

Figure S1. **The distribution of  $\beta$ -catenin and  $\alpha$ -catenin is not changed in cells expressing  $G_{\alpha 13a}$ .** Confocal images show the cellular distribution of  $\beta$ -catenin and  $\alpha$ -catenin. One of 8–32 blastomeres was injected with RNAs encoding  $G_{\alpha 13a}$  (60 pg) and mCherry (30 pg, red). Embryos were then fixed at 50% E and immunostained using antibodies against  $\beta$ -catenin or  $\alpha$ -catenin (green). Asterisks indicate cells in which  $G_{\alpha 13a}$  and mCherry are expressed. Bar, 10  $\mu$ m.

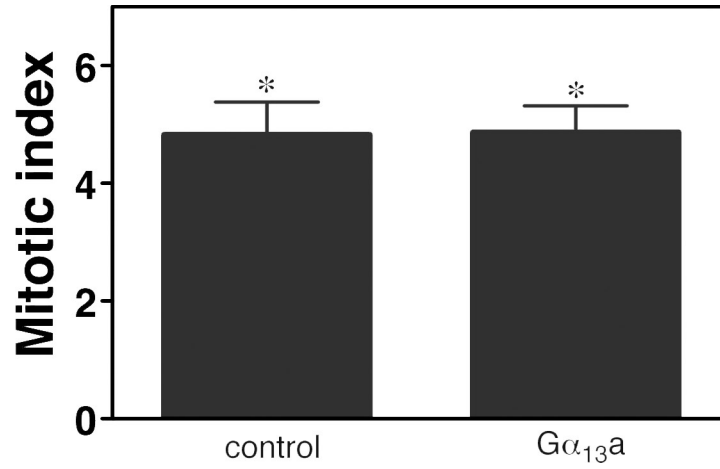


Figure S2. **Gα<sub>13</sub>a overexpression does not promote cell proliferation.** Uninjected control or Gα<sub>13</sub>a-expressing embryos were fixed at 50% E and immunostained with an anti-phosphohistone antibody (pH<sub>3</sub>) in order to identify proliferating cells at M phase, and with rhodamine-phalloidin to visualize all cells. A series of confocal z-section images was obtained from the animal pole, and the mitotic index was determined as a percentage of the pH<sub>3</sub>-positive cells within a field in each section. 3,338 and 3,502 cells were analyzed in uninjected control and Gα<sub>13</sub>a-expressing embryos, respectively (13 embryos each). \*, P > 0.05. Error bars indicate mean ± SEM.

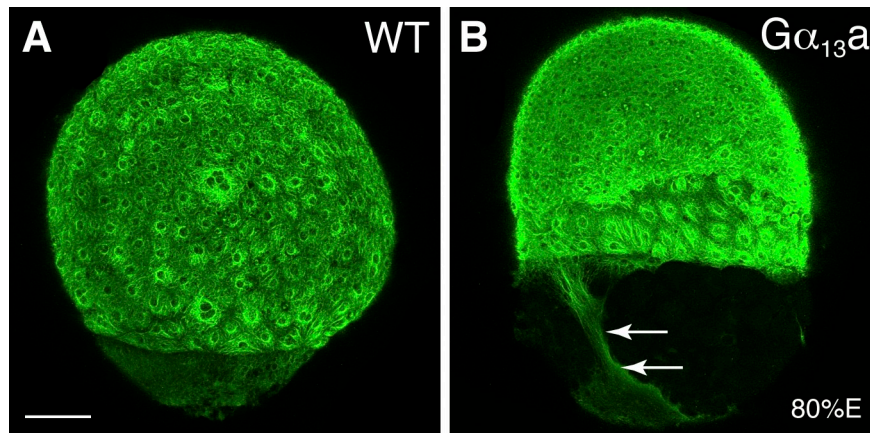


Figure S3. **Microtubules in the indicated embryos revealed by anti-α-tubulin staining.** Confocal z-projection images show anti-α-tubulin staining in uninjected WT and Gα<sub>13</sub>a-expressing embryos at 80% E. Arrows indicate the thick microtubule bundles. Bar, 100 μm.