

## SUPPLEMENTARY FIGURE LEGENDS

**Figure S1.** PFGE analysis of *swi1Δ* cells. Chromosome samples from either wild-type or *swi1Δ* cells were examined by PFGE. Cells were grown until mid-log phase and then incubated in the presence of 12 mM HU for 3 h at 30°C. Cells were then washed and released into fresh medium. Chromosomal DNA samples were prepared at the indicated times. Representative results from repeat experiments are shown.

**Figure S2.** Genetic interaction involving *rqh1Δ*, *ctf18Δ*, *chl1Δ* and *rad21-K1*. (A) Synergistic interaction of *ctf18Δ* and *rqh1Δ* in MMS and CPT survival assays indicates that Ctf18 and Rqh1 function in separate pathways. Fivefold serial dilution of cells were plated on YES agar medium supplemented with the indicated amounts of MMS or CPT for 2 to 3 days at 32°C. Representative images of repeat experiments are shown. (B) Synergistic interaction of *ctf18Δ* or *chl1Δ* and *rad21-K1* in MMS and CPT survival assays suggesting that Ctf18 and Chl1 are involved in sister chromatid cohesion. Fivefold serial dilution of cells were plated on YES agar medium supplemented with the indicated amounts of MMS or CPT for 3 to 5 days at 25°C. Representative results from repeat experiments are shown.

## Supplementary Table S1

### *S. pombe* strains used in this study

Strains	Genotype*	Source
Y0001	<i>h</i> <sup>-</sup>	Laboratory stock
Y0002	<i>h</i> <sup>+</sup>	Laboratory stock
Y0149	<i>h</i> <sup>-</sup> <i>cds1::ura4</i> <sup>+</sup>	Laboratory stock
Y0211	<i>h</i> <sup>-</sup> <i>swi1::Kan</i> <sup>r</sup>	Laboratory stock
Y0428	<i>h</i> <sup>-</sup> <i>cds1::Kan</i> <sup>r</sup>	Paul Russell
Y0492	<i>h</i> <sup>-</sup> <i>chk1::ura4</i> <sup>+</sup>	Laboratory stock
Y0541	<i>h</i> <sup>-</sup> <i>swi1::Kan</i> <sup>r</sup> <i>ade6-M210</i>	Laboratory stock
Y0660	<i>h</i> <sup>-</sup> <i>lis1-1 swi1::Kan</i> <sup>r</sup> <i>ade6-M210</i>	This study
Y0668	<i>h</i> <sup>-</sup> <i>swi3::Kan</i> <sup>r</sup>	Laboratory stock
Y0670	<i>h</i> <sup>-</sup> <i>rad22-YFP-Kan</i> <sup>r</sup>	Laboratory stock
Y0674	<i>h</i> <sup>-</sup> <i>swi3::Kan</i> <sup>r</sup> <i>rad22-YFP-Kan</i> <sup>r</sup>	Laboratory stock
Y0713	<i>h</i> <sup>-</sup> <i>lis1-1</i>	This study
Y0794	<i>h</i> <sup>-</sup> <i>ctf18::his3</i> <sup>+</sup> <i>his3-D1 ade6-M210</i>	This study
Y0797	<i>h</i> <sup>+</sup> <i>swi1::Kan</i> <sup>r</sup> <i>his3-D1</i>	Laboratory stock
Y0799	<i>h</i> <sup>-</sup> <i>swi3::Kan</i> <sup>r</sup> <i>his3-D1</i>	Laboratory stock
Y0835	<i>h</i> <sup>+</sup> <i>cen1-GFP his3-D1</i>	Mitsuhiro Yanagida
Y0857	<i>ctf18::his3</i> <sup>+</sup> <i>rad22-YFP-Kan</i> <sup>r</sup> <i>his3-D1</i>	This study
Y0863	<i>h</i> <sup>+</sup> <i>cdc25-22 cen1-GFP his3-D1</i>	This study
Y0872	<i>h</i> <sup>+</sup> <i>swi1::Kan</i> <sup>r</sup> <i>cen1-GFP his3-D1</i>	This study
Y0874	<i>h</i> <sup>+</sup> <i>swi3::Kan</i> <sup>r</sup> <i>cen1-GFP his3-D1</i>	This study
Y0876	<i>h</i> <sup>+</sup> <i>ctf18::his3</i> <sup>+</sup> <i>cen1-GFP his3-D1</i>	This study
Y0898	<i>h</i> <sup>-</sup> <i>rad21-K1-ura4</i> <sup>+</sup> <i>ade6-M216</i>	Hideo Ikeda
Y0922	<i>h</i> <sup>+</sup> <i>swi1::Kan</i> <sup>r</sup> <i>cdc25-22 cen1-GFP his3-D1</i>	This study
Y0924	<i>h</i> <sup>+</sup> <i>swi3::Kan</i> <sup>r</sup> <i>cdc25-22 cen1-GFP his3-D1</i>	This study

