

Table S1. Strains used in this study.

Strain	Genotype	Source or Reference
BY4741 (YF336)	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i>	This study ¹
DMY2800 (YF1444)	MATa; <i>ura3-52</i> ; <i>ade2-1</i> ; <i>his3Δ11,15</i> ; <i>leu2Δ3,112</i> ; <i>trp1Δ1</i> ; <i>can1Δ100</i> ; <i>NTS2::mURA3-LEU2+</i>	[1]
YSB2244	MATa; <i>ura3Δ52</i> ; <i>ade2Δ1</i> ; <i>his3Δ11,15</i> ; <i>leu2Δ3,112</i> ; <i>trp1Δ1</i> ; <i>can1Δ100</i> ; <i>NTS2::mURA3-LEU2+</i> ; <i>rrp6Δ::KANMX</i>	[2]
YF1465	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>rrp47Δ::KANMX</i>	This study ¹
YF1977	MAT?; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ0</i> ; <i>dis3Δ::KANMX</i> [pDIS3 (<i>LEU2</i> , CEN/ARS)]	[3]
YF1978	MAT?; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ0</i> ; <i>dis3Δ::KANMX</i> [pdis3 (D171A) (<i>LEU2</i> , CEN/ARS)]	[3]
YF1979	MAT?; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ0</i> ; <i>dis3Δ::KANMX</i> [pdis3 (D551N) (<i>LEU2</i> , CEN/ARS)]	[3]
YF1186	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>dhh1Δ::KANMX</i>	This study ¹
YF1694	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>xrn1Δ::KANMX</i>	This study ¹
YF1064	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>ccr4Δ::KANMX</i>	This study ¹
YF1926	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>lsm2-ts::URA3</i> ; <i>can1Δ::LEU2-MFAprHIS3</i> ; <i>met15Δ0</i> ; <i>lys2Δ0</i>	[4]
YLV7	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>rrp47Δ::KAN MX</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , CEN/ARS)]	This study
YLV19	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , CEN/ARS)]	This study
YLV22	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , CEN/ARS)] [pRS315- <i>TLC1</i> (<i>TLC1</i> , <i>LEU2</i> , CEN/ARS)]	This study
YLV8	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>rrp47Δ::KAN MX</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , CEN/ARS)] [pRS315- <i>TLC1</i> (<i>TLC1</i> , <i>LEU2</i> , CEN/ARS)]	This study
YLV24	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , CEN/ARS)] [pRS315- <i>tlc1sm⁻</i> (<i>tlc1-sm⁻</i> , <i>LEU2</i> , CEN/ARS)]	This study
YLV36	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>rrp47Δ::KAN MX</i> ; <i>tlc1Δ::HIS3</i>	This study

