Supplementary Table S4

Table S4. Bacterial strains and plasmids used in this work.

Name	Description	Resistance	Reference
Strains			
E. coli			
DH5α	*recA*, Δ*lacU169*, F80d*lac* ZDM15		Bathesda Res. Lab.
S 17-1	*E. coli* 294 RP4-2-Tc::Mu-Km::Tn7 integrated into the chromosome		(1)
R. favelukesii			
LPU83	Wild type strain	Sm	(2)
LPU83-13	Derivative of LPU83 with a Tn*5*-B10 inserted in pLPU83a	Sm Nm	(3)
LPU83-13 pLPU83aΔ0145	Derivative of LPU83-13 with deletion of gene LPU83_0145	Sm Nm	This work
LPU83-13 pLPU83aΔ0146 or LPU83-13 Δ*rcgR*	Derivative of LPU83-13 with deletion of gene LPU83_0146	Sm Nm	This work
LPU83-13 pLPU83aΔ0148 or LPU83-13 Δ*rcgA*	Derivative of LPU83-13 with deletion of gene LPU83_0148	Sm Nm	This work
LPU83-13 (pBBR1MCS-5)	Derivative of LPU83-13, carrying pBBR1MCS-5	Sm Nm Gm	This work
LPU83-13 Δ*rcgR* (pBBR1MCS-5)	Derivative of LPU83-13 Δ*rcgR*, carrying pBBR1MCS-5	Sm Nm Gm	This work
LPU83-13 Δ*rcgR* (pBBR::*rcgR*)	Derivative of LPU83-13 Δ*rcgR*, carrying pBBR::*rcgR*	Sm Nm Gm	This work
LPU83-13 Δ*rcgR* (pBBR::*rcgR*-LPU88)	Derivative of LPU83-13 Δ*rcgR*, carrying pBBR::*rcgR*-LPU88	Sm Nm Gm	This work
LPU83-13 Δ*rcgR* (pBBR::*rcgR*-Sh)	Derivative of LPU83-13 Δ*rcgR*, carrying pBBR::*rcgR*-Sh	Sm Nm Gm	This work
LPU83-13 Δ*rcgA* (pBBR1MCS-5)	Derivative of LPU83-13 Δ*rcgA*, carrying pBBR1MCS-5	Sm Nm Gm	This work
LPU83-13 Δ*rcgA* (pBBR::*rcgA*)	Derivative of LPU83-13 Δ*rcgA*, carrying pBBR::*rcgA*	Sm Nm Gm	This work
LPU83-13 Δ*rcgA* (pBBR::*rcgA*-LPU88)	Derivative of LPU83-13 Δ*rcgA*, carrying pBBR::*rcgA*-LPU88	Sm Nm Gm	This work
LPU83-13 Δ*rcgA* (pBBR::*rcgA*-Sh)	Derivative of LPU83-13 Δ*rcgA*, carrying pBBR::*rcgA*-Sh	Sm Nm Gm	This work

