

**Table S1. Strains and primers used for mutant constructions.**

**STRAINS**

<i>Escherichia coli</i> strains	Relevant characteristics	Source
DH5 $\alpha$ .pVO155-pnpt2::GFP	Strain carrying the pVO155-pnpt2::GFP plasmid used for insertional mutagenesis	1
DH5 $\alpha$ .pNPTS129	Strain carrying the pNPTS129 plasmid used for the construction of deletion mutants	1
DH5 $\alpha$ .pSRKGm	Broad host-range expression vector derived from pBBR1	2
DH5 $\alpha$ .pHC60-pnifH::GFP	Strain used for triparental conjugation, carrying a derivative of the broad host range low copy number IncP plasmid pHC60 with a GFP gene under the control of the <i>nifH</i> promoter	R�n� Geurts laboratory, Wageningen University
HB101.pRK600	Helper strain used for triparental conjugation	common laboratory strain

<i>Sinorhizobium meliloti</i> strains	Relevant characteristics	Source
Sm1021	<i>Sinorhizobium meliloti</i> wild type strain	common laboratory strain
Sm1021. $\Delta$ bacA	Sm1021 derivative carrying a <i>bacA</i> deletion	3
Sm1021. <i>lpsB</i> ::Tn5	Sm1021 derivative carrying a Tn5 transposon insertion in the <i>lpsB</i> gene	4
Sm1021. <i>lpxXL</i> ::pJH104	Sm1021 derivative carrying a plasmid insertion in <i>lpxXL</i>	5
Sm1021. <i>rpoH1</i> ::pVO155	Sm1021 derivative carrying a pVO155-pnpt2::GFP in the <i>rpoH1</i> gene	this work
Sm1021. <i>yejA</i> ::pVO155	Sm1021 derivative carrying a pVO155-pnpt2::GFP in the <i>yejA</i> gene	this work
Sm1021. <i>yejE</i> ::pVO155	Sm1021 derivative carrying a pVO155-pnpt2::GFP in the <i>yejE</i> gene	this work
Sm1021. <i>yejF</i> ::pVO155	Sm1021 derivative carrying a pVO155-pnpt2::GFP in the <i>yejF</i> gene	this work
Sm1021. $\Delta$ yejA	Sm1021 derivative carrying a <i>yejA</i> deletion	this work
Sm1021. $\Delta$ yejE	Sm1021 derivative carrying a <i>yejE</i> deletion	this work
Sm1021. $\Delta$ yejF	Sm1021 derivative carrying a <i>yejF</i> deletion	this work
Sm1021.pSRKGm	Sm1021 derivative carrying the empty pSRKGm plasmid	this work
Sm1021.pSRK-yejABEF	Sm1021 derivative carrying the <i>yejABEF</i> genes on the pSRKGm plasmid	this work
Sm1021. $\Delta$ yejE.pSRKGm	Sm1021. $\Delta$ yejE derivative carrying the empty pSRKGm plasmid	this work
Sm1021. $\Delta$ yejE.pSRK-yejABEF	Sm1021. $\Delta$ yejE derivative carrying the <i>yejABEF</i> genes on the pSRKGm plasmid	this work
Sm1021. $\Delta$ yejF.pSRKGm	Sm1021. $\Delta$ yejF derivative carrying the empty pSRKGm plasmid	this work
Sm1021. $\Delta$ yejF.pSRK-yejABEF	Sm1021. $\Delta$ yejF derivative carrying the <i>yejABEF</i> genes on the pSRKGm plasmid	this work
Sm1021.pHC60-pnifH::GFP	Sm1021 carrying the pHC60-pnifH::GFP plasmid	this work
Sm1021. $\Delta$ bacA.pHC60-pnifH::GFP	Sm1021. $\Delta$ bacA carrying the pHC60-pnifH::GFP plasmid	this work
Sm1021. $\Delta$ yejE.pHC60-pnifH::GFP	Sm1021. $\Delta$ yejE carrying the pHC60-pnifH::GFP plasmid	this work
Sm1021. $\Delta$ yejF.pHC60-pnifH::GFP	Sm1021. $\Delta$ yejF carrying the pHC60-pnifH::GFP plasmid	this work

