

IA Plasmids		
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Name	Description	Ab^R ori
pIA140, 141	P _L -nutL-t _R '	Amp pMB1
pIA142, 143	T7A1-nutR-t _R '	Amp pMB1
pIA144, 145	P _L -nutL- <i>his</i> T	Amp pMB1
pIA146, 147	<i>Clal</i> - <i>Bsp</i> EI fragment from pRL574 cloned into pRL777:T7A1, A29, no terminator in sight	Amp pMB1
pIA148, 149	<i>Clal</i> - <i>Bsp</i> EI fragment from pRL574 cloned into pRM143: λP _R , G135, no terminator in sight	Amp pMB1
pIA150	Deletion of residues 938-1040 in β - pRL702 derivative	Amp pMB1
pIA160	<i>Xho</i> I site in beta at 998 in pRL702 (= His ₆ -β)	Amp pMB1
pIA161	2H1 fragment (<i>rpoC</i> N-term.) cloned between <i>Bam</i> HI and <i>Pst</i> I sites of pGAD424	Amp pMB1
pIA162	2H2 fragment (<i>rpoC</i> middle) cloned between <i>Bam</i> HI and <i>Pst</i> I sites of pGAD424	Amp pMB1
pIA163	2H3 fragment (<i>rpoC</i> C-term.) cloned between <i>Bam</i> HI and <i>Pst</i> I sites of pGAD424	Amp pMB1
pIA164	2H4 fragment (<i>rpoB</i> N-term.) cloned between <i>Bam</i> HI and <i>Pst</i> I sites of pGAD424	Amp pMB1
pIA165	2H5 fragment (<i>rpoB</i> middle) cloned between <i>Bam</i> HI and <i>Pst</i> I sites of pGAD424	Amp pMB1
pIA166	2H6 fragment (<i>rpoB</i> C-term.) cloned between <i>Bam</i> HI and <i>Pst</i> I sites of pGAD424	Amp pMB1
pIA167	UUUG tetraloop in pCL102b	Amp pMB1
pIA168	UUUG tetraloop in pCL102b	Amp pMB1
pIA169	UGA in place of Cys77 codon of <i>lacZ</i> in pRL602 (<i>his</i> promoter)	Amp pMB1
pIA170	UGA in place of Cys77 codon of <i>lacZ</i> in pIA12	Amp pMB1
pIA171	WT downstream sequence combined with the A29 complex from pCL102b	Amp pMB1
pIA172	-10, -9, -8 TTT substitution in pIA171	Amp pMB1
pIA173	-10, -9, -8 TTT substitution combined with GG insertion in the hairpin in pIA171	Amp pMB1
pIA174	deletion of β aa 900-909 in pSJ103; contains extra mutation Ala875Pro- introduces extra <i>Bsp</i> EI site	Amp pMB1
pIA175	G to A substitution at the pause site in pIA171	Amp pMB1
pIA176	β F906A in pIA178	Amp pMB1
pIA177	β F934A in pIA178	Amp pMB1
pIA178	β S531F <i>Xho</i> I @998 in pRL702	Amp pMB1

pIA179	β K909D/S531F in pIA160	Amp pMB1
pIA180	β K909D/D516V in pIA160	Amp pMB1
pIA181	β Δ 900-909/S531F in pRL702X998	Amp pMB1
pIA182	β Δ 900-909 /D516V in pRL702X998	Amp pMB1
pIA183	β D516V in pRL702X998	Amp pMB1
pIA184	β ' 762A, 763A, 764A in pRL663	Amp pMB1
pIA185	WT put in pIA171	Amp pMB1
pIA186	Δ put in pIA171	Amp pMB1
pIA187	β ' 762A, 763A, 764A in pRL662	Amp pMB1
pIA188	his71B in pIA171	Amp pMB1
pIA189	his71C in pIA171	Amp pMB1
pIA190	his71C+mutant hairpin in pIA171	Amp pMB1
pIA191	λ P _R in pIA170	Amp pMB1
pIA192	β K909A in pIA183	Amp pMB1
pIA193	β K909S in pIA183	Amp pMB1
pIA194	β K909G in pIA183	Amp pMB1
pIA195	β K909P in pIA183	Amp pMB1
pIA196	β X29Lys ₆ in pIA183	Amp pMB1
pIA197	β F906A in pIA183	Amp pMB1
pIA198	β F934A in pIA183	Amp pMB1
pIA199	<i>B. subtilis</i> P RNA in pCL185 – makes G16	Amp pMB1
pIA200	λ N cloned between <i>Nde</i> I and <i>Xho</i> I sites of pET21b - his6 tag at the 3' end.	Amp pMB1
pIA201	λ N cloned between <i>Nde</i> I and <i>Xho</i> I sites of pET21b	Amp pMB1
pIA202	-13 through -9 AATTT substitution in pIA171	Amp pMB1
pIA203	mutation in pIA204 - Δ of C between <i>Hph</i> I and <i>Spe</i> I sites	Amp pMB1
pIA204	<i>his</i> perfect hairpin in pIA171	Amp pMB1
pIA205	β F934A/S531F in pRW408	Amp pMB1

pIA206	β K909D/S531F in pRW408	Amp pMB1
pIA207	β Δ 900-909/S531F in pRW408	Amp pMB1
pIA208	β K909A/S531F in pRW408	Amp pMB1
pIA209	β K909S /S531F in pRW408	Amp pMB1
pIA210	β F906A/S531F in pRW408	Amp pMB1
pIA211	λ t _o cloned between <i>Bgl</i> III and <i>Bam</i> HI sites of pIA214	Amp pMB1
pIA212	<i>trpP</i> constitutive promoter cloned between <i>Eco</i> RI and <i>Bgl</i> III of pIA175	Amp pMB1
pIA213	promoter-less CAT gene cloned into <i>Eco</i> RV site of pET28a	Amp pMB1
pIA214	promoter-less CAT gene + US cloned between <i>Xba</i> I and <i>Hind</i> III sites of pIA212	Amp pMB1
pIA215	λ t _o cloned between <i>Bgl</i> III and <i>Bam</i> HI sites of pIA214	Amp pMB1
pIA216	λ t _R cloned between <i>Bgl</i> III and <i>Xba</i> I sites of pIA214	Amp pMB1
pIA217	T7Te cloned between <i>Bgl</i> III and <i>Xba</i> I sites of pIA214	Amp pMB1
pIA218	perfect hairpin that extends to the -10 position from the 3' end in pIA171	Amp pMB1
pIA219	perfect hairpin that extends to the -9 position from the 3' end in pIA171	Amp pMB1
pIA220	perfect hairpin that extends to the -8 position from the 3' end in pIA171	Amp pMB1
pIA221	perfect hairpin that extends to the -7 position from the 3' end in pIA171	Amp pMB1
pIA222	β D516V with a silent <i>Bsg</i> I site - original isolate from Quick Change	Amp pMB1
pIA223	β D516V with <i>Bsg</i> I site - <i>Cla</i> I to <i>Bsp</i> EI fragment of pIA222 cloned into pIA160	Amp pMB1
pIA224	Mutant 3' proximal region (UUU->ccc) in T7 terminator in pCM301	Amp pMB1
pIA225	Mutant 3' proximal region (UCU->cuc) in T7 terminator in pCM301	Amp pMB1
pIA226	<i>hisP</i> signal cloned under control of λ P _R promoter between <i>Bbs</i> I and <i>Sph</i> I sites of pCM301	Amp pMB1
pIA227	Δ of β ' in pRM339	Amp pMB1
pIA228	<i>his</i> pause signal cloned under control of of λ P _R promoter between <i>Bbs</i> I and <i>Sph</i> I of pCM301	Amp pMB1
pIA229	<i>his</i> perfect hairpin cloned under control of of λ P _R promoter between <i>Bbs</i> I and <i>Sph</i> I of pCM301	Amp pMB1
pIA230	Δ of <i>Nsi</i> I- <i>Mfe</i> I fragment (= cI repressor) in pIA229	Amp pMB1
pIA231	<i>Nsi</i> I- <i>Hind</i> III fragment from pIA227 into <i>Nsi</i> I- <i>Hind</i> III of pBAD33.	Cm p15A
pIA232	PCR 3430+3431 from pRL719 cloned between <i>Pst</i> I & <i>Eco</i> RI of pBR322 – new <i>Stu</i> I site & <i>bla</i> is deleted	Tet pMB1

pIA233	killed <i>XhoI</i> site at 10320 in pRL719	Amp pMB1
pIA234	<i>SgfI</i> (T4) fragment of pRL719 cloned between <i>SmaI</i> and <i>HincII</i> sites of pBSIIKS- : reverse	Amp pMB1
pIA235	<i>SgfI</i> (T4) fragment of pRL719 cloned between <i>SmaI</i> and <i>HincII</i> sites of pBSIIKS-	Amp pMB1
pIA236	<i>NsiI</i> to <i>StuI</i> fragment (9806 bp) of pRL719 cloned into <i>NsiI</i> & <i>StuI</i> sites of pIA232	Tet pMB1
pIA237	<i>ops</i> site from <i>rfaS</i> cloned between <i>SpeI</i> and <i>BglIII</i> sites of pIA171	Amp pMB1
pIA238	<i>rfaH</i> cloned between <i>NdeI</i> and <i>HindIII</i> sites of pET28a	Kn pMB1
pIA239	<i>S.cerevisiae rpb2</i> Zn-finger region cloned between <i>Sse87I</i> and <i>HindIII</i> sites of pIA178	Amp pMB1
pIA240	<i>S.cerevisiae rpb2</i> Zn-finger region cloned between <i>Sse87I</i> and <i>HindIII</i> sites of pIA233	Amp pMB1
pIA241	Derivative of pCM301: change in the G26 to remove tandem Us + <i>NheI</i> site	Amp pMB1
pIA242	β' <i>XbaI</i> @ 103 in pIA235 - re-cloned <i>SseI</i> to <i>MluI</i> fragment from pIA243 into pIA235	Amp pMB1
pIA243	β' <i>XbaI</i> @ 103 in pIA235 - original isolate from QuikChange mutagenesis	Amp pMB1
pIA244	WT NusG in pET33 between <i>NdeI</i> and <i>HindIII</i> His ₆ tag + <i>HMK</i> site at the N-terminus	Kn pMB1
pIA245	NusG in pET21b between <i>NdeI</i> and <i>HindIII</i> - has a frameshift at the 3' end + His ₆ tag	Amp pMB1
pIA246	WT NusG in pET21b between <i>NdeI</i> and <i>HindIII</i>	Amp pMB1
pIA247	WT NusG in pET28a between <i>NdeI</i> and <i>HindIII</i> : His ₆ tag at the N-terminus	Kn pMB1
pIA248	His ₆ -NusG in the P _{trc} plasmid - <i>NcoI</i> - <i>HindIII</i> fragment of pIA247 cloned into pRW308	Amp pMB1
pIA249	His ₆ -RfaH in the P _{trc} plasmid - <i>NcoI</i> - <i>HindIII</i> fragment of pIA238 cloned into pRW308	Amp pMB1
pIA250	137AT in <i>B. subtilis</i> P RNA – made from pIA199 by QuikChange mutagenesis	Amp pMB1
pIA251	<i>ops</i> site from <i>pheP</i> cloned between <i>SpeI</i> and <i>BglIII</i> sites of pIA171	Amp pMB1
pIA252	137AT in <i>B. subtilis</i> P RNA – made from pCP240 by QuikChange mutagenesis	Amp pMB1
pIA253	T8 in pCM301 between <i>BbsI</i> and <i>BamHI</i>	Amp pMB1
pIA254	T9 in pCM301 between <i>BbsI</i> and <i>BamHI</i>	Amp pMB1
pIA255	<i>his</i> terminator in pIA241. PCR 3495-3071 cloned between <i>NheI</i> and <i>BamHI</i> sites of pIA241	Amp pMB1
pIA256	<i>E.coli topA</i> gene fragment under T7A1+A29 - random isolate from cloning PCR fragment 3483-3484 from genomic DNA into <i>SpeI</i> and <i>BglIII</i> sites of pIA171	Amp pMB1
pIA257	<i>E.coli fucO</i> gene fragment under T7A1+A29 - random isolate from cloning PCR fragment 3483-3484 from genomic DNA into <i>SpeI</i> and <i>BglIII</i> sites of pIA171	Amp pMB1
pIA258	137AT and 225 TA in <i>B. subtilis</i> P RNA – made from pIA250 by Quick change mutagenesis	Amp pMB1
pIA259	137AT and 225TA in <i>B. subtilis</i> P RNA – made from pIA252 by Quick change mutagenesis	Amp pMB1

pIA260	<i>ops</i> from <i>rfaS</i> cloned between <i>SpeI</i> and <i>BglIII</i> sites of pIA228	Amp pMB1
pIA261	<i>trpP_{oc}</i> cloned in front of <i>lacZ</i> : PCR 3932+3933 cloned between <i>HindIII</i> and <i>EcoRI</i> of pIA12	Amp pMB1
pIA262	Substitution of the 9 nt of the <i>ops</i> site in pIA260: GGCGGTAGCGTG to GGCaacgtgcac at 1198-1206	Amp pMB1
pIA263	<i>ops</i> + T7 terminator from pAR1707 cloned between <i>SpeI</i> and <i>BglIII</i> of pIA228	Amp pMB1
pIA264	<i>ops</i> + T3 terminator from pCPG T3 cloned between <i>SpeI</i> and <i>BglIII</i> of pIA228	Amp pMB1
pIA265	<i>ops</i> + P14 terminator from pCPG P14 cloned between <i>SpeI</i> and <i>BglIII</i> of pIA228	Amp pMB1
pIA266	<i>ops</i> + <i>rrmBT1</i> terminator from pCPG <i>rrmBT1</i> cloned between <i>SpeI</i> and <i>BglIII</i> of pIA228	Amp pMB1
pIA267	λ t_{r1} region from λ DNA cloned between <i>XmaI</i> and <i>XbaI</i> of pIA263	Amp pMB1
pIA268	<i>ops</i> site from <i>rfaS</i> cloned between <i>SpeI</i> and <i>BglIII</i> sites of pIA171; <i>SpeI</i> site recreated	Amp pMB1
pIA269	G to T substitution at nt 2 of the <i>ops</i> site in pIA268	Amp pMB1
pIA270	<i>NdeI-HindIII</i> RfaH fragment from pIA249 cloned into pET33-His ₆ -HMK site at the N-terminus	Kn pMB1
pIA271	hisP region from pIA171 cloned between <i>SmaI</i> and <i>SphI</i> of pIA263	Amp pMB1
pIA272	<i>ops</i> - terminator fragment cloned between <i>SpeI</i> and <i>BglIII</i> sites of pIA228 (sequence 265-42); should have been P14 but is not	Amp pMB1
pIA273	GGC to TAA @ 1932-1934 in pIA260	Amp pMB1
pIA274	<i>ops</i> mutant: AACCTTCAC @ 1935-1943 in pIA260	Amp pMB1
pIA275	Derivative of pIA263 – <i>SmaI</i> to <i>SphI</i> fragment deleted	Amp pMB1
pIA276	Derivative of pIA263 – <i>SmaI</i> to <i>SphI</i> fragment deleted, 2 bp deletion relative to 275	Amp pMB1
pIA277	Deletion of <i>BamHI</i> fragment in pIA267 - <i>ops</i> site gone	Amp pMB1
pIA278	RfaH C9S/C28S in pIA238; SDM	Kn pMB1
pIA279	RfaH S3C in pIA238; SDM	Kn pMB1
pIA280	RfaH S173C in pIA238; SDM	Kn pMB1
pIA281	<i>rpoA</i> in pGET3A; <i>HindIII</i> site in α is gone - quikchange with oligos 3653+3654; original isolate	Amp pMB1
pIA282	<i>rpoA</i> in pET21; <i>HindIII</i> site in α is gone - quikchange with oligos 3653+3654; original isolate	Amp pMB1
pIA283	<i>MluI</i> in pIA171; makes G33; quikchange with oligos 3675 and 3676	Amp pMB1
pIA284	<i>MluI</i> in pIA171; makes G33; quikchange with oligos 3675 and 3676	Amp pMB1
pIA285	<i>rfaQ ops</i> in pIA283; just 3 walking steps. Cassette 3677+3678 between <i>MluI</i> and <i>BglIII</i> sites of pIA283	Amp pMB1
pIA286	<i>XbaI-HindIII</i> fragment from pIA281 re-cloned into pGET3A	Amp pMB1

pIA287	<i>Xba</i> I - <i>Hind</i> III fragment from pIA281 recloned into pET α	Amp pMB1
pIA288	Remade pIA174 by quick change to get rid of Pro875 mutation – original isolate	Amp pMB1
pIA289	<i>Bsp</i> EI- <i>Xho</i> I from pIA288 recloned into pIA178	Amp pMB1
pIA290	<i>Bam</i> HI- <i>rbs</i> - <i>Nco</i> I linker cloned into <i>Bam</i> HI site of pRL738	Amp pMB1
pIA291	<i>Bam</i> HI- <i>rbs</i> - <i>Nco</i> I linker cloned into <i>Bam</i> HI site of pRL738 – linker is slightly different from pIA290	Amp pMB1
pIA292	<i>Nco</i> I- <i>Sse</i> I fragment from pRW408 cloned into pIA290	Amp pMB1
pIA293	<i>Nco</i> I- <i>Sse</i> I fragment from pRL702 cloned into pIA290	Amp pMB1
pIA294	β' Δ 943-1130 in pRL663; original isolate from QuikChange	Amp pMB1
pIA295	β Δ 226-350 in pIA160; original isolate from QuikChange with oligos 3593+3694	Amp pMB1
pIA296	<i>Nco</i> I- <i>Sse</i> I fragment from pIA176 (β S531F/F906A) cloned into pIA291	Amp pMB1
pIA297	<i>Nco</i> I- <i>Sse</i> I fragment from pIA177 (β S531F/F934A) cloned into pIA291	Amp pMB1
pIA298	<i>Nco</i> I- <i>Sse</i> I fragment from pIA289 (β S531F/ Δ 900-909) cloned into pIA291	Amp pMB1
pIA299	<i>Bsm</i> I to <i>Hind</i> III fragment of pRL736 cloned into pIA292 = T7P- α - β - β' -His ₆	Amp pMB1
pIA300	T7P- α -His ₆ - β [S531F]- β' : <i>Nco</i> I- <i>Sse</i> I fragment from pIA178 cloned into pIA292	Amp pMB1
pIA301	β' Δ 943-1130 in pRL663, recloned from pIA294; sequenced	Amp pMB1
pIA302	β Δ 226-350 recloned into pIA178, sequenced	Amp pMB1
pIA303	<i>Nco</i> I- <i>Sse</i> I fragment from pIA205 cloned into pIA299	Amp pMB1
pIA304	<i>Nco</i> I- <i>Sse</i> I fragment from pIA210 cloned into pIA299	Amp pMB1
pIA305	<i>Nco</i> I- <i>Sse</i> I fragment from pRW225 cloned into pIA299	Amp pMB1
pIA306	<i>Nco</i> I- <i>Sse</i> I fragment from pIA207 cloned into pIA299	Amp pMB1
pIA307	<i>Sac</i> I- <i>Nco</i> I deletion in pIA306	Amp pMB1
pIA308	β Δ 226-350/ Δ 938-1040/S531F	Amp pMB1
pIA309	Linker from pIA292 (PCR product with 3739 and 3740) cloned between <i>Bam</i> HI and <i>Nco</i> I sites of pIA293	Amp pMB1
pIA310	Oligo linker (3737+3738) cloned between <i>Bam</i> HI and <i>Nco</i> I sites of pIA293	Amp pMB1
pIA311	β 938-1040/S531F	Amp pMB1
pIA312	T7P- α - β - β' -CBP. Chitin tag from pTYB3 (3741+3742) digested with <i>Sal</i> I and <i>Xho</i> I & cloned between <i>Xho</i> I sites of pIA299	Amp pMB1
pIA313	λ P _R - <i>B. subtilis</i> P RNA. <i>Bam</i> HI – <i>Sph</i> I fragment of pIA199 cloned into pIA263	Amp pMB1