LPU83-13 pLPU83a::*traR*::GFP	Derivative of LPU83-13 with pG18::*traR*::GFP integrated in pLPU83a.	Sm Nm Gm	This work
LPU83-13 pLPU83aΔ0145::*traR*::GFP	Derivative of LPU83-13 pLPU83aΔ0145 with pG18::*traR*::GFP integrated in pLPU83a.	Sm Nm Gm	This work
LPU83-13 Δ*rcgR*::*traR*::GFP	Derivative of LPU83-13 Δ*rcgR* with pG18::*traR*::GFP integrated in pLPU83a.	Sm Nm Gm	This work
LPU83-13 Δ*rcgA*::*traR*::GFP	Derivative of LPU83-13 Δ*rcgA* with pG18::*traR*::GFP integrated in pLPU83a.	Sm Nm Gm	This work
S. meliloti			
20MP6	Derivative of *S. meliloti* 2011, with a GFP and a Tc^R gene	Sm Tc	(4)
20MP6 (pLPU83a)	Derivative of 20MP6, carrying pLPU83a	Sm Tc Nm	This work
20MP6 (pLPU83aΔ*rcgR*)	Derivative of 20MP6, carrying pLPU83aΔ*rcgR*	Sm Tc Nm	This work
20MP6 (pLPU83aΔ*rcgA*)	Derivative of 20MP6, carrying pLPU83aΔ*rcgA*	Sm Tc Nm	This work
LPU88	Wild type strain	Sm	(5)
LPU88 Gm	Derivative of LPU88, carrying pG18mob2::88a integrated in pLPU88a	Sm Gm	This work
LPU88 (pLPU83a)	Derivative of LPU88 Gm, carrying pLPU83a	Sm Gm Nm	This work
LPU88 (pLPU83aΔ*rcgR*)	Derivative of LPU88 Gm, carrying pLPU83aΔ*rcgR*	Sm Gm Nm	This work
LPU88 (pLPU83aΔ*rcgA*)	Derivative of LPU88 Gm, carrying pLPU83aΔ*rcgA*	Sm Gm Nm	This work
A. tumefaciens			
UBAPF2	*A. tumefaciens* plasmid free derivative	Rf	(6)
UBAPF2 (pBBR1MCS-5)	Derivative of UBAPF2, carrying pBBR1MCS-5	Rf Gm	This work
UBAPF2 (pLPU83a)	Derivative of UBAPF2, carrying pLPU83a	Rf Nm	This work
UBAPF2 (pLPU83aΔ*rcgR*)	Derivative of UBAPF2, carrying pLPU83aΔ*rcgR*	Rf Nm	This work
UBAPF2 (pLPU83aΔ*rcgA*)	Derivative of UBAPF2, carrying pLPU83aΔ*rcgA*	Rf Nm	This work
UBAPF2 (pLPU83a::*traR*::GFP)	Derivative of UBAPF2 with pLPU83a::*traR*::GFP	Rf Nm Gm	This work
UBAPF2 (pLPU83aΔ0145::*traR*::GFP)	Derivative of UBAPF2 with pLPU83aΔ0145::*traR*::GFP.	Rf Nm Gm	This work
UBAPF2 (pLPU83aΔ*rcgR*::*traR*::GFP)	Derivative of UBAPF2 with pLPU83aΔ*rcgR*::*traR*::GFP.	Rf Nm Gm	This work
UBAPF2 (pLPU83aΔ*rcgA*::*traR*::GFP)	Derivative of UBAPF2 with pLPU83aΔ*rcgA*::*traR*::GFP.	Rf Nm Gm	This work

Shinella sp.			
DD12	Wild type strain		(7)
DD12 Gm	Derivative of DD12, carrying pG18mob2::Sh integrated in pDD12c	Gm	This work
DD12 (pLPU83a)	Derivative of DD12 Gm, carrying pLPU83a	Gm Nm	This work
DD12 (pLPU83aΔ*rcgR*)	Derivative of DD12 Gm, carrying pLPU83aΔ*rcgR*	Gm Nm	This work
DD12 (pLPU83aΔ*rcgA*)	Derivative of DD12 Gm, carrying pLPU83a*rcgA*	Gm Nm	This work
Plasmids			
pK18mob	High copy number cloning vector	Km	(8)
pGem®-T easy	High copy number cloning vector	Amp	Invitrogen
pGem::145Cter	Derivative of pGem®-T easy containing a 210 bp fragment from *R. favelukesii* LPU83 amplified with primers *145-Cter-Xba / 145-Cter-Hind*	Amp	This work
pK18::145Nter	Derivative of pK18mob containing a 257 bp fragment from *R. favelukesii* LPU83 amplified with primers *145-Nter-Sal / 145-Nter-Hind*	Km	This work
pGem::Δ145	Derivative of pGem::145Cter containing a *SalI/HindIII* fragment from pK18::145Nter	Amp	This work
pK18::146Nter	Derivative of pK18mob containing a 201 bp fragment from *R. favelukesii* LPU83 amplified with primers *146-Nter-Sal / 146-Nter-Bam*	Km	This work
pK18::146Cter	Derivative of pK18mob containing a q199 bp fragment from *R. favelukesii* LPU83 amplified with primers *146-Cter-Xba / 146-Cter-Bam*	Km	This work
pK18::148Nter	Derivative of pK18mob containing a 249 bp fragment from *R. favelukesii* LPU83 amplified with primers *148-Nter-Sal / 148-Nter-Bam*	Km	This work
pK18::148Cter	Derivative of pK18mob containing a 241 bp fragment from *R. favelukesii* LPU83 amplified with	Km	This work

