

**Table S1.** Bacterial strains, primers and plasmids used in this study

Strain or Plasmid	Genotype or Phenotype	Reference
<i>E. coli</i> strains		
S17-1	294 ( <i>recA thi pro hsdR-M</i> <sup>+</sup> ) Tp <sup>r</sup> Sm <sup>r</sup> [RP4-2-Tc::Mu-Km:Tn7]	[67]
DH5α	F <sup>-</sup> Φ80 <i>lacZ</i> ΔM15 Δ( <i>lacZYA-argF</i> ) U169 <i>recA1 endA1 hsdR17</i> (rK <sup>-</sup> , mK <sup>+</sup> ) <i>phoA supE44 λ<sup>-</sup> thi-1 gyrA96 relA1</i>	[68]
<i>A. vinosum</i> strains		
Rif50	Rif <sup>r</sup> , spontaneous rifampicin-resistant mutant of DSM 180 <sup>T</sup>	[54]
<i>sgpD</i> :: Km	Rif <sup>r</sup> , Km <sup>r</sup> , <i>sgpD</i> :: Km (in <i>A. vinosum</i> Rif50)	This work
Plasmids		
pBBR1MCS-2	Km <sup>r</sup> , Mob <sup>+</sup> , <i>rep</i> , <i>lacZ</i>	[69]
pBBR1MCS-5	Gm <sup>r</sup> , Mob <sup>+</sup> , <i>rep</i> , <i>lacZ</i>	[69]
pBBR1MCS2-L	Km <sup>r</sup> , XbaI–HindIII fragment of PCR-amplified <i>dsr</i> promoter and <i>dsrL</i> in XbaI–HindIII of pBBR1MCS-2	[54]
pBBR1-L-Gm	Gm <sup>r</sup> , RsrII fragment of PCR-amplified gentamycin resistance cassette in RsrII of pBBR1MCS2-L	This work
pmCherry	Amp <sup>r</sup> , mCherry	[37]
pBBR_dsr_mCherry_Gm	Gm <sup>r</sup> , NdeI-SalI fragment of PCR-amplified gene for mCherry in NdeI-SalI of pBBR1-L-Gm, <i>dsr</i> promoter	This work
pBBR_dsr_Sec2515_mCherry_Gm	Gm <sup>r</sup> , NdeI-SalI fragment of PCR-amplified gene for mCherry in NdeI-SalI of pBBR1-L-Gm, <i>dsr</i> promoter, PCR forward primer encoding <i>sgpD</i> signal sequence	This work
pBBR_dsr_sgpD_mCherry	Gm <sup>r</sup> , NdeI fragment of PCR amplified <i>sgpD</i> (including signal peptide encoding sequence) in NdeI of pBBR_dsr_mCherry_Gm	This work
pHP45ΩKm	Ap <sup>r</sup> , Km <sup>r</sup> , pHP45Ω with kanamycin cassette	[61]
pSUP301	Ap <sup>r</sup> , Km <sup>r</sup> , RP4 oriT p15A ori Mob <sup>+</sup>	[67]
pSUP301_Δ <i>sgpD</i>	Ap <sup>r</sup> , Mob <sup>+</sup> , HindIII fragment of PCR-amplified genome region around <i>sgpD</i> (Alvin_2515) with deletion of 603 bp of the <i>sgpD</i> sequence in HindIII of pSUP301	This work
pSUP301_Δ <i>sgpD</i> _ΩKm	Ap <sup>r</sup> , Km <sup>r</sup> , Mob <sup>+</sup> , ΩKm cassette from pHP45ΩKm inserted into pSUP301_Δ <i>sgpD</i> using EcoRI	This work
Primers		
Del-Alvin2515-fw1	ATGATAAAGCTTCAACCTCGATTCGCCACCAC	This work
Del-Alvin2515-rev1	TGCGGCTTTTTAGAATTCCATGTGACACACCTTGAAAAGACAG (EcoRI)	This work
Del-Alvin2515-fw2	GTGTGTCACATGGAATTCTAAAAAGCCGCATGCGGGGTC (EcoRI)	This work
Del-Alvin2515-rev2	ATGATAAAGCTTCATCAGCCGGTCGTCGT	This work
Gent-CpoI-Fw	ATGATACGGTCCGCTGTCGTGCCAGCTGCATTA (RsrII)	This work
Gent-CpoI-Rev	ATGATACGGACCGATCTCGGCTTGAACGAA (RsrII)	This work
for-mCherry-NdeI	ATAGCTCATATGGTGAGCAAGGGCGAGGA (NdeI)	This work
rev-mCherry-SalI	ATAGCTGTCGACCCGCTACTTGTACAGCTCGTC (SalI)	This work
fAlvin2515-NdeI	ATAGCTCATATGTCCAAGCTGATCCAAACC (NdeI)	This work
rAlvin2515-NdeI	ATAGCTCATATGGCGCGTTTGGGAGGAAGG (NdeI)	This work
fo-mCher-SacIIV4	ATAGCTCCGCGGCGAACTGATTCGGGTCGAGCC (SacII)	This work
re-mCher-NdeIV4	ATAGCTCATATGGCGCGTTTGGGAGGAAGGC(NdeI)	This work
for-mCher-Sig	ATAGCTCATATGTCCAAGCTGATCCAAACCGTCTCCGCCATCG CGCTCGCTGCCGCCACGACCACGGCCTTCGCCTGGATGGTGAG CAAGGGCGAGGA (NdeI)	This work
re-Prom2515-NdeI	ATAGTCCATATGGTGACACACCTTGAAAAGACAG (NdeI)	This work

---

## References

37. Shaner, N.C.; Campbell, R.E.; Steinbach, P.A.; Giepmans, B.N.; Palmer, A.E.; Tsien, R.Y. Improved monomeric red, orange and yellow fluorescent proteins derived from *Discosoma* sp. red fluorescent protein. *Nat. Biotechnol.* **2004**, *22*, 1567-1572.
54. Lübke, Y.J.; Youn, H.S.; Timkovich, R.; Dahl, C. Siro(haem)amide in *Allochromatium vinosum* and relevance of DsrL and DsrN, a homolog of cobyrinic acid *a,c* diamide synthase for sulphur oxidation. *FEMS Microbiol. Lett.* **2006**, *261*, 194-202.
61. Fellay, R.; Frey, J.; Krisch, H.M. Interposon mutagenesis of soil and water bacteria: a family of DNA fragments designed for in vitro insertional mutagenesis of Gram-negative bacteria. *Gene* **1987**, *52*, 147-154.
67. Simon, R.; Priefer, U.; Pühler, A. A broad host range mobilization system for in vivo genetic engineering: transposon mutagenesis in gram negative bacteria. *Nat. Biotechnol.* **1983**, *1*, 784-791.
68. Hanahan, D. Studies on transformation of *Escherichia coli* with plasmids. *J. Mol. Biol.* **1983**, *166*, 557-580.
69. Kovach, M.E.; Elzer, P.H.; Hill, D.S.; Robertson, G.T.; Farris, M.A.; Roop, R.M., II; Peterson, K.M. Four new derivatives of the broad-host-range cloning vector pBBR1MCS, carrying different antibiotic-resistance cassettes. *Gene* **1995**, *166*, 175-176.