pIA314	T7P- α -His ₆ β [Δ938-1040]- β ' ; <i>NcoI-SseI</i> fragment from pIA150 cloned into pIA309	Amp pMB1
pIA315	T7P- α -His ₆ β [S531F/Δ226-350]- β ' ; <i>NcoI-SseI</i> fragment from pIA302 cloned into pIA309	Amp pMB1
pIA316	T7P- α -His ₆ β [S531F/Δ226-350/Δ938-1040]- β ' ; <i>NcoI-SseI</i> fragment from pIA308 cloned into pIA309	Amp pMB1
pIA317	RfaH C9S in pIA238	Kn pMB1
pIA318	RfaH C28S in pIA238	Kn pMB1
pIA319	β Δ 226-350 in pIA160 (rif ^S)	Amp pMB1
pIA320	β Δ 226-350/ Δ 938-1040 in pIA160 (rif ^S)	Amp pMB1
pIA321	T7P- α - β - β ' [Δ943-1130] His₆ ; <i>BsmI</i> to <i>HindIII</i> fragment of pIA301 cloned into pIA299	Amp pMB1
pIA322	extension of the 3' proximal region to 13 nt in pIA171	Amp pMB1
pIA323	T7P- α -His ₆ β [F906A]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA176 cloned into pIA312	Amp pMB1
pIA324	T7P- α -His ₆ β [F934A]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA177 cloned into pIA312	Amp pMB1
pIA325	T7P- α -His ₆ β [Δ900-909]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA289 cloned into pIA312	Amp pMB1
pIA326	extension of the 3' proximal region to 12 nt in pIA171 - A inserted at -9	Amp pMB1
pIA327	extension of the 3' proximal region to 12 nt in pIA171 - G inserted at -9	Amp pMB1
pIA328	extension of the 3' proximal region to 12 nt in pIA171 - T inserted at -9	Amp pMB1
pIA329	T7P- α -His ₆ β [S531F/Δ226-350]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA302 cloned into pIA312	Amp pMB1
pIA330	T7P- α -His ₆ β [S531F/Δ226-350/Δ983-1040]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA308 cloned into pIA312	Amp pMB1
pIA331	T7P- α - β - β ' [Δ943-1130]- <i>CBP</i> ; <i>BsmI</i> to <i>XhoI</i> fragment of pIA301 cloned into pIA312	Amp pMB1
pIA332	T7P- α -His ₆ β [S531F]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA178 cloned into pIA312	Amp pMB1
pIA333	T7P- α -His ₆ β - β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA160 cloned into pIA312	Amp pMB1
pIA334	T7P- α -His ₆ β [S531F/Δ938-1040]- β '- <i>CBP</i> ; <i>NcoI-SdaI</i> fragment from pIA311 cloned into pIA312	Amp pMB1
pIA335	RfaH C153S in pIA278 – a single C-terminal Cys	Kn pMB1
pIA336	T7P- α -His ₆ β [S531F/Δ226-350]- β ' [Δ943-1130]- <i>CBP</i> ; <i>NcoI-SseI</i> fragment from pIA302 cloned into pIA331	Amp pMB1
pIA337	<i>SalI</i> to <i>KpnI</i> fragment of pIA329 cloned between <i>XhoI</i> and <i>KpnI</i> sites of Litmus28	Amp pUC
pIA338	<i>SpeI</i> site in the intergenic region in pIA337	Amp pUC
pIA339	silent <i>NheI</i> site @ β '23/24 + <i>SpeI</i> site in the intergenic region (in pIA337)	Amp pUC
pIA340	recloned <i>SseI</i> to <i>EcoRI</i> fragment from pIA339 back into pIA337	Amp

		pUC
pIA341	<i>SseI</i> - <i>BsmI</i> from pIA340 recloned into pIA312; silent silent <i>NheI</i> site @ β'23/24 + <i>SpeI</i> site in intergenic region	Amp pMB1
pIA342	<i>B. subtilis</i> β fragment from <i>BspEI</i> to F934 (in <i>E. coli</i>) cloned into pIA177 - partial <i>XhoI</i> + <i>BspEI</i>	Amp pMB1
pIA343	<i>ApaI</i> to <i>DraIII</i> fragment (large) from pIA312 cloned into pET28: T7P-α-β-β'- <i>CBP</i> in Kn^R vector	Kn pMB1
pIA344	<i>NcoI</i> to <i>SseI</i> fragment from pIA342 cloned into pIA312	Amp pMB1
pIA345	Long hairpin stem + 12 nt spacer region	Amp pMB1
pIA346	<i>ops</i> site - <i>kps</i> terminator fragment (PCR 3852+3853) cloned between <i>EcoRI</i> and <i>BamHI</i> sites of pIA12	Amp pMB1
pIA347	additional sites <i>BspEI</i> and <i>BglIII</i> in pIA285	Amp pMB1
pIA348	<i>ops</i> P – <i>ops</i> P tandem: oligo cassette 3813+3817 cloned between <i>BspEI</i> and <i>XbaI</i> of pIA347	Amp pMB1
pIA349	<i>ops</i> P – <i>his</i> P tandem: PCR 3812-645 cloned between <i>BspEI</i> and <i>XbaI</i> of pIA347	Amp pMB1
pIA350	10 nt 3' proximal region variant of pIA171	Amp pMB1
pIA351	extended hairpin + 11 nt 3'-proximal region: PCR 3818-645 cloned between <i>SpeI</i> and <i>PstI</i> sites of pIA345	Amp pMB1
pIA352	T7P-α-His ₆ β[S531F]-β' [Δ943-1130]- <i>CBP</i> : <i>NcoI</i> - <i>SseI</i> fragment from pIA178 cloned into pIA331	Amp pMB1
pIA353	<i>ops</i> + terminator fragment from <i>kpsF-kpsE</i> (PCR 3852+3853) cloned between <i>SpeI</i> and <i>SphI</i> of pIA188	Amp pMB1
pIA354	<i>lac</i> operator in pIA260 between 2000 and 2021	Amp pMB1
pIA355	Mutant <i>lac</i> _O in pIA260 between 2000 and 2021; substitution A to T at 2009	Amp pMB1
pIA356	Mutant <i>lac</i> _O operator in pIA260 between 2000 and 2021; 1 bp deletion at 2003	Amp pMB1
pIA357	C-less cassette after <i>rfaQ ops</i> site in pIA171	Amp pMB1
pIA358	T7P-α[His ₆]-β-β'- <i>CBP</i> : PCR 3393-3847 from pIA287 cloned between <i>XbaI</i> and <i>NcoI</i> sites of pIA312	Amp pMB1
pIA359	G-less fragment from pRL540 cloned between <i>SpeI</i> and <i>SphI</i> sites of pIA188	Amp pMB1
pIA360	T7P-α[Δ235-His ₆]-β-β'- <i>CBP</i> : amplified from pIA287 (3393+ 3864) and cloned between <i>XbaI</i> and <i>NcoI</i> sites of pIA312	Amp pMB1
pIA361	<i>ops</i> + G-less cassette cloned between <i>MluI</i> and <i>SphI</i> of pIA283	Amp pMB1
pIA362	8 bp hairpin + 11 nt 3'-proximal region: PCR product 3902-645 cloned between the <i>SpeI</i> and <i>PstI</i> of pIA351	Amp pMB1
pIA363	8 bp hairpin + 12 nt 3'-proximal region: PCR product 3902-645 cloned between the <i>SpeI</i> and <i>PstI</i> of pIA351	Amp pMB1
pIA364	12 bp hairpin +11 3'-proximal region: PCR product 3904-645 cloned between the <i>BspEI</i> and <i>PstI</i> of pIA351	Amp pMB1
pIA365	12 bp hairpin +12 3'-proximal region: PCR product 3905-645 cloned between the <i>SpeI</i> and <i>PstI</i> of pIA364	Amp pMB1
pIA366	T7P-α-His ₆ β[K909C]-β'- <i>CBP</i>	Amp pMB1
pIA367	T7P-α-His ₆ β[K909M]-β'- <i>CBP</i>	Amp

		pMB1
pIA368	8 bp hairpin + 12 nt 3'-proximal region: as pIA363 but mutation in the loop TTT to TCT	Amp pMB1
pIA369	CBP- RfaH - chitin tag from pTYB3 cloned between <i>NcoI</i> and <i>NdeI</i> sites of pIA238	Kn pMB1
pIA370	NusA in pET28b - stop codon at aa 349	Kn pMB1
pIA371	10(10)-11 hairpin combined with the 11 3'-proximal region – mutant variant of pIA364	Amp pMB1
pIA372	11(8)-11 hairpin: mutant variant of pIA364; 1 bp deletion in the stem - has a 1-nt bulge	Amp pMB1
pIA373	T7P- α - β - β' [Δ1149-1190]-CBP: <i>BsmI-XhoI</i> fragment recloned	Amp pMB1
pIA374	T7P- α - β - β' [G1161R]-CBP: <i>BsmI-XhoI</i> fragment recloned	Amp pMB1
pIA375	trp_{OC} promoter (PCR 3932+3933) cloned between <i>HindIII</i> and <i>EcoRI</i> sites of pIA345 (<i>trpP-ops-kpsT-lacZ</i>)	Amp pMB1
pIA376	a mutant in the -10 region of the <i>trp</i> constitutive promoter in pIA261	Amp pMB1
pIA377	a mutant in the -10 region of the <i>trp</i> constitutive promoter in pIA261	Amp pMB1
pIA378	NusA 1-137 in pAP1	Kn pMB1
pIA379	<i>ops</i> mutant in pIA349; quick change with oligos 3972+3973 - multiple repeats of the insert	Amp pMB1
pIA380	σ^{70} Δ 4: a stop codon @520. <i>PstI</i> to <i>ClaI</i> fragment from pRL750 cloned into pQE30T- σ^{70}	Amp pMB1
pIA381	σ^{70} Δ 4: 1-565 + 3 extra aa. ; pQE30T- σ^{70} digested with <i>ClaI</i> and <i>HindIII</i> , filled-in and religated	Amp pMB1
pIA382	σ^{70} deletion (residues 99-519 remain), <i>PstI</i> to <i>HindIII</i> fragment from pIA380 cloned into pIA389	Kn pMB1
pIA383	β P560L (silent <i>Thi111 II</i> site) in pIA160; quick change with oligos 3938+3939	Amp pMB1
pIA384	β R637C (silent <i>SfcI</i> site) in pIA160, quick change with 3840+3841	Amp pMB1
pIA385	β S642F (silent <i>EcoRI</i> site) in pIA160, quick change with 3842+3843	Amp pMB1
pIA386	β' P750L (silent <i>HindIII</i> site) in pRL663, quick change with 3944+3945	Amp pMB1
pIA387	β' F773V (silent <i>SnaBI</i> site) in pRL663, quick change with 3946+3947	Amp pMB1
pIA388	β' I774S (silent <i>EarI</i> site) in pRL663, quick change with 3948+3949	Amp pMB1
pIA389	Deletion of σ region 1: linker cloned between <i>NdeI</i> and <i>BsrGI</i> sites of pET28- σ^{70}	Kn pMB1
pIA390	deletion of region 4 in σ^{70} : <i>PstI-HindIII</i> fragment from pIA380 cloned into pET28- σ^{70} ; stop codon @520	Kn pMB1
pIA391	deletion σ^{70} region 4 : <i>PstI</i> to <i>NheI</i> (Klenow) fragment from pIA381 cloned into <i>PstI</i> + <i>HindIII</i> (KI) of pET28 σ^{70} ; σ^{70} 1-565 + 3 aa	Kn pMB1
pIA392	<i>ops</i> mutant CGCGcgcacatccgtcttttc in pIA349 - pIA379 digested with <i>BspEI</i> and religated to remove repeats	Amp pMB1
pIA393	<i>ops</i> mutant in pIA347; quick change with oligos 3972+3973 – two repeats of the insert	Amp pMB1
pIA394	<i>galP1</i> promoter with consensus –10: quick change with oligos 3997+3998 on pIA398	Amp

		pMB1
pIA395	<i>galP1</i> promoter with consensus -10: quick change with oligos 3997+3998 on pIA398; 1 bp change in the T-track	Amp pMB1
pIA396	λ P _{RE} promoter cloned into <i>EcoRI</i> and <i>HindIII</i> sites of 770; oligo cassette 3988+3889	Amp pMB1
pIA397	<i>galP1</i> promoter from chromosome (DH5a) cloned between <i>EcoRI</i> and <i>BamHI</i> sites of pIA12	Amp pMB1
pIA398	<i>galP1</i> promoter from chromosome (DH5a) cloned between <i>EcoRI</i> and <i>BamHI</i> sites of pBSIIKS-	Amp pMB1
pIA399	T7P- α [Δ 235-His ₆]-His ₆ β [S531F/ Δ 900-909]- β '-CBP: <i>NcoI</i> to <i>SseI</i> fragment from pIA289 cloned into pIA360	Amp pMB1
pIA400	deletions of regions 1 and 4 in σ^{70} : residues 99-565 remain; <i>XbaI</i> to <i>PstI</i> fragment from pIA389 cloned into pIA391	Kn pMB1
pIA401	T7P- α - β His ₆ [P560L]- β '-CBP: recloned from pIA383 between <i>NcoI</i> and <i>SdaI</i> sites of pIA312	Amp pMB1
pIA402	T7P- α - β His ₆ [R673C]- β '-CBP: recloned from pIA384 between <i>NcoI</i> and <i>SdaI</i> sites of pIA312	Amp pMB1
pIA403	T7P- α - β His ₆ [S642F]- β '-CBP: recloned from pIA385 between <i>NcoI</i> and <i>SdaI</i> sites of pIA312	Amp pMB1
pIA404	T7P- α - β - β '[P570L]-CBP: recloned from pIA386 between <i>BsmI</i> and <i>XhoI</i> sites of pIA312	Amp pMB1
pIA405	T7P- α - β - β '[F773V]-CBP: recloned from pIA387 between <i>BsmI</i> and <i>XhoI</i> sites of pIA312	Amp pMB1
pIA406	T7P- α - β - β '[I774S]-CBP: recloned from pIA388 between <i>BsmI</i> and <i>XhoI</i> sites of pIA312	Amp pMB1
pIA407	β ' PL750 (silent <i>HindIII</i> site) from pIA386 cloned into <i>SalI</i> and <i>BsmI</i> sites of pRL662	Amp pMB1
pIA408	<i>hlyAB</i> terminator fragment from pO157 in pIA349: REVERSE ORIENTATION	Amp pMB1
pIA409	β ' PL750 (silent <i>HindIII</i> site) from pIA407 cloned between <i>BsmI</i> and <i>XhoI</i> sites of pIA312	Amp pMB1
pIA410	β H526Y in pIA160; PCR amplified from RL310, cloned between <i>ClaI</i> and <i>BspEI</i> ; rifR	Amp pMB1
pIA411	β Q513P in pIA160; PCR amplified from RL315, cloned between <i>ClaI</i> and <i>BspEI</i> ; rifR	Amp pMB1
pIA412	T7P- α - β His ₆ [H526Y]- β '-CBP: cloned between <i>NcoI</i> and <i>SdaI</i> sites of pIA312 ; rifR	Amp pMB1
pIA413	T7P- α - β His ₆ [Q513P]- β '-CBP: cloned between <i>NcoI</i> and <i>SdaI</i> sites of pIA312 rifR	Amp pMB1
pIA414	<i>kps</i> terminator fragment from pIA346 amplified with primers 77+98 and cloned into <i>BspEI</i> and <i>SphI</i> of pIA349	Amp pMB1
pIA415	<i>hlyAB</i> terminator fragment from pO157 amplified with primers 96+97 and cloned into <i>BspEI</i> and <i>XbaI</i> of pIA349	Amp pMB1
pIA416	<i>hlyAB</i> terminator fragment from pWAM amplified with primers 94+95 and cloned into <i>BspEI</i> and <i>XbaI</i> of pIA349	Amp pMB1
pIA417	T7P- α -His ₆ β [S531F/ Δ 226-350/ Δ 938-1040]- β '[Δ 943-1130]-CBP: <i>NcoI</i> - <i>SdaI</i> fragment from pIA308 cloned into pIA331	Amp pMB1
pIA418	T7P- α -His ₆ β [S531F/ Δ 226-350]- β '-CBP: <i>NcoI</i> - <i>SdaI</i> fragment from pIA302 cloned into pIA312	Amp pMB1
pIA419	T7P- α -His ₆ β [S531F/ Δ 226-350/ Δ 938-1040]- β '-CBP	Amp pMB1
pIA420	T7P- α -His ₆ β [S531F/ Δ 226-350]- β '[Δ 943-1130]-CBP: <i>NcoI</i> - <i>SseI</i> fragment from pIA302 cloned into pIA331	Amp pMB1
pIA421	σ 398-474 in pET28	Kn

		pMB1
pIA422	RfaH from pIA238 (<i>XbaI-HindIII</i>) cloned between <i>NheI</i> (partial) and <i>HindIII</i> sites of pBAD33	Cm p15A
pIA423	T7P- α - β - β' - <i>CBP</i> : recreating pIA312 to attain high induction levels: <i>XhoI</i> to <i>XbaI</i> fragment of pIA312 cloned between the same sites of pIA299	Amp pMB1
pIA424	deleted <i>SnaBI</i> site at 2661 in pIA160; Quickchange with oligos 109 & 110	Amp pMB1
pIA425	introduced <i>SpeI</i> site at β aa 250/251 in pIA424 (Quickchange with oligos 111 & 112)	Amp pMB1
pIA426	recloned <i>NcoI-SnaBI</i> fragment from pIA425 back into pIA160	Amp pMB1
pIA427	recloned <i>NcoI-SnaBI</i> fragment from pIA425 back into pIA178	Amp pMB1
pIA428	EGFP cassette (amplified with oligos 105 & 106 from GFP-N3) cloned between <i>NcoI</i> and <i>XhoI</i> sites of pIA238	Kn pMB1
pIA429	silent <i>SpeI</i> site @ β '969/970 in pRL662 (Quickchange with oligos 107 & 108)	Amp pMB1
pIA430	recloned <i>Sall-BspEI</i> fragment from pIA429 into pRL662	Amp pMB1
pIA431	oligos 116 and 117 cloned into the <i>BamHI</i> site of p(ATC) ₁₀ Sal vector 1-bp deletion after the T-track (TTTTTC -> TTTTT)	Amp pMB1
pIA432	a silent <i>BamHI</i> site in <i>rfaH</i> : SDM on pIA238 with oligos 92 & 93	Kn pMB1
pIA433	T7P- α - β His ₆ [H526Y]- β' - <i>CBP</i> : cloned between <i>NcoI</i> and <i>SdaI</i> sites; rifR	Amp pMB1
pIA434	T7P- α - β His ₆ [Q513P]- β' - <i>CBP</i> : β QP513 in pIA423; cloned between <i>NcoI</i> and <i>SdaI</i> sites; rifR	Amp pMB1
pIA435	T7P- α -His ₆ β [S531F/Δ226-350/Δ938-1040]- β' [Δ943-1130]- <i>CBP</i> : <i>NcoI-HindIII</i> fragment from pIA417 cloned into pIA423	Amp pMB1
pIA436	T7P- α -His ₆ β [S531F/Δ226-350/Δ938-1040]- β' - <i>CBP</i> : <i>NcoI-SdaI</i> fragment from pIA308 cloned into pIA423	Amp pMB1
pIA437	β' PL750 (silent <i>HindIII</i> site) from pIA386 cloned between <i>BsmI</i> and <i>XhoI</i> sites of pIA423	Amp pMB1
pIA438	T7P- α - β His ₆ - β' - <i>CBP</i> : <i>NcoI-SdaI</i> fragment from pIA160 cloned into pIA423	Amp pMB1
pIA439	T7P- α -His ₆ β [S531F]- β' - <i>CBP</i> : <i>NcoI-SdaI</i> fragment from pIA178 cloned into pIA423	Amp pMB1
pIA440	T7P- α - β His ₆ [P560L]- β' - <i>CBP</i> : recloned from pIA383 between <i>NcoI</i> and <i>SdaI</i> sites of pIA423	Amp pMB1
pIA441	T7P- α - β His ₆ [R637C]- β' - <i>CBP</i> : recloned from pIA384 between <i>NcoI</i> and <i>SdaI</i> sites of pIA423	Amp pMB1
pIA442	T7P- α - β His ₆ [S642F]- β' - <i>CBP</i> : recloned from pIA385 between <i>NcoI</i> and <i>SdaI</i> sites of pIA423	Amp pMB1
pIA443	β 909C in pIA160	Amp pMB1
pIA444	recloned <i>NcoI-SnaBI</i> fragment from pIA424 back into pIA160: a unique <i>SnaBI</i> site in β now	Amp pMB1
pIA445	<i>ops</i> cassette (oligos 116+117) cloned into the <i>BamHI</i> site of pATC17	Amp pMB1
pIA446	<i>NsiI-HindIII</i> fragment from pIA422 cloned between <i>PstI</i> and <i>HindIII</i> sites of pIA188	Amp pMB1
pIA447	class II site (= scrambled <i>ops</i>) in pIA349 between <i>BspEI</i> and <i>BglIII</i> (oligos 120+121)	Amp pMB1
pIA448	an arrest site (U8) in pIA349 between <i>BspEI</i> and <i>BglIII</i>	Amp

