Supplemental Data

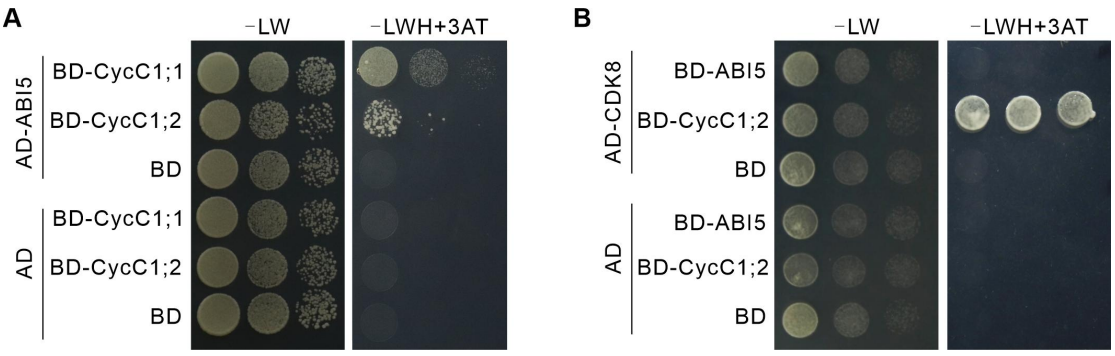

Figure S1. The interaction of CycC1;2 with ABI5 and CDK8 with ABI5 in yeast cells.

(A) Y2H experiment showing the interaction between ABI5 and CycC1;1 or CycC1;2 under double dropout medium (lacking Trp and Leu) and triple dropout medium (lacking Trp, Leu, His) plus 3 mM 3AT.

(B) Y2H experiment showing the interaction between CDK8 and ABI5 or CycC1;1 under double dropout medium (lacking Trp and Leu) and triple dropout medium (lacking Trp, Leu, His) plus 3 mM 3AT.

