Supplementary Materials: The Role of Sugarcane Catalase Gene *ScCAT2* in the Defense Response to Pathogen Challenge and Adversity Stress

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Table S1. Primers used in this study.

Primer	Sequence	Strategy
ScCAT2-cDNAF	ACACCTCCACTCTCCAACACT	RT-PCR
ScCAT2-cDNAR	CAATTCGCCATCACTCACAT	RT-PCR
ScCAT2-QF	GGAGTGGAAGCTGTTCGTGC	qRT-PCR
ScCAT2-QR	CGCCGTCGTAGTGGTTGTTA	qRT-PCR
GAPDH-QF	CACGGCCACTGGAAGCA	qRT-PCR
GAPDH-QR	TCCTCAGGGTTCCTGATGCC	qRT-PCR
ScCAT2-SublocF	TGCTCTAGAATGGATCCCACCAAGTTC	Subcellular localization vector construction
ScCAT2-SublocR	GGACTAGTCATGTTTGGCTTCATGTTGAG	Subcellular localization vector construction
ScCAT2-32aF	CGGAATTCATGGATCCCACCAAGTT	Prokaryotic expression vector construction
ScCAT2-32aR	CCCTCGAGTCACATGTTTGGCTTCATG	Prokaryotic expression vector construction
ScCAT2-1301F	TGCTCTAGAATGGATCCCACCAAGTTC	Overexpression vector construction
ScCAT2-1301R	GGACTAGTTCACATGTTTGGCTTCATGTT	Overexpression vector construction
NtHSR201-F	CAGCAGTCCTTTGGCGTTGTC	qRT-PCR
NtHSR201-R	GCTCAGTTTAGCCGCAGTTGTG	qRT-PCR
NtHSR203-F	TGGCTCAACGATTACGCA	qRT-PCR
NtHSR203-R	GCACGAAACCTGGATGG	qRT-PCR
NtHSR51-F	TTGGGCAGAATAGATGGGTA	qRT-PCR
NtHSR51-R	TTTGGTGAAAGTCTTGGCTC	qRT-PCR
NtNPR1-F	GGCGAGGAGTCCGTTCTTTAA	qRT-PCR
NtNPR1-R	TCAACCAGGAATGCCACAGC	qRT-PCR
NtPR-1a/c-F	AACCTTTGACCTGGGACGAC	qRT-PCR
NtPR-1a/c-R	GCACATCCAACACGAACCGA	qRT-PCR
NtPR2-F	TGATGCCCTTTTGGATTCTATG	qRT-PCR
NtPR2-R	AGTTCCTGCCCCGCTTT	qRT-PCR
NtPR3-F	CAGGAGGGTATTGCTTTGTTAGG	qRT-PCR
NtPR3-R	CGTGGGAAGATGGCTTGTTGTC	qRT-PCR
NtEFE26-F	CGGACGCTGGTGGCATAAT	qRT-PCR
NtEFE26-R	CAACAAGAGCTGGTGCTGGATA	qRT-PCR
NtAccdeaminase-F	TCTGAGGTTACTGATTTGGATTGG	qRT-PCR
NtAccdeaminase-R	TGGACATGGTGGATAGTTGCT	qRT-PCR
NtEF1-α-F	TGCTGCTGTAACAAGATGGATGC	qRT-PCR
NtEF1-α-R	GAGATGGGGACAAAGGGGATT	qRT-PCR

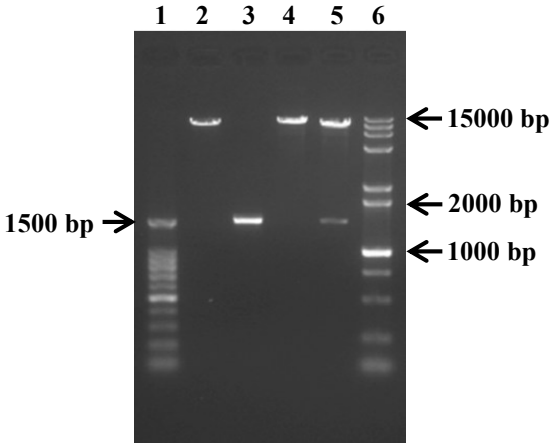


Figure S1. Enzyme digestion of the subcellular localization expression vector pCAMBIA 2300-*ScCAT2-GFP*. 1, 100 bp ladder marker; 2, *35S::GFP*/*Xba*I; 3, *ScCAT2* ORF PCR product; 4, *35S::ScCAT2::GFP*/*Xba*I; 5, *35S::ScCAT2::GFP*/*Xba*I + *Spe*I; 6, 15000 + 2000 bp DNA marker.

