Table S2 Yeast strains

Strain	Relevant Genotype	Reference
LW01[a]	*pol2::kanMX msh2::HIS3* + pRS416*POL2*	This study
LW02[a]	*pol2::kanMX msh3::MET15* + pRS416*POL2*	This study
LW03[a]	*pol2::kanMX msh6::HIS3* + pRS416*POL2*	This study
LW04[a]	*pol2::kanMX mlh1::HIS3* + pRS416*POL2*	This study
LW05[a]	*pol2::kanMX pms1::HIS3* + pRS416*POL2*	This study
LW06[a]	*pol2::kanMX mlh3::MET15* + pRS416*POL2*	This study
LW07[a]	*pol2::kanMX msh6::HIS3 msh3::LEU2* + pRS416*POL2*	This study
LW08[a]	*pol2::kanMX pms1::HIS3 mlh3::TRP1* + pRS416*POL2*	This study
LW09[a]	*pol2::kanMX msh2::HIS3 rev3::TRP1* + pRS416*POL2*	This study
LW10[a]	*pol2::kanMX msh2::HIS3 rad30::TRP1* + pRS416*POL2*	This study
BP0109[b]	*pol3::HIS3 msh2::TRP1* + pGL310 [*URA3/POL3*]	(Herr *et al.* 2011)
BP0210[b]	*pol3::HIS3 msh3::TRP1* + pGL310 [*URA3/POL3*]	This study
BP0301[b]	*pol3::HIS3 msh6::TRP1* + pGL310 [*URA3/POL3*]	This study
BP0412[b]	*pol3::HIS3 mlh1::TRP1* + pGL310 [*URA3/POL3*]	This study
BP0502[b]	*pol3::HIS3 pms1::TRP1* + pGL310 [*URA3/POL3*]	This study
LW09[b]	*pol3::HIS3 mlh3::TRP1* + pGL310 [*URA3/POL3*]	This study
LW10[b]	*pol3::HIS3 msh6::TRP1 msh3::MET15* + pGL310 [*URA3/POL3*]	This study
LW11[b]	*pol3::HIS3 pms1::TRP1 mlh3::MET15* + pGL310 [*URA3/POL3*]	This study
LW12[c]	*pol2::NAT1 msh2::MET15* + pRS416*POL2*	This study
LW13[c]	*pol3::NAT1 msh2::MET15* + pGL310 [*URA3/POL3*]	This study

[a] Strains engineered from the BY4733 strain (*MATa leu2Δ0 ura3Δ0 met15Δ0 trp1Δ63 his3Δ200*), an S288C descendent (Brachmann *et al.* 1998) that we re-derived via sporulation of a BY4733 X BY4734 diploid (kindly provided by Tim Formosa, University of Utah). The *pol2::kanMX* strains were constructed from this re-derived BY4733 strain by first introducing pRS416*POL2* (to provide a wild-type plasmid copy of *POL2*) and then replacing the entire chromosomal *POL2* gene with a *kanMX* cassette. pRS416*POL2* is the *CEN6/ARSH4/URA3* plasmid pRS416 (Brachmann *et al.* 1998) carrying wild-type *POL2* with its natural promoter.

[b] These strains were engineered from P3H3a described in (Herr *et al.* 2011).

[c] These strains were engineered from the Y7092 strain (*MATα can1Δ::STE2pr-his5 lyp1Δ ura3Δ0 leu2Δ0 his3Δ1 met15Δ0*), an S288C descendent modified by the Boone lab to be used as a query strain in Synthetic Genetic Analysis (Tong and Boone 2007).