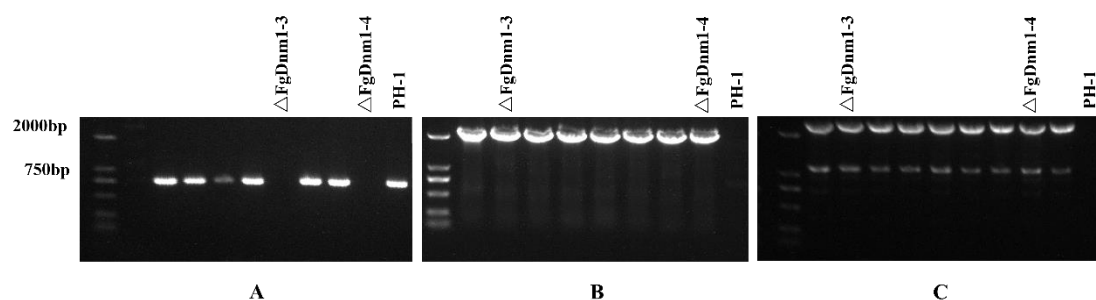
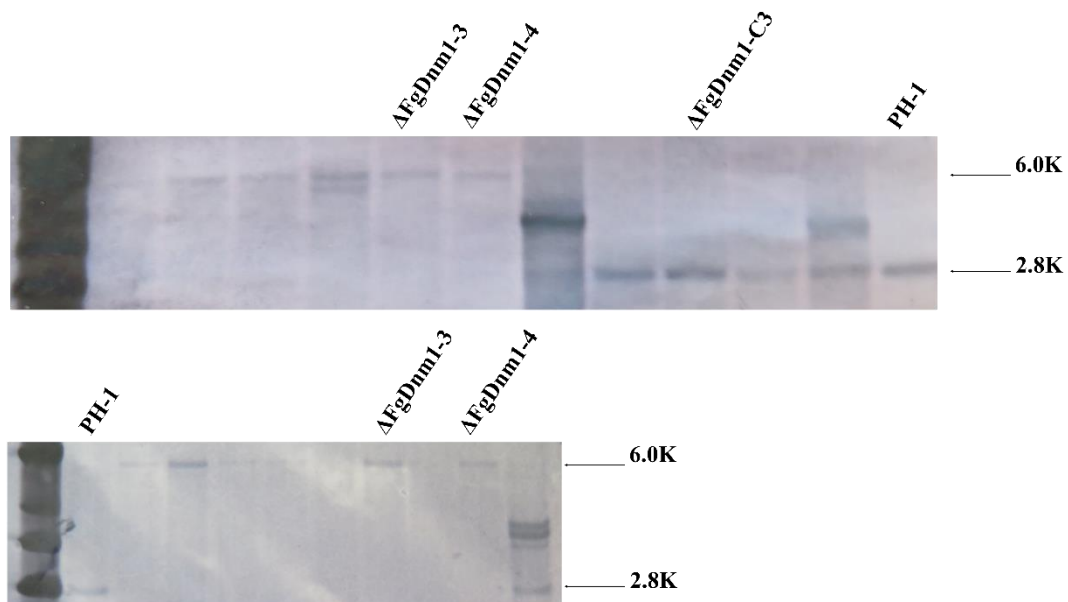


**Appendix A Gene replacement strategy for *FgDnm1* of *Fusarium graminearum*.** (A) The replacement cassette is consisted of *hph* and *hsv-tk*. (B) The locus of *FgDnm1* in the wild type strain PH-1. (C) The structure of the *FgDnm1* locus in the *FgDnm1* deletion mutant. (D) The complementary cassette generated by PCR amplification. (E) The structure of the *FgDnm1* locus in the complementary strain.

