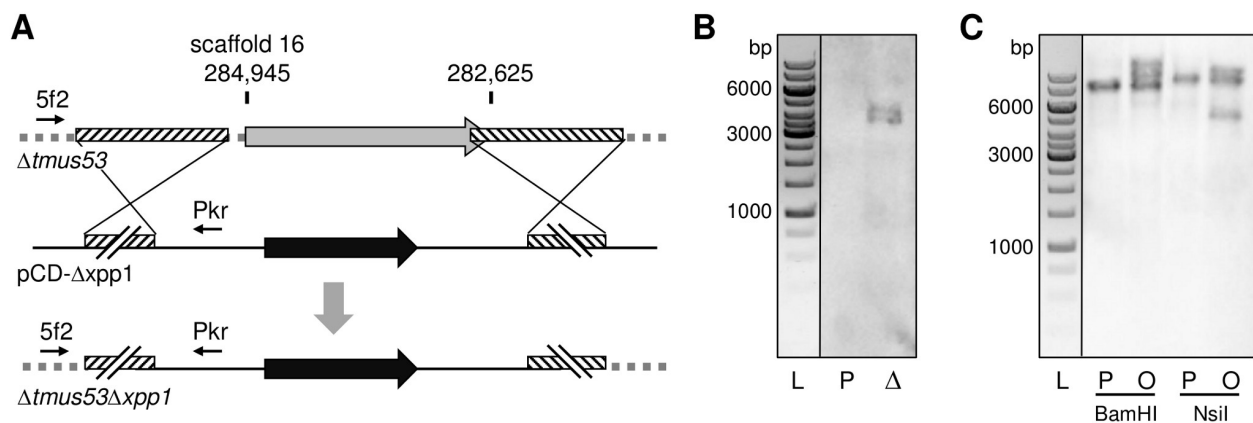


Additional file 1 – Deletion and over-expression of *xpp1*



(A) Deletion of *xpp1* in the parent strain QM6a*Dtmus53* (*Dtmus53*) by homologous recombination with the plasmid pCD- Δ *xpp1* yielding an *xpp1* deletion strain (*Dtmus53* Δ *xpp1*) is represented schematically. Position of the *xpp1* locus on scaffold 16 is indicated at the top. Thin black arrows indicate the approximate positions of the primers used for genotype analysis via PCR (5f2, *xpp1*-5fwd2 and Pkr, Ppki_5rev). Black-rimmed, light gray arrow represents the *xpp1* gene; hatched boxes represent regions for homologous recombination; thick, black arrow represents the *hph* gene; gray arrow indicate the homologous recombination event; gray, dotted lines represent genomic DNA sequence; solid, black lines represent plasmid DNA sequence. **(B)** Correct and exclusive integration of the hygromycin cassette in the *xpp1* locus was verified by Southern Blot analysis. The obtained signals correspond to the expected fragment sizes after digestion with PstI (3,410 bp and 4,622 bp) using the *hph* coding region as probe. **(C)** Ectopic insertions of *xpp1* expression cassettes in the over-expression strain were determined by Southern Blot analysis using the *xpp1* coding region as probe. L, 1-kb DNA ladder; P, parent strain (QM6a*Dtmus53*); D, *xpp1* deletion strain; O, *xpp1* over-expression strain.