**SUPPLEMENTAL FIGURE LEGENDS**

**Supplemental Figure 1. SYP-2 and SYP-1 co-localize in both polycomplexes and aggregates**. Whole mount fixed, age matched *wgIs227*; *syp-2(ok307)* V gonads were probed with anti-GFP and anti-SYP-1. All SYP-2::GFP foci overlap with all SYP-1 foci in *htp-3(RNAi)* animals raised at 25° (top row), *dlc-1(RNAi)*  animals raised at 25° (middle), or animals raised at 27.5° (bottom). Meiotic progression depicted from left to right. Scale bars 5μm.

**Supplemental Figure 2. Undispersed aggregates in *dlc-1(RNAi)* animals treated with hexanediol contain SYP-2 protein.** *syp-2::gfp(wgIs227); syp-2(ok307)* animals grown at 25° on *dlc-1*, *htp-3*, or empty vector control RNAi, untreated, or treated with hexanediol for one minute before being fixed and probed with anti-SYP-2, anti-GFP, and DAPI. Aggregates in *dlc-1(RNAi)* animals (top row, same images as in Figure 2D) are not dispersed when treated with hexanediol (second row). However, polycomplexes in *htp-3(RNAi)* animals (third row) are dissolved with hexanediol treatment (fourth row). Empty vector control treated animals do not display either polycomplexes or aggregates (fifth row), and their synaptonemal complex is dissolved with treatment of hexanediol (bottom row). Scale bars 5 μm.

**Supplemental Figure 3. Heat induced foci are partially dispersed by 1,6-hexanediol**. (A) In *syp-2::gfp(wgIs227); syp-2(ok307)* V gonads with heat-induced foci, 59.38% show dissolution of foci when exposed to 1,6-hexanediol (n=64), while only 22.86% of foci in *syp-3::gfp(ok758;ieSi11)* dissolve when exposed (n=35) (examples in B) (B) Live imaging of GFP in *wgIs227; syp-2(ok307)* V gonads (top two rows), and *syp-2::gfp(ok758;ieSi11)* gonads (bottom two rows); all animals grown at 27.5° for 24 hours starting at larval stage L4. Examples of *syp-2::gfp(wgIs227)* gonads with foci that do not dissolve with addition of 1,6-hexanediol (top row), and *syp-2::gfp(wgIs227)* gonads that show dissolution (second row). Examples of *syp-3::gfp(ok758;ieSi11)* that do not dissolve with exposure to 1,6-hexanediol (third row), and that do dissolve with exposure (bottom row). Scale bars 5μm.

**Supplemental Figure 4. SYP-2 and GFP co-localize in CRISPR Cas-9 created lines.** Whole mount fixed WT *syp-2::gfp* or *syp-2::gfp(AMTA)* gonads 48 hours after larval stage L4 raised at 25° for approximately 24 hours probed with anti-SYP-2, anti-GFP, and DAPI. This demonstrates that SYP-2 and GFP are not cleaved and remain co-localized in the CRISPR generated strains used in this paper. Meiotic progression shown from left to right. Scale bars 5 μm

**Supplemental Figure 5. Mutation of putative binding site in SYP-2 results in extension of transition zone.** Whole mount fixed gonads of age matched animals probed with DAPI. Many nuclei in *syp-2::gfp(AMTA)* hermaphrodites show odd DNA conformation throughout gonad (arrows) reminiscent of clustering of transition zone nuclei (arrowheads). This is rarely observed in WT *syp-2::gfp* hermaphrodites (arrows). Meiotic progression from left to right in all images. Scale bars 5μm.

**Supplemental Figure 6. *syp-2::gfp(AMTA)* oocytes have increased achiasmatic chromosomes**

(A) Animals grown at 25° for 48 hour starting at larval stage L4, then dissected and probed with DAPI and number of bodies counted in each oocyte using Z-stacks of the gonad. 215 total oocytes counted for *syp-2::gfp(AMTA)*, 232 total oocytes counted for WT *syp-2::gfp,* 64 oocytes counted for *syp-2::gfp(AMTA); dlc-1::flag,* and 47 total oocytes were scored for WT *syp-2::gfp; dlc-1::flag*. Chi-squared goodness of fit test indicates that the two single genotypes do not follow the same pattern for proportion of oocytes with 6-8 DAPI bodies (p > .00001). Additionally, *syp-2::gfp(AMTA);dlc-1::flag* do not follow the same pattern as WT *syp-2::gfp;dlc-1::flag* (p=0.0003)*.* Addition of the *dlc-1::flag* allele also changed the pattern as compared to *syp-2::gfp(AMTA)* alone (p<.0001). Oocytes with 5 DAPI bodies excluded from this analysis as this could indicate chromosomes were too close together to separate (8 in *syp-2::gfp(AMTA*), 6 in WT *syp-2::gfp*). (B) Representative AMTA *syp-2::gfp* and AMTA *syp-2::gfp; dlc-1::flag* images of oocytes from graph in A. Each oocyte labeled with number of DAPI bodies counted. Scale bars 5 μm.

**Supplemental Figure 7. Male meiotic synapsis is unaffected by either *dlc-1(RNAi)* or by AMTA *syp-2::gfp* mutation.** Whole mount fixed *dlc-1(RNAi)* male probed with anti-SYP-1, and live imaged GFP in AMTA *syp-2::gfp; dlc-1::flag* male, both raised at 25. Males do not require DLC-1 to synapse their chromosomes, and further still are able to synapse their chromosomes with the AMTA *syp-2* mutation and hypomorphic *dlc-1::flag* transgene. Scale bars 5 μm.