

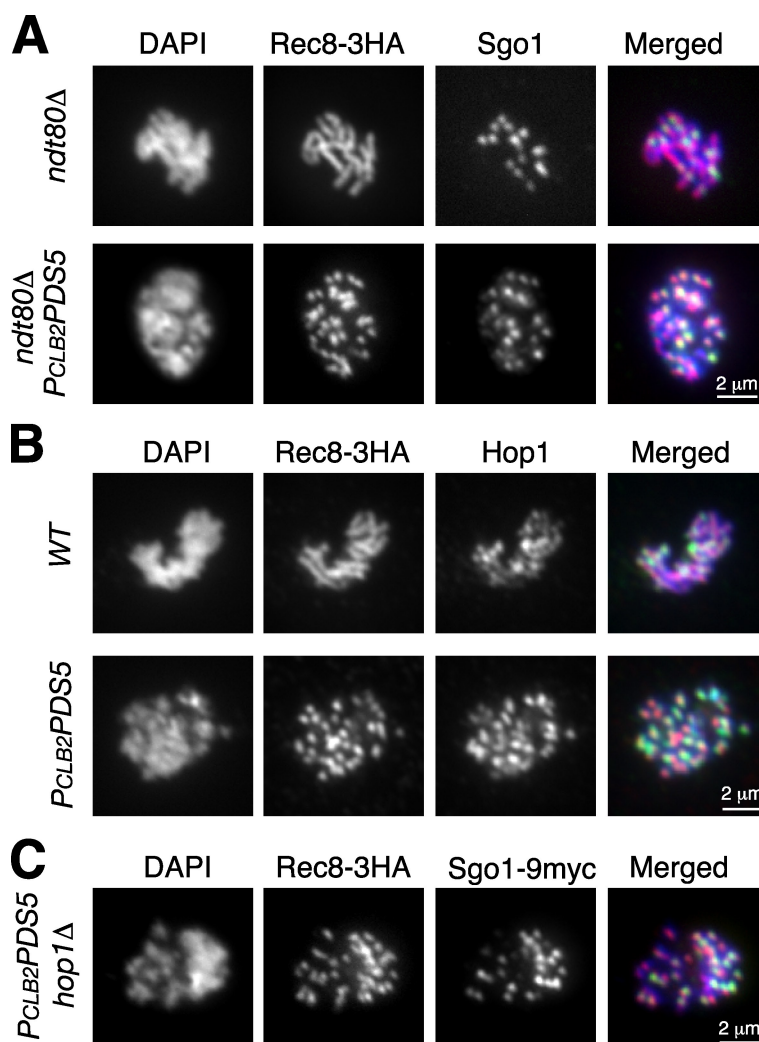
Jin et al., <http://www.jcb.org/cgi/content/full/jcb.200810107/DC1>

Figure S1. **Chromosome morphology in *ndt80Δ* and *hop1Δ* cells during meiosis.** (A) Meiotic cells arrested at pachytene by *ndt80Δ*. Yeast cells were induced for 8 h to undergo synchronous meiosis, and nuclear spreads were prepared. Rec8-3HA (red) and Sgo1-9Myc (green) were detected with anti-HA (12CA5) and anti-Myc (9E10) antibodies; DNA (blue) was stained with DAPI. (B) Hop1 localization in wild-type (WT) and *PCLB2PDS5* cells at pachytene. Yeast nuclear spreads were prepared from synchronous meiotic cultures and subjected to immunofluorescence as in A. Rec8-3HA (red) and Hop1 (green) were detected using anti-HA (12CA5) and anti-Hop1 antibodies; DNA (blue) was stained by DAPI. (C) Chromosome morphology in *PCLB2PDS5 hop1Δ* cells at pachytene. Rec8-3HA (red), Sgo1-9Myc (green), and DNA (blue) were detected as described in A.

