

**Supplementary Table 4. Strains and plasmid list**

Strain or plasmid	Relevant genotype	Source
<b>E. coli strains</b>		
DH5-α λ pir	F' endA1 hsdR17 supE44 thi-1 recA1 gyrA96 relA1 Δ(argF-lacZYA) U169(Φ80lacDM15) λ pir	BCCM Gene corner
CC118 λ pir	Δ(ara-leu) araD ΔlacX74 galE galK phoA20 thi-1 rpsE rpoB argE(Am) recA1 λ pir	(1)
S17-1 λ pir	Tp <sup>r</sup> Sm <sup>r</sup> recA thi pro rK <sup>r</sup> mK <sup>r</sup> RP4::2-Tc::MuKm Tn7 λ pir	(2)
<b>V. cholerae strains</b>		
FY_Vc_2	Vibrio cholerae O1 El Tor A1552, Rugose variant, Rif <sup>r</sup>	(3)
FY_Vc_7044	FY_Vc_2 ΔrbmA (VC0928)	This work
FY_Vc_686	FY_Vc_2 ΔrbmC (VC0930)	(4)
FY_Vc_1367	FY_Vc_2 Δbap1 (VC1888)	(4)
FY_Vc_4329	FY_Vc_2 ΔrbmA ΔrbmC Δbap1	(5)
FY_Vc_4327	FY_Vc_2 Δvps-I Δvps-II	(6)
FY_Vc_9251	FY_Vc_2 ΔtoxR	This work
FY_Vc_17473	FY_Vc_9251 pMMB67.EH-ompU	This work
FY_Vc_13387	FY_Vc_2 ΔompU (VC0633)	This work
FY_Vc_16739	FY_Vc_2 ΔompT (VC1854)	This work
FY_Vc_13385	FY_Vc_2 ΔompA (VC2213)	This work
FY_Vc_16843	FY_Vc_2 ΔompV (VC1318)	This work
FY_Vc_13724	FY_Vc_13387 Tn7::Pnat-ompU	This work
FY_Vc_240	FY_Vc_2 Tn7-GFP	(7)
FY_Vc_16827	FY_Vc_4327 ΔompU	This work
FY_Vc_16821	FY_Vc_7044 ΔompU	This work
FY_Vc_17026	FY_Vc_686 ΔompU	This work
FY_Vc_17028	FY_Vc_1367 ΔompU	This work
FY_Vc_16823	FY_Vc_4329 ΔompU	This work
FY_Vc_8970	ΔctxAB ΔrbmA ΔrbmC bap1-3xHA	This work
FY_Vc_8966	ΔctxAB ΔrbmA Δbap1 rbmC-3xFLAG	This work
FY_Vc_9441	ΔctxAB ΔrbmC Δbap1 rbmA-Myc	This work
FY_Vc_17245	FY_Vc_13387 ΔVC2662	This work
FY_Vc_17262	FY_Vc_13387 ΔVCA0713	This work
FY_Vc_9944	FY_Vc_2 ΔdegP (VC0566)	This work
FY_Vc_6228	FY_Vc_4329 Tn7-GFP	This work
FY_Vc_6226	FY_Vc_4327 Tn7-GFP	(6)
FY_Vc_10559	ΔctxAB ΔrbmA ΔrbmC Δbap1 Δvps-I Δvps-II	This work
<b>Plasmids</b>		
pGP704-sacB28	pGP704 derivative, mob/oriT sacB, Amp <sup>r</sup>	G. Schoolnik
pFY_1277	pGP704-sacB28::ΔrbmA, Amp <sup>r</sup>	This work
pFY_5536	pGP704-sacB28::ΔompU, Amp <sup>r</sup>	This work
pFY_5542	pGP704-sacB28::ΔompT, Amp <sup>r</sup>	This work
pFY_5535	pGP704-sacB28::ΔompA, Amp <sup>r</sup>	This work

pFY_5654	pGP704-sacB28::ΔompV, Amp <sup>r</sup>	This work
pFY_4306	pGP704-sacB28::ΔtoxR, Amp <sup>r</sup>	This work
pFY_4832	pGP704-sacB28::ΔVC2662, Amp <sup>r</sup>	This work
pFY_6949	pGP704-sacB28::ΔVCA0713, Amp <sup>r</sup>	This work
pFY_295	pGP704-sacB28::ΔctxAB, Amp <sup>r</sup>	(5)
pFY_1057	pGP704-sacB28::rbmA-Myc, Amp <sup>r</sup>	(5)
pFY_1093	pGP704-sacB28::rbmC-3xFLAG, Amp <sup>r</sup>	(5)
pFY_1159	pGP704-sacB28::bap1-3xHA, Amp <sup>r</sup>	(5)
pFY_1303 (pMMB67.EH)	Expression vector harboring <i>lacI</i> and containing a Ptac promoter, Amp <sup>r</sup>	(8)
pFY_7013	pMMB67.EH-ompU, Amp <sup>r</sup>	This work
pMCM11	pGP704::mTn7-gfp, Gm <sup>r</sup> Amp <sup>r</sup>	M. Miller and G. Schoolnik
pFY_720	pGP704-Tn7, Gm <sup>r</sup> Amp <sup>r</sup>	(9)
pFY_5722	pGP704-Tn7::ompU	This work

## REFERENCES

1. Herrero M, de Lorenzo V, Timmis KN. 1990. Transposon vectors containing non-antibiotic resistance selection markers for cloning and stable chromosomal insertion of foreign genes in gram-negative bacteria. *J Bacteriol* 172:6557-67.
2. de Lorenzo V, Timmis KN. 1994. Analysis and construction of stable phenotypes in gram-negative bacteria with Tn5- and Tn10-derived minitransposons. *Methods Enzymol* 235:386-405.
3. Yildiz FH, Schoolnik GK. 1999. *Vibrio cholerae* O1 El Tor: identification of a gene cluster required for the rugose colony type, exopolysaccharide production, chlorine resistance, and biofilm formation. *Proc Natl Acad Sci U S A* 96:4028-33.
4. Fong JC, Yildiz FH. 2007. The *rbmBCDEF* gene cluster modulates development of rugose colony morphology and biofilm formation in *Vibrio cholerae*. *J Bacteriol* 189:2319-30.
5. Berk V, Fong JC, Dempsey GT, Develioglu ON, Zhuang X, Liphardt J, Yildiz FH, Chu S. 2012. Molecular architecture and assembly principles of *Vibrio cholerae* biofilms. *Science* 337:236-9.
6. Fong JCN, Syed KA, Klose KE, Yildiz FH. 2010. Role of *Vibrio* polysaccharide (vps) genes in VPS production, biofilm formation and *Vibrio cholerae* pathogenesis. *Microbiology (Reading)* 156:2757-2769.
7. Beyhan S, Yildiz FH. 2007. Smooth to rugose phase variation in *Vibrio cholerae* can be mediated by a single nucleotide change that targets c-di-GMP signalling pathway. *Mol Microbiol* 63:995-1007.
8. Furste JP, Pansegrouw W, Frank R, Blocker H, Scholz P, Bagdasarian M, Lanka E. 1986. Molecular cloning of the plasmid RP4 primase region in a multi-host-range *tacP* expression vector. *Gene* 48:119-31.
9. Lim B, Beyhan S, Meir J, Yildiz FH. 2006. Cyclic-diGMP signal transduction systems in *Vibrio cholerae*: modulation of rugosity and biofilm formation. *Mol Microbiol* 60:331-48.