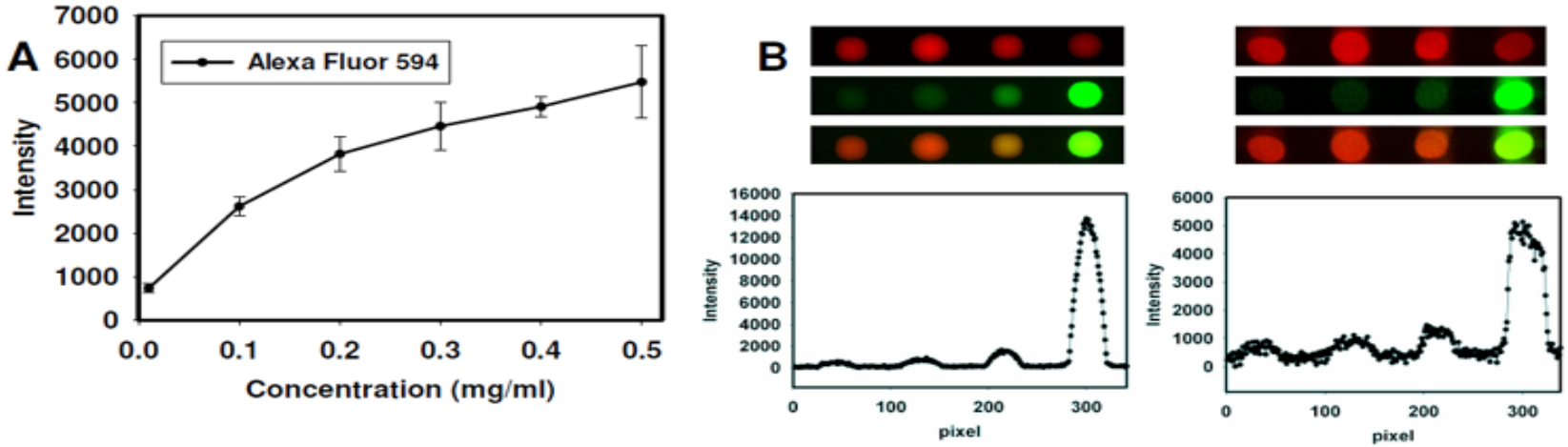
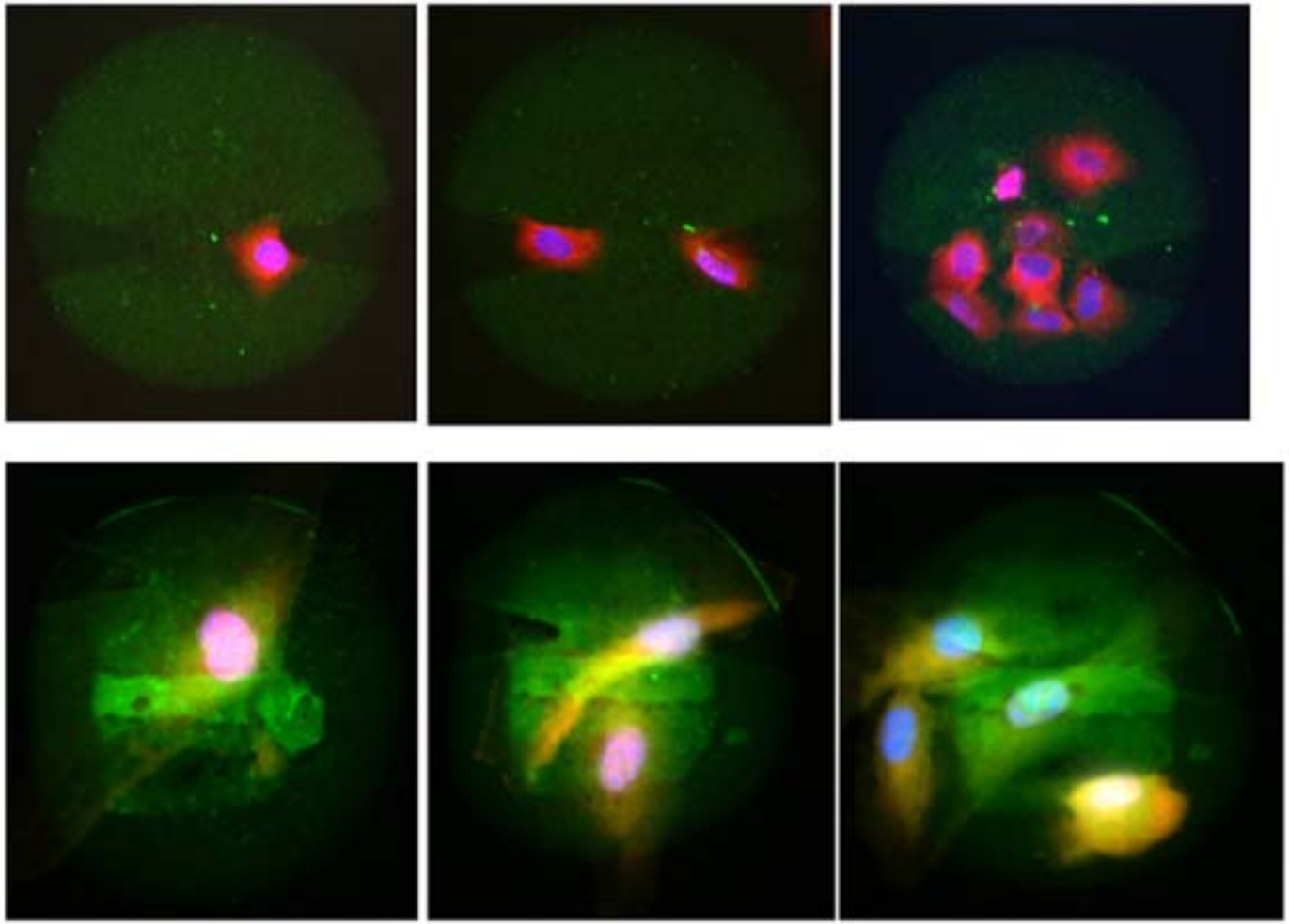
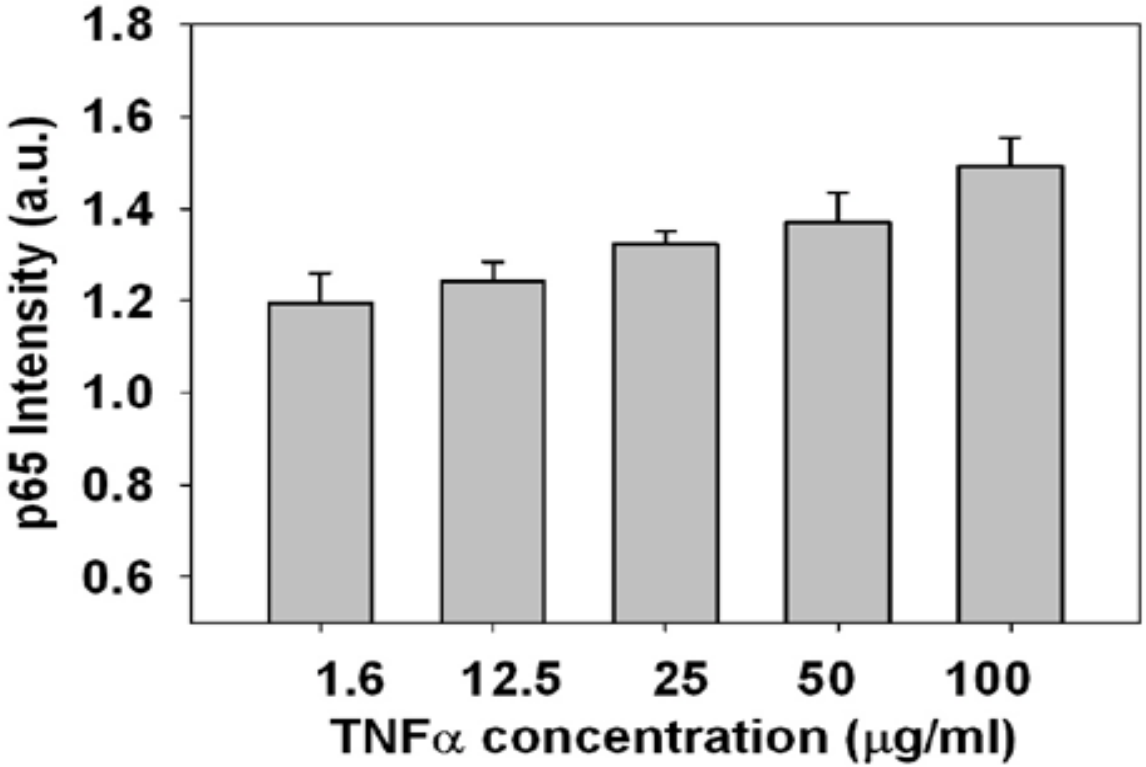
Supplementary Information



