Name	crescentus strains: Genotype	Description	Source or Reference
Ivaille	Genotype	Description	Source of Reference
CB15	CB15	C. crescentus wild type ATCC 19089 Caulobacter vibrioides LOT: 3967454	(Poindexter and Cohen-Bazire, 1964)
NA1000	CB15N	Laboratory strain derived from CB15	(Evinger and Agabian 1977)
SoA0071	CB15 Δ <i>popA</i>	markerless in frame deletion of <i>popA</i> in CB15 by allelic exchange using plasmid pAD8	this study
SoA0144	NA1000 Δcc0655	markerless in frame deletion of <i>cc0655</i> in NA1000 by allelic exchange using plasmid pSA93	this study
SoA0145	NA1000 ΔtipF	markerless in frame deletion of <i>tipF</i> in NA1000 by allelic exchange using plasmid pSA94	this study
SoA0154	ΝΑ1000 Δ <i>cc0740</i>	markerless in frame deletion of <i>cc0740</i> in NA1000 by allelic exchange using plasmid pAD2	this study
SoA0155	NA1000 Δcc0857	markerless in frame deletion of <i>cc0857</i> in NA1000 by allelic exchange using plasmid pSA91	this study
SoA0156	NA1000 Δcc0896	markerless in frame deletion of <i>cc0896</i> in NA1000 by allelic exchange using plasmid pSA102	this study
SoA0157	NA1000 Δcc1086	markerless in frame deletion of <i>cc1086</i> in NA1000 by allelic exchange using plasmid pSA79	this study
SoA0161	ΝΑ1000 Δcc3094	markerless in frame deletion of <i>cc3094</i> in NA1000 by allelic exchange using plasmid pSA96	this study
SoA0162	NA1000 Δcc3148	markerless in frame deletion of <i>cc3148</i> in NA1000 by allelic exchange using plasmid pSA90	this study
SoA0163	NA1000 ΔdgcA	markerless in frame deletion of <i>dgcA</i> in NA1000 by allelic exchange using plasmid pSA80	this study
SoA0166	CB15 Δ <i>cc0655</i>	markerless in frame deletion of cc0655 in CB15 by allelic exchange using plasmid pSA93	this study
SoA0167	CB15 ΔtipF	markerless in frame deletion of <i>tipF</i> in CB15 by allelic exchange using plasmid pSA94	this study
SoA0168	CB15 Δ <i>cc0740</i>	markerless in frame deletion of <i>cc0740</i> in CB15 by allelic exchange using plasmid pAD2	this study
SoA0170	CB15 Δ <i>cc0896</i>	markerless in frame deletion of <i>cc896</i> in CB15 by allelic exchange using plasmid pSA102	this study
SoA0171	CB15 Δcc1086	markerless in frame deletion of <i>cc1086</i> in CB15 by allelic exchange using plasmid pSA79	this study
SoA0173	CB15 ΔdgcB	markerless in frame deletion of <i>dgcB</i> in CB15 by allelic exchange using plasmid pAD7	(Abel et al., 2011)
SoA0175	CB15 Δ <i>cc3094</i>	markerless in frame deletion of <i>cc3094</i> in CB15 by allelic exchange using plasmid pSA96	this study

SoA0176	CB15 Δcc3148	markerless in frame deletion of <i>cc3148</i> in CB15 by allelic exchange using plasmid pSA90	this study	
SoA0177	CB15 $\Delta dgcA$ markerless in frame deletion of $dgcA$ in CB15 by allelic exchange using plasmid pSA80		this study	
