TABLE S1A. Strains with deletions of FG repeats

Strain	MAT	Description	Genotype	Source
SWY2283	a	wt	*trp1-1 leu2-3,112u ra3-1 his3-11,15**	Strawn et al., 2004
SWY2284	α	wt	*leu2-3,112 ura3-1 his3-11,15 lys2**	"
SWY2801	α	*nup1 ΔFxFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup1 ΔFxFG*	"
SWY2731	a	*nup2 ΔFxFG*	*trp1 leu2 ura3 his3 myc-LoxP-nup2 ΔFxFG*	"
SWY2772	a	*nup60 ΔFxF*	*trp1 leu2 ura3 his3 myc-LoxP-nup60 ΔFxF*	"
SWY2922	a	*nsp1 ΔFG ΔFxFG*	*trp1 leu2 ura3 his3 flag-LoxP-nsp1 ΔFG ΔFxFG*	"
SWY2825	a	*nup49 ΔGLFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup49 ΔGLFG*	"
SWY2869	a	*nup145 ΔGLFG*	*trp1 leu2 ura3 his3 myc-LoxP-nup145 ΔGLFG*	"
SWY2754	a	*nup57 ΔGLFG*	*trp1 leu2 ura3 his3 myc-LoxP-nup57 ΔGLFG*	"
SWY2764	a	*nup100 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG*	"
SWY2789	a	*nup116 ΔGLFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup116 ΔGLFG*	"
SWY2882	a	*nup57 ΔGLFG nup49 ΔGLFG*	*leu2 ura3 his3 T7-LoxP-nup49 ΔGLFG myc-LoxP-nup57 ΔGLFG*	"
SWY2916	a	*nup116 ΔGLFG nup145 ΔGLFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup116 ΔGLFG myc-LoxP-nup145 ΔGLFG*	"
SWY2819	a	*nup116 ΔGLFG nup57 ΔGLFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup116 ΔGLFG myc-LoxP-nup57 ΔGLFG*	"
SWY2841	a	*nup116 ΔGLFG nup49 ΔGLFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup116 ΔGLFG T7-LoxP-nup49 ΔGLFG*	"
SWY2973	a	*nup100 ΔGLFG nup145 ΔGLFG*	*leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup145 ΔGLFG*	"
SWY2785	a	*nup100 ΔGLFG nup57 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup57 ΔGLFG*	"
SWY2835	a	*nup100 ΔGLFG nup49 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG T7-LoxP-nup49 ΔGLFG*	"
SWY2924	a	*nup145 ΔGLFG nup57 ΔGLFG*	*trp1 leu2 ura3 his3 myc-LoxP-nup145 ΔGLFG myc-LoxP-nup57 ΔGLFG*	"
SWY2965	a	*nup145 ΔGLFG nup49 ΔGLFG*	*leu2 ura3 his3 myc-LoxP-nup145 ΔGLFG T7-LoxP-nup49 ΔGLFG*	"
SWY2871	a	*nup100 ΔGLFG nup49 ΔGLFG nup57 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG T7-LoxP-nup49 ΔGLFG myc-LoxP-nup57 ΔGLFG*	"
SWY2968	a	*nup100 ΔGLFG nup145 ΔGLFG nup49 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup145 ΔGLFG T7-LoxP-nup49 ΔGLFG*	"
SWY2951	a	*nup100 ΔGLFG nup145 ΔGLFG nup57 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup145 ΔGLFG T7-LoxP-nup57 ΔGLFG*	"
SWY2953	α	*nup100 ΔGLFG nup145 ΔGLFG nup57 ΔGLFG*	*trp1-1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup145 ΔGLFG myc-LoxP-nup57 ΔGLFG*	"
SWY3008	a	*nup100 ΔGLFG nup49 ΔGLFG nsp1 ΔFG ΔFxFG*	*leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG T7-LoxP-nup49 ΔGLFG flag-LoxP-nsp1 ΔFG ΔFxFG*	"
SWY3012	a	*nup100 ΔGLFG nup57 ΔGLFG nsp1 ΔFG ΔFxFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup57 ΔGLFG flag-LoxP-nsp1 ΔFG ΔFxFG*	"

