Electronic Supplementary Material (ESI) for Lab on a Chip.

A simple microfluidic platform for partial treatment of insuspendable tissue samples with orientation control

Supplementary Figure

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Supplementary Figure S1

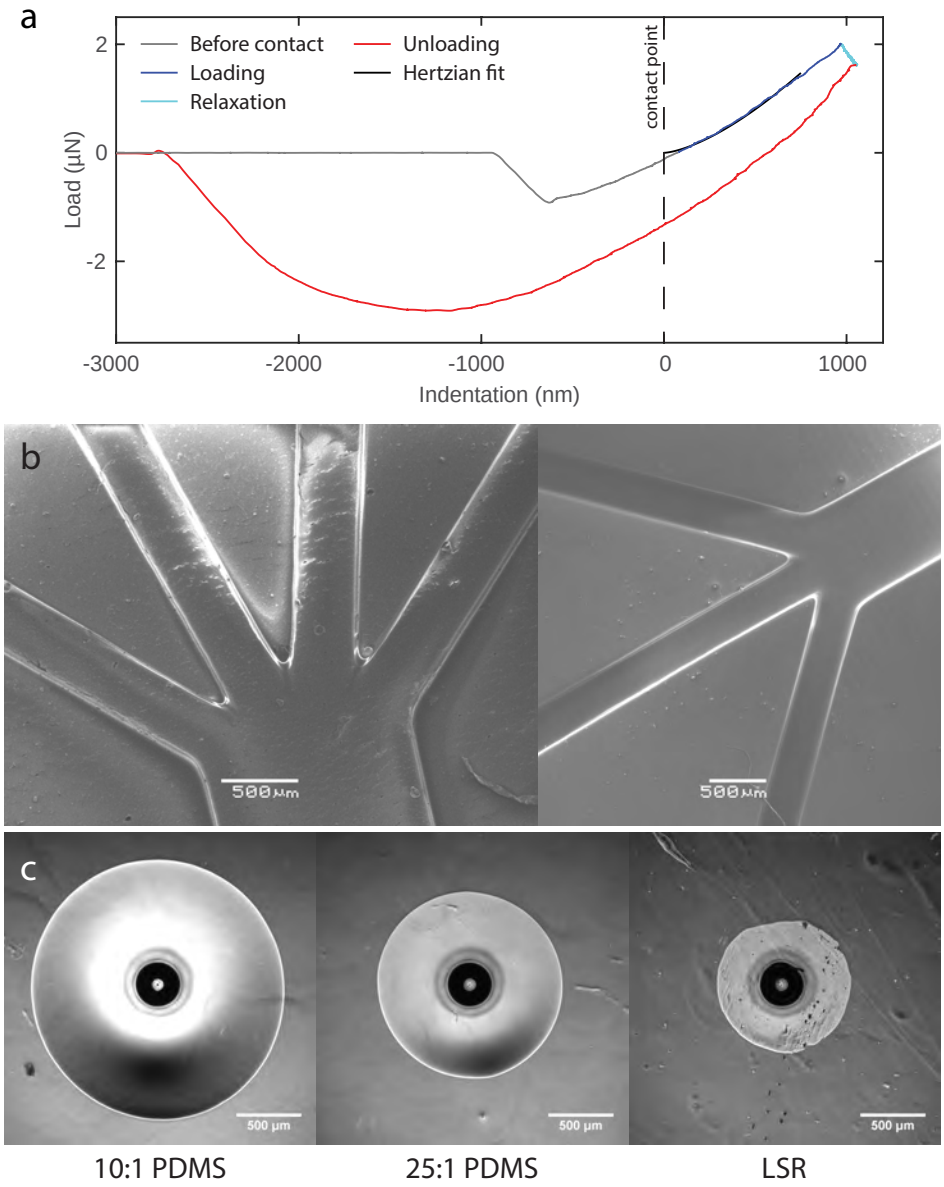

Figure S1: Device material characterization. (a) A sample nano-indentation curve. Loading data just after the contact point are fitted to the Hertzian model to extract the stiffness of the material. Negative load during the approach phase is due to surface adhesion. (b) SEM images of an LSR device with 4 channels and a PDMS device with 3 channels. (b) A bead is placed between the material of interest and a glass substrate. The delamination radius is much more pronounced with 10:1 PDMS (left) and 25:1 PDMS (center) compared to LSR (right). Device thickness and image size are the same.

