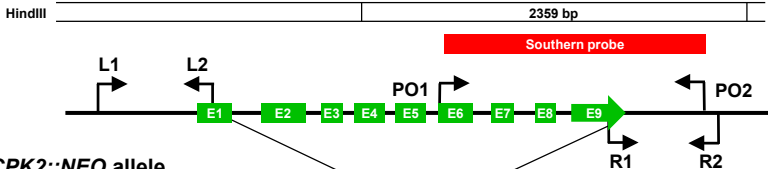


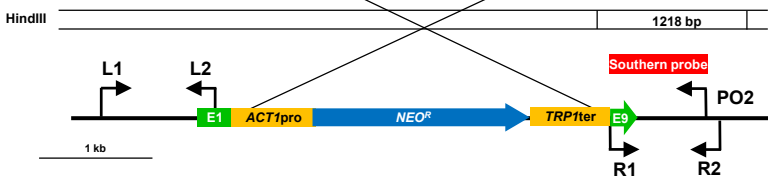
Jang et al. (Supplementary Figure 1)

A

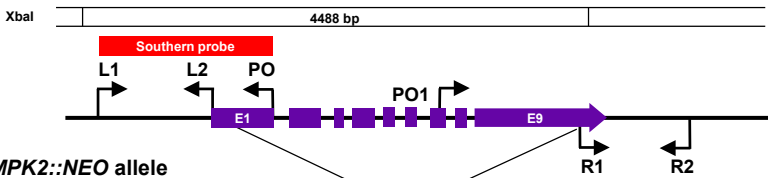
**CPK2 WT allele**



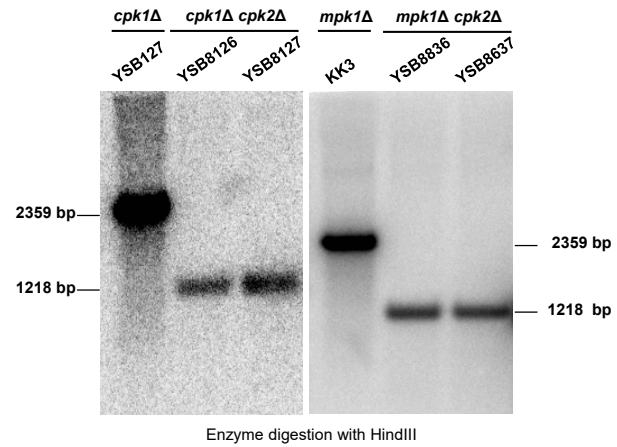
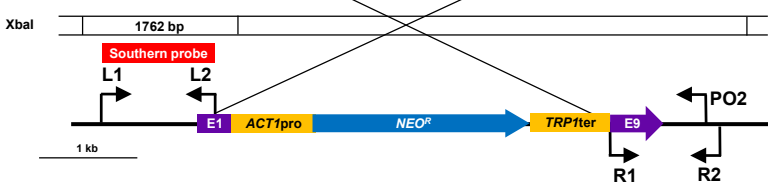
**CPK2::NEO allele**