	(oligos 122+123)	pMB1
pIA449	<i>trp</i> pause site in pIA349 between <i>BspEI</i> and <i>BgIII</i> (oligos 124+125)	Amp pMB1
pIA450	deletion of β' M932 to G1137 in pIA301: the original isolate from SDM	Amp pMB1
pIA451	<i>SalI</i> (Klenow)- <i>KpnI</i> fragment (including fragment from β' <i>SdaI</i> to β' <i>BsmI</i>) from pIA423 cloned between <i>SnaBI</i> and <i>KpnI</i> sites of Litmus 28	Amp pUC
pIA452	<i>rpoZ</i> in pTYB3 PCR with oligos 129+130 cloned between <i>PstI</i> and <i>BspEI</i> sites (adds a decent SD to <i>rpoZ</i>)	Amp pMB1
pIA453	deletion of β' M932 to G1137 in pRL662: recloned a fragment from SDM between <i>SalI</i> and <i>BspEI</i> sites	Amp pMB1
pIA454	<i>NcoI</i> to <i>XbaI</i> fragment from pRL663 cloned into pTYB3	Amp pMB1
pIA455	<i>NcoI</i> to <i>XbaI</i> fragment from pIA301 cloned into pTYB3	Amp pMB1
pIA456	<i>SdaI-Mva</i> fragment from pIA451 moved back in to pIA423	Amp pMB1
pIA457	<i>Mva-XhoI</i> fragment from pIA453 cloned into pIA423	Amp pMB1
pIA458	<i>SpeI</i> site in the intergenic region in pIA451	Amp pUC
pIA459	silent <i>NheI</i> site @ β' 23/24 in pIA451	Amp pUC
pIA460	PCR product 136-137 (pIA416) digested with <i>BamHI</i> and <i>BgIII</i> and cloned into <i>BamHI</i> site of pIA397	Amp pMB1
pIA461	<i>SpeI-NheI</i> fragment from pIA428 cloned into the <i>SpeI</i> site of pIA426	Amp pMB1
pIA462	<i>SpeI-XbaI</i> fragment from pIA171 cloned into <i>XbaI</i> site of pACIq Tet (forward orientation)	Tet
pIA463	TraB (PCR product 141+142 from Δ <i>rfaH</i> chromosomal DNA) cloned between <i>NdeI</i> and <i>HindIII</i> sites of pIA238	Kn pMB1
pIA464	<i>SpeI</i> site in the <i>rpoBC</i> intergenic region and silent <i>NheI</i> site @ β' 23/24 in pIA451: SDM on pIA458; sequenced	Amp pUC
pIA465	<i>SdaI-MluI</i> fragment from pIA464 moved back into pIA451	Amp pMB1
pIA466	Y66W, F64L, S65T in pGlo = enhanced cyan FP	Amp pMB1
pIA467	<i>Myxococcus xanthus</i> TaA cloned into pIA238: PCR 146-156 digested with <i>PstI</i> and <i>NdeI</i> and cloned into the same sites of pIA238	Kn pMB1
pIA468	T7P- α - β - β' -BCCP: the C-terminal domain of the BCCP protein (residues 71-156) cloned between <i>XhoI</i> sites of pIA299; 159-160 PCR digested with <i>XhoI</i> and <i>SalI</i>	Amp pMB1
pIA469	oligos 116 and 117 (OPS) cloned into the <i>BamHI</i> site of p(ATC) ₁₀ vector GGATCCGGCGGTAGCGTGCCTTTTTTCGATCCGTCGAC(ATC) ₁₀	Amp pMB1
pIA470	oligos 161 and 162 (HISP) cloned into the <i>BamHI</i> site of p(ATC) ₁₀ Sal vector GGATCCTGACTAGTCTTTCAGGCGATGTGTGCTGAGATCCGTCGATCGAC(ATC) ₁₀	Amp pMB1
pIA471	PCR product with oligos 163 and 1 (HISP + DS) digested with <i>BamHI</i> and <i>BgIII</i> and cloned into the <i>BamHI</i> site of p(ATC) ₁₀ Sal vector	Amp pMB1
pIA472	β' T563I change in pIA160 - att instead of ACC at 3759/3761. SDM with oligos 164 and 165. Introduces <i>ApoI</i> site	Amp pMB1
pIA473	oligos 116 and 117 (OPS) cloned into the <i>BamHI</i> site of p(ATC) ₁₀ vector GGATCCGGCGGTAGCGTGCCTTTTTTCGATCCGTCGAC(ATC) ₁₀	Amp pMB1
pIA474	oligos 161 and 162 (HISP) cloned into the <i>BamHI</i> site of p(ATC) ₁₀ vector GGATCCTGACTAGTCTTTCAGGCGATGTGTGCTGAGATCCGTCGAC(ATC) ₁₀	Amp pMB1
pIA475	PCR product with oligos 163 and 1 (HISP + DS) digested with <i>BamHI</i> and <i>BgIII</i> and	Amp

	cloned into the <i>Bam</i> HI site of p(ATC) ₁₀ vector	pMB1
pIA476	β T563I in pIA178 - att instead of ACC at 3759/3761. SDM with oligos 164 and 165. Introduces <i>Apo</i> I site	Amp pMB1
pIA477	T7P-α- βHis ₆ [H526Y]-β'- <i>BCCP</i> : <i>Nco</i> I- <i>Sda</i> I fragment from pIA410 cloned into pIA468	Amp pMB1
pIA478	T7P-α- βHis ₆ [Q513P]-β'- <i>BCCP</i> : <i>Nco</i> I- <i>Sda</i> I fragment from pIA411 cloned into pIA468	Amp pMB1
pIA479	inserting <i>Eco</i> RI sites after the <i>hisP</i> in pIA349: 3 repeats	Amp pMB1
pIA480	inserting <i>Eco</i> RI sites after the <i>hisP</i> in pIA392: 3 repeats	Amp pMB1
pIA481	deletion of <i>Eco</i> RI repeats from pIA479	Amp pMB1
pIA482	deletion of <i>Eco</i> RI repeats from pIA480	Amp pMB1
pIA483	β T563I in pIA160: <i>Cla</i> I to <i>Bsp</i> EI fragment from pIA472 sequenced and recloned into pIA160	Amp pMB1
pIA484	β T563I in pIA178: <i>Cla</i> I to <i>Bsp</i> EI fragment from pIA472 sequenced and recloned into pIA160	Amp pMB1
pIA485	T7P-α- βHis ₆ [T563I]-β'- <i>BCCP</i> : <i>Nco</i> I- <i>Sda</i> I fragment from pIA483 cloned into pIA468	Amp pMB1
pIA486	T7P-α- βHis ₆ [S531F/T563I]-β'- <i>BCCP</i> : <i>Nco</i> I- <i>Sda</i> I fragment from pIA484 cloned into pIA468	Amp pMB1
pIA487	<i>Bsp</i> EI- <i>Xba</i> I fragment from pIA160 cloned into pIA349 (same sites)	Amp pMB1
pIA488	<i>Apa</i> I- <i>Hind</i> III fragment from pIA299 (10.5 kb) cloned between the same sites of pIA452	Amp pMB1
pIA489	silent <i>Mfe</i> I + <i>Bam</i> HI sites in <i>rfaH</i> : SDM on pIA432 with oligos 220 and 221 ORIGINAL isolate	Kn pMB1
pIA490	silent <i>Bsp</i> EI + <i>Bam</i> HI sites in <i>rfaH</i> : SDM on pIA432 with oligos 216+217 ORIGINAL isolate	Kn pMB1
pIA491	<i>birA</i> gene cloned between <i>Nde</i> I and <i>Hind</i> III sites of pIA422; PCR with oligos 182 + 183	Cm p15A
pIA492	α:biotin in pIA287	Amp pMB1
pIA493	<i>Nde</i> I- <i>Hind</i> III fragment from pIA389 recloned into pIA238	Kn pMB1
pIA494	T7P-α- β-β' [F773V]- <i>BCCP</i> : <i>Bsm</i> I- <i>Xho</i> I fragment from pIA387 cloned into pIA468	Amp pMB1
pIA495	silent <i>Xho</i> I + <i>Bam</i> HI sites in <i>rfaH</i> : SDM on pIA432 with oligos 226 and 227 ORIGINAL isolate	Kn pMB1
pIA496	<i>Bam</i> HI site in <i>rfaH</i> in pIA249 <i>Nco</i> I to <i>Hind</i> III fragment from pIA432 was cloned into pIA249	Amp pMB1
pIA497	minimal biotin substrate at the end of <i>rpoA</i> in pIA468: <i>Xba</i> I to <i>Bam</i> HI (partial) fragment of pIA468 and <i>Xba</i> I- <i>Bam</i> HI fragment of pIA492 combined	Amp pMB1
pIA498	silent <i>Xho</i> I + <i>Bsp</i> EI + <i>Bam</i> HI sites in <i>rfaH</i> : SDM on pIA432 with oligos 226+227 and 216+217. ORIGINAL isolate	Kn pMB1
pIA499	silent <i>Cla</i> I + <i>Bam</i> HI sites in <i>rfaH</i> : SDM on pIA432 with oligos 218 and 219 ORIGINAL isolate	Kn pMB1
pIA500	<i>Nco</i> I - <i>Hind</i> III fragment from pIA498 cloned into pIA496	Amp pMB1
pIA501	EC-VC <i>Bam</i> HI hybrid - PCR 195-236 digested with <i>Bam</i> HI and <i>Hind</i> III and cloned into pIA498 (same sites)	Kn pMB1
pIA502	EC-VC <i>Bsp</i> EI hybrid - PCR 195-237 digested with <i>Bsp</i> EI and <i>Hind</i> III and cloned into	Amp

	pIA496 (same sites)	pMB1
pIA503	EC-VC <i>MfeI</i> hybrid - PCR 195-236 digested with <i>EcoRI</i> and <i>HindIII</i> and cloned into pIA498 (<i>MfeI</i> and <i>HindIII</i>)	Kn pMB1
pIA504	EC-VC <i>XhoI</i> hybrid - PCR 195-239 digested with <i>XhoI</i> and <i>HindIII</i> and cloned into the same sites of pIA500	Amp pMB1
pIA505	Filled in the <i>XhoI</i> site in pIA238	Kn pMB1
pIA506	EC-VC <i>XhoI</i> hybrid – recloned an <i>NcoI-HindIII</i> fragment from pIA504 into the same sites of pIA432	Kn pMB1
pIA507	Cloned an <i>NcoI-HindIII</i> fragment from pIA498 into pIA505; now have a unique <i>XhoI</i> site in <i>RfaH</i> : hybrid cloning	Kn pMB1
pIA508	<i>AflIII-HindIII</i> fragment from pIA422 cloned between the same sites of pGLO	Amp pMB1
pIA509	T7P- α - β - β' (<i>XhoI</i> fragment from pIA299 removed)	Amp pMB1
pIA510	RN2 hybrid: <i>XhoI</i> to <i>HindIII rfaH</i> fragment replaced with the corresponding NusG fragment; PCR 252-55 on pIA247 cloned between <i>HindIII</i> & <i>XhoI</i> sites of pIA507	Kn pMB1
pIA511	RN3 hybrid: <i>NcoI</i> to <i>XhoI rfaH</i> fragment replaced with the corresponding NusG fragment; PCR 52-253 on pIA247 cloned between <i>NcoI</i> & <i>XhoI</i> sites of pIA507	Kn pMB1
pIA512	RN4 hybrid: <i>NcoI</i> to <i>BamHI rfaH</i> fragment replaced with the corresponding NusG fragment; PCR 52-254 on pIA247 cloned between <i>NcoI</i> & <i>BamHI</i> sites of pIA507	Kn pMB1
pIA513	RN5 hybrid: <i>BamHI</i> to <i>HindIII rfaH</i> fragment replaced with the corresponding NusG fragment; PCR 255-55 on pIA247 cloned between <i>BamHI</i> & <i>HindIII</i> sites of pIA507	Kn pMB1
pIA514	Altered sites in Litmus28: PCR product 261-262 cloned between <i>SnaBI</i> and <i>NcoI</i> sites of Litmus28	Amp pUC
pIA515	Altered specificity mutants: β' Y457H in pIA451; SDM with oligos 198+199, original isolate	Amp pUC
pIA516	Altered specificity mutants: β' Y457V in pIA451; SDM with oligos 200+201, original isolate	Amp pUC
pIA517	Altered specificity mutants: β' N458D in pIA451; SDM with oligos 203+204, original isolate	Amp pUC
pIA518	Altered specificity mutants: β' N457S in pIA451; SDM with oligos 205+206, original isolate	Amp pMB1
pIA519	Deletion of β gate loop (a.a. 370-375): SDM on pIA160 with oligos 263+264	Amp pMB1
pIA520	β Δ 370-375/S531F: recloned <i>Clal</i> to <i>BsaBI</i> fragment from pIA519 into pIA178	Amp pMB1
pIA521	Altered specificity mutants: β' Y457H from pIA515 moved to pIA458 on <i>SnaBI</i> to <i>BsmBI</i> fragment	Amp pUC
pIA522	Altered specificity mutants: β' Y457V from pIA516 moved to pIA458 on <i>SnaBI</i> to <i>BsmBI</i> fragment	Amp pUC
pIA523	Altered specificity mutants: β' N458D from pIA517 moved to pIA458 on <i>SnaBI</i> to <i>BsmBI</i> fragment	Amp pUC
pIA524	Altered specificity mutants: β' N457S from pIA518 moved to pIA458 on <i>SnaBI</i> to <i>BsmBI</i> fragment	Amp pUC
pIA525	Recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA458 into pIA299	Amp pMB1
pIA526	T7P- α - β His ₆ [S531F/ Δ 370-375]- β' -CBP: Recloned <i>NcoI</i> to <i>SbfI</i> fragment from pIA520 into pIA423	Amp pMB1
pIA527	T7P- α - β - β' [Y457V]His ₆ : Recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA522 into pIA299; silent <i>HincII</i> site	Amp pMB1
pIA528	T7P- α - β - β' [N458S]His ₆ : Recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA524 into pIA299; silent <i>HaeII</i> site	Amp pMB1
pIA529	T7P- α - β - β' [Y457H]His ₆ : Recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA521 into pIA299;	Amp

	silent <i>FspI</i> site	pMB1
pIA530	T7P- α - β - β' [N458D]His ₆ : Recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA523 into pIA299; silent <i>NdeI</i> site	Amp pMB1
pIA531	<i>Tth rpoZ</i> gene (PCR 265+266) cloned into <i>NdeI</i> and <i>NsiI</i> sites of pIA514 – the plasmid we have has a strange piece in it - resequence	Amp pMB1
pIA532	<i>Tth NusG</i> gene (PCR 266+267) cloned between <i>NdeI</i> and <i>HindIII</i> sites of pIA238 – has an extension at the N-terminus	Kn pMB1
pIA533	PCR product 354-355 on pIA535 cloned between <i>XhoI</i> and <i>XbaI</i> sites of pIA514	Amp pMB1
pIA534	β' T790V in pRL662 – original isolate	Amp pMB1
pIA535	β' T790V in pRL662 – recloned from pIA534	Amp pMB1
pIA536	Wild-type <i>rrmB</i> P1 with additional <i>BstBI</i> site cloned between <i>EcoRI</i> and <i>HindIII</i> sites of p770	Amp pMB1
pIA537	-1,-2GG <i>rrmB</i> P1 with additional <i>BstBI</i> site cloned between <i>EcoRI</i> and <i>HindIII</i> sites of p770	Amp pMB1
pIA538	-1,-2AA <i>rrmB</i> P1 with additional <i>BstBI</i> site cloned between <i>EcoRI</i> and <i>HindIII</i> sites of p770	Amp pMB1
pIA539	-1,-2TT <i>rrmB</i> P1 with additional <i>BstBI</i> site cloned between <i>EcoRI</i> and <i>HindIII</i> sites of p770	Amp pMB1
pIA540	T7P- α - β - β' [T790V]His ₆ : <i>MvaI-HindIII</i> fragment from pIA535 recloned into pIA299	Amp pMB1
pIA541	β' Y795A in pRL662 – original isolate	Amp pMB1
pIA542	T7P- α - β - β' [Y795A]His ₆ : <i>MvaI-HindIII</i> fragment from pIA541 recloned into pIA299	Amp pMB1
pIA543	pIA160 with a silent <i>MfeI</i> site @ β 555 – SDM original isolate	Amp pMB1
pIA544	hisG promoter in p770	Amp pMB1
pIA545	<i>ClaI</i> – <i>BspEI</i> fragment from pIA543 recloned back into pIA160	Amp pMB1
pIA546	β P580A in pIA545: PCR 346+74, digested with <i>MfeI</i> + <i>BspEI</i> , recloned into the same sites	Amp pMB1
pIA547	β E581R in pIA543: PCR 347+74, digested with <i>MfeI</i> + <i>BspEI</i> , recloned into the same sites	Amp pMB1
pIA548	β G582F in pIA543: PCR 348+74, digested with <i>MfeI</i> + <i>BspEI</i> , recloned into the same sites	Amp pMB1
pIA549	β P583G in pIA543: PCR 349+74, digested with <i>MfeI</i> + <i>BspEI</i> , recloned into the same sites	Amp pMB1
pIA550	β M1290V in pIA160: PCR 350 +1, digested with <i>SdaI</i> + <i>HindIII</i> , recloned into the same sites	Amp pMB1
pIA551	Altered specificity mutants: β' R425A in pIA451; SDM with oligos 352+353, original isolate	Amp pMB1
pIA552	Altered specificity mutants: β' R425A from pIA551 moved to pIA458 on <i>SnaBI</i> to <i>BsmBI</i> fragment	Amp pUC
pIA553	Recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA552 into pIA299	Amp pMB1
pIA554	β M1290V in pIA438: recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA555	Amp pMB1
pIA555	β M1290V in pIA458	Amp pUC
pIA556	β D814N in pIA545: SDM, original isolate	Amp

