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| Supplemental Table 1: Reagents used in this study | | | | |
| Reagent type | **Designation** | **Source or reference** | **Identifiers** | **Additional Information** |
|  |  |  |  |  |
| Chemical compound | Alpha Factor | Zymo | Y1001 |  |
| Chemical compound | Nocodozole | Sigma | M1404 |  |
| Chemical compound | Methyl methanesulfonate | ACROS | 66-27-3 | noted as MMS in text |
| Chemical compound | Hydroxyurea | Sigma | H8627 | noted as HU in text |
| Chemical compound | Protease inhibitor cocktail | Sigma | P8215 |  |
| Chemical compound | ECL Prime | GE Healthcare | RPN2232 |  |
| Chemical compound | Glass beads | BioSpec | 11079105 |  |
| Chemical compound | IGEPAL-630 | Sigma | I-3021 |  |
| Antibody | Mouse anti-PGK | Novex | 459250 | WB: 1:20,000 |
| Antibody | Rabbit anti-H2B | Abcam | ab188291 | WB: 1:80,000 |
| Antibody | Mouse anti-V5 | Invitorgen | R960-25 | WB: 1:40,000 |
| Antibody | Mouse anti-SMC3 K112/K113 acetylation | Dr. Katsuhiko Shirahige |  | WB: 1:1,000 |
| Antibody | Goat anti-rabbit | Bio-Rad | 170-6515 | WB: 1:40,000 |
| Antibody | Goat anti-mouse | Bio-Rad | 170-6516 | WB: 1:10,000 (anti-acetyl) or 1:40,000 (V5 and PGK) |
| Genetic Reagent | *Saccharomyces cerevisiae* | this paper | Yeast strains | Supplementary table 2 |
| Genetic Reagent | *Escherichia coli* plasmids | this paper | DNA Plasmids | Supplementary table 3 |

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| Supplemental Table 2: Strains used in this study |
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| Strain Genotype Reference |
| DLY285 *MATa mec1-1:HIS ura3 leu2 trp1 his3* *Paulovich, 1995* |
| EU3430-9A *MATa SMC3-3V5-HIS3MX leu2-3, 112 his3-11, 15 lys2-801 trp1-1 bar1 GAL+* *Unal, 2008* |
| K699 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 GAL psi+* *Schwob, 1994* |
| K5824 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 smc3-42* *Stead, 2003* |
| K6013 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 GAL psi+ smc1-259* *Stead, 2003* |
| YBS2021 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1 Net1:GFP:KAN* This study |
| YDM884 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 Morrow, 1995* |
| YMM433 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 can1-100 smc1-2* This study |
| YMM435 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 can1-100 smc3-5* This study |
| YCZ044 *MATα ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1* This study |
| YCZ143 *MATα ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1* This study |
| YCZ144 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1* This study |
| YCZ147 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1* This study |
| YCZ225 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1 2µ POL30:URA* This study |
| YCZ249 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 KAN:ECO1, elg1∆::TRP* This study |
| YCZ262 *MATα ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 SMC3:V5:HIS* This study |
| YCZ280 *MATα ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 elg1∆::TRP SMC3:V5:HIS* This study |
| YCZ407 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 SMC3:V5:HIS* This study |
| YCZ408 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1 elg1∆::TRP SMC3:V5:HIS* This study |
| YCZ425 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1 SMC3:V5:HIS* This study |
| YCZ428 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 elg1∆::TRP SMC3:V5:HIS* This study |
| YCZ465 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 2µ POL30:URA* This study |
| YCZ474 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 mcd1-1 2µ vector:URA* This study |
| YCZ477 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 CEN vector:URA* This study |
| YCZ530 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 can1-100 smc1-2 CEN vector:URA* This study |
| YCZ532 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 can1-100 smc1-2 2µ POL30:URA* This study |
| YCZ534 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 can1-100 smc3-5 CEN vector:URA* This study |
| YCZ536 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 can1-100 smc3-5 2µ POL30:URA* This study |
| YCZ559 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 smc3-42 CEN vector:URA* This study |
| YCZ561 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 smc3-42 2µ POL30:URA* This study |
| YCZ563 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 GAL psi+ smc1-259 CEN vector:URA* This study |
| YCZ565 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3 can1-100 GAL psi+ smc1-259 2µ POL30:URA* This study |
| YCZ567 *MATa mec1-1:HIS ura3 leu2 trp1 his3 CEN vector:URA* This study |
| YCZ568 *MATa mec1-1:HIS ura3 leu2 trp1 his3 CEN vector:URA* This study |
| YCZ575 *MATa mec1-1:HIS ura3 leu2 trp1 his3 CEN vector:URA* This study |
| YCZ569 *MATa mec1-1:HIS ura3 leu2 trp1 his3 2µ POL30:URA* This study |
| YCZ570 *MATa mec1-1:HIS ura3 leu2 trp1 his3 2µ POL30:URA* This study |
| YCZ576 *MATa mec1-1:HIS ura3 leu2 trp1 his3 2µ POL30:URA* This study |
| YCZ571 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 CEN vector:URA* This study |
| YCZ572 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 CEN vector:URA* This study |
| YCZ577 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 CEN vector:URA* This study |
| YCZ573 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 2µ POL30:URA* This study |
| YCZ574 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 2µ POL30:URA* This study |
| YCZ578 *MATa tel1∆1::HIS3 ura3-52 his3∆200 ade2-101 leu2∆1 lys2-801 trp1∆1 2µ POL30:URA* This study |
| YCZ662 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 2µ ADH:GAL4AD:HA Vector:LEU* This study |
| YCZ663 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 2µ ADH:GAL4AD:HA Vector:LEU* This study |
| YCZ664 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 2µ ADH:GAL4AD:HA:POL30:LEU* This study |
| YCZ665 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 2µ ADH:GAL4AD:HA:POL30:LEU* This study |
| YCZ666 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc1-259 2µ ADH:GAL4AD:HA Vector:LEU* This study |
| YCZ667 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc1-259 2µ ADH:GAL4AD:HA Vector:LEU* This study |
| YCZ668 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc1-259 2µ ADH:GAL4AD:HA:POL30:LEU* This study |
| YCZ669 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 2µ ADH:GAL4AD:HA:POL30:LEU* This study |
| YCZ670 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 2µ ADH:GAL4AD:HA Vector:LEU* This study |
| YCZ671 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 2µ ADH:GAL4AD:HA Vector:LEU* This study |
| YCZ672 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 2µ ADH:GAL4AD:HA:POL30:LEU* This study |
| YCZ673 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 2µ ADH:GAL4AD:HA:POL30:LEU* This study |
| YCZ702 *MATa/α ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc1-259 elg1∆* This study |
| YCZ706 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 elg1∆* This study |
| YCZ707 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc3-42 elg1∆* This study |
| YCZ728 *MATa ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc1-259 elg1∆* This study |
| YCZ730 *MATα ade 2-1 his 3-11,15 leu 2-3,112 trp 1-1 ura3-1 smc1-259 elg1∆* This study |
| All strains are in the W303 background except for DLY285 (A364a), EU3430-9A (A364a), and YDM884 (A364a) |

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| Supplemental Table 3: Plasmids used in this study |
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| Plasmid Genotype Reference |
| pBS99 *2u POL30:URA* *Skibbens et al., 1999* |
| pRS316 CEN Vector *CEN:URA* *Sikorski and Hieter, 1989* |
| pGADT7 *2µ* Vector *ADH:HA:LEU* *TakaraBio #630442* |
| pCZ058 *2µ* *ADH:HA:POL30:LEU* *This study* |