Supplementary Information

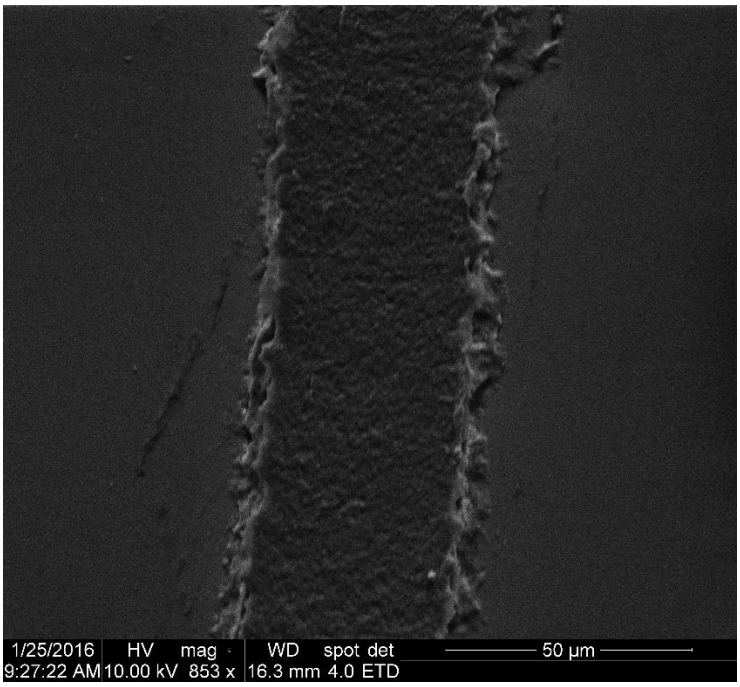

Figure S1. SEM of carbon ink microelectrode at 853X magnification.

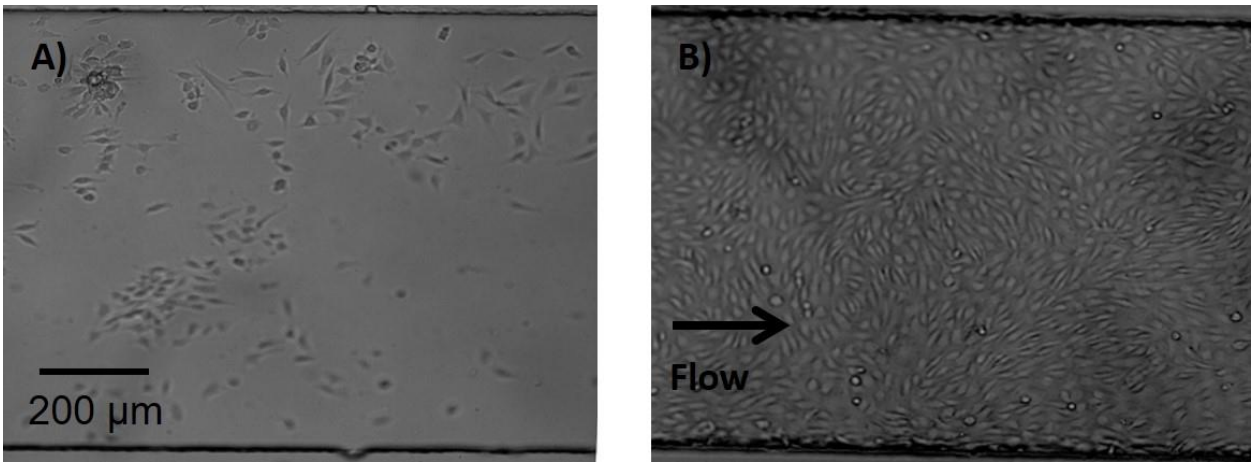

Figure S2. Bright field images of ECs cultured on-chip A) 48 hours after immobilization, and B) 9 days after immobilization. Flow was initiated at 50 nL/min after 1 day.

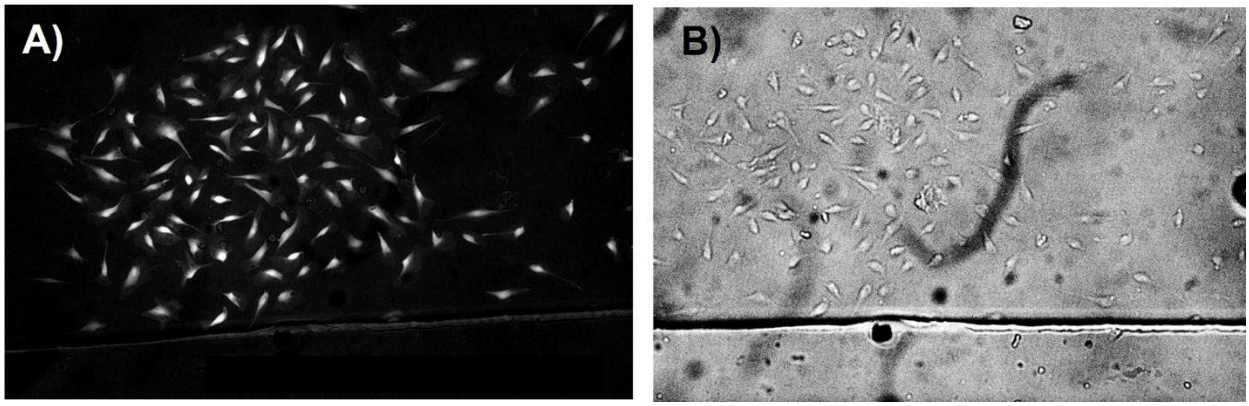

Figure S3. A) Fluorescence micrograph of ECs stained with calcein AM before on-chip lysis. B) Bright field image of the same region of ECs after on-chip lysis.

Cell Type	**Electric Field**	**Lysis Time**	**Pulse Length**	**Comments**	**Reference**
Leukocytes	10 V, 4 Hz pulse (Electric field not reported)	~3 s	100 µs	Flowing cell suspension	Biosensors and Bioelectronics **2006**, *22*, 568–574
Human epidermal cells	1000 V/cm	7 s	Up to 9 s	Flowing cell suspension	Micromachines **2013**, *4*, 243-256
HeLa cells	30 V (Electric field not reported)	25 s	N/A	Cells patterned in microwells	Sensors **2012**, *12*, 6967-6977
HeLa, MCF-7, Jurkat, and CHO-K1	11 V/cm	5 min	N/A	Electrical lysis of adherent cells via hydroxide generation	Lab Chip **2007**, *7*, 1689–1695

Table S1. Parameters and cell lysis times for on-chip electroporation experiments reported in the literature.