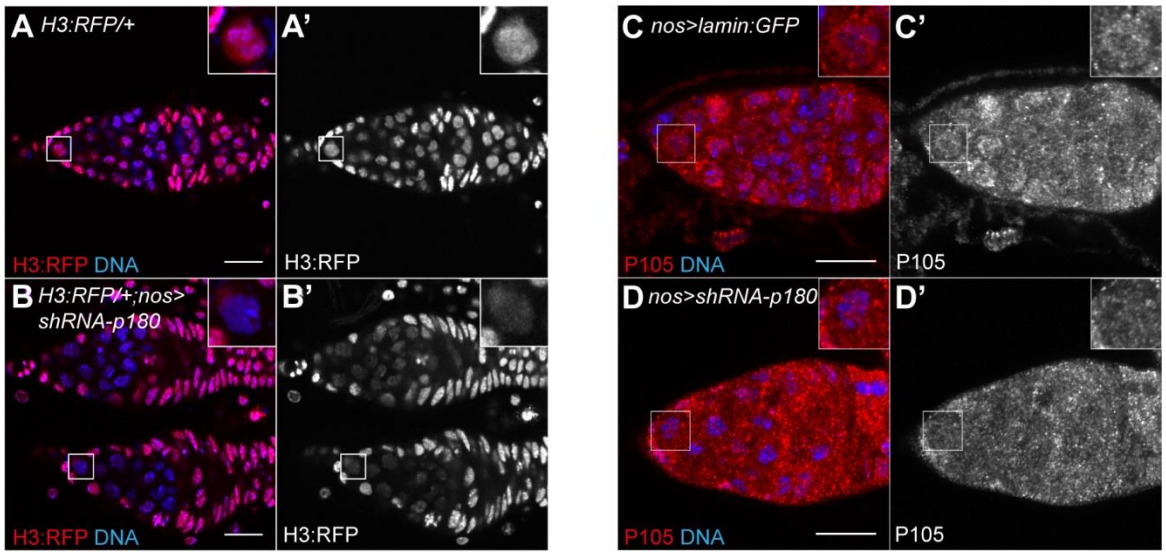


**Figure S1. Depletion of P180 in germ cells induces a decrease of H3:RFP incorporation into chromatin and a concomitant downregulation of CAF-1 median subunit P105.**

**(A-B)** Control (A) and P180-depleted (B) germaria carrying one copy of a *H3:RFP* transgene (RFP fluorescence in red and A'-B'), with DNA staining (blue). **(C-D)** Control (C) and P180-depleted (D) germaria (depletion induced for four days at the adult stage), with P105 (red and C'-D') and DNA (blue) stainings. A close-up view of the framed GSCs is shown in the upper right corner of each panel. Scale bars: 15µm.

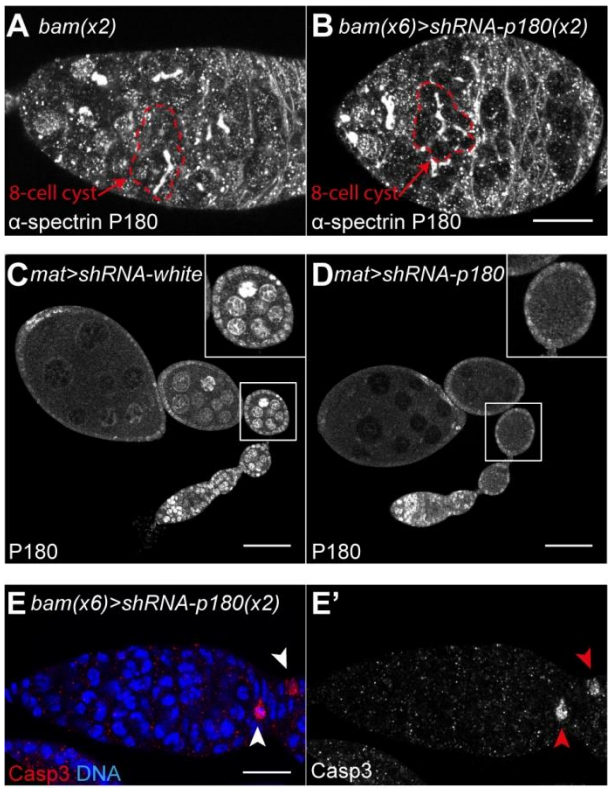


**Figure S2. Depletion of P180 in more differentiated germ cells does not arrest oogenesis and does not induce apoptosis in germ cells.**