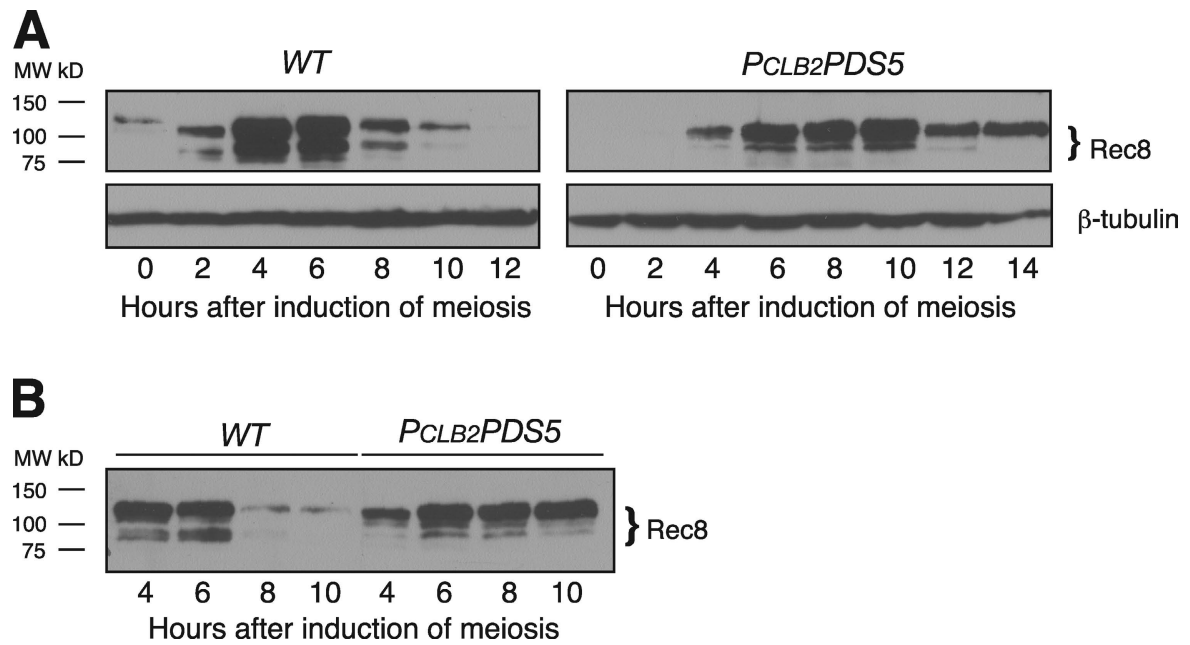


Figure S2. **Immunoblot analysis of Rec8 in wild-type and *PCLB2PDS5* cells during meiosis.** Yeast cultures were induced to enter meiosis synchronously. Protein extracts were prepared at the indicated time points. Rec8 was detected with an anti-HA antibody. β-Tubulin served as a loading control. Rec8 persists in *PCLB2PDS5* cells because they are blocked at prophase I. (A) Protein samples were prepared on two separate blots. (B) Selected protein samples from A were prepared on the same blot. Four time points are shown from each strain. WT, wild type.

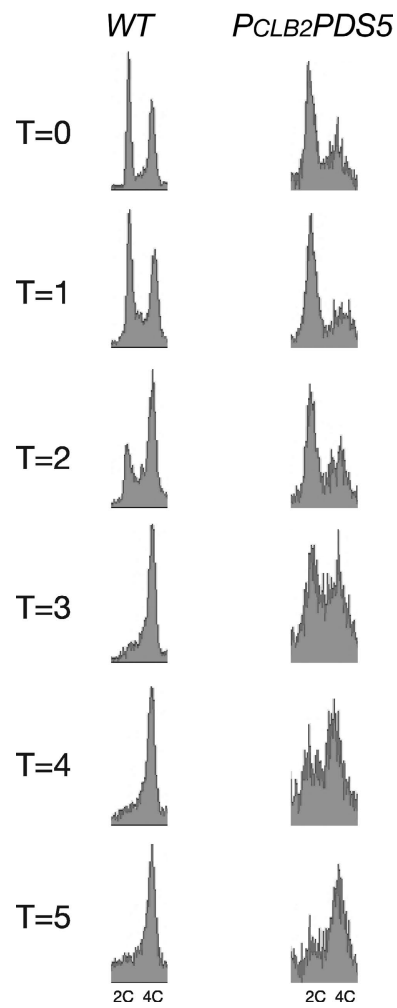


Figure S3. **FACS analysis of S phase progression during meiosis.** Yeast cultures were induced to undergo synchronous meiosis. Aliquots were withdrawn at the indicated times, fixed with 70% EtOH, stained with propidium iodide, and sorted by a cell-sorting system (FACSARIA; BD). WT, wild type.

