



**Supplementary information, Figure S8** shRNA knockdown of mouse testicular *Miwi* or *Caf1* by testis lentivirus transduction.

**(A)** Knockdown of *Miwi* by lentivirus-expressed shRNAs. Left, western blot analysis of the efficiencies of *Miwi* shRNA constructs in silencing of transiently expressed Flag-MIWI in 293T cells. Right, immunostaining of elongating spermatids from testes transduced by *shMiwi*:GFP or control pSilencer:GFP with anti-MIWI antibody.

**(B)** Knockdown of *Caf1* by lentivirus-expressed shRNAs. Left, western blot analysis of the efficiencies of *Caf1* shRNA constructs in silencing of transiently expressed Myc-CAF1 in 293T cells. Right, immunostaining of elongating spermatids from testes transduced by *shCaf1*:GFP or control pSilencer:GFP with anti-CAF1 antibody.

(C) Knockdown of *Miwi* or *Caf1* led to up-regulation of non-responsive candidate targets in elongating spermatids. GFP<sup>+</sup> cells were sorted from the elongating spermatids isolated from testes transduced by *shMiwi*:GFP, *shCaf1*:GFP, or control pSilencer:GFP. qRT-PCR assays were performed to determine the expression of 5 non-responsive candidates, including *Nploc4*, *Samd4*, *Qrich1*, *Tcf20*, and *Ap2a1* in GFP<sup>+</sup> cells and respective GFP<sup>-</sup> cells, with *GAPDH* served as an internal control. The respective treatments indicated in parentheses.