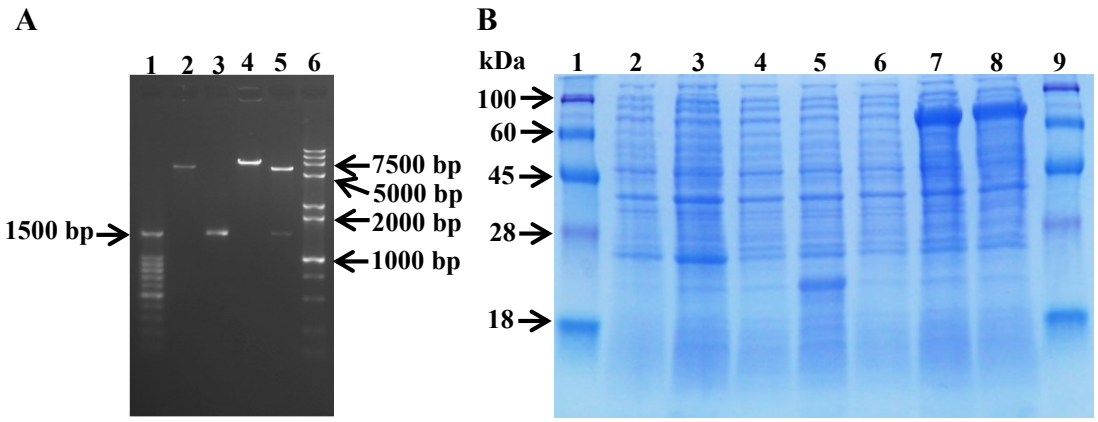


Figure S2. Enzyme digestion of prokaryotic expression vector pET-32a-*ScCAT2* (A) and corresponding protein expression in *Escherichia coli* Rosetta strain cells (B). (A) 1, 100 bp ladder marker; 2, pET-32a/*Eco*RI; 3, *ScCAT2* ORF PCR product; 4, pET-32a-*ScCAT2*/*Eco*RI; 5, pET-32a-*ScCAT2*/*Eco*RI + *Xho*I; 6, 15000 + 2000 bp DNA marker. (B) 1, Protein marker; 2, Rosetta strain cells without induction; 3, Rosetta strain cells induction for 2 h; 4, Rosetta + pET-32a strains without induction; 5, Rosetta + pET-32a strains induction for 2 h; 6, Rosetta + pET-32a-*ScCAT2* strains without induction; 7 and 8, Rosetta + pET-32a-*ScCAT2* strains induction for 1 h and 2 h, respectively.

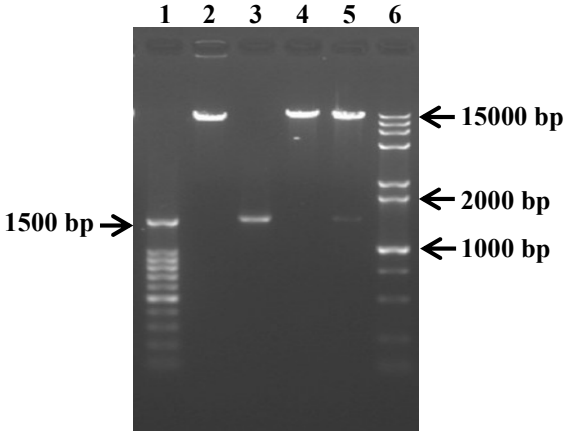


Figure S3. Enzyme digestion of the transient overexpression vector pCAMBIA 1301-*ScCAT2*. 1, 100 bp ladder marker; 2, pCAMBIA 1301/*Xba*I; 3, *ScCAT2* ORF PCR product; 4, pCAMBIA 1301-*ScCAT2*/*Xba*I; 5, pCAMBIA 1301-*ScCAT2*/*Xba*I + *Spe*I; 6, 15000 + 2000 bp DNA marker.