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

|  |  |  |
| --- | --- | --- |
| Strain | Relevant genotype | Source |
| W303 | *MAT*a/α *ade2-1 can1-100 his3-11,15 leu2-3,112 trp1-1 ura3-1 rad5-535* |  |
| DMP7292/2A | W303 *MAT*a *chd1∆::HPHMX* | This study |
| DMP7252/3A | W303 *MAT*a *chd1-E514A::LEU2* | This study |
| DMP7289/2D | W303 *MAT*a *chd1-K407R::LEU2* | This study |
| DMP5781/1B | W303 *MAT*a *rad50-V1269M::KANMX* | 1 |
| DMP7145/1D | W303 *MAT*a *chd1∆::HPHMX rad50-V1269M::KANMX* | This study |
| DMP7252/3B | W303 *MAT*a *chd1-E514A::LEU2 rad50-V1269M::KANMX* | This study |
| DMP7289/6B | W303 *MAT*a *chd1-K407R::LEU2 rad50-V1269M::KANMX* | This study |
| YLL2479.1 | W303 *MAT*a *dnl4∆::KANMX* | This study |
| JKM139 | *MAT*a *hml∆*::*ADE1,* *hmr∆::ADE1*, *ade1-100, lys5,**leu2-3,112, trp1::hisG ura3-52, ho, ade3::GAL-HO site* | 2 |
| YLL4201.5 | JKM139 *MAT*a *chd1∆::HPHMX* | This study |
| YLL4350.1 | JKM139 *MAT*a *chd1-E514A::LEU2* | This study |
| YLL4351.1 | JKM139 *MAT*a *chd1-K407R::LEU2* | This study |
| YLL3077.12 | JKM139 *MAT*a *rad51∆::HPHMX* | This study |
| YLL1769.1 | JKM139 *MAT*a *mre11∆::NATMX* | 3 |
| YLL1523.3 | JKM139 *MAT*a *sae2∆::KANMX* | 4 |
| YLL4291.4 | JKM139 *MAT*a *CHD1-18MYC::URA3* | This study |
| YLL1854.2 | JKM139 *MAT*a *MRE11-18MYC::TRP1*  | 1 |
| DMP7076/1D | JKM139 *MAT*a *MRE11-18MYC::TRP1* *chd1∆::HPHMX* | This study |
| DMP7311/8D | JKM139 *MAT*a *MRE11-18MYC::TRP1* *chd1-E514A::LEU2* | This study |
| DMP7312/4D | JKM139 *MAT*a *MRE11-18MYC::TRP1* *chd1-K407R::LEU2* | This study |
| DMP6021/4A | JKM139 *MAT*a *MRE11-18MYC::TRP1* *rad50-V1269M::KANMX* | 1 |
| DMP7373/9B | JKM139 *MAT*a *MRE11-18MYC::TRP1* *rad50-V1269M::KANMX chd1∆::HPHMX* | This study |
| YLL1643.1 | JKM139 *MAT*a *bar1∆::HPHMX* | 5 |
| DMP6433/6C | JKM139 *MAT*a *bar1∆::TRP1 YKU70-3HA::URA3* | 5 |
| DMP7194/2B | JKM139 *MAT*a *bar1∆::TRP1 YKU70-3HA::URA3 chd1∆::HPHMX* | This study |
| DMP7251/10A | JKM139 *MAT*a *bar1∆::TRP1 YKU70-3HA::URA3 chd1-E514A::LEU2* | This study |
| DMP5819/3D | JKM139 *MAT*a *rad50-V1269M::KANMX* | 1 |
| DMP7094/3B | JKM139 *MAT*a *rad50-V1269M::KANMX chd1∆::HPHMX* | This study |
| YLL1959.2 | JKM139 *MAT*a *EXO1-18MYC::TRP1*  | 3 |
| DMP7385/4A | JKM139 *MAT*a *EXO1-18MYC::TRP1 chd1∆::HPHMX* | This study |
| DMP7387/6D | JKM139 *MAT*a *EXO1-18MYC::TRP1 chd1-K407R::LEU2* | This study |
| DMP7386/10C | JKM139 *MAT*a *EXO1-18MYC::TRP1 chd1-E514A::LEU2* | This study |
| YLL3136.13 | JKM139 *MAT*a *SAE2-18MYC::TRP1*  | This study |
| YLL4232.5 | JKM139 *MAT*a *SAE2-18MYC::TRP1 chd1∆::HPHMX* | This study |
| DMP7309/5D | JKM139 *MAT*a *SAE2-18MYC::TRP1 chd1-E514A::LEU2* | This study |
| DMP7310/1C | JKM139 *MAT*a *SAE2-18MYC::TRP1 chd1-K407R::LEU2* | 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* | 6 |
| YLL4304.3 | YMV45 *chd1∆::TRP1* | This study |
| YLL4329.1 | YMV45 *chd1-E514A::LEU2* | This study |
| YLL4394.1 | YMV45 *chd1-K407R::LEU2* | This study |
| YLL4339.6 | YMV45 *rad52∆::HPHMX* | This study |
| YLL4307.3 | YMV45 *rad52∆::HPHMX chd1∆::TRP1* | This study |
| YLL4338.1 | YMV45 *rad52∆::HPHMX chd1-E514A::LEU2* | This study |
| YLL4395.1 | YMV45 *rad52∆::HPHMX chd1-K407R::LEU2* | This study |
| YLL4405.1 | YMV45 *rad50-V1269M::KANMX* | This study |
| YLL4406.1 | YMV45 *rad50-V1269M::KANMX chd1∆::TRP1* | This study |
| tGI354 | *ho hml∆::ADE1 MATa-inc hmr∆::ADE1 ade1 leu2-3;112 lys5 trp1::hisG ura3-52 ade3::GAL::HO arg5,6::MATa::HPHMX* | 7 |
| YLL4306.6 | tGI354 *chd1∆::TRP1* | This study |
| YLL4330.1 | tGI354 *chd1-E514A::LEU2* | This study |
| YLL4403.38 | tGI354 *rad50-V1269M::KANMX* | This study |
| YLL4404.23 | tGI354 *rad50-V1269M::KANMX chd1∆::TRP1* | This study |

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