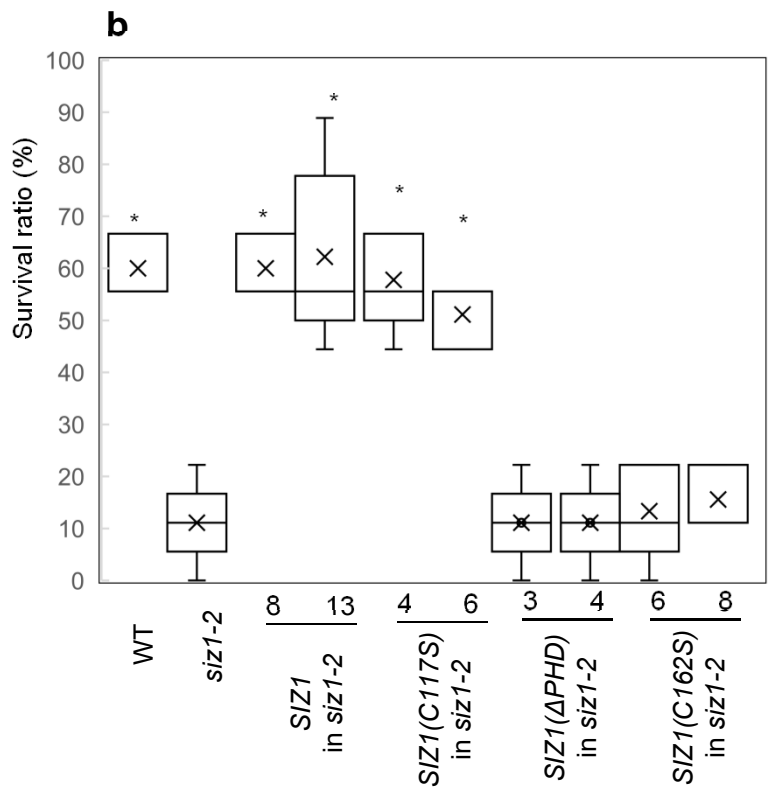
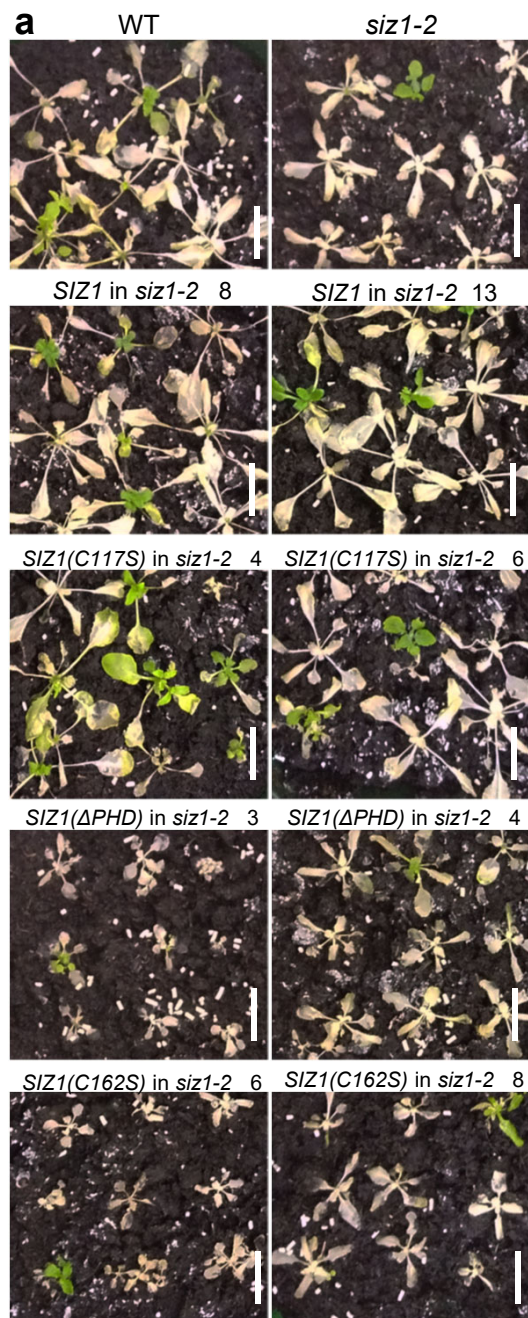
