Supplemental Figures

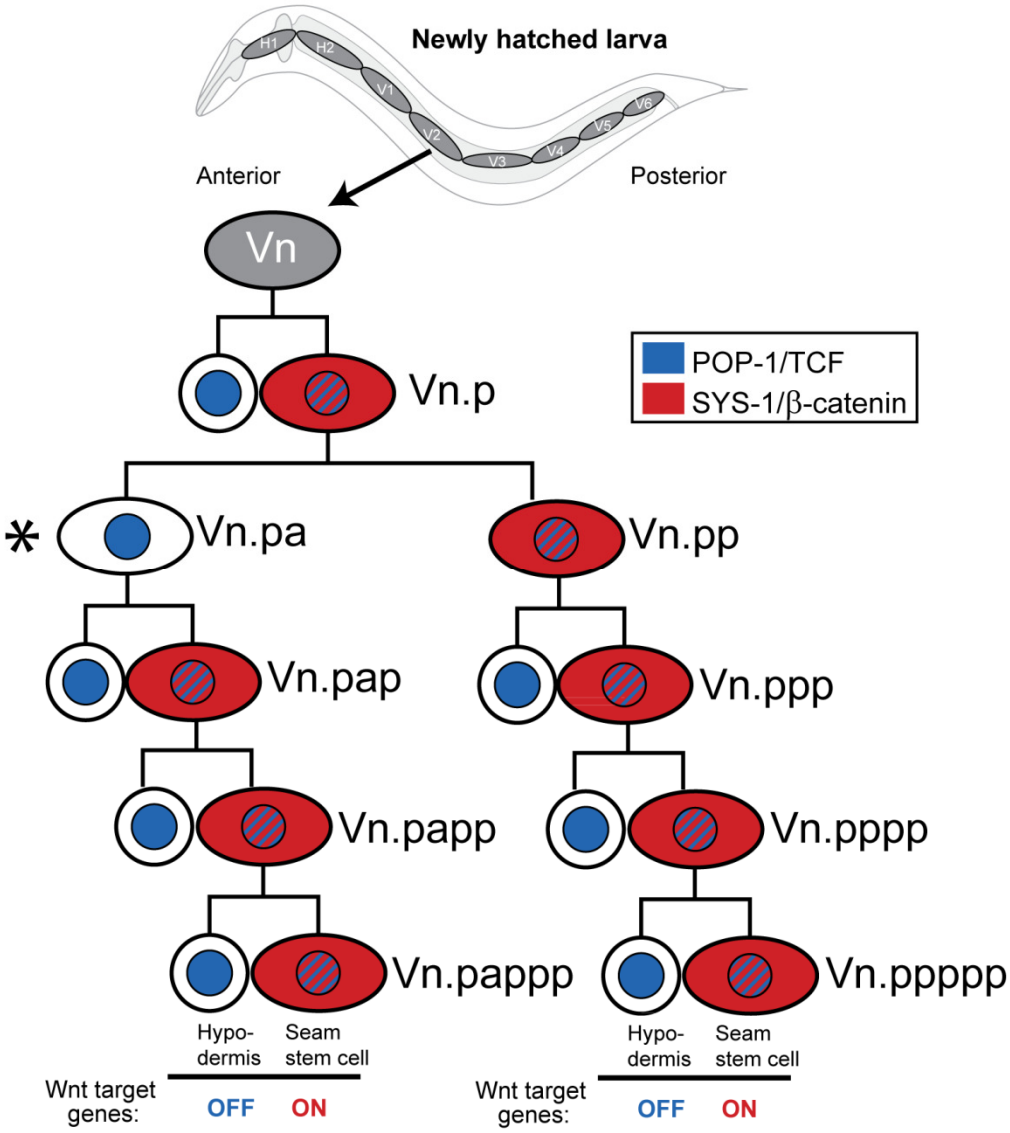

Fig. S1. The epithelial seam cells divide in a stem cell-like pattern dependent on the WβA signaling pathway. Nuclear POP-1/TCF is lowered and SYS-1/β-catenin is elevated only in the posterior daughter, which activates Wnt target genes and retains the seam stem cell fate. Anterior daughters display a low SYS-1:POP-1 ratio and differentiate as hypodermis with the exception of Vn.pa, which remains a seam cell in all lineages except V5. Asterisk indicates that this lineage is altered in V5.

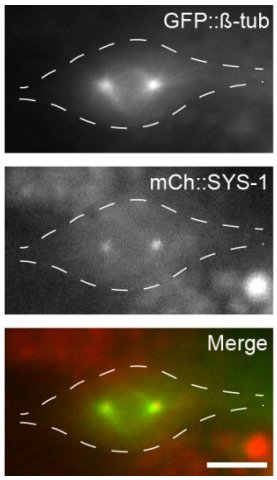

Fig. S2. mCherry::SYS-1 colocalizes with GFP::β-tubulin during seam cell division. $P_{sys\text{-}1}$::mCherry::SYS-1 puncta colocalize with P_{scm}::GFP::β-tubulin during seam cell division, indicating that the SYS-1 puncta are likely centrosomal. Scale bars: 5 µm.

