Figure S1. Characterization of mutation in OsNTL3. Protein sequences of OsNTL3 in WT (NTL3) and mutants (ntl3-1 and ntl3-2) derived from the CRISPR-CAS9 technology. The NAC DNA-binding domain is shown in red. The amino acids for a new C-terminus of NTL3 in ntl3-2 mutant is boxed.
Figure S2. OsNTL3 has transcriptional activation activity. (a) Diagram showing various segments of OsNTL3 that were fused to the yeast GAL4 DNA-binding domain. The NAC domain and transmembrane domain (TM) were shown in rectangle and diamond, respectively. Amino acid (AA) positions were indicated for each segment. (b-c) Activation of the His and Ade reporter genes in yeast cells. Three different dilutions of yeast cells were spotted on nutritional selection medium. The mutated form of OsNTL3 (NTL3-2) was obtained from the ntl3-2 rice mutant plants and used for comparison (c).
Figure S3. Subcellular localizations of YFP-OsNTL3ΔC. The YFP-tagged truncated OsNTL3 devoid of the transmembrane domain were transiently expressed in tobacco leaves. DAPI staining was used to visualize the nuclei. Bar = 50 μm.
Figure S4. Validation of transgenic expression. Total RNA were extracted from the wild-type (WT) control plants and NTL3ΔC overexpression (OE1-3) plants and the expression of total OsNTL3 was detected by RT-PCR. ACTIN was used as an internal control.
**Figure S5.** Characterization of mutation in OsbZIP16. Protein sequences of OsbZIP16 in WT (bZIP16) and mutant (bzip16) derived from the CRISPR-CAS9 technology are aligned. The bZIP DNA-binding domain is shown in red.
**Figure S6.** Characterization of mutation in bZIP17. Protein sequences of bZIP17 in WT (bZIP17) and mutant (bzip17) derived from the CRISPR-CAS9 technology are aligned. The bZIP DNA-binding domain is shown in red.
**Figure S7.** Characterization of mutation in OsbZIP74. Protein sequences of OsbZIP74 in WT (bZIP74) and mutants (bzip74-1 and bzip74-2) derived from the CRISPR-CAS9 technology are aligned. The bZIP DNA-binding domain is shown in red.
Figure S8. Loss-of-function of OsbZIP74 does not affect heat stress sensitivity in rice. Eight-day old wild-type (WT) seedlings and two lines of targeted-gene-edited OsbZIP74 (bzip74-1 and bzip74-2) mutant seedlings grown at 29°C were transferred to 45°C for 4-5 days and then photographed after recovering at 29°C for 7 days. Bar = 1 cm.