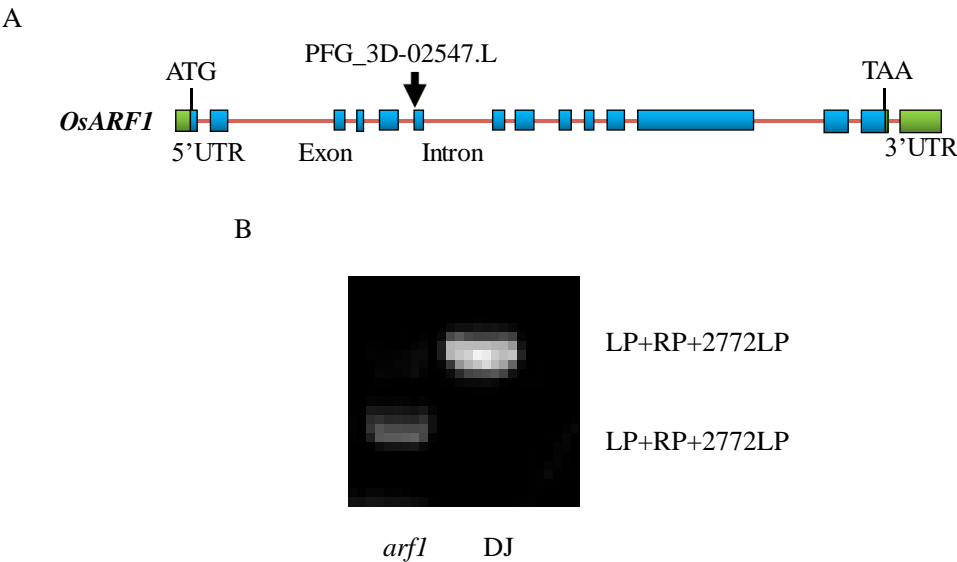
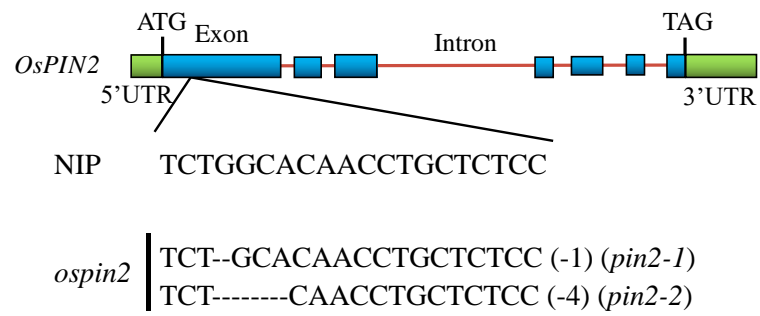


Supplementary Table S1 The primers for qRT-PCR of *ARF1* and *PIN2* genes

Gene	Primer sequence
<i>OsARF1</i>	5'-ATCGCTATATGGAATCACTGA-3' 5'-GAGCCTCTTCACCTTCAA-3'
<i>OsPIN2</i>	5'-CAACACCTACTCCAGCCTC-3' 5'-TGGACCAGTCAAGAACCTC-3'
<i>OsActin</i>	5'-CAACACCCCTGCTATGTACG-3' 5'-CATCACCAGAGTCCAACACAA-3'



Supplementary Figure S1 Identification of the T-DNA insertion *arf1* mutant. (A) Gene structure of *ARF1* and the T-DNA insertion site. The exons and introns are indicated by bold boxes and lines, respectively. Insertion site of T-DNA in the mutant line is indicated by arrowhead showing the name of mutant. (B) Identification of homozygous T-DNA insertion mutant by two rounds of PCR.



Supplementary Figure S2 Sequencing verification of CRISPR-edited *PIN2* knockout mutants. Seedlings were grown in hydroponic medium containing normal nutrition.