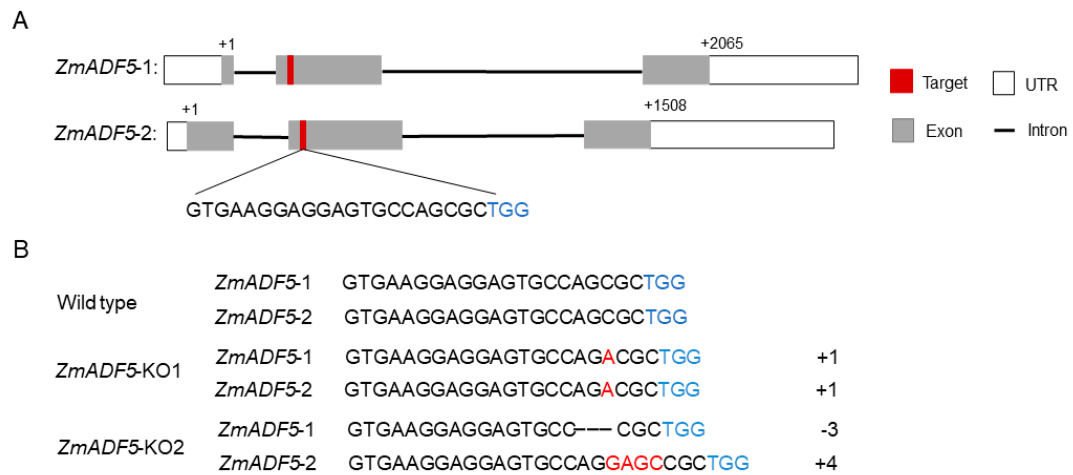


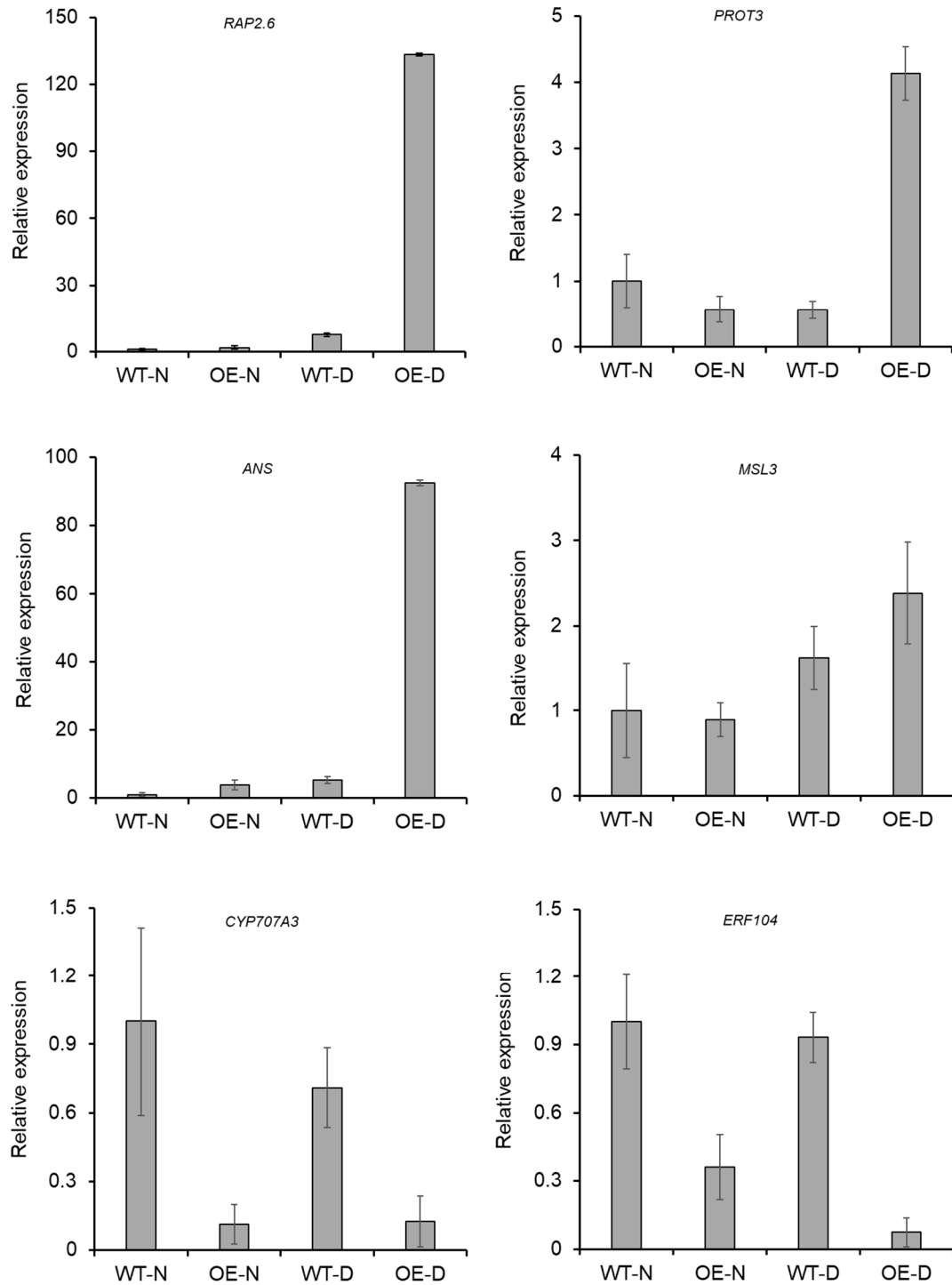
**Supplementary Figure S1** Phylogenetic analysis, conserved motifs, and gene structural analysis of all ADF genes. **(A)** Phylogenetic analysis of ADF genes in maize and six other plant species. At, *Arabidopsis thaliana*; Gm, *Glycine max*; Os, *Oryza sativa*; Sb, *Sorghum bicolor*; Si, *Setaria italica*; St, *Solanum tuberosum*; and Zm, *Zea mays*. **(B)** Conserved motif analysis of all ADF genes. The 20 motifs are represented by different colored boxes. **(C)** Structural diagram of all ADF genes. Numbers in parentheses after the structure diagram represent the length of the first exon of the ADF gene.

