

Figure S1

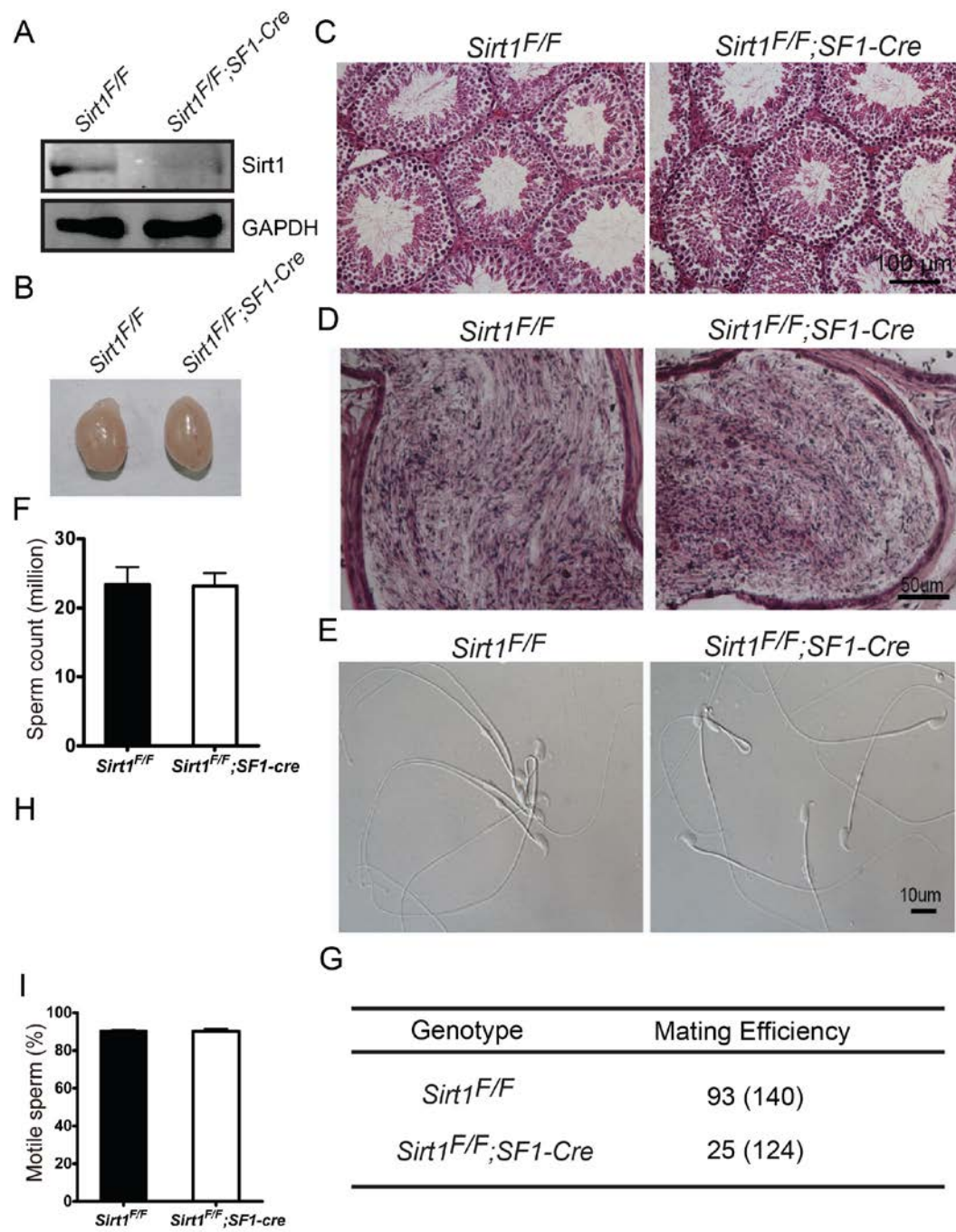


Fig. S1. Spermatogenesis was not affected in *Sirt1*^{F/F}; *SF1-Cre* male mice. (A) Sirt1 protein levels were dramatically reduced in the Leydig cells of *Sirt1*^{F/F}; *SF1-Cre* mice. (B) The mating efficiency was reduced in Sirt1 deficient male mice. (C) Testosterone production was significantly reduced in Sirt1 deficient mice. In *Sirt1*^{F/F}; *SF1-Cre* mice (white column), the concentration of serum testosterone was 2.88 ± 0.28 ng/ml, whereas the serum testosterone concentration in *Sirt1*^{F/F} mice was 0.60 ± 0.30 ng/ml (black column). (D) Testes of 8-week-old *Sirt1*^{F/F} and *Sirt1*^{F/F}; *SF1-Cre* mice. (E) Histology of the seminiferous tubules of *Sirt1*^{F/F} and *Sirt1*^{F/F}; *SF1-Cre* mice. (F) Histology of the cauda epididymis of *Sirt1*^{F/F} and *Sirt1*^{F/F}; *SF1-Cre* mice. (G) Spermatozoa of 8-week-old *Sirt1*^{F/F} and *Sirt1*^{F/F}; *SF1-Cre* mice cauda epididymis. (H) The total number of sperm from the cauda epididymis in *Sirt1*^{F/F} and *Sirt1*^{F/F}; *SF1-Cre* mice. (I) Sperm motility of *Sirt1*^{F/F} and *Sirt1*^{F/F}; *SF1-Cre* mice.