	primers *148-Cter-Xba / 148-Cter-Bam*		
pK18::*rcgR*	Derivative of pK18mob containing a 1079 bp fragment from *R. favelukesii* LPU83 amplified with primers *146-l-Xba / 146-r-Kpn*	Km	This work
pK18::*rcgA*	Derivative of pK18mob containing a 1871 bp fragment from *R. favelukesii* LPU83 amplified with primers *148-l-Xba / 148-r-Kpn*	Km	This work
pK18:: *rcgR*-LPU88	Derivative of pK18mob containing a 1234 bp fragment from *S. meliloti* LPU88 amplified with primers *146-Cter-88 / 146-Nter-88*	Km	This work
pK18:: *rcgA*-LPU88	Derivative of pK18mob containing a 1885 bp fragment from *S. meliloti* LPU88 amplified with primers *148-Cter-88 / 148-Nter-88*	Km	This work
pK18:: *rcgR*-Sh	Derivative of pK18mob containing a 1162 bp fragment from *Shinella* sp. DD12 amplified with primers *146-Cter-Sh / 146-Nter-Sh*	Km	This work
pK18:: *rcgA*-Sh	Derivative of pK18mob containing a 1804 bp fragment from *Shinella* sp. DD12 amplified with primers *148-Cter-Sh / 148-Nter-Sh*	Km	This work
pJQ200KS	Suicide vector in rhizobia	Gm	(9)
pJQ200::146Nter	Derivative of pJQ200KS containing a *SalI/BamHI* fragment from pK18::146N	Gm	This work
pJQ200::148Nter	Derivative of pJQ200KS containing a *SalI/BamHI* fragment from pK18::148N	Gm	This work
pJQ200::Δ145	Derivative of pJQ200KS containing a *SalI/XbaI* fragment from pK18::Δ145	Gm	This work
pJQ200::Δ146	Derivative of pJQ200::146N containing a *BamHI/XbaI* fragment from pK18::146Cter	Gm	This work
pJQ200::Δ148	Derivative of pJQ200::148N containing a *BamHI/XbaI*	Gm	This work

	fragment from pK18::148Cter		
pJQ200::Δ148Δ146	Derivative of pJQ200::148N containing a *BamHI/XbaI* fragment from pK18::146Cter	Gm	This work
pMP6	Vector containing GFP protein	Gm Tc	(4)
pG18mob2	High copy number cloning vector	Gm	(10)
pG18mob2::88a	Derivative of pG18mob2 containing a 239 bp fragment from *S. meliloti* LPU88 amplified with primers *Gm-88a-left / Gm-88a-right*	Gm	This work
pG18mob2::Sh	Derivative of pG18mob2 containing a 220 bp fragment from *Shinella* sp. DD12 amplified with primers *Gm-Sh-left / Gm-Sh-right*	Gm	This work
pG18mob2::*traR*	Derivative of pG18mob2 containing a 788 bp fragment from *R. favelukesii* LPU83 amplified with primers *traR-Nter / traR-Cter*	Gm	This work
pG18mob2::*traR*::GFP	Derivative of pG18mob2::*traR* containing an *EcoRI* fragment from pMP6 containing the GFP	Gm	This work
pBBR1MCS-5	Broad-host-range cloning vector, mobilizable	Gm	(11)
pBBR::*rcgR*	Derivative of pBBR1MCS-5 containing a *KpnI/XbaI* fragment from pK18::*rcgR*	Gm	This work
pBBR::*rcgA*	Derivative of pBBR1MCS-5 containing a *KpnI/XbaI* fragment from pK18::*rcgA*	Gm	This work
pBBR::*rcgR*-LPU88	Derivative of pBBR1MCS-5 containing a *KpnI/XbaI* fragment from pK18::*rcgR*-LPU88	Gm	This work
pBBR::*rcgA*-LPU88	Derivative of pBBR1MCS-5 containing a *KpnI/XbaI* fragment from pK18::*rcgA*-LPU88	Gm	This work
pBBR::*rcgR*-Shinella	Derivative of pBBR1MCS-5 containing a *KpnI/XbaI* fragment from pK18::*rcgR*-Sh	Gm	This work
pBBR::*rcgA*-Shinella	Derivative of pBBR1MCS-5 containing a *KpnI/XbaI*	Gm	This work