**(A-B)** P180 together with α-spectrin stainings in a control germarium (A) and in a germarium expressing a shRNA against *p180* under the control of *bam-gal4* (B). The number in brackets indicates the number of copies of the corresponding transgene. Arrows point to 8-cell cysts either with P180 protein (A) or depleted of P180 protein (B). **(C-D)** P180 staining in a control ovariole (C) and in an ovariole expressing a shRNA against *p180* under the control of *mat-gal4* (D). **(E)** Cleaved caspase 3 (Casp3, red and E') and DNA (blue) stainings in a germarium expressing a shRNA against *p180* under the control of 6 copies of *bam-gal4*. Arrowheads point to two apoptotic somatic cells (Casp3 positive), validating the efficiency of the staining. Scale bars: 15µm (B and E) and 50µm (C-D).

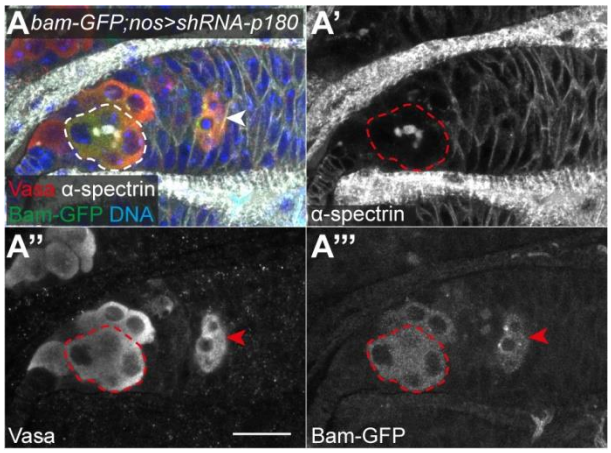


**Figure S3. P180-depleted germ cells are able to initiate differentiation.**

**(A)** α-spectrin (white and A'), vasa (red and A''), and DNA (blue) stainings in a germarium expressing a shRNA against *p180* under the control of *nanos-gal4* together with the *bam-GFP* transgene (GFP fluorescence in green and A'''). The dotted lines demarcate a 4-cell cyst expressing Bam-GFP and Vasa. The arrowhead in A, A'' and A''' shows a group of dying (based on the presence of characteristic pyknotic nuclei visualized with DAPI staining) Vasa positive germ cells expressing Bam-GFP. The image is a maximum intensity projection of several confocal images. Scale bar: 15 µm.

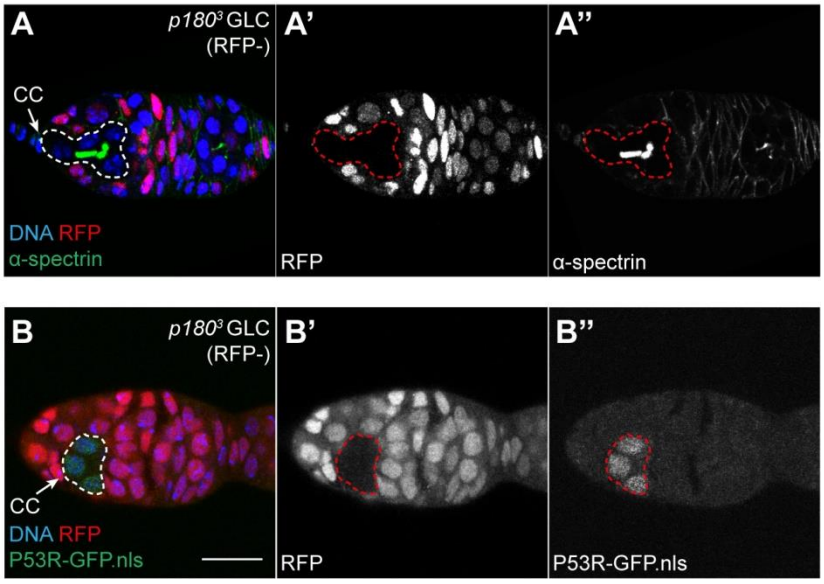


**Figure S4. *p180*$^{3}$ GLC exhibit branched fusomes originating from GSCs and show P53 activation.**

(**A-B**) Germaria containing *p180*$^{3}$ germline clones (GLC, dotted lines), identified by the absence of RFP fluorescence (A'-B') combined with a positive DNA staining (blue). The germarium in (A) was stained with an antibody against α-spectrin (green and A'') and the one in (B) contains a *p53R-GFP.nls* transgene (GFP fluorescence in green and B''). Cap cells (CC) are indicated. Scale bar: 15µm.

