



Supplementary material

The Small GTPase FgRab1 Plays Indispensable Roles in the Vegetative Growth, Vesicle Fusion, Autophagy and Pathogenicity of *Fusarium graminearum*

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A

Score 1077 bits(583)	Expect 0.0	Identities 587/589(99%)	Gaps 0/589(0%)	Strand Plus/Plus
Query 1	ATGAACCCGAATAAGACTATCTTCAAGCTCCTCTCATCGGAGATTCCGGTTGGAA	60		
Sbjct 45	ATGAACCCGAATAAGACTATCTTCAAGCTCCTCTCATCGGAGATTCCGGTTGGAA	104		
Query 61	AAGCTTGCTGCTCTCGGATTTGCCGACGATACTTACACTGAATCATACATCTCCACT	120		
Sbjct 105	AAGCTTGCTGCTCTCGGATTTGCCGACGATACTTACACTGAATCATACATCTCCACT	164		
Query 121	ATCGGTGTCGATTTCAAAATCCGAACTGATGCAAGACCGTCAAGCTTCAG	180		
Sbjct 165	ATCGGTGTCGATTTCAAAATQ67L GATAAAGCTGATGCCAAGACCGTCAAGCTTCAG	224		
Query 181	ATTTGGGATACCGCCGGCAAAGCGTTCCGAAACATTACCTCTCGTACTACCGCCGC	240		
Sbjct 225	ATCTGGGATACCGCCGGCAAAGCGTTCCGAAACATTACCTCTCGTACTACCGCCGC	284		

B

Score 1083 bits(586)	Expect 0.0	Identities 588/589(99%)	Gaps 0/589(0%)	Strand Plus/Plus
Query 1	ATGAACCCGAATAAGACTATCTTCAAGCTCCTCTCATCGGAGATTCCGGTTGGAA	60		
Sbjct 46	ATGAACCCGAATAAGACTATCTTCAAGCTCCTCTCATCGGAGATTCCGGTTGGAA	105		
Query 61	AAGCTTGCTGCTCTCGGATTTGCCGACGATACTTACACTGAATCATACATCTCCACT	120		
Sbjct 106	AAGCTTGCTGCTCTCGGATTTGCCGACGATACTTACACTGAATCATACATCTCCACT	165		
Query 121	ATCGGTGTCGATTTCAAAATCCGAACTGATGCAAGACCGTCAAGCTTCAG	180		
Sbjct 166	ATCGGTGTCGATTTCAAAATCCGAACTGATGCAAGACCGTCAAGCTTCAG	225		
Query 181	ATTTGGGATACCGCCGGCAAAGAGCGTTCCGAAACATTACCTCTCGTACTACCGCCGC	240		
Sbjct 226	ATTTGGGATACCGCCGGCAAAGAGCGTTCCGAAACATTACCTCTCGTACTACCGCCGC	285		
Query 241	GCCCCAGGCATTGGCTGCTACGAGGTACCGACATGGACTCTTCACAAACAGCTCAAG	300		
Sbjct 286	GCCCCAGGCATTGGCTGCTACGAGGTACCGACATGGACTCTTCACAAACAGCTCAAG	345		
Query 301	N121I AGGAGATTTGACCGATATGCCACAGAGGGTGTCAACAAAGCTGCTGGCTGGT	360		
Sbjct 346	N121I AGGAGATTTGACCGATATGCCACAGAGGGTGTCAACAAAGCTGCTGGCTGGT	405		
Query 361	AACAGAGGCCATATGTCAGACAAAGGTCGTAGACTACAGCTAGGCCAAAGGAGTTGCC	420		
Sbjct 406	AACAGAGGCCATATGTCAGACAAAGGTCGTAGACTACAGCTAGGCCAAAGGAGTTGCC	465		

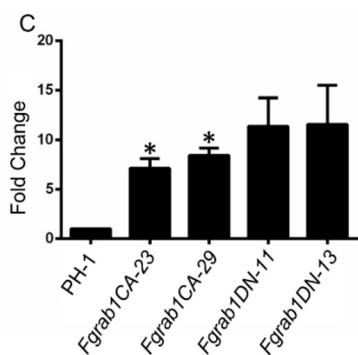


Figure S1. Construction and identification of *Fgrab1CA* and *Fgrab1DN* strains: (A, B) Sequencing results for positive transformants of *Fgrab1CA* and *Fgrab1DN* strains. (C) Relative expression levels of *FgRAB1* in *Fgrab1CA* and *Fgrab1DN* strains, *P<0.05, **P<0.01 according to t-test.

