**Table S2. Strains and plasmids used in this study**

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| ***Caulobacter crescentus*** | **Relevant characteristics** | **Reference or source** |
| NA1000 | syn-1000, synchronizable variant of strain CB15 | (Evinger 1977) |
| *neuB::Tn* (NS7) | NA1000 derivative with *himar1* insertion in *neuB*, KanaR | This work |
| *neuB* | NA1000 with in-frame deletion of *neuB* | This work |
| *flmG* | NA1000 with in-frame deletion of *flmG* | This work |
| *flj*x6 | NA1000 derivative with in-frame deletion of *fljJ*, *fljK*, *fljL* and *fljMNO* | (Faulds-Pain 2011) |
| *neuB**flj*x6 | NA1000 derivative with in-frame deletion of *fljJ*, *fljK*, *fljL*, *fljMNO* and *neuB* | This work |
| *flmA::Tn* (NS148) | NA1000 derivative with *EzTn5* insertion in *flmA*, KanaR | This work |
| *flmB::Tn* (NS76) | NA1000 derivative with *himar1* insertion in *flmB*, KanaR | This work |
| *flmH* | NA1000 with in-frame deletion of *flmH* | This work |
| *CCNA\_01531* | NA1000 with in-frame deletion of *CCNA\_01531* | This work |
| *CCNA\_01537* | NA1000 with in-frame deletion of *CCNA\_01537* | This work |
| *flmH* *1531* *1537* | NA1000 with in-frame deletion of *flmH*, *CCNA\_01531* and *CCNA\_01537* | This work |
| *flmD* | NA1000 with in-frame deletion of *flmD* | This work |
| NA1000 *ctrA401* | NA1000 derivative with the temperature-sensitive *ctrA401* allele | (Quon 1996) |
| *mucR1* *mucR2* | NA1000 derivative with in-frame deletion of *mucR1* and *mucR2* | (Fumeaux 2014) |
| UG1277 | *mucR1* *mucR2* carrying the *sciP* T24I allele | (Fumeaux 2014) |
| UG1278 | *mucR1* *mucR2* carrying the *sciP* T65A allele | (Fumeaux 2014) |
| UG1280 | *mucR1* *mucR2* carrying the *ctrA* T170A allele | (Fumeaux 2014) |
| *flbD::Tn* (NS228) | NA1000 derivative with Hyper*Mu* insertion in *flbD*, KanaR | This work |
| *flaF::Tn* (NS273) | NA1000 derivative with Hyper*Mu* insertion in *flaF*, KanaR | This work |
| *flaF::Tn* (NS307) | NA1000 derivative with Hyper*Mu* insertion in *flaF*, KanaR | This work |
| *rpoN::Tn* (NS229) | NA1000 derivative with Hyper*Mu* insertion in *rpoN*, KanaR | This work |
| *rpoN::Tn* (NS272) | NA1000 derivative with Hyper*Mu* insertion in *rpoN*, KanaR | This work |
| *neuB rpoN::Tn* | NA1000 derivative with in-frame deletion of *neuB* and Hyper*Mu* insertion in *rpoN* (NS229), KanaR | This work |
| *neuB rpoN::Tn* | NA1000 derivative with in-frame deletion of *neuB* and Hyper*Mu* insertion in *rpoN* (NS272), KanaR | This work |
| ***Sinorhizobium fredii*** |  |  |
| NGR234 | Wild-type strain | (Stanley 1988) |
| NGR234*rkpQ* | NGR234 with in-frame deletion of *rkpQ* | This work |
| NGR234*rkp3\_013* | NGR234 with in-frame deletion of *rkp3\_013* | This work |
| ***Escherichia coli*** |  |  |
| EC100D | Cloning strain | Epicentre Technologies |
| S17-1 | For plasmid mobilization | (Simon 1983) |
| Rosetta™(DE3)pLysS | BL21 derivative for protein expression from T7 promoter | Novagen |
| BTH101 | F− *cya-99 araD139 galE15 galK16 rpsL1* (Strr) *hsdR2 mcrA1 mcrB1* | Euromedex |
| **Plasmid** | **Relevant characteristics** | **Reference or source** |
| pNPTS138 | Suicide vector used forgene replacement; KanaR | M.R.K. Alley |
