Developmental Cell *18*

Supplemental Information

The Fz-Dsh Planar Cell Polarity Pathway Induces Oriented Cell Division via Mud/NuMA in *Drosophila* and Zebrafish

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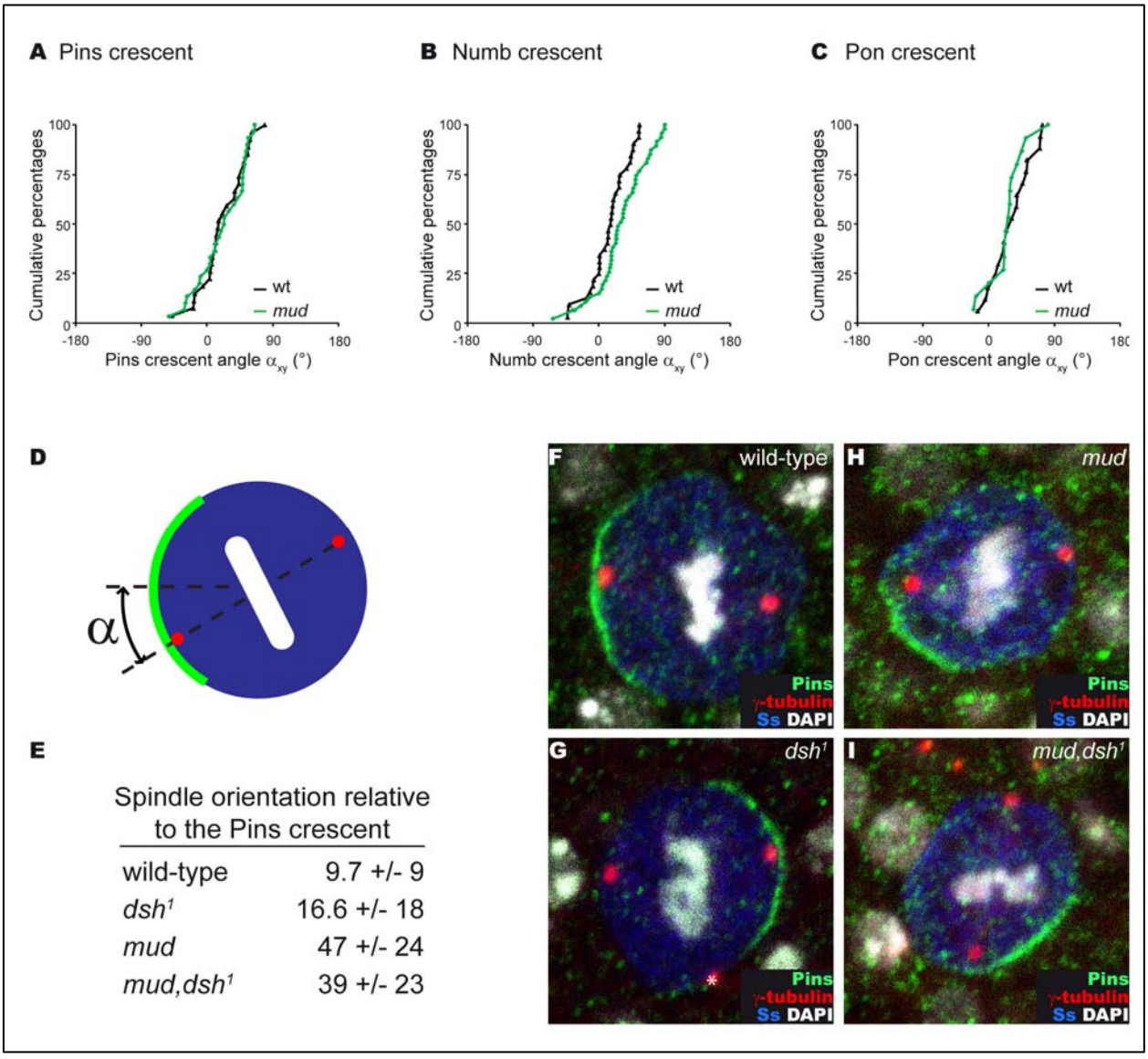

Figure S1. The orientation of the polarity is not affected in *mud* mutant cells

A: Cumulative plot of the anterior-posterior orientation of the Pins crescent in wild-type (n=26) and *mud* mutant pI cells (n=30).
B: Cumulative plot of the anterior-posterior orientation of the Numb crescent in wild-type (n=32) and *mud* mutant pI cells (n=46).
C: Cumulative plot of the anterior-posterior orientation of the Pon::GFP crescent in wild-type (n=17) and *mud* mutant pI cells (n=15).
D-**I**: Orientation of the mitotic spindle relative to the Pins crescent. The angle α is defined by the vector perpendicular to the middle of Pins crescent (green) and the spindle axis defined by the position of the two centrosomes (red) (**D**). Mean and standard deviation of the α angle in wild-type pI cells (n=25), *mud* (n=25), *dsh*^{1} (n=25) and double *mud*, *dsh*^{1} (n=25) mutant pI cells; (**E**). Pins crescent (green in **F**-**I**), Senseless (blue in **F**-**I**), centrosomes (labeled by γ-tubulin, red in **F**-**I**) and DNA (labeled by DAPI counterstaining, white in **F**-**I**) in wild type (**F**), *mud* (H), *dsh*^{1} (**G,** asterisk indicate the centrosome of a neighboring dividing cell) and *mud*, *dsh*^{1} (**I**). Note that in *dsh*^{1} mutant pI cells, the mitotic spindle is not as well as oriented as in the wild-type pI cells and that Pon::GFP segregates in both daughter cells in 10% of the *dsh*^{1} mutant pI cells (not shown, see also Bellaïche et al., 2001).

