Electronic Supplementary Material (ESI) for Integrative Biology.

Supplementary Information

Inhibition of Cell-Cell Adhesion Randomized Epithelial Chiral Morphogenesis on Micropatterned surfaces

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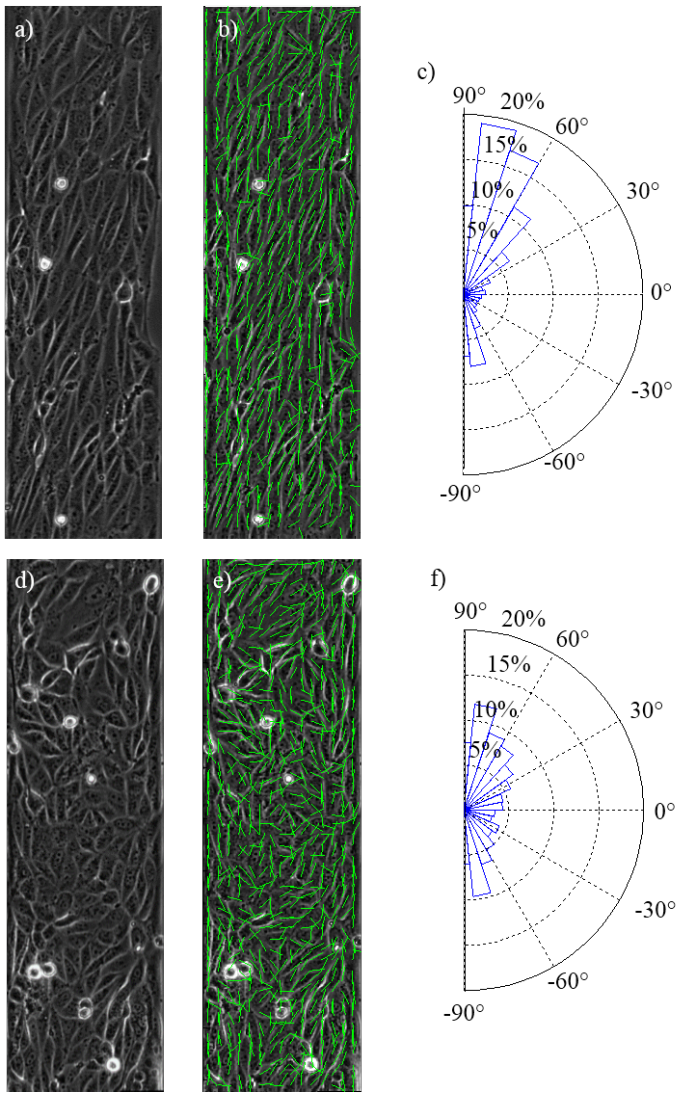
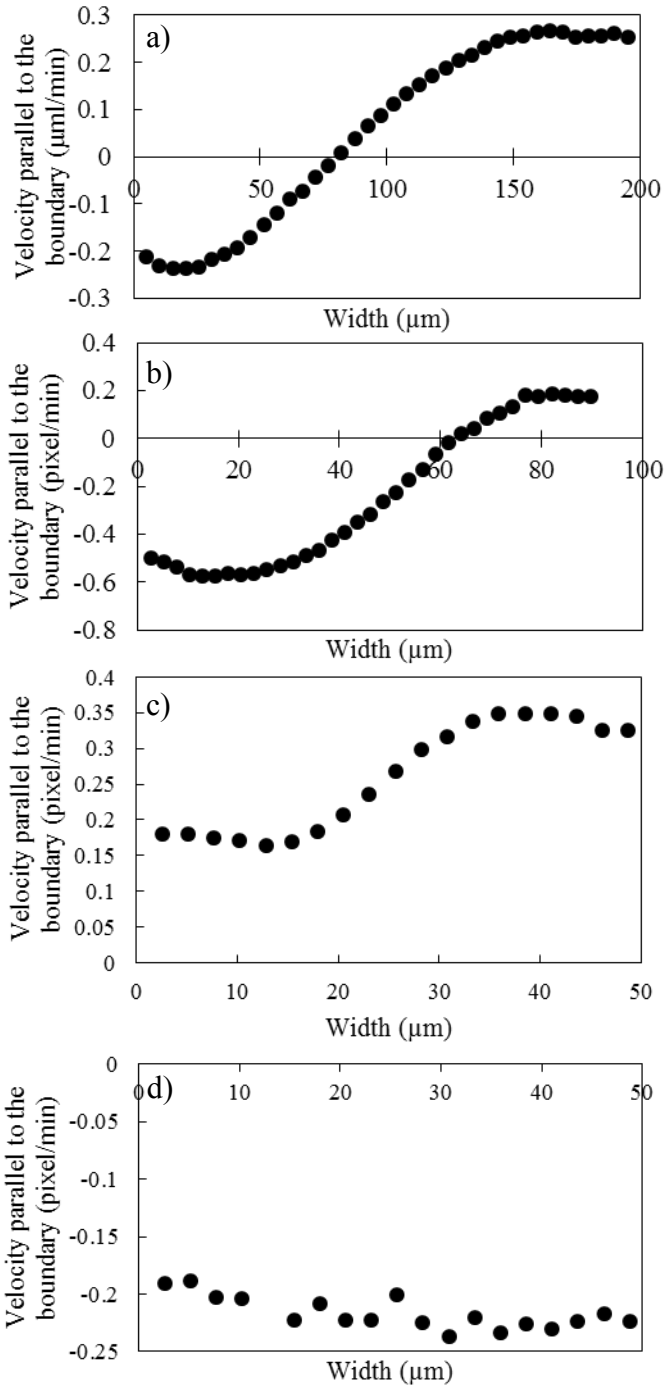


Supplementary Figure 1. Intensity gradient analysis of cell alignment indicates biased alignment for the 200 µm control line. A) Phase contrast image of 200 µm control line B) Result of alignment analysis C) An angular histogram displaying the bias in cell alignment for the control line. D) Phase contrast image of 200 µm, 1.0 mM EGTA treated line E) Results of alignment analysis F) An angular histogram displaying a randomization of cell alignment.



Supplementary Figure 2. Velocity profiles of MDCK control micropatterned lines. a) velocity profile of a 200 µm line b) velocity profile of a 100 µm line c) velocity profile of a 50 µm line displaying a distinct linearly varying region d) velocity profile of a 50 µm line displaying no linear region

Supplementary Movie 1. Manual cell tracking illustrates the clustered migration of cells at the boundaries of a 200 μm control line with cells located more centrally exhibiting little migration.

Supplementary Movie 2. Manual tracking of MDCK cells on a 200 μm line under the treatment of 1 mM EGTA shows more random migration, with cells at the boundaries migrating parallel to the boundary for a period of time, but then moving perpendicularly toward the center of the line. There is also less clustered migration at the pattern boundary.

Supplementary Movie 3. Representative movie of cell migration on a 100 μm control line. The cells align similarly to the 200 μm control line, with opposite migration occurring on opposing boundaries.

Supplementary Movie 4. Representative movie of cell migration on a 50 μm control line. The cells tend to migrate in the same direction.