

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: Sample 3D reconstruction of a segmented stage 8 follicle from the morphometric workflow. Cells are colour-coded for topology as in Fig. 1g.

File Name: Supplementary Movie 2

Description: ImSAnE cylinder projection of live-imaged follicle expressing Jupiter-GFP (gray) to visualize mitotic spindles and midbodies.

File Name: Supplementary Movie 3

Description: Time-lapse video showing mitotic spindle (grey) in control stage 6 follicle rotates from latitudinal orientation to final A-P-oriented cell division as in Supplementary Figure 2b.

File Name: Supplementary Movie 4

Description: Rack1-depleted follicle is not defective in rotation. Time-lapse video showing a stage 8 Rack1-depleted follicle marked with histone (magenta) and follicle cell membrane (green) rotated ex vivo. Scale bar, 10 μm .

File Name: Supplementary Movie 5

Description: Time-lapse videos showing FRAP in stage 7 control (left panel), Rack1- depleted follicle (middle panel), and Src42A-hyperactivated follicle (right panel) as in Fig. 7a-c. One latitudinally-oriented junction marked with E-cadherin-GFP(gray) of each genotype was bleached during 8-9 seconds, followed by recovery. Scale bars, 3 μm .