| pNPTS\_*neuB* | pNPTS138 derivative carrying the in-frame deletion of *neuB*; KanaR | This work |
| pSA37 | pNPTS138 derivative carrying the in-frame deletion of *flmG*; KanaR | This work |
| pSA252 | pNPTS138 derivative carrying the in-frame deletion of *flmH*; KanaR | This work |
| pSA265 | pNPTS138 derivative carrying the in-frame deletion of *CCNA\_01531*; KanaR | This work |
| pSA617 | pNPTS138 derivative carrying the in-frame deletion of *CCNA\_01537*; KanaR | This work |
| pSA253 | pNPTS138 derivative carrying the in-frame deletion of *flmD*; KanaR | This work |
| pSA35 | pNPTS138 derivative carrying the in-frame deletion of *rkpQ*; KanaR | This work |
| pK18*mobsacB* | Suicide vector used forgene replacement; KanaR | (Schafer 1994) |
| pSA326 | pK18*mobsacB* derivative carrying the in-frame deletion of *rkp3\_013*; KanaR | This work |
| pOK12 | Cloning vector; KanaR | (Vieira 1991) |
| pSA58 | pOK12 derivative carrying the *neuB* ORF; KanaR | This work |
| pSA90 | pOK12 derivative carrying the *neuB* E30A variant; KanaR | This work |
| pSA91 | pOK12 derivative carrying the *neuB* H245A variant; KanaR | This work |
| pSA92 | pOK12 derivative carrying the *neuB* R322A variant; KanaR | This work |
| pMT335 | Medium copy number plasmid for inducible expression; P*van*, GmR | (Thanbichler 2007) |
| pSA53 | pMT335 derivative carrying the *neuB* ORF; GmR | This work |
| pSA93 | pMT335 derivative carrying the *neuB* E30A variant; GmR | This work |
| pSA94 | pMT335 derivative carrying the *neuB* H245A variant; GmR | This work |
| pSA95 | pMT335 derivative carrying the *neuB* R322A variant; GmR | This work |
| pSA59 | pMT335 derivative carrying the *flmG* ORF (full-length); GmR | This work |
| pSA645 | pMT335 derivative carrying the *flmG* GT domain (residues 309-596); GmR | This work |
| pSA126 | pMT335 derivative carrying the *neuB1Cj* ORF; GmR | This work |
| pSA47 | pMT335 derivative carrying the *neuB2Cj* ORF; GmR | This work |
| pSA48 | pMT335 derivative carrying the *neuB3Cj* ORF; GmR | This work |
| pSA42 | pMT335 derivative carrying the *S. fredii* *rkpQ* ORF; GmR | This work |
| pSA263 | pMT335 derivative carrying the *S. fredii rkpO* ORF; GmR | This work |
| pSA569 | pMT335 derivative carrying the *S. fredii rkpL* ORF; GmR | This work |
| pSA568 | pMT335 derivative carrying the *S. fredii rkpM* ORF; GmR | This work |
| pSA570 | pMT335 derivative carrying the *S. fredii rkpLM* ORFs; GmR | This work |
| pSA60 | pMT335 derivative carrying the *fljK* ORF; GmR | This work |
| pSA107 | pMT335 derivative carrying the *fljK* ORF (codon optimised for *E. coli*); GmR | This work |
| pSA235 | pMT335 derivative carrying the *fljK* (codon optimised for *E. coli*)and *flmG* ORFs; GmR | This work |
| pSA283 | pMT335 derivative carrying the *S. fredii rkp3\_013* ORF; GmR | This work |
| pSA290 | pMT335 derivative carrying the *flmH* ORF; GmR | This work |
| pSA292 | pMT335 derivative carrying the *CCNA\_01531* ORF; GmR | This work |
| pSRK-Gm | pBBR1MCS-5 derived broad host range vector containing *lac* promoter, *lacI*q, l*acZ*α+; GmR | (Khan 2008) |
| pSA454 | pSRK-Gm derivative carrying the *fljK* ORF (codon optimised for *E. coli*); GmR | This work |
| pSA496 | pSRK-Gm derivative carrying the *C. crescentus* *flmG* ORF; GmR | This work |