		pMB1
pIA557	T7P- α - β His ₆ [V146F]- β' -CBP: <i>NcoI-SbfI</i> fragment from pIA559 recloned into pIA423	Amp pMB1
pIA558	β D814N in pIA545: recloned <i>MfeI</i> + <i>BspEI</i> fragment	Amp pMB1
pIA559	β V146F in pIA160 - SDM	Amp pMB1
pIA560	β V146R in pIA160 - SDM	Amp pMB1
pIA561	β M1290A in pIA438: recloned <i>SbfI</i> to <i>MvaI</i> fragment from pIA562	Amp pMB1
pIA562	β M1290A in pIA458	Amp pUC
pIA563	repairing a 1 nt gap in pIA532 by SDM; introduces <i>XhoI</i> site	Kn pMB1
pIA564	T7P- α - β His ₆ [P580A]- β' -CBP: <i>NcoI-SbfI</i> fragment from pIA546 recloned into pIA423; introduces <i>MfeI</i> site	Amp pMB1
pIA565	T7P- α - β His ₆ [G582F]- β' -CBP: <i>NcoI-SbfI</i> fragment from pIA548 recloned into pIA423; introduces <i>MfeI</i> site	Amp pMB1
pIA566	T7P- α - β His ₆ [P583G]- β' -CBP: <i>NcoI-SbfI</i> fragment from pIA549 recloned into pIA423; introduces <i>MfeI</i> site	Amp pMB1
pIA567	T7P- α - β His ₆ [E581R]- β' -CBP: <i>NcoI-SbfI</i> fragment from pIA547 recloned into pIA423; introduces <i>MfeI</i> site	Amp pMB1
pIA568	<i>NcoI-SbfI</i> fragment from pIA559 recloned into pIA442	Amp pMB1
pIA569	Deletion of a small <i>XhoI</i> fragment in pIA299	Amp pMB1
pIA570	T7P- α - β His ₆ [S531F]- β' : recloned from pIA178 into pIA509	Amp pMB1
pIA571	T7P- α - β His ₆ [D814N]- β' : recloned from pIA558 into pIA509	Amp pMB1
pIA572	T7P- α - β His ₆ [V146F]- β' : recloned from pIA559 into pIA509	Amp pMB1
pIA573	T7P- α - β His ₆ [H526Y]- β' : recloned from pIA410 into pIA509	Amp pMB1
pIA574	<i>Tth</i> NusG - recloned <i>NdeI</i> - <i>HindIII</i> fragment from pIA563 into pET28b	Kn pMB1
pIA575	<i>rpoN</i> in pBAD33: PCR amplified with oligos 420+421 and cloned between <i>KpnI</i> and <i>SphI</i> sites	Cm p15A
pIA576	GreB cloned into pET28 between <i>NcoI</i> and <i>XhoI</i> sites; N-terminal <i>HMK</i> + C-terminal His ₆ (oligos 413+415)	Kn pMB1
pIA577	GreB cloned into pET28 between <i>NcoI</i> and <i>XhoI</i> sites; C-terminal his tag (oligos 414+415)	Kn pMB1
pIA578	GreA cloned into pET28 between <i>NcoI</i> and <i>XhoI</i> sites, C-terminal His ₆ tag (oligos 416+417)	Kn pMB1
pIA579	<i>E.coli</i> dksA in pTYB12, cloned between <i>BsmI</i> and <i>PstI</i> , has a <i>HMK</i> tag at the N-terminus (ARRASV) after cleavage (oligos 412+323)	Amp pMB1
pIA580	<i>rpoH</i> in pBAD33: PCR amplified with oligos 418+419 and cloned between <i>KpnI</i> and <i>HindIII</i> sites	Cm p15A
pIA581	T7P- α - His ₆ β - β' : <i>NcoI-SbfI</i> fragment from pIA160 cloned into pIA509	Amp pMB1
pIA582	σ^{70} Δ 507-519 in pIA586	Kn pMB1
pIA583	deletion of <i>XbaI-NheI</i> fragment in pIA587	Amp

		pMB1
pIA584	Deletion of the <i>NheI-XbaI</i> fragment from pIA587 – only T7P- <i>rpoZ</i> remain	Amp pMB1
pIA585	filled in <i>XhoI</i> site in pET28B	Kn pMB1
pIA586	recloned <i>XbaI-HindIII</i> fragment from pET70- σ^{70} into pIA585 = unique <i>XhoI</i> site in <i>rpoD</i>	Kn pMB1
pIA587	Deletion of the <i>MfeI</i> to <i>EcoRI</i> fragment in pIA452: most of the chitin-intein ORFs gone	Amp pMB1
pIA588	σ^{70} 513D →A in pIA586	Kn pMB1
pIA589	σ^{70} 513D →T in pIA586	Kn pMB1
pIA590	β M685A/T687A in pIA545: SDM - original isolate	Amp pMB1
pIA591	β N684A in pIA545: SDM - original isolate	Amp pMB1
pIA592	β M681A in pIA545: SDM - original isolate	Amp pMB1
pIA593	β L1235A in pIA545: SDM with oligos: 505+506; silent <i>AflIII</i> site - original isolate	Amp pMB1
pIA594	β L1235A in pIA545: <i>BsrGI-HindIII</i> fragment from pIA593 recloned into pIA545	Amp pMB1
pIA595	<i>XhoI</i> site in pIA349 – for recloning HC <i>ops</i> mutants	Amp pMB1
pIA596	T7P- α - β His ₆ [Δ 370-375/S531F]- β' : Recloned <i>NcoI</i> to <i>SbfI</i> fragment from pIA520 into pIA509	Amp pMB1
pIA597	T7P- α - β His ₆ [L1235A]- β' : Recloned <i>NcoI</i> to <i>SbfI</i> fragment from pIA594 into pIA509	Amp pMB1
pIA598	<i>ops</i> mutant G2C cloned between <i>XhoI</i> and <i>BspEI</i> sites of pIA595: PCR products generated with primers 509 and 510 using pHC318 as a template	Amp pMB1
pIA599	WT <i>ops</i> cloned between <i>XhoI</i> and <i>BspEI</i> sites of pIA595: PCR products generated with primers 509 and 510 using pHC319 as a template – 1 bp change after the pause	Amp pMB1
pIA600	β Δ 565-568→G in pIA545 – PCR 10-516 cloned between <i>MfeI</i> and <i>HpaI</i> sites	Amp pMB1
pIA601	β Q510A – <i>ClaI-MfeI</i> fragment from pDS8 recloned into pIA545	Amp pMB1
pIA602	T7P- α - β His ₆ [Δ 565-568→G]- β' : recloned <i>NcoI</i> to <i>SbfI</i> fragment from pIA600 into pIA509	Amp pMB1
pIA603	β R548A mutant in pIA545: SDM with oligos 530+531, ORIGINAL ISOLATE	Amp pMB1
pIA604	β R548A mutant in pIA545: <i>ClaI-MfeI</i> fragment from pIA603 recloned into pIA545	Amp pMB1
pIA605	β T786Y mutant in pRL662: SDM with oligos 540+541, ORIGINAL ISOLATE	Amp pMB1
pIA606	β E813A without the His tag: <i>NcoI-ClaI</i> fragment from pIA299 recloned into pIA620	Amp pMB1
pIA607	β' T786V mutant in pRL662: SDM with oligos 538+539, ORIGINAL ISOLATE	Amp pMB1
pIA608	<i>ops</i> mutant A7T cloned between <i>XhoI</i> and <i>BspEI</i> sites of pIA595: PCR products generated with primers 509 and 510 using pHC320 as a template	Amp pMB1
pIA609	<i>ops</i> mutant G6C cloned between <i>XhoI</i> and <i>BspEI</i> sites of pIA595: PCR products generated with primers 509 and 510 using pHC321 as a template	Amp pMB1
pIA610	<i>ops</i> mutant G12A cloned between <i>XhoI</i> and <i>BspEI</i> sites of pIA595: PCR products	Amp

	generated with primers 509 and 510 using pH326 as a template	pMB1
pIA611	β' R731A mutant in pRL662: introduces <i>Bam</i> HI site; SDM with oligos 550+551,	Amp pMB1
pIA612	β' Q736A mutant in pRL662: SDM with oligos 548+549 – double insert with the <i>Bam</i> HI site and QA change , ORIGINAL ISOLATE	Amp pMB1
pIA613	β E813A mutant in pIA545: introduces <i>Spe</i> I site @ 4520; SDM with oligos 546+547, ORIGINAL ISOLATE	Amp pMB1
pIA614	β' Q504A in pRL662: introduces <i>Pst</i> I site; SDM with oligos 544+545, ORIGINAL ISOLATE	Amp pMB1
pIA615	β S1105A in pIA545: removes <i>Bsm</i> BI site; SDM with oligos 552+553, ORIGINAL ISOLATE	Amp pMB1
pIA616	T7P-α-β-β'[T786Y]His ₆ : <i>Mva</i> ...- <i>Hind</i> III fragment from pIA605 cloned into pVS16	Amp pMB1
pIA617	T7P-α-β-β'[T786V]His ₆ : <i>Mva</i> ...- <i>Hind</i> III fragment from pIA607 cloned into pVS16	Amp pMB1
pIA618	T7P-α-β-β'[R731A]His ₆ : <i>Mva</i> ...- <i>Hind</i> III fragment from pIA611 cloned into pVS16	Amp pMB1
pIA619	a silent <i>Bam</i> HI site in pRL662 @ codon 733 - SDM with oligos 548+549 gone wrong, no 736 change	Amp pMB1
pIA620	β E813A in pIA545: <i>Mfe</i> I- <i>Bsp</i> EI fragment from pIA613 recloned into pIA545	Amp pMB1
pIA621	β' Q504A in pRL663; <i>Sna</i> BI- <i>Sph</i> I site from pIA614 recloned into pRL663	Amp pMB1
pIA622	β S1105A in pIA545: <i>Xho</i> I- <i>Hind</i> III fragment from pIA615 recloned into pIA545	Amp pMB1
pIA623	T7P-α- βHis ₆ [S1105A]-β': <i>Nco</i> I- <i>Sbf</i> I fragment from pIA622 cloned into pIA509	Amp pMB1
pIA624	T7P-α- βHis ₆ [E813A]-β': <i>Nco</i> I- <i>Sbf</i> I fragment from pIA620 cloned into pIA509	Amp pMB1
pIA625	A modified version of pH315: <i>Xho</i> I and <i>Not</i> I sites flanking the ops element in pSF4000	Cm p15A
pIA626	T7P-α-β-β'[T786Y]His ₆ -ω: <i>Mva</i> ...- <i>Hind</i> III fragment from pIA605 cloned into pVS10	Amp pMB1
pIA627	T7P-α-β-β'[T786V]His ₆ -ω: <i>Mva</i> ...- <i>Hind</i> III fragment from pIA605 cloned into pVS10	Amp pMB1
pIA628	β F545S in pA545: SDM with oligos 570+571; silent <i>Nru</i> I site ORIGINAL ISOLATE	Amp pMB1
pIA629	β' S793F in pRL662: SDM with oligos 572+573; ORIGINAL ISOLATE; silent <i>Eco</i> RV site at 4480	Amp pMB1
pIA630	<i>E. coli rpoA</i> in pIA514; <i>Nde</i> I- <i>Sac</i> I fragment from pIA287 cloned into pIA514	Amp pMB1
pIA631	β D675A pIA545: SDM with oligos 581+582; silent <i>Sac</i> I site, ORIGINAL ISOLATE	Amp pMB1
pIA632	β N677A in pIA545: SDM with oligos 583+584; silent <i>Sac</i> I site, ORIGINAL ISOLATE	Amp pMB1
pIA633	β M1107A in pIA545: SDM with oligos 585+586; silent <i>Xba</i> I site; ORIGINAL ISOLATE	Amp pMB1
pIA634	β F545S in pA545: <i>Cla</i> I- <i>Mfe</i> I fragment from pIA628 recloned into pIA545	Amp pMB1
pIA635	β' S793F in pRL662: <i>Bsr</i> GI- <i>Sal</i> I fragment from pIA629 recloned into pRL662	Amp pMB1
pIA636	PCR product with tet ^R +ori15A (from pACYC184) cloned into <i>Sbf</i> I and <i>Sac</i> I sites of pSKD314	Tet p15A
pIA637	PCR product with tet ^R +ori15A (from pACYC184) cloned into <i>Sbf</i> I and <i>Sac</i> I	Tet

	sites of pSKD441.1	p15A
pIA638	T7P- α - β His ₆ [F545S]- β ' : <i>NcoI-SbfI</i> fragment from pIA634 recloned into pIA509	Amp pMB1
pIA639	T7P- α - β '[S793F]His ₆ - ω : <i>MvaI</i> ...- <i>HindIII</i> fragment from pIA635 recloned; extra silent <i>EcoRV</i> site at 12772	Amp pMB1
pIA640	<i>NcoI</i> - <i>SnaBI</i> fragment from pIA619 cloned between <i>NcoI</i> and <i>SnaBI</i> sites of pIA545	Amp pMB1
pIA641	<i>NcoI</i> - <i>SnaBI</i> fragment from pRL662 cloned between <i>NcoI</i> and <i>SnaBI</i> sites of pIA545	Amp pMB1
pIA642	<i>lacZ</i> Rho-dependent terminator (+52 to +240) after the <i>ops</i> site in pIA349 PCR 617-619 cloned between <i>BspEI</i> and <i>XbaI</i> sites	Amp pMB1
pIA643	PCR 31-593 digested with <i>NcoI</i> and <i>NruI</i> and cloned into pRL662: removing <i>BamHI</i> site from the beginning of <i>rpoC</i>	Amp pMB1
pIA644	scrambled <i>ops</i> in pIA625: PCR 565-594 cloned between <i>XhoI</i> and <i>NotI</i> sites of pIA625; introduces <i>SacI</i> site	Cm p15A
pIA645	β D675A in pIA545; silent <i>SacI</i> site, recloned <i>MfeI</i> - <i>BspEI</i> fragment from pIA631 into pIA545	Amp pMB1
pIA646	β N677A in pIA545; silent <i>SacI</i> site, recloned <i>MfeI</i> - <i>BspEI</i> fragment from pIA631 into pIA545	Amp pMB1
pIA647	His ₆ -NusG under P _{BAD} promoter <i>NcoI-XhoI</i> fragment from pIA247 cloned into pVS7	Tet
pIA648	β M1107A in pIA545; silent <i>XbaI</i> site; recloned <i>XhoI</i> - <i>HindIII</i> fragment from pIA633 into pIA545	Amp pMB1
pIA649	His ₆ -NusG under P _{BAD} promoter <i>NdeI-HindIII</i> fragment from pIA247 cloned into pIA422	Cm p15A
pIA650	T7P- α - β His ₆ [D675A]- β ' : <i>NcoI-SbfI</i> fragment from pIA645 recloned into pIA509	Amp pMB1
pIA651	β ' L672R/V673R in pIA661 – PCR 19-616 cloned between <i>EagI</i> and <i>SphI</i> sites	Amp pMB1
pIA652	β M1107A in pIA509 - <i>NcoI-SbfI</i> fragment recloned from pIA648	Amp pMB1
pIA653	β P564L in pIA545; PCR product 74-603 cloned into <i>MfeI</i> and <i>BspEI</i> sites	Amp pMB1
pIA654	β P560S in pIA545; PCR product 74-604 cloned into <i>MfeI</i> and <i>ClaI</i> sites	Amp pMB1
pIA655	β T563I in pIA545; PCR product 74-605 cloned into <i>MfeI</i> and <i>BspEI</i> sites	Amp pMB1
pIA656	<i>EagI</i> @ β '675 in pRL662; SDM with oligos 600+601; ORIGINAL ISOLATE	Amp pMB1
pIA657	β R678A change in pIA646 - Silent <i>SacI</i> site is gone; SDM with oligos 611+612; ORIGINAL ISOLATE	Amp pMB1
pIA658	β R1106A change in pIA545; SDM with oligos 613+614; ORIGINAL ISOLATE	Amp pMB1
pIA659	<i>rpoZ</i> on pIA509	Amp pMB1
pIA660	<i>BsrGI-SalI</i> fragment from pIA619 cloned into pIA643: unique silent <i>BamHI</i> @ β '733	Amp pMB1
pIA661	<i>BsrGI-SalI</i> fragment from pIA656 cloned into pRL662; <i>EagI</i> site at @ β '675	Amp pMB1
pIA662	β R1106A in pIA545; recloned <i>XhoI</i> - <i>HindIII</i> fragment from pIA658 into pIA648 – <i>XbaI</i> site is gone	Amp pMB1
pIA663	β ' R744A in pRL662; SDM with oligos 609+610; ORIGINAL ISOLATE	Amp pMB1
pIA664	β R678A in pIA545; <i>MfeI-BspEI</i> fragment from pIA657 recloned into pIA545	Amp

		pMB1
pIA665	T7P- α - β - β' [L672R/V673R]His ₆ - ω : <i>MvaI</i> .. - <i>HindIII</i> fragment from pIA651 recloned into pVS10	Amp pMB1
pIA666	T7P- α - β - β' [R744A]His ₆ - ω : <i>MvaI</i> .. - <i>HindIII</i> fragment from pIA663 recloned recloned into pVS10	Amp pMB1
pIA667	<i>lacZ</i> Rho-dependent terminator (+102 to +240) after the <i>ops</i> site in pIA349 PCR 618-619 cloned between <i>BspEI</i> and <i>XbaI</i> sites	Amp pMB1
pIA668	E120R in RfaH in pIA238 SDM with oligos 281 & 282; silent <i>SmaI</i> site	Kn pMB1
pIA669	F130A in RfaH in pIA238 SDM with oligos 283 & 284; silent <i>BanII</i> site	Kn pMB1
pIA670	T131L in RfaH in pIA238 SDM with oligos 285 & 286; silent <i>BanII</i> site	Kn pMB1
pIA671	E136R in RfaH in pIA238 SDM with oligos 287 & 288; silent site <i>BanII</i>	Kn pMB1
pIA672	F123A in RfaH in pIA238 SDM with oligos 632 & 633; silent <i>PvuII</i> site	Kn pMB1
pIA673	R138A in RfaH in pIA238 SDM with oligos 634 & 635; silent <i>ClaI</i> site	Kn pMB1
pIA674	W4A in RfaH in pIA238 PCR with oligos 628 & 87 cloned between <i>NdeI</i> and <i>PstI</i> sites of 238	Kn pMB1
pIA675	Y5A in RfaH in pIA238 PCR with oligos 630 & 87 cloned between <i>NdeI</i> and <i>PstI</i> sites of 238	Kn pMB1
pIA676	W4F in RfaH in pIA238 PCR with oligos 629 & 87 cloned between <i>NdeI</i> and <i>PstI</i> sites of 238	Kn pMB1
pIA677	Y8A in RfaH in pIA238 PCR with oligos 631 & 87 cloned between <i>NdeI</i> and <i>PstI</i> sites of 238	Kn pMB1
pIA678	PCR 606-256 on pRL662 cloned between <i>XhoI</i> and <i>HindIII</i> sites of pRL662 introduces stop codon after the <i>XhoI</i> site - removes the His ₆ tag	Amp pMB1
pIA679	T7P- α - β - β' - ω ; no tags! <i>MvaI</i> - <i>HindIII</i> fragment from pIA678 cloned into pVS10	Amp pMB1
pIA680	deletion of 5 C-terminal residues in <i>E.coli dksA</i> ; cloned between <i>NdeI</i> and <i>PstI</i> of pIA579, <i>HMK</i> tag at the N-terminus after cleavage	Amp pMB1
pIA681	deletion of 10 C-terminal residues in <i>E.coli dksA</i> ; cloned between <i>NdeI</i> and <i>PstI</i> of pIA579, <i>HMK</i> tag at the N-terminus after cleavage	Amp pMB1
pIA682	<i>EcoRI</i> - <i>BamHI</i> fragment from pIA346 cloned into pIA261: <i>Ptp_{OC}-ops-kps</i> terminator- <i>lacZ</i>	Amp pMB1
pIA683	site for TFO at 2360-2381 in pIA487; elongation rate assays	Amp pMB1
pIA684	site for TFO at 1691-1712 in pIA487; elongation rate assays	Amp pMB1
pIA685	deletion in the β' C-terminal coiled coil: 665-671+674-680: <i>Sall</i> - <i>BsmI</i> fragment from pAS1 recloned into pRL662	Amp pMB1
pIA686	<i>MvaI</i> .. - <i>HindIII</i> fragment from pIA685 recloned into pVS10	Amp pMB1
pIA687	β' 672,673DD in pIA661: PCR 19-684 cloned between <i>EagI</i> and <i>BsmI</i> sites of pIA661	Amp pMB1
pIA688	<i>HMK</i> YacL in pTYB12	Amp pMB1
pIA689	GreB D41N in pIA577 - SDM; silent <i>BglIII</i> site	Kn pMB1
pIA690	VC <i>rpoZ</i> fragment cloned between <i>NdeI</i> and <i>NsiI</i> sites of pIA514 <i>NsiI</i> - <i>NsiI</i> C-terminal part of <i>rpoZ</i> is missing	Amp pMB1
pIA691	PCR product with oligos 695 & 696 cloned between <i>BglIII</i> and <i>XbaI</i> sites of pGL2	Amp