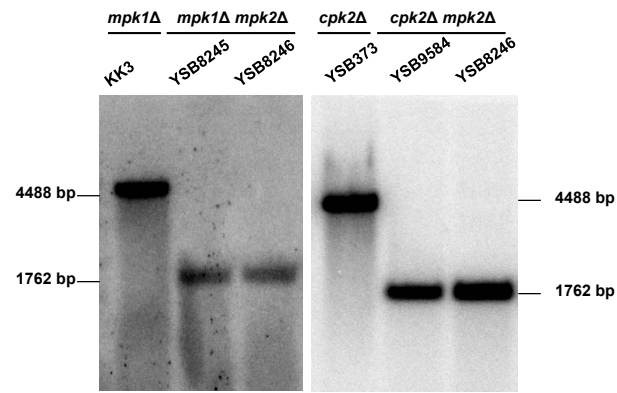
**MPK2 WT allele**



**MPK2::NEO allele**



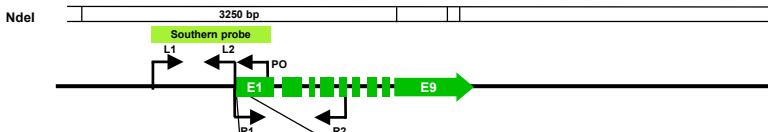
Enzyme digestion with HindIII



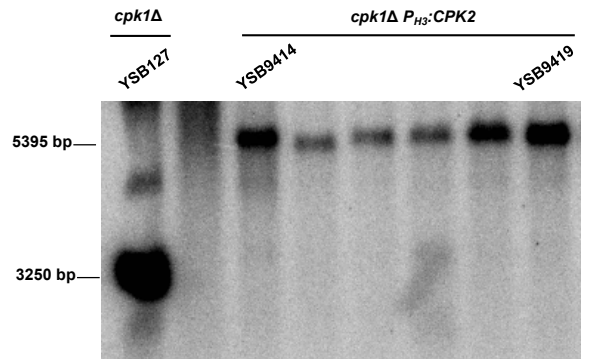
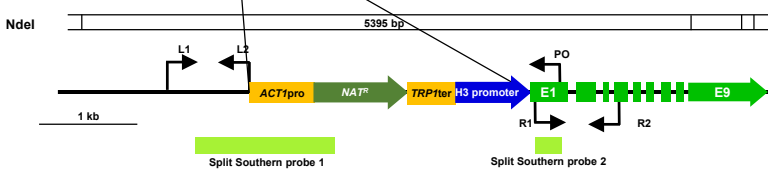
Enzyme digestion with XbaI

B

**CPK2 WT allele**

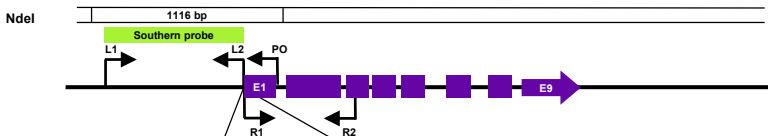


**P<sub>H3</sub>::CPK2 allele**

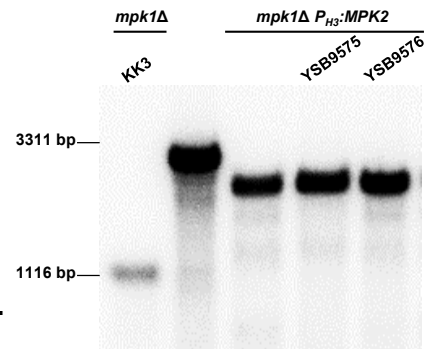
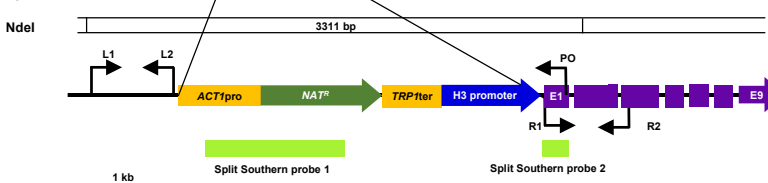


Enzyme digestion with NdeI

**MPK2 WT allele**



**P<sub>H3</sub>::MPK2 allele**



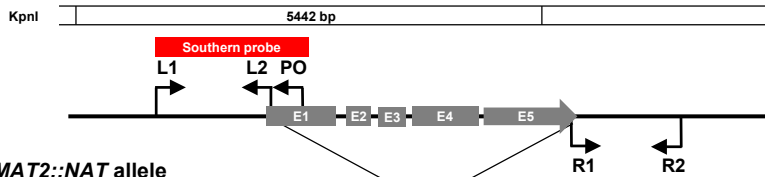
Enzyme digestion with NdeI

(continued)

