**Expanded View table 1.** Yeast strains used in this study.

|  |  |
| --- | --- |
| YBP641 | *MAT*a *bar1∆ ura3::URA3::GPD-TK7* |
| YPB642 | *MAT*a *bar1∆NatMX6 rad3-102::HphMX6 ura3::URA3::GPD-TK7* |
| YBP643 | *MAT*a *bar1∆NatMX6 mus81∆KanMX4 ura3::URA3::GPD-TK7* |
| YBP645 | *MAT*a *bar1∆ rad3-102::HphMX6 mus81∆KanMX4 ura3::URA3::GPD-TK7* |
| YBP782 | *MAT*a *bar1∆ mus81-dd ura3::URA3::GPD-TK7* |
| YBP785 | *MAT*a *bar1∆ rad3-102::HphMX6 mus81-dd ura3::URA3::GPD-TK7* |
| YREC102-51 | *MAT*a *rad3-102::HphMX6 mus81∆KanMX4 rad51∆KanMX4* |
| YBP1068 | *MAT*a *bar1∆ rad3-102::HphMX6 rad51∆::LEU2 ura3::URA3::GPD-TK7* |
| PP3558 | *MAT*a *RAD52-YFP RFA1-CFP ura3::mCHERRY-PUS1::URA3* |
| PP3562 | *MAT*a *RAD52-YFP RFA1-CFP mus81∆::NatMX6 ura3::mCHERRY-PUS1::URA3* |
| YBP699 | *MAT*a *bar1∆ rad52∆::klTRP1MX6 Mms4-His6-Flag10::KanMX4 ura3::URA3::GPD-TK7* |
| WS-M11 | *MAT*a *mre11∆::KanMX4* |
| WS-R50 | *MAT*a *rad50∆KanMX4* |
| WS-X2 | *MAT*a *xrs2∆KanMX4* |
| YBP665 | *MAT*a *bar1∆ rad51∆::HphMX6 ura3::URA3::GPD-TK7* |
| YBP667 | *MAT*a *bar1∆ pol32∆::NatMX6 ura3::URA3::GPD-TK7* |
| YBP669 | *MAT*a *bar1∆ rad51∆::HphMX6 pol32∆::NatMX6 ura3::URA3::GPD-TK7* |
| YREC102-49 | *MAT*a *mus81∆KanMX4 rad51∆KanMX4* |
| YREC102-47 | *MAT*a *mus81∆KanMX4 pol32∆HphMX6* |
| YBP716 | *MAT*a *bar1∆ mms4∆::klTRP1MX6 ura3::URA3::GPD-TK7* |
| YBP759 | *MAT*a *bar1∆ rad3-102::HphMX6 mms4∆::klTRP1MX6 ura3::URA3::GPD-TK7* |
| YBP727 | *MAT*a *bar1∆ pADH1-HA3-mms4-9A::HIS3* |
| YBP732 | *MAT*a *bar1∆ mms4-14A-HA3::URA3* |
| YBP671 | *MAT*a *bar1∆ Mms4-His6-Flag10::KanMX4 ura3::URA3::GPD-TK7* |
| YBP673 | *MAT*a *bar1∆ rad3-102::HphMX6 Mms4-His6-Flag10::KanMX4 ura3::URA3::GPD-TK7* |
| YBP697 | *MAT*a *bar1∆ yen1∆::klTRP1MX6 Mms4-His6-Flag10::KanMX4 ura3::URA3::GPD-TK7* |
| YBP712 | *MAT*a *bar1∆::NatMX6 mus81∆::KanMX4 yen1∆::klTRP1MX6 ura3::URA3::GPD-TK7* |
| YREC105-24 | *MAT*a *rad3-102::HphMX6 yen1∆::KanMX4* |
| YBP1178 | *MAT*a *bar1∆ mre11-3::URA3* |
| YBP1179 | *MAT*a *bar1∆ yku70∆::KanMX6* |
| YBP1180 | *MAT*a *bar1∆ mre11-3::URA3 yku70∆::KanMX6* |