| pSA236 | pSRK-Gm derivative carrying the *fljK* ORF (codon optimised for *E. coli*) and the *C. crescentus flmG* ORF; GmR | This work |
| pSRK-Km | pBBR1MCS-2 derived broad host range vector containing *lac* promoter, *lacI*q, l*acZ*α+; KanaR | (Khan 2008) |
| pSA571 | pSRK-Km derivative carrying the *C. crescentus* *flmH* ORF; KanaR | This work |
| pSA572 | pSRK-Km derivative carrying the *C. crescentus* *CCNA\_01531* ORF; KanaR | This work |
| pSA624 | pSRK-Km derivative carrying the *C. crescentus* *CCNA\_01537* ORF; KanaR | This work |
| pSA573 | pSRK-Km derivative carrying the *S. fredii* *rkp3\_013* ORF; KanaR | This work |
| pMT463 | Medium copy number plasmid for inducible expression; P*xyl*, GmR | (Thanbichler 2007) |
| pSA104 | pMT463 derivative carrying the *fljK* ORF; GmR | This work |
| pMT464 | Medium copy number plasmid for inducible expression; P*xyl*, KanaR | (Thanbichler 2007) |
| pMT464\_*fljJ* | pMT464 derivative carrying the *C. crescentus fljJ* ORF; KanaR | (Faulds-Pain 2011) |
| pMT464\_*fljK* | pMT464 derivative carrying the *C. crescentus fljK* ORF; KanaR | (Faulds-Pain 2011) |
| pMT464\_*fljL* | pMT464 derivative carrying the *C. crescentus fljL* ORF; KanaR | (Faulds-Pain 2011) |
| pMT464\_*fljM* | pMT464 derivative carrying the *C. crescentus fljM* ORF; KanaR | (Faulds-Pain 2011) |
| pMT464\_*fljN* | pMT464 derivative carrying the *C. crescentus fljN* ORF; KanaR | (Faulds-Pain 2011) |
| pMT464\_*fljO* | pMT464 derivative carrying the *C. crescentus fljO* ORF; KanaR | (Faulds-Pain 2011) |
| pUCIDT-*flm* | pIDT carrying the synthetic sequence encoding *C. crescentus flmA*, *flmB*, *flmH*, *flmD*, *neuB* and *flmC* (codon-optimized for *E. coli*); AmpR | This work |
| pET28a | T7 expression plasmid; KanaR | Novagen |
| pSA44 | pET28a derivative expressing His6-NeuB; KanaR | This work |
| pET47b | T7 expression plasmid; KanaR | Novagen |
| pSA106 | pET47b derivative expressing *C. crescentus* FljK; KanaR | This work |
| pCWR547 | pET-28a derivative expressing His6-SUMO-KidO | (Radhakrishnan 2010) |
| pSA363 | pCWR547 derivative expressing His6-SUMO-FlmG(301-500); KanaR | This work |
| pNKT25 | Low copy plasmid with T25 adenylate cyclase fragment Nter, KanR | Euromedex |
| pKT25 | Low copy plasmid with T25 adenylate cyclase fragment Cter, KanR | Euromedex |
| pUT18 | Low copy plasmid with T18 adenylate cyclase fragment Nter, AmpR | Euromedex |
| pUT18C | Low copy plasmid with T18 adenylate cyclase fragment Cter, AmpR | Euromedex |
| pNK92 | pKNT25-*flmG-GT*, KanR | This work |
| pNK93 | pKT25-*flmG-GT*, KanR | This work |
| pNK95 | pKNT25-*flmG*, KanR | This work |
| pNK96 | pKT25-*flmG*, KanR | This work |
| pNK98 | pKNT25-*flmG-TPR*, KanR | This work |
| pNK99 | pKT25-*flmG-TPR*, KanR | This work |
| pNK16 | pUT18C-*fljJ*, AmpR | This work |
| pNK144 | pUT18C-*fljK*, AmpR | This work |
| pNK330 | pUT18-*fljM*, AmpR | This work |
| pRKlac290 | *lacZ* transcriptional fusion vector, pRK290 derivative; TetR | (Gober 1992) |
| pRKlac290\_P*neuB* | pRKlac290 derivative carrying P*neuB-lacZ*; TetR | This work |
| pRKlac290\_P*flmG* | pRKlac290 derivative carrying P*flmG-lacZ*; TetR | This work |
| pRKlac290\_P*flmA* | pRKlac290 derivative carrying P*flmA-lacZ*; TetR | This work |