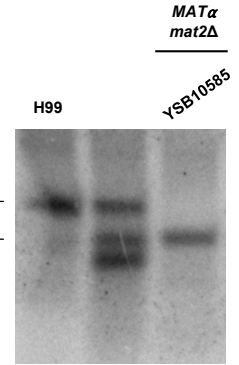
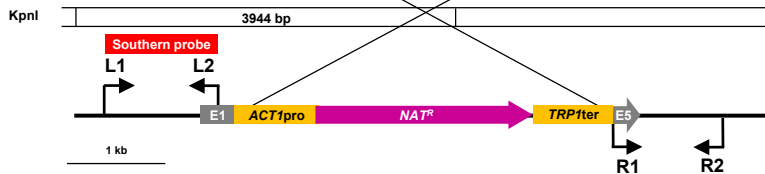
Jang et al. (Supplementary Figure 1)

C

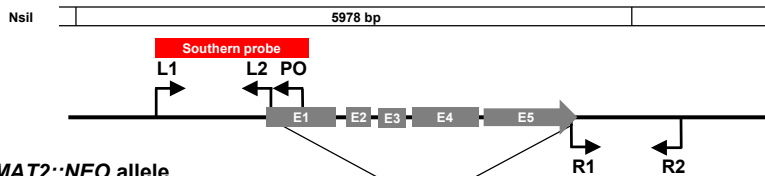
**MAT2 WT allele**



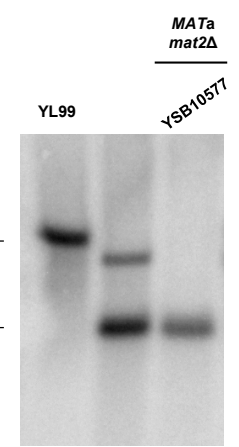
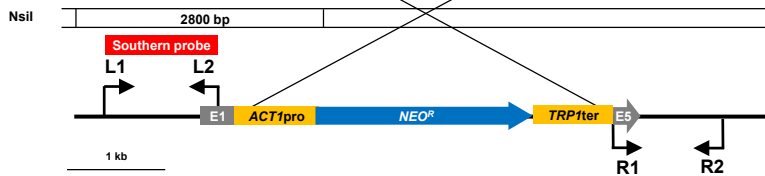
**MAT2::NAT allele**



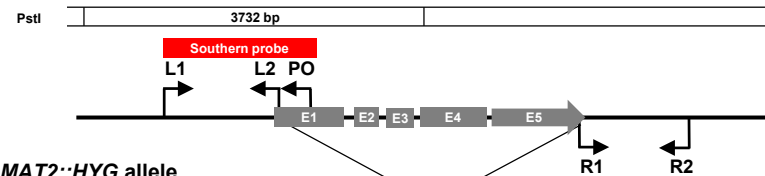
**MAT2 WT allele**



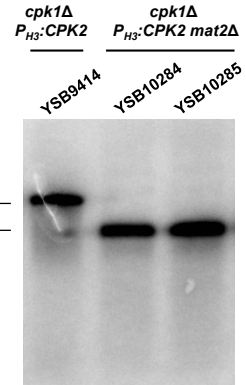
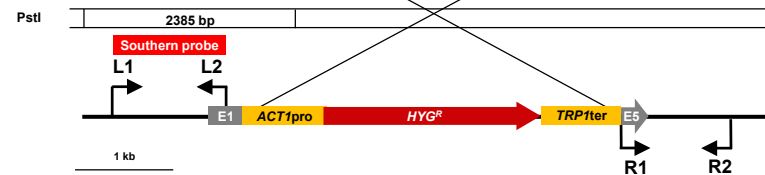
**MAT2::NEO allele**



