Figure S1. Telomere clustering defects in dynein and kinesin mutants and intracellular localization of kinesin motors. (A) Telomere location of wild-type and dhc1Δ dlc1Δ mutant zygotes with two nuclei. (B) Telomere distribution in dynein and kinesin-8 mutant zygotes with two nuclei. (C) Telomere distribution in kinesin single, kinesin dhc1 double, and kinesin dlc1 double mutants with one nucleus. Because Cut7 is essential for growth, the temperature-sensitive cut7 allele, which causes meiotic defects even at the permissive temperature, was used for Cut7 analysis. The asterisk shows distribution in zygotes with two nuclei caused by nuclear fusion defects (Troxell et al., 2001). (D) Intracellular localization of kinesins. Pkl1 and Cut7 are localized in the nucleus, whereas other kinesins are localized at microtubules with some enrichment at the microtubule ends. Similar localization patterns were seen in cells undergoing cell conjugation. White lines indicate cell shapes. Mt, microtubule; Wt, wild type.
Figure S2. Microtubule and telomere dynamics and Sad1 localization of Dhc1 and Dlc1. (A and B) Microtubule nucleation from the vicinity of the telomere in haploid meiotic cells. Microtubule nucleation was examined after MBC removal in haploid meiotic cells. In B, the nuclear membrane was visualized simultaneously by mCherry-tagged Cut11 to show that the nucleated microtubules were in the cytoplasm (arrowheads). (C) The interaction between telomeres and microtubules in mitotic cells is not stable. Telomere and microtubule dynamics were examined in a haploid mitotic cell. Sid4 was visualized simultaneously with microtubules to localize the SPB. Arrows in A–C indicate the SPB as judged by signal intensity. (D) Microtubule nucleation from the vicinity of the telomere-associated Sad1 dots before cell conjugation. (E) Sad1 localization of Dhc1 in the dlc1Δ mutant and localization of Dlc1 in the dhc1Δ mutant after cell conjugation. (F) Intracellular localization of a Dhc1 fragment lacking a motor domain in dlc1Δ meiotic cells. dlc1Δ cells expressing the Dhc1 fragment failed to undergo nuclear fusion for unknown reasons. White lines indicate cell shapes. Telo, telomere; Mt, microtubule.
Figure S3. Meiotic progression in haploid wild-type, mto1Δ, and dynein mutant cells in the presence of DMSO or MBC. DMSO (left) or MBC (right) was added 2 h after nitrogen depletion (arrows). The experiment of the mto1Δ mutant was completed once. The data of other strains are shown from a single experiment out of two (wild type [Wt] and dhc1Δ) or three (dlc1Δ and dhc1Δ dlc1Δ) repeats. More than 100 cells were examined at each time point. nuc, nucleus.
Video 1. **Dynamics of microtubules and telomeres in cells undergoing cell conjugation.** Cells of opposite mating types expressing mCherry-tagged Taz1 (magenta) and GFP-tagged Atb2 (green) were induced to enter meiosis on solid ME medium. Time-lapse images were collected using a fluorescence microscope (IX71) equipped with a 60x/1.42 NA Plan Apochromat oil immersion objective lens and a cooled CCD camera (CoolSNAP-HQ2). Images at seven focal planes spaced at 0.5-µm intervals were taken every 30 s for 30 min, and each set of images was processed by deconvolution and combined to form a maximal projection by MetaMorph software. The video plays at a rate of three frames per second. The video sequence shows clustering of telomeres with microtubules. The two cells eventually fuse, and mCherry-tagged Taz1 diffused in the nucleus in one of the conjugating cells (top right) because it inefficiently localized to telomeres as a result of the expression of endogenous Taz1.

Video 2. **Dynamics of microtubules and telomeres in haploid meiotic cells after MBC removal.** Haploid cells bearing both types of the mating-type genes and expressing GFP-Atb2 (green) and Taz1-RFP (magenta) were induced to enter meiosis synchronously and treated with MBC to inhibit telomere clustering. MBC was removed around 5 h after induction of meiosis to allow the cells to reform microtubules. Time-lapse images were collected using a fluorescence microscope (IX71) equipped with a 60x/1.42 NA Plan Apochromat oil immersion objective lens and a cooled CCD camera (CoolSNAP-HQ2). After MBC removal, images at seven focal planes spaced at 0.5-µm intervals were taken every ~11 s for ~8 min, and each set of images was processed by deconvolution and combined to form a maximal projection by MetaMorph software. The video plays at a rate of three frames per second. The video shows nucleation of microtubules from the vicinity of the telomere and telomere clustering with the telomere-nucleated microtubules.

