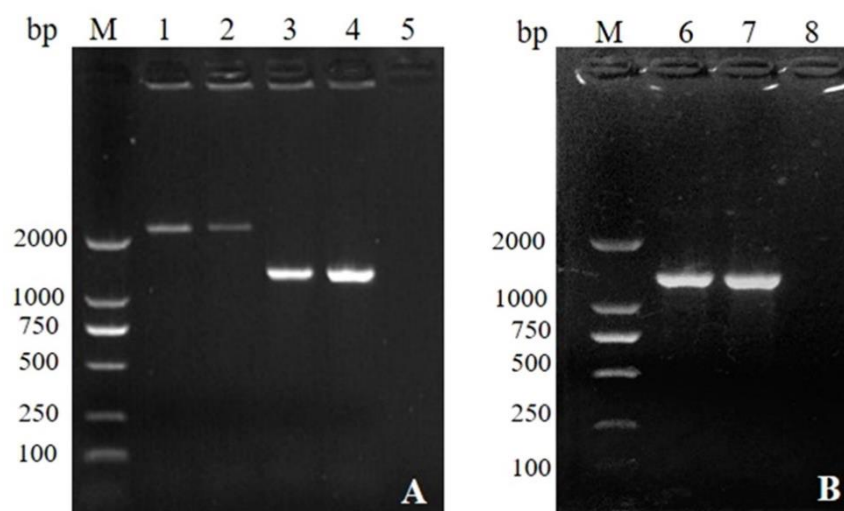


Supplementary Data

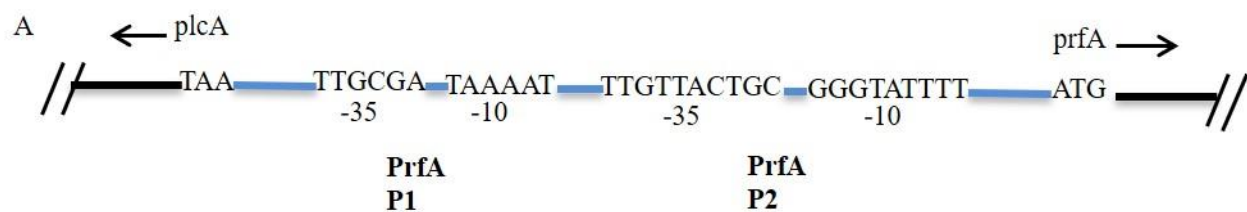


Supplementary Fig. 1: Screening and genetic stability analysis of the recombinant strain of LM- $\Delta lmo2672$. (A): Screening of recombinant LM- $\Delta lmo2672$ by PCR; (B): Analysis of genetic stability of LM- $\Delta lmo2672$.

M: Standard DNA marker (DL-2000); 1, 2: LM EGD-e; 3, 4: LM- $\Delta lmo2672$; 6, 7: PCR detection of the 10th and 20th generation of LM- $\Delta lmo2672$; 5, 8: Negative control

