

Supplementary materials

Table S1: List of primers used in this study

Primer name	5' – 3' sequences	Use
Cfem1 F	ctgggtgcaacctcactgaaatcg	Gene expression, cfem1
Cfem1 R	gactgcggtgctgaacttggtgta	
Cfem2 F	ctggctctgggaccgttgttgctc	Gene expression, cfem2
Cfem2 R	cagttgaatcggtggagagtgtgacg	
Cfem3 F	ccgactgcttcgccaagaactgta	Gene expression, cfem3
Cfem3 R	ccagaggcagatgtagaagcagatg	
Cfem4 F	cgtgtgcaagtcggctcttcc	Gene expression, cfem4
Cfem4 R	cgtcgaggtgctctgggtagtgg	
Cfem5 F	gtgccgacactgccctgaaca	Gene expression, cfem5
Cfem5 R	ctgaagccgaagatgagcctgc	
Cfem6 F	cggctcggctcccatctg	Gene expression, cfem6
Cfem6 R	gacgaggcagtggtgggagcg	
Cfem7 F	gagctgcttctctccgcctc	Gene expression, cfem7
Cfem7 R	acggctcggacttgggtgtcgtaga	
Cfem8 F	cccccatcaacaccgctcag	Gene expression, cfem8
Cfem8 R	aagactgggcagcagaggaagagg	
Cfem9 F	tccctcaactgcctgaacgacg	Gene expression, cfem9
Cfem9 R	gagacaccagcaccacaggcg	
Cfem10 F	catccctgagtgtgccctcgg	Gene expression, cfem10, mutant validation
Cfem10 R	cagtttcggcaccacacttcttga	
Cfem11 F	ccgtctacaaccagcaccctcc	Gene expression, cfem11
Cfem11 R	tgcacagatcaacgcaaactg	
Cfem12 F	attagtctggctcggctggcg	Gene expression, cfem12
Cfem12 R	ccgggtgtcgaccttagtttgaa	
Cfem13 F	gggctattcgtcatgcttcgtttg	Gene expression, cfem13
Cfem13 R	tggtattgttcggttgatggtgatgat	
Cfem14 F	cgttcgatgagattccatttctactccg	Gene expression, cfem14
Cfem14 R	tagcgattcgcataacgcgcttag	
Cfem15 F	gccctctctcggagtcctcatcg	Gene expression, cfem15
Cfem15 R	atgcttctcggccatgcttcg	
Cfem16 F	tgagccggaaaaaaaaaataagcg	Gene expression, cfem16
Cfem16 R	ctcaacagtggaaccatacggcaac	
Cfem17 F	gtcgcccgaactcctgtccg	Gene expression, cfem17
Cfem17 R	cagaagaagctcacaggcgtgca	
Cfem18 F	aatggccttgattgctatcccga	Gene expression, cfem18
Cfem18 R	ccgcgacgaatgtcacgacg	
Cfem19 F	gaaagtcgaccacagctatgtccc	Gene expression, cfem19
Cfem19 R	aaagttgaaccagtcatcccacca	
Cfem20 F	ggccataccgaacgcgtaaatac	Gene expression, cfem20
Cfem20 R	gtccaaccccaaacataacccaa	
Cfem21 F	acttacacgagggcaggcaaaagc	Gene expression, cfem21
Cfem21 R	acttacacgagggcaggcaaaagc	
Cfem22 F	agagtgtgtcccaggattgttca	Gene expression, cfem22
Cfem22 R	gaggggtgtacctgggctgtcgtt	
Cr actin F	tcggcagtggtggagaaggtgt	Gene expression, root colonization
Cr actin R	gttctggattcgggtgatggtgtc	
Tubulin F	cgccagtgtaccaatgcaagaaa	Root colonization
Tubulin R	gctcacatctcgtgggtcacaga	
Cfem10 ups F	GGGGACAAGTTTGTACAAAAAGCAGGCT TAgaccaggcgcaatacatacg	Amplify 786 bp genomic region upstream to cfem10 to construct gene deletion cassette for homologous recombination
Cfem10 ups R	GGGGACAACCTTTGTATAGAAAAGTTGG GTGctgatttggccggagtgct	
Cfem10 ds F	GGGGACAACCTTTGTATAATAAAGTTGTA ctcagtgcgttcccccttt	Amplify 556 bp genomic region downstream to cfem10 to construct gene deletion cassette for homologous recombination
Cfem10 ds R	GGGGACCACTTTGTACAAGAAAGCTG GGTTCTagaagatgcaaaggccatgc	
Cfem10 ko F	cgggttcaatgctaacatggttcag	Mutant validation
Cfem10 ko R	tgaggacgtcttctcaaggcctaca	
Cfem10 F OE	ggggacaagttgtacaaaaagcaggccta gaagttctccctctgcgt	Amplify cfem10 to construct overexpression cassette for transient expression in Tobacco
Cfem10 R OE	ggggaccacttgttacaagaaagctgggttgga tggtatgatcgcttgag	
Sequences used for gateway cloning are indicated with capital letters		