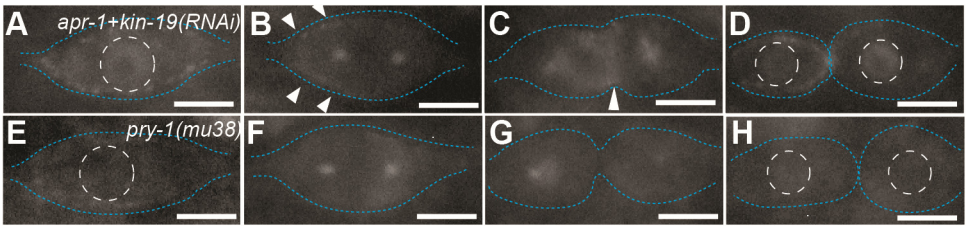

Fig. S3. *apr-1+kin-19(double RNAi)* resembles the *apr-1(RNAi)* phenotype, and *pry-1(mu38)* displays defects in the polarity of SYS-1 localization during seam cell division. A-D, YFP::SYS-1 localization in *apr-1+kin-19(double RNAi)*seam cells. Arrowheads in B and C denote cortical SYS-1 localization. Compare to Figure 2E-L. E-H, YFP::SYS-1 localization in *pry-1(mu38)* seam cells. A is a representative images. F-H are consecutive images of the same cell during mitosis. The division shown in F-H represents a reversal of the polarity of SYS-1 asymmetry versus wild-type (Figure 2). White dashed circles denote nuclei. Blue dashed lines denote cell boundaries. Scale bars: 5 µm.

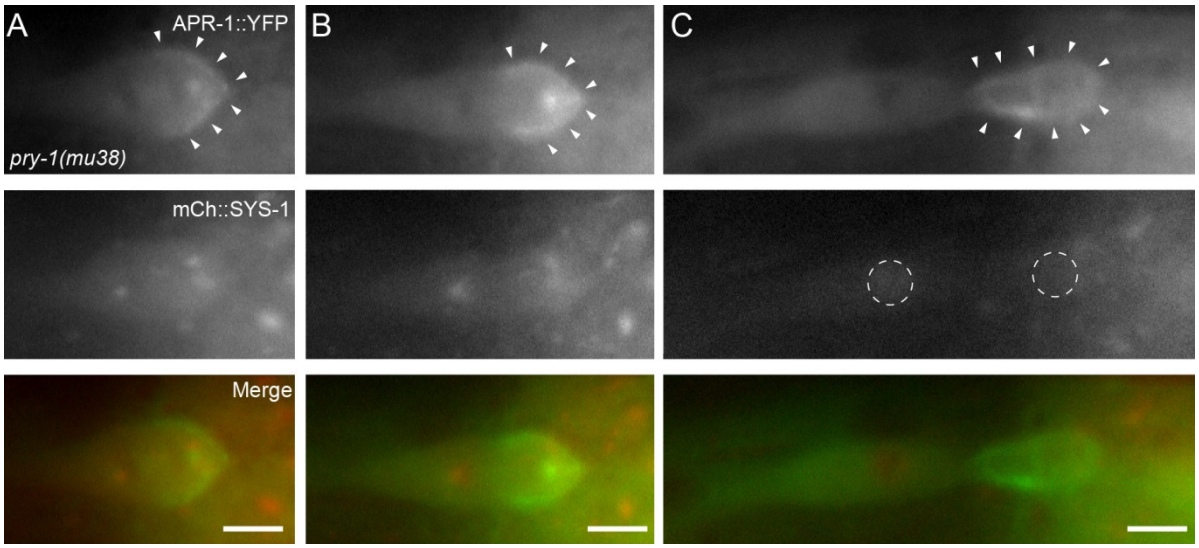

Fig. S4. Aberrant cortical localization of APR-1–YFP in *pry-1(mu38)* is established prior to cytokinesis and persists through the end of division. A, APR-1::YFP and mCherry::SYS-1 localization in *pry-1(mu38)* during metaphase. Arrowheads mark cortical APR-1::YFP, the polarity of which is already reversed at this stage. B, APR-1::YFP cortical asymmetry remains reversed during telophase. C, post-division, high levels of cortical APR-1::YFP are maintained in the posterior daughter. White dashed circles mark nuclei, which also display reversed SYS-1 asymmetry. Scale bars: 5 µm.