Supplemental Material

Supplementary Fig. S1. Overview of the potato 135K v2 microarray.
Supplementary Fig. S2. Generation of potato transgenic mutants. A) Schematic diagram of the pCaMV35S::AtZIP28 binary vector. The region shows the construct containing the pCaMV35S promoter and the AtZIP28 coding region between the left border (LB) and right border (RB). B) An outline of the transgenic potato plant.
Supplementary Fig. S3. Growth of potato plants under drought stress conditions. Three transgenic potato lines (Z-3, Z-6, and Z-8) and a wild-type control were subjected to A) 12-day water deprivation or B) a 9-day 250 mM NaCl treatment.
Supplementary Fig. S4. Comparison of harvested transgenic and wild-type potato lines.
Supplementary Fig. S5. Overview of vectors used in the BiFC experiments.
Supplementary Fig. S6. Venn diagrams comparing the selected genes by three methods, ΔPRi, limma, and edgeR. The number of genes in each set is displayed within a circle. Common genes are shown in the intersection of the two sets.
Supplementary Fig. S7. RT-PCR analysis of *bZIP28* expression under drought stress conditions.

Wild-type and Z-3 mutant plants were exposed to 10 μg/mL TM, 20 mM DTT, 250 mM NaCl, or DMSO treatment for 0, 3, 6, 12, and 72 hours.
Supplementary Fig. S8. RT-PCR analysis of target genes identified using RNA-seq. Expression of the indicated genes was assessed following 12-hr drought-related treatments (10 µg/mL TM, 20 mM DTT, 250 mM NaCl, or DMSO). Gene names obtained from the UniProt Knowledgebase (https://www.uniprot.org/help/uniprotkb).
Supplementary Fig. S9. qRT-PCR analysis of target genes identified by RNA-seq. Expression of the indicated genes was assessed following 12-hr drought-related treatments (10 μg/mL TM, 20 mM DTT, 250 mM NaCl, or DMSO). Blue bar indicates wild-type and red bar is Z-3 mutant.
**Supplementary Fig. S10. RT-PCR analysis of NF-Y family genes.** Expression of the six selected genes was assessed in the absence or presence of endoplasmic reticulum stress conditions. (1) normal conditions, 0 hour; (2) normal conditions, 12 hours; (3) 4°C, 12 hours; (4) 250 mM NaCl, 12 hours; (5) 50 μM abscisic acid (ABA), 12 hours; (6) 10% PEG, 6 hours