



Supplementary Figure 1 *Stra8* is required for meiotic initiation in ovarian germ cells on C57BL/6 inbred background employed throughout this study.

(a, b) Immunofluorescent staining of chromosome spreads of E16.5 wild-type and *Stra8*-deficient germ cells for (a) SYCP3 and (b) REC8 proteins. In merged images, DAPI is shown in blue, SYCP3 in red, and REC8 in green.

(c) Immunohistochemical staining for double-strand break response marker γ H2A.X (nuclear), in green, and germ cell marker mouse vasa homolog (MVH; cytoplasmic), in

red, on sections of wild-type and *Stra8*-deficient E16.5 ovaries. In the wild-type ovary, γ H2A.X signal is present in MVH-positive cells, while in the mutant the γ H2A.X signal is absent from MVH-positive cells.

(d) Photomicrographs of sections from control (wild-type or *Stra8*-heterozygous) and *Stra8*-deficient ovaries at E14.5, E15.5, and E16.5 stained with hematoxylin and eosin. Insets show higher magnification and arrows indicate representative germ cells. While wild-type germ cells condense their chromosomes as they progress through meiotic prophase at E15.5 and E16.5, *Stra8*-deficient germ cells maintain pre-meiotic nuclear morphology.

Scale bars represent 20 μ m.