Y0937	<i>h<sup>+</sup> rqh1::ura4<sup>+</sup> his3-D1</i>	Laboratory stock
Y1001	<i>chl12::his3<sup>+</sup> rqh1::ura4<sup>+</sup> his3-D1</i>	This study
Y1026	<i>h<sup>+</sup> ctf18::Kan<sup>r</sup> cdc25-22 cen1-GFP his3-D1</i>	This study
Y1377	<i>h<sup>-</sup> rad3::Kan<sup>r</sup> ade6-M216 his3-D1</i>	This study
Y1485	<i>h<sup>-</sup> ctf18-TAP-Kan<sup>r</sup> ade6-M216 his3-D1</i>	This study
Y1490	<i>h<sup>-</sup> ctf18::his3<sup>+</sup> rad3::Kan<sup>r</sup> ade6-M216 his3-D1</i>	This study
Y1508	<i>h<sup>+</sup> chl1::Kan<sup>r</sup></i>	This study
Y1510	<i>h<sup>+</sup> chl1::Kan<sup>r</sup> his3-D1</i>	This study
Y1511	<i>h<sup>-</sup> ctf18::his3<sup>+</sup> cds1::ura4<sup>+</sup> ade6-M216 his3-D1</i>	This study
Y1513	<i>h<sup>-</sup> ctf18::his3<sup>+</sup> chk1::ura4<sup>+</sup> ade6-M216 his3-D1</i>	This study
Y1515	<i>h<sup>-</sup> ctf18-5FLAG-Kan<sup>r</sup></i>	This study
Y1550	<i>h<sup>-</sup> chk1::Kan<sup>r</sup></i>	This study
Y1567	<i>h<sup>-</sup> rad3::Kan<sup>r</sup></i>	This study
Y1571	<i>h<sup>-</sup> chl1::hph</i>	This study
Y1580	<i>h<sup>-</sup> ctf18-5FLAG-Kan<sup>r</sup> cdc25-22</i>	This study
Y1591	<i>chl1::hph cds1::Kan<sup>r</sup></i>	This study
Y1593	<i>chl1::hph chk1::Kan<sup>r</sup></i>	This study
Y1595	<i>chl1::hph rad3::Kan<sup>r</sup></i>	This study
Y1597	<i>h<sup>-</sup> rad17-TAP-Kan<sup>r</sup> his3-D1</i>	Paul Russell
Y1598	<i>h<sup>-</sup> rfc4-13myc-Kan<sup>r</sup></i>	Paul Russell
Y1599	<i>h<sup>-</sup> rfc5-13myc-Kan<sup>r</sup></i>	Paul Russell
Y1600	<i>h<sup>+</sup> ctf18-TAP-Kan<sup>r</sup> rfc4-13myc-Kan<sup>r</sup> his3-D1</i>	This study
Y1601	<i>h<sup>-</sup> ctf18-TAP-Kan<sup>r</sup> rfc5-13myc-Kan<sup>r</sup> his3-D1</i>	This study
Y1602	<i>h<sup>+</sup> rad17-TAP-Kan<sup>r</sup> rfc4-13myc-Kan<sup>r</sup></i>	Paul Russell
Y1603	<i>h<sup>+</sup> rad17-TAP-Kan<sup>r</sup> rfc5-13myc-Kan<sup>r</sup></i>	Paul Russell
Y1795	<i>h<sup>+</sup> nda3-KM311 cen1-GFP his3-D1</i>	This study
Y1797	<i>h<sup>+</sup> swi1::Kan<sup>r</sup> nda3-KM311 cen1-GFP his3-D1</i>	This study

