

Traction microscopy with integrated microfluidics: responses of the multi-cellular island to gradients of HGF

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SUPPORTING INFORMATION

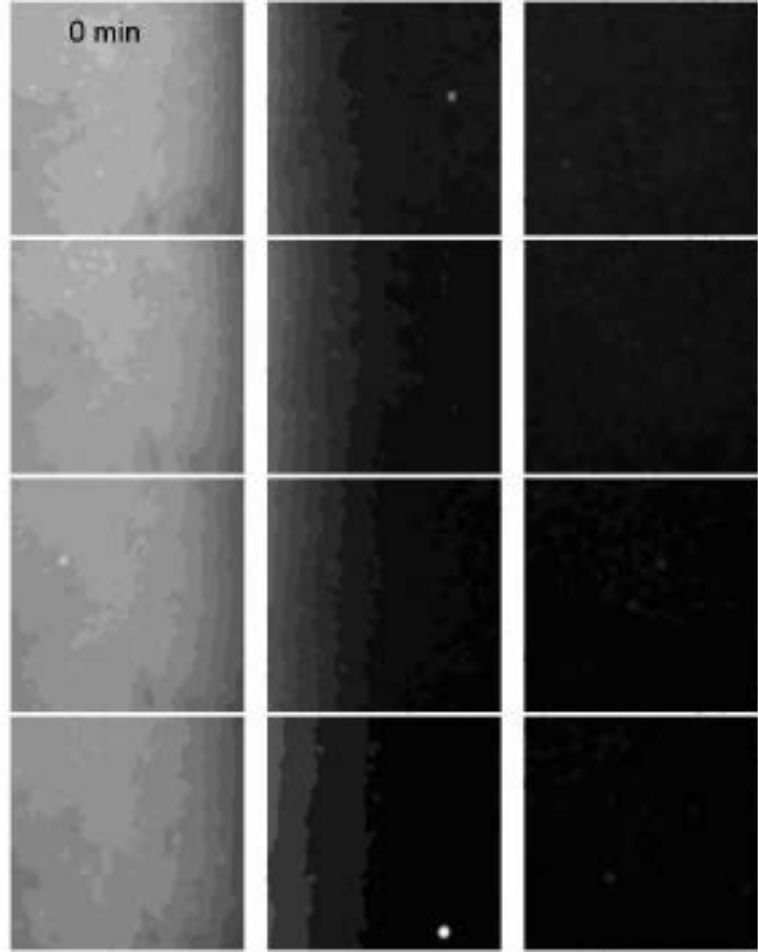
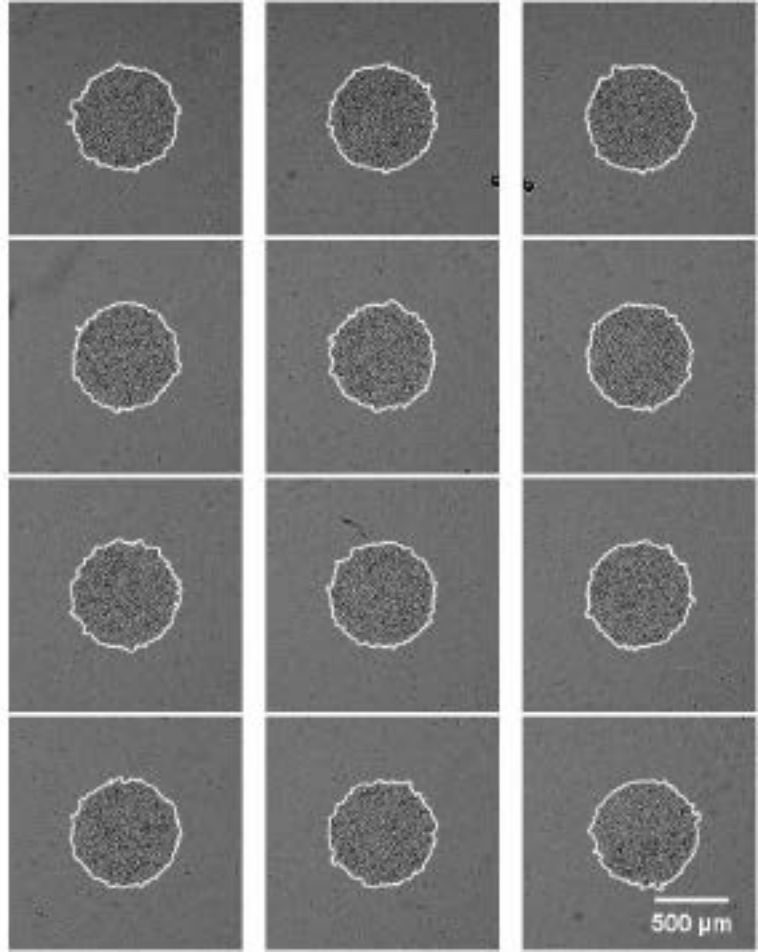
Movie 1. (a) Concentration gradient visualized by fluorescence intensities of Rhodamine-conjugated dextran which has a similar molecular weight with HGF (70 kDa). (b) Bright field images of MDCK cell islands and their expansion responding to HGF concentration for 500 min.

