Supplementary Table 1. Plasmid construction.

Plasmid	Insert	Construction
pAF022	P_{spoIID}-yfp at *pyrD*	P_{spoIID} fragment (PY79; AFO063, 064) was digested with EcoRI & HindIII and ligated to pKM51.
pAF038	P_{spank}-P_{spoVE}-*spoVE-gfp* at *amyE*	P_{spoVE}-*spoVE-gfp* amplified (JDB1135; AFO100, 102) was digested with NheI & SphI and ligated to pDR111(D. Rudner).
pAF054	P_{spoIIQ}-*yfp* at *sacA*	P_{spoIIQ} amplified (PY79; AFO126, 127) was digested with EcoRI/HindIII and ligated to pDG1662(2) cut with same. YFP cassette was digested with HindIII/BamHI and ligated to vector. P_{spoIIQ}-*YFP* was then digested with EcoRI/BamHI and ligated to pSac-Kan (6).
pAF078	*ftsW-yfp*	*ftsW* amplified (PY79, AFO154, 155) was digested with EcoRI/XhoI and ligated to pKM67
pAF083	*tet* cassette at *sacA*	*tet* cassette amplified (pDG1515(3), AFO081, 082) was digested with EcoRI/SphI and ligated to pSac-Cm (6).
pAF100	*spoVD-flag*	3'spoVD-flag amplified (PY79, JDO763, AFO238), digested with EcoRI and SphI, ligated to pKL147(5).
pAF104	P_{spoIID}-*cfp* at *sacA*	P_{spoIID} amplified (PY79; AFO063, 064) was digested with EcoRI/HindIII and ligated to pAF083. CFP cassette was then digested with HindIII/BamHI and ligated to vector.
pAF132	addition of SpeI site	pDG1662(2) fragment amplified (AFO326, 327) digested with EcoRI/SphI and ligated to pDG1662(2).
pAF195	*mls* at *sacA*	Mls cassette amplified (pDG1730(2); AFO458, 459), digested with EcoRI and SphI, ligated to pSac-Cm (6).
pAF211	P_{spoVE}-*spoVE(G334A*) at a *amyE*	P_{spoVE}-*spoVE(G334A)* amplified (JDB1271, OJD006, AFO363) was digested with EcoRI/BamHI and ligate to pAF195
pAF213	P_{spoVE}-*spoVE(G343A)* at a *amyE*	P*spoVE-spoVE(G343A)* amplified (JDB1355; OJD006, AFO363) was digested with EcoRI/BamHI and ligated to pAF195.
pAF215	P_{spoVE}-*spoVE(E271A)* at at *amyE*	P_{spoVE}-*spoVE(E271A)* amplified (JDB1359; OJD006, AFO363) was digested with EcoRI/BamHI and ligated to pAF195.
pAF216	P_{spoVE}-*spoVE(W69A)* at *amyE*	P_{spoVE}-*spoVE(W69A)* amplified (JDB1850; OJD006, AFO363) was digested with EcoRI/BamHI and ligated to pAF195
pAF239	P_{spoVE}-*secY(1,6)-flag* at *amyE*	*secY* amplified (MG1655; AFO482, 509) digested with SpeI and BamHI, and ligated to pKM44
pAF248	P_{spoVE}-*spoVE* at *amyE*	P_{spoVE}-*spoVE* amplified (PY79; OJD006, AFO524) and digested with EcoRI/BamHI and ligated to

		pDG1662
pAF250	P_{spoVE}-*secY(1,6)-flag* at *sacA*	Fragment of pAF239 cut with EcoRI and BamHI ligated to pAF195
pAF254	P_{spoVE}-*spoVE-GSGSGS-spoVD-flag* at *amyE*	Linker-*spoVD-flag* amplified (PY79; AFO532, 536) digested with SpeI/BamHI and ligated to pAF248.
pAF257	*GSGSGS-spoVD-flag* at *amyE*	linker-spoVD-flag amplified (PY79; AFO532, 536), digested with SpeI/BamHI and ligated to pAF248.
pAF260	P_{spoVE}-*spoVE(G334A)-GSGSGS-spoVD-flag* at amyE	P_{spoVE}-*spoVE(G334A)* amplified (JDB1271; OJD006, AFO524) was digested with EcoRI/SpeI and ligated to pAF257
pAF261	P_{spoVE}-*spoVE(G343A)-GSGSGS-spoVD-flag* cm at amyE	P_{spoVE}-*spoVE(G343A)* amplified (JDB1355; OJD006, AFO524) digested with EcoRI/SpeI and ligated to pAF257
pAF263	P_{spoVE}-*spoVE(E271A)-GSGSGS -spoVD-flag* at amyE	P_{spoVE}-*spoVE(E271A)* amplified (JDB1357; OJD006, AFO524) was digested with EcoRI/SpeI and ligated to pAF257
pAF273	P_{spoVE}-*gfp-spoVD(K496)-flag* at amyE	Fragments amplified with (pKM61; OJD006, AFO553-r) and (pKM61; AFO553, 536) were sewn together, digested with EcoRI/BamHI and ligated to pDG1662(4)
pAF274	P_{ftsW}-*ftsW* at *amyE*	P_{ftsW}-*ftsW amplified* (PY79; OJD199, AFO557), digested with EcoRI/BamHI and ligated to pDG1662(4)
pAF275	P_{spoVE}-*spoVE-GSGSGS-pbpB-flag* at *amyE*	*pbpB* amplified (PY79; AFO555, 556), digested with SpeI/BamHI and ligated to pAF248
pAF276	P_{ftsW}-*ftsW-GSGSGS-pbpB-flag* at *amyE*	*pbpB* amplified (PY79; AFO555, 556), digested with SpeI/BamHI and ligated to pAF274
pAF278	P_{spoVE}-*spoVE- GSGSGS-spoVD(K496A)-flag* at *amyE*	*spoVD(K496A)* amplified (pAF273; AFO532, 536) digested with SpeI/BamHI and ligated to pAF248.
pAF310	P_{spoVE}-*spoVE- GSGSGS-spoVD(Q227E)-flag* at *amyE*	*spoVD(Q227E)* amplified (pAF317; AFO532, 536) was digested with SpeI/BamHI and ligated to pAF248
pAF317	P_{spoVE}-*gfp-spoVD(Q227E) flag* at *amyE*	Fragments (pKM61; OJD006, AFO593-r; AFO593, 536) sewn together, digested with EcoRI/BamHI and ligated to pDG1662(4)
pAF328	3'*spoVD-mCherry*	mCherry amplified (ODJ184, 185) was digested with XhoI/SphI and ligated to pKM5
pAF402	3'*spoVD(K496A)-mCherry*	3' spoVD amplified (pAF273; OJD763, OJD764) was digested with EcoRI/XhoI and ligated to pAF328 cut with same
pKM5	3'*spoVD-gfp*	3'*spoVD* amplified (PY79; OJD763, OJD764) was digested with EcoRI/XhoI and ligated to pKL147(5)
pKM51	*yfp* at *pyrD*	*yfp* amplified (yfp cassette; JD643, 666) was digested with HindIII/BamHI and ligated to pPyr-Cm(6)
pKM57	P_{spoVE}-*gfp* at *amyE*	*yfp* amplified (yfp cassette; OJD087, 088) was

