

Supplementary Table S1-S4 Primers used in this study.

Table S1 Primers used for identification of *ats40.4* mutants. LP, forward primer; RP, reverse primer.

Primer	Sequence	Mutant
<i>ats40.4-1LP</i>	5'-TAAAACTCGGAAAGGATGCG C-3'	GABI_561G08
<i>ats40.4-1RP</i>	5'-AAACGAAATTCAAGTTTTGAGC-3'	
<i>ats40.4-2LP</i>	5'-CGTCAACTTCTTCCTCATTGCG-3'	GABI_863C05
<i>ats40.4-2RP</i>	5'-CATTCGTCTAGCTCGAAATCG -3'	
LBGABI	5'- ATATTGACCATCATACTCATTGC-3'	For GABI mutants

Table S2 Lists of primers used for vector construction and identification of transgenic lines. F, forward primer; R, reverse primer.

Primer	Sequence	Amplicon Size and Construct
<i>AtS40.4F_</i> <i>Xba I</i>	5'-TCTAGATTCTTCTTCTGAAATGCGC-3'	506 bp including the <i>AtS40.4</i> CDS (489 bp) and 17 bp UTR;
<i>AtS40.4R_</i> <i>Kpn I</i>	5'-GGTACCTAAATTAATCTTCGATCCCTC-3'	35S:: <i>AtS40.4</i>
<i>AtS40.4PF</i>	5'-GTTCAACCAAACTCTTACCTTCA-3'	1403 bp promoter, 489 bp CDS, and 3
<i>AtS40.4R</i>	5'-TAAATAATCTTCGATCCCTC-3'	bp 3' UTR of <i>AtS40.4</i> ; <i>proAtS40.4::S40.4-GFP</i>
<i>AtS40.4PF</i>	5'-GTTCAACCAAACTCTTACCTTCA-3'	1403 bp promoter of <i>AtS40.4</i> ;
<i>AtS40.4PR</i>	5'-GGCGGTGACGTGTTGGT-3'	<i>proS40.4::GUS</i>
35SF	5'-GAAGGTGGCTCCTACAAATGCCA -3'	Together with <i>AtS40.4R_KpnI</i> for identification of 35S:: <i>AtS40.4</i> transgenic lines
GUSR	5'-CACAGTTCATAGAGATAACCTTCACCCG - 3'	Together with <i>AtS40.4PF</i> for identification of <i>proS40.4::GUS</i> transgenic plants
GFPR	5'-CACCTTCACCCTCTCCACTG -3'	Together with <i>AtS40.4PF</i> for identification of <i>proAtS40.4::S40.4-</i> <i>GFP</i> transgenic lines

The boxes in the primer sequences indicate the star and terminal codons of *AtS40.4* CDS. The underlines denote the nucleotide sequence for exonucleases *Xba I* and *Kpn I*. The underline and box indicate the mutated terminal codons of *AtS40.4* CDS.

Table S3 Primers used for RT-PCR analysis for *AtS40.4* expression level. F, forward primer; R, reverse primer.

Primer	Sequence	Gene
<i>AtS40.4RTF</i>	5'- <u>ATG</u> GCGACGAGCAAGTGCTA-3'	<i>AtS40.4</i>
<i>AtS40.4RTR</i>	5'-ATCTTCGATCCCTCTAATTTTAAAA-3'	(486bp)
<i>TUBULIN2F</i>	5'-GGTATCCAGGTCGAAATGC-3'	Internal control gene
<i>TUBULIN2R</i>	5'-TCCCGTAGTCAACAGAAAGT-3'	<i>TUBULIN2</i>

The boxes in the primer sequences indicate the star codons of *AtS40.4* CDS. The PT-PCR product includes the sequences of *AtS40.4* CDS from star codons to the nucleotide sequence before terminal codons TAA of *AtS40.4* CDS.

Table S4 Primers used for qRT-PCR analysis. F, forward primer; R, reverse primer.

Primer	Sequence	Gene
<i>AtS40.4qRTF</i>	5'-GCCACCGTTTCTTACCAC-3'	<i>AtS40.4</i>
<i>AtS40.4qRTR</i>	5'-CGGATGTGATTGTAAGGTCATAAAG-3'	(132 bp)
<i>ABI1F</i>	5'-CCATGTCGAGATCCATTGGC-3'	<i>ABI1</i>
<i>ABI1R</i>	5'-CAGTTCAAGGGTTTGCTCTTGAG-3'	
<i>ABI2F</i>	5'-ATGGCGGTTCTCAGGTAGCGA-3'	<i>ABI2</i>
<i>ABI2R</i>	5'-AACCACCGAGGTAGACCCAACAG-3'	
<i>ABI3F</i>	5'-ACGTGAGCAGGTGGTACCAG-3'	<i>ABI3</i>
<i>ABI3R</i>	5'-GGCAAGTGTGTCTCAGCTTC-3'	
<i>ABI4F</i>	5'-ATGGACCCCTTAGCTTCCCAAC-3'	<i>ABI4</i>
<i>ABI4R</i>	5'-CTTTGCGTTTGCGTTGAGCG-3'	
<i>ABI5F</i>	5'-TCGACAAGGCTCTTGACAC-3'	<i>ABI5</i>
<i>ABI5R</i>	5'-ATTACCGCTACCACCACCTC-3'	
<i>RD29AF</i>	5'-GCCGACGGGATTTGACG-3'	<i>RD29A</i>
<i>RD29AR</i>	5'-GCCGGAAATTTATCCTCTTCTGA-3'	
<i>SnRK2.6F</i>	5'-TCCGGTAATTTGGAGTTGC-3'	

SnRK2.6R

5'-CCACCATTAATACCACGTTCC-3'

SnRK2.6R

GAPDHF

5'-TGGTTGATCTCGTTGTGCAGGTCTC-3'

GAPDHR

GAPDHR

5'-GTCAGCCAAGTCAACAACCTCTCTG-3'
