




Knockdown of Rnd1 or Shirin affect collective properties of mesoderm tissue explants (Related to Figure 9). Analysis of spreading, dispersion, and intercalation of mesodermal explants under various conditions was performed as for experiments presented in Figure 9. A-D) Control mesoderm, mesoderm treated with Y27632, and mesoderm from embryos injected with Rnd1 MO or Shirin MO. Red arrowheads in A and D indicate areas of large scale retractions (compare 85 and 170 min ). Scale bar: $100 \mu \mathrm{~m}$. E) Average time course curves with SD for the various experimental conditions. E') Corresponding relative spreading after 60 min and 170 min . F-K) Delaunay triangulation of nuclei in order to measure cell dispersion. F-I) Representative plots of triangulated nuclei after 170 minutes of imaging. X and Y labels mark the coordinates in $\mu \mathrm{m}$, the colour coded scale bar indicates the area of the triangles in $\mu \mathrm{m}^{2}$. J) Quantification of average triangle size at the initiation of spreading ( 30 min ) and the end of the time lapse. K) Quantification of the relative change in triangle size over time calculated by dividing the average triangle area at 170 minutes by that at 30 minutes. L) Quantification of intercalation calculated by dividing number of nuclei at the ventral surface at 170 minutes by the number at 30 minutes. Statistical comparisons: One-way ANOVA followed by Tukey's HSD post hoc test.