SoA0739	NA1000 pSA129 NA1000 containing pSA129		this study	
SoA0741	CB15 pSA129 CB15 containing pSA129		this study	
SoA0764	NA1000 ΔdgcB Δcc0857 Δcc0740 ΔdgcA ΔpleD Δcc0655 Δcc3094 Δcc0896 Δcc1086 Δcc0091 ΔpdeA Δcc3148	markerless in frame deletion of cc1086, cc0091, pdeA and cc3148 in NA1000 cdG <sup>0</sup> background by allelic exchange using plasmids pSA79, pSA156, pSA81, and pSA90, respectively; refered to as rcdG <sup>0</sup> strain in NA1000 background	this study	
SoA0801	NA1000 pSRK-Km	NA1000 containing pSRK-Km	this study	
SoA0803	CB15 pSRK-Km	CB15 containing pSRK-Km	this study	
SoA0827	CB15 cdG <sup>0</sup> dgcB <sup>+</sup>	the c-di-GMP free strain in CB15 background containing a chromosomal <i>dgcB</i> copy in the <i>dgcB</i> locus which was introcduce by general transduction using φCR30 and the marker CMS21 (West et al 2002).	this study	
SoA0918	NA1000 Δcc0091 markerless in frame deletion of cc0091 in NA1000 th by allelic exchange using plasmid pSA156		this study	
SoA0930	CB15 $\Delta cc0091$ markerless in frame deletion of $cc0091$ in CB15 by allelic exchange using plasmid pSA156		this study	
SoA1015	CB15 Δ <i>pleD</i> pSA164	CB15 Δ <i>pleD</i> containing pSA164	this study	
SoA1061	CB15 Δ <i>pleD</i> pSA129	CB15 Δ <i>pleD</i> containing pSA129	this study	
SoA1154	NA1000 cdG <sup>0</sup> pSA129 the c-di-GMP free strain in NA1000 background this stu- containing pSA129		this study	
SoA1273	NA1000 ΔdgcB Δcc0857 Δcc0740 ΔdgcA Δcc0655 Δcc3094 Δcc0896 Δcc1086 Δcc0091 ΔpdeA Δcc3148	rcdG <sup>0</sup> strain lacking the final markerless in frame deletion of <i>pleD</i> ; refered to as rcdG <sup>0</sup> :: <i>pleD</i>	this study	
SoA1372	NA1000 cdG <sup>0</sup> pSRK-Km	the c-di-GMP free strain in NA1000 background containing pSRK-Km	this study	
SoA1374	NA1000 cdG <sup>0</sup> ::ydeH pSRK-Km	the c-di-GMP free strain in NA1000 background containing a chromosomal copy of YdeH integrated by allelic exchange using plasmid pSA223 and pSRK-Km	this study	
SoA1481	CB15 cdG <sup>0</sup> pTB4	the c-di-GMP free strain in CB15 background containing pTB4	this study	
SoA1496	NA1000 cdG <sup>0</sup> pSA280	the c-di-GMP free strain in NA1000 background containing pSA280	this study	
SoA1498	CB15 cdG <sup>0</sup> pSA280	the c-di-GMP free strain in CB15 background containing pSA280	this study	
SoA1507	CB15 cdG <sup>0</sup> pSA129	the c-di-GMP free strain in CB15 background this study containing pSA129		
SoA1508	CB15 cdG <sup>0</sup> pSRK-Km	the c-di-GMP free strain in CB15 background containing pSRK-Km	this study	

SoA1511	CB15 cdG <sup>0</sup> ::ydeH pSRK-Km	the c-di-GMP free strain in CB15 background	this study
	portar in the second se	containing a chromosomal copy of YdeH integrated	,