Figure S2

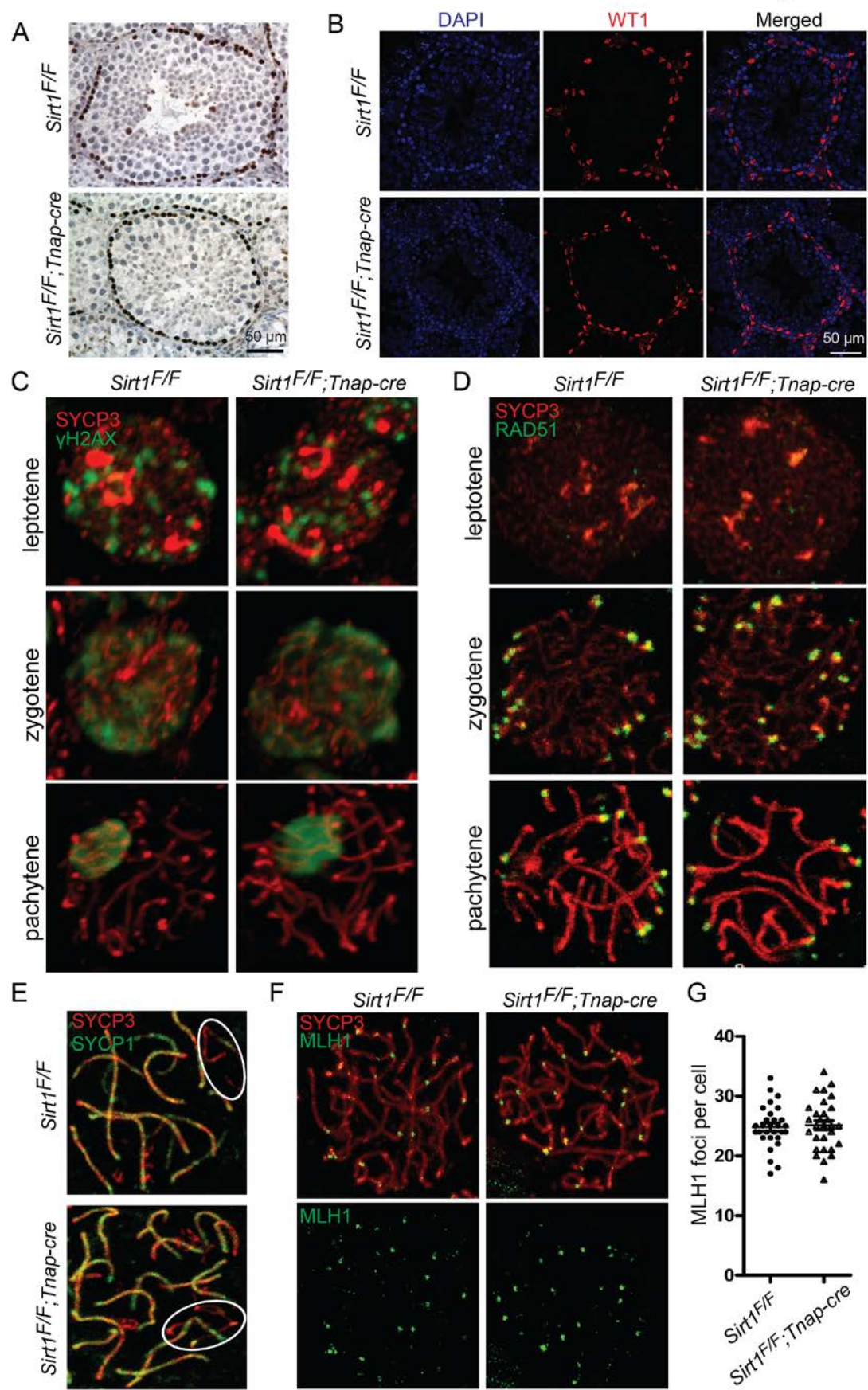


Fig. S2. Mitotic and meiotic progression of germ cells during spermatogenesis in *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* mice. (A) PLZF immunohistochemistry (IHC) of *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* mice testes. (B) WT1 immunofluorescence (IF) of *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* mice testes. (C) *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* spermatocytes stained for SYCP3 (red) and γ H2Ax (green). Leptotene, zygotene and pachytene spermatocytes were stained. (D) *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* spermatocytes stained for SYCP3 (red) and RAD51 (green). Leptotene, zygotene and pachytene spermatocytes were stained. (E) *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* pachytene