Video 3. **Microtubule nucleation from the vicinity of the telomere in haploid meiotic cells.** Haploid cells bearing both types of the mating-type genes and expressing RFP-Atb2 (magenta), Sid4-RFP (magenta), and Taz1-GFP (green) were induced to enter meiosis synchronously and treated with MBC to inhibit telomere clustering. MBC was removed around 5 h after induction of meiosis to allow the cells to reform microtubules. Time-lapse images were collected using a fluorescence microscope (IX71) equipped with a 60x/1.42 NA Plan Apochromat oil immersion objective lens and a cooled CCD camera (DP30BW; Olympus). Images at seven focal planes spaced at 0.5-µm intervals were taken every 20 s for 160 s, and each set of images was processed by deconvolution and combined to form a maximal projection by MetaMorph software. The video plays at a rate of two frames per second. At the beginning, one of telomere signals (top left) colocalized with the SPB, which was judged by the intensity of the RFP signal.

Video 4. **Dynamics of microtubules and telomeres in haploid mitotic cells.** Time-lapse images of a mitotic haploid cell expressing RFP-Atb2 (magenta), Sid4-RFP (magenta), and Taz1-GFP (green) were collected using a fluorescence microscope (IX71) equipped with a 60x/1.42 NA Plan Apochromat oil immersion objective lens and a CCD camera (DP30BW; Olympus). Images at seven focal planes spaced at 0.5-µm intervals were taken every 20 s for 140 s, and each set of images was processed by deconvolution and combined to form a maximal projection in MetaMorph software. The video plays at a rate of two frames per second. Telomeres do not stably interact with microtubules in mitosis.

Video 5. **Dynamics of microtubules and telomeres in haploid meiotic cells after MBC removal.** Haploid cells bearing both types of the mating-type genes and expressing GFP-Atb2 (green) and Taz1-RFP (magenta) were synchronously induced to enter meiosis and treated with MBC to inhibit telomere clustering. MBC was removed around 5 h after induction of meiosis to allow the cells to reform microtubules. After MBC removal, time-lapse images were collected using a fluorescence microscope (IX71) equipped with a 60x/1.42 NA Plan Apochromat oil immersion objective lens and a CCD camera (CoolSNAP-HQ2). Images at seven focal planes spaced at 0.5-µm intervals were taken every 15 s for 1 min, and each set of images was processed by deconvolution and combined to form a maximal projection by MetaMorph software. The video plays at a rate of three frames per second. One of telomere signals (left) moves upon interaction with microtubules.

Video 6. **Microtubule nucleation from telomere-localized Sad1 before cell conjugation.** Cells expressing Sad1-DsRed (magenta) and GFP-Atb2 (green) were induced to enter meiosis and treated with MBC to disrupt microtubules. After MBC removal, time-lapse images were collected using a fluorescence microscope (IX71) equipped with a 60x/1.42 NA Plan Apochromat oil immersion objective lens and a cooled CCD camera (CoolSNAP-HQ2). Images at seven focal planes spaced at 0.5-µm intervals were taken every 15 s for 4 min, and each set of images was processed by deconvolution and combined to form a maximal projection by MetaMorph software. The video plays at a rate of three frames per second.
Table S1. List of strains used in this study