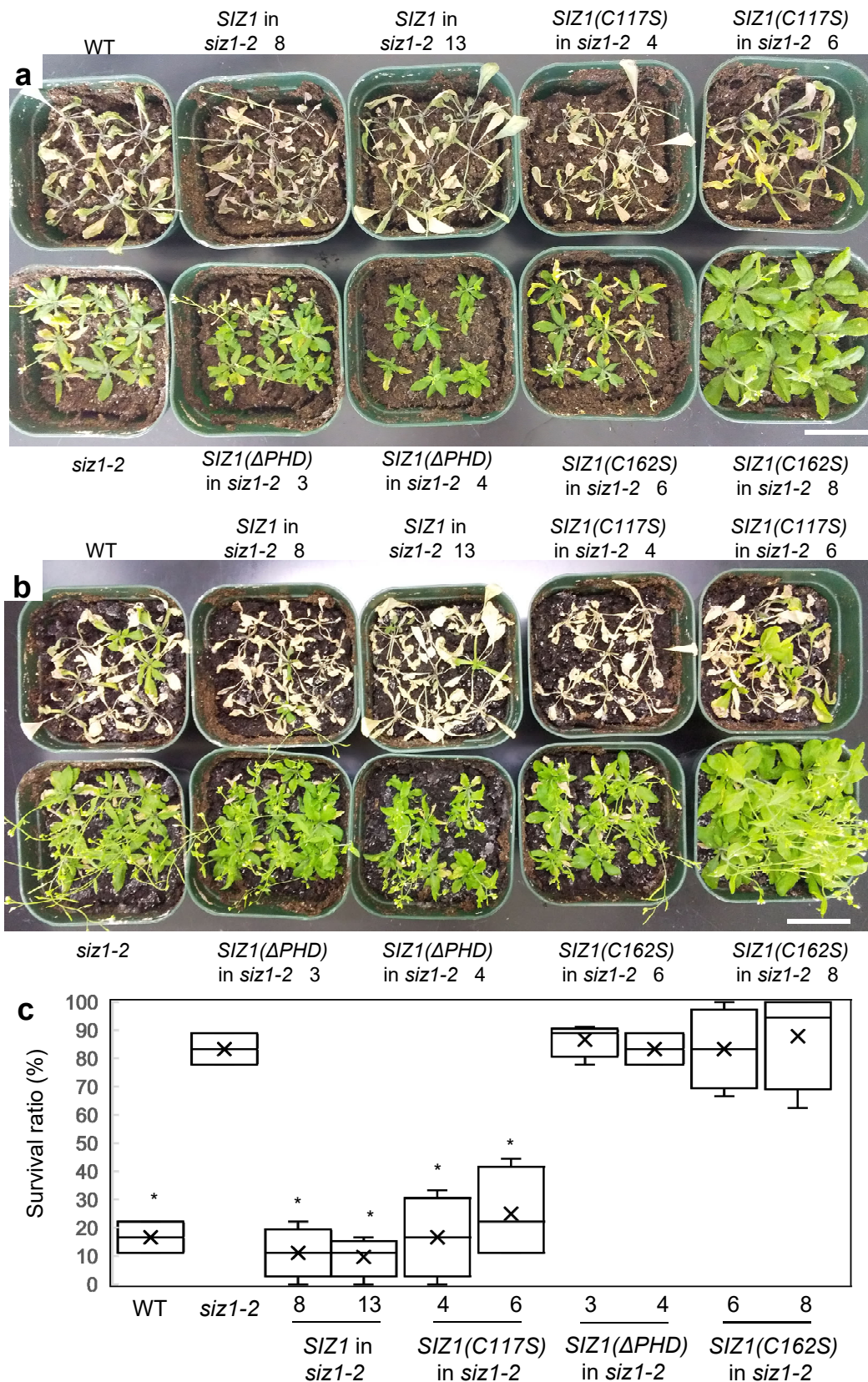