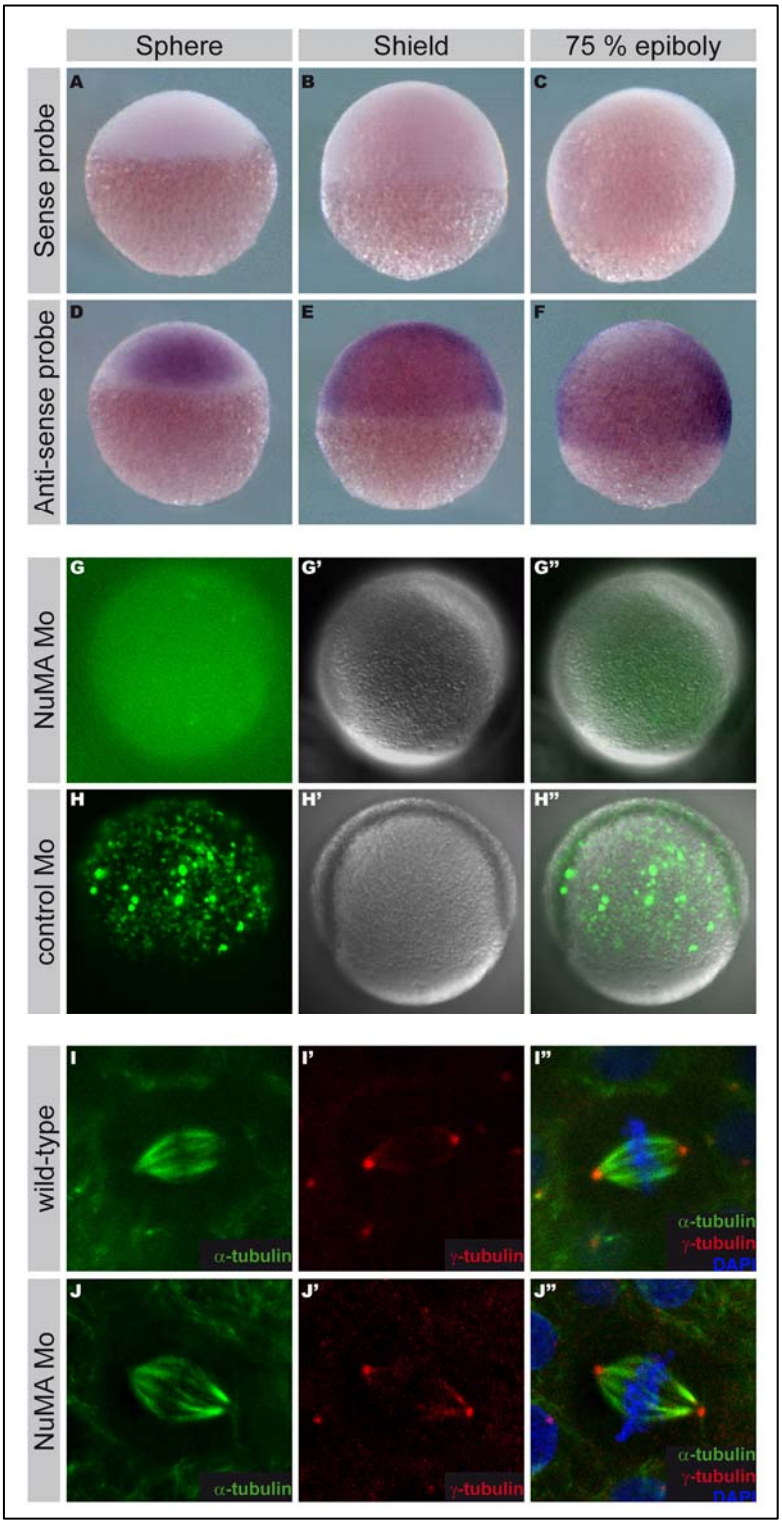

Figure S2. NuMA is expressed during zebrafish gastrulation.
A-F: Expression of NuMA. *In situ* hybridization for the NuMA sense probe (**A-C**) or anti-sense probe (**D-F**) at the sphere (**A**, **D**), shield (**B**, **E**) and 75% epiboly (**C**, **F**) stages. Animal pole to the top, (**C**, **F**) dorsal to the right.
G-H'': The efficiency of the NuMA MO was controlled by showing that the expression of a GFP gene harboring the NuMA MO sequence was abrogated by NuMA MO injection (**G-G''**) but not

by the NuMA control MO (**H-H’’**) in zebrafish embryo injected at the 1 cell stage. GFP channel (**G** and **H**), bright field image (**G’** and **H’**) and merge (**G’’** and **H’’**).
I-J’’: Dividing epiblast cells in control (**I-I’’**) and NuMA MO injected embryos (**J-J’’**) stained for α-tubulin (**I**, **I’’**, **J** and **J’’**, green), γ-tubulin (**I’**, **I’’**, **J’** and **J’’**, red) and DNA (Hoechst, **I’’** and **J’’**, blue).

SUPPLEMENTAL REFERENCE

Bellaïche, Y., Gho, M., Kaltschmidt, J.A., Brand, A.H., and Schweisguth, F. (2001). Frizzled regulates localization of cell-fate determinants and mitotic spindle rotation during asymmetric cell division. Nat Cell Biol *3*, 50-57.