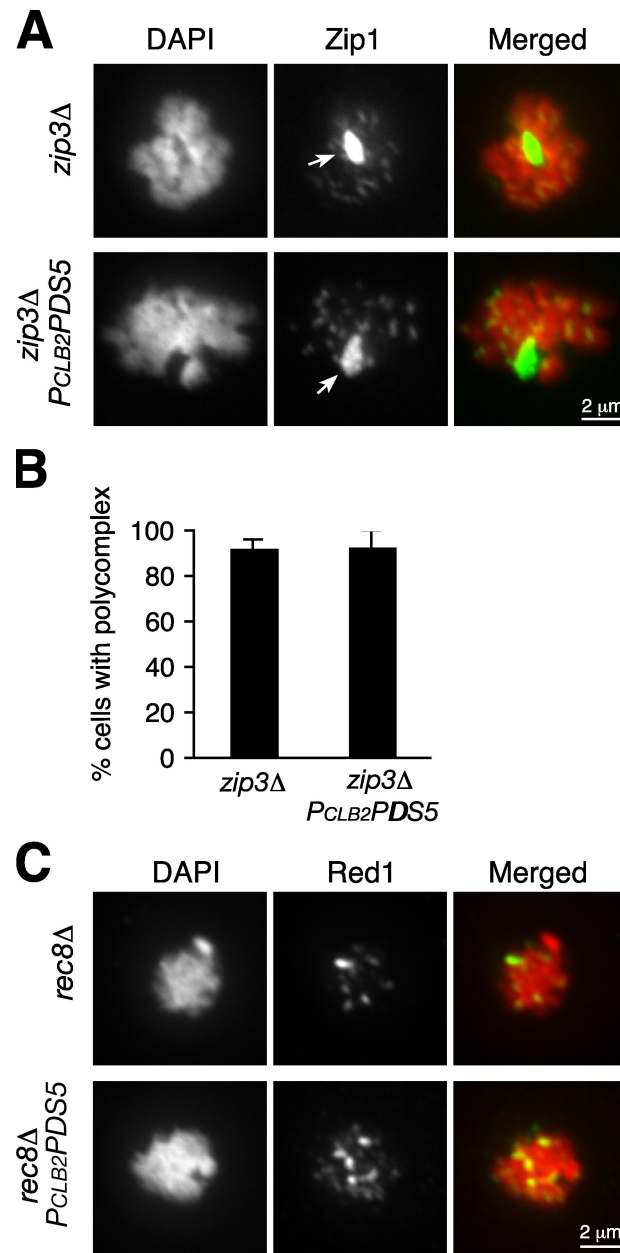


Figure S4. **Zip3 is required for SC formation and Rec8 is required for LE formation.** Yeast cultures were induced to undergo synchronous meiosis. Nuclear spreads were prepared for immunofluorescence after 8 h of induction. (A) Zip1 localization in *zip3Δ* and *zip3Δ P<sub>CLB2</sub>PDS5* cells. Zip1 (green) was detected with anti-Zip1 antibody and DNA (red) stained by DAPI. Arrows indicate the polycomplex. (B) Quantification of polycomplex formation in *zip3Δ* and *zip3Δ P<sub>CLB2</sub>PDS5* cells at pachytene. At least 25 cells were counted. Error bars indicate SD. (C) Red1 localization in *rec8Δ* and *rec8Δ P<sub>CLB2</sub>PDS5* cells. Red1 (green) was detected with anti-Red1 antibody and DNA (red) stained by DAPI.

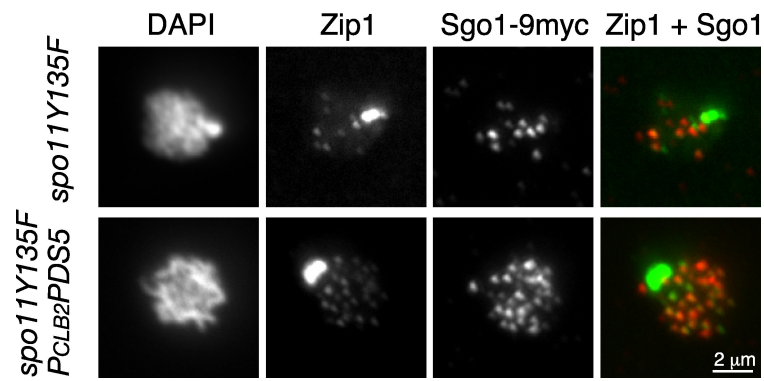


Figure S5. **Localization of Zip1 and Sgo1 in meiotic cells without Spo11 activity.** Yeast cultures were induced to undergo synchronous meiosis. Nuclear spreads were prepared for immunofluorescence after 6 h of induction. Note that Zip1 staining only partially overlaps with that of Sgo1.