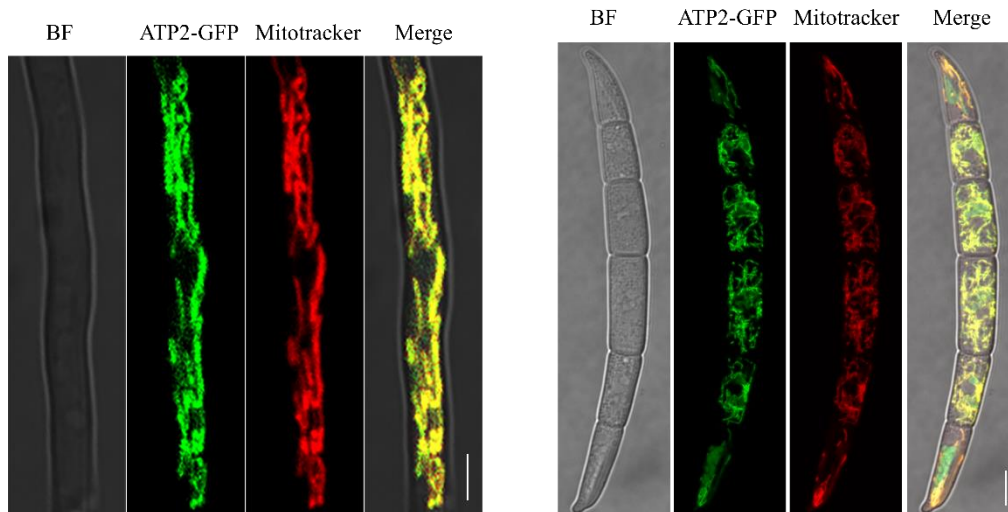


**Appendix B PCR screen of *FgDnm1* deletion mutants.** (A) PCR amplification of *FgDnm1* gene; a 750-bp fragment not detected indicates the replacement integration at the *FgDnm1* gene. (B) PCR amplification of the left flank, a 2000-bp fragment indicates replacement integration at the left junction.

(C) PCR amplification of the right flank, a 2100-bp fragment indicates replacement integration at the right junction.



**Appendix C Southern blotting analysis of FgDnm1 deletion mutant and complementary strains.** HindIII digested genomic DNA from wild type,  $\Delta FgDnm1$  and complementary strain was used for Southern blotting and probed with the 0.7-kb left flank fragment. The 6.0-kb or 2.8-kb band observed in the  $\Delta FgDnm1$  and wild type or complementary strain was diagnostic of the correct gene deletion event.



**Appendix D FgAtp2 co-localize with mitochondria.** FgAtp2 tagged with GFP was transformed into PH-1 and stained with mitochondrial fluorescent dye Mitotracker to visualize mitochondria, implying that FgAtp2 can be used for mitochondrial marker. Bar=5  $\mu$ m.

## Appendix E Growth of strains on PDA and MM medium

Strains	Mycelia growth (mm)	
	PDA	MM
PH-1	63.3 $\pm$ 0.5 a	74.2 $\pm$ 0.4 a
$\Delta$ FgDnm1-3	55.2 $\pm$ 0.8 b	65.5 $\pm$ 1.6 b
$\Delta$ FgDnm1-4	55.0 $\pm$ 0.0 b	64.5 $\pm$ 0.8 b
$\Delta$ FgDnm1-C3	61.2 $\pm$ 4.8 a	75.0 $\pm$ 1.2 a

Values in a column following the same letter are not significantly different ( $p < 0.05$ ) according to Fisher's least significant difference, there were three replicates per treatment and the experiment was repeated three times.

## Appendix F Conidiation and virulence assays

Strains	Conidiaton ( $\times 10^5$ conidia/ml)	Virulence (mm)
PH-1	7.15 $\pm$ 1.58a	18.73 $\pm$ 2.38a
$\Delta$ FgDnm1-3	6.62 $\pm$ 1.88a	17.91 $\pm$ 2.84a
$\Delta$ FgDnm1-4	6.53 $\pm$ 2.00a	15.82 $\pm$ 3.61a
$\Delta$ FgDnm1-C3	6.34 $\pm$ 1.62a	17.91 $\pm$ 3.85a

Values in a column following the same letter are not significantly different ( $P < 0.05$ ) according to Fisher's least significant difference, there were three replicates per treatment and the experiment was repeated three times.