	added <i>AatII</i> +STOP and SD to <i>luc</i> gene	pMB1
pIA692	λ P _{R-rrnB} T1: deletion of the <i>PstI</i> fragment in pIA266	Amp pMB1
pIA693	<i>V. cholerae rpoZ</i> in pIA514 - between <i>NdeI</i> and <i>NsiI</i> sites; there are 2 <i>NsiI</i> sites there!	Amp pMB1
pIA694	<i>lux</i> operon from pSB417 (<i>SnaBI-SbfI</i> fragment) cloned between <i>HincII</i> and <i>PstI</i> sites of pIA432 (the entire sequence is not known)	Kn pMB1
pIA695	Extra sites added to pIA694	Kn pMB1
pIA696	deletion in the β' C-terminal coiled coil: residues 665-670 + 675-680; 674 changed to Gly EVAEIGLVGKVIDIWAAA instead of EVAEIQEQFQSGGLVTAGERYNKVIDIWAAA	Amp pMB1
pIA697	GreB W148A in pIA576 - SDM, silent <i>AfeI</i> site	Kn pMB1
pIA698	GreB V139D in pIA576 - SDM, silent <i>SaI</i> site	Kn pMB1
pIA699	RfaH NTD in pIA432 (STOP codon at 110)	Kn pMB1
pIA700	E132A in pIA432: SDM with oligos 736+737; ORIGINAL ISOLATE	Kn pMB1
pIA701	RfaH K37A in pIA238: PCR from 123 genomic DNA with oligos 58 & 734 cloned between <i>NdeI</i> and <i>PstI</i> sites of pIA238	Kn pMB1
pIA702	RfaH R40A in pIA432: PCR from 123 genomic DNA with oligos 58 & 735 cloned between <i>NdeI</i> and <i>PstI</i> sites of pIA432	Kn pMB1
pIA703	RfaH K37A in pIA432: PCR from 123 genomic DNA with oligos 58 & 734 cloned between <i>NdeI</i> and <i>PstI</i> sites of pIA432	Kn pMB1
pIA704	substitution of the basic loop residues in RfaH: 37, 40, 42, 43 with Ala in pIA507 (<i>XhoI</i> site)	Kn pMB1
pIA705	deletion of 5 residues (PSTPY) in the RfaH linker; cloned between <i>BamHI</i> and <i>HindIII</i> sites of pIA432	Kn pMB1
pIA706	insertion of 5 residues (PTAQK) in the RfaH linker after residue 106; cloned between <i>BamHI</i> and <i>HindIII</i> sites of pIA432	Kn pMB1
pIA707	RfaH F51A in pIA432: SDM with oligos 751+752; ORIGINAL ISOLATE silent <i>HaeII</i> site	Kn pMB1
pIA708	RfaH F56A in pIA432: SDM with oligos 753+754; ORIGINAL ISOLATE silent <i>BstXI</i> site	Kn pMB1
pIA709	RfaH F159A in pIA432: cloned between <i>BamHI</i> and <i>HindIII</i> sites of pIA432	Kn pMB1
pIA710	RfaH K10A in pIA432: cloned between <i>NdeI</i> and <i>PstI</i> sites of pIA432	Kn pMB1
pIA711	RfaH R11A in pIA432: <i>NdeI-BamHI</i> fragment recloned from pIA745; silent <i>HincII</i> site	Kn pMB1
pIA712	RfaH Δ ARK loop in pIA432: cloned between <i>NdeI</i> and <i>PstI</i> sites of pIA432	Kn pMB1
pIA713	-35 mutant- T_{hly} fragment from pIA416 (PCR with oligos 765-256) cloned between <i>NheI</i> and <i>BglIII</i> sites of pGL2; no SD before <i>luc</i> gene	Amp pMB1
pIA714	extended -10 promoter - T_{hly} fragment from pIA416 (PCR with oligos 766-256) cloned between <i>NheI</i> and <i>BglIII</i> sites of pGL2; no SD before <i>luc</i> gene	Amp pMB1
pIA715	T7A1 -35 mut - <i>ops</i> - T_{hly} - SD - luciferase <i>BglIII</i> - <i>EcoRI</i> fragment from pIA691 cloned into pIA713	Amp pMB1
pIA716	extended -10 promoter- <i>ops</i> - T_{hly} - SD - luciferase <i>BglIII</i> - <i>EcoRI</i> fragment from pIA691 cloned into pIA714	Amp pMB1
pIA717	PCR 765-794 cloned into <i>NheI</i> and <i>KpnI</i> sites of pIA695 T7A1 promoter variant with -35 mutation - <i>ops-T_{hly}-lux</i> operon	Kn pMB1
pIA718	PCR 766-794 cloned into <i>NheI</i> and <i>KpnI</i> sites of pIA695	Kn

	extended -10 promoter – <i>ops</i> -T _{hiv} - <i>lux</i> operon	pMB1
pIA719	PCR 795-796 cloned into <i>NheI</i> and <i>KpnI</i> sites of pIA695 P _{lac} – <i>lux</i> operon	Kn pMB1
pIA720	GreB H101A in pIA576 - SDM with oligos 797+798 ; silent <i>BsgI</i> site	Kn pMB1
pIA721	GreB I118A in pIA576 - SDM with oligos 801+802; silent <i>MluI</i> site	Kn pMB1
pIA722	GreB M124A in pIA576 - SDM with oligos 799+800; silent <i>EagI</i> site	Kn pMB1
pIA723	<i>NotI</i> site upstream of the <i>lac</i> promoter in pSB417: the same <i>lux</i> activity as the original plasmid, SDM with oligos 808+809	Amp pMB1
pIA724	oligos 812+813 linker cloned between the <i>NotI</i> and <i>SnaBI</i> sites of pIA723; no promoter but also no RBS; background <i>lux</i> activity (25 U)	Amp pMB1
pIA725	deletion of the <i>BamHI</i> fragment in pIA723 – high <i>lux</i> activity; <i>EcoRI</i> site is now unique	Amp pMB1
pIA726	oligos 826+827 linker cloned between the <i>NotI</i> and <i>SnaBI</i> sites of pIA723; no promoter but RBS is retained, ~ 5000 <i>lux</i> units; <i>might need terminators there</i>	Amp pMB1
pIA727	T7A1 promoter – <i>hisP</i> – <i>hisT</i> from pIA171 cloned between <i>NotI</i> and <i>NheI</i> sites of pIA726	Amp pMB1
pIA728	T7A1 promoter – <i>opsP</i> – <i>hlyT</i> from pIA416 cloned between <i>NotI</i> and <i>NheI</i> sites of pIA726	Amp pMB1
pIA729	<i>min</i> biotin peptide in RfaH; PCR 839-93 cloned between <i>NcoI</i> and <i>BamHI</i> sites of pIA432	Kn pMB1
pIA730	amber codon @ RfaH Tyr8: PCR 908-93 cloned between <i>NdeI</i> and <i>BamHI</i> sites of pIA432	Kn pMB1
pIA731	amber codon @ RfaH Tyr99: PCR 834-58 cloned between <i>NdeI</i> and <i>BamHI</i> sites of pIA432	Kn pMB1
pIA732	amber codon @ RfaH Tyr111: PCR 835-59 cloned between <i>HindIII</i> and <i>BamHI</i> sites of pIA432	Kn pMB1
pIA733	RfaH H94A in pIA432: PCR 58-849 cloned between <i>NdeI</i> and <i>BamHI</i> sites	Kn pMB1
pIA734	RfaH M32R in pIA432: PCR 58-850 cloned between <i>NdeI</i> and <i>PstI</i> sites; silent <i>SacII</i> site	Kn pMB1
pIA735	RfaH HTTT→Ala ₄ in pIA432: PCR 58-863 cloned between <i>NdeI</i> and <i>SacII</i> sites; silent <i>NotI</i> site	Kn pMB1
pIA736	RfaH P110A in pIA432: PCR 59-843 cloned between <i>HindIII</i> and <i>BamHI</i> sites	Kn pMB1
pIA737	RfaH P110G in pIA432: PCR 59-842 cloned between <i>HindIII</i> and <i>BamHI</i> sites	Kn pMB1
pIA738	PCR product 846-847 on <i>B. subtilis</i> genomic DNA (strain RL1569) cloned between <i>SalI</i> and <i>SphI</i> sites of pBEST501: <i>yvgS</i>	Amp pMB1
pIA739	PCR product 851-852 on <i>B. subtilis</i> genomic DNA (strain RL1569) cloned between <i>SalI</i> and <i>SphI</i> sites of pBEST501: <i>yvgS</i>	Amp pMB1
pIA740	T7A1 promoter – scrambled <i>ops</i> – <i>hlyT</i> from pVS54 on PCR fragment digested with <i>NotI</i> and <i>XbaI</i> and cloned between <i>NotI</i> and <i>NheI</i> sites of pIA726	Amp pMB1
pIA741	RfaH G113A in pIA432: PCR 59-843 cloned between <i>HindIII</i> and <i>BamHI</i> sites	Kn pMB1
pIA742	RfaH G113M in pIA432: PCR 59-842 cloned between <i>HindIII</i> and <i>BamHI</i> sites	Kn pMB1
pIA743	RfaH M32C in pIA507; silent <i>NsiI</i> site	Kn pMB1
pIA744	RfaH Q24A in pIA507; silent <i>PvuII</i> site	Kn pMB1
pIA745	Making RfaH R11A in pIA432 - a deletion between the <i>NdeI</i> and <i>NcoI</i> sites	Kn

		pMB1
pIA746	TTH terminator 886: PCR 887+888 on HB8 genomic DNA cloned into <i>Bgl</i> III and <i>Xba</i> I sites of pIA228	Amp pMB1
pIA747	TTH terminator 1969: PCR 889+890 on HB8 genomic DNA cloned into <i>Bgl</i> III and <i>Xba</i> I sites of pIA228	Amp pMB1
pIA748	TTH terminator 1672: PCR 891+892 on HB8 genomic DNA cloned into <i>Bgl</i> III and <i>Xba</i> I sites of pIA228	Amp pMB1
pIA749	RfaH F51C in pIA432: cloned between <i>Hind</i> III and <i>Pst</i> I sites, <i>Bam</i> HI site is gone	Kn pMB1
pIA750	RfaH His ₆ NTD-TEV-CTD in pIA432: PCR 59-907 cloned between <i>Hind</i> III and <i>Bam</i> HI sites	Kn pMB1
pIA751	His ₆ -TEV-RfaH in pIA432: PCR 916-917 cloned between <i>Bgl</i> III and <i>Nde</i> I sites; silent <i>Bsp</i> HI site	Kn pMB1
pIA752	P _{BAD} -RfaH Amber 99: <i>Nde</i> I- <i>Hind</i> III fragment from pIA731 cloned into pIA422	Cm p15A
pIA753	P _{trc} -RfaH Amber 8: <i>Nco</i> I- <i>Hind</i> III fragment from pIA730 cloned into pIA248	Amp pMB1
pIA754	P _{trc} -RfaH Amber 99: <i>Nco</i> I- <i>Hind</i> III fragment from pIA731 cloned into pIA248	Amp pMB1
pIA755	P _{trc} -RfaH Amber 111: <i>Nco</i> I- <i>Hind</i> III fragment from pIA732 cloned into pIA248	Amp pMB1
pIA756	RfaH K42A: PCR 52-872 cloned between <i>Nde</i> I and <i>Pst</i> I sites of pIA507; <i>Xho</i> I site is gone	Kn pMB1
pIA757	RfaH T67A in pIA507: PCR with oligos 52 & 909 cloned between <i>Nde</i> I and <i>Sac</i> II sites of pIA507	Kn pMB1
pIA758	RfaH H65A in pIA507: PCR with oligos 52 & 915 cloned between <i>Nde</i> I and <i>Sac</i> II sites of pIA507	Kn pMB1
pIA759	RfaH M32C/C9S/C28S in pIA507 – PCR with oligos 916-922 cloned between <i>Bgl</i> III and <i>Xho</i> I sites of pIA743, silent <i>Nsi</i> I site is gone	Kn pMB1
pIA760	RfaH H20A: PCR 93-923 cloned between <i>Bam</i> HI and <i>Sac</i> I sites of pIA766; <i>Xho</i> I site is gone	Kn pMB1
pIA761	RfaH E22A: PCR 93-924 cloned between <i>Bam</i> HI and <i>Sac</i> I sites of pIA766; <i>Xho</i> I site is gone	Kn pMB1
pIA762	TTH terminator 886: PCR 887+888 on HB8 genomic DNA cloned into <i>Bgl</i> III and <i>Xba</i> I sites of pIA228, 2 bp different from pIA746, but outside of the terminator region	Amp pMB1
pIA763	RfaH E48A: PCR 59-920 cloned between <i>Hind</i> III and <i>Pst</i> I sites of pIA432; <i>Bam</i> HI site is gone	Kn pMB1
pIA764	RfaH T66A: PCR 58-921 (on IA123 DNA) cloned between <i>Nde</i> I and <i>Sac</i> II sites of pIA507; <i>Xho</i> I site is gone	Kn pMB1
pIA765	deletion between <i>Pst</i> I and <i>Hind</i> III sites in pIA432: PCR 920-59 gone wrong but can use for subcloning	Kn pMB1
pIA766	silent <i>Sac</i> I site in RfaH: SDM on pIA507 with oligos 222+223	Kn pMB1
pIA767	RfaH Q2A in pIA507: PCR 929 -93 cloned between <i>Nde</i> I and <i>Pst</i> I sites of pIA507; <i>Xho</i> I site is gone	Kn pMB1
pIA768	RfaH T68A: PCR 58-938 cloned between <i>Nde</i> I and <i>Sac</i> II sites of pIA507; <i>Xho</i> I site is gone	Kn pMB1
pIA769	RfaH P49A in pIA432: PCR 59-932 cloned between <i>Hind</i> III and <i>Pst</i> I sites of pIA432; <i>Bam</i> HI site is gone	Kn pMB1
pIA770	RfaH P52A in pIA432: PCR 59-933 cloned between <i>Hind</i> III and <i>Pst</i> I sites of pIA432; <i>Bam</i> HI site is gone	Kn pMB1
pIA771	RfaH I64A: PCR 58- 934 cloned between <i>Nde</i> I and <i>Sac</i> II sites of pIA507; <i>Xho</i> I site is gone	Kn pMB1
pIA772	RfaH V63D: PCR 58-935 cloned between <i>Nde</i> I and <i>Sac</i> II sites of pIA507; <i>Xho</i> I site is	Kn

	gone	pMB1
pIA773	RfaH Q13A: PCR 24-925 cloned between <i>NcoI</i> and <i>SacI</i> sites of pIA766; <i>XhoI</i> site is gone	Kn pMB1
pIA774	β' N-terminal CC deletion: linker 939+940 cloned between <i>BsaBI</i> and <i>SnaBI</i> sites of pIA458; <i>SnaBI</i> site is gone	Amp pUC
pIA775	β' L283D in pIA458: PCR 941-15 cloned between <i>EcoRI</i> and <i>SnaBI</i> sites of pIA458; silent <i>XbaI</i> site	Amp pUC
pIA776	β' I290D in pIA458: PCR 942-15 cloned between <i>EcoRI</i> and <i>SnaBI</i> sites of pIA458; silent <i>EcoRV</i> site	Amp pUC
pIA777	RfaH NTD-TEV-CTD- His ₆ : PCR 58-945 cloned between <i>NdeI</i> and <i>XhoI</i> sites of pET36	Kn pMB1
pIA778	T7P- α - β - β' [L283D]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA775 cloned into pVS10	Amp pMB1
pIA779	T7P- α - β - β' [I290D]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA776 cloned into pVS10	Amp pMB1
pIA780	T7P- α - β - β' [Δ 282-292 \rightarrow G ₄]His ₆ - ω : deletion in the β' N-terminal coiled-coil in pVS10: <i>SbfI</i> - <i>Mva</i> fragment from pIA774 cloned into pVS10	Amp pMB1
pIA781	deletion of 6 residues in the RfaH linker: PCR 949-59 cloned between <i>BamHI</i> and <i>HindIII</i> sites of pIA432	Kn pMB1
pIA782	deletion of 7 residues in the RfaH linker: PCR 950-59 cloned between <i>BamHI</i> and <i>HindIII</i> sites of pIA432	Kn pMB1
pIA783	RfaH E19A: PCR 93-951 cloned between <i>BamHI</i> and <i>SacI</i> sites of pIA766; <i>XhoI</i> is gone	Kn pMB1
pIA784	6S RNA = PCR 952-953/genomic DNA cloned between <i>BglII</i> and <i>BlpI</i> sites of pIA432	Kn pMB1
pIA785	β' R293Q in pIA458: PCR 994-207 cloned between <i>BsmBI</i> and <i>SnaBI</i> sites of pIA458; <i>SnaBI</i> site is gone	Amp pUC
pIA786	T7P- α -His ₆ -HMK- β [S531F]- β' - ω : HMK site at the N-terminus of β in pIA178, linker 958+959 inserted into <i>NcoI</i> site; silent <i>NheI</i> site	Amp pMB1
pIA787	T7P- α - β - β' -HMK-His ₆ - ω : HMK site at the C-terminus of β' in pVS10; silent <i>NheI</i> site	Amp pMB1
pIA788	PCR 955-956 cloned between <i>BamHI</i> and <i>XhoI</i> of pGEX4T-1	Amp pMB1
pIA789	RfaH R138Q: SDM 960+961 on pIA432; silent <i>ClaI</i> site	Kn pMB1
pIA790	<i>FspAI</i> to <i>HindIII</i> fragment from pET36 cloned into <i>BsaBI</i> and <i>HindIII</i> sites of pBAD33	Cm p15A
pIA791	<i>NdeI</i> to <i>HindIII</i> fragment from pIA586 cloned into <i>NdeI</i> and <i>HindIII</i> sites of pIA790	Cm p15A
pIA792	5' upstream region of the <i>rfaH</i> gene region added to ORF in pIA432: PCR 1021-1022 cloned into <i>NdeI</i> and <i>BglII</i> sites of pIA432	Kn pMB1
pIA793	3' downstream region of the <i>rfaH</i> gene region added to ORF in pIA792: PCR 1023-1024 cloned into <i>HindIII</i> and <i>XhoI</i> sites of pIA792	Kn pMB1
pIA794	His ₆ -thrombin β' N-terminal CC: PCR 955-956 digested with <i>BamHI</i> (Klenow) and <i>XhoI</i> and cloned into pIA432 digested with <i>NdeI</i> (Klenow) and <i>XhoI</i>	Kn pMB1
pIA795	T7P- α - β - β' [R293Q]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA785 cloned into pVS10	Amp pMB1
pIA796	β' I291R, V292R in pIA458: PCR 964-25 cloned between <i>EcoRI</i> and <i>SnaBI</i> sites of pIA458; silent <i>EcoRV</i> site	Amp pUC
pIA797	T7P- α - β - β' [I291R/V292R]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA796 cloned into pVS10	Amp pMB1
pIA798	RfaH H77C: PCR 984-59 cloned between <i>SacII</i> and <i>HindIII</i> sites of pIA432; silent <i>PvuII</i> site	Kn pMB1
pIA799	RfaH C9S/C28S/H77C: PCR 984-59 cloned between <i>SacII</i> and <i>HindIII</i> sites of pIA278;	Kn