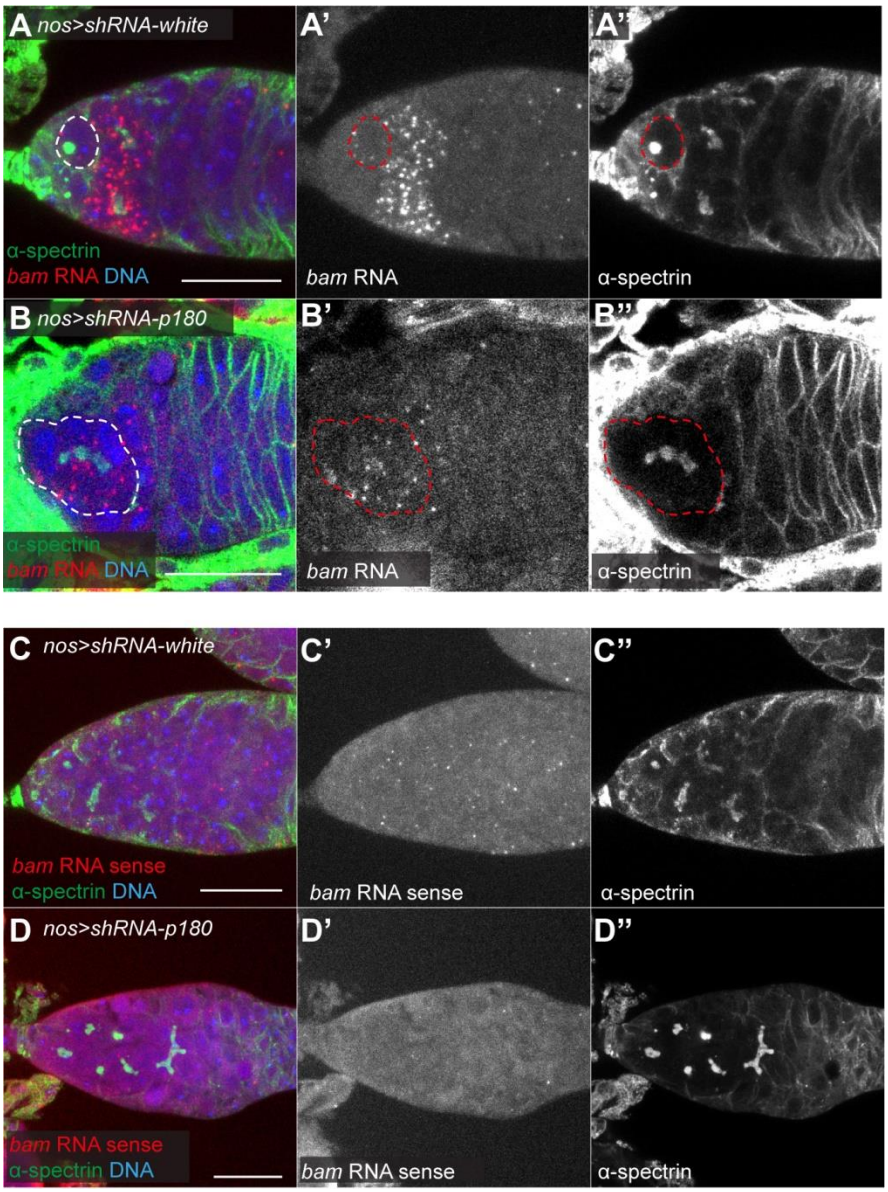


**Figure S5: *bam* RNA accumulates in P180-depleted stem-cysts.**

**(A-B)** Control (A) and P180-depleted (B) germaria, with α-spectrin (green and A"-B"), *bam* RNA (detected by RNA-FISH with an antisense probe, red and A'-B') and DNA (blue) stainings. Dotted lines delineate either a single GSC (A) or a stem-cyst (B). **(C-D)** Control (C) and P180-depleted (D) germaria, with α-spectrin (green and C"-D"), *bam* RNA sense probe (red and C'-D') and DNA (blue) stainings. Note that the *bam* RNA sense probe does not provide a specific signal, showing that the signal observed in A and B with the antisense probe is specific for *bam* RNA. Scale bars: 15µm.

