**Supplementary Figures**

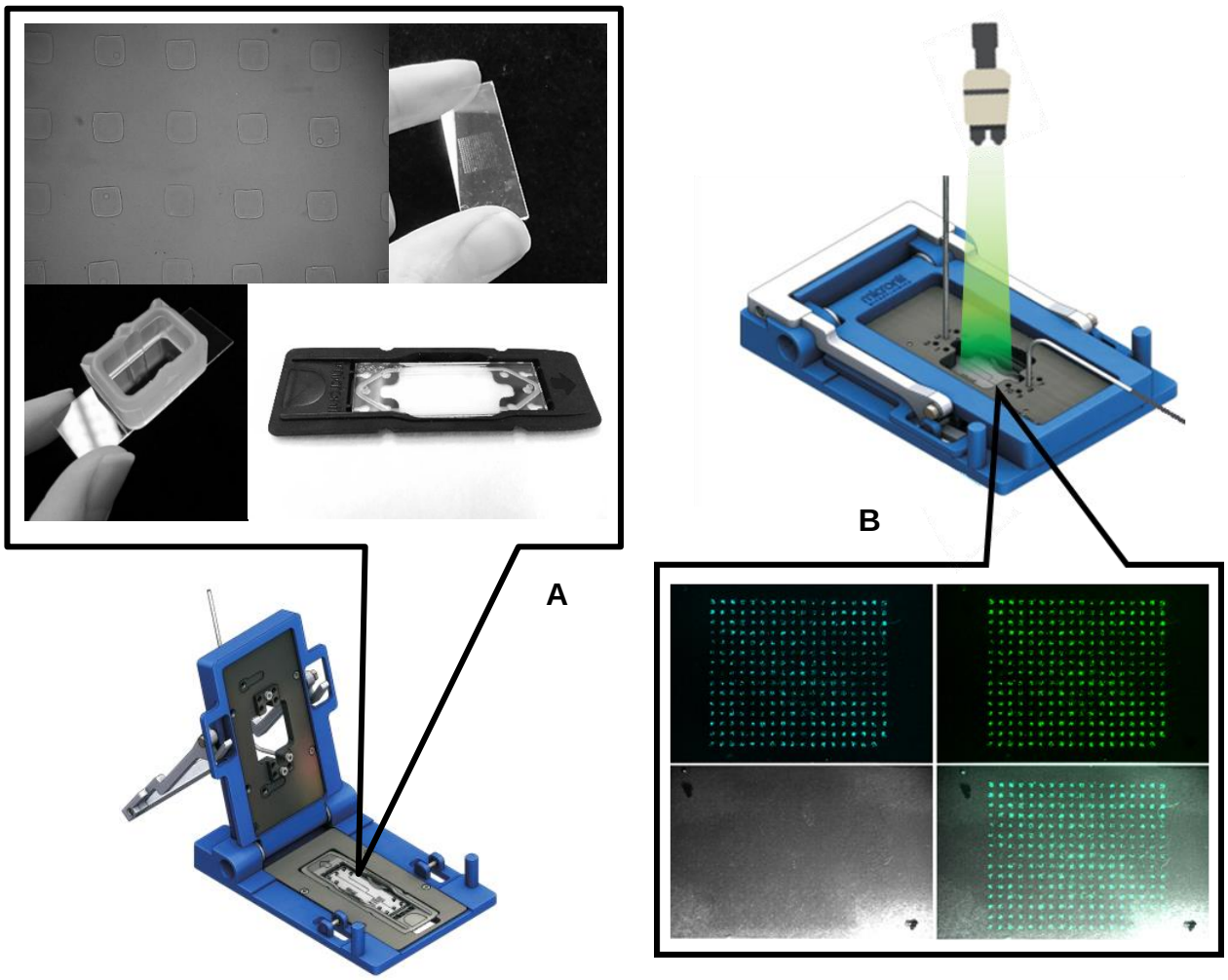


**Figure S1.** Overview of slide preparation and slide measurement. (**a**) Uniform printed array (top left and right) with a spot size of 200 µm and a spot spacing of 600 µm. A flexiPERM chamber for cell growth mounted on the array (lower left) and an assembled flow cell (lower right) mounted in the flow cell holder below. (**b**) Imaging setup using a stereo-fluorescence microscope that records both CFP and YFP FRET emissions of the whole cell array. The bright field image shows the uniform cell layer of HEK293 cells after growth in the flexiPERM chamber.