Supplementary Figure S2

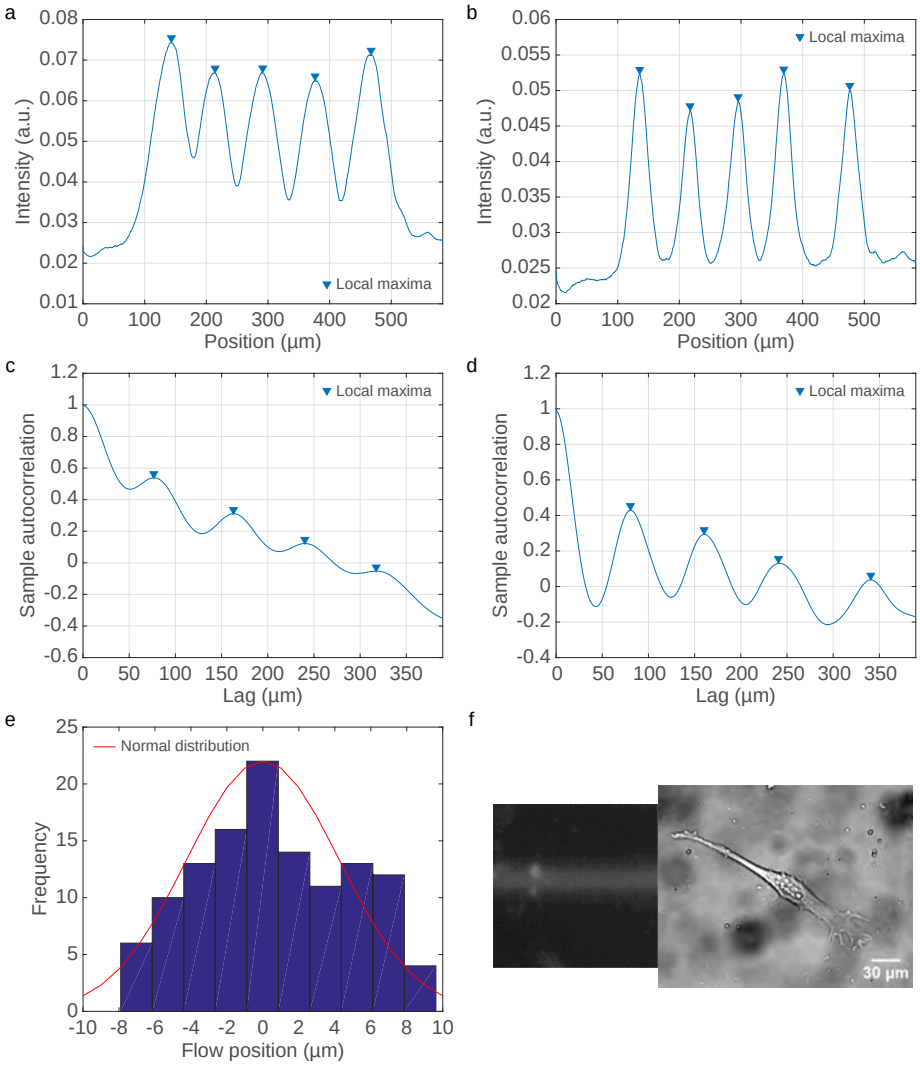

Figure S2: Flow accuracy and resolution characterization. Smoothed intensity data from the regions indicated in Fig. 6d of experiment set 1 (a) & 2 (b). Autocorrelation of the data from experiment set 1 (c) & 2 (d). (e) A position distribution histogram of the center flow over a 2-hour period. Data also plotted temporally in Fig. 6f. Red line shows a normal distribution (normalized to the maximum frequency) with the same standard deviation as the position distribution. (f) Expanded view of the region of interest indicated in Fig. 6c. Contrast adjusted to aid flow visualization. The flow is compared to a typical fibroblast cell. The images have the same scale.