Y1800	<i>h<sup>+</sup> swi3::Kan<sup>r</sup> nda3-KM311 cen1-GFP his3-D1</i>	This study
Y1913	<i>h<sup>-</sup> ctf18::Kan<sup>r</sup></i>	This study
Y1978	<i>h<sup>+</sup> chl1::Kan<sup>r</sup> cen1-GFP his3-D1</i>	This study
Y2233	<i>h<sup>+</sup> chl1::Kan<sup>r</sup> cdc25-22 cen1-GFP his3-D1</i>	This study
Y2237	<i>h<sup>+</sup> rad21-K1:ura4<sup>+</sup> cdc25-22 cen1-GFP his3-D1</i>	This study
Y2241	<i>h<sup>+</sup> chl1::Kan<sup>r</sup> nda3-KM311 cen1-GFP his3-D1</i>	This study
Y2243	<i>h<sup>+</sup> ctf18::Kan<sup>r</sup> nda3-KM311 cen1-GFP his3-D1</i>	This study
Y2273	<i>h<sup>+</sup> rad21-K1:ura4<sup>+</sup> ctf18::Kan<sup>r</sup> ade6-M216</i>	This study
Y2274	<i>h<sup>+</sup> rad21-K1:ura4<sup>+</sup> ctf18::Kan<sup>r</sup> ade6-M216</i>	This study
Y2276	<i>h<sup>+</sup> rad21-K1:ura4<sup>+</sup> chl1::Kan<sup>r</sup> ade6-M216</i>	This study
Y2277	<i>h<sup>+</sup> rad21-K1:ura4<sup>+</sup> chl1::Kan<sup>r</sup> ade6-M216</i>	This study

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\* All strains are also *leu1-32* and *ura4-D18*

\* The actual genotype of *cen1-GFP* is *lys1<sup>+</sup>:lacOrepeat his7<sup>+</sup>:disIpromoter-GFP-LacI-NLS*

## Supplementary Table S2

### DNA oligonucleotide primers used in this study

Primer	Sequence (5' to 3')
P525	GTT TGA CGG ATG GAG TTT ATG
P526	GGG GAT CCG TCG ACC TGC AGC GTA CGT TTA AAG GTA AAA CAA CCT TTT CAG AAA CCT G
P529	GTT TAA ACG AGC TCG AAT TCT AGA CAT ATG GTT TGC GTT ACA GCG TC
P530	CAG CTC GAT GGA CTG AAT TAA GC
P532	ATG CAA TCA ATA TCA AAT TTC ACG ATG GGT TTT CCA ATG CTG TGA GAA AAC CAA TAT CGT TGA ACG AGA TTC TGA ATT TCC GGA TCC CCG GGT TAA TTA A
P533	TAA TGG TTA GAT GAA TTT ACG CAT ACA CCT ATT TTT ACT AGT GAT TTT TTT TTA AAT TAA ATG ATT GAT TTT ATT TCG GCG GCG TTA GTA TCG AAT CGA C
P534	CTC AAG TTG TTA CTG TAG TTT C
P535	TTA ATT AAC CCG GGG ATC CGT CTT TGG TGT AAA GGG AAA GAA GAT TAT AAT ATA AC
P538	GTT TAA ACG AGC TCG AAT TCT AAT TGC ACA TCT TTT GAA AGG TCG TG
P539	CAA ATG AGC CGT CAG ATA TCT C
P545	CTC CGC ACA CGG TAT GAG TTT CAT
P547	GTT TAA ACG AGC TCG AAT TCT AAT CTA ATG TGC ATT AAT ATT TTT AAT TTC AAT C
P548	CAA TTG TGT AAG GGA CAG AAG G
P574	GGG GAT CCG TCG ACC TGC AGC GTA CGA TGA GTT GGA AAT CCA AAT TTT CAA ATG GAA C