SWY2980	a	*nup100 ΔGLFG nup145 ΔGLFG nsp1 ΔFG ΔFxFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup100 ΔGLFG myc-LoxP-nup145 ΔGLFG flag-LoxP-nsp1 ΔFG ΔFxFG*	"
SWY2844	a	*ΔC*	*trp1 ura3 leu2 his3 ha-LoxP-Nup42 ΔFG myc-LoxP-Nup159 ΔFG*	"
SWY2852	α	*ΔC nsp1 ΔFG*	*trp1 ura3 leu2 his3 ha-LoxP-Nup42 ΔFG flag-LoxP-Nsp1 ΔFG myc-LoxP-Nup159 ΔFG*	"
SWY2897	α	*ΔN*	*trp1 ura3 leu2 his3 myc-LoxP-Nup2 ΔFxFG T7-LoxP-Nup1 ΔFxFG myc-LoxP-Nup60 ΔFxF*	"
SWY2905	α	*ΔN nsp1 ΔFxFG*	*trp1 ura3 leu2 his3 T7-LoxP-Nup1 ΔFxFG myc-LoxP-Nup2 ΔFxFG HA-LoxP-Nsp1 ΔFxFG myc-LoxP-Nup60 ΔFxF*	"
SWY3062	a	*ΔN ΔC nsp1 ΔFG ΔFxFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFLG myc-LoxP-nup60 ΔFxF flag-LoxP-nsp1 ΔFG ΔFxFG*	"
SWY3063	α	*ΔN ΔC nsp1 ΔFG ΔFxFG*	*trp1 ura3-1 leu2-3,112 his3-11,15 HA-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFG myc-LoxP-nup60 ΔFxF flag-LoxP-nsp1 ΔFG ΔFxFG*	"
SWY2971	α	*ΔN ΔC*	*trp1 ura3 leu2 his3 ha-LoxP-Nup42 ΔFG myc-LoxP-Nup159 ΔFG T7-LoxP-Nup1 ΔFxFG myc-LoxP-Nup2 ΔFxFG myc-LoxP-Nup60 ΔFxF*	"
SWY3462	a	*ΔN ΔC nup145 ΔGLFG*	*trp1 lys2 leu2 ura3 his3 ha-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFG myc-LoxP-nup60 ΔFxF myc-LoxP-nup145 ΔGLFG*	Terry & Wente, 2007
SWY3410	α	*ΔN ΔC nup57 ΔGLFG*	*trp1 leu2 ura3 his3 ha-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFG myc-LoxP-nup60 ΔFxF myc-LoxP-nup57 ΔGLFG*	"
SWY3930	a	*ΔN ΔC nup57 ΔGLFG*	*trp1 leu2 ura3 his3 T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFLG myc-LoxP-nup60 ΔFxF ha-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG myc-LoxP-nup57 ΔGLFG*	"
SWY3043	a	*ΔN ΔC nup100 ΔGLFG*	*trp1 ura3 leu2 his3 ha-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFG myc-LoxP-nup60 ΔFxF HA-loxP-nup100 ΔGLFG*	Strawn et al., 2004
SWY3603	α	*ΔN ΔC nup116 ΔGLFG*	*trp1 ura3 leu2 his3 ha-LoxP-nup42 ΔFG myc-LoxP-nup159 ΔFG T7-LoxP-nup1 ΔFxFG myc-LoxP-nup2 ΔFxFG myc-LoxP-nup60 ΔFxF T7-LoxP-nup116 ΔGLFG*	Terry & Wente, 2007

*These are also full genotypes for all the mutant strains for which these are parental, for mutants abbreviated as *trp1 ura3 leu2 his3*

TABLE S1B. Common and deletion strains

Strain*	MAT	Description	Genotype	Source
			trp1-H3 ura3-52 his3-200 ade2-101 lys2-1 leu1-12 can1-100 bar1::hisG	Menees and Sandmeyer,
yTM443	a	wt	*GAL+ ΔTy3*	1994
BY4741	a	wt	*his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	Open Biosystems
nup120 Δ	a	*nup120 Δ*	*nup120 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap108 Δ	a	*kap108 Δ*	*kap108 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap114 Δ	a	*kap114 Δ*	*kap114 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap120 Δ	a	*kap120 Δ*	*kap120 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap122 Δ	a	*kap122 Δ*	*kap122 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap123 Δ	a	*kap123 Δ*	*kap123 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap142 /msn5 Δ	a	*kap142/msn5 Δ*	*kap142/msn5 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
los1 Δ	a	*los1 Δ*	*los1 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"