		by allelic exchange using plasmid pSA223 and pSRK-	
		Km	
SoA1538	NA1000 ΔMGE	FC766; NA1000 with a deletion of the mobile genetic	(Marks et al., 2002)
		element between position 473069-499098 of the	
		NA1000 genome	
SoA1539	NA1000 ΔMGE pTB4	NA1000 ΔMGE containing pTB4	this study
SoA1541	NA1000 ΔMGE pSRK-Km	NA1000 ΔMGE containing pSRK-Km	this study
SoA1569	CB15 Δ <i>cc0857</i>	markerless in frame deletion of cc0857 in CB15 by	this study
		allelic exchange using plasmid pSA91	
SoA1587	rcdG <sup>0</sup> :: <i>ydeH</i>	chromoslomal integration of ydeH in rcdG <sup>0</sup> by alleic	this study
	,	exchange using pSA223	
SoA1612	NA1000 hfsA + pSRK-Km	markerless exchange of hfsA NA1000 to functional	this study
	рети	hfsA by allelic exchange using pSA178 in NA1000	
		containing pSRK-Km	
SoA1615	NA1000 hfsA <sup>+</sup> ΔMGE pSRK-	markerless exchange of hfsA NA1000 to functional hfsA	this study
	Km	by allelic exchange using pSA178 in NA1000 ΔMGE	
		containing pSRK-Km	
SoA1616	NA1000 cdG <sup>0</sup> <i>hfsA</i> <sup>+</sup> pSRK-Km	markerless exchange of <i>hfsA</i> <sub>NA1000</sub> to functional	this study
		hfsA by allelic exchange using pSA178 in NA1000	
		cdG <sup>0</sup> containing pSRK-Km	
SoA1617	NA1000 hfsA + pTB4	markerless exchange of hfsA NA1000 to functional	this study
		hfsA by allelic exchange using pSA178 in NA1000	
		containing pTB4	
SoA1620	NA1000 hfsA <sup>+</sup> ΔMGE pTB4	markerless exchange of <i>hfsA</i> NA1000 to functional	this study
		hfsA by allelic exchange using pSA178 in NA1000	
SoA1621		ΔMGE containing pTB4 markerless exchange of <i>hfsA</i> NA1000 to functional	Alaia aku aku
30A1621	NA1000 cdG <sup>0</sup> hfsA <sup>+</sup> pTB4	hfsA by allelic exchange using pSA178 in NA1000	this study
		cdG0 containing pTB4	
SoA1624	NA1000 pSA266	NA1000 containing pSA266	this study
SoA1626	NA1000::CMS0	NA1000 containing a kanamycin resistance marker	(West et al., 2002)
00/12020		(CMS0) integrated via plasmid pLW132 linked to	(11001010111)
		cc0091	
SoA1627	rcdG <sup>0</sup> ::ydeH ::CMS0	marker CMS0 tranfered in rcdG <sup>0</sup> ::ydeH by general	this study
		transduction using $\phi$ CR30, the strain retained the	
		cc0091 deletion	
SoA1628	NA1000::ydeH ::CMS0 ΔdgcB	marker CMS0 tranfered in rcdG <sup>0</sup> ::ydeH by general	this study
	Δcc0857 Δcc0740 ΔdgcA	transduction using φCR30, the strain optained a wild-	
	ΔpleD Δcc0655 Δcc3094	type cc0091 allel	
	Δcc0896 Δcc1086 ΔpdeA		
	Δcc3148		
SoA1632	NA1000::CMS12	NA1000 containing a kanamycin resistance marker	(West et al., 2002)
		(CMS12) integrated via plasmid pLW92 linked to	
		cc1086	
SoA1633	rcdG <sup>0</sup> ::ydeH ::CMS12	marker CMS12 tranfered in rcdG <sup>0</sup> ::ydeH by general	this study
		transduction using $\phi$ CR30, the strain retained the	,