Table S1. Yeast strains used in this study

Strain names	Genotype
NH144	<i>MAT<math>\alpha</math>, leu2<math>\Delta</math>hisG, his4-x, ura3, lys2, ho<math>\Delta</math>LYS2 MAT<math>\alpha</math>, leu2-k, arg4-Nsp, ura3, lys2, ho<math>\Delta</math>LYS2</i>
HY1276	<i>MAT<math>\alpha</math>, his4, leu2, P<sub>CLB2</sub>PDS5::KANMX4, REC8-3HA::URA3, SGO1-9myc MAT<math>\alpha</math>, arg4, leu2, P<sub>CLB2</sub>PDS5::KAN, REC8-3HA::URA3, SGO1-9myc</i>
HY1276C	<i>MAT<math>\alpha</math>, arg4, leu2, his4, REC8-3HA::URA3, SGO1-9MYC MAT<math>\alpha</math>, his4, leu2, REC8-3HA::URA3, SGO1-9MYC</i>
HY1277	<i>MAT<math>\alpha</math>, his4-x, ura3, leu2, P<sub>CLB2</sub>PDS5::KANMX4 MAT<math>\alpha</math>, arg4-Nsp, ura3, leu2, P<sub>CLB2</sub>PDS5::KANMX4</i>
HY1285	<i>MAT<math>\alpha</math> arg4, leu2, his4, REC8-3HA::URA3, SGO1-9MYC, P<sub>CLB2</sub>PDS5::KAN, ndt80<math>\Delta</math>KAN MAT<math>\alpha</math> leu2, his4, REC8-3HA::URA3, SGO1-9MYC, P<sub>CLB2</sub>PDS5::KAN, ndt80<math>\Delta</math>KAN</i>
HY1297	<i>MAT<math>\alpha</math> arg4, leu2, P<sub>CLB2</sub>PDS5::KAN, REC8-3HA::URA3, SGO1-9myc, spo11-Y135F::HB MAT<math>\alpha</math> leu2, P<sub>CLB2</sub>PDS5::KAN, REC8-3HA::URA3, SGO1-9myc, spo11-Y135F::HB</i>
HY1297C	<i>MAT<math>\alpha</math> arg4, leu2, his4, REC8-3HA::URA3, SGO1-9myc, spo11-Y135F::HB MAT<math>\alpha</math> leu2, his4, REC8-3HA::URA3, spo11-Y135F::HB</i>
HY1298	<i>MAT<math>\alpha</math> arg4-Nsp his4-x leu2 trp1 ura3 P<sub>CLB2</sub>PDS5::KANMX4 MAT<math>\alpha</math> arg4-Bgl his4-B leu2 trp1 ura3 P<sub>CLB2</sub>PDS5::KANMX4</i>
HY1298C	<i>MAT<math>\alpha</math> arg4-Nsp his4-x leu2 trp1 ura3 MAT<math>\alpha</math> arg4-Bgl his4-B leu2 trp1 ura3</i>
HY1299	<i>MAT<math>\alpha</math> his4, leu2, REC8-3HA::URA3, SGO1-9myc, ndt80<math>\Delta</math>KAN MAT<math>\alpha</math> arg4, his4, leu2, REC8-3HA::URA3, SGO1-9myc, ndt80<math>\Delta</math>KAN</i>
HY1325	<i>MAT<math>\alpha</math> ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, P<sub>CLB2</sub>PDS5::KAN, ndt80<math>\Delta</math>HB, REC8-3HA::URA3/ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, P<sub>CLB2</sub>PDS5::KAN, ndt80<math>\Delta</math>HB, REC8-3HA::URA3</i>
HY1325C	<i>MAT<math>\alpha</math> arg4, ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, ndt80<math>\Delta</math>HB, REC8-3HA::URA3 MAT<math>\alpha</math> ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, ndt80<math>\Delta</math>HB, REC8-3HA::URA3</i>
HY1332	<i>MAT<math>\alpha</math> his4, ura3, leu2, P<sub>CLB2</sub>PDS5::KANMX4, REC8-3HA::URA3, SGO1-9myc, zip1<math>\Delta</math>HB MAT<math>\alpha</math> arg4, ura3, leu2, P<sub>CLB2</sub>PDS5::KAN, REC8-3HA::URA3, SGO1-9myc, zip1<math>\Delta</math>HB</i>