* All deletion strains were made in BY4741 background

TABLE S1B. Common and deletion strains

Strain*	MAT	Description	Genotype	Source
			trp1-H3 ura3-52 his3-200 ade2-101 lys2-1 leu1-12 can1-100 bar1::hisG	Menees and Sandmeyer,
yTM443	a	wt	*GAL+ ΔTy3*	1994
BY4741	a	wt	*his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	Open Biosystems
nup120 Δ	a	*nup120 Δ*	*nup120 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap108 Δ	a	*kap108 Δ*	*kap108 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap114 Δ	a	*kap114 Δ*	*kap114 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap120 Δ	a	*kap120 Δ*	*kap120 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap122 Δ	a	*kap122 Δ*	*kap122 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap123 Δ	a	*kap123 Δ*	*kap123 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
kap142 / msn5 Δ	a	*kap142 / msn5 Δ*	*kap142 / msn5 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"
los1 Δ	a	*los1 Δ*	*los1 Δ::kanMX4 his3Δ1 leu2Δ0 met15Δ0 ura3Δ0*	"

* All deletion strains were made in BY4741 background

TABLE S2A. Plasmids for expression in *E. coli*

Plasmid	Description	Marker	Protein Residues	Promoter	Source
pGEX-2TK	*GST* vector	AmpR		T7	GE Healthcare
	*GST-NUP59**	"	full-length	"	Allen et al., 2002
	*NUP159 GST-FG**	"	441–881	"	"
pSW487	*GST-NUP42*	"	full-length	"	This work
pSW1399	*NSP1 GST-FxFG*	"	167-601	"	"
pSW433	*NUP100 GST-GLFG*	"	2-610	"	Iovine et al., 1995
pSW304	*GST-NUP116 (codons 161-730)*	"	161-730	"	"
pNB3033	*GAG3* -6xHIS-tag, optimized for *E.coli* expression	KanR	1-290	"	This work
pNB3034	CA-6xHIS-tag, optimized for *E.coli* expression	"	1-207	"	"
pNB3028	CA NTD-6xHIS-tag, optimized for *E.coli* expression	"	1-135	"	"
pNB3029	CA CTD-6xHIS-tag, optimized for *E.coli* expression	"	136-207	"	"
pNB3030	SP-NC-6xHIS-tag, optimized for *E.coli* expression	"	208-290	"	"
pNB3031	NC-6xHIS-tag, optimized for *E.coli* expression	"	234-290	"	"

TABLE S2B. Plasmids for expression in *S. cerevisiae*

Plasmid	Description	Copy #	Ty3 Protein Residues	Promoter	Source
pSSL2010	2x-GFP in pYES2	2 μ	N/A	p*GAL1*	Lin et al., 2001
pNB2723	*GAG3* -2xGFP	"	1-290	"	This work
pNB2725	CA-2xGFP	"	1-207	"	"
pNB2726	CA-SP-2xGFP	"	1-233	"	"
pNB2727	CA NTD-2xGFP	"	1-135	"	"
pNB2728	CA CTD-2x-GFP	"	136-207	"	"
pNB2729	SP-NC-2xGFP	"	208-290	"	"
pNB2730	NC-2xGFP	"	234-290	"	"
pNB2731	NC(C267A)-2xGFP	"	234-290	"	"
pNB2361	Ty3-*HIS3*	ARS4/CEN6	full-length Ty3	p*GAL10*	"
pDLC201	wt Ty3	2 μ	full-length Ty3	"	Hansen et al., 1988
pDLC201 mutant derivatives	Ty3 with mutations in *GAG3*	"	full-length Ty3	"	Larsen et al., 2007; Larsen et al., 2008

*These plasmids are a gift from Dr. Rexach