| Figure | Strain type | Strain name | Genotype |
|--------|-------------|-------------|----------|
| Fig. 1 B and Fig. S1 A | Wt | SMY1 | \(h^{+}\) ade6-M210 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP \(^{Alb2} \)
| | dhc1Δ dlc1Δ | SMY8 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP taz1::ura4
| | dhc1Δ dlc1Δ | SMY8 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP taz1::ura4
| Fig. 1 C and Fig. S1 B | Wt | SKS1-2 | \(h^{+}\) ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP
| | dhc1Δ | SKS1-3 | \(h^{+}\) ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP dhc1-d3::LEU2
| | dlc1Δ | SKS1-40 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP taz1::ura4 dlc1::ura4
| | ssm4Δ | SKS3-73 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 ssm4::kan\(^{R} \) lys1::taz1::GFP taz1::ura4
| | dhc1Δ ssm4Δ | SKS3-74 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 dhc1-d3::LEU2 ssm4::kan lys1::taz1::GFP taz1::ura4
| | dlc1Δ ssm4Δ | SKS3-75 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 dlc1::ura4 ssm4::kan lys1::taz1::GFP taz1::ura4
| | dhc1Δ dlc1Δ | MYS1-21 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP taz1::ura4
| | dhc1Δ dlc1Δ ssm4Δ | SMY1 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 ssm4::kan lys1::taz1::GFP taz1::ura4
| Fig. 1 D and Fig. S1 B | klp5Δ | SKS2-1C | \(h^{+}\) ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP dhc1-d3::LEU2
| | dhc1Δ | SKS2-45 | \(h^{+}\) ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP dhc1-d3::LEU2
| | klp6Δ | SKS2-19 | \(h^{+}\) ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP dhc1-d3::LEU2
| | klp5Δ klp6Δ dhc1Δ | SKS2-3A | \(h^{+}\) ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP dhc1-d3::LEU2
| | | | klp5::ura4 klp6::his3
| Fig. 2 A, and Video 1 | Taz1 | SMY102-25B | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | Kms1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Kms1 | SKT60-1 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| Fig. 2 C | Kms1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| Fig. 2, D and E | Kms2 | SMY102-25B | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| Fig. 3, A-D | Kms1 | SMY102-25B | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| Fig. 3 B | Kms1 | SMY102-25B | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Kms1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SMY150-2A | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| | Dhc1 | SKT60-2 | \(h^{+}\) ade6-M216 leu1-32 ura4-D18 lys1::taz1::GFP sad1::DsRed-LEU2
| | | | klp5::ura4 klp6::his3
| Fig. 3 C and Fig. S2 E | Dhc1 | SMY77-3B | \(h^{+}\) ade6-M216 leu1-32 lys1-131 ura4-D18 dlc1::ura4 sad1::DsRed-LEU2
| Figure | Strain type | Strain name | Genotype |
|--------|-------------|-------------|----------|
| Fig. 3 D and Fig. 4, D and E | Mto1 [dhc1 Δ] | SKT35-13B | h<sup>+</sup> ade6 his3-D1 leu1-32 ura4-D18 dlc1-d4::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 ura4-D18 dlc1-d4::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Fig. 3 D and Fig. 4, D and E | Mto1 [dhc1 Δ] | SKT35-14D | h<sup>+</sup> ade6 his3-D1 leu1-32 ura4-D18 dlc1-d3::LEU2<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 ura4-D18 dlc1-d3::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Alp4 [W] | Skt144-1A | MY813-23C | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Alp4 [W] | Skt144-1B | MY813-24C | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Table S1. List of strains used in this study (Continued) | Fig. 3 E | | |
| Fig. 3 E | Skt67-1 | MY352-1A | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Fig. 3 E | Skt70-2 | MY352-2A | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Fig. 3 F and Fig. 4, D and E | Alp4 [dhc1 Δ] | SKT35-13B | h<sup>+</sup> ade6 his3-D1 leu1-32 ura4-D18 dlc1-d4::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 ura4-D18 dlc1-d4::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Fig. 3 F and Fig. 4, D and E | Alp4 [dhc1 Δ] | SKT35-14D | h<sup>+</sup> ade6 his3-D1 leu1-32 ura4-D18 dlc1-d3::LEU2<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 ura4-D18 dlc1-d3::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> mtol::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Alp4 [W] | Skt144-1A | MY813-23C | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Alp4 [W] | Skt144-1B | MY813-24C | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Alp4 [mto1 Δ] | Skt67-1 | MY352-1A | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
| Alp4 [mto1 Δ] | Skt70-2 | MY352-2A | h<sup>+</sup> ade6 his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> his2-245 leu1-32 lys1-131 alp4<sup>+</sup>::GFP<sup>+</sup> km<sup>+</sup>::ura4<sup>+</sup> dhc1<sup>+</sup> dlc1<sup>+</sup> sad1<sup>+</sup> DsRed<LEU2> |
### Table S1. List of strains used in this study (Continued)