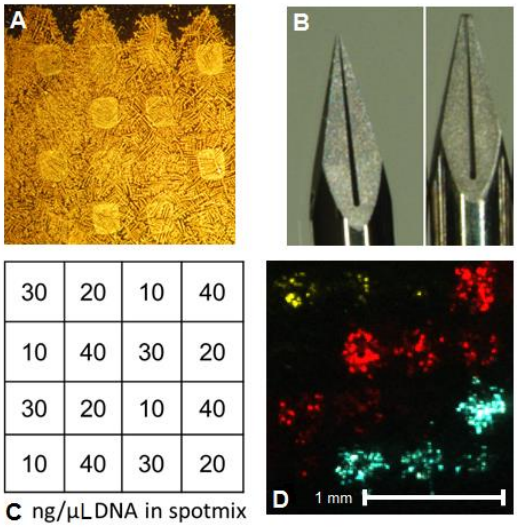


**Figure S2.** Printed DNA array before and after reverse transfection. (**a**) Printed DNA array after Effectene treatment and drying. Spot size is 200 μm; spot spacing is 400 μm. (**b**) Hollow needles used to print spots. The sharp tip on the left yielded spots of about 100 μm and the blunted one on the right yielded spots of 200 μm. (**c**) Total DNA concentration in ng/μL for the corresponding spots of (a). (**d**) Array of (a) 24 hours after reverse transfection with HEK293 cells. Spots expressed the fluorescent proteins CFP, RFP or YFP. The spacing of 400 μm risked spot cross-contamination; therefore, an inter-spot distance of 600 μm was used in all other arrays.

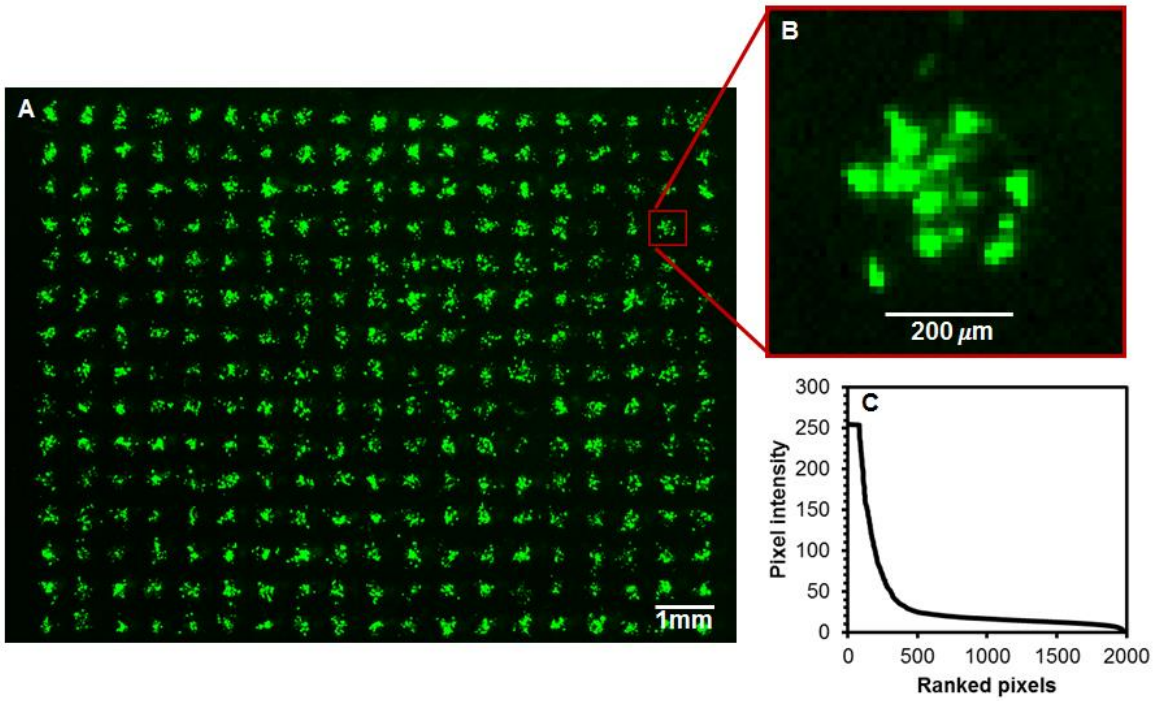


**Figure S3.** Fluorescence image of a large reverse-transfected cell array. (**a**) Large cell array of 15 × 19 (9 × 10.8 mm) spots with diameters of 200 μm and a spacing of 600 μm. (**b**) Enlarged section (~45 × 45 pixels) where one pixel represents ~11 μm (no binning). (c) Pixels of (b) ranked from highest to lowest intensity. The distribution shows some saturated pixels at an intensity of 256, fluorescent protein expressing cells between an intensity of ~20 and 256 and background pixels at intensities <20.