		digested with HindIII/BamHI and ligated to pKM44
pKM61	P_{spoVE}-*gfp-spoVD* at *amyE*	*spoVD* amplified (PY79; OJD098, 099) was digested with SpeI and ligated to pKM57.
pKM65	*cfp*	*cfp* amplified (cfp cassette; OJD152, 153) was digested with XhoI/SphI and ligated to pKL147(5)
pKM67	*yfp*	*yfp* amplified (yfp cassette; OJD154, 155) was digested with XhoI/SphI and ligated to pKL147(5)
pKM77	P_{spoVE}-*yfp* at *amyE*	*yfp* amplified (yfp cassette; OJD087,088) digested with HindIII/BamHI and ligated to pKM44 (8)
pKM80	P_{spoVE}-*yfp-spoVD* at *amyE*	*spoVD* amplified (PY79; OJD098, 099) was digested with SpeI and ligated to pKM77
pMR14	*PspoVE-yfp-spoVD at gltA*	pKM80 digested with EcoRI/BamHI and *PspoVE-yfp-spoVD* fragment ligated to pGlt-Cm(6)
pMR9	*PspoVE-spoVE-cfp at sacA*	*PspoVE-spoVE-cfp* (JDB1376, OJD006, JD643) digests with EcoRI/BamHI and ligated to pSac-tet
pMR12	*PspoVE-ftsW-yfp at amyE*	*ftsW-yfp* (JDB1559, AFO054 JD643) digested with SpeI/BamHI and ligated to pKM44(8) cut with same
pMR14	*PspoVE-yfp-spoVD at gltA*	pKM80 digested with EcoRI/BamHI and *PspoVE-yfp-spoVD* fragment ligated to pGlt-Cm(6)
pMR35	*PspoVE-yfp-cfp at amyE*	*Cfp* amplified (OPM100, OPM101) digested with SpeI and ligated to pKM77 cut with NheI
For *E.coli* replication		
pAF172	P_{ara}-GST	RBS-GST-Xa cut from pALEX(7) with XbaI/SalI was ligated to to pBAD24(4) cut with NheI/SalI
pAF175	P_{ara}-GST-spoVD AmpR	*spoVD* amplified PY79; AFO437, 426) was digested with EcoRI/SalI then ligated to pAF172.
pAF186	T7-6his-spoVE-gfp	*spoVE-gfp* amplified (JDB1134; AFO439,389) was digested BamHI/PstI and ligated to pETDuet-1 (Novagen) digested with BglII/PstI.
pAF188	P_{ara}-*6his-spoVE-gfp*	*6his-spoVE-gfp* fragment from pAF186 digested with XbaI/PstI ligated to pBAD33(4).
pAF190	P_{ara} *-10xhis*	ligated oligos into pBAD24(4)
pAF191	P_{ara} -10xHis-spoVE-GFP	*spoVE-gfp* amplified (PY79; AFO439, 389) was digested BamHI/PstI and ligated into pAF190 digested with BglII/PstI.
pAF231	P_{ara} *-GST-spoVD*	Fragment from digesting pAF175 with BstEII/SalI was ligated to pBAD33(4) cut with same
pAF232	P_{ara}-GST	Fragment from digesting pAF172 with BstEII/PstI was ligated to pBAD33(4) cut with same
pAF233	P_{ara} *-10xhis-gfp*	*gfp* amplified (pKL147(5); AF)438, 439) was digested BamHI/PstI and ligated to pAF190 digested with BglII/PstI.

pAF253	P_{ara} *-10his-ftsW-gfp*	*ftsW-gfp* amplified (JDB223; AFO423, 439) was digested with BamHI/PstI and ligated into pAF190 cut with BglII/PstI.
pAF256	P_{ara} *-10xhis-ftsW-gfp*	*10xhis-ftsW-gfp* from pAF253 digested with XbaI/PstI ligated to pBAD33(4)
pAF267	P_{ara} -GST-Pbp2B	*pbpB* amplified (PY79; AFO534 538)was digested with SalI/SphI and ligated to pAF172

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