		cc1086 deletion	

SoA1634	NA1000::ydeH ::CMS12 ΔdgcB Δcc0857 Δcc0740 ΔdgcA ΔpleD Δcc0655 Δcc3094 Δcc0896 Δcc0091 ΔpdeA Δcc3148	marker CMS12 tranfered in rcdG <sup>0</sup> ::ydeH by general transduction using φCR30, the strain optained a wild-type cc1086 allel	this study	
SoA1644	NA1000::CMS37	NA1000 containing a kanamycin resistance marker (CMS37) integrated via plasmid pLW124 linked to pdeA (West of pdeA)		
SoA1645	rcd $G^0$ ::ydeH ::CMS37 marker CMS37 tranfered in rcd $G^0$ ::ydeH by general transduction using $\phi$ CR30, the strain retained the pdeA deletion		this study	
SoA1646	NA1000:: $ydeH$ ::CMS37 marker CMS37 tranfered in rcdG $^0$ :: $ydeH$ by general this study transduction using $\phi$ CR30, the strain optained a wild-type $pdeA$ allel $\Delta cc3094$ $\Delta cc0896$ $\Delta cc1086$ $\Delta cc0091$ $\Delta cc3148$		·	
SoA1648	rcdG <sup>0</sup> pBV-PA5295	rcdG <sup>0</sup> containing pBV-PA5295	this study	
SoA1650	rcdG <sup>0</sup> ::ydeH pBV-PA5295	rcdG <sup>0</sup> ::ydeH containing pBV-PA5295	this study	
SoA1652	rcdG <sup>0</sup> :: <i>pleD</i> pBV-PA5295	rcdG <sup>0</sup> ::pleD containing pBV-PA5295	this study	
UJ2827			(Duerig et al., 2009)	
UJ3252	NA1000 Δ <i>pilA</i>	deletion of <i>pilA</i> in NA1000	Assaf Levi	
UJ3257	CB15 $\Delta flgH$ markerless in frame deletion of $flgH$ in CB15 by allelic exchange using plasmid pAL2		Assaf Levi	
UJ4449	NA1000 $\Delta dgcB$ markerless in frame deletion of $dgcB$ in NA1000 by allelic exchange using plasmid pAD7 (Abel et a		(Abel et al., 2012)	
UJ4450	NA1000 $\Delta pleD$ markerless in frame deletion of $pleD$ in NA1000 by allelic exchange using plasmid pSA95 (Abel et al		(Abel et al., 2012)	
UJ4454	NA1000 Δ <i>pdeA</i>	markerless in frame deletion of <i>pdeA</i> in NA1000 by allelic exchange using plasmid pSA81	(Abel et al., 2012)	
UJ4462	CB15 ΔdgcB	markerless in frame deletion of dgcB in CB15 by allelic exchange using plasmid pAD7	(Abel et al., 2012)	
UJ4463	CB15 Δ <i>pleD</i>	markerless in frame deletion of <i>pleD</i> in CB15 by allelic exchange using plasmid pSA95	(Abel et al., 2012)	
UJ4467	CB15 Δ <i>pdeA</i>	markerless in frame deletion of <i>pdeA</i> in CB15 by allelic exchange using plasmid pSA81	by (Abel et al., 2012)	
UJ4618	CB15 ΔdgcB Δcc0857	CB15 $\triangle dgcB$ $\triangle cc0857$ markerless in frame deletion of $cc0857$ in CB15 this study $\triangle dgcB$ by allelic exchange using plasmid pSA91		
UJ4760	CB15 ΔdgcB Δcc0857 Δcc0740			
UJ4773	CB15 ΔdgcB Δcc0857 Δcc0740 ΔdgcA	$\Delta dgcB \ \Delta cc0857$ markerless in frame deletion of $dgcA$ in CB15 $\Delta dgcB$ this study		
UJ4774	CB15 pBV-MCS4	CB15 containing pBV-MCS4	this study	
UJ4776	CB15 pBV-PA5295 <sub>E328A</sub>	CB15 containing pBV-PA5295 <sub>E328A</sub>	this study	