	silent <i>Pvu</i> III site	pMB1
pIA800	putting a unique <i>Bam</i> HI site and changing ITS to G17 in pIA171	Amp pMB1
pIA801	β' I290R in pIA775: PCR 992-25 cloned between <i>Eco</i> RI and <i>Sna</i> BI sites of pIA775; <i>Xba</i> I site gone	Amp pMB1
pIA802	β' I291R in pIA775: PCR 993-25 cloned between <i>Eco</i> RI and <i>Sna</i> BI sites of pIA775; <i>Xba</i> I site gone	Amp pMB1
pIA803	T7P- α - β - β' [I290R]His ₆ - ω : <i>Sbf</i> I- <i>Mva</i> fragment from pIA801 cloned into pVS10	Amp pMB1
pIA804	T7P- α - β - β' [I291R]His ₆ - ω : <i>Sbf</i> I- <i>Mva</i> fragment from pIA802 cloned into pVS10	Amp pMB1
pIA805	extended -10 + consensus <i>ops</i> site between <i>Bam</i> HI and <i>Spe</i> I sites of pIA800: oligos 996+997	Amp pMB1
pIA806	extended -10 + scrambled <i>ops</i> site between <i>Bam</i> HI and <i>Spe</i> I sites of pIA800: oligos 998+999	Amp pMB1
pIA807	extended -10 (oligo cassette 1000+1001) cloned between <i>Bsp</i> EI and <i>Spe</i> I sites of pIA349 canonical <i>ops</i> - TGcTATAAT	Amp pMB1
pIA808	extended -10 (oligo cassette 1000+1001) cloned between <i>Bsp</i> EI and <i>Spe</i> I sites of pIA392 scrambled <i>ops</i> - TGcTATAAT	Amp pMB1
pIA809	mutant extended -10 + consensus <i>ops</i> site between <i>Bam</i> HI and <i>Xba</i> I sites of pIA800: 1020-256 PCR on pIA805	Amp pMB1
pIA810	extended -10 + consensus <i>ops</i> site after λ P _R <i>Bam</i> HI- <i>Pst</i> I fragment from pIA805 cloned into pIA253	Amp pMB1
pIA811	altered -10 + consensus <i>ops</i> site after λ P _R <i>Bam</i> HI- <i>Pst</i> I fragment from pIA809 cloned into pIA253	Amp pMB1
pIA812	β' R278E in pIA458: PCR 1025-207 cloned into <i>Bsa</i> BI and <i>Bsm</i> BI sites; silent <i>Sac</i> I site	Amp pUC
pIA813	β' R275Q in pIA458: PCR 1026-207 cloned into <i>Bsa</i> BI and <i>Bsm</i> BI sites; <i>Bsa</i> BI site disappears	Amp pUC
pIA814	T7P-RfaH NTD-HMK-TEV-CTD-His ₆ : PCR 1036-88 cloned between <i>Xho</i> I and <i>Bam</i> HI sites of pIA777	Kn pMB1
pIA815	T7P -GreB HMK-L39D-His ₆ : SDM on pIA576; silent <i>Nhe</i> I site	Kn pMB1
pIA816	T7P- α - β - β' [R278E]His ₆ - ω : <i>Sbf</i> I- <i>Mva</i> fragment from pIA812 cloned into pVS10; silent <i>Sac</i> I site	Amp pMB1
pIA817	T7P- α - β - β' [R275Q]His ₆ - ω : <i>Sbf</i> I- <i>Mva</i> fragment from pIA813 cloned into pVS10; <i>Bsa</i> BI site is gone	Amp pMB1
pIA818	extended -10 -- 4 bp -- <i>ops</i> PCR 1037-256 (on pIA810) cloned between <i>Bam</i> HI- <i>Sph</i> I sites of pIA253	Amp pMB1
pIA819	extended -10 -- 6 bp -- <i>ops</i> PCR 1038-256 (on pIA810) cloned between <i>Bam</i> HI- <i>Sph</i> I sites of pIA253	Amp pMB1
pIA820	GreB W35E in pIA576; SDM with oligos 1039+1040; silent <i>Acu</i> I site	Kn pMB1
pIA821	T7P- α - His ₆ β -HMK-[S531F]- β' - ω	Kn pMB1
pIA821a		
pIA822	extended -10 -- 3 bp -- <i>ops</i> ; deletion variant of pIA818 PCR 1037-256 (on pIA810) cloned between <i>Bam</i> HI- <i>Sph</i> I sites of pIA253	Amp pMB1
pIA823	RfaH C9V/C28S; oligo cassette 1042+1043 cloned into <i>Bsr</i> GI and <i>Eco</i> RI sites of in pIA278, <i>Bsr</i> GI site gone, <i>Sna</i> BI appears	Kn pMB1
pIA824	RfaH C9T/C28S; oligo cassette 1044+1045 cloned into <i>Bsr</i> GI and <i>Eco</i> RI sites of in pIA278	Kn pMB1
pIA825	<i>Sac</i> II- <i>ops</i> - <i>Xho</i> I cassette in pIA349: PCR 2-1052 cloned between <i>Eco</i> RI and <i>Bsp</i> EI sites	Amp pMB1

pIA826	<i>NotI</i> fragment from pIA793 cloned into pKO1 (<i>rfaH</i> gene replacement)	Cm
pIA827	β' R339A in pIA458: <i>BglIII</i> to <i>BsmBI</i> fragment amplified from AK pET29-derived vector cloned into pIA775 - <i>XbaI</i> site replaced	Amp pUC
pIA828	β' R339E in pIA458: <i>BglIII</i> to <i>BsmBI</i> fragment amplified from AK pET29-derived vector cloned into pIA775 - <i>XbaI</i> site replaced	Amp pUC
pIA829	β' R339K in pIA458: <i>BglIII</i> to <i>BsmBI</i> fragment amplified from AK pET29-derived vector cloned into pIA775 - <i>XbaI</i> site replaced	Amp pUC
pIA830	T7P- α - β - β' [R339A]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA827 cloned into pVS10	Amp pMB1
pIA831	T7P- α - β - β' [R339E]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA828 cloned into pVS10	Amp pMB1
pIA832	T7P- α - β - β' [R339K]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA829 cloned into pVS10	Amp pMB1
pIA833	β S512Y in pIA545: SDM with oligos 1167+1168, original isolate	Amp pMB1
pIA834	5' and 3' extensions added to the <i>rfaH</i> gene in pIA792	Kn pMB1
pIA835	GreB M124E in pIA576: SDM with oligos 1146+1147	Kn pMB1
pIA836	GreB W148E in pIA576: PCR with 1150+1152	Kn pMB1
pIA837	P _{trc} - <i>rpoB</i> - <i>rpoC</i> : <i>NcoI</i> - <i>HindIII</i> fragment from pVS10 cloned into pIA183	Amp pMB1
pIA838	σ^{70} region 1 cloned between <i>NdeI</i> and <i>XhoI</i> sites of pIA751: His ₆ tag followed by the TEV cleavage site: PCR with oligos 1165+1166	Kn pMB1
pIA839	<i>E. coli rpoZ</i> under P _{BAD} control; PCR with oligos 1162+422 on pIA452	Cm p15A
pIA840	DksA N88I in pVS11	Amp pMB1
pIA841	β S512Y in pIA545: <i>MfeI</i> - <i>ClaI</i> fragment from pIA833 recloned into pIA545	Amp pMB1
pIA842	T7P- α - β - β' [R933A/D847]His ₆ - ω : <i>Mva</i> - <i>SacII</i> fragment from pJZ14 cloned into pIA665; <i>EagI</i> site gone	Amp pMB1
pIA843	β' Q504A: <i>SnaBI</i> - <i>Mva</i> fragment from pIA621 recloned into pIA458; silent <i>PstI</i> site	Amp pUC
pIA844	<i>traR</i> in pIA751: PCR 1189+1190 digested with <i>NdeI</i> and <i>HindIII</i>	Kn pMB1
pIA845	β' R933A in pRL662: <i>SalI</i> - <i>BspEI</i> fragment from pJZ14 recloned	Amp pMB1
pIA846	T7P- α - β - β' [R933A]His ₆ - ω : <i>Mva</i> - <i>HindIII</i> fragment from pIA845 cloned into pVS10	Amp pMB1
pIA847	T7P- α - β - β' [Q504A]His ₆ - ω : <i>SbfI</i> - <i>Mva</i> fragment from pIA843 recloned into pVS10	Amp pMB1
pIA848	T7P- α -His ₆ β [S512Y]- β' - ω : <i>NcoI</i> - <i>SbfI</i> fragment from pIA841 recloned into pIA679; silent <i>PfI</i> MI and <i>MfeI</i> sites	Amp pMB1
pIA849	T7P- α -His ₆ β [S512Y]- β' - ω : <i>NcoI</i> - <i>SbfI</i> fragment from pIA841 recloned into pIA821; silent <i>PfI</i> MI and <i>MfeI</i> sites	Kn pMB1
pIA850	DksA D71N/D74N/N88I - oligo cassette 1390+1391 cloned into <i>AflIII</i> and <i>SnaBI</i> sites of pIA906	Amp pMB1
pIA851	T7P- α -His ₆ β [D516V]- β' - ω : <i>NcoI</i> - <i>SbfI</i> fragment from pIA183 recloned into pIA679; silent <i>XhoI</i> site	Amp pMB1
pIA852	T7P- α -His ₆ β [D516V]- β' - ω : <i>NcoI</i> - <i>SbfI</i> fragment from pIA183 recloned into pRM565; silent <i>XhoI</i> site	Kn pMB1

pIA853	T7P- α - β - β' [H936A]His ₆ - ω : <i>Mva-SacII</i> fragment from pJZ16 cloned into pIA665; <i>EagI</i> site gone	Amp pMB1
pIA854	DksA S10C in pVS11; SDM with 1206+1207	Amp pMB1
pIA855	RfaH C9V/C28S/S153C: <i>PstI-NotI</i> fragment from pIA280 cloned into pIA823	Kn pMB1
pIA856	<i>T. thermophilus</i> putative DksA – optimized for the <i>E. coli</i> codon usage; in pIDT vector	Kn pMB1
pIA857	<i>NdeI-PstI</i> DksA silent cassette in pZErO-2	Kn pMB1
pIA858	His ₆ -TEV-RfaH NTD- β' CH; PCR 1230-956 cloned between <i>BamHI</i> and <i>XhoI</i> sites of pIA751	Kn pMB1
pIA859	His ₆ -TEV-RfaH NTD- β' CH; PCR 1231-956 cloned between <i>BamHI</i> and <i>XhoI</i> sites of pIA751	Kn pMB1
pIA860	His ₆ -TEV NusG S2C in pIA751; PCR 55+1223 cloned between <i>NdeI</i> and <i>HindIII</i> sites	Kn pMB1
pIA861	β E1279A in pIA545; silent <i>NheI</i> site; SDM with oligos 1234+1235	Amp pMB1
pIA862	β S1322E in pIA458 ; silent <i>EcoRI</i> site; SDM with oligos 1236+1237	Amp pUC
pIA863	β' K334A in pIA458; silent <i>SacI</i> site; SDM with oligos 1238+1239	Amp pUC
pIA864	β' G336A in pIA458; silent <i>HinfI</i> site; SDM with oligos 1240+1241	Amp pUC
pIA865	<i>E. coli crl</i> (His ₆ -TEV): genomic PCR with 990+991 cloned into <i>NdeI</i> and <i>HindIII</i> sites of pIA751	Kn pMB1
pIA866	β' F338A in pIA458; silent <i>ApaLI</i> site; SDM with oligos 1244+1245	Amp pUC
pIA867	β' K345A in pIA458; silent <i>AflIII</i> site; SDM with oligos 1246+1247	Amp pUC
pIA868	β' Δ 333-335 in pIA458; silent <i>EagI</i> site; SDM with oligos 1248+1249	Amp pUC
pIA869	DksA silent cassette from pIA857 recloned into pVS11	Amp pMB1
pIA870	β E1279A in pIA545; silent <i>NheI</i> site; <i>BsrGI-HindIII</i> fragment from pIA861 recloned into pIA545	Amp pMB1
pIA871	β S1322E in pIA458 ; silent <i>EcoRI</i> site; <i>SbfI-SpeI</i> fragment from pIA862 recloned into pIA458	Amp pUC
pIA872	β' K334A in pIA458; silent <i>SacI</i> site; <i>SnaBI-BsaBI</i> fragment from pIA863 recloned into pIA458	Amp pUC
pIA873	β' G336A in pIA458; silent <i>HinfI</i> site; <i>SnaBI-BsaBI</i> fragment from pIA864 recloned into pIA458	Amp pUC
pIA874	deletion of <i>PstI</i> fragment in pIA726	Amp pMB1
pIA875	β' F338A in pIA458; silent <i>ApaLI</i> site; <i>SnaBI-BsaBI</i> fragment from pIA866 recloned into pIA458	Amp pUC
pIA876	β' K345A in pIA458; silent <i>AflIII</i> site; <i>SnaBI-BsaBI</i> fragment from pIA867 recloned into pIA458	Amp pUC
pIA877	β' Δ 333-335 in pIA458; silent <i>EagI</i> site; <i>SnaBI-BsaBI</i> fragment from pIA868 recloned into pIA458	Amp pUC
pIA878	T7P- α -His ₆ β [D516V/S1322E]- β' - ω : <i>SbfI-BsmI</i> fragment from pIA871 recloned into pIA851; silent <i>EcoRI</i> site	Amp pMB1
pIA879	T7P- α - β - β' [K334A]His ₆ - ω : <i>SbfI-BsmI</i> fragment from pIA875 recloned into pVS10; silent <i>SacI</i> site	Amp pMB1

pIA880	T7P- α - β - β' [G336A]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA875 recloned into pVS10; silent <i>HinfI</i> site	Amp pMB1
pIA881	T7P- α - β - β' [F338A]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA875 recloned into pVS10; silent <i>ApaI</i> site	Amp pMB1
pIA882	T7P- α - β - β' [K345A]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA876 recloned into pVS10; silent <i>AflIII</i> site	Amp pMB1
pIA883	T7P- α - β - β' [Δ333-335]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA877 recloned into pVS10; silent <i>EagI</i> site	Amp pMB1
pIA884	His ₁₀ -TEV in pIA751: PCR 1255-1269 cloned between <i>NcoI</i> and <i>SacII</i> sites	Kn pMB1
pIA885	His ₆ -Tth NusG 1-117 in pIA751	Kn pMB1
pIA886	σ D516W in pIA586, silent <i>AvaII</i> site	Kn pMB1
pIA887	β' F338P in pIA458; silent <i>EagI</i> site; SDM with oligos 1273+1274	Amp pUC
pIA888	β' Δ 338-341 \rightarrow G in pIA458; silent <i>BstEII</i> site; SDM with oligos 1275+1276	Amp pUC
pIA889	T7P- α - β - β' [F338P]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA887 recloned into pVS10; silent <i>EagI</i> site	Amp pMB1
pIA890	T7P- α - β - β' [Δ338-341\rightarrowG]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA888 recloned into pVS10; silent <i>BstEII</i> site	Amp pMB1
pIA891	β' Δ 316-323+ Gly in pIA458; silent <i>StuI</i> site; SDM with oligos 1295+1296	Amp pUC
pIA892	β' Δ 309-325 in pIA458; SDM with oligos 1299+1300	Amp pUC
pIA893	deletion of σ^{70} residues 1-92 in pIA586; linker 1301+1302 cloned between <i>NdeI</i> and <i>BsrGI</i> sites	Kn pMB1
pIA894	Δ β gate loop (residues 368-376 in <i>E. coli</i>) in pIA183; SDM with oligos 1303+1304; RMMRPGEP \rightarrow GG; silent <i>KpnI</i> site	Amp pMB1
pIA895	Δ β gate loop (residues 368-376 in <i>E. coli</i>) in pIA545; SDM with oligos 1303+1304; silent <i>KpnI</i> site	Amp pMB1
pIA896	T7P- α - β [D516V]- β' [Δ316-323\rightarrowG]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA891 recloned into pVS10; silent <i>StuI</i> site	Amp pMB1
pIA897	T7P- α - β - β' [Δ309-325]His ₆ - ω : <i>SbfI</i> - <i>BsmI</i> fragment from pIA892 recloned into pVS10	Amp pMB1
pIA898	Δ β gate loop in pIA183; <i>NcoI</i> - <i>ClaI</i> fragment from pIA895 recloned; silent <i>KpnI</i> site	Amp pMB1
pIA899	T7P- α -His ₆ β [D516V/Δ368-376\rightarrowGG]- β' - ω : <i>NcoI</i> - <i>SbfI</i> fragment from pIA898 recloned into pIA852; silent <i>KpnI</i> site	Kn pMB1
pIA900	T7P- α - β - β' -TEV-His ₁₀ - ω : linker with TEV-His ₁₀ (oligos 1319+1320) cloned between <i>NheI</i> and <i>StuI</i> sites of pIA787; <i>NheI</i> site is gone	Amp pMB1
pIA901	Triple deletion in <i>E. coli</i> β' : SI3, TL, and 1150-1215 are gone; pRL662 derivative SDM with oligos 1339+1340 on pVS201	Amp pMB1
pIA902	T7P- α - β - β' [ΔSI3/ΔTL/Δ1150-1215]His ₆ - ω : <i>BsmI</i> - <i>HindIII</i> fragment from pIA901 recloned into pVS10	Amp pMB1
pIA903	DksA N88V in pIA840; SDM with oligos 1341+1344	Amp pMB1
pIA904	DksA N88R; oligo cassette 1362+1363 cloned between <i>SnaBI</i> and <i>AflIII</i> sites of pIA869	Amp pMB1
pIA905	DksA N88W; oligo cassette 1351+1352 cloned between <i>SnaBI</i> and <i>AflIII</i> sites of pIA869	Amp pMB1
pIA906	DksA D71N,D74N; oligo cassette 1364+1365 cloned between <i>NdeI</i> and <i>EcoRI</i> sites of pIA869	Amp pMB1

pIA907	DksA C114V,C117V; oligo cassette 1358+1359 cloned between <i>Afl</i> III and <i>Xho</i> I sites of pIA869	Amp pMB1
pIA908	DksA C135V,C138V; oligo cassette 1360 +1361 cloned between <i>Pst</i> I and <i>Xho</i> I sites of pIA869	Amp pMB1
pIA909	DksA Cys[114,117,135,138]Val; <i>Bsm</i> I- <i>Xho</i> I fragment from pIA907 cloned into pIA908	Amp pMB1
pIA910	β' A687W, silent <i>Nde</i> I site; PCR with oligos 1366 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA661	Amp pMB1
pIA911	β' A687D in pIA661, silent <i>Nde</i> I site; PCR with oligos 1367 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I	Amp pMB1
pIA912	β' A688W, silent <i>Eco</i> RV at 4149 is gone; PCR with oligos 1368 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA661	Amp pMB1
pIA913	β' A688D, silent <i>Eco</i> RV at 4149 is gone; PCR with oligos 1369 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA661	Amp pMB1
pIA914	β' D691W, silent <i>Mfe</i> I site; <i>Eag</i> I - <i>Sal</i> I fragment from pIA927 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA661	Amp pMB1
pIA915	β' D691R, silent <i>Pst</i> I site; PCR with oligos 1371 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA661	Amp pMB1
pIA916	T7P- α - β - β' [ΔSI3/ΔTL]- <i>TEV</i> -His ₁₀ - ω : <i>Bsm</i> I- <i>Hind</i> III fragment from pVS201 recloned into pIA900	Amp pMB1
pIA917	<i>Bsm</i> I- <i>Nde</i> I DksA silent cassette in pZErO-2	Kn pMB1
pIA918	T7P- α - β - β' [ΔSI3/ΔTL] His ₆ - ω : fragment from pVS201 recloned into pVS10	Amp pMB1
pIA919	DksA silent cassette - <i>Bsm</i> I- <i>Nde</i> I from pIA917 cloned into pIA869	Amp pMB1
pIA920	T7P- α - β - β' [ΔSI3/ΔTL/Δ1150-1215] - <i>TEV</i> -His ₁₀ - ω : <i>Bsm</i> I- <i>Hind</i> III fragment from pIA901 recloned into pIA900	Amp pMB1
pIA921	T7P-His ₁₀ - <i>TEV</i> -Eco ω : <i>E. coli rpoZ</i> (PCR product 1385+1386) cloned between <i>Nde</i> I and <i>Hind</i> III sites of pIA884	Kn pMB1
pIA922	T7P-His ₁₀ - <i>TEV</i> -Tth ω : <i>T. thermophilus rpoZ</i> (PCR product 1384+265) cloned between <i>Nde</i> I and <i>Hind</i> III sites of pIA884	Kn pMB1
pIA923	T7P-His ₁₀ - <i>TEV</i> -DksA2 from <i>Pseudomonas</i> (PCR product 1324+1325; P174) cloned between <i>Nde</i> I and <i>Hind</i> III sites of pIA884	Kn pMB1
pIA924	T7P-His ₁₀ - <i>TEV</i> -Tth β' C-terminal CC (PCR product 1393+1394) cloned between <i>Nde</i> I and <i>Hind</i> III sites of pIA884	Kn pMB1
pIA925	β' A687W/L672D/V673D, silent <i>Nde</i> I site; PCR with oligos 1366 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA687	Amp pMB1
pIA926	β' A687D/ L672D/V673D, silent <i>Eco</i> RV at 4149 is gone; PCR with oligos 1368 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA687	Amp pMB1
pIA927	β' D691W/ L672D/V673D, silent <i>Mfe</i> I site; PCR with oligos 1370 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA687	Amp pMB1
pIA928	β' D691R / L672D/V673D, silent <i>Pst</i> I site; PCR with oligos 1371 and 72 cloned between <i>Eag</i> I and <i>Sal</i> I of pIA687	Amp pMB1
pIA929	T7P- α - β - β' [D691R]His ₆ - ω : <i>Mva</i> - <i>Hind</i> III fragment from pIA915 recloned into pVS10; silent <i>Eag</i> I and <i>Pst</i> I	Amp pMB1
pIA930	T7P- α - β - β' [A687W]His ₆ - ω : <i>Mva</i> - <i>Hind</i> III fragment from pIA910 recloned into pVS10; silent <i>Eag</i> I and <i>Nde</i> I	Amp pMB1
pIA931	T7P- α - β - β' [A687D]His ₆ - ω : <i>Mva</i> - <i>Hind</i> III fragment from pIA911 recloned into pVS10; silent <i>Eag</i> I and <i>Nde</i> I	Amp pMB1
pIA932	T7P- α - β - β' [A688W]His ₆ - ω : <i>Mva</i> - <i>Hind</i> III fragment from pIA912 recloned into pVS10; silent <i>Eag</i> I site	Amp pMB1
pIA933	T7P- α - β - β' [A688D]His ₆ - ω : <i>Mva</i> - <i>Hind</i> III fragment from pIA913 recloned into pVS10; silent <i>Eag</i> I site	Amp pMB1