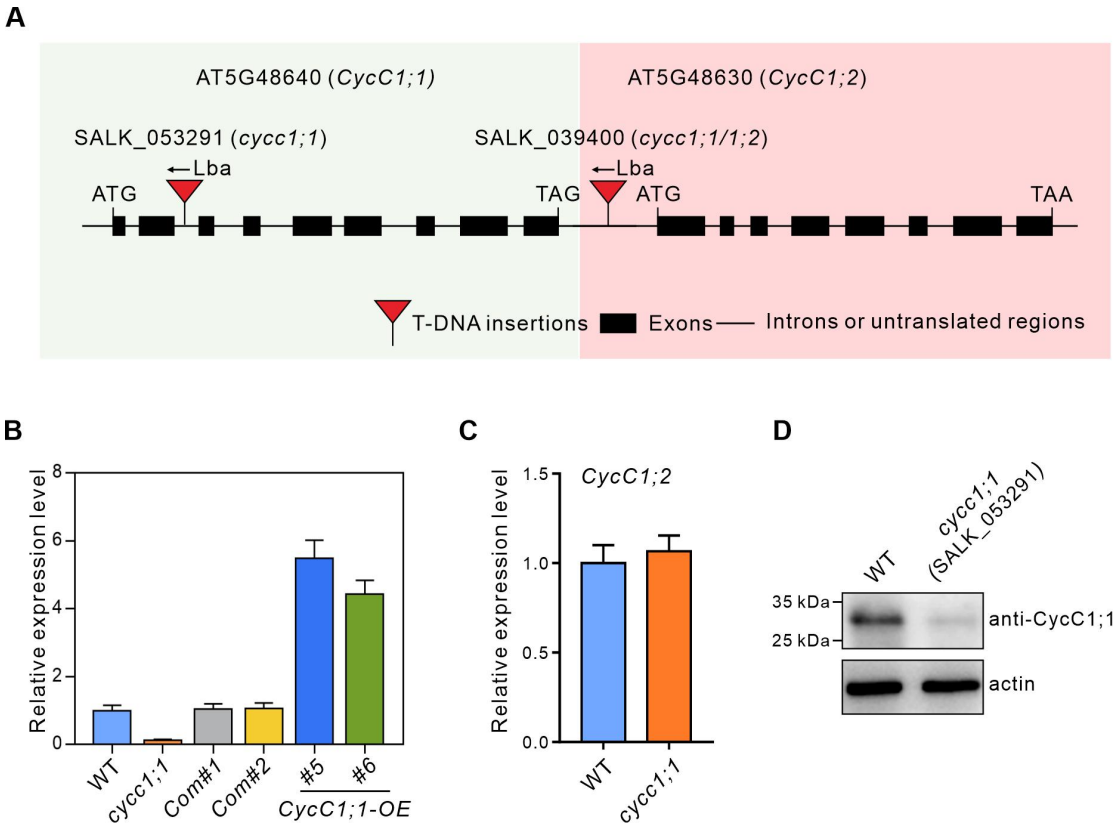

Figure S2. CycC1;1 suppresses abscisic acid (ABA)-inhibited seed germination through ABI5.

(A) Schematic diagram showing the genomic DNA information of both *CycC1;1* and *CycC1;1*, and the T-DNA positions in *CycC1;1* and *CycC1;1*.

(B) The expression of *CycC1;1* in 7-d-old WT, *cycc1;1*, complementary lines and *CycC1;1-OE* lines assayed by RT-qPCR.

(C) The expression of *CycC1;2* in the wild-type and *cycc1;1* mutant.

(D) Immunoblot analysis reveals the specificity of anti-CycC1;1 antibody. Total proteins were extracted from 7-d-old wild-type and *cycc1;1* mutant seedlings, and then separated on SDS-PAGE gel. The anti-CycC1;1 and anti-actin antibodies were applied to examine the CycC1;1 and actin proteins, respectively.

