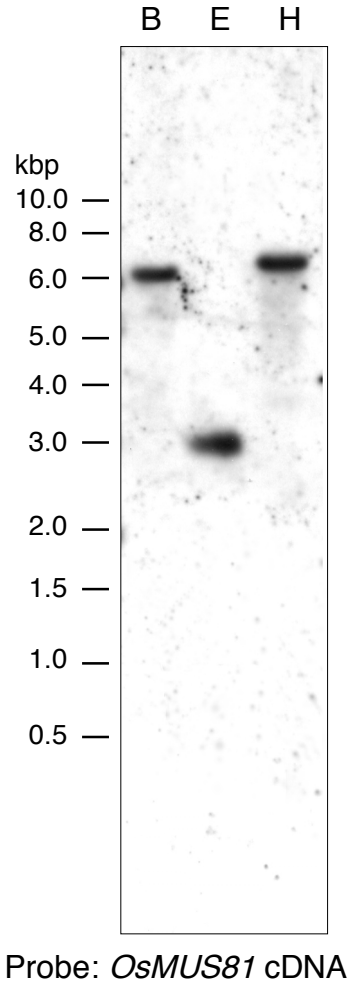
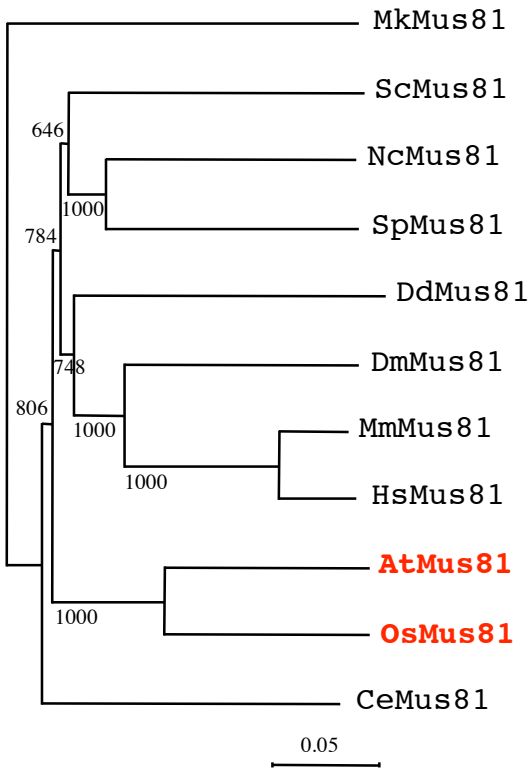
Supplemental Materials



SM Figure 1. Genomic Southern blot analysis of *MUS81* in rice. Total DNA (10 μg each) from rice (cv. Nipponbare) was digested with *Bam*HI (B), *Eco*RI (EI) and *Hind*III (H). The digested DNAs were electropheresed, blotted and probed with *OsMUS81α* cDNA. The positions of the molecular size markers in kbp are shown on the left of the autoradiogram.



SM Figure 2. A phylogenetic tree of Mus81 family proteins. Protein IDs for 11 deduced Mus81 amino acid sequences used in this analysis were as follows: AAM02891 (741 aa) from *Methanopyrus kandleri* AV19 (Mk), NP_010674/AAB64828 (632 aa) from *S. cerevisiae* (Sc), XM_327743 (645 aa) from *Neurospora crassa* OR74A (Nc), T41371 (572 aa) from *Schizosaccharomyces pombe* (Sp), AAL86954 (964 aa) from *Dictyostelium discoideum* (Dd), CAB51668 (426 aa) from *Drosophila melanogaster* (Dm), AAL28066 (551 aa) from *Mus musculus* (Mm), AAL28065 (551 aa) from *Homo sapiens* (Hs), AAB64828 (this study) from *Arabidopsis thaliana* (At), Mus81α from *Oryza sativa* (Os) (this study), and AAB37627 from *Caenorhabditis elegans* (Ce). The phylogenetic tree was aligned using CLUSTAL X multiple sequence alignment program ver. 1.81 (Thompson et al. 1997) and displayed with the Njplot (Perrière and Gouy 1996). The branch lengths are proportional to the sequence divergence. Numbers along branches are bootstrap values (1,000 replicates). The scale represents 0.05 substitutions/site.

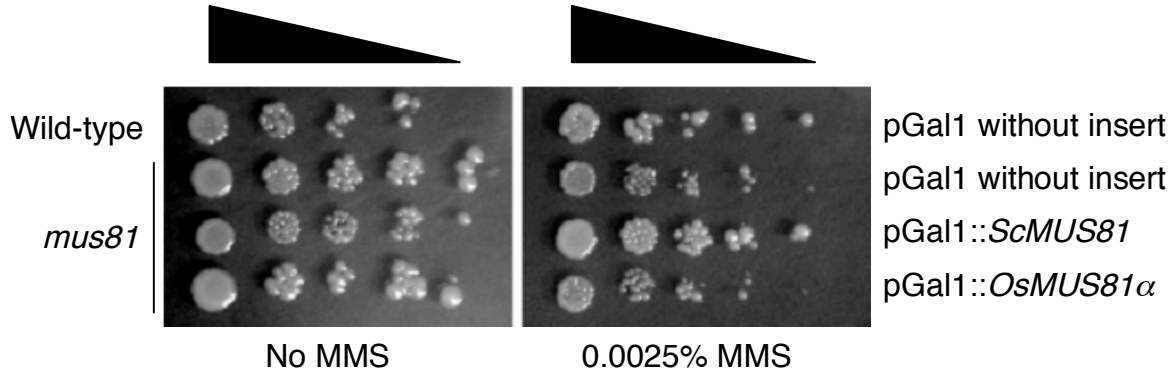


Figure 3. Complementation test of budding yeast *mus81* mutant by overexpression of *OsMUS81*. A haploid strain with *mus81* deletion was transformed with pGal1 without insert (pYES2.1/V5-His-TOPO), pGal1*ScMUS81* or pGal1*OsMUS81*α. Wild-type strain BY4741 was transformed with pGal1 without insert as a control. Precultured cells at 3.84 x 10^3 μl^{-1} and their serial 10-fold dilutions were spotted onto selection media composed of Minimal SD Base with amino acids containing 2% galactose + 1% raffinose as carbon sources at pH 5.8 with or without 0. 0025% MMS for 2 d at 30 ^oC. Culture media containing more than 0.005% MMS inhibited growth of both the wild-type and *mus81* mutant strains.