggaggctctgatgcttaaaaaacaaaccgtt*
oTD200	*gccGCTAGCggcttctttaaaatgtatgatg*
oTD201	*gccGGATCCTTAttcattgccgacactctcc*
oDT205	*gccGCTAGCagaaaggaggaggctctgatgagttttttaacggaatgg*
oTD241	*gtgCTCGAGatgcagattgacattgttcaa*
oTD261	*ggcAAGCTTacaaaggatgatggcattgaagcgctttcaatgggtt*
oTD263	*ggcAAGCTTacaaaggatgatggcattgaatgaaatcgctgaggttctc*
oDR78	*gccGGATCCttatttgtatagttcatccatgcc*
oDR107	*ggcAAGCTTacataaggaggaactactatgagtaaaggagaagaac*
oDR280	*gccGAATTCcttcaggttatgaccatctg*
oDR281	*gcggatccCATATGgtctttcggttttctagtgtaacg*
oDR344	*ggcAAGCTTacataaggaggaactactatgggccgctctgagcaaaagc*
oDR345	*cggCTCGAGactattaagatcctcctcgga*
oDR409	*gccGCTAGCtcttcacctgagaaaactgaa*
oCM133	*ccgCTCGAGggttcaaataatgattaaatatc*
oCM134	*cgcGCTAGCgccgcgatttccaatgagg*

capital letters indicate the recognition sites of restriction enzymes