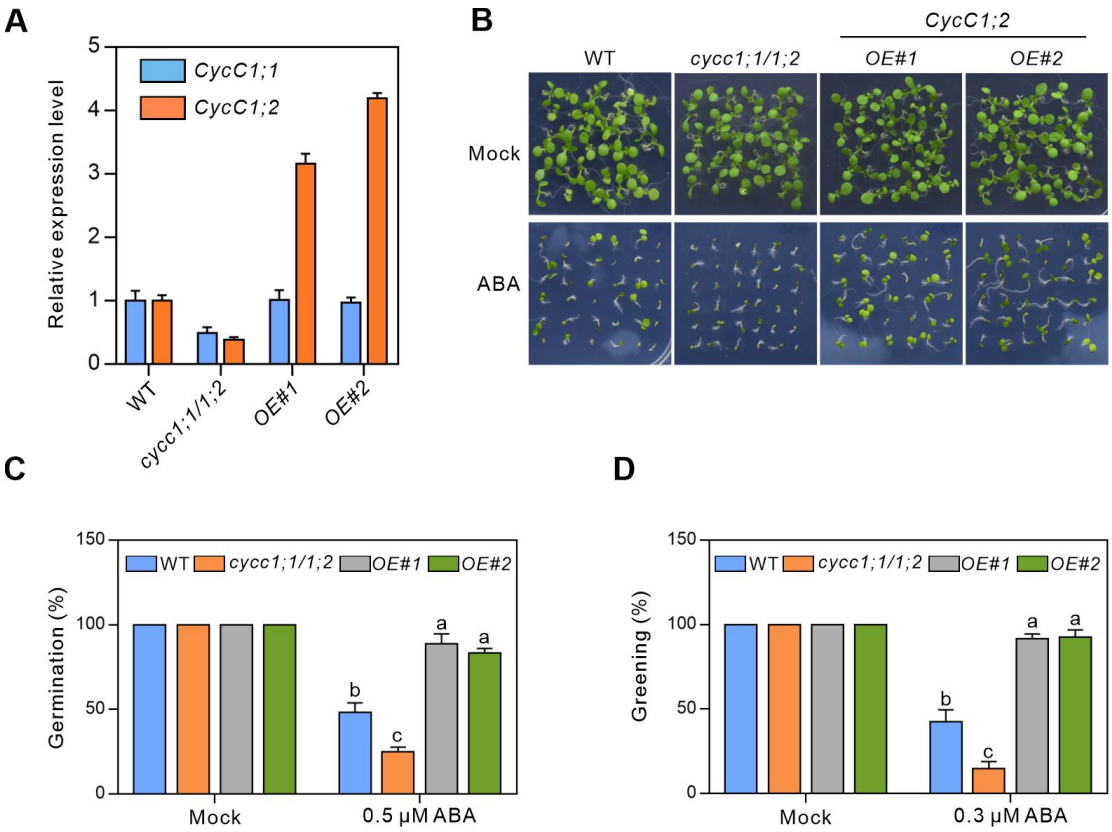

Figure S3. Analysis of the abscisic acid (ABA) sensitivity of the *cycc1;1/1;2* mutant and *CycC1;2*-overexpression lines.

(A) The expression of *CycC1;1* and *CycC1;2* in 7-d-old various genotypes assayed by RT-qPCR.

(B) Seedlings of 7-d-old various genotypes germinated on MS medium supplemented with or without 0.3 μM ABA.

(C) Germination percentages of the WT, *cycc1;1/1;2* and *CycC1;2-OE* lines in response to ABA. Seed germination on MS medium without or with 0.5 μM ABA was recorded after 3 d of stratification.

(D) Percentages of greening cotyledon of the WT, *cycc1;1/1;2* and *CycC1;2-OE* lines. Cotyledon greening was recorded 7 d after stratification on MS medium supplemented without or with 0.3 μM ABA. Data indicate mean ± SD (n = 3). Bars with different letters indicate significant differences at $p < 0.05$, revealed using ANOVA analysis.

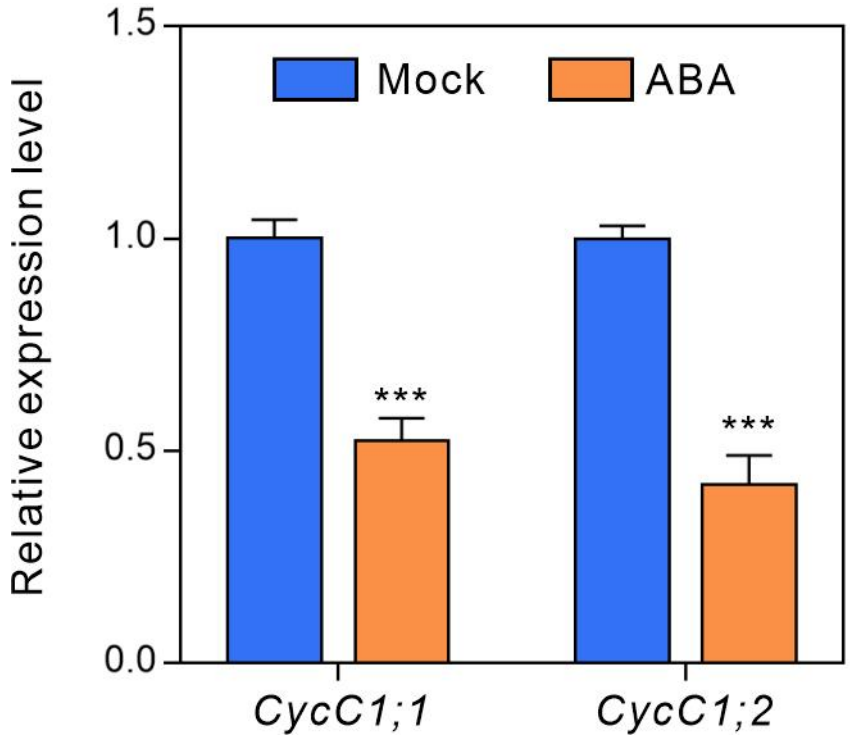

Figure S4. Abscisic acid (ABA) represses the expression of *CycC1;1* and *CycC1;2*.