**MAT2 WT allele**

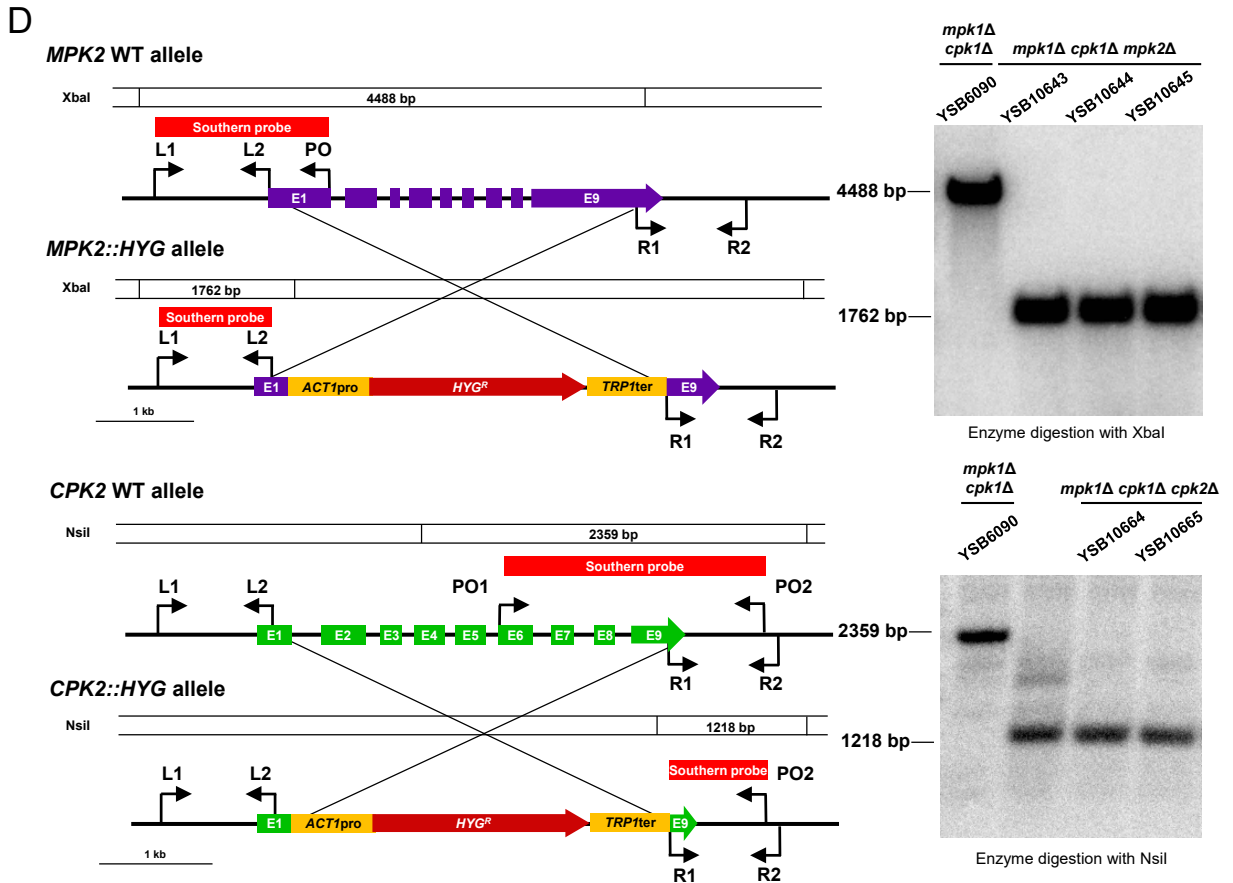


**MAT2::HYG allele**



(continued)

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**Figure S1. Construction of mutant strains were established through Southern blot analysis.** The target MAPK genes were replaced with neomycin or hygromycin resistance genes (*NEO<sup>R</sup>* or *HYG<sup>R</sup>*), and the genes were delivered using the gene gun biolistic transformation method (see Material and Method). Graphical representations depict the strategies for homologous recombination between the wild-type gene and the deletion cassette. The newly constructed strains were verified through diagnostic PCR and further validated by Southern blot using dCTP labeled with the radioactive phosphorus P<sup>32</sup>. The primer sets used for these procedures are detailed in Table S2.