pIA934	T7P- α - β - β' [D691W]His ₆ - ω : <i>Mva-HindIII</i> fragment from pIA914 recloned into pVS10; silent <i>EagI</i> and <i>MfeI</i> sites	Amp pMB1
pIA935	β' N792D in pRL663; silent <i>EagI</i> site <i>Mva-HindIII</i> fragment sequenced Dec 22, 2008	Amp pMB1
pIA936	β' R933K in pRL663; SDM with oligos 1424+1425 <i>Mva-HindIII</i> fragment sequenced	Amp pMB1
pIA937	β' R933N in pRL663; SDM with oligos 1426+1427 <i>Mva-HindIII</i> fragment sequenced	Amp pMB1
pIA938	T7P- α - β - β' [N792D]His ₆ - ω : <i>Mva-HindIII</i> fragment from pIA935 recloned into pVS10; silent <i>EagI</i> site	Amp pMB1
pIA939	T7P- α - β - β' [R933K]His ₆ - ω : <i>Mva-HindIII</i> fragment from pIA936 recloned into pVS10	Amp pMB1
pIA940	T7P- α - β - β' [R933N]His ₆ - ω : <i>Mva-HindIII</i> fragment from pIA937 recloned into pVS10	Amp pMB1
pIA941	T7P- α - β - β' [N458D]-TEV-His ₁₀ - ω : <i>SbfI-MvaI</i> ... fragment from pIA523 recloned into pIA900	Amp pMB1
pIA942	T7P- α - β - β' [N458S]-TEV-His ₁₀ - ω : <i>SbfI-MvaI</i> ... fragment from pIA524 recloned into pIA900	Amp pMB1
pIA943	β' R933K in pRL662; <i>Mva-HindIII</i> fragment from pIA936 recloned	Amp pMB1
pIA944	β' R933N in pRL662; <i>Mva-HindIII</i> fragment from pIA937 recloned	Amp pMB1
pIA945	a <i>BamHI-XhoI</i> fragment from pGB83 cloned into Litmus28 for SDM purposes	Amp pUC
pIA946	An <i>NcoI</i> site in pIA945 –SDM with oligos 1458+1459	Amp pUC
pIA947	P _{lacQ1} - <i>lacI</i> amplified from pIA249 with oligos 1460+1461 and cloned between <i>EagI</i> and <i>HindIII</i> sites of pACYC184	Cm p15A
pIA948	<i>MfeI</i> site @ β' 154 in pRL662; L154W: SDM with oligos 1446+1447; also an F7V change	Amp pMB1
pIA949	NusG-YFP-His ₆ : YFP protein amplified from YPet_His vector with primers 1444+1445 and cloned into <i>HindIII</i> and <i>XhoI</i> sites of pGB88	Kn pMB1
pIA950	NusG-CFP-His ₆ : CFP protein amplified from CyPet_His vector with primers 1444+1445 and cloned into <i>HindIII</i> and <i>XhoI</i> sites of pGB88	Kn pMB1
pIA951	T7P- α -His ₆ β [R678A]- β' - ω : <i>NcoI-SbfI</i> fragment from pIA664 cloned into pIA852	Kn pMB1
pIA952	β' K598A, K599A in pIA458; PCR with 1521+19 cloned into <i>Mva</i> and <i>SnaBI</i> sites	Amp pUC
pIA953	<i>NcoI-ops-SpeI</i> cassette in pIA946: SDM with oligos 1456+1457	Amp pUC
pIA954	An <i>SpeI</i> site in pIA945 -SDM with oligos 1456+1457	Amp pUC
pIA955	<i>NcoI-ops-SpeI</i> cassette in the <i>lux</i> vector; a <i>BamHI-XhoI</i> fragment from pIA953 cloned back into pGB83	Amp pMB1
pIA956	<i>T. thermophilus</i> putative DksA- <i>NdeI</i> to <i>HindIII</i> fragment from pIA856 recloned into pIA751	Kn pMB1
pIA957	P _{trc} -RfaH; <i>rfaH</i> cloned between the <i>NdeI</i> and <i>HindIII</i> sites of pIA947 – a fragment from pIA432 recloned	Cm p15A
pIA958	DksA W47Amber in pIA919	Amp pMB1
pIA959	<i>E. coli</i> RfaH NTD in pBT; PCR 1476-1477 cloned between <i>NotI</i> and <i>XhoI</i> sites	Cm p15A
pIA960	<i>E. coli</i> RpoB 2-454 in pBT; PCR 1478-1480 cloned between <i>NotI</i> and <i>XhoI</i> sites	Cm p15A

pIA961	<i>E. coli</i> RpoB 2-147 in pBT; PCR 1478-1481 cloned between <i>NotI</i> and <i>XhoI</i> sites	Cm p15A
pIA962	<i>E. coli</i> RpoB 147-454 in pBT; PCR 1479-1480 cloned between <i>NotI</i> and <i>XhoI</i> sites	Cm p15A
pIA963	<i>E. coli</i> RfaH NTD in pTRG; PCR <i>NotI</i> - <i>XhoI</i> fragment from pIA959 recloned	Tet pMB1
pIA964	<i>E. coli</i> RpoB 2-454 in pTRG; <i>NotI</i> - <i>XhoI</i> fragment from pIA960 recloned	Tet pMB1
pIA965	<i>E. coli</i> RpoB 2-147 in pTRG; PCR 1478-1481 cloned between <i>NotI</i> and <i>XhoI</i> sites	Tet pMB1
pIA966	<i>E. coli</i> RpoB 147-454 in pTRG; PCR 1479-1480 cloned between <i>NotI</i> and <i>XhoI</i> sites	Tet pMB1
pIA967	RfaH NTD-CFP fusion: <i>HindIII</i> - <i>XhoI</i> from pIA950 cloned into pGB87	Kn pMB1
pIA968	T7P- α - β - β' [K598A/K599A]-TEV-His ₁₀ - ω : <i>Mva</i> ...- <i>SdaI</i> fragment from pIA952 recloned into pIA900	Amp pMB1
pIA969	Silent <i>MfeI</i> site in pIA661 (at β' 929, nt 4882): SDM with 1496+7	Amp pMB1
pIA970	Silent <i>XhoI</i> site in pIA969 (at β' 1140, nt 5513): SDM with 1498+9; β' TL flanked by unique <i>MfeI</i> and <i>XhoI</i> sites	Amp pMB1
pIA971	<i>NcoI</i> - <i>ops</i> - <i>SpeI</i> cassette in the <i>lux</i> vector – a repeat of <i>SpeI</i> fragment in pIA955	Amp pMB1
pIA972	RfaH NTD-YFP fusion: <i>HindIII</i> - <i>XhoI</i> from pIA949 cloned into pGB87	Kn pMB1
pIA973	WT <i>ops</i> cloned into pIA955 as an oligo cassette – <i>SpeI</i> site is gone	Amp pMB1
pIA974	G2C <i>ops</i> cloned into pIA955 as an oligo cassette – <i>SpeI</i> site is gone	Amp pMB1
pIA975	A7T <i>ops</i> cloned into pIA955 as an oligo cassette – <i>SpeI</i> site is gone	Amp pMB1
pIA976	pIA900 with <i>XhoI</i> sites removed; PCR with oligos 1522+1523 digested with <i>SalI</i> and cloned into pIA900/ <i>XhoI</i>	Amp pMB1
pIA977	Deletion of residues 2-69 in DksA, Pro70 \rightarrow Ser; oligo cassette 1524+1525 cloned between <i>BsmI</i> and <i>EcoRI</i> sites of pIA869	Amp pMB1
pIA978	Clamp X-link: β' DG256/257 \rightarrow DGGC; silent <i>EagI</i> site, PCR with 25 and 1529 cloned between <i>NruI</i> and <i>EcoRI</i> sites of pIA458	Amp pMB1
pIA979	Clamp X-link: β PG1044/1045 \rightarrow PGGC, <i>SexAI</i> site; PCRs 1530+13 & 45+1531 amplified with 13+45 and cloned into <i>BsrGI</i> and <i>XhoI</i> sites of pIA160	Amp pMB1
pIA980	Deletion of σ 1.1; His ₆ -TEV- σ ⁹⁹⁻⁶¹³ ; <i>NdeI</i> - <i>HindIII</i> fragment from pIA493 moved into pIA751	Kn pMB1
pIA981	T7P- α - β - β' [MfeI@929; XhoI@1140]-TEV-His ₁₀ - ω : <i>BsmI</i> - <i>SacII</i> fragment from pIA970 moved into pIA976	Amp pMB1
pIA982	T7P- α - β \bullet β' -TEV-His ₁₀ - ω : RpoB_C FUSION in pIA976: <i>SdaI</i> - <i>Mva</i> ... fragment from pRL719 recloned	Amp pMB1
pIA983	T7P- α - β \bullet TEV \bullet β' -TEV-His ₁₀ - ω : <i>rpoBC</i> fusion with the TEV site inserted in between <i>rpoB</i> <i>rpoC</i> : linker from oligos 1537+1538 cloned into <i>XhoI</i> site of pIA982	Amp pMB1
pIA984	Deletion of β' SI3 in pIA981: oligo cassette 1539+1540 cloned into <i>MfeI</i> and <i>XhoI</i> sites	Amp pMB1
pIA985	<i>rpoBC</i> fusion in pIA458: <i>SdaI</i> - <i>Mva</i> ... fragment from pRL719 recloned	Amp pMB1
pIA986	G4A <i>ops</i> cloned into pIA955 as an oligo cassette – <i>SpeI</i> site is gone	Amp pMB1
pIA987	pIA545 with a silent <i>AvrII</i> site @ β 477; PCRs 334+1541 & 595+1542 reamplified with 334+595 and cloned between <i>ClaI</i> and <i>MfeI</i> sites	Amp pMB1

pIA988	Deletion of the <i>NheI</i> site in the plasmid backbone of pIA660	Amp pMB1
pIA989	β F545R in pIA545 – PCR with oligos 1543 and 33 cloned between <i>ClaI</i> and <i>MfeI</i> sites	Amp pMB1
pIA990	minimal biotin peptide (GLNDIFEAQKIEWH) at the end of <i>rpoC</i> = between <i>SacII</i> and <i>StuI</i> sites	Kn pMB1
pIA991	<i>BglIII-MvaI</i> fragment from pIA978 recloned into <i>BglIII</i> and <i>MvaI</i> sites of pIA985; Clamp X-link: β' DG 256/257 \rightarrow DGGC as RpoB_C FUSION	Amp pMB1
pIA992	<i>NcoI-ClaI</i> from pIA982 recloned into pIA979; β PG1044/1045 \rightarrow PGGC, no His tag on β	Amp pMB1
pIA993	<i>NcoI-ClaI</i> from pIA982 recloned into pIA545; no His tag on β	Amp pMB1
pIA994	Clamp X-link β PG1044/1045 DGGC + β' DG 256/257 DGGC = <i>SbfI-StuI</i> fragment from pIA991 recloned into <i>SbfI</i> and <i>HindIII</i> (Klenow) sites of pIA992	Amp pMB1
pIA995	T7P- α - β [PG1044/1045 \rightarrow PGGC] • β' [DG256/257 \rightarrow DGGC]- <i>TEV</i> -His ₁₀ - ω : Clamp X-link as RpoB_C FUSION: <i>NcoI-BsmI</i> fragment from pIA994 recloned into pIA900	Amp pMB1
pIA996	CCPGCC in β @ 430: PCR with oligos 335 and 1547 cloned into <i>MfeI</i> and <i>ClaI</i> of pIA545	Amp pMB1
pIA997	β Δ GL in pIA960: PCR with oligos 1192+1480 on pIA898 cloned into <i>AflIII</i> and <i>XhoI</i> sites	Cm p15A
pIA998	β' Q736R + <i>NheI</i> site: PCR 1551- 72 cloned between <i>BamHI</i> and <i>SalI</i> sites of pIA988	Amp pMB1
pIA999	T7P- α - β - β' [<i>biotin</i> _GLNDIFEAQKIEWH]- ω : <i>StuI-SacII</i> fragment from pIA990 cloned between <i>SacII</i> and <i>StuI</i> sites of pIA976	Amp pMB1
pIA1000	T7P- α - His ₆ β [AvrII@477 ; MfeI@555]- β' - ω ; <i>NcoI-SdaI</i> fragment from pIA987 recloned into pIA852	Kn pMB1
pIA1001	RfaH T66A in pIA957; <i>NdeI-BamHI</i> fragment from pIA764	Cm p15A
pIA1002	RfaH K10A in pIA957; <i>NdeI-BamHI</i> fragment from pIA710; silent <i>FspI</i> site	Cm p15A
pIA1003	RfaH R73D in pIA957; <i>NdeI-BamHI</i> fragment from pVS62; <i>SacII</i> site disappears	Cm p15A
pIA1004	RfaH H20A in pIA957; <i>NdeI-BamHI</i> fragment from pIA760; silent <i>SacI</i> site	Cm p15A
pIA1005	RfaH R16A in pIA957; <i>NdeI-BamHI</i> fragment from pGB009	Cm p15A
pIA1006	RfaH Y54F in pIA957; <i>NdeI-BamHI</i> fragment from pGB038	Cm p15A
pIA1007	RfaH T67A in pIA957; <i>NdeI-BamHI</i> fragment from pIA757	Cm p15A
pIA1008	RfaH T72A in pIA957; <i>NdeI-BamHI</i> fragment from pGB013	Cm p15A
pIA1009	RfaH F51A in pIA957; <i>NdeI-BamHI</i> fragment from pIA707; silent <i>HaeII</i> site	Cm p15A
pIA1010	RfaH R43A in pIA957; <i>NdeI-BamHI</i> fragment from pAL16; silent <i>EagI</i> site	Cm p15A
pIA1011	T7P- α - His ₆ β [F545R]- β' - ω : <i>NcoI-SdaI</i> fragment from pIA989 recloned into pIA852; a silent <i>MfeI</i> site @ β 555	Kn pMB1
pIA1012	T7P- α - His ₆ β [CCPGCC@430]- β' - ω : <i>NcoI-SdaI</i> fragment from pIA996 recloned into pIA852	Kn pMB1
pIA1013	RfaH H65A in pTRG; PCR 1476-1477 on pIA758 cloned between <i>NotI</i> and <i>XhoI</i> sites	Tet pMB1
pIA1014	β' Δ 702-713: PCR 1550-19 cloned between <i>BamHI</i> and <i>MvaI</i> ... sites of pIA988	Amp pMB1

pIA1015	DksA in pTXB1: PCR product 1468- 1563 on pVS11 cloned between <i>NheI</i> and <i>XhoI</i> sites	Amp pMB1
pIA1016	RfaH H65A in pIA957; <i>NdeI</i> - <i>BamHI</i> fragment from pIA758	Cm p15A
pIA1017	β' Q736R w/o an extra <i>BsmI</i> site: oligo cassette 1558+1559 cloned between <i>BamHI</i> and <i>NheI</i> sites of pIA998	Amp pMB1
pIA1018	β' with silent <i>BamHI</i> and <i>NheI</i> sites @ ~730: oligo cassette 1560+1561 cloned between <i>BamHI</i> and <i>NheI</i> sites of pIA998	Amp pMB1
pIA1019	oligo cassette 1556+1557 cloned between <i>SacI</i> and <i>HindIII</i> sites of pIA987	Amp pMB1
pIA1020	T7P- α - β - β' [Q736R]- <i>TEV</i> -His ₁₀ - ω : <i>Mva</i> - <i>HindIII</i> fragment from pIA1017 recloned into pIA900	Amp pMB1
pIA1021	T7P- α - β - β' [NheI@730]- <i>TEV</i> -His ₁₀ - ω : <i>Mva</i> - <i>HindIII</i> from pIA1014 recloned into pIA900	Amp pMB1
pIA1022	T7P- α - β - β' [Δ702-713]- <i>TEV</i> -His ₁₀ - ω : <i>Mva</i> - <i>HindIII</i> fragment from pIA1014 recloned into pIA900	Amp pMB1
pIA1023	β' K598A, K599A in pRL662; <i>Mva</i> - <i>SnaBI</i> fragment from pIA952 recloned	Amp pMB1
pIA1024	T7P- α - β - β' [Δ1149-1190]-His ₆ - ω : <i>Mva</i> - <i>SacII</i> fragment from pIA373 recloned into pVS10	Amp pMB1
pIA1025	T7P- α - β - β' [S733R/Q736R]- <i>TEV</i> -His ₁₀ - ω : PCR product with oligos 1565+1566 (on pRL663) cloned between the <i>Mva</i> .. and <i>NheI</i> sites of pIA1021	Amp pMB1
pIA1026	T7P- α - β - β' [S733R]- <i>TEV</i> -His ₁₀ - ω : PCR product with oligos 1565+1566 (on pRL663) cloned between the <i>Mva</i> .. and <i>NheI</i> sites of pIA1021	Amp pMB1
pIA1027	T7P- α - His ₆ β [P564L]- β' - ω : <i>NcoI</i> - <i>SdaI</i> fragment from pIA653 recloned into pIA852; a silent <i>MfeI</i> site @ β 555	Amp pMB1
pIA1028	Making an <i>NsiI</i> site in pIA458 in front of the GTG:	Amp pMB1
pIA1029	A minimal biotin tag into the <i>NsiI</i> and <i>EcoRI</i> sites of pIA1028	Amp pMB1
pIA1030	T7P- α - β -[<i>N-biotin</i>]- β' -[<i>C-biotin</i>]- ω : <i>SbfI</i> - <i>Mva</i> ... fragment from pIA1029 cloned into pIA999	Amp pMB1
pIA1031	<i>NcoI</i> - <i>ops</i> in the <i>lux</i> vector; a <i>BamHI</i> - <i>XhoI</i> fragment from pIA946 cloned into pGB83	Amp pMB1
pIA1032	<i>NcoI</i> - <i>ops</i> - <i>SpeI</i> in the <i>lux</i> vector; a <i>BamHI</i> - <i>XhoI</i> fragment from pIA953 cloned into pGB83	Amp pMB1
pIA1033	<i>ops</i> - <i>SpeI</i> in the <i>lux</i> vector; a <i>BamHI</i> - <i>XhoI</i> fragment from pIA954 cloned into pGB83	Amp pMB1
pIA1034	DksA N88D; oligo cassette 1577+1578 cloned between <i>SnaBI</i> and <i>AflIII</i> sites of pIA919	Amp pMB1
pIA1035	Eliminating an <i>ops</i> -like element from pGB83; a silent <i>BtgI</i> site. SDM with oligos 1079+1080	Amp pMB1
pIA1036	Eliminating an <i>ops</i> -like element from pGB063 - <i>BsrGI</i> - <i>XbaI</i> fragment from pIA1035 recloned	Amp pMB1
pIA1037	His ₁₀ -DksA- <i>Mxe</i> intein: <i>XbaI</i> - <i>NdeI</i> fragment from pRF2 cloned into pIA1015	Amp pMB1
pIA1038	T7P- α - β - β' [E1327Q, R1330H]- His ₆ - ω : PCR with oligos 1596+1597 on pVS10 cloned into <i>SacII</i> and <i>HindIII</i> of pIA900	Amp pMB1
pIA1039	T7P- α - His ₆ β [Δ368-376 →GG]- β' - ω : <i>NcoI</i> - <i>MfeI</i> fragment from pIA895 recloned into pIA1000; silent <i>KpnI</i> site	Kn pMB1
pIA1040	<i>T. thermophilus</i> CarD 5' - <i>NdeI</i> to <i>MfeI</i> fragment	Kn pMB1
pIA1041	<i>T. thermophilus</i> CarD 3' - <i>MfeI</i> to <i>HindIII</i> fragment	Kn pMB1