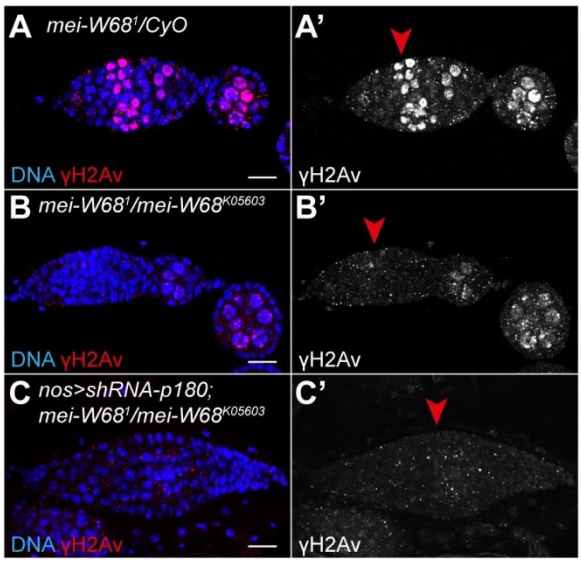


**Figure S6. Suppression of programmed meiotic DSBs does not rescue the oogenesis arrest induced by depletion of P180 in germ cells.**

(**A-C**) Control (A), *mei-W68*$^{1}$*/mei-W68*$^{K05603}$ mutant (B) and P180-depleted *mei-W68*$^{1}$*/mei-W68*$^{K05603}$ mutant (C) germaria with DNA (blue) and γH2Av (red, A'-C') stainings. Arrowheads point to the meiotic region of germaria where meiotic DSBs normally accumulate. Scale bars: 15µm.

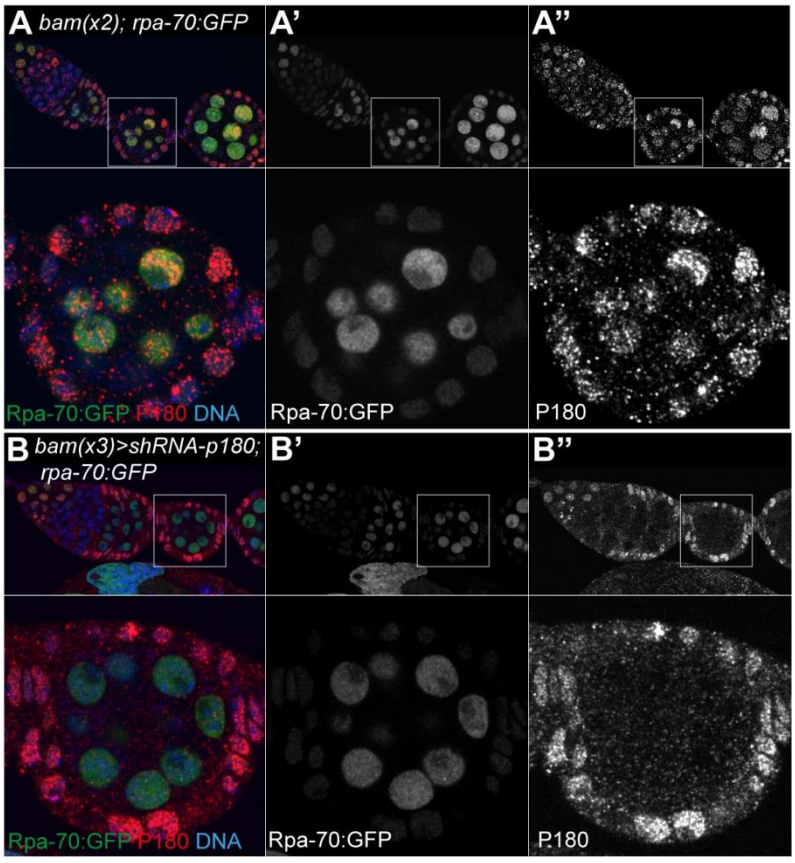


**Figure S7. Depletion of P180 at later stages of germ cell development does not induce an accumulation of Rpa-70:GFP foci.**

(**A-B**) Egg chambers from control flies (A) and flies expressing a shRNA targeting p180 under the control of 3 copies of *bam-gal4* (B) together with the *rpa-70:GFP* transgene (GFP fluorescence in green and A'-B'), with P180 (red and A''-B'') and DNA (blue) stainings. Close-up views of the framed egg chambers are shown below each panel.