ZmADF5-1	.....MAMAYKMATEG	11
ZmADF5-2	MRDRIRRRQRIIPRFRRQGVHPIRDDPQATAMAMAYKMATEG	40
ZmADF5-1	MNVKEECQRWFMEMKWKKVHRFVVYKIDERSRAVLVDKVG	51
ZmADF5-2	MDVKEECQRWFMEMKWKKVHRFVVYRIDERSRAVLVDKRVG	80
ZmADF5-1	GPGEGYEELVAALPGDDCRYAVFDFDFVTVDNCQKSKIFF	91
ZmADF5-2	GPGEGYEELVAALPGDDCRYAVFDFDFVSVVDNCQKSKIFF	120
ZmADF5-1	IAWSPAASRIRAKILYATSKQGLRRLLDGVHYEVQATDPS	131
ZmADF5-2	IAWSPAASRIRAKILYATSKQGLRRLLDGVHYEVQATDPS	160
ZmADF5-1	EMGFDVIRGRA	142
ZmADF5-2	EMGFDVIRGRA	171

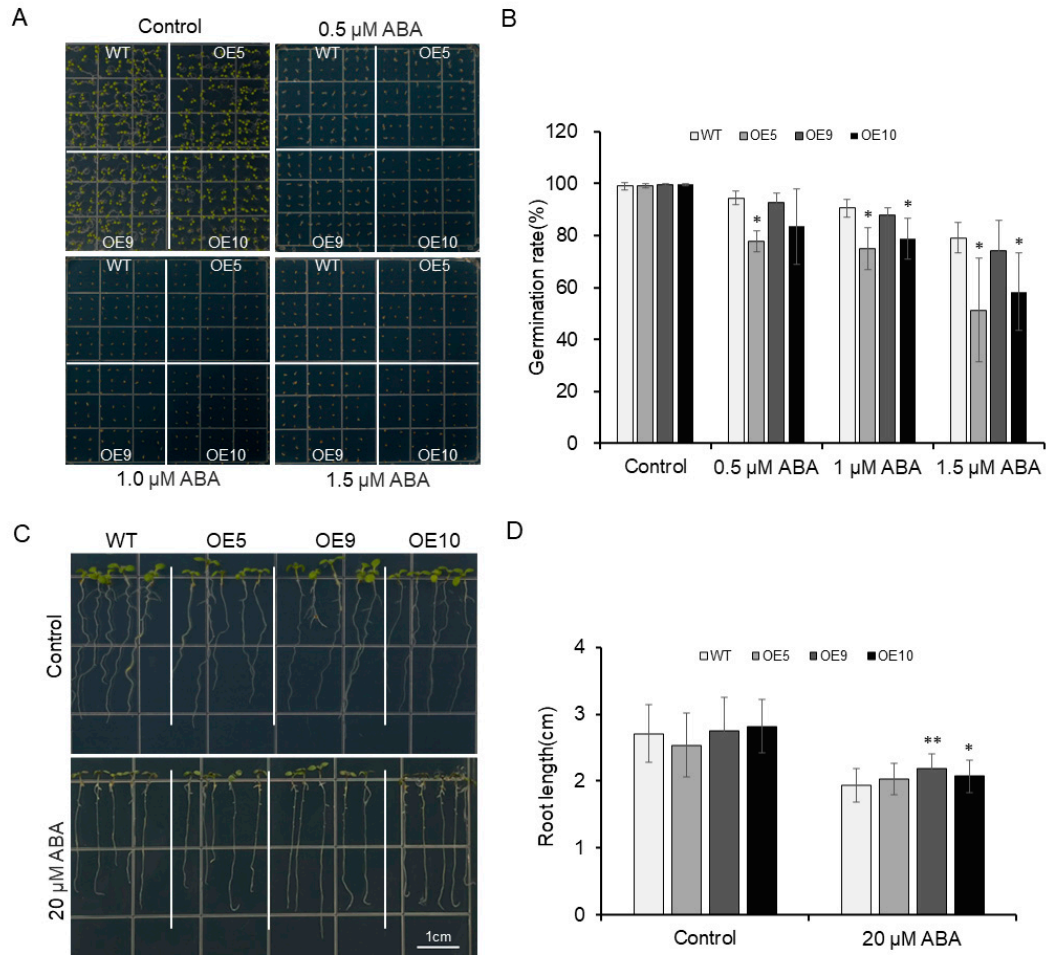
**Supplementary Figure S2** Amino acid sequence alignment of two *ZmADF5* genes.



**Supplementary Figure S3** Target site design of *ZmADF5* gene knockout and PCR identification of the knockout lines. **(A)** Design of the target sites of *ZmADF5-1* and *ZmADF5-2* genes by CRISPR/Cas9. **(B)** Insertion/deletion mutations at the target sites in the *ZmADF5* knockout lines. Black font for target sequence, blue font for PAM sequence, red base for an inserted base, dash for missing base.



**Supplementary Figure S4** Expression levels of differentially expressed genes in different plants under normal and drought conditions.



**Supplementary Figure S5** ABA sensitivity of 35S:*ZmADF5* transgenic Arabidopsis plants during germination and post-germination growth. **(A)** Growth of WT and 35S:*ZmADF5* seedlings on 1/2 MS medium with or without (control) 0.5  $\mu$ M ABA, 1.0  $\mu$ M ABA or 1.5  $\mu$ M ABA. The photographs show representative seedlings. **(B)** Statistics of germination rate of WT and 35S:*ZmADF5* transgenic Arabidopsis. **(C)** Effects of ABA on the seedling growth of WT and 35S:*ZmADF5* transgenic Arabidopsis plants on 1/2 MS medium containing 20  $\mu$ M ABA. Scale bar, 1 cm. **(D)** Root length statistics of WT and 35S:*ZmADF5* transgenic plants on 1/2 MS medium containing 20  $\mu$ M ABA. Significant differences were determined by t-tests. \* $P < 0.05$ , \*\* $P < 0.01$ .