2-d-old wild-type seeds were treated with MS medium or MS medium containing 10 μM ABA for 24 h. Error bars indicate mean ± SD (n = 3). Asterisks indicate significant differences using a Student's *t*-test (***$p < 0.001$).

Supplemental Table S1. List of the primers used in this study.

List of the primers used in this study.

Primer name	Sequence (5' to 3')
Primers used for molecular cloning	
pET28a-CycC1;1-F	AGCAAATGGGTCGCGGAATGTTCCTGATTGATTCGTTTTG
pET28a-CycC1;1-R	CGGAGCTCGAATTCGGATATGGGTTTGTAGCAAGTTTGTTG
pEGAD-CycC1;1-F	CGAGAAGCTTGGATCCATGTTCCTGATTGATTCGTTTTG
pEGAD-CycC1;1-R	TATCTAGATCCGGTGGATATGGGTTTGTAGCAAGTTTGTTG
1300-CycC1;2-F	CGGGGATCCTCTAGAGTCATGTTCCTGATTGATTCGTTT
1300-CycC1;2-F	GCCCTTGCTCACCATGTCTGGGTTTGTAGCAAGTTTG
pSPYNE-ABI5-F	GGCGCGCCACTAGTGGATCCATGGTAACTAGAGAAACGAAG
pSPYNE-ABI5-R	ACAGTACTATCGATGGATCCGAGTGGACAACTCGGGTTC
pSPYCE-CycC1;1-F	GGCGCGCCACTAGTGGATCCATGTTCCTGATTGATTCGTTTTG
pSPYCE-CycC1;1-R	ACAGTACTATCGATGGATCCTATGGGTTTGTAGCAAGTTTGT
pSPYCE-CycC1;2-F	GGCGCGCCACTAGTGGATCCATGTTCCTGATTGATTCGTTT
pSPYCE-CycC1;2-R	ACAGTACTATCGATGGATCCTTATGGGTTTGTAGCAAGTTTG
JW771-CycC1;1-F	GACGAGCTCGGTACCCGGATGTTCCTGATTGATTCGTTTTG
JW771-CycC1;1-F	CGCGTACGAGATCTGGTCGGGTTTGTAGCAAGTTTGTTG
JW771-CycC1;2-F	GACGAGCTCGGTACCCGGATGTTCCTGATTGATTCGTTT
JW771-CycC1;2-F	CGCGTACGAGATCTGGTCTGGGTTTGTAGCAAGTTTG
JW772-ABI5-F	CGGGGCGGTACCCGGATGGTAACTAGAGAAACGAAG
JW772-ABI5-F	AAAGCTCTGCAGGTCTTAGAGTGGACAACTCGGGTTC
pGEX4T-ABI5-FL-F	ATCCCCGGAATTCCCGATGGTAACTAGAGAAACGAAG
pGEX4T-ABI5-FL-R	CGCTCGAGTCGACCCGGTTAGAGTGGACAACTCGGGTTC
pGEX4T-ABI5-371-R	CGCTCGAGTCGACCCGGTTATCTAGCAGCAGACTCGCGGTTC
pGEX4T-ABI5-221-F	ATCCCCGGAATTCCCGCCCACTAATCCTAAACCTAATC
pGEX4T-ABI5-122-R	CGCTCGAGTCGACCCGGAGAACCACCACTAAAGACACC
pGEX4T-ABI5-123-F	ATCCCCGGAATTCCCGAGAGGCAACGAAGATGCTAAC
ABI5-pro-F	ATGACCATGATTACGAATCAGAACAAAATTAGGTGTATT
ABI5-pro-R	GCTGCAGGTCGACGGAAACAACTGCATCATATACACAACAAT
ABI5-gDNA-F	CGACCTGCAGCCAAGCTTATGGTAACTAGAGAAACGAAGTTG
ABI5-Ter-R	ACGGCCAGTGCCAAGCTTCTCGAGAAGAGTGTGTTCCAC
0800-ABI5pro-F	TCCTGCAGCCCGGGGGATCAGAACAAAATTAGGTGTATT
0800-ABI5pro-R	CGCTCTAGAACTAGTGGAACAACTGCATCATATACACAACAA
Primers for site-directed mutagenesis	
ABI5-S42A-F	TCTTTGGGAAGACAATCCGCTATCTACTCATTGACCCTT
ABI5-S42A-R	AAGGGTCAATGAGTAGATAGCGGATTGTCTTCCCAAAGA
ABI5-S145A-F	AGTCTTCCTCGACAAGGCGCTTTGACACTTCCAGCTCCG
ABI5-S145A-R	CGGAGCTGGAAGTGTCAAAGCGCCTTGTCGAGGAAGACT
ABI5-T201A-F	ACTGCGGCTAGACAACCGGCTTTTGGAGAGATGACACTT
ABI5-T201A-R	AAGTGTCATCTCTCCAAAAGCCGGTTGTCTAGCCGCAGT
ABI5-S42D-F	TCTTTGGGAAGACAATCCGATATCTACTCATTGACCCTT