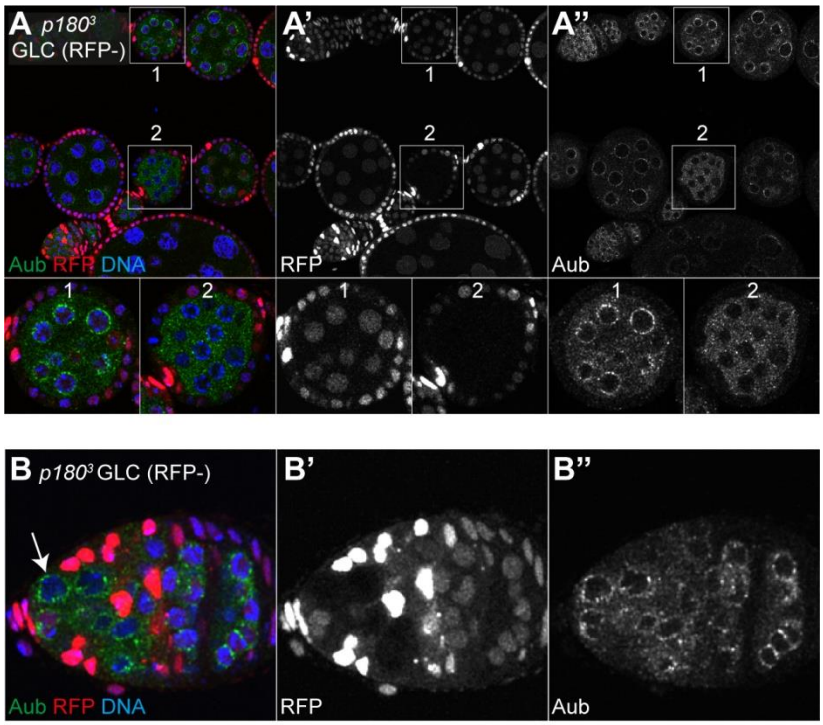


**Figure S8. P180 is required for the "nuage" formation in female germline egg chambers.**

**(A-B)** *p180*$^{3}$ mutant germline clones (GLC) identified by the absence of RFP fluorescence (A' and B'), with Aubergine (Aub, green and A''-B'') and DNA (blue) stainings. Close-up views in A show control (1) and *p180*$^{3}$ mutant (2) egg chambers in which the "nuage" is altered. The white arrow in B shows a *p180*$^{3}$ mutant GSC in the germarium, in which the "nuage" is intact.

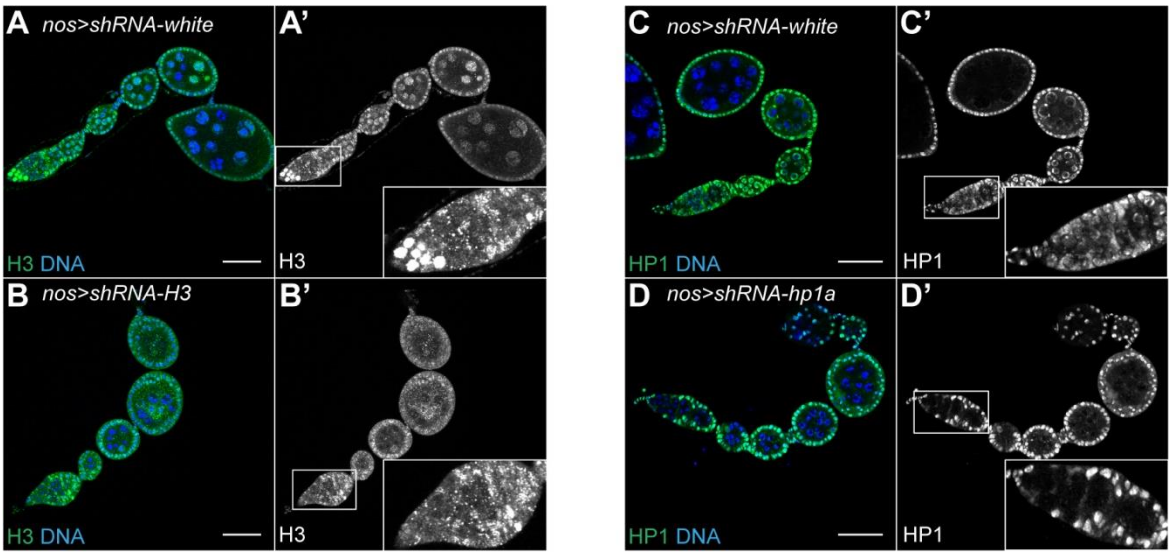


**Figure S9. Histone H3 and HP1a are efficiently depleted in germ cells upon expression of cognate targeting shRNAs under the control of *nanos-gal4*.**

(**A-B**) Control (A) and H3-depleted (B) ovarioles with DNA (blue) and histone H3 (green, A'-B') stainings. Scale bars: 50µm. (**C-D**) Control (C) and HP1a-depleted (D) ovarioles with DNA (blue) and HP1 (green, C'-D') stainings. Scale bars: 50µm.