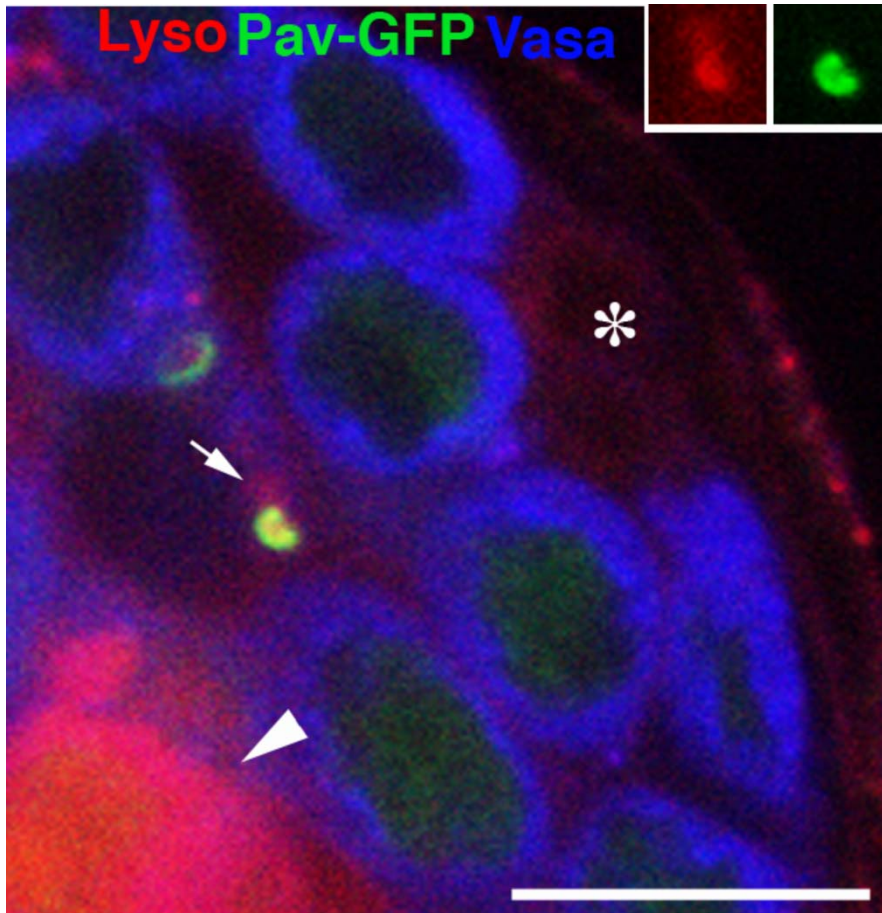


# Supplemental Materials

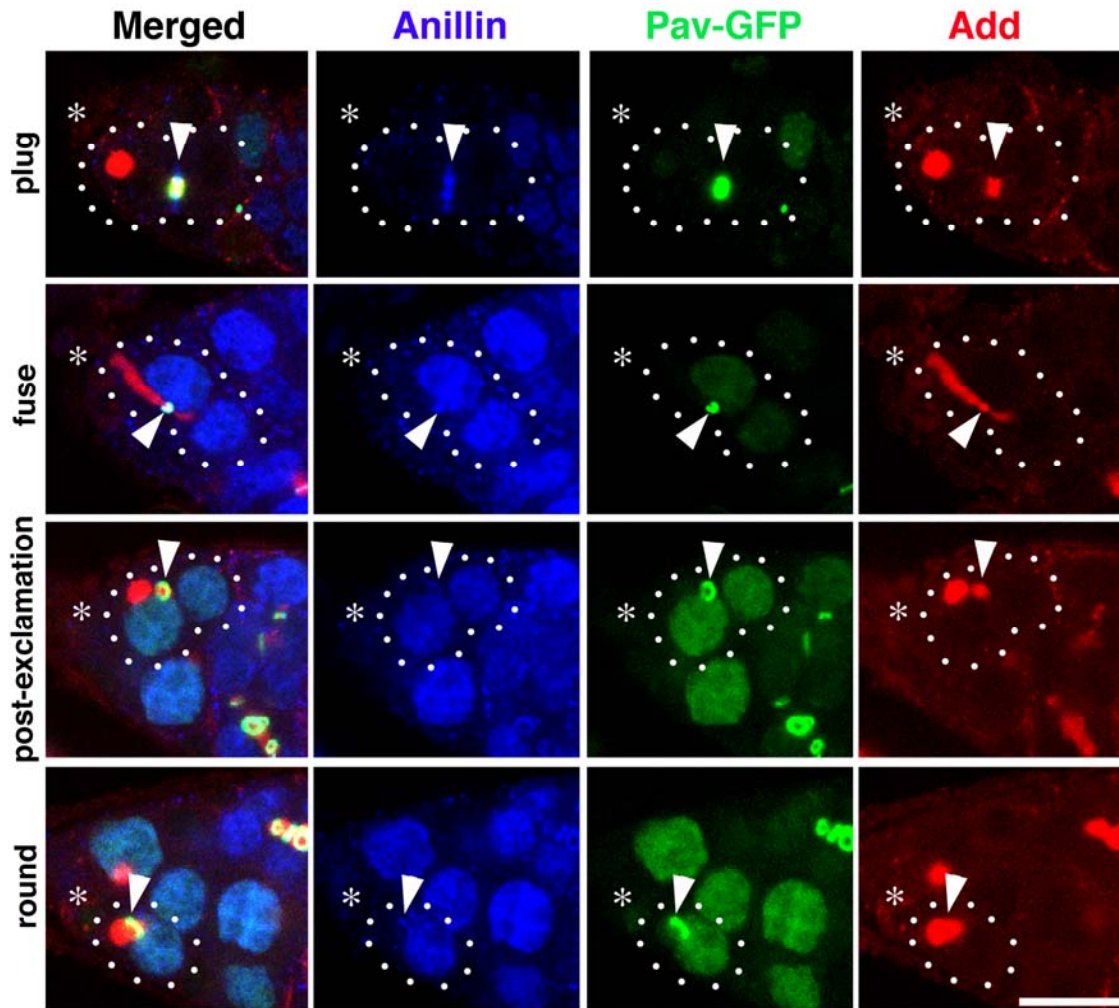
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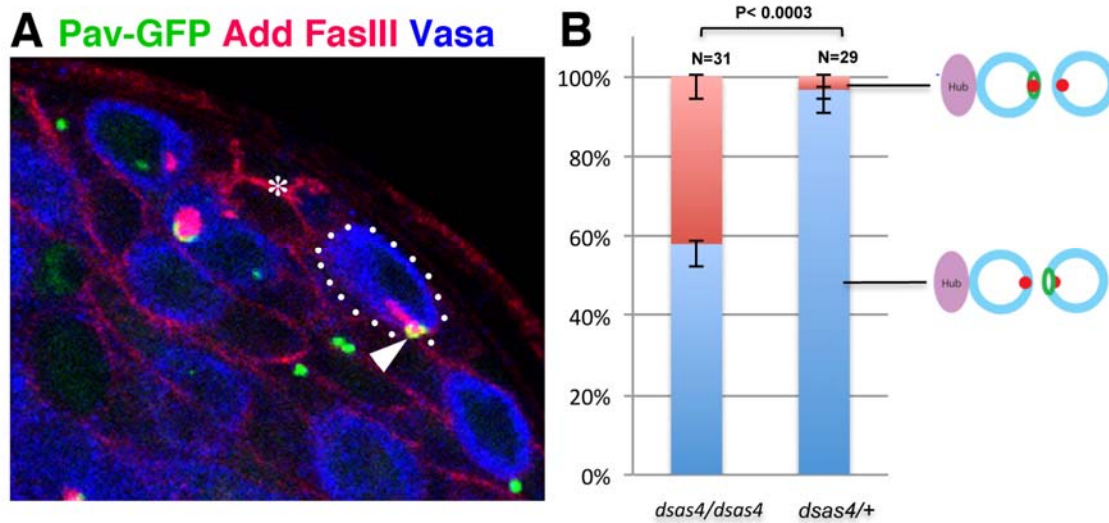
**Figure S1. MR in cyst cells is often associated with the lysosome.**

MRs ingested into CySCs/CCs were frequently associated with the lysosome in the testis (arrow). Red, Lyso (Lysotracker). Green, Pav-GFP. Blue, Vasa. Inset shows separate channels of Lysotracker (Lyso) and Pav-GFP. Arrowhead indicates dying spermatogonia, which are frequently observed in normal wild-type testes and are associated with Lysotracker. Bar: 10 $\mu$ m.



**Figure S2 MR behavior during cell cycle visualized by Anillin and Pav-GFP**

Red, Adducin-like. Green, Pav-GFP. Blue, Anillin. The hub is marked by the asterisk (\*). Bar: 10  $\mu$ m. The signal intensity ratio (signal on MR/signal in the nucleus) was much higher with Pav-GFP than with Anillin, making it difficult to detect the internalized MR using anti-Anillin antibody.



**Figure S3 MR segregation is randomized in *dsas-4* mutant**

A. An example of MR inheritance by male GSCs in the *dsas-4* mutant. B. Frequency of MR inheritance either by GSC or GB in *dsas-4* and control flies. MR inheritance by GSCs was observed in 41.9% of GSC-GB pairs, compared to 3% in heterozygous control,  $p < 0.0003$ . Red, Adducin-like and Fas III. Green, Pav-GFP. Blue, Vasa. The hub is marked by the asterisk (\*). Bar: 10  $\mu$ m.