

Supplementary Table S1. Strains used in this study.

Figure	Strain	Genotype	Source	Note
Fig. 1	UCC1111	MATa <i>ura3Δ0 leu2Δ0 trp1Δ63 his3Δ200 ade2Δ::hisG lys2Δ0 met15Δ0 adh4::URA3-TEL (VII-L) hhf2-hht2::MET15 hhf1-hht1::LEU2</i> pRS412 (<i>ADE2 CEN ARS</i>) - <i>HHF2-HHT2</i>	Kevin Struhl & Mark R. Parthun [1,2]	
Fig. 2	UCC1111	See Fig. 1		
	SY189	MATa <i>ura3Δ0 leu2Δ0 trp1Δ63 his3Δ200 ade2Δ::hisG lys2Δ0 met15Δ0 adh4::URA3-TEL (VII-L) hhf2-hht2::MET15 hhf1-hht1::LEU2 set1Δ::KanMX4</i> pRS412 (<i>ADE2 CEN ARS</i>) - <i>HHF2-HHT2</i>	[3]	
	SY190	MATa <i>ura3Δ0 leu2Δ0 trp1Δ63 his3Δ200 ade2Δ::hisG lys2Δ0 met15Δ0 adh4::URA3-TEL (VII-L) hhf2-hht2::MET15 hhf1-hht1::LEU2 set2Δ::KanMX4</i> pRS412 (<i>ADE2 CEN ARS</i>) - <i>HHF2-HHT2</i>	[3]	
	SY191	MATa <i>ura3Δ0 leu2Δ0 trp1Δ63 his3Δ200 ade2Δ::hisG lys2Δ0 met15Δ0 adh4::URA3-TEL (VII-L) hhf2-hht2::MET15 hhf1-hht1::LEU2 dot1Δ::KanMX4</i> pRS412 (<i>ADE2 CEN ARS</i>) - <i>HHF2-HHT2</i>	[3]	
	SY238	MATa <i>ura3Δ0 leu2Δ0 trp1Δ63 his3Δ200 ade2Δ::hisG lys2Δ0 met15Δ0 adh4::URA3-TEL (VII-L) hhf2-hht2::MET15 hhf1-hht1::LEU2 sir2Δ::KanMX4</i> pRS412 (<i>ADE2 CEN ARS</i>) - <i>HHF2-HHT2</i>	[3]	
Fig. 3A	BY4741	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0</i>		
	SY129	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 set1Δ::KanMX4</i>	[4]	
	FY021	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 set2Δ::KanMX4</i>	Euroscarf	
	FY059	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 dot1Δ::KanMX4</i>	Euroscarf	
Fig. 3B	BY4741	See Fig. 3A		
	SY386	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 sir2Δ::KanMX4::LEU2</i>	This study	From FY186
	SY396	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 set1Δ::KanMX4 sir2Δ::KanMX4::LEU2</i>	This study	From SY129
	SY418	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 set2Δ::KanMX4 sir2Δ::KanMX4::LEU2</i>	This study	From FY021
	SY409	MATa <i>his3Δ1 leu2Δ0 met15Δ0 ura3Δ0, dot1Δ::KanMX4 sir2Δ::KanMX4::LEU2</i>	This study	From FY059
Fig. 3C	SY213	MATa <i>ura3-1 leu2-3,112 his3-11,15 trp1-1 ade2-1 htb1-1 htb2-1 RNA14-TAP::His3MX6</i> pRS314 [Flag- <i>HTB1-CEN-TRP1</i>] pRG145 [GAPDHprom-3HA- <i>UBI4-URA3</i> Integrative]	This study	From YKH045 [5,6]
	SY214	MATa <i>ura3-1 leu2-3,112 his3-11,15 trp1-1 ade2-1 htb1-1 htb2-1 RNA14-TAP::His3MX6</i> pRS314 [Flag- <i>htb1-K123R-CEN-TRP1</i>] pRG145 [GAPDHprom-3HA- <i>UBI4-URA3</i> Integrative]	This study	From YKH046 [5,6]
	SY284	MATa <i>ura3-1 leu2-3,112 his3-11,15 trp1-1 ade2-1 htb1-1 htb2-1 RNA14-TAP::His3MX6 set1Δ::KanMX4</i> pRS314 [Flag- <i>htb1-K123R-CEN-TRP1</i>] pRG145 [GAPDHprom-3HA- <i>UBI4-URA3</i> Integrative]	This study	From YKH046 [5,6]
	SY285	MATa <i>ura3-1 leu2-3,112 his3-11,15 trp1-1 ade2-1 htb1-1 htb2-1 RNA14-TAP::His3MX6 set2Δ::KanMX4</i> pRS314 [Flag- <i>htb1-K123R-CEN-TRP1</i>] pRG145 [GAPDHprom-3HA- <i>UBI4-URA3</i> Integrative]	This study	From YKH046 [5,6]
	SY295	MATa <i>ura3-1 leu2-3,112 his3-11,15 trp1-1 ade2-1 htb1-1 htb2-1 RNA14-TAP::His3MX6 dot1Δ::KanMX4</i> pRS314 [Flag- <i>htb1-K123R-CEN-TRP1</i>] pRG145 [GAPDHprom-3HA- <i>UBI4-URA3</i> Integrative]	This study	From YKH046 [5,6]

Supplementary Table S2. Oligonucleotide sequences used in ChIP and RT-PCR analyses.

