**Table S1.** *Saccharomyces cerevisiae* **strains used in this study.**

| Strain | Relevant genotype | Source |
|---|---|---|
| W303 | *MATa/α ade2-1 can1-100 his3-11,15 leu2-3,112 trp1-1 ura3-1 rad5-535* | |
| YLL936 | W303 *mre11Δ::HIS3* | 1 |
| YLL1069 | W303 *sae2Δ::KANMX* | 1 |
| YLL2402 | W303 *exo1Δ::LEU2* | 1 |
| YLL2403 | W303 *exo1Δ::LEU2 sae2Δ::KANMX* | 1 |
| YLL2511 | W303 *dna2Δ::NATMX pif1-M2::URA3* | This study |
| YLL3497 | W303 *sae2Δ::KANMX SGS1-ss-3HA::URA3* | This study |
| YLL3503 | W303 *sae2Δ::KANMX SGS1-ss::TRP1* | This study |
| YLL3557 | W303 *sgs1-hd::LEU2* | This study |
| YLL3558 | W303 *sgs1-hd-ss::TRP1* | This study |
| DMP2949 | W303 *rad9Δ::URA3* | This study |
| DMP5694 | W303 *mre11-H125N* | This study |
| DMP5936 | W303 *SGS1-ss::TRP1* | This study |
| DMP5952 | W303 *pif1-M2::URA3 yku70Δ::HIS3 sae2Δ::KANMX* | This study |
| DMP5956 | W303 *mre11-H125N SGS1-ss::TRP1* | This study |
| DMP5964/7A | W303 *exo1Δ::LEU2 sae2Δ::KANMX SGS1-ss::TRP1* | This study |
| DMP5964/1B | W303 *exo1Δ::LEU2 SGS1-ss::TRP1* | This study |
| DMP6008 | W303 *pif1-M2::URA3 sae2Δ::KANMX SGS1-ss::TRP1* | This study |
| DMP6011 | W303 *mre11Δ::KANMX SGS1-ss::TRP1* | This study |
| DMP6068/2B | W303 *sae2Δ::KANMX rad9Δ::URA3* | This study |
| DMP6068/4C | W303 *sae2Δ::KANMX rad9Δ::URA3* | This study |
| DMP6068/2D | W303 *sae2Δ::KANMX rad9Δ::URA3 SGS1-ss::TRP1* | This study |
| DMP6068/6B | W303 *sae2Δ::KANMX rad9Δ::URA3 SGS1-ss::TRP1* | This study |
| JKM139 | *MATa hmlΔ::ADE1, hmrΔ::ADE1, ade1-100, lys5, leu2-3,112, trp1::hisG ura3-52, ho, ade3::GAL-HO site* | 2 |
| YLL1523 | JKM139 *sae2Δ::KANMX* | This study |
| YLL1540 | JKM139 *exo1Δ::LEU2* | This study |
| YLL1643 | JKM139 *bar1Δ::HPHMX* | This study |
| YLL2482 | JKM139 *sgs1Δ::NATMX* | This study |
| YLL3397 | JKM139 *SGS1-3HA::URA3 bar1Δ::HPHMX* | This study |
| YLL3507 | JKM139 *sae2Δ::KANMX SGS1-ss::TRP1* | This study |
| YLL3564 | JKM139 *SGS1-3HA::URA3 rad9Δ::KANMX bar1Δ::HPHMX* | This study |
| DMP5685 | JKM139 *ku70Δ::URA3 bar1Δ::HPHMX* | This study |
| DMP5793 | JKM139 *rad9Δ::KANMX* | This study |
| DMP5984 | JKM139 *SGS1-ss::TRP1* | This study |
| DMP5985 | JKM139 *SGS1-ss::TRP1 bar1Δ::HPHMX* | This study |
| DMP6005 | JKM139 *rad9Δ::KANMX SGS1-ss::TRP1* | This study |

| DMP6012 | JKM139 *rad9Δ::KANMX sgs1Δ::NATMX* | This study |
|---|---|---|
| DMP6034 | JKM139 *rad9Δ::KANMX sae2Δ::KANMX* | This study |
| DMP6080 | JKM139 *exo1Δ::LEU2 rad9Δ::KANMX* | This study |
| DMP6084/2B | JKM139 *SGS1-ss-3HA::URA3 bar1Δ::HPHMX* | This study |
| DMP6084/5D | JKM139 *SGS1-ss-3HA::URA3 rad9Δ::KANMX bar1Δ::HPHMX* | This study |
| DMP6125/8A | JKM139 *EXO1-18MYC::TRP1 bar1Δ::HPHMX* | This study |
| DMP6125/5A | JKM139 *EXO1-18MYC::TRP1 rad9Δ::KANMX bar1Δ::HPHMX* | This study |
| DMP6127 | JKM139 *exo1Δ::LEU2 SGS1-ss::TRP1* | This study |
| DMP6129/8A | JKM139 *ku70Δ::URA3 SGS1-ss::TRP1 bar1Δ::HPHMX* | This study |
| DMP6129/15B | JKM139 *ku70Δ::URA3 rad9Δ::KANMX bar1Δ::HPHMX* | This study |
| DMP6145/2C | JKM139 *MRE11-18MYC::TRP1 sae2Δ::KANMX* | This study |
| DMP6145/10B | JKM139 *MRE11-18MYC::TRP1 sae2Δ::KANMX SGS1-ss::TRP1* | This study |
| SK1 | *MATa/MATα HO/HO lys2/lys2 ura3::hisG/ura3::hisG leu2::hisG/leu2::hisG* | |
| DMP2679 | *SK1 sae2Δ::NATMX/sae2Δ ::NATMX* | 3 |
| DMP6071/2B | *SK1 SGS1-ss::TRP1/ SGS1-ss::TRP1* | This study |
| DMP6071/2A | *SK1 sae2Δ::NATMX/ sae2Δ::NATMX SGS1-ss::TRP1/ SGS1-ss::TRP1* | This study |
| YMV45 | *ho hml::ADE1 mata::hisG hmr::ADE1 leu2::leu2(Asp718-SalI)-URA3*-pBR332-*MATa ade3::GAL::HO ade1 lys5 ura3-52 trp1::hisG* | 4 |
| YLL1621 | YMV45 *sae2Δ::KANMX* | This study |
| YLL3583 | YMV45 *sae2Δ::KANMX SGS1-ss::TRP1* | This study |
| YLL3584 | YMV45 *SGS1-ss::TRP1* | This study |

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