**Table S1: Yeast strains used in this study**

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| **Strain** | **Genotype** | **Source** |
| BY4741 (wild-type) | Mat a, his3, leu2, met15, ura3 | Euroscarf |
| YBD1122, set1 | Mat a, his3, leu2, met15, ura3, set1:: KanMX4 | Dehe et al., 2006 |
| YBD780swd1 | Mat a, his3, leu2, met15, ura3swd1:: KanMX4 | Euroscarf |
| YBD781swd3 | Mat a, his3, leu2, met15, ura3swd3:: KanMX4 | Euroscarf |
| YBD783sdc1 | Mat a, his3, leu2, met15, ura3sdc1:: KanMX4 | Euroscarf |
| YBD782bre2 | Mat a, his3, leu2, met15, ura3bre2:: KanMX4 | Euroscarf |
| YBD779spp1 | Mat a, his3, leu2, met15, ura3spp1:: KanMX4 | Euroscarf |
| YBD784shg1 | Mat a, his3, leu2, met15, ura3shg1:: KanMX4 | Euroscarf |
| YBD247, H3 wild-type | Mat , ura3-52, leu2-3,112, trp 1-289, his31, (hht1-hhf1)(hht2-hhf2) (CEN ARS URA3 HHT-1-HHF1) | Hsu et al., 2000 |
| YBD245, H3K4A | Mat , ura3-52, leu2-3,112, trp 1-289, his31, (hht1-hhf1)(hht2-hhf2) pBD364 (CEN ARS TRP1 HHT-1(K4A)-HHF1) | Dichtl et al, 2004 |
| YBD246, H3K9A | Mat , ura3-52, leu2-3,112, trp 1-289, his31, (hht1-hhf1)(hht2-hhf2) pBD364 (CEN ARS TRP1 HHT-1(K9A)-HHF1) | Dichtl et al, 2004 |
| YBD228, H3S10A | Mat , ura3-52, leu2-3,112, trp 1-289, his31, (hht1-hhf1)(hht2-hhf2) pBD364 (CEN ARS TRP1 HHT-1(S10A)-HHF1) | Hsu et al., 2000 |
| SET1-G951S | Mat a, ade2-101, trp11, leu21, his3200, lys2-801, ura352, G951S::ura3 | Sollier et al., 2004 |
| Zk4, ipl1-2 | MATα, lys2-801, his3-200, ura3-52, ipl1-2 | Zhang et al, 2005 |
| YBD1417mbp1 | Mat a, his3, leu2, met15, ura3mbp1:: KanMX4 | Euroscarf |
| YBD1415swi4 | Mat a, his3, leu2, met15, ura3swi4:: KanMX4 | Euroscarf |
| YCI001  set1 x ipl1-2 | Mat a/, his3 his3-200, ura3/ ura3-52, SET1/set1:: KanMX4, IPL1/ ipl1-2 | This work |
| YBD2246,  swi4 x ipl1-2 | Mat a/, his3 his3-200, ura3/ ura3-52, SWI4/swi4:: KanMX4, IPL1/ ipl1-2 | This work |
| YBD2265,  mbp1 x ipl1-2 | Mat a/, his3 his3-200, ura3/ ura3-52, MBP1/mbp1:: KanMX4, IPL1/ ipl1-2 | This work |
| YBD 2267,  pho23 x ipl1-2 | Mat a/, his3 his3-200, ura3/ ura3-52, PHO23/pho23:: KanMX4, IPL1/ ipl1-2 | This work |
| YBD2266,  rrp6 x set1 | Mat a/, his3 HIS3 ura3/ura3, SET1/set1:: KlURA3, RRP6/rrp6:: KanMX4 | This work |
| YBD2301,  rrp6set1 | Mat a, ura3, SET1/set1:: KlURA3, RRP6/rrp6:: KanMX4 | This work |
| YBD1243, bar1 | Mat a, his3, leu2, met15, ura3bar1:: NatR | This work |
| YBD1273set1bar1 | Mat a, his3, leu2, met15, ura3set1:: KanMX4, bar1:: NatR | This work |
| CUY696 tub2-423 | Mat , his3, ade2, leu2, lys2 tub2-423::URA3 | Reijo et al., 1994 |
| YBD2277  tub2-423 x set1 | Mat a/, his3/ his3, ade2/ADE2, leu2/ leu2, lys2/LYS2 TUB2/tub2-423::URA3, SET1/set1:: KanMX4 | This work |