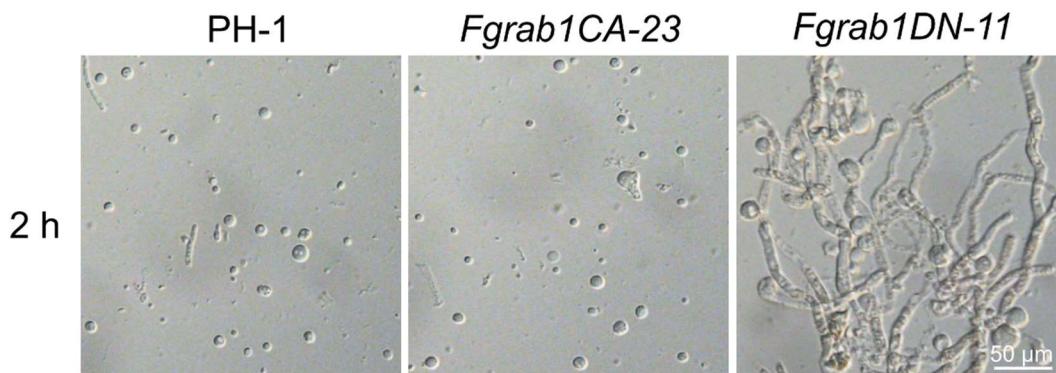


Figure S2. Light microscopic examination of the protoplasts released by the indicated strains after 2 h.

Table S1. Wild type (PH-1) and mutant strains of fungi used in this study.

Strain	Description	Reference
PH-1	Wild type	
<i>Fgrab1CA-23</i>	Constitutively active in PH-1	This study
<i>Fgrab1DN-11</i>	Dominant negative in PH-1	This study
FgGFP-Rab1/ER-mCherry	FgGFP-Rab1 and ER-mCherry are co- express in PH-1	This study
FgGFP-Rab1/TGN-mCherry	FgGFP-Rab1 and TGN-mCherry are co- express in PH-1	This study
FgGFP-Rab1/Lifeactin-RFP	FgGFP-Rab1 and Lifeactin-RFP are co- express in PH-1	This study
PH-1: ER-mCherry	PH-1 strain expressing the ER-mCherry construct	This study
<i>Fgrab1CA</i> : ER-mCherry	<i>Fgrab1CA</i> strain expressing the ER-mCherry construct	This study
<i>Fgrab1DN</i> : ER-mCherry	<i>Fgrab1DN</i> strain expressing the ER-mCherry construct	This study
PH-1: GFP-FgSnc1	PH-1 strain expressing the FgSnc1-GFP construct	This study
<i>Fgrab1CA</i> : GFP-FgSnc1	<i>Fgrab1CA</i> strain expressing the FgSnc1-GFP construct	This study
<i>Fgrab1DN</i> : GFP-FgSnc1	<i>Fgrab1DN</i> strain expressing the FgSnc1-GFP construct	This study

Table S2. Primers used in this study.

Primers	(5' → 3') Sequences	Function
FGRab1DN1F	CGGGATCCATGAACCCCGAATACGACTA	
FGRab1DN1R	TGTCTGACATATCGCTCTTGATACCGACC AGCAGCTTG	
FGRab1DN2F	CAAGCTGCTGGTCGGTATCAAGAGCGAT ATGTCAGACA	For <i>Fgrab1DN</i> construction
FGRab1DN2R	ATAAGAATGCCGCCGCTTAGCAGCAGCT GTTGTTGG	
FGRab1CA1F	AAAATGGCTCGAGGGGGATCCATGAACC CCGAATACGACTA	
FGRab1CA1R	TTCGGAAACGCTCTAGGCCGGCGGTATCC CAAATCTGAAG	For <i>Fgrab1CA</i> construction

FGRab1CA2F	TGGGATACCGCCGGCCTAGAGCGTTCCG AACAAATTACCT	
FGRab1CA2R	TGAGTGGAAATGATGCCGGCCGCTTAGCAG CAGCTGTTGTTGG	
pTE11-F2	AGCCGACTATACTGAGCACCAACGC	For <i>Fgrab1DN</i> construction
pTE11-R2	TAAAACACTGTAACCCGCAACGAAG	
Fgrab1 QF	AACCCCGAATACGACTA	qRT-PCR primer for <i>FgRAB1</i>
Fgrab1 QR	TTCAGTGTAGGTATCGTC	
β -Tubulin F	TCTGACTTCAGGAATGGTCGTTAC	Inference primers
β -Tubulin R	AGCGGTCTGGATGTTGTTGG	for qRT-PCR