| YBP1181 | *MAT*a *bar1∆ rad3-102::HphMX6 mre11-3::URA3* |
| YBP1183 | *MAT*a *bar1∆ rad3-102::HphMX6 yku70∆::KanMX6* |
| YBP1185 | *MAT*a *bar1∆ rad3-102::HphMX6 mre11-3::URA3 yku70∆::KanMX6* |
| YBP1187 | *MAT*a *bar1∆ exo1∆::HIS3* |
| YBP1189 | *MAT*a *bar1∆ mre11-3::URA3 exo1∆::HIS3* |
| YBP1191 | *MAT*a *bar1∆ exo1∆::HIS3 yku70∆::KanMX6* |
| YBP1193 | *MAT*a *mre11-3::URA3 exo1∆::HIS3 yku70∆::KanMX6* |
| YBP1195 | *MAT*a *bar1∆ rad3-102::HphMX6 exo1∆::HIS3* |
| YBP1197 | *MAT*a *rad3-102::HphMX6 mre11-3::URA3 exo1∆::HIS3* |
| YBP1199 | *MAT*a *bar1∆ rad3-102::HphMX6 exo1∆::HIS3 yku70∆::KanMX6* |
| YBP1201 | *MAT*a *rad3-102::HphMX6 mre11-3::URA3 exo1∆::HIS3 yku70∆::KanMX6* |
| LSY2743-1.1 | *MAT*a*-inc* *bar1∆::LEU2 ade3::pGAL-HO ura3::URA3::GPD-TK7 lys2∆::NatMX4 avt2::lys-HOcs::KanMX6 cos9::TRP1-ys2* |
| LSY2753-3.8 | *MAT*a*-inc* *bar1∆::LEU2 ade3::pGAL-HO ura3::URA3::GPD-TK7 lys2∆::NatMX4 avt2::lys-HOcs::KanMX6 cos9::TRP1-ys2 pol32∆::KanMX6* |
| LSY2824-21D | *MAT*a*-inc* *bar1∆::LEU2 ade3::pGAL-HO ura3::URA3::GPD-TK7 lys2∆::NatMX4 avt2::lys-HOcs::KanMX6 cos9::TRP1-ys2 rad51∆::LEU2* |
| PP3475 | *MAT*a*-inc* *bar1∆::LEU2 ade3::pGAL-HO ura3::URA3::GPD-TK7 lys2∆::NatMX4 avt2::lys-HOcs::KanMX6 cos9::TRP1-ys2 pol32∆::KanMX6 rad51∆::HphMX6* |
| PP3476 | *MAT*a*-inc* *bar1∆::LEU2 ade3::pGAL-HO ura3::URA3::GPD-TK7 lys2∆::NatMX4 avt2::lys-HOcs::KanMX6 cos9::TRP1-ys2 pol32∆::KanMX6 rad51∆::HphMX6* |
| PP708 | *MAT*α *ura3::URA3::GPD-TK7 rev3∆ ::NatMX4* |
| YBP1203 | *MAT*a *bar1∆ rad3-102::HphMX6 wss1∆::KanMX4* |
| YBP1204 | *MAT*a *bar1∆ rad3-102::HphMX6 wss1∆::KanMX4* |
| YBP1206 | *MAT*a *bar1∆ wss1∆::KanMX4* |
| YBP1207 | *MAT*a *tdp1∆::NatMX6* |
| YBP1209 | *MAT*a *bar1∆ rad3-102::HphMX6 tdp1∆::NatMX6* |
| YBP1097 | *MAT*a *bar1∆ rad3-102::HphMX6 NatMX6::G2-MUS81* |
| YBP1101 | *MAT*a *NatMX6::G2-MUS81* |
| YBP816 | *MAT*a *bar1∆ rad52∆::klLEU2 mus81∆::KanMX4* |
| YBP1237 | *MAT*a *bar1∆ NatMX6::S-MUS81* |
| YBP1239 | *MAT*a *bar1∆ rad3-102::HphMX6 NatMX6::S-MUS81* |
| YBP1241 | *MAT*a *bar1∆ NatMX6::S-MUS81-HA3::klTRP1* |
| PP3779 | *MAT*a *bar1∆::NatMX4 cdc5-2::URA3* |