





Supplementary Figure Legends

Figure S1. Colocalization of the COPII foci with cis-Golgi marker before and during male meiosis I. (A-D) Anti-GM130 immunostaining (green in A to D, white in A'' to H'') of the primary spermatocytes expressing RFP-Sec13 before (S6 stage) (A) and those at prometaphase (B), early (C) and late (D) telophase. The RFP fluorescence is red in A to D, white in A'' to H''. Arrowheads in A and B indicate colocalization between Sec13 and GM130 foci. (E, F) Anti-GM130 immunostaining (green in E, F, white in E'', F'') of the control normal (*bam*>+) and *Sar1*-silenced (*bam*>*Sar1RNAi*) spermatocytes before (S6 stage) (A) and those at prometaphase (B), early (C) and late (D) telophase. DNA staining with DAPI (blue in A to D, white in A'' to D''). Bars, 10 μ m.

Figure S2. Accumulation of COPII foci around astral microtubules until the end of meiosis and its disruption in spermatocytes homozygous for *testis-specific tubulin* or *asterless* mutation.

(A) Time-lapse observation of COPII foci (RFP-Sec13, red in A, white in A'') and microtubules (GFP-Tubulin, green in A, white in A') during male meiosis I. The time when GFP fluorescence in spindle poles became distinctive is set as $t=0'$ (prophase I). Based on the characteristics of the microtubule structure, meiosis progressed in this cell from the start point, metaphase I ($t=16'$), anaphase I ($t=40'$) to cytokinesis ($t=70'$). Note that COPII foci become accumulated around the spindle poles (arrowheads) and inside of spindle envelop (arrow) in the cell ($t=40'$) and are localized outside of astral microtubules at the end ($t=70'$). Bar, 10 μ m. (B, C) Quantification of meiotic cells showing the abnormal distribution of COPII foci in *betaTub85D* mutant testes (*GFP-Tubulin*, *Ub-RFP-Sec13*/+; *betaTub85D*^D/+) and normal control testes (*GFP-Tubulin*, *Ub-RFP-Sec13*/+ (B), and in *asl* mutant testes (*GFP-Tubulin*, *Ub-RFP-Sec13*/+; *asl*^l/*asl*^l) and normal control testes (*GFP-Tubulin*, *Ub-RFP-Sec13*/+). The bars represent the SEM.