

**Supplementary Table S1. Yeast strains**

| Name                              | Genotype   | Figure                       | Reference                  |
|-----------------------------------|--|------------------------------|----------------------------|
| UCC3515                           | <i>MAT</i> $\alpha$ <i>ade2-101 his3<math>\Delta</math>200 leu2<math>\Delta</math>1 trp1-<math>\Delta</math>63 ura3-52 lys2-801 hml <math>\alpha</math>hml::URA3</i> | 1, 4B, S1C                   | Singer & Gottschling, 1994 |
| TAT7                              | <i>MAT</i> $\alpha$ <i>ade2-1 ura3-1 his3-11,15 trp1-1 leu2-3,112 can1-100</i>   | 2A, S2A, 4A, S4A, S4C        | our stock                  |
| W303-1a                           | <i>MAT</i> $\alpha$ <i>ade2-1 ura3-1 his3-11,15 trp1-1 leu2-3,112 can1-100</i>   |                              | our stock                  |
| W303-1a $\Delta$ bar1 (Wild type) | W303-1a $\Delta$ bar1::hisG  | 2B, 3A 4C, 5D, S2B, S2C, S5D | our stock                  |
| YYK16                             | W303-1a <i>sld3-6</i>  | 2B, S2B                      | Kamimura et al., 2001      |
| YYK19                             | W303-1a $\Delta$ bar1 <i>sld3-5</i>  | S2C                          | Kamimura et al., 2001      |
| YST1038                           | W303-1a $\Delta$ bar1 <i>GALp</i> vector   | 3B, S1A,B                    | Tanaka et al., 2011        |
| YST1054                           | W303-1a $\Delta$ bar1 <i>GALp-SLD3-SLD7-CDC45</i>  | 3B, S1A,B                    | Tanaka et al., 2011        |
| YST1788                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp (LEU2)</i>   | 1, 2C, S1C                   | this work                  |
| YST1789                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp-SLD3-SLD7-CDC45 (LEU2) x1 copy</i>   | 1, 2C                        | this work                  |
| YST1790                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp-SLD3-SLD7-CDC45 (LEU2) x2 copies</i>   | 1, 2C, S1C                   | this work                  |
| YST1861                           | UCC3515 $\Delta$ <i>sir1::KanMX</i>  | 1, 4B, S1C-E                 | this work                  |
| YST1862                           | UCC3515 $\Delta$ <i>sir2::KanMX</i>  | 1, 4B                        | this work                  |
| YST1878                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp-SLD3-CDC45 (LEU2) x2 copies</i>  | S1C                          | this work                  |
| YST1880                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp-SLD3-CDC45<sup>JET1</sup> (LEU2) x2 copies</i>   | S1C                          | this work                  |
| YST1882                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp-SLD3-SLD7 (LEU2) x2 copies</i>   | S1C                          | this work                  |
| YST1884                           | UCC3515 <i>leu2<math>\Delta</math>1::GALp-SLD7-CDC45 (LEU2) x2 copies</i>  | S1C                          | this work                  |
| YST1896                           | YST1790 $\Delta$ <i>swe1::KanMX</i>  | S1D,E                        | this work                  |
| YST1898                           | YST1790 $\Delta$ <i>mih1::KanMX</i>  | S1D,E                        | this work                  |
| YST1928                           | W303-1a $\Delta$ bar1 $\Delta$ <i>sir1::KanMX</i>  | S3C                          | this work                  |
| YST1930                           | W303-1a $\Delta$ bar1 $\Delta$ <i>sir2::KanMX</i>  | 3A, S3C                      | this work                  |
| YST2313                           | YYK16 $\Delta$ <i>eof5::KanMX</i>  | 2B, S2B                      | this work                  |
| YST2314                           | YYK16 $\Delta$ <i>eof6::KanMX</i>  | 2B, S2B                      | this work                  |
| YST2327                           | W303-1a $\Delta$ bar1 $\Delta$ <i>eof3::KanMX</i>  | 2B, S2B, S2C                 | this work                  |
| YST2329                           | W303-1a $\Delta$ bar1 $\Delta$ <i>eof5::KanMX</i>  | 2B, S2B, S2C, 3A             | this work                  |
| YST2330                           | W303-1a $\Delta$ bar1 $\Delta$ <i>eof6::KanMX</i>  | 2B, S2B, S2C                 | this work                  |
| YST2331                           | W303-1a $\Delta$ bar1 $\Delta$ <i>eof7::KanMX</i>  | 2B, S2B, S2C                 | this work                  |
| YST2345                           | YST1788 $\Delta$ <i>eof3::KanMX</i>  | 2C                           | this work                  |
| YST2346                           | YST1788 $\Delta$ <i>eof5::KanMX</i>  | 2C                           | this work                  |
| YST2347                           | YST1788 $\Delta$ <i>eof6::KanMX</i>  | 2C                           | this work                  |
| YST2351                           | YST1790 $\Delta$ <i>eof3::KanMX</i>  | 2C                           | this work                  |