Supplementary Figure 1. *SIZ1* with mutation in the PHD finger was unable to complement ABA inhibition of primary root growth in seedlings of the *siz1* mutant. Three-day-old seedlings were transferred onto the basal media containing 0 (a) or 10  $\mu$ M ABA (b). Photographs are of representative seedlings 6 days after transfer onto the media. The bar indicates 1-cm length. Root growth on the media without (c) or with 10  $\mu$ M ABA (d) was measured. The order of the values are same as Supplementary Fig. S1a or S1b. The values are mean  $\pm$  standard deviation (SD; n = 12). Asterisk indicates a significant difference from the *siz1-2* plants ( $p < 0.05$ ) as determined by Student's *t*-test.



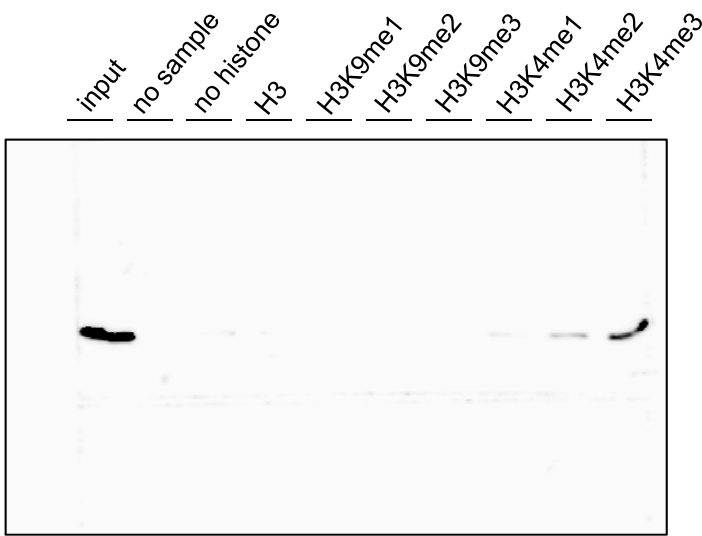
Supplementary Figure 2. *SIZ1* with mutation in the PHD finger was unable to complement cold sensitivity of the *siz1-2* mutant. **a**. Three-week-old plants were incubated at 4°C for 1 week for cold acclimation. Cold-acclimated plants were exposed for 4 h at -7°C. After freezing treatment, plants were incubated at 4°C for 1 day and done at 24°C for 1 week. Photographs are representative of WT, *siz1-2*, and *siz1-2* transformed with *SIZ1* variants. **b**. Survival was determined. Data are the mean  $\pm$  SD calculated from four independent experiments. Asterisks indicate a statistical difference from the *siz1-2* plants ( $p < 0.05$ ) as determined by Student's *t*-test. The bar indicates 2-cm length.



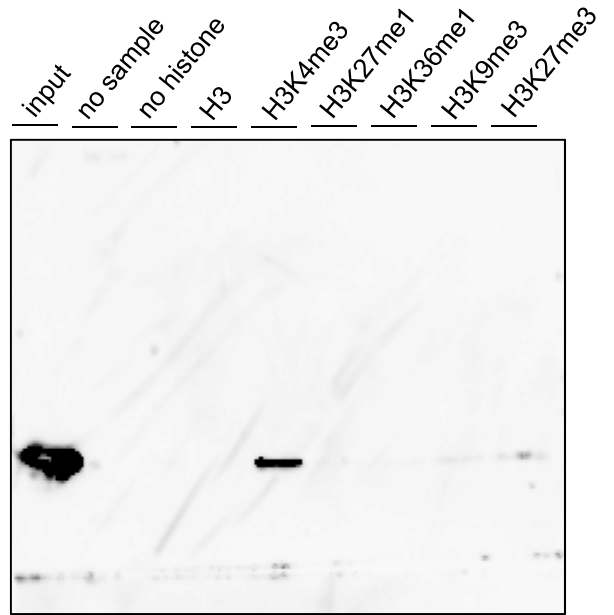
Supplementary Figure 3. *SIZ1* with mutation in the PHD finger was unable to complement drought tolerant phenotype of the *siz1-2* mutant. **a**, Water was withheld from 2-week-old plants for 18 days. **b**, Watering was resumed, and plants were incubated for 1 week. **c**, The survival ratio was determined for 9 plants after drought treatment. Data are mean  $\pm$  SE from four independent experiments. Asterisks indicate a statistical difference from the *siz1-2* plants ( $P < 0.05$ ) as determined by Student's *t*-test. The bar indicates 3-cm length.