Supplementary Figure S3

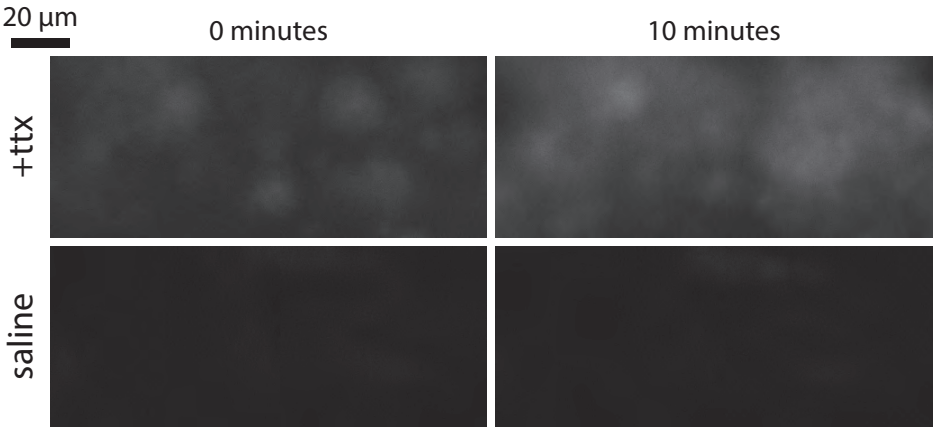

Figure S3: Regions of interest from Fig. 7a expanded. Red fluorescence observed only in cells under ttx perfusion.

Supplementary Figure S4

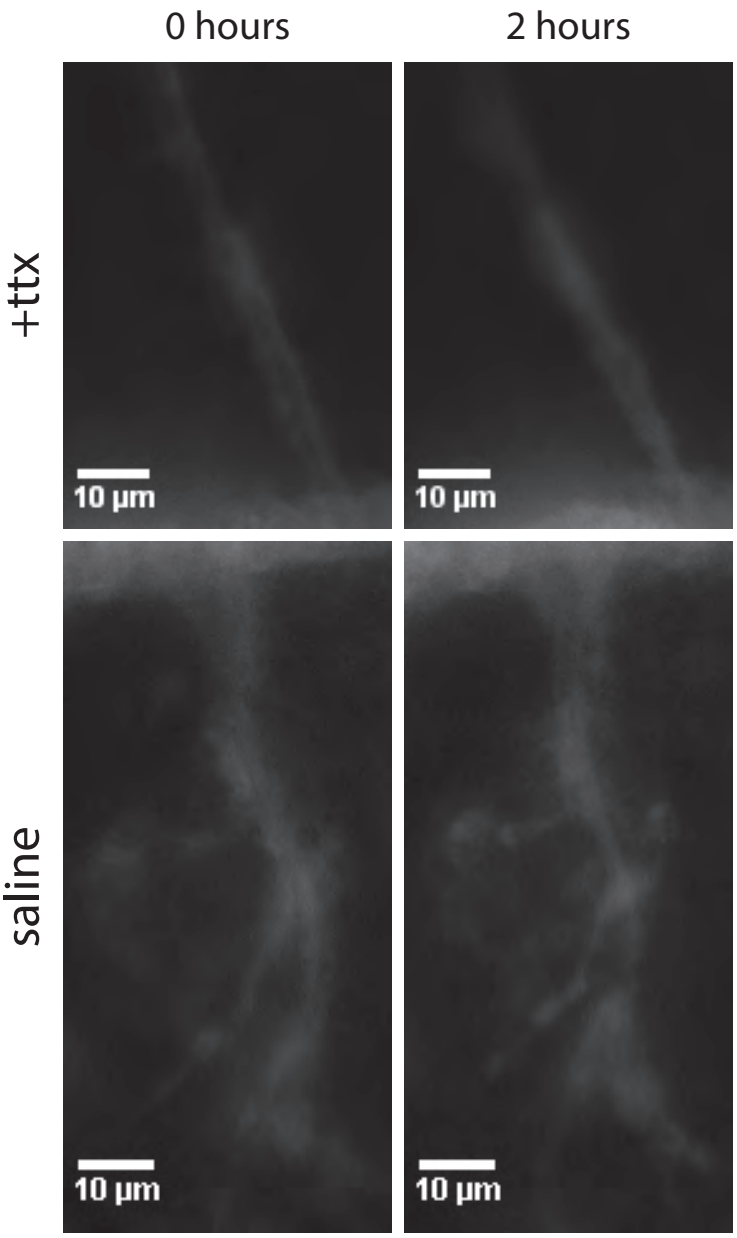

Figure S4: Regions of interest from Fig. 8a expanded. Small fluorescence increase in the axon under ttx perfusion.