Figure S1. Concentration gradients depending on flow rate and gradient stability over time. (a) Gradients visualized by fluorescence images of Rhodamine-conjugated dextran (70 kDa) introduced at the left channel under 0.1 $\mu\text{l}/\text{min}$ or 0.5 $\mu\text{l}/\text{min}$ of fluid flow. (b) The intensity profiles of the fluorescence images under 0.1 $\mu\text{l}/\text{min}$ or 0.5 $\mu\text{l}/\text{min}$ of fluid flow. (c) Variation of concentration difference over time in each column in the box shown in Fig. 2b.

Figure S2. Variability of speed, traction, and tension of 4 separate experiments. Each red dot is the average of ratios between left half and right half of an island in each left, middle and right columns. Each column has 6 islands. Green line and red line indicate the mean and median value of these red dots, respectively. (a) speed. (b) the magnitude of traction. (c) the magnitude of tension.

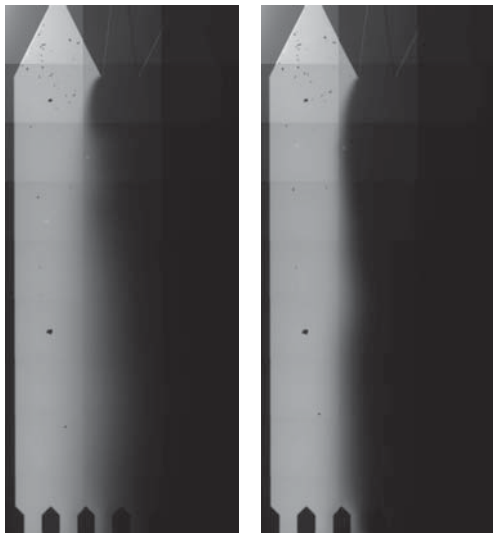
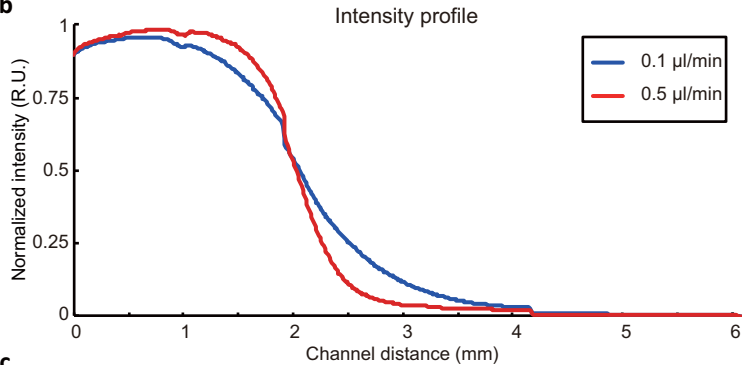
a

0 min

**b**

a

Fluorescent image of rhodamine-dextran (70 kDa)

0.1 $\mu\text{l}/\text{min}$ 0.5 $\mu\text{l}/\text{min}$ **b****c**