| Figure | Strain type | Strain name | Genotype |
|--------|-------------|-------------|----------|
| SJM13-1B | h* his2-245 leu1-32 mto1::kan1 | |
| SJM13-8A | mto1::kan1 | |
| HM04-27 | ade6-L469 | |
| SHM148-11A | ade6-M26 | |
| HNO1-16 | ade6-M375 | |
| SJM14-12C | ade6-L469 his2-245 leu1-32 mto1::kan1 | |
| SJM15-2D | ade6-M26 ura4-D18 mto1::kan1 | |
| SJM16-1C | ade6-M375 ura4-D18 mto1::kan1 | |
| Fig. 4 C | Shot | SMY102-25B | h<sup>lo</sup> leu1-32 ura4-D18 lys1::taz1-GFP sad1::DsRed-LEU2 |
| | | SMY102-24D | h<sup>lo</sup> leu1-32 ura4-D18 kms1::ura4<sup>+</sup> lys1::taz1-GFP sad1::DsRed-LEU2 |
| | mto1Δ | SKT5-1A | h* ade6-M210 his2-245 leu1-32 ura4-D18 mto1::kan1 lys1::taz1-GFP sad1::DsRed-LEU2 |
| | | SKT7-3C | h ade6-M210 leu1-32 ura4-D18 mto1::kan1 lys1::taz1-GFP sad1::DsRed-LEU2 |
| | dhc1Δ dlc1Δ | SMY43-35A | h* ade6-M216 his2-245 leu1-32 ura4-D18 dhc1-d4::ura4<sup>+</sup> dlc1-d14::ura4<sup>+</sup> lys1::taz1-GFP sad1::DsRed-LEU2 |
| | | SKT34-1 | h leu1-32 ura4-D18 dhc1-d14::ura4<sup>+</sup> dlc1-d1::ura4<sup>+</sup> lys1::taz1-GFP sad1::DsRed-LEU2 |
| | | SSK37-1A | h ade6-M216 leu1-32 lys1-131 ura4-D18 dhc1-d14::ura4<sup>+</sup> dlc1-d1::ura4<sup>+</sup> lys1::taz1-GFP sad1::DsRed-LEU2 |
| Fig. 4 D | Shot | SMY107-3D | h* ade6-M210 leu1-32 ura4-D18 alp4::GFP-kan1 sad1::DsRed-LEU2 |
| | | SMY107-5C | h* ade6-M210 his2-245 leu1-32 ura4-D18 alp4::GFP-kan1 sad1::DsRed-LEU2 |
| Fig. 4 F | Shot | SSF22-1C | h* his2-245 leu1-32 ura4-D18 sad1::DsRed-LEU2 lys1::Pnda3-GFPab2<sup>+</sup> |
| | | SSF22-15C | h* ade6-M210 leu1-32 ura4-D18 sad1::DsRed-LEU2 lys1::Pnda3-GFPab2<sup>+</sup> |
| | mto1Δ | SKT4-3D | h ade6-M210 ura4-D18 mto1::kan1 sad1::DsRed-LEU2 |
| | | SKT6-1A | h* ade6-M210 his3-D1 leu1-32 ura4-D18 mto1::kan1 sad1::DsRed-LEU2 |
| | | | |
| Fig. 5, A and B; and Fig. S3 | Shot | SKT15-1 | h* lys1::mat<sup>α</sup> alp<sup>4</sup>::GFP-kan1 sid4::mRFP-kan1 aur1::aur1-taz1<sup>r</sup>-mCherry<sup>r</sup> |
| | mto1Δ | SKT23-1 | h* mto1::kan1 lys1::mat<sup>α</sup> alp<sup>4</sup>::GFP-kan1 sid4::mRFP-kan1 aur1::aur1-taz1<sup>r</sup>-mCherry |
| | dhc1Δ | SMY154-82 | h* ura4-D18 dhc1-d14::ura4<sup>+</sup> lys1::mat<sup>α</sup> alp<sup>4</sup>::GFP-kan1 sid4::mRFP-kan1 aur1::aur1-taz1<sup>r</sup>-mCherry |
| | dlc1Δ | SMY154-91 | h* ura4-D18 dlc1-d4::ura4<sup>+</sup> lys1::mat<sup>α</sup> alp<sup>4</sup>::GFP-kan1 sid4::mRFP-kan1 aur1::aur1-taz1<sup>r</sup>-mCherry |
| | dhc1Δ dlc1Δ | SMY155-22 | h* ura4-D18 dhc1-d14::ura4<sup>+</sup> dlc1-d4::ura4<sup>+</sup> lys1::mat<sup>α</sup> alp<sup>4</sup>::GFP-kan1 sid4::mRFP-kan1 aur1::aur1-taz1<sup>r</sup>-mCherry |
| Fig. S1 C | pk1Δ | SKS2-23 | h<sup>lo</sup> ade6-M210 his3-D1 leu1-32 ura4-D18 pk1-D25::[his3<sup>+</sup>]<r> taz1::ura4<sup>+</sup> lys1::taz1-GFP |
| | pk2Δ | SKS5-12 | h<sup>lo</sup> ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP pk1-D25::[ura4<sup>+</sup>]<r> |
| | pk1Δ dhc1Δ | SKS1-4 | h<sup>lo</sup> ade6-M210 his3-D1 leu1-32 ura4-D18 lys1::taz1-GFP dhc1-d3::[LEU2]<r> pk1-D25::[his3<sup>+</sup>]<r> |
| | kl2Δ dhl1Δ | SK1-7 | h<sup>lo</sup> ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1-GFP dhc1-d3::[LEU2]<r> pk2-D25::[ura4<sup>+</sup>]<r> |
| | kl2Δ kl1Δ dhl1Δ | SKS1-5 | h<sup>lo</sup> ade6-M210 his3-D1 leu1-32 ura4-D18 lys1::taz1-GFP dhc1-d3::[LEU2]<r> pk1-D25::[his3<sup>+</sup>]<r> kl2-D25::[ura4<sup>+</sup>]<r> |
| | teo2Δ | SSS48-11D | h* ade6-M210 his3-D1 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP dhc1-d3::[LEU2]<r> |
| | | SSS48-3A | h* ade6-M210 his3-D1 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP teo2<sup>+</sup> |
| | | SSS48-6B | h* ade6-M210 his3-D1 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP dhc1-d3::[LEU2]<r> teo2<sup>+</sup> |
| | | SSS48-3D | h* ade6-M210 his3-D1 ura4-D18 dhc1-d3::[LEU2]<r> teo2<sup>+</sup> |
| | | SSMY49-28 | h* leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP cut7-446<sup>r</sup> |
| | | SSMY49-2C | h* leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP cut7-446<sup>r</sup> |
| | | SSMY49-7A | h* leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP dhc1-d3::[LEU2]<r> cut7-446 |
| | | SSMY49-11D | h* leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP dhc1-d3::[LEU2]<r> cut7-446 |
| | dhl1Δ | SSK1-40 | h<sup>lo</sup> ade6-M216 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP taz1::ura4<sup>+</sup> dlc1::ura4<sup>+</sup> |
| | kl1Δ kl2Δ | SSMY71-3C | h<sup>lo</sup> ade6 his3-D1 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP dlc1::ura4<sup>+</sup> |
| | | SSK8-2C | h<sup>lo</sup> ade6-M216 leu1-32 ura4-D18 lys1::taz1<sup>r</sup>-GFP dlc1::ura4<sup>+</sup> kl2-D25::[ura4<sup>+</sup>]<r> taz1::ura4<sup>+</sup> |
Table S1. List of strains used in this study (Continued)