UJ4778	CB15 pBV-PA5295	CB15 containing pBV-PA5295	this study
UJ4811	CB15 Δcc0740 Δcc0857 Δcc1850 Δcc3285 pAD5	CB15 Δcc0740 Δcc0857 Δcc1850 Δcc3285 containing pAD5	this study
UJ4816	CB15 $\triangle dgcB$ $\triangle cc0857$ markerless in frame deletion of $pleD$ in CB15 $\triangle dgc$ $\triangle cc0740$ $\triangle dgcA$ $\triangle pleD$ $\triangle cc0857$ $\triangle cc0740$ $\triangle dgcA$ by allelic exchange using plasmid pSA95		this study
UJ4849	CB15 Δcc0740 Δcc0857 Δcc1850 Δcc2462 Δcc3285 pAD5	CB15 Δcc0740 Δcc0857 Δcc1850 Δcc2462 Δcc3285 containing pAD5	this study
UJ4929	CB15 ΔdgcB Δcc0857 Δcc0740 ΔdgcA ΔpleD Δcc0655	markerless in frame deletion of $cc0655$ in CB15 $\Delta dgcB$ $\Delta cc0857$ $\Delta cc0740$ $\Delta dgcA$ $\Delta pleD$ by allelic exchange using plasmid pSA93	this study
UJ4932	CB15 pAD5	CB15 containing pAD5	this study
UJ5061	CB15 ΔdgcB Δcc0857 Δcc0740 ΔdgcA ΔpleD Δcc0655 Δcc3094	markerless in frame deletion of $cc3094$ in CB15 $\Delta dgcB$ $\Delta cc0857$ $\Delta cc0740$ $\Delta dgcA$ $\Delta pleD$ $\Delta cc0655$ by allelic exchange using plasmid pSA96	this study
UJ5065	NA1000 ΔdgcB Δcc0857 Δcc0740 ΔdgcA ΔpleD Δcc0655 Δcc3094 Δcc0896	markerless in frame deletion of $pleD$ in NA1000 $\Delta dgcB$ $\Delta cc0857$ $\Delta cc0740$ $\Delta dgcA$ $\Delta cc0655$ $\Delta cc3094$ $\Delta cc0896$ by allelic exchange using plasmid pSA95; refered to as $cdG^0$ strain in NA1000 background	this study
UJ5100	CB15 ΔdgcB Δcc0857 Δcc0740 ΔdgcA ΔpleD Δcc0655 Δcc3094 Δcc0896	markerless in frame deletion of $cc0896$ in CB15 $\Delta dgcB$ $\Delta cc0857$ $\Delta cc0740$ $\Delta dgcA$ $\Delta pleD$ $\Delta cc0655$ $\Delta cc3094$ by allelic exchange using plasmid pSA102; refered to as $cdG^0$ strain in CB15 background	this study
UJ5153	CB15 Δcc0655 Δcc0740 Δcc0857 Δcc0896 Δcc1850 Δcc2462 Δcc3094 Δcc3285 pAD5	CB15 Δcc0655 Δcc0740 Δcc0857 Δcc0896 Δcc1850 Δcc2462 Δcc3094 Δcc3285 containing pAD5	this study
UJ5154	CB15 Δcc0655 Δcc0740 Δcc0857 Δcc1850 Δcc2462 Δcc3285 pAD5	CB15 Δcc0655 Δcc0740 Δcc0857 Δcc1850 Δcc2462 Δcc3285 containing pAD5	this study
UJ5155	CB15 Δcc0655 Δcc0740 Δcc0857 Δcc1850 Δcc2462 Δcc3094 Δcc3285 pAD5	CB15 Δcc0655 Δcc0740 Δcc0857 Δcc1850 Δcc2462 Δcc3094 Δcc3285 containing pAD5	this study
UJ5170	NA1000 pTB4	NA1000 containing pTB4	this study
UJ5172	NA1000 cdG <sup>0</sup> pTB4	the c-di-GMP free strain in NA1000 background containing pTB4	this study
UJ5380	NA1000 pCM4	NA1000 containing pCM4	this study
UJ5381	NA1000 Δcc0655 Δcc0740 Δcc0857 Δcc0896 Δcc1850 Δcc2462 Δcc3094 Δcc3285 pCM4	NA1000 Δcc0655 Δcc0740 Δcc0857 Δcc0896 Δcc1850 Δcc2462 Δcc3094 Δcc3285 containing pCM4	this study
UJ5458	NA1000 pOP290-2	NA1000 containing pOP290-2	this study