CTF18-KO1      ATT GTT ACA TGT TCC ATT TGA AAA TTT GGA TTT CCA ACT  
CAT ATG GAT TCG ATT CCA AAT GAG GAT GAT TTG GAG TTT  
CAA CGT TTT CTT TAC TAT TGC A

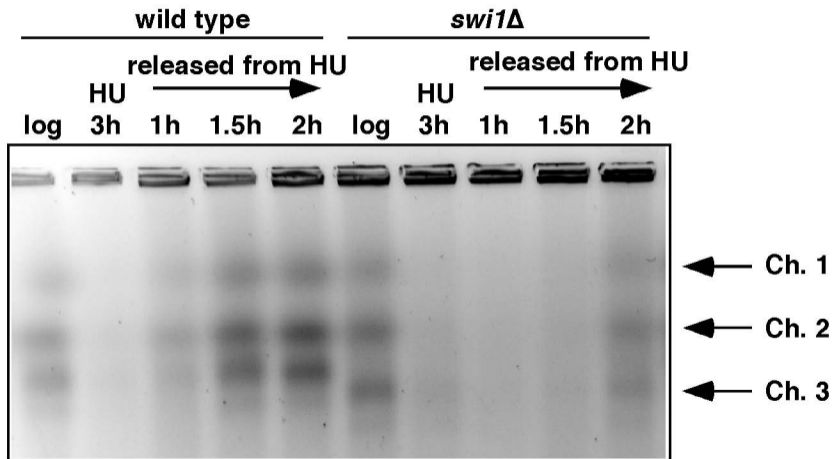
CTF18-KO2      CAC ATT AGA TTA GAA ATT CAG AAT CTC GTT CAA CGA TAT  
TGG TTT TCT CAC AGC ATT GGA AAA CCC ATC GTG CTA TGC  
AAA GCT AAC GAA TCT TTA ATT C

URAKAN-T1      CCC ACT GGC TAT ATG TAT GCA TTT GTG TTA AAA AAG TTT  
GTA TAG ATT ATT TAA TCT ACT CAG CAT TCT TTC TCT AAC  
GCG CCA GAT CTG TTT AGC TTG C

URAKAN-B1      GAT ATT GAC GAA ACT TTT TGA CAT CTA ATT TAT TCT GTT  
CCA ACA CCA ATG TTT ATA ACC AAG TTT TAT CTT GTT TGG  
GCG GCG TTA GTA TCG AAT CGA C

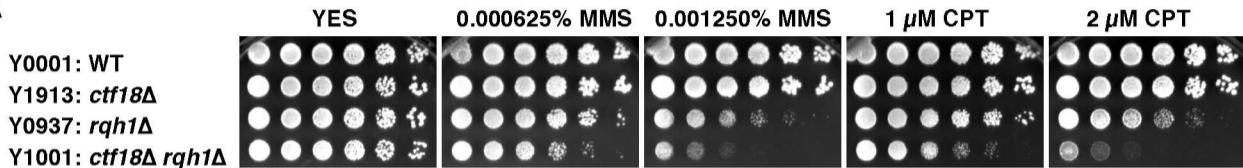
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**Figure S1**



**Figure S2**

**A**



**B**