Figure	Name	Sequence	Reference
Fig. 1B and 2A	TEL-URA3-for (555-572) ^a	TGTATACACCCGCAGAGT	This study
	TEL-URA3-rev (666-687) ^a	GATTTTCCATGGAGGGCACAG	This study
	ACT1-for (1338-1358)	TGATAACGGTTCTGGTATGTG	[7]
	ACT1-rev (1851-1871)	TAGTCAGTCAAATCTCTACCG	[7]
Fig. 1C and 2C	TEL07L-URA3-1-for (123- 144) ^a	CCCAGCCTGCTTTTCTGTAACG	[3]
	TEL07L-URA3-1-rev (306-329) ^a	TGGGTGGAAGAGATGAAGGTTACG	[3]
	TEL07L-URA3-2-for (732- 756) ^a	TGGGACCTAATGCTTCAACTAACTC	[3]
	TEL07L-URA3-2-rev (1003-1024) ^a	GGAAGAACGAAGGAAGGAGCAC	[3]
	TEL07L-URA3-3-for (4912- 4933) ^a	ATTCTCTCCCTGCCATCCTC	[3]
	TEL07L-URA3-3-rev (5141-5164) ^a	GCTCTCTCCCACAAAATAATCTT	[3]
	TEL07L-URA3-4-for (15987-16009) ^a	GAATAATCGGCTGTAATCGGACC	[3]
	TEL07L-URA3-4-rev (16261-16281) ^a	ACCAACCGGATCAGGCAAGAC	[3]
Fig. 2B	TEL07L-URA3-1-for (123- 144) ^a	See Fig. 1C and 2C	
	TEL07L-URA3-1-rev (306-329) ^a	See Fig. 1C and 2C	
Fig. 1C, 2B and 2C	ChrV NO-ORF-for ^b	GGCTGTCAGAATATGGGGCCGTAGTA	[8,9]
	ChrV NO-ORF-rev ^b	CACCCCGAAGCTGCTTTCACAATAC	[8,9]

^aThe nucleotide numbers are relative to the first nucleotide of the *URA3* initiation codon (+1).

^bPrimers used to amplify the non-transcribed regions of chromosome V.

Supplementary Table S3. Mean lifespans and p-values for lifespan analysis

Figure	Strain A			Strain B			p-values
	Name	Mean ^a	n ^b	Name	Mean ^a	n ^b	
Fig. 3A	WT (BY4741)	29.8	47	<i>set1Δ</i>	21.1	50	2.1×10 ⁻³
	WT (BY4741)	29.8	47	<i>set2Δ</i>	41.6	49	7.0×10 ⁻⁴
	WT (BY4741)	29.8	47	<i>dot1Δ</i>	24.0	49	0.039
Fig. 3B	WT (BY4741)	25.9	48	<i>sir2Δ::KanMX4::LEU2</i>	13.6	41	2.7×10 ⁻¹⁰
	WT (BY4741)	25.9	48	<i>set2Δ+sir2Δ::KanMX4::LEU2</i>	19.2	46	7.1×10 ⁻⁴
	<i>sir2Δ::KanMX4::LEU2</i>	13.6	41	<i>set1Δ+sir2Δ::KanMX4::LEU2</i>	11.6	47	0.13
	<i>sir2Δ::KanMX4::LEU2</i>	13.6	41	<i>set2Δ+sir2Δ::KanMX4::LEU2</i>	19.2	46	2.0×10 ⁻³
	<i>sir2Δ::KanMX4::LEU2</i>	13.6	41	<i>dot1Δ+sir2Δ::KanMX4::LEU2</i>	13.2	45	0.90
Fig. 3C	WT (SY213)	19.1	48	<i>htb1-K123R</i> (SY214)	10.0	47	1.6×10 ⁻⁶
	<i>htb1-K123R</i> (SY214)	10.0	47	<i>set1Δ+htb1-K123R</i>	9.9	48	0.84
	<i>htb1-K123R</i> (SY214)	10.0	47	<i>set2Δ+htb1-K123R</i>	13.1	45	8.9×10 ⁻²
	<i>htb1-K123R</i> (SY214)	10.0	47	<i>dot1Δ+htb1-K123R</i>	11.3	41	0.38

^aMean lifespan; ^b number of cells analyzed in each experiment.

Supplementary references

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