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UJ5459	NA1000 Δcc0655 Δcc0740	NA1000 Δcc0655 Δcc0740 Δcc0857 Δcc0896	this study
	Δcc0857 Δcc0896 Δcc1850	Δcc1850 Δcc2462 Δcc3094 Δcc3285 containing	
	Δcc2462 Δcc3094 Δcc3285	pOP290-2	
	pOP290-2		
UJ5487	NA1000 pfljL-lacZ	NA1000 containing pfljL-lacZ	this study
UJ5488	NA1000 Δ <i>cc0655</i> Δ <i>cc0740</i>	ΝΑ1000 Δ <i>cc0655</i> Δ <i>cc0740</i> Δ <i>cc0857</i> Δ <i>cc0896</i>	this study
	Δcc0857 Δcc0896 Δcc1850	Δcc1850 Δcc2462 Δcc3094 Δcc3285 containing	
	Δcc2462 Δcc3094 Δcc3285	pfljL-lacZ	
	pfljL-lacZ		
UJ7134	CB15 Δ <i>pleD</i> pSA217	CB15 Δ <i>pleD</i> containing pSA217	this study
UJ7137	CB15 cdG <sup>0</sup> pSA164	the c-di-GMP free strain in CB15 background	this study
	·	containing pSA164	
UJ7138	CB15 cdG <sup>0</sup> pSA217	the c-di-GMP free strain in CB15 background	this study
		containing pSA217	
UJ7156	CB15 dgcB <sub>E261Q</sub>	CB15 with a mutation coding for the DgcB active site	this study
		mutant DgcB <sub>E261Q</sub> . Created by allelic exchange using	
		plasmid pIH99	
UJ7162	CB15 cdG <sup>0</sup> dgcB <sub>E261Q</sub>	the c-di-GMP free strain in CB15 background with a	this study
		mutation coding for the DgcB active site mutant	
		DgcB <sub>E261Q</sub> . Created by allelic exchange using plasmid	
		pIH99	

Escherichia coli strains:			
Name	Genotype	Description	Source or Reference
DH5α	(F-) F` endA 1 hsdR 17 (rK-mK plus) glnV 44 thi 1 recA 1 gyr $\Delta$ (Nal <sup>R</sup> ) relA 1 $\Delta$ (laclZYA - argF)U169 deoR ( $\Phi$ 80dlac $\Delta$ (lacZ) M15)	Used for general cloning purposes	(Woodcock et al., 1989)
S17-1	RP4-2, Tc::Mu, KM-Tn7	Used as donor strain in conjugations to transfer oriT containing plasmids to <i>C. crescentus</i>	(Simon et al., 1983)

Phages:			
Name		Description	Source or Reference
фСbК		Bacteriophage that infects <i>C. crescentus</i> uses the pili as a receptor.	(Schmidt et al.,1965)
фCR30		Bacteriophage that infects <i>C. crescentus</i> uses the paracrystalline surface layer protein as a receptor; can be used for generalized transduction.	(Ely and Johnson, 1977)

Plasmids:		
Name	Description	Source or Reference
pAD2	pNPTS138; used for inframe deletion of <i>cc0740</i>	Anna Dürig
pAD5	pMR20; <i>popA -egfp</i> under control of <i>popA</i> promoter	(Duerig et al. 2009)
pAD7	pNPTS138; used for inframe deletion of dgcB	(Abel et al., 2011)
pAD8	pNPTS138; used for clean deletion of <i>popA</i>	(Duerig et al., 2009)
pAL2	pNPTS138; used for inframe deletion of flgH	Assaf Levi
pBV-MCS4	Gent <sup>R</sup> , vanillate inducible medium-copy number plasmid	(Thanbichler et al., 2007)
pBV-PA5295	pBV-MCS4; <i>PA5292</i> under control of the vanillate promoter	(Duerig et al. 2009)
pBV-PA5295 <sub>E328A</sub>	pBV-MCS4; <i>PA5292</i> <sub>E328A</sub> active site mutant under the control of vanillate promoter	(Duerig et al. 2009)