Figure S1: Heterologous expression of the CFEM10 gene in *E. coli* and protein purification

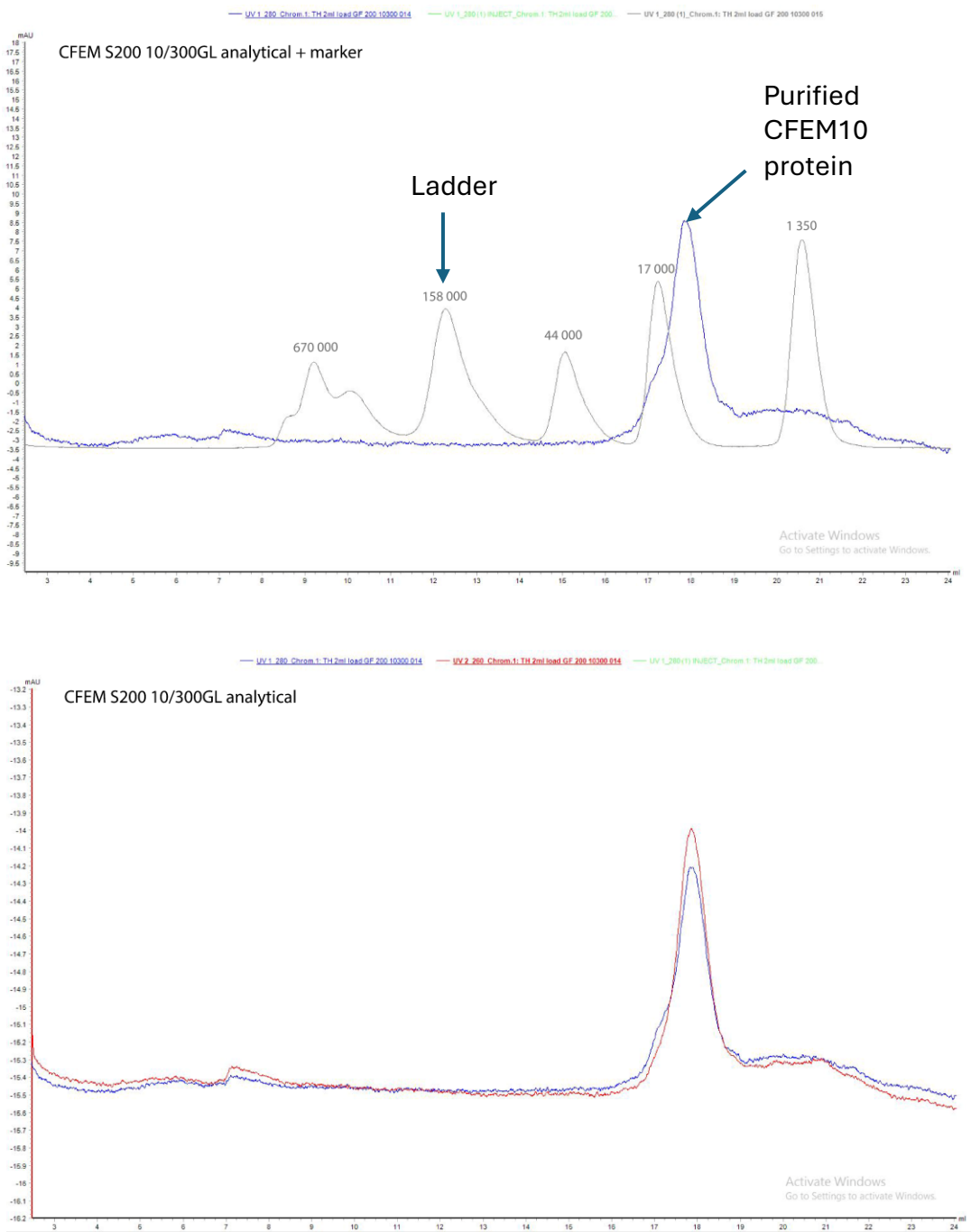


Figure S2: Phenotypic analysis of *C. rosea* IK726 WT and *cfem10* gene deletion strains. No significant difference was recorded for growth rate on PDA, growth rate under abiotic stress conditions, antagonisms against fungal hosts *B. cinerea*, *F. graminearum* or *R. solani*, root colonization and biocontrol against fusarium foot and root rot on wheat