Supplementary Figure 1. Properties of the protein deposition onto the cell culture substratum. A: A range of concentrations of Alexa 594-conjugated secondary antibody were printed on NHS-derivatized glass slide. After being in contact with the surface for several hours and a wash, the intensity of fluorescence, which corresponds to protein concentration level on spots, was measured by a GenePix 4000B ; B: Printing of four different concentration of Alexa 488-conjugated secondary antibody (green): at 0.001; 0.01; 0.1; 1 mg/ml along with the same Alexa 594-conjugated secondary antibody (red) at the constant concentration of 1 mg/ml was performed to test the competition for available NHS-derivatized surface. The strips indicate the fluorescence of Alexa 488 only (upper), Alexa 594 only (middle) and both dyes (lower), prior (left panels) and following (right panels) a wash. The results for Alexa 488 fluorescence intensity are quantified in the graphs.



Supplementary Figure 2. Different cell types tested using the system combining dielectrophoresis-assisted microfluidics with protein micro-arraying for cell signaling studies. Top panel: A549 Cells on printed TNFα with conjugated collagen 488; bottom panel: iHUVECs printed TNFα with conjugated collagen 488. Cells were stained within the chip to indicate the location of the nucleus (stained with DAPI, blue) and anti-p65 antibody (red).



Supplementary Figure 3. The dose response of p65 nuclear translocation in iHUVEC cells stimulated by immobilized TNFα at indicated coating concentrations. The fluorescence intensity values represent in arbitrary units the amount of NF-κB in cell nuclei measured by immunostaining using an anti-p65 antibody. Error bars represent the standard error of the mean. Immunostaining was performed after cells seeded on immobilized TNFα for 3 hours.