| YBD2346  tub3 x set1 | Mat a/, his3 HIS3 ura3/ura3, SET1/set1:: KlURA3, TUB3/tub3:: KanMX4 | This work |
| set1 in E3087 | W303 (RAD5) URA3::GPD-TK5x AUR1c::ADH-hENT1 set1 | Talarek et al., 2015 |
| YBD717bre1 | Mat a, his3, leu2, met15, ura3bre1:: KanMX4 | Euroscarf |
| YBD739rad6 | Mat a, his3, leu2, met15, ura3rad6:: KanMX4 | Euroscarf |
| YBD1236jhd2 | Mat a, his3, leu2, met15, ura3jhd2:: KanMX4 | Euroscarf |
| YBD1814set2 | Mat a, his3, leu2, met15, ura3set2:: KanMX4 | Euroscarf |
| YBD1159dot1 | Mat a, his3, leu2, met15, ura3dot1:: KanMX4 | Euroscarf |
| YBD1496paf1 | Mat a, his3, leu2, met15, ura3paf1:: KanMX4 | Euroscarf |
| YBD737leo1 | Mat a, his3, leu2, met15, ura3leo1:: KanMX4 | Euroscarf |
| YBD740rtf1 | Mat a, his3, leu2, met15, ura3rtf1:: KanMX4 | Euroscarf |
| YBD742ctr9 | Mat a, his3, leu2, met15, ura3ctr9:: KanMX4 | Euroscarf |
| YBD743cdc73 | Mat a, his3, leu2, met15, ura3cdc73:: KanMX4 | Euroscarf |
| YBD2240not4 | Mat a, his3, leu2, met15, ura3not4:: KanMX4 | Euroscarf |
| YBD2245not5 | Mat a, his3, leu2, met15, ura3not5:: KanMX4 | Euroscarf |
| YBD2124ccr4 | Mat a, his3, leu2, met15, ura3ccr4:: KanMX4 | Euroscarf |
| YBD2254pho23 | Mat a, his3, leu2, met15, ura3pho23:: KanMX4 | Euroscarf |
| YBD2113set3 | Mat a, his3, leu2, met15, ura3set3:: KanMX4 | Euroscarf |
| YBD2255hos2 | Mat a, his3, leu2, met15, ura3hos2:: KanMX4 | Euroscarf |
| YBD2256hos4 | Mat a, his3, leu2, met15, ura3hos4:: KanMX4 | Euroscarf |
| YBD2257cpr1 | Mat a, his3, leu2, met15, ura3cpr1:: KanMX4 | Euroscarf |
| YBD2258sif2 | Mat a, his3, leu2, met15, ura3sif2:: KanMX4 | Euroscarf |
| YBD2259sin3 | Mat a, his3, leu2, met15, ura3sin3:: KanMX4 | Euroscarf |
| YBD2260snt1 | Mat a, his3, leu2, met15, ura3snt1:: KanMX4 | Euroscarf |
| YBD2261bye1 | Mat a, his3, leu2, met15, ura3bye1:: KanMX4 | Euroscarf |
| YBD2262cti6 | Mat a, his3, leu2, met15, ura3cti6:: KanMX4 | Euroscarf |
| YBD2252hat1 | Mat a, his3, leu2, met15, ura3hat1:: KanMX4 | Euroscarf |
| YBD1086gcn5 | Mat a, his3, leu2, met15, ura3gcn5:: KanMX4 | Euroscarf |
| YBD576yaf9 | Mat a, his3, leu2, met15, ura3yaf9:: KanMX4 | Euroscarf |
| YBD2246rpd3 | Mat a, his3, leu2, met15, ura3rpd3:: KanMX4 | Euroscarf |
| YBD2247vps75 | Mat a, his3, leu2, met15, ura3vps75:: KanMX4 | Euroscarf |
| YBD1378rtt109 | Mat a, his3, leu2, met15, ura3rtt109:: KanMX4 | Euroscarf |
| YBD2248hda1 | Mat a, his3, leu2, met15, ura3hda1:: KanMX4 | Euroscarf |
| YBD2249hda2 | Mat a, his3, leu2, met15, ura3hda2:: KanMX4 | Euroscarf |
| YBD2250hda3 | Mat a, his3, leu2, met15, ura3hda3:: KanMX4 | Euroscarf |
| YBD2251 hos1 | Mat a, his3, leu2, met15, ura3hos1:: KanMX4 | Euroscarf |