**Supplementary Figure 4 (unprocessed blots)**

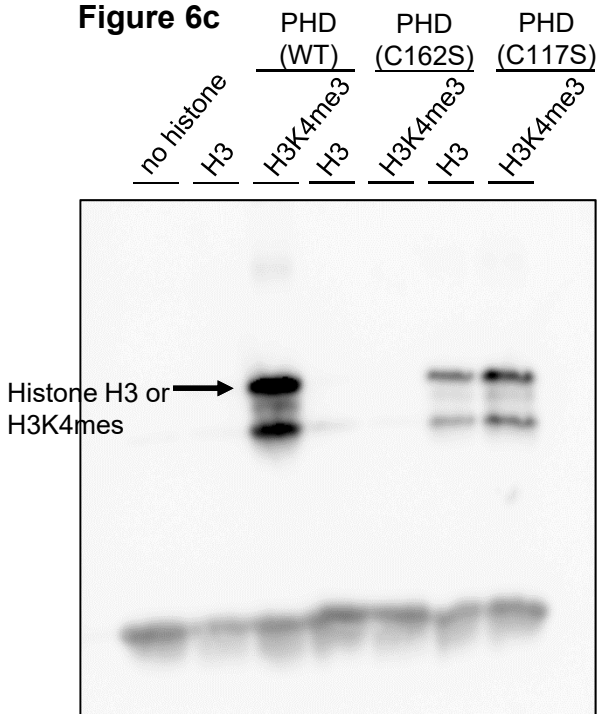
**Figure 6a**



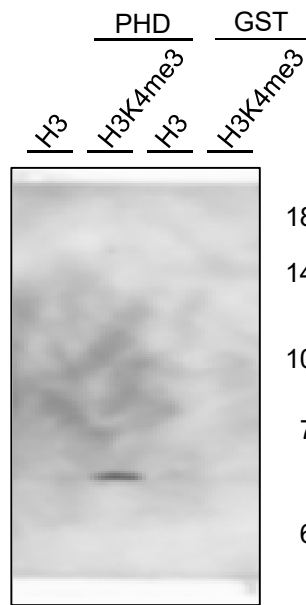
**Figure 6b**



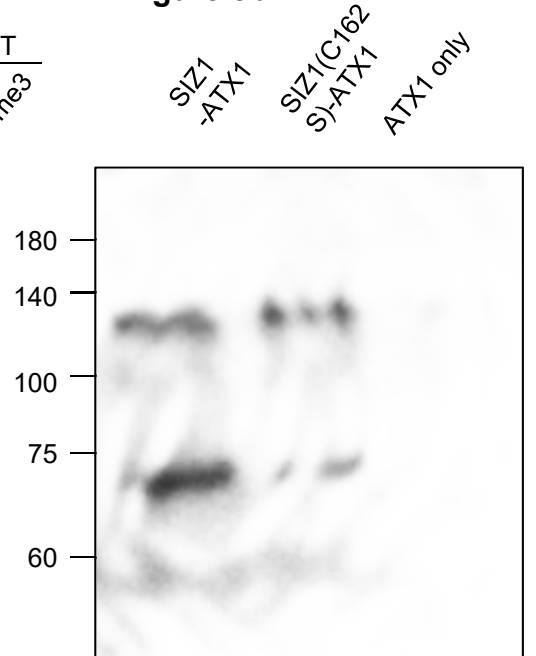
**Figure 6c**



**Figure 6d**



**Figure 8b**



Supplementary Table 1. Primers used for plasmid construction

Name of primer	DNA sequence (5'-to-3')
<b>pCambia1302-AtSIZ1full::AtSIZ1(<math>\Delta</math>PHD):GFP</b>	
SIZ1-2hyF	GCTAGCATGGATTTTGGGAAGCTAATTG
SIZ1-2hyR	CACTAGTTTACTCAGAATCCGAGTCAAT
SIZ1-PHDdeltaF	CAACCAGAAATTAAAGTTCGACGACTTA
SIZ1-PHDdeltaR	TGGGTCAGCTCGAGTAAGTCGTCGAACT
<b>Detection of <i>siz1-2</i> mutation</b>	
LP034008	CTGATGGTAGCCTTTGCCCT
RP034008	AAACCCGACTGAGCTGAAGCA
Salk_LBa1	TGGTTCACGTAGTGGGCCATCG
<b>pCambia1302-AtSIZ1full::AtSIZ1(C162S):GFP</b>	
AtSIZ1-C162S-F	CATTTTATTCTGAAATCTGCCG
AtSIZ1-C162S-R	CGGCAGATTCAGAATAAAATG
<b>pCambia1302-AtSIZ1full::AtSIZ1(C117S):GFP</b>	
AtSIZ1-C117S-F	CGATGTGTTTCAGGAAACTCGC
AtSIZ1-C117S-R	GCGAGTTTCCTGAAACACATCG
<b>GST-PHD</b>	
pGEX5X-PHD-F	TGGGATCCCCGAATTCTGTGTTTGTGGAAACTCGCT AGAAAC
pGEX5X-PHD-R	GGCCGCTCGAGTCGACGCAGATTTACAATAAAAT GATTCC
<b>pMAL-ATX1SET</b>	
ATX1SET-F-SalI	TAGAGTCGACAGGGAAACATACAGGAAGAG
ATX1-SalI-R	CCGAGTCGACTTATTCTGCGGTCCAGTC
<b>pMAL-ATX2SET</b>	
ATX2SET-F-SalI	AACCGTCGACAAGAGATTAGCATTCCGGGAA
ATX2-SalI-R	CCGAGTCGACTCAGGACTCTGTCCACTC
<b>pMAL-ATX3SET</b>	
ATX3SET-F-BamHI	ATTCGGATCCCGGCTAAAACATTTGCAGAG
ATX3-BamHI-R	CCGAGGATCCCTAGTTCATGAATTTGCG
<b>pMAL-ATX4SET</b>	
ATX4SET-F-BamHI	TTTCTGGATCCAGGGAACGACTTCACC