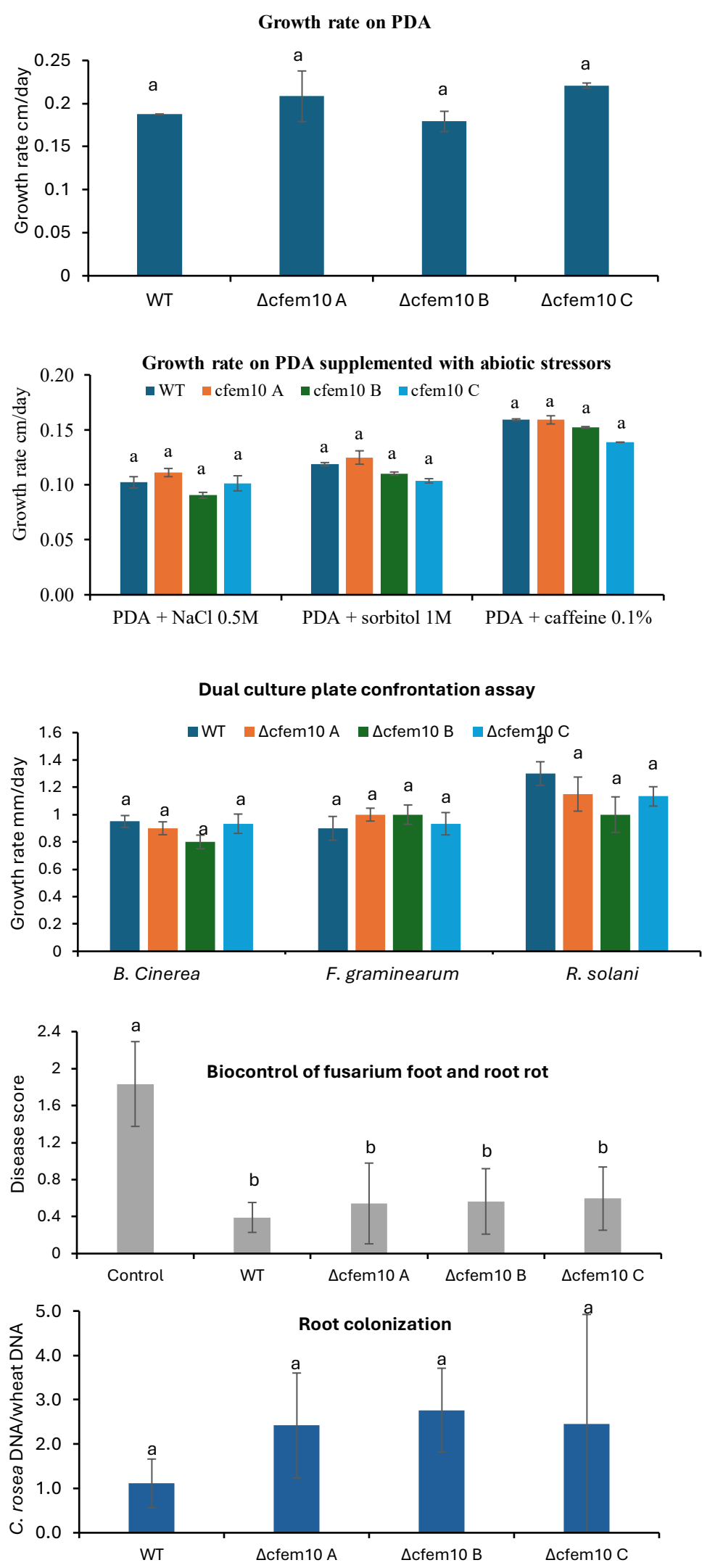


Figure S2: Tobacco leaves showing hypersensitivity response to Avr4/Cf4 complex. The gene of interest (CFEM10), the empty vector (EV-p602), and IM (induction media), which was used as a negative control, were agroinfiltrated on day 1. After 24 hours, the Avr4/Cf4 complex was agroinfiltrated into the same spots on the leaves. Six leaves were photographed after 4 days post-inoculation of Avr4/Cf9.

