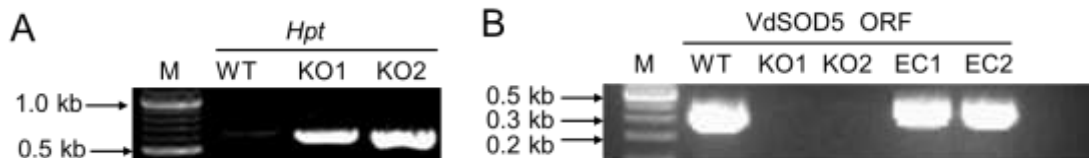


Appendix A Primers used in this study

Primer name	Primer sequence (5'-3')	
<i>VdSOD5</i> gene cloning		
VdSOD5-F	ATGCGTACTCAGTCGGTTCT	<i>VdSOD5</i> DNA and cDNA sequences cloning
VdSOD5-R	TTACAGGCCAAACACGGCAG	<i>VdSOD5</i> DNA and cDNA sequences cloning
<i>Cloning VdSOD5</i> signal peptide		
SP-VdSOD5-F	CCGGAATTCATGCGTACTCAGTCGGTT	<i>VdSOD5</i> 20 aa signal peptide cloning
SP-VdSOD5-R	AATCTCGAGAGCAGCAACGCGACCGAT	<i>VdSOD5</i> 20 aa signal peptide cloning
<i>VdSOD5</i> gene deletion		
VdSOD5-UP-F	CCTGTACCTGTACACGGCTG	To amplify upstream DNA fragment of <i>VdSOD5</i>
VdSOD5-UP-R	GAGGTCGACGGTATCGATAAGCTTTACGCTCCTTGAAGACCA	To amplify upstream DNA fragment of <i>VdSOD5</i>
VdSOD5-Down-F	GCCAAAAATGCTCCTTCAACAACGGTACCATGTGGTGA	To amplify downstream DNA fragment of <i>VdSOD5</i>
VdSOD5-Down-R	CCCTGGGTTCCGCAAGATAACCTTCTTGGCTGGGTGTCA	To amplify downstream DNA fragment of <i>VdSOD5</i>
VdSOD5-Nest-F	TCCACCGCGGTGGCGGCCGCTCTAGAGCAGCACTAGCGCAGCAG	Nest PCR primer to obtain the amplicon
VdSOD5-Nest-R	TCGACCTCAAAGTCCACGTC	Nest PCR primer to obtain the amplicon
VdSOD5-Test-F	CACCCTTCGGTTGTCTCCT	mutant detection, amplification of gene <i>VdSOD5</i>
VdSOD5-Test-R	ACCGAGACTCCCCCTTCATT	mutant detection, amplification of gene <i>VdSOD5</i>
HYG-F	TTGAAGGAGCATTTTTGGGC	To amplify hygromycin resistant cassette DNA sequence
HYG-R	TTATCTTTGCGAACCCAGGG	To amplify hygromycin resistant cassette DNA sequence
<i>VdSOD5</i> complementation		
VdSOD5-C-F	AGCCCCTGGGTGAATTCATTGCCACGCTCAGCAAGCGA	amplification of gene <i>VdSOD5</i> with flanking sequence
VdSOD5-C-R	ACGGCCAGTGGCAAGCTTCGCTCAGCCAGATTGAGCCTGG	amplification of gene <i>VdSOD5</i> with flanking sequence
<i>VdSOD5</i> gene expression		
qPCR-F	TCACCTTCTCGAACCTGCCC	measure <i>VdSOD5</i> expression during infection
qPCR-R	ATGACTCAACGAAGCCGTGT	measure <i>VdSOD5</i> expression during infection
EF-1 α -F	TGAGTTCGAGGCTGGTATCT	<i>EF-1α</i> gene as an internal standard
EF-1 α -R	CACCTGGTGGTGCCATCTT	<i>EF-1α</i> gene as an internal standard
<i>Fungal biomass detection</i>		
EF-1 α -F	TGAGTTCGAGGCTGGTATCT	<i>V.dahliae</i> <i>EF-1α</i> gene used for fungal biomass detection
EF-1 α -R	CACCTGGTGGTGCCATCTT	<i>V.dahliae</i> <i>EF-1α</i> gene used for fungal biomass detection
18S-F	CGGCTACCACATCCAAGGAA	Cotton 18S gene used for fungal biomass detection
18S-R	TGTCACTACCTCCCCGTGTCA	Cotton 18S gene used for fungal biomass detection



Appendix B Confirmation of *VdSOD5* targeted deletion mutant and complementation

strains in *V. dahliae*. A, detection of the positive targeted *VdSOD5* deletion strains by detection of

the Hpt fragment. WT, wild - type strain Vd991; KO1-KO2, two independent targeted deletion mutants of *VdSOD5*. B, detection of the positive targeted *VdSOD5* deletion strains and complementation strains (EC1-EC2) by amplifying a *VdSOD5* internal fragment.