ATX4-BamHI-R	CGAGGATCCCTAATTCATGAATTTCTGCA
<b>pMAL-ATX5SET</b>	
ATX5SET-F-BamHI	TTTCCGGATCCAGGGAACGGCTTCACC
ATX5-BamHI-R	GAGGATCCATTCATGAATTTCTGCA

Supplementary Table 1. (continued)

Name of primer	DNA sequence (5'-to-3')
<b>pBYR2HS-CFH</b>	
pBYR2HS-Flag-F	ACTGTTGATAGTCGACATGGACTACAAGGACGAT GACGACAAGG
FLAG-His	CAAGGACGATGACGACAAGGTCGAGATGGATTA TAAGGATGACGATGACAAGGTTGAGCATCACCAT CACCA
pBYR2HS-FlagHis-R	ATTCAGAATTGTCGATTAGTGGTGGTGGTGGTGA TGCTCAAC
<b>pBYR2HS-CRH</b>	
pBYR2HS-HRV3C-F	ACTGTTGATAGTCGACCTTGAGGTTTTGTTCCAGG GTCC
HRV3C-RAP-His	CTTGAGGTTTTGTTCCAGGGTCCTGACATGGTGAA TCCTGGTCTTGAGGATAGGATCGAGCATCATCACC ACCATCACTAA
pBYR2HS-stopHis-R	ATTCAGAATTGTCGATTAGTGATGGTGGTGGTGGT G
<b>pBYR2HS-AtSIZ1-FH</b>	
pBYR2HS-AtSIZ1-F	CACTGTTGATAGTCGATGGATTTGGAAGCTAATTG TAAGG
pBYR2HS-AtSIZ1-R	TGTAGTCCATGTCGACCTCAGAATCCGAGTCAATG GAGAGG
<b>pBYR2HS-ATX1-RH</b>	
pBYR2HS-ATX1-F	CACTGTTGATAGTCGATGGCGTGTTTTTCTAACGA AACCC
pBYR2HS-ATX1-R	AAACCTCAAGGTCGACTTCTGCGGTCCAGTCTATT AGATCAC

Supplementary Table 2. Primers used for detection of transcripts and for ChIP analysis

Name of primer	DNA sequence (5'-to-3')
<b><i>SIZ1</i></b>	
LP023805	GCTGACGTTTCAGGAGGTTTAGTTG
RP023805	GCCTTGTCTTGTCTACTGTCATTCATAC
<b>WRKY70-ChIP</b>	
WRKY70-ChipF	CTTCAAACCTTGCCGTCGTTA
WRKY70-ChipR	ATCTCCTCCTCCTCATCCCT
<b>pCambia1302-AtSIZ1full::AtSIZ1(C162S):GFP</b>	
AtSIZ1-C162S-F	CATTTTATTCTGAAATCTGCCG
AtSIZ1-C162S-R	CGGCAGATTTTCAGAATAAAAATG
<b>pCambia1302-AtSIZ1full::AtSIZ1(C117S):GFP</b>	
AtSIZ1-C117S-F	CGATGTGTTTCAGGAAACTCGC
AtSIZ1-C117S-R	GCGAGTTTCCTGAAACACATCG