	fragment from pK18::*rcgA*-Sh		

REFERENCES

1. Simon R, Priefer U, Pühler A. 1983. A broad host range mobilization system for in vivo genetic engineering: Transposon mutagenesis in gram negative bacteria. Bio/Technology 1:784-791.
2. Del Papa MF, Balagué LJ, Sowinski SC, Wegener C, Segundo E, Abarca FM, Toro N, Niehaus K, A P, Aguilar OM, Martinez-Drets G, Lagares A. 1999. Isolation and characterization of alfalfa-nodulating rhizobia present in acidic soils of central argentina and uruguay. Appl Environ Microbiol 65:1420-7.
3. Torres Tejerizo G, Del Papa MF, Giusti MA, Draghi W, Lozano M, Lagares A, Pistorio M. 2010. Characterization of extrachromosomal replicons present in the extended host range *Rhizobium* sp. LPU83. Plasmid 64:177-85.
4. Pistorio M, Balagué LJ, Del Papa MF, Pich-Otero A, Lodeiro A, Hozbor DF, Lagares A. 2002. Construction of a *Sinorhizobium meliloti* strain carrying a stable and non-transmissible chromosomal single copy of the green fluorescent protein GFP-P64L/S65T. FEMS Microbiol Lett 214:165-70.
5. Pistorio M, Del Papa MF, Balagué LJ, Lagares A. 2003. Identification of a transmissible plasmid from an Argentine *Sinorhizobium meliloti* strain which can be mobilised by conjugative helper functions of the European strain *S. meliloti* GR4. FEMS Microbiol Lett 225:15-21.
6. Hynes MF, Simon R, Pühler A. 1985. The development of plasmid-free strains of *Agrobacterium tumefaciens* by using incompatibility with a *Rhizobium meliloti* plasmid to eliminate pAtC58. Plasmid 13:99-105.
7. Poehlein A, Freese H, Daniel R, Simeonova DD. 2016. Genome sequence of *Shinella* sp. strain DD12, isolated from homogenized guts of starved *Daphnia magna*. Stand Genomic Sci 11:14.
8. Schäfer A, Tauch A, Jäger W, Kalinowski J, Thierbach G, Pühler A. 1994. Small mobilizable multi-purpose cloning vectors derived from the *Escherichia coli* plasmids pK18 and pK19: selection of defined deletions in the chromosome of *Corynebacterium glutamicum*. Gene 145:69-73.
9. Quandt J, Hynes MF. 1993. Versatile suicide vectors which allow direct selection for gene replacement in gram-negative bacteria. Gene 127:15-21.
10. Kirchner O, Tauch A. 2003. Tools for genetic engineering in the amino acid-producing bacterium *Corynebacterium glutamicum*. Journal of Biotechnology 104:287-299.
11. Kovach ME, Elzer PH, Hill DS, Robertson GT, Farris MA, Roop RM, 2nd, Peterson KM. 1995. Four new derivatives of the broad-host-range cloning vector pBBR1MCS, carrying different antibiotic-resistance cassettes. Gene 166:175-6.