	[pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , <i>CEN/ARS</i>)] [pRS315- <i>tlc1sm⁻</i> (<i>tlc1-sm⁻</i> , <i>LEU2</i> , <i>CEN/ARS</i>)]	
YLV25	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , <i>CEN/ARS</i>)] [pRS315- <i>tlc1sm2T</i> (<i>tlc1-sm2T</i> , <i>LEU2</i> , <i>CEN/ARS</i>)]	This study
YLV37	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>rrp47Δ::KAN MX</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , <i>CEN/ARS</i>)] [pRS315- <i>tlc1sm2T</i> (<i>tlc1-sm2T</i> , <i>LEU2</i> , <i>CEN/ARS</i>)]	This study
YLV26	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , <i>CEN/ARS</i>)] [pRS315- <i>tlc1sm4C5C</i> (<i>tlc1-sm4C5C</i> , <i>LEU2</i> , <i>CEN/ARS</i>)]	This study
YLV38	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ; <i>rrp47Δ::KAN MX</i> ; <i>tlc1Δ::HIS3</i> [pRS316- <i>TLC1</i> (<i>TLC1</i> , <i>URA3</i> , <i>CEN/ARS</i>)] [pRS315- <i>tlc1sm4C5C</i> (<i>tlc1-sm4C5C</i> , <i>LEU2</i> , <i>CEN/ARS</i>)]	This study
YF182	MATα; <i>ura3Δ52</i> ; <i>leu2Δ3,112</i> ; <i>trp1Δ289</i> ; <i>smd1::LEU2</i> [pGAL::SMD1HA (<i>GAL1::SMD1HA</i> ; <i>URA3</i>)]	[5], [6]
YLV34	MATα; <i>ura3Δ52</i> ; <i>leu2Δ3,112</i> ; <i>trp1Δ289</i> ; <i>smd1::LEU2</i> ; <i>rrp47Δ::KAN MX</i> [pGAL::SMD1HA (<i>SMD1</i> , <i>URA3</i>)]	This study, [5], [6]
BY4742 (YF2068)	MATα; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>lys2Δ0</i>	This study ¹
YF2069	MATα; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>lys2Δ0</i> ; <i>tgslΔ::KANMX</i>	This study ¹
YF2070	MATα; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>lys2Δ0</i> ; <i>kap122Δ::KANMX</i>	This study ¹
YF2088 (PSUΔ192-507)	MATa; <i>ura3Δ52</i> ; <i>trp1Δ1</i> ; <i>his3Δ1</i> ; <i>lys2Δ801</i> ; <i>snr19Δ::LYS2</i> [pSE358 (<i>snr19Δ192-507</i> , <i>TRP1</i> , <i>CEN/ARS</i>)]	[7]
YLV68	MATa; <i>ura3Δ52</i> ; <i>trp1Δ1</i> ; <i>his3Δ1</i> ; <i>lys2Δ801</i> ; <i>snr19Δ::LYS2</i> ; <i>rrp47Δ::KAN MX</i> [pSE358 (<i>snr19Δ192-507</i> , <i>TRP1</i> , <i>CEN/ARS</i>)]	This study, [7]
YF2081 (RSY1)	MATa; <i>ura3Δ52</i> ; <i>leu2Δ3,112</i> ; <i>trp1Δ289</i> ; <i>ade2</i> <i>arg4</i> (<i>RV-</i>); <i>snr19Δ::ADE2</i> [pXL46 (<i>GAL::U1</i> , <i>URA3</i>)] [YEplac112 (<i>snr19Δ192-507sm</i> , <i>TRP1</i>)]	[7]
YLV48	MATa; <i>ura3Δ52</i> ; <i>leu2Δ3,112</i> ; <i>trp1Δ289</i> ; <i>ade2</i> <i>arg4</i> (<i>RV-</i>); <i>snr19Δ::ADE2</i> ; <i>rrp47Δ::KAN MX</i> [pXL46 (<i>GAL::U1</i> , <i>URA3</i>)] [YEplac112 (<i>snr19Δ192-507sm</i> , <i>TRP1</i>)]	This study
YLV46	MATa; <i>ura3Δ0</i> ; <i>leu2Δ0</i> ; <i>his3Δ1</i> ; <i>met15Δ0</i> ;	This study

	[pRS423-NTS1 (NTS1, HIS3, 2 μ)]	
YLV47	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0; <i>rrp47</i> Δ ::KAN MX [pRS423-NTS1 (NTS1, HIS3, 2 μ)]	This study
YLV81	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0 [pRS423-nts1::Sm (<i>nts1</i> ::Sm, HIS3, 2 μ)]	This study
YLV82	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0; <i>rrp47</i> Δ ::KAN MX [pRS423-nts1::Sm (<i>nts1</i> ::Sm, HIS3, 2 μ)]	This study
YLV93	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0 [pRS423-nts1::sm4C5C (<i>nts1</i> ::sm4C5C, HIS3, 2 μ)]	This study
YLV94	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0; <i>rrp47</i> Δ ::KAN MX [pRS423-nts1::sm4C5C (<i>nts1</i> ::sm4C5C, HIS3, 2 μ)]	This study
YLV125	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0; <i>rrp47</i> Δ ::KAN MX; <i>tlc1</i> Δ ::HIS3; <i>proA-EST2</i> (N-terminal tag) [pRS315-tlc1sm4C5C (<i>tlc1</i> -sm4C5C, LEU2, CEN/ARS)]	This study, [8]
YLV126	MATa; <i>ura3</i> Δ 0; <i>leu2</i> Δ 0; <i>his3</i> Δ 1; <i>met15</i> Δ 0; <i>tlc1</i> Δ ::HIS3; <i>proA-EST2</i> (N-terminal tag) [pRS315-TLC1 (TLC1, LEU2, CEN/ARS)]	This study, [8]
YLV115	MATa; <i>ura3</i> -52; <i>leu2</i> -1; <i>trp1</i> -63; <i>his3</i> Δ ::LEU2; <i>rat1</i> -1; <HIS>Pgal::HA2- NRD1	This study
YLV154	MATa; <i>ura3</i> -52; <i>leu2</i> -1; <i>trp1</i> -63; <i>his3</i> Δ ::LEU2; <i>rat1</i> -1; <HIS>Pgal::HA2- NRD1; <i>rrp47</i> Δ ::KAN MX	This study
YF691	MATa; <i>ura3</i> -52; <i>leu2</i> -3, 112; <i>trp1</i> Δ 0; <i>pep4</i> -3	[9]
YF1446	MATa; <i>ura3</i> -52; <i>leu2</i> -3, 112; <i>trp1</i> Δ 0; <i>pep4</i> -3; <i>sen1</i> -1	[9]
YF1449	MATa; <i>ura3</i> -52; <i>leu2</i> -3, 112; <i>trp1</i> Δ 0; <i>pep4</i> -3; <i>sen1</i> -1; <i>rrp6</i> Δ ::URA3	[2]
YP34 (SPT999a)	h+; <i>ura4</i> ; <i>leu1</i> -32; <i>his2</i> ; <i>otr1</i> ::URA4+; <i>ade6</i> -210	[10]
YP35 (SPEN 297)	h+; <i>ura4</i> ; <i>leu1</i> -32; <i>his2</i> ; <i>otr1</i> ::URA4+; <i>ade6</i> -210; <i>rrp6</i> Δ ::KAN MX	This study, [10]
YP67	h-; <i>leu1</i> ; <i>ura4</i> ; <i>dis3</i> -54	[11]
YP53	h+; <i>ura4</i> - Δ 18; <i>leu1</i> -32; <i>ade6</i> -216; DIS3-3xHA-TAP::KAN MX	This study
YP54	h+; <i>ura4</i> ; <i>leu1</i> -32; <i>his2</i> ; <i>otr1</i> ::URA4+; <i>ade6</i> -210; <i>rrp6</i> Δ ::KAN MX; DIS3-3xHA-TAP::KAN MX	This Study
YP22	h+; <i>ura4</i> - Δ 18; <i>leu1</i> -32; <i>ade6</i> -216	This study

