SUPPLEMENTARY MOVIE LEGENDS

MovieS1. Transport of endogenous *drongo* mRNA in a wild type oocyte. A mix of dH1111-Cy3 (green) and dH1598-AF647 (red) *drongo*-specific molecular beacons was microinjected in one of the nurse cells adjacent to the oocyte of a stage 8 egg chamber. Images were analyzed by time-lapse confocal microscopy using a spinning disc confocal microscope. Frames were acquired every minute for at least 49 min and are shown as a projection of seven 1 μm Z-slices at 6 frames/sec. Bar, 20 μm.

MovieS2. Colocalization of *drongo* mRNA and Me31B-YFP. dH1598-AF647 (red) *drongo*-specific molecular beacon was microinjected in a nurse cell of a stage 8 Me31B-YFP (green) egg chamber. Images were analyzed by time-lapse confocal microscopy using a spinning disc confocal microscope. Frames were acquired every 20 sec for at least 20 min and are shown as a projection of five 1 μm Z-slices at 18 frames/sec. Bar, 20 μm.

MovieS3. Colocalization of *drongo* and *osk* mRNA in a wild type oocyte. A cocktail of dH1111-Cy3 (*drongo*-specific) (red) and o2209-Cy5 (*osk*-specific) (green) molecular beacons was microinjected in the oocyte of a stage 8-9 wild type egg chamber. Images were analyzed by time-lapse confocal microscopy using a spinning disc confocal microscope. Frames were acquired every minute for at least 18 min and are shown as a projection of nine 1 μm Z-slices at 6 frames/sec. Bar, 20 μm.

MovieS4. Colocalization of *drongo* mRNA and Stau in live GFP-Stau oocytes. dH1598-AF647 (red) *drongo*-specific molecular beacon was microinjected in the nurse cell adjacent to the oocyte of a *GFP-Stau/Cyo* (green) egg chamber. Images were analyzed by time-lapse confocal microscopy using a spinning disc confocal microscope. Frames were acquired every minute for at least 65 min and are shown as a projection of twelve 1 μm Z-slices at 6 frames/sec. Bar, 20 μm.

MovieS5. Localization of *drongo* mRNA in an *armi* mutant oocyte. dH1598-AF647 *drongo*-specific molecular beacon was microinjected in the nurse cell adjacent to the oocyte of an *armi* mutant egg chamber. Images were analyzed by time-lapse confocal microscopy using a spinning

disc confocal microscope. Frames were acquired every minute for at least 53 min and are shown as a projection of ten 1 μm Z-slices at 6 frames/sec. Bar, 20 μm.

MovieS6. Transport and localization of Drongo-EGFP in YFP-Rab11 backgrounds. Drongo-EGFP particles were detected in wild type, YFP-Rab11DN and YFP-Rab11CA mutant oocytes. Images were acquired by time-lapse confocal microscopy using a spinning disc confocal microscope. Frames were acquired every 20 sec for at least 30 min and are shown as a projection of thirteen 0.5 μm Z-slices at 18 frames/sec. Bar, 20 μm.

MovieS7. Morphology of egg chambers coexpressing Drongo-EGFP and YFP-Rab11DN. Drongo-EGFP (green) and YFP-Rab11DN were coexpressed with the V2H-GAL4 driver. Images are the result of stitching of three Z-stacks with 46 individual slices of 0.5 μm each and are shown as 3 Z-stacks/sec. Z-stacks were acquired using a spinning disc confocal microscope. F-actin (red) was highlighted using fluorescently labeled phalloidin. Inset shows one Z-slice of an F-actin stain using egg chambers expressing YFP-Rab11DN alone using the same GAL4 driver. s=stage. Bar, 20 μm.