pIA1042	<i>T. thermophilus</i> CarD ORF – <i>NdeI</i> to <i>HindIII</i> fragment: <i>MfeI-DraI</i> from pIA1041 recloned into pIA1040	Kn pMB1
pIA1043	NusA C-term–TEV– RfaH C-domain fusion	Kn pMB1
pIA1044	T7P-His ₆ NusA ¹⁻³⁴⁹ –TEV– RfaH ^C fusion <i>PstI-XhoI</i> fragment from pIA1043 cloned into pIA370	Kn pMB1
pIA1045	T7P-His ₆ -TEV- <i>Tth</i> CarD – <i>NdeI</i> to <i>HindIII</i> fragment from pIA1042 recloned into pIA751	Kn pMB1
pIA1046	DksA Ala16Cys: PCR 916-1607 on pIA919 cloned into <i>NcoI</i> and <i>XmaI</i> sites of pIA919	Amp pMB1
pIA1047	DksA Ala35Cys : PCR 1392-1608 on pIA919 cloned into <i>EcoRI</i> and <i>XmaI</i> sites of pIA919	Amp pMB1
pIA1048	DksA Glu107Cys: oligo cassette 1609+1610 cloned between <i>AflIII</i> and <i>XhoI</i> sites of pIA919	Amp pMB1
pIA1049	deletion of β' 215-220 in pIA458; SDM with oligos 1613+1614	Amp pMB1
pIA1050	β' Δ215-220 in pIA458; <i>SpeI-BglIII</i> fragment from pIA1049 moved into pIA458	Amp pMB1
pIA1051	T7P-α-β-β'[Δ215-220]-His ₆ -ω: <i>SdaI-Mva...</i> fragment from pIA1050 moved to pIA900	Amp pMB1
pIA1052	A fusion of the C-terminal domain of human mt FRS with NusA: PCR product with oligos cloned between <i>PmlI</i> and <i>XhoI</i> sites of pIA1044	Kn pMB1
pIA1053	A fusion of the N-terminal domain human mt FRS with NusA: PCR product with oligos cloned between <i>PmlI</i> and <i>XhoI</i> sites of pIA1044	Kn pMB1
pIA1054	a unique C-terminal Cys in CarD: PCR with oligos 1619+1620 cloned into <i>MfeI</i> and <i>XhoI</i> sites of pIA1045	Kn pMB1
pIA1055	mitochondrial PheRS β with a F36L substitution - an original isolate from SDM with oligos 239L and 240L	Amp pMB1
pIA1056	mitochondrial PheRS βF36L; <i>NcoI-BlpI</i> fragment from pIA1055 recloned into the wild-type plasmid	Amp pMB1
pIA1057	mitochondrial PheRS βF36L; 2-step PCR strategy – 93+239 and 94+240 combined, reamplified with 93+94 and cloned into <i>NcoI</i> and <i>BlpI</i> sites of the wild-type pFRSβ plasmid	Amp pMB1
pIA1058	RfaH N-domain cloned between the <i>NdeI</i> and <i>HindIII</i> sites of pIA947 – a fragment from pIA699 recloned	Cm p15A
pIA1059	T7P- <i>T.thermophilus</i> β'-His ₆ : <i>FspI-XbaI</i> fragment from pIA432 cloned into pRJ8	Amp pMB1
pIA1060 pIA1060 a	double biotin in β': <i>SbfI-Mva...</i> fragment from pIA1029 cloned into pIA999	Amp pMB1
pIA1061	double biotin in β': adding a lost His ₁₀ tag to pIA1030: PCR with a primer encoding the tag and cloned between <i>StuI</i> and <i>SacII</i> sites of pIA1030; low expression!	Amp pMB1
pIA1062	added a perfect RBS to pIA1061; oligo cassette 1658+1659 inserted between <i>SpeI</i> and <i>NsiI</i> sites of pIA1061	Amp pMB1
pIA1063	ATG in place of GTG start codon in pIA1061; PCR 208-1660 cloned between <i>NsiI</i> and <i>Mva...</i> sites of pIA1061	Amp pMB1
pIA1064	DksA in pBAD33; PCR 893-321 on pIA1037 cloned between <i>XbaI</i> and <i>HindIII</i> sites	Cm p15A
pIA1065	<i>rrnB T1</i> terminator cassette cloned into <i>NheI</i> and <i>XhoI</i> sites of pIA1036	Amp pMB1
pIA1066	<i>P. aeruginosa</i> RH-His ₆ in pET33; similar to pRJ12	Kn pMB1
pIA1067	<i>P. aeruginosa</i> RH in pIDT vector	Amp pMB1

pIA1068	RfaH F126A change in pIA432, PCR with 1681 and 88 cloned into <i>Bst</i> BI and <i>Hind</i> III sites silent <i>Kas</i> I	Kn pMB1
pIA1069	RfaH L145A change in pIA432, SDM with 1682+1683	Kn pMB1
pIA1070	T7P- α -His ₆ β [D516V]- β' - ω : pIA851 with <i>Spe</i> I site in the <i>rpoBC</i> spacer: <i>Sbf</i> I- <i>Spe</i> I fragment from pIA458 recloned into pIA878	Amp pMB1
pIA1071	T7P- α - β His ₆ [T563I]- β' - ω ; <i>Mfe</i> I- <i>Sbf</i> I fragment from pIA655 moved into pIA1000	Kn pMB1
pIA1072	RfaH E48A in pIA957; <i>Nde</i> I- <i>Hind</i> III fragment from pIA763 recloned; no <i>Bam</i> HI site	Cm p15A
pIA1073	A defective RBS in pIA1036; oligo cassette 1679+1680 cloned into <i>Nhe</i> I and <i>Sna</i> BI sites; <i>Sac</i> I is gone	Amp pMB1
pIA1074	T7P-His ₆ -TEV-S10 in pIA751; PCR 1688+1689 cloned between <i>Nde</i> I and <i>Hind</i> III sites	Kn pMB1
pIA1075	β V1325G in pIA458 ; silent <i>Acc</i> I site; SDM with oligos 1690+1691	Amp pUC
pIA1076	RfaH F126A in pGB25, PCR with 1681 and 88 cloned into <i>Bst</i> BI and <i>Hind</i> III sites silent <i>Kas</i> I	Kn pMB1
pIA1077	RfaH L145A in pGB25, PCR with 92 and 88 (1069) cloned into <i>Bst</i> BI and <i>Hind</i> III sites	Kn pMB1
pIA1078	T7P- α - β His ₆ [D516V, V1325G]- β' - ω : <i>Sbf</i> I- <i>Spe</i> I fragment from 1075 moved into pIA878	Amp pMB1
pIA1079	RfaH K148A in pGB25, PCR with 92 and 88 (1071) cloned into <i>Bst</i> BI and <i>Hind</i> III sites, <i>Ase</i> I site is gone	Kn pMB1
pIA1080	RfaH F126A in pIA957, PCR with 92 and 88 (1068) cloned into <i>Bam</i> HI and <i>Hind</i> III sites silent <i>Kas</i> I	Cm p15A
pIA1081	RfaH L145A in pIA957, PCR with 92 and 88 (1069) cloned into <i>Bam</i> HI and <i>Hind</i> III sites	Cm p15A
pIA1082	T7P- α - β His ₆ [Q513P]- β' - ω : PCR 335-1051 on pIA411 cloned between <i>Mfe</i> I and <i>Avr</i> II sites of pIA1000	Kn pMB1
pIA1083	T7P- α - β His ₆ [P560S]- β' - ω : PCR 46-1051 on pIA654 cloned between <i>Mfe</i> I and <i>Avr</i> II sites of pIA1000	Kn pMB1
pIA1084	RfaH F126R change in pIA432, PCR with 1689 and 88 cloned into <i>Bst</i> BI and <i>Hind</i> III sites silent <i>Kas</i> I	Kn pMB1
pIA1085	RfaH L145D change in pIA432, PCR with 1690 and 92 cloned into <i>Bst</i> BI and <i>Hind</i> III sites silent <i>Eco</i> RV	Kn pMB1
pIA1086	RfaH I146D change in pIA432, PCR with 1691 and 92 cloned into <i>Bst</i> BI and <i>Hind</i> III sites; <i>Ase</i> I site is gone	Kn pMB1
pIA1087	A defective RBS in pIA955; oligo cassette cloned into <i>Xho</i> I and <i>Sna</i> BI sites; <i>Eco</i> RI site	Amp pMB1
pIA1088	T7A1-C105- <i>rrnB</i> T1 cassette	Kn pMB1
pIA1089	T7A1-C30- <i>opsP-hisP-hisT</i> cassette	Kn pMB1
pIA1090	T7A1-C30- λ_{TR2} cassette	Kn pMB1
pIA1091	β His ₆ [Δ186-433]: <i>Nco</i> I- <i>Cla</i> I PCR fragment cloned into pIA545	Amp pMB1
pIA1092	RfaH F126R in pIA957, PCR with 92 and 88 (1084) cloned into <i>Bam</i> HI and <i>Hind</i> III sites	Cm p15A
pIA1093	RfaH L145D in pIA957, PCR with 92 and 88 (1085) cloned into <i>Bam</i> HI and <i>Hind</i> III sites	Cm p15A
pIA1094	RfaH I146D in pIA957, PCR with 92 and 88 (1086) cloned into <i>Bam</i> HI and <i>Hind</i> III sites	Cm p15A

pIA1095	<i>araC</i> -P _{BAD} -Ø; deletion of the <i>dksA</i> gene in pIA1096	Kn p15A
pIA1096	<i>araC</i> -P _{BAD} - <i>dksA</i> ; <i>kanR</i> gene in place of <i>cat</i> in pIA1064	Kn p15A
pIA1097	<i>S. aureus rpoA</i> in pUC57; flanked with <i>AvrII</i> and <i>BglIII</i> sites	Amp pUC
pIA1098	<i>S. aureus rpoB</i> in pUC57; flanked with <i>KpnI</i> and <i>AflIII</i> sites	Amp pUC
pIA1099	<i>S. aureus rpoBC</i> in pUC57; flanked with <i>AflIII</i> and <i>HindIII</i> sites	Amp pUC
pIA1100	<i>S. aureus rpoC</i> in pUC57; flanked with <i>HindIII</i> and <i>BamHI</i> sites	Amp pUC
pIA1101	<i>S. aureus rpoZ</i> in pUC57; <i>BamHI</i> - promoter, RBS, <i>SacI</i> -- <i>rpoZ</i> -- <i>NotI</i>	Amp pUC
pIA1102	T7P-α-βHis ₆ [P560S,T563I]-β'-ω: PCR 46-1051 on pIA654 cloned between <i>MfeI</i> and <i>AvrII</i> sites pIA1071	Kn pMB1
pIA1103	<i>S. aureus rpoZ</i> in pET36 – <i>EcoRI</i> - <i>NotI</i> fragment from pIA1101 recloned	Kn pMB1
pIA1104	Linker with <i>KpnI</i> - <i>AflIII</i> - <i>HindIII</i> - <i>BamHI</i> sites (1710+1711) cloned between <i>KpnI</i> and <i>BamHI</i> sites of pIA1103	Kn pMB1
pIA1105	T7A1- <i>lux</i> ; T7A1 promoter cassette (1665+1666) cloned into <i>NotI</i> and <i>BamHI</i> sites of pIA1036	Amp pMB1
pIA1106	T7A1- <i>rrnB</i> T1- <i>lux</i> ; T7A1 promoter cassette (1665+1666) cloned into <i>NotI</i> and <i>BamHI</i> sites of pIA1065	Amp pMB1
pIA1107	T7P-α-βHis ₆ [S1005A]-β'-ω: <i>MfeI</i> - <i>SbfI</i> fragment from pIA622 recloned into pIA1000	Kn pMB1
pIA1108	T7P-α-βHis ₆ [R1006A]-β'-ω: <i>MfeI</i> - <i>SbfI</i> fragment from pIA662 recloned into pIA1000	Kn pMB1
pIA1109	T7P-α-β-β'[R731A]- <i>TEV</i> -His ₁₀ -ω: <i>Mva</i> ...- <i>HindIII</i> fragment from pIA611 recloned into pIA900; introduces <i>BamHI</i> site	Amp pMB1
pIA1110	T7P-α-β-β'[Y795A]- <i>TEV</i> -His ₁₀ -ω: <i>Mva</i> ...- <i>HindIII</i> fragment from pIA541 recloned into pIA900; introduces <i>SacI</i> site	Amp pMB1
pIA1111	βHis ₆ [H1244Q]: PCR fragment 480-1701 cloned into <i>AflIII</i> and <i>SbfI</i> sites of pIA593	Amp pMB1
pIA1112	C-terminal Cys in the <i>E. coli</i> β'RH domain in pRJ12	Kn pMB1
pIA1113	T7P-α-βHis ₆ [Δ186-433]-β'-ω: <i>NcoI</i> - <i>MfeI</i> fragment from pIA1091 recloned into pIA1000	Kn pMB1
pIA1114	T7P-α-β-β'[T934A]- <i>TEV</i> -His ₁₀ -ω: PCR 1114- cloned between <i>MfeI</i> and <i>XhoI</i> sites of pIA981	Amp pMB1
pIA1115	A 4-Ala mutant (79,80,81,82) in NusG in pIA247; a putative GL contact site. SDM with oligos 1712 and 1713	Kn pMB1
pIA1116	T7A1-C105-λ _{TR2} cassette	Amp pMB1
pIA1117	<i>araC</i> -P _{BAD} vector – a derivative of pIA1087 without the <i>lux</i> operon; many sites	Amp pMB1
pIA1118	P _{trc} -βHis ₆ [D516V,V1325G]: PCR 1766+1767 cloned between <i>SbfI</i> and <i>HindIII</i> sites of pIA183	Amp pMB1
pIA1119	His ₁₀ - <i>TEV</i> - <i>DksA</i> [N88D] - PCR 1414-1415 on pIA1034 cloned into <i>PstI</i> and <i>HindIII</i> sites of pRF1	Kn pMB1
pIA1120	<i>araC</i> -P _{BAD} – <i>ops</i> – ΔRBS – <i>cat</i> reporter vector; a derivative of pIA1087	Amp pMB1
pIA1121	<i>araC</i> -P _{BAD} – <i>ops</i> – ΔRBS – <i>cat</i> -His ₆ reporter vector	Amp pMB1

pIA1122	P_{trc} - <i>rfaH</i> ; <i>NruI</i> - <i>HindIII</i> fragment from pIA957 cloned into <i>DraI</i> and <i>HindIII</i> sites of pIA1096	Kn p15A
pIA1123	T7P-His ₆ -TEV-β'[260-309]: PCR 956-1773 cloned between <i>NdeI</i> and <i>XhoI</i> sites of pIA751	Kn pMB1
pIA1124	T7P-His ₆ -TEV-β'[638-709]: PCR 1782 -1783 cloned between <i>NdeI</i> and <i>HindIII</i> sites of pIA751	Kn pMB1
pIA1125	λ P _R -60--+21 between <i>EcoRI</i> and <i>HindIII</i> sites, followed by 4 terminators: [<i>rrnB</i> T1 - T2] _{x2}	Kn pMB1
pIA1126	<i>araC</i> -P _{BAD} - <i>ops</i> - no RBS, no reporter	Amp pMB1
pIA1127	T7P-His ₆ -TEV-σ ⁷⁰ [1-613] from pIA586 recloned between <i>NdeI</i> and <i>MfeI</i> sites of pIA1128	Kn pMB1
pIA1128	T7P-His ₆ -TEV-σ ⁷⁰ [99-613] from pIA389 recloned between <i>NdeI</i> and <i>HindIII</i> sites of pIA751	Kn pMB1
pIA1129	T7P-His ₆ -TEV-σ ⁷⁰ [57-613]: oligo cassette cloned between <i>NdeI</i> and <i>SacII</i> sites of pIA1127	Kn pMB1
pIA1130	consensus T7A1-C30- <i>opsP</i> - <i>hisP</i> - <i>hisT</i>	Kn pMB1
pIA1131	T7P-α-βHis ₆ [H1244Q]-β'-ω: <i>MfeI</i> - <i>SbfI</i> fragment from pIA1111 recloned into pIA1000; silent <i>AflIII</i> site	Kn pMB1
pIA1132	λ P _R +2G; oligo cassette 1792+1793 cloned between <i>BsaBI</i> and <i>BglII</i> sites of pIA226	Amp pMB1
pIA1133	T7P-α-ββ'[Q929E]-TEV-His ₁₀ -ω: PCR 19-1794 digested with <i>EcoRI</i> - <i>BsmI</i> and cloned into <i>MfeI</i> and <i>BsmI</i> of pIA981; <i>MfeI</i> is gone	Amp pMB1
pIA1134	T7A1-C105-arrest site: oligo cassette cloned between <i>XbaI</i> and <i>HindIII</i> sites of pIA1116	Amp pMB1
pIA1135	T7A1- λ tr1 Rho-dependent terminator- <i>lux</i> ; <i>BamHI</i> - <i>XbaI</i> fragment from pIA267 cloned between <i>BamHI</i> and <i>NheI</i> of pIA1105	Amp pMB1
pIA1136	T7P-His ₆ - <i>rpoB</i> : <i>NcoI</i> - <i>HindIII</i> from pIA545 recloned into pIA432	Kn pMB1
pIA1137	T7P-His ₆ - <i>rpoC</i> : <i>XbaI</i> - <i>HindIII</i> from pIA656 recloned into pIA432	Kn pMB1
pIA1138	<i>EcoRI</i> —T7A1 [UP, -35,ΔSP,-10,DISC,DN]— <i>HindIII</i> — <i>rrnBT1</i> — <i>XhoI</i>	Amp pMB1
pIA1139	T7P-His ₆ - <i>rpoD</i> [C132,291,295S;S211C]: <i>SacII</i> - <i>MfeI</i> from pGEMD-C211 (V. Mekler) recloned into pIA586	Kn pMB1
pIA1140	T7P-His ₆ -TEV- <i>rpoD</i> [C132,291,295S;S211C]: <i>SacII</i> - <i>MfeI</i> from pGEMD-C211 (V. Mekler) recloned into pIA1127	Kn pMB1
pIA1141	<i>EcoRI</i> —LPR_ALL [UP,SP,-10,DISC,DN]— <i>HindIII</i> — <i>rrnBT1</i> — <i>XhoI</i>	Amp pMB1
pIA1142	P _{BAD} - <i>ops</i> - RBS - <i>cat</i> -His ₆ reporter; a good SD in pIA1121; an oligo cassette between <i>XhoI</i> and <i>SnaBI</i> sites	Amp pMB1
pIA1143	<i>EcoRI</i> —LPR[UP,SP]/T7[-10,DISC,DN]— <i>HindIII</i> —[<i>rrnBT1</i> -T2] ₂ — <i>Sall</i> ; pIA1125 derivative	Kn pMB1
pIA1144	<i>EcoRI</i> —LPR[UP,SP,-10]/T7[DISC,DN]— <i>HindIII</i> —[<i>rrnBT1</i> -T2] ₂ — <i>Sall</i> ; pIA1125 derivative	Kn pMB1
pIA1145	<i>EcoRI</i> —LPR[UP,SP,-10,DISC]/T7[DN]— <i>HindIII</i> —[<i>rrnBT1</i> -T2] ₂ — <i>Sall</i> ; pIA1125 derivative	Kn pMB1
pIA1146	T7P-CBP-intein-DksA[H39A]; an oligo cassette cloned between <i>Sall</i> and <i>XmaI</i> sites of pIA919; silent <i>NheI</i>	Amp MB1
pIA1147	T7P-CBP-intein-DksA[R124A]; an oligo cassette cloned between <i>AflIII</i> and <i>XhoI</i> sites of pIA919; silent <i>BsrDI</i>	Amp MB1
pIA1148	<i>rfbB</i> -HA ₂	Kn pMB1

pIA1149	<i>rfbB</i> -HA ₂ in pIA1120; <i>XhoI</i> site is missing	Amp MB1
pIA1150	T7P-CBP-intein-DksA[H61A]; a PCR product cloned between <i>SalI</i> and <i>PstI</i> sites of pIA919; silent <i>NdeI</i> is gone	Amp MB1