¹)-strains were obtained from the Saccharomyces Genome Deletion Project

MAT? - indicates that the mating type of a haploid strain is not known.

Supporting References

1. Huang J, Brito IL, Villen J, Gygi SP, Amon A, et al. (2006) Inhibition of homologous recombination by a cohesin-associated clamp complex recruited to the rDNA recombination enhancer. *Genes Dev* 20: 2887-2901.
2. Vasiljeva L, Kim M, Terzi N, Soares LM, Buratowski S (2008) Transcription termination and RNA degradation contribute to silencing of RNA polymerase II transcription within heterochromatin. *Mol Cell* 29: 313-323.
3. Schaeffer D, Tsanova B, Barbas A, Reis FP, Dastidar EG, et al. (2009) The exosome contains domains with specific endoribonuclease, exoribonuclease and cytoplasmic mRNA decay activities. *Nat Struct Mol Biol* 16: 56-62.
4. Ben-Aroya S, Coombes C, Kwok T, O'Donnell KA, Boeke JD, et al. (2008) Toward a comprehensive temperature-sensitive mutant repository of the essential genes of *Saccharomyces cerevisiae*. *Mol Cell* 30: 248-258.
5. Birney E, Stamatoyannopoulos JA, Dutta A, Guigo R, Gingeras TR, et al. (2007) Identification and analysis of functional elements in 1% of the human genome by the ENCODE pilot project. *Nature* 447: 799-816.
6. Zhang D, Rosbash M (1999) Identification of eight proteins that cross-link to pre-mRNA in the yeast commitment complex. *Genes Dev* 13: 581-592.
7. Seipelt RL, Zheng B, Asuru A, Rymond BC (1999) U1 snRNA is cleaved by RNase III and processed through an Sm site-dependent pathway. *Nucleic Acids Res* 27: 587-595.
8. Friedman KL, Cech TR (1999) Essential functions of amino-terminal domains in the yeast telomerase catalytic subunit revealed by selection for viable mutants. *Genes Dev* 13: 2863-2874.
9. Ursic D, Chinchilla K, Finkel JS, Culbertson MR (2004) Multiple protein/protein and protein/RNA interactions suggest roles for yeast DNA/RNA helicase Sen1p in transcription, transcription-coupled DNA repair and RNA processing. *Nucleic Acids Res* 32: 2441-2452.
10. Nicolas E, Yamada T, Cam HP, Fitzgerald PC, Kobayashi R, et al. (2007) Distinct roles of HDAC complexes in promoter silencing, antisense suppression and DNA damage protection. *Nat Struct Mol Biol* 14: 372-380.
11. Ohkura H, Adachi Y, Kinoshita N, Niwa O, Toda T, et al. (1988) Cold-sensitive and caffeine-supersensitive mutants of the *Schizosaccharomyces pombe* *dis* genes implicated in sister chromatid separation during mitosis. *EMBO J* 7: 1465-1473.