HY1333	<i>MAT<math>\alpha</math> leu2, his4, REC8-3HA::URA3, SGO1-9myc, zip1<math>\Delta</math>HB MAT<math>\alpha</math> leu2, his4, REC8-3HA::URA3, SGO1-9myc, zip1<math>\Delta</math>HB</i>
HY1391	<i>MAT<math>\alpha</math> ura3, leu2, CEN4::224lacO::CLONAT, TEL4::224lacO::CLONAT, his3::HIS3::lacI-GFP::KAN, P<sub>CLB2</sub>PDS5::HB MAT<math>\alpha</math> his3, leu2, P<sub>CLB2</sub>PDS5::KANMX4, REC8-3HA::URA3, SGO1-9myc</i>
HY1392	<i>MAT<math>\alpha</math> arg4, leu2, his4, REC8-3HA::URA3, SGO1-9MYC MAT<math>\alpha</math> ura3, leu2, CEN4::224lacO::CLONAT, TEL4::224lacO::CLONAT, his3::HIS3::lacI-GFP::KAN</i>
HY1419	<i>MAT<math>\alpha</math> his4, ura3, leu2, P<sub>CLB2</sub>PDS5::KAN, rec8<math>\Delta</math>HB MAT<math>\alpha</math> arg4-Nsp, ura3, leu2, P<sub>CLB2</sub>PDS5::KAN, rec8<math>\Delta</math>HB</i>
HY1419C	<i>MAT<math>\alpha</math> his4, ura3, leu2, rec8<math>\Delta</math>HB MAT<math>\alpha</math> arg4, ura3, leu2, rec8<math>\Delta</math>HB</i>
HY1534	<i>MAT<math>\alpha</math> leu2, ura3, arg4, REC8-3HA::URA3, sir2<math>\Delta</math>CLONAT</i>
HY1535	<i>MAT<math>\alpha</math> leu2, ura3, arg4, REC8-3HA::URA3, P<sub>CLB2</sub>PDS5::KANMX4, sir2::CLONAT</i>
HY1541	<i>ura3, leu2, his4, P<sub>CUP1</sub>MCD1::KAN, P<sub>CLB2</sub>PDS5::KANMX4, rec8<math>\Delta</math>HB MAT<math>\alpha</math> ura3, leu2, P<sub>CUP1</sub>MCD1::KAN, P<sub>CLB2</sub>PDS5::KANMX4, rec8<math>\Delta</math>HB</i>
HY1542	<i>MAT<math>\alpha</math> ura3, leu2, his4, P<sub>CUP1</sub>MCD1::KAN, rec8<math>\Delta</math>HB MAT<math>\alpha</math> ura3, leu2, arg4, P<sub>CUP1</sub>MCD1::KAN, rec8<math>\Delta</math>HB</i>
HY1608	<i>MAT<math>\alpha</math> arg4, leu2, his4, P<sub>CLB2</sub>PDS5::KANMX4 MAT<math>\alpha</math> arg4, ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, P<sub>CLB2</sub>PDS5::KANMX4</i>
HY1609	<i>MAT<math>\alpha</math> arg4, leu2, zip1<math>\Delta</math>HB MAT<math>\alpha</math> arg4, ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, zip1<math>\Delta</math>HB</i>
HY1611	<i>MAT<math>\alpha</math> arg4, ura3::tetOx224::URA3, leu2::tetR-GFP::LEU2, zip1<math>\Delta</math>HB, P<sub>CLB2</sub>PDS5::KANMX4 MAT<math>\alpha</math> leu2, his4, REC8-3HA::URA3, zip1<math>\Delta</math>HB, P<sub>CLB2</sub>PDS5::KANMX4</i>
HY1636	<i>MAT<math>\alpha</math> ura3, leu2, P<sub>CUP1</sub>MCD1::KAN, P<sub>CLB2</sub>PDS5::KAN, rec8<math>\Delta</math>HB, URA3::tetO::URA3, LEU2::tetR-GFP MAT<math>\alpha</math> ura3, leu2, his4, P<sub>CUP1</sub>MCD1::KAN, P<sub>CLB2</sub>PDS5::KAN, rec8<math>\Delta</math>HB</i>
HY1637	<i>MAT<math>\alpha</math> ura3, leu2, arg4, P<sub>CUP1</sub>MCD1::KAN, rec8<math>\Delta</math>HB, URA3::tetO::URA3, LEU2::tetR-GFP MAT<math>\alpha</math> ura3, leu2, his4, P<sub>CUP1</sub>MCD1::KAN, rec8<math>\Delta</math>HB</i>