| Figure     | Strain type | Strain name                          | Genotype                                                                 |
|------------|-------------|--------------------------------------|--------------------------------------------------------------------------|
| dlc1Δ klp6Δ | h' ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP klp6::ura4+ dlc1::ura4+ | h' ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP klp6::ura4+ dlc1::ura4+ |
| dlc1Δ klp6Δ | h' ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP klp6::ura4+ dlc1::ura4+ | h' ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP klp6::ura4+ dlc1::ura4+ |
| dlc1Δ tea2Δ | h' ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP tea2::his3+ dlc1::ura4+ | h' ade6-M216 his3-D1 leu1-32 ura4-D18 lys1::taz1::GFP tea2::his3+ dlc1::ura4+ |
| dlc1Δ cut7  | h' ade6-M216 his2-245 leu1-32 ura4-D18 lys1::taz1::GFP cut7-446 dlc1::ura4+ | h' ade6-M216 his2-245 leu1-32 ura4-D18 lys1::taz1::GFP cut7-446 dlc1::ura4+ |

Wt, wild type.
*Chikashige and Hiraoka, 2001.
*This study.
*Cooper et al., 1998.
*Yamamoto et al., 1999.
*Miki et al., 2002.
*Niccoli et al., 2004; obtained from A. Yamashita and H. Yamamoto, Tokyo University, Tokyo, Japan.
*West et al., 2001; obtained from J.R. McIntosh, Colorado University, Boulder, CO.
*Masuda et al., 2006.
*Chikashige et al., 2004.
*Saito et al., 2005; obtained from the Yeast Genetic Resource Center (YRGC), Osaka, Japan.
*Toyoda et al., 2007; obtained from the YRGC.
*Tomlin et al., 2002.
*Samejima et al., 2005; obtained from K. Sawa, University of Edinburgh, Edinburgh, Scotland, UK.
*Shimakawa et al., 1997; obtained from the YRGC.
*Yamamoto and Hiraoka, 2003.
*Troxell et al., 2001; obtained from J.R. McIntosh.
*Brown et al., 2000; obtained from J.R. McIntosh.
*Yamamoto et al., 2000; obtained from J. Paluh, University of Albany, Albany, NY.
*Unsworth et al., 2008; obtained from T. Toda, Cancer Research UK, London, England, UK.
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