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|---------------------|--|-----------------|-----------|
| YST2352             | YST1790 <i>Deaf5::KanMX</i>  | 2C              | this work |
| YST2353             | YST1790 <i>Deaf6::KanMX</i>  | 2C              | this work |
| YST2482             | YST1038 <i>Deaf5::KanMX</i>  | 3C              | this work |
| YST2489             | YST1054 <i>Deaf5::KanMX</i>  | 3C              | this work |
| YST2551             | W303-1a $\Delta$ bar1 <i>Δyaf9::KanMX</i>  | 2B, S2B,<br>S2C | this work |
| YST2616             | YYK19 <i>Deaf5::KanMX</i>  | S2C             | this work |
| YST2617             | YYK19 <i>Deaf6::KanMX</i>  | S2C             | this work |
| YST2741             | W303-1a $\Delta$ bar1 <i>esa1<sup>Sld3(-)-2</sup></i>  | 4C, 5D, S5D     | this work |
| YST2749             | W303-1a $\Delta$ bar1 <i>his3-11, 15::GALp-SLD3-SLD7-CDC45 (HIS3) <math>\geq</math>2 copies</i>                          | 5B, S5B         | this work |
| YST2751             | W303-1a $\Delta$ bar1 <i>esa1<sup>Sld3(-)-1</sup> his3-11, 15::GALp-SLD3-SLD7-CDC45 (HIS3) <math>\geq</math>2 copies</i> | 5B, S5B         | this work |
| YST2753             | W303-1a $\Delta$ bar1 <i>esa1<sup>Sld3(-)-2</sup> his3-11, 15::GALp-SLD3-SLD7-CDC45 (HIS3) <math>\geq</math>2 copies</i> | 5B, S5B         | this work |
| YST2827             | UCC3515 <i>leu2Δ1::GALp (LEU2)</i>   | 4B              | this work |
| YST2828             | UCC3515 <i>leu2Δ1::GALp-SLD3-SLD7-CDC45 (LEU2) x1 copy</i>   | 4B              | this work |
| YST2831             | UCC3515 <i>sld3<sup>Esa1(-)-1</sup> leu2Δ1::GALp-sld3<sup>Esa1(-)-1</sup>-SLD7-CDC45 (LEU2) x1 copy</i>                  | 4B              | this work |
| YST2832             | UCC3515 <i>sld3<sup>Esa1(-)-2</sup> leu2Δ1::GALp-sld3<sup>Esa1(-)-2</sup>-SLD7-CDC45 (LEU2) x1 copy</i>                  | 4B              | this work |
| YST2834             | UCC3515 <i>sld3<sup>Esa1(-)-3</sup> leu2Δ1::GALp-sld3<sup>Esa1(-)-3</sup>-SLD7-CDC45 (LEU2) x1 copy</i>                  | 4B              | this work |
| YST2843 (Wild type) | W303-1a $\Delta$ bar1::hisG  | 4C, 5C, S5C     | this work |
| YST2870             | YST2843 <i>sld3<sup>Esa1(-)-3</sup></i>  | 4C, 5C, S5C     | this work |
| YST2895             | YST2843 <i>leu2-3.112::GALp-SLD3-SLD7-CDC45 (LEU2) x2 copies</i>   | 5A, S5A         | this work |
| YST2898             | YST2843 <i>sld3<sup>Esa1(-)-1</sup> leu2-3.112::GALp-sld3<sup>Esa1(-)-1</sup>-SLD7-CDC45 (LEU2) x2 copies</i>            | 5A, S5A         | this work |
| YST2903             | YST2843 <i>sld3<sup>Esa1(-)-3</sup> leu2-3.112::GALp-sld3<sup>Esa1(-)-3</sup>-SLD7-CDC45 (LEU2) x2 copies</i>            | 5A, S5A         | this work |
| YST3402             | YYK19 <i>Deaf3::KanMX</i>  | S2C             | this work |
| YST3403             | YYK19 <i>Deaf7::KanMX</i>  | S2C             | this work |
| YST3404             | YYK19 <i>Δyaf9::KanMX</i>  | S2C             | this work |
| YST3406             | YYK16 <i>Deaf3::KanMX</i>  | 2B, S2B         | this work |
| YST3407             | YYK16 <i>Deaf7::KanMX</i>  | 2B, S2B         | this work |
| YST3408             | YYK16 <i>Δyaf9::KanMX</i>  | 2B, S2B         | this work |
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