**PRIMERS**

Targeted gene	Primer name	Sequence	Description	
Insertion mutants	SMc02829 ( <i>yejF</i> )	2829forward	CAAATCGGTGTCGACCAACTCGATCCTGAAGCTC	Primers used to amplify a region of SMc02829 CDS, flanked with Sall & XbaI sites
		2829reverse	GTTGGCTTAGACATGGCTATCATTAC	
		2829out-f	CATCTCCTTCGACATCAAG	Primers used for verification
		2829out-r	CTCGTCGGCGATCAGGAGCTC	
	SMc02830 ( <i>yejE</i> )	2830forward	CTTCGGCCTGTCGACGTTTGCCGAGTTCATC	Primers used to amplify a region of SMc02830 CDS, flanked with Sall & XbaI sites
		2830reverse	CAGCGCTCTAGAGAAAAGGACCCGAGATG	
		2830out-f	CTGGCTTCTCCTCCTCCTTC	Primers used for verification
		2830out-r	GATGATGAGCAGGATGTAGAG	
	SMc02832 ( <i>yejA</i> )	2832forward	GCTACGTCGACGATCGGAGAACCAATAC	Primers used to amplify a region of SMc02832 CDS, flanked with Sall & XbaI sites
		2832reverse	GTGACTCTAGACTCGCTGTCTTTTC	
		2832out-f	CAATGCCGAGGAACAACC	Primers used for verification
		2832out-r	GAGAAATGTTGGCAGTTC	
SMc00646 ( <i>rpoH1</i> )	RpoH1-Sal1-forward	CGCACAGTCGACTAACGAGCCATCTTCGCCTC	Primers used to amplify a region of SMc00646 CDS, flanked with Sall & XbaI sites	
	RpoH1-Xba1-Reverse	CGAAGATCTAGAGCTCAGATCGTTCAGAACC		
	RpoH1-up	AAGCGGTATCAGGAG	Primers used for verification	
	RpoH1-down	CCTCTGCACCTTTT		

## PRIMERS (cont.)

	Targeted gene	Primer name	Sequence	Description
Deletion mutants	SMc02829 ( <i>yejF</i> )	2829fup	GCAACGGCACCATCATGGATCCGCACC	Up fragment used for deletion of <i>SMc02829</i>
		2829rup	GGAGAAACTCGGAACGCTTTCTCG	
		2829fdown	CGTTCCGAGTTTCTCCATGC	Down fragment used for deletion of <i>SMc02829</i>
		2829rdown	CACCACTCGCTCATCCAAGCTTTCAGG	
	SMc02830 ( <i>yejE</i> )	2830fup	GGACACGTGTTCCGCAACGGATCCCTGATC	Up fragment used for deletion of <i>SMc02830</i>
		2830rup	CGTCGCGCCAGACGTCCTCCG	
		2830fdown	GGACGTCTGGCGCGACGATGACAG	Down fragment used for deletion of <i>SMc02830</i>
		2830rdown	GCGAACATGCCTGAAAGCTTCGTCTG	
	SMc02832 ( <i>yejA</i> )	2832fup	GGTCGAACCGCAGGGATCCAGCGCAGCACG	Up fragment used for deletion of <i>SMc02832</i>
		2832rup	GCAAGAGCTCCGGCCGGTACCCC	
		2832fdown	CGGCCGGAGCTCTTGCCTCAGG	Down fragment used for deletion of <i>SMc02832</i>
		2832rdown	CATGATGCCGACGATCGTCAAGCTTATCAGC	
comple- mentation	<i>yejABEF</i>	yejA_Ndel_F	ATTATAATCATATGCCAAACTTCTGCAGGACCG	upstream primer for cloning of <i>yejABEF</i> in pSRK(Gm)
		yejF_XbaI_R	ATAATTACTAGACTACTGATGAACGGCGGC	downstream primer for cloning of <i>yejABEF</i> in pSRK(Gm)
		Lacl_F	ACGACAGGTTTCCCGACTGG	primer for construct verification in pSRK(Gm)
		T7_F	TAATACGACTCACTATAGGG	primer for construct verification in pSRK(Gm)

## References

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