pCM4	pRK-lacZ 290; <i>lacZ</i> under control of the <i>fliL /fliG</i> promoter	C. Mohr
pfljL-lacZ	pRK-lacZ 290; <i>lacZ</i> under control of the <i>fljL</i> promoter	E. Mangan
pIH99	pNPTS138; used for the introduction of $dgcB_{\rm g781c}$ coding for $DgcB_{\rm E261Q}$ by allelic exchange	this study
pLW124	Kan <sup>R</sup> , suicide vector pBGS18T containing a homology region to <i>C. crescentus</i> for chromosomal intergration close to <i>pdeA</i>	(West et al., 2002)
pLW132	Kan <sup>R</sup> , suicide vector pBGS18T containing a homology region to <i>C. crescentus</i> for chromosomal intergration close to <i>cc0091</i>	(West et al., 2002)
pLW92	Kan <sup>R</sup> , suicide vector pBGS18T containing a homology region to <i>C. crescentus</i> for chromosomal intergration close to <i>cc1086</i>	(West et al., 2002)
pMR10	RK2 based Kan <sup>R</sup> low copy number and broad host range vector with oriT	(Roberts et al., 1996)
pNPTS138	Kan <sup>R</sup> , suicide vector with <i>sacB</i> gene and oriT	D. Alley
pOP290-2	pRK-lacZ 290; <i>lacZ</i> under control of the <i>fliF</i> promoter	K. Quon
pSA79	pNPTS138; used for inframe deletion of cc1086	this study
pSA80	pNPTS138; used for inframe deletion of dgcA	this study
pSA81	pNPTS138; used for inframe deletion of pdeA	(Abel et al., 2011)
pSA90	pNPTS138; used for inframe deletion of cc3148	this study
pSA91	pNPTS138; used for inframe deletion of cc0857	this study
pSA93	pNPTS138; used for inframe deletion of cc0655	this study
pSA94	pNPTS138; used for inframe deletion of tipF	this study
pSA95	pNPTS138; used for inframe deletion of <i>pleD</i>	(Abel et al., 2011)
pSA96	pNPTS138; used for inframe deletion of cc3094	this study

pSA102	pNPTS138; used for inframe deletion of <i>cc0896</i> this study
pSA129	pMR10 lacking the lac Promoter this study
pSA156	pNPTS138; used for inframe deletion of <i>cc0091</i> this study
pSA164	pSA129; <i>pleD</i> under control of the <i>pleD</i> promoter (Abel et al., 2011)
pSA178	pNPTS138; used for the introduction of a functional this study hfA allele by allelic exchange
pSA217	pSA129; <i>pleD</i> <sub>GG368DE</sub> under control of the <i>pleD</i> this study promoter
pSA223	pNPTS138; used for the introduction of lac promoter this study driven <i>ydeH</i> -3x <i>flag</i> by allelic exchange in the intergenic region between <i>cc3065</i> and <i>cc3066</i>
pSA266	pSRK-Km; <i>ydeH -gfp</i> under control of the lac this study promoter
pSA280	pSA129; <i>ydeH</i> -3 <i>xflag</i> under control of the lac this study promoter
pSRK-Km	Kan <sup>R</sup> , IPTG inducible pBBR based medium-copy (Khan et al., 2008) number plasmid
рТВ4	pSRK-Km; <i>ydeH -3xflag</i> under control of the lac this study promoter