spermatocytes stained for SYCP3 (red) and SYCP1 (green). The area bounded by an ellipse indicates the XY body. (F) *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* pachytene spermatocytes stained for SYCP3 (red) and MLH1 (green). Merged (top), MLH1 (bottom). (G) Quantitation of the number of MLH1 foci per cell in *Sirt1^{F/F}* (n=29) and *Sirt1^{F/F}; Tnap-Cre* (n=29) pachytene spermatocytes.

Figure S3

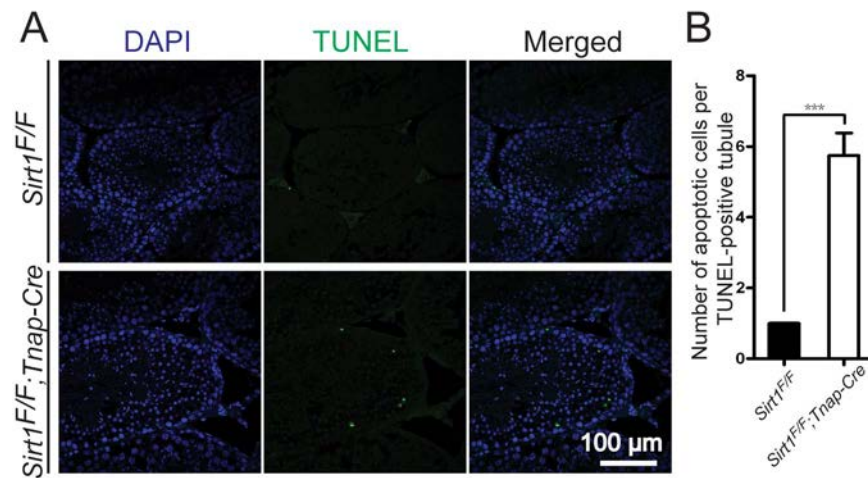


Fig. S3. Increased numbers of apoptotic germ cells are present in the seminiferous tubules of *Sirt1^{F/F}; Tnap-Cre* mice. (A) TUNEL assays of testis cross sections from *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* mice. (B) The number of apoptotic cells per TUNEL-positive tubule in *Sirt1^{F/F}* and *Sirt1^{F/F}; Tnap-Cre* mice.