

S3 Table. Primers used in this study

ID	Sequence 5' -> 3'	Application
AAS-3	GAATGCCCATGAATGCAACCAT	Amplification of Av- <i>nifA</i> for genotyping
AAS-55	TCAGATCTTGCGCATGTGGATGT	
2-43	AAAAGGATCCCTCATGTTTGACAGCTTATC	Amplifies the <i>tetA</i> cassette from pALMAR3 for Av- <i>nifH</i> insertion
2-44	AAAAGAATTCTTGATTGGCTCCAATTCTTG	
2-45	AAAAGGATCCGTCACCTGAACTCTCCTGCTGAGG	Amplifies 1874 pb of Av- <i>nifHD</i> (position 136301 – 138174)
2-46	AAATAAGCTTTCCACTTCGTCGATCAGTTTGGCG	
5-49	GAGTTGTTTCGCTTTTCTACGGAATCATTGGTGATTTCCGG	Amplifies 409 bp corresponding to the Av- <i>nifH</i> promoter (position 136401 – 136809)
5-50	TGTA AAAACGACGGGATCCCCGACTTACCGATACCA CC	
5-46	GGGGATCCCGTCGTTTTTACAACGTCGTG	Amplifies the <i>lacZ</i> gene (3057 bp) and from pRT22
5-464	CTAGCGGTTATTATTATTTTTTGGACACCAGACCAACT G	
7-28	CGAATTCGAGCTCGGTACCCCCATGGAAACGGTGGG GAACTG	Amplifies 906 bp upstream Av- <i>glnE</i> (position 4547284 – 4548189)
7-29	AATTATCCATACTGTGCGCGAGCGTGCC	
7-30	CGGCGACAGTATGGATAATTACGAACC	Amplifies a 631 bp fragment from pUC18T-mini-Tn7T-Tp encoding to the <i>tmp</i> resistance gene
7-31	CCGGCTGCTTTAATAACCGCTAGATAAATCTTAG	
7-32	GCGGTTATTAAAGCAGCCGGGCGTGTTG	Amplifies 752 bp downstream Av- <i>glnE</i> (position 4543778 – 45444529)
7-33	GTCGACTCTAGAGGATCCCCGCCTTCCGGATCGAGC AGC	
3-75	AAGCTTATCGATGATAAGCTG	Amplification of 2421 bp from pR34 excluding Av- <i>nifLA</i>
4-14	ATGGTGCTCGTCTATCCGAA	
4-17	GGAAGCTCGCATGAACGCCACATTCGCC	Amplification of Ps- <i>nifA</i> for constructing pMB1804
4-18	CGATAAGCTTTCAGATCTTGCGCATATGAATG	
4-19	GAGGCACCATATGGCTTTGCAACGGATACC	Amplification of Ps- <i>nifL</i> for constructing pMB1804
4-20	TGGCGTTCATGCGAGCTTCCCTGTCAG	
4-21	CGCGACCTGAAGCATGAGGTGGAG	Introducing E356K mutation into Ps- <i>nifA</i>
4-22	CGCGACCTGAAGCATGAGGTGGAG	
3-74	CAGCTTATCATCGATAAGCTTTCAGATCTGCCGCAC CTTGAT	Amplification of Ao- <i>nifA</i> for constructing pMB1806
3-74B	GACCTGGAGGGCGGTTCGATGAGCGCGCCGGTCCGA TG	
4-12	CATCGGACCGGCCGCGCTCATCGACCGCCCTCCAGG TC	Amplification of Ao- <i>nifL</i> for constructing pMB1806
4-13	TTCGGATAGACGAGGCACCATATGGGCGCTGTCGCC GACG	
2-37	ACCAACCGCGACCTCAAGCTCGAGGTCGAAAGCG	Introducing E351K mutation into Ao- <i>nifA</i>
2-38	CGCTTCGACCTCGAGCTTGAGGTCGCGGTTGGT	
8-1	TGATTACGAATTCGAGCTCGGTACCCCTCAGTCTTCG GTTTCCGCGCT	Amplification of 847 bp downstream Ps- <i>nifA</i>
8-2	GCGCAAGATCTGAACGACCCGCCCG	
8-3	TCGGGCGGGTCGTTTCAGATCTTGCG	Amplification of Ps- <i>nifLAE356K</i> (2364 bp) fragment from pMB1805
8-11b	CTCTAGAGGATCCCCACCGGGCTGCGCCAGCAA	

8-13	ACATGAGCCCGGGTCGGGC	Linearizes the pMB2006 by PCR for <i>tetA</i> insertion
8-14	CCAATCAAAGTCGGGCGGGTCG	
8-15	GCCCGACTTTGATTGGCTCCAATTCTTGGAGTG	Amplifies the <i>tetA</i> cassette from pALMAR3 for insertion into pMB2006
8-16	GACCCGGGCTCATGTTTGACAGCTTATCATCGATTAGC	
8-17	TCGAGCTCGGTACCCTCAGGCGGCCCT	Amplification of Ps- <i>rnfAB</i> (1160bp)
8-18	GAGGTGCGTTATGGAATATGCGCTGTTTCTGATCG	
8-19	CATATTCCATAAGCGACCTCACCTGCT	Amplification of the <i>A. vinelandii rnf-nifLA</i> intergenic region (444 bp)
8-20	AAAGCCATGCTGTGCCTCGTCTATCCA	
8-21	GCACAGCATGGCTTTGCAACGGATACCG	Amplification of Ps- <i>nifL</i> (1638 bp)
8-22	GACTCTAGAGGATCCCCTCAGCTGGCCGAGAAGGG	
M13F (-47)	CGCCAGGGTTTTCCAGTCACGAC	Sequencing and PCR linearization of constructs
M13R (-48)	AGCGGATAACAATTTACACAGGA	
Av-RTgyrBF	CAAGAAGCACAAAGGTGACGA	RT-qPCR <i>A. vinelandii gyrB</i>
Av-RTgyrBR	TGGTCTGCGAACTGAACTTG	
AvRTnifH-3F	CAGCCCTGGCTGAGATGGG	RT-qPCR <i>A. vinelandii nifH</i>
AvRTnifH-3R	ATGGTGTTCTGGGCCTTGA	
Av-RTnifLF	CTGCTGACCATCAACGACAT	RT-qPCR <i>A. vinelandii nifL</i>
Av-RTnifLR	ATGCCTTCCAGCAGCTCTT	
Av-RTnifAF	GCAAGTACGGCTTCGAGAAC	RT-qPCR <i>A. vinelandii nifA</i>
Av-RTnifAR	GTACGGTGCTGTTCCACTTG	
Ps-RTgyrB2F	AAACCATCCGCCGAGACCTT	RT-qPCR <i>P. stutzeri gyrB</i>
Ps-RTgyrB2R	CCCACCCCGGAGTTGAGAAA	
Ps-RTnifH1F	CCACGACCCAGAACCTCGTG	RT-qPCR <i>P. stutzeri nifH</i>
Ps-RTnifH1R	GAGTGCAGGATCAGGCGAGT	
Ps-RTnifL2F	AGGACATGCACATGACCCAGG	RT-qPCR <i>P. stutzeri nifL</i>
Ps-RTnifL2R	CACGGCTTGCTGGAACACTT	
Ps-RTnifA7F	TCCTCAAGCATGGCAACAGC	RT-qPCR <i>P. stutzeri nifA</i>
Ps-RTnifA7R	GAAGGGCAGGTCCATGTTCGTA	