Lm EGD-e	ATGATTAATG AATTGTTTG TACAAATATT TCCACACAAG ATCCGGCGGC GTTGGTTGCG TTTATCACG AAAAATTGGG AATCCGATA GTATTCAAG
LM- <i>Δlmo2672</i>	ATGATTAATG AATTGTTTG TACAAATATT TCCACACAAG ATCCGGCGGC GTTGGTTGCG TTTATCACG AAAAATTGGG AATCCGATA GTATTCAAG
Lm EGD-e	GGTACGACAA TTATGACGGA GCGAAATTAG GTTTTCTGA AAAGGCTCCC GGGATTATTG TTTGGAATA TAGCAAATGG GCGAAGCAA GCGAATCTAA
LM- <i>Δlmo2672</i>	GGTACGACAA TTATGACGGA GCGAAATTAG GTTTTCTGA AAAGGCTCCC GGGATTATTG TTTGGAATA TAGCAAATGG GCGAAGCAA GCGAATCTAA
Lm EGD-e	AGTGGAGTTT GTTTCTCGT GTGATACTAA TTTGGATGAG ATGTACCGGG AACTTCAAAC AGCGGGAGTG GAGACACCAG AACCTTGTGT GGCTGAGTGG
LM- <i>Δlmo2672</i>	AGTGGAGTTT GTTTCTCGT GTGATACTAA TTTGGATGAG ATGTACCGGG AACTTCAAAC AGCGGGAGTG GAGACACCAG AACCTTGTGT GGCTGAGTGG
Lm EGD-e	GGCGGACGTG AACTGAATTT ACTTGACCCA GATGGCAATA AGATTATGAT TTTGGAGCCC GCACAATGAA TGGCTAAGCT AGAAACGTTT TATCCCATTTG
LM- <i>Δlmo2672</i>	GGCGGACGTG AACTGAATTT ACTTGACCCA GATGGCAATA AGATTATGAT TTTGGAGCCC GCACAATGA-----
Lm EGD-e	TAGTACACC AAAGCGTGGT GGCTATAAAG AATATCTACC GAGTGCAGCT CTTACAGGCT ATATTCGCTG TTTTGGGAG GCAGATGATA AGAATTTCCC
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	GGGAAATAAT TTAGTGGTTC CTGATTATG TCGGATATT ATTTTACAA TTGATAGTAA AACAGGGCTA GTGACGGATG CTATATTGT TGGCGTTAGT
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	GATGCATCGT TTGAGTCTGA CGATGAAAGT AATACCGAGC TTTTGGCGT GCGATTATAT GCGTGGTCGT TATTTTATT TGTCGAACAG GACTTGACTG
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	GTAGCATGAA TCGGGTAAAA GAGCCGAAG AGATGTTTGC TGGATTGTT TCGTTTTTTC AAGAGAGGTT TGCTGAAATG ACGACGAACA GTGAAAGAAT
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	AGCTTTATTA GAAGAATTTT TACTGCGAAA ATTAATGATG CTTGCAAGC AAGTCCATCC TGATTTTTTA AACAGTATTG ATAAGTTACT ACAAACCCC
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	AATCAATTG TGTAGGAGC TGTATCTGTT CGGCAGTTAG AACGGCTGTT TCAAAAACAC ATGGGACTTG CACCTAAACA GACAGCAAAA CTTATTCGTT
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	TCCAAAAAGT ATTACAGGCA TTATATGAGA ATCCAAGTGT GCCGGGCGCT GAACTTGCTT ATCTTCATGG GTTACGGAC CAGGCTCACT TAATTAAACA
LM- <i>Δlmo2672</i>	-----
Lm EGD-e	ATTTAAACGA TATAGTAATC ATACCCAGA AGAAATGAAG CAAATTTTTC TGCAAAATGT CGCAAATATA CAATGAATGT CTGCTTACAA ACGGATTCTT
LM- <i>Δlmo2672</i>	-----ATGT CTGCTTACAA ACGGATTCTT
Lm EGD-e	GTTGGTGTAG ATGGATCAAA TGAAGCGGAA GCCGCGCTAA GACGAGCTGT TCAATTGCC AAAATGGATG GCGCTACGCT TGGCATTGGC TTTGTCGCGG
LM- <i>Δlmo2672</i>	GTTGGTGTAG ATGGATCAAA TGAAGCGGAA GCCGCGCTAA GACGAGCTGT TCAATTGCC AAAATGGATG GCGCTACGCT TGGCATTGGC TTTGTCGCGG
Lm EGD-e	ATGTTTCGTCG GATTGCACCA TTAATCGATT ATGAACAAAC CTATGCCAAA AAAGCCAAAG CTTACGGAGA AGAATTAGTT GAGATGTACA AAAAAGAAGC
LM- <i>Δlmo2672</i>	ATGTTTCGTCG GATTGCACCA TTAATCGATT ATGAACAAAC CTATGCCAAA AAAGCCAAAG CTTACGGAGA AGAATTAGTT GAGATGTACA AAAAAGAAGC
Lm EGD-e	CGAAAAAGCT GCGTAGCGC ACGTTGAAAC TTTTGTTCAC TTTGGTACGC CAAAACTAC CTTCAATAAA AAAATAACGC GAAATTTTGA ACCCGATTTA
LM- <i>Δlmo2672</i>	CGAAAAAGCT GCGTAGCGC ACGTTGAAAC TTTTGTTCAC TTTGGTACGC CAAAACTAC CTTCAATAAA AAAATAACGC GAAATTTTGA ACCCGATTTA
Lm EGD-e	ATTTTAGTTG GAGCAACTGG ACTTTCGGCA ACAGAACAAT TTATTCTTGG TAGTGTTTCT GAATATACGG CCACCCATGC ACCTTGCGAC GTTATTATTG
LM- <i>Δlmo2672</i>	ATTTTAGTTG GAGCAACTGG ACTTTCGGCA ACAGAACAAT TTATTCTTGG TAGTGTTTCT GAATATACGG CCACCCATGC ACCTTGCGAC GTTATTATTG
Lm EGD-e	TTCACGCAAA ACCTTGGCGC AACAGAAAGA CTGTCGAAAA ACTCTAA
LM- <i>Δlmo2672</i>	TTCACGCAAA ACCTTGGCGC AACAGAAAGA CTGTCGAAAA ACTCTAA

Supplementary Fig. 2: Comparison of sequencing result of amplified products of LM-*Δlmo2672* with the corresponding sequence of Lm EGD-e



B

AGTATATCTCCGAGCAACCTCGGAACCATATACTAACTCTATTTCAATTTTAACATCTAAATAAATCC

GTTTTTAAATATGTATGCATTTCTTTTGCGAAATCAAAATTTGTATAATAAAATCCTATATGTAAAAAA

prfA P1 -35 box -10 box

CATCATTTAGCGTGACTTTCTTTCAACAGCTAACAATTGTTGTTACTGCCTAATGTTTTTAGGGTATTT

prfA P2 -35 box | -10 box

TAAAAAAGGGCGATAAAAAACGATTGGGGGATGAGAC

Supplementary Fig. 3: The upstream DNA sequence of *prfA* gene used in the EMSA.

(A) The upstream sequence of *prfA* gene; (B) The relevant features and position in DNA fragment were shown.