**Supplementary file 5.** **Strains used in this study.**

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| **Strain** | **Genotype** | **Construction** | **Source** |
| ***C. crescentus*** |
| CB15N | Synchronizable variant of wild-type strain CB15 | - | Evinger and Agabian, 1977 |
| JK5 | CB15N ∆*bacAB* | - | Kühn et al., 2010 |
| JK81 | CB15N *creS*::Tn5 | - | Laboratory stock |
| JK136 | CB15N ∆*pbpC xylX*::P*xyl-bacA-venus* | - | Kühn et al., 2010 |
| JK281 | Δ*bacAB* Δ*pbpC* |  | Kühn et al., 2010 |
| MT256 | CB15N *xylX*::P*xyl-bacA-venus* | - | Laboratory stock |
| MT304 | ∆*pbpC* | - | Kühn et al., 2010 |
| LY70 | ∆*bacA* ∆*pbpC* | In-frame deletion of *bacA* in MT304 using pMT813 | This work |
| LY71 | ∆*bacB* ∆*pbpC* | In-frame deletion of *bacB* in MT304 using pMT815 | This work |
| LY72 | ∆*bacA* ∆*pbpC xylX*::P*xyl-mVenus-pbpC* | Integration of pLY073 in LY70 | This work |
| LY75 | ∆*bacB* ∆*pbpC xylX*::P*xyl-mVenus-pbpC* | Integration of pLY073 in LY71 | This work |
| LY76 | ∆*bacB* ∆*pbpC xylX*::P*xyl-mVenus-pbpC∆2-13* | Integration of pLY074 in LY71 | This work |
| LY77 | Δ*bacB* Δ*pbpC xylX*::P*xyl-mvenus-pbpC1-13-dipM224-296-pbpC84-733* | Integration of pLY075 in LY71 | This work |
| LY84 | Δ*bacAB xylX*::P*xyl-bacAΔ2-8-mVenus*  | Integration of pLY076 in JK5 | This work |
| LY88 | Δ*bacAB xylX*::P*xyl-bacAK4S-mVenus*  | Integration of pLY087 in JK5 | This work |
| LY89 | Δ*bacAB xylX*::P*xyl-bacAK4S/K7S-mVenus* | Integration of pLY088 in JK5 | This work |
| LY90 | Δ*bacAB xylX*::P*xyl-bacA-mVenus* | Integration of pLY086 in JK5 | This work |
| LY91 | Δ*bacAB xylX*::P*xyl-bacAA6S-mVenus* | Integration of pLY101 in JK5 | This work |
| LY92 | Δ*bacAB xylX*::P*xyl-bacAK7S-mVenus* | Integration of pLY102 in JK5 | This work |
| LY95 | Δ*bacAB xylX*::P*xyl-bacAS3A-mVenus* | Integration of pLY099 in JK5 | This work |
| LY96 | Δ*bacAB xylX*::P*xyl-bacAQ5A-mVenus* | Integration of pLY100 in JK5 | This work |
| LY97 | Δ*bacAB xylX*::P*xyl-bacAF2Y-mVenus* | Integration of pLY104 in JK5 | This work |
| LY103 | Δ*bacAB xylX*::P*xyl*-2×*mreB1-11*-*bacAΔ2-8*-*mVenus*  | Integration of pLY115 in JK5 | This work |
| LY111 | Δ*bacAB xylX*::P*xyl-bacAF2E-mVenus* | Integration of pLY131 in JK5 | This work |
| LY112 | Δ*bacAB xylX*::P*xyl-bacAK4E/K7E-mVenus* | Integration of pLY132 in JK5 | This work |
| LY113 | Δ*bacAB xylX*::P*xyl-bacAF2E/K4E/K7E-mVenus* | Integration of pLY138 in JK5 | This work |
| LY119 | Δ*bacAB xylX*:: P*xyl-bacAF130R-mVenus* | Integration of pLY154 in JK5 | This work |
| LY120 | *creS*::Tn5 *xylX*::P*xyl-creS-mNeonGreen* | Integration of pLY149 in JK81 | This work |
| LY121 | *creS*::Tn5 *xylX*::P*xyl-creS∆2-27-mNeonGreen* | Integration of pLY144 in JK81 | This work |
| LY122 | *creS*::Tn5 *xylX*::P*xyl-bacA1-8-creS28-457-mNeonGreen* | Integration of pLY145 in JK81 | This work |
| LY123 | ∆*bacAB* *xylX*::P*xyl-*2×*EcmreB1-11-bacAF130R/9-161-mVenus* | Integration of pLY155 into JK5 | This work |
| MAB568 | Δ*bacAB* Δ*pbpC* *vanA*::P*van*-*pbpC1-132*-*mCherry* | Integration of pMAB234 into JK281 | This work |
| MAB575 | Δ*bacAB* Δ*pbpC* *vanA*::P*van*-*pbpC1-132*-*mCherry* *xylX*::P*van-bacAΔ2-8-mVenus* | Integration of pLY76 into MAB568 | This work |
| MAB576 | Δ*bacAB* Δ*pbpC* *vanA*::P*van*-*pbpC1-132*-*mCherry* *xylX*::P*van-bacA-mVenus* | Integration of pLY86 into MAB568 | This work |
| MAB577 | Δ*bacAB* Δ*pbpC* *vanA*::P*van*-*pbpC1-132*-*mCherry* *xylX*::P*van-bacAF130R-mVenus* | Integration of pLY154 into MAB568 | This work |
| ***E. coli*** |  |  |  |
| TOP10 | F– *mcrA* Δ(*mrr-hsdRMS*-*mcrBC*) Φ80*lacZ*ΔM15 Δ*lacX74* *recA1* *araD139* Δ(*ara-leu*)7697 *galU* *galK* *rpsL* (StrR) *endA1* *nupG* | - | Invitrogen |
| Rosetta(DE3)pLysS | F– *ompT* *hsdS*B(rB- mB-) *gal dcm* (DE3) pLysSRARE (CamR) | - | Merck Milipore |