ABI5-S42D-R	AAGGGTCAATGAGTAGATATCGGATTGTCTTCCCAAAGA
ABI5-S145D-F	AGTCTTCCTCGACAAGGCGATTTGACACTTCCAGCTCCG
ABI5-S145D-R	CGGAGCTGGAAGTGTCAAATCGCCTTGTCGAGGAAGACT
ABI5-T201D-F	ACTGCGGCTAGACAACCGGATTTTGGAGAGATGACACTT
ABI5-T201D-R	AAGTGTCATCTCTCCAAAATCCGGTTGTCTAGCCGCAGT

Primers for ChIP assays

ABI5-500bp-F	GACGGATATAATGATGACCCAAGC
ABI5-500bp-R	CTCTTCCAATAAAGTTTTCGTTACC
ABI5-TATAbox-F	CAGGGACAAGTAACTGAAGTTTGG
ABI5-TATAbox-R	GTCAACTTCGTTTCTCTAGTTACCAT
ABI5-CDS-F	GAGATGACACTTGAGGATTTCTTG
ABI5-CDS-R	CTCCTCCTGTCCTTTTAGCATAAC
ABI5-Ter-F	GACAGAACGAGGGAAAAACTGATG
ABI5-Ter-R	CCAAAGATTGATGATGTTGAAACAC
ACTIN7-F	CGTTTCGCTTTCCTTAGTGTTA
ACTIN7-R	AGCGAACGGATCTAGAGACTC

Primers used for genotypic analysis

SALK_053291-LP	AGAACCGTTGTCGTCGATATG
SALK_053291-RP	TGCCAATTTCTGGAATTCATC
SALK_039400-LP	TAATGTGTTGTGCCAGTTTCG
SALK_039400-RP	CTATTTTCCGTGTTTCAGGGG
LBa1	TGGTTCACGTAGTGGGCCATCG

Primers used for RT-qPCR

CYCC1;1-F	ATCTGGTTGTGTTTCACCCTTA
CYCC1;1-R	ACAATTCCCCATGTAATCTGGT
CYCC1;2-F	CTCCTACATGCTTGTATTTGGC
CYCC1;2-R	GTCATTGATTCCAGAATCCTGC
RD29A-F	GCCGACGGGATTTGACG
RD29A R	GCCGGAAATTTATCCTCTTCTGA
EM1-F	CGAGGAAGGAGCAGTTAG
EM1-R	GTACTGAGTCCTCCTTTACG
EM6-F	TGAGAGGGCAAAGAAGGG
EM6-R	CTTGTCTCCGGTGCTAAG
ABI5-F	AAGCCACCGGTTTTTAGACACACAG
ABI5-R	CACCTCCTCCATTATGTCTCGCTTG
ACTIN2-F	GGTAACATTGTGCTCAGTGGTGG
ACTIN2-R	AACGACCTTAATCTTCATGCTGC