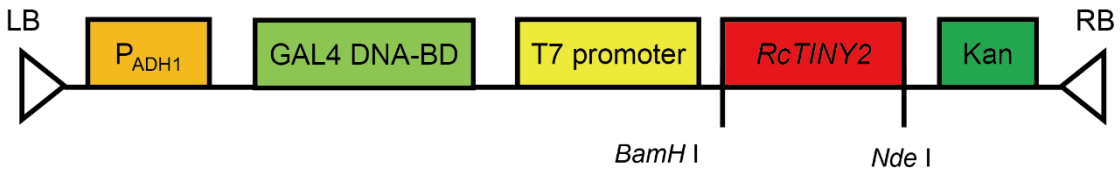
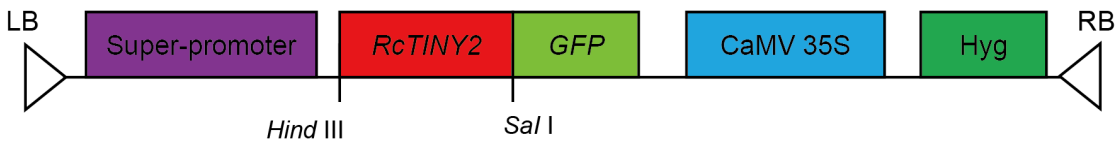
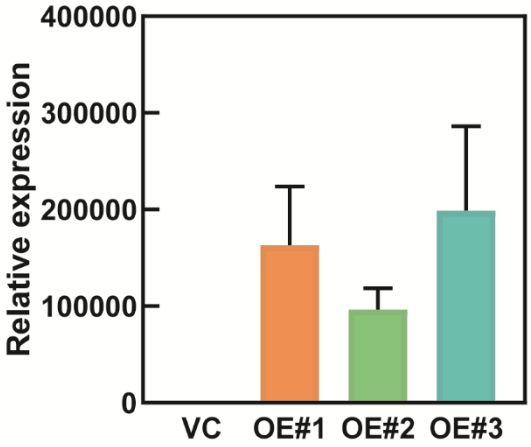


Supplementary Figure S1. Schematic representation of constructs used in yeast transactivation system.



Supplementary Figure S2. Schematic representation of constructs used in overexpression in Arabidopsis



Supplementary Figure S3. RT-qPCR was used to detect the overexpression efficiency of RcTINY2 transgenic lines

Table S1 Primer sequence used in this study

qRT-PCR primers	
RcTINY2q-F	TTCAGAAACTGATAGCAGCTCATCC
RcTINY2q-R	CGGATTTCAGAGACCCATTTGC
RcUBI2-F	GCCCTGGTGCGTTCCCAACTG
RcUBI2-R	CCTGCGTGTCTGTCCGCATTG
RcABF2-F	GCCTCAACTCGGTGAGTGAA□
RcABF2-R	ACATCAGGACCCGAAAACCC□
RcATAF1-F	GACGTGGATCGAACGCCTC
RcATAF1-R	CATCAGATTCTCCGGCTTCACG
RcRD22-F	ATGGTTTTACGGTTTTACCAAAGA
RcRD22-R	CGGCCACTTACACTATCCTTTC
RcDREB1-F	CTCTCAGCTAAGAAAACCAAACCAG
RcDREB1-R	TTAAAAGCAAGCTGGACACCTGT
RcNCED1-F	ATGTCCGAAGACGACTTGCC
RcNCED1-R	TGGGCGATCATGGTGGAC
RcPR4-F	GTATATTAATCAGTTATCAGAAAATGGC
RcPR4-R	ACGTTCGTAGCACTTTGCG
RcCIPK6-F	GCAGAGAGATCAACAGAGCACT
RcCIPK6-R	TCATCTCTCTGCATTCCCTAAA
RcMKK3-F	AGTGATACTAAAATATGCTCGTAAGAC
RcMKK3-R	GTCGAAGGTGACCAAATGAC
RcMKK9-F	AATTTAATCCCAACCTCCCCCTA
RcMKK9-R	GGCAAGGGGAGGCTGAGG
***RcTINY2* overexpression clone primers**	
RcTINY2-F	ATGAGTAGTACTACTGAAACTCAG
RcTINY2-R	ATAATCCCATAACAAACCCTCAAAG
***RcTINY2* overexpression vector primers**	
RcTINY2T-F	GCTCTAGAATGAGTAGTACTACTGAAACTCAG
RcTINY2T-R	CGGAATTCATAATCCCATAACAAACCCTCAAAG
RcTINY2 silencing clone primers	
RcTINY2-V-F	AAGGCTGCCCAAATGCAC
RcTINY2-V-R	TTAATAATCCCATAACAAACCCTCA
RcTINY2 silencing vector primer	
RcTINY2T-V-F	cctccatggggatccggtaccAAGGCTGCCCAAATGCACC
RcTINY2T-V-R	ggcctcgagacgcgtgagctcTTAATAATCCCATAACAAACCCTCAA

Table S2 Cis-regulatory element prediction of RcTINY2

Name	position		Description
MYB	105	111	cis-acting element involved in the dehydration and abscisic acid responsiveness
MYB	292	298	cis-acting element involved in the dehydration and abscisic acid responsiveness
MYB	433	439	cis-acting element involved in the dehydration and abscisic acid responsiveness
STRE	140	145	stress-responsive element
STRE	231	236	stress-responsive element
STRE	302	307	stress-responsive element
STRE	488	493	stress-responsive element
STRE	1650	1655	stress-responsive element
STRE	1747	1752	stress-responsive element
MYC	1	7	cis-acting element involved in the dehydration and abscisic acid responsiveness
MYC	355	361	cis-acting element involved in the dehydration and abscisic acid responsiveness
MYC	542	548	cis-acting element involved in the dehydration and abscisic acid responsiveness
MYC	741	747	cis-acting element involved in the dehydration and abscisic acid responsiveness
ARE	41	47	cis-acting regulatory element essential for the anaerobic induction
ARE	1890	1896	cis-acting regulatory element essential for the anaerobic induction
ABRE	1425	1432	cis-acting element involved in the abscisic acid responsiveness

Table S3 ABA and stress-related genes information

Gene name	ID	Description	References
RcABF2	RcHm_v2.0_Chr6g0244361	ARM REPEAT PROTEIN INTERACTING WITH ABF2	Raymond et al., 2018
RcATAF1	RcHm_v2.0_Chr6g0296281	NAC domain-containing protein	Geng et al., 2022
RcRD22	RcHm_v2.0_Chr1g0356161	BURP domain protein RD22	Fu et al., 2021
RcDREB1	RcHm_v2.0_Chr7g0199301	Dehydration-responsive element-binding protein 1	Wang et al., 2009
RcNCED1	RcHm_v2.0_Chr5g0027901	9-cis-epoxycarotenoid dioxygenase NCED1	Raymond et al., 2018
RcPR4	RcHm_v2.0_Chr3g0450761	Pathogenesis-related protein PR-4B	Raymond et al., 2018
RcCIPK6	RcHm_v2.0_Chr2g0085831	CBL-interacting serine/threonine-protein kinase 6	Raymond et al., 2018
RcMKK3	RcHm_v2.0_Chr2g0131721	Mitogen-activated protein kinase kinase 3	Raymond et al., 2018
RcMKK9	RcHm_v2.0_Chr7g0197511	Mitogen-activated protein kinase kinase 9	Raymond et al., 2018

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