

Supplementary Information

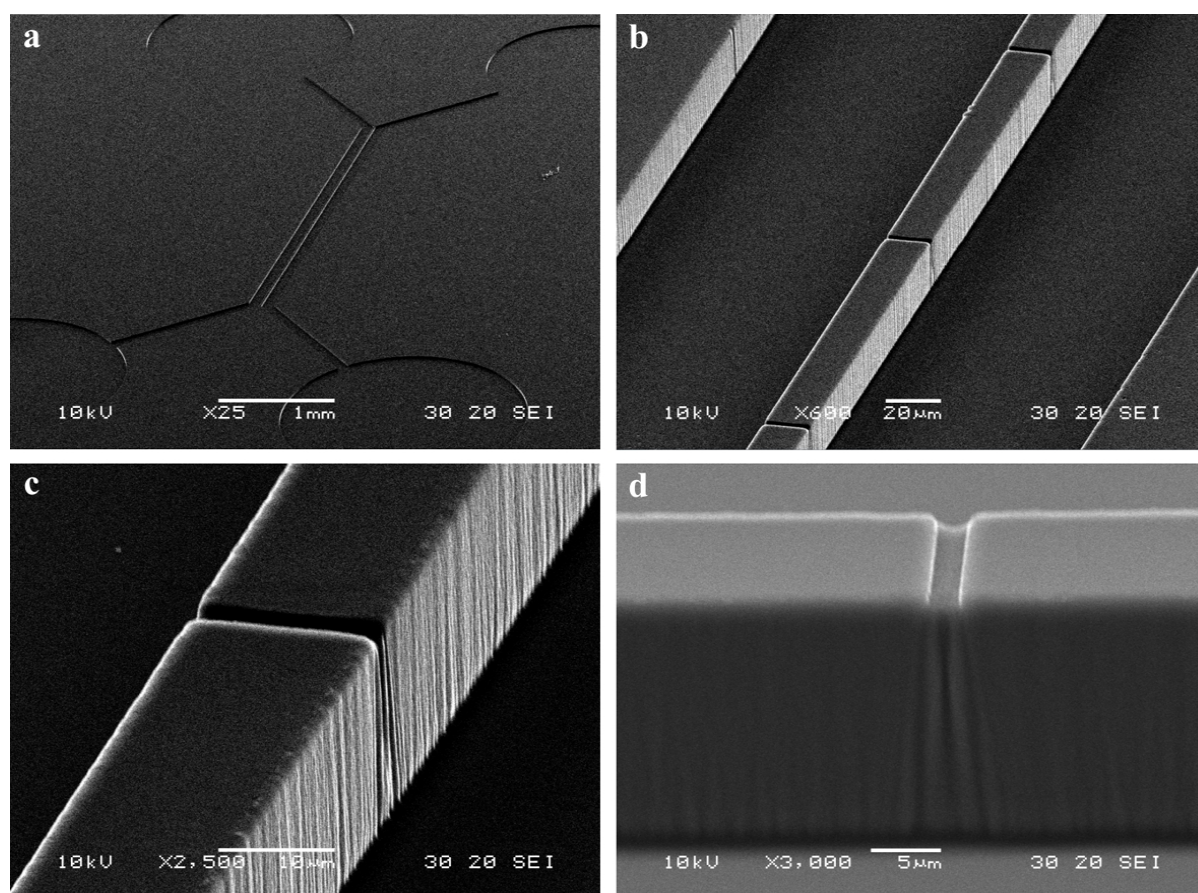


Figure S1 Scanning electron microscopy images of the PDMS chip using 25x (a), 600x (b), 2,500x (c) and 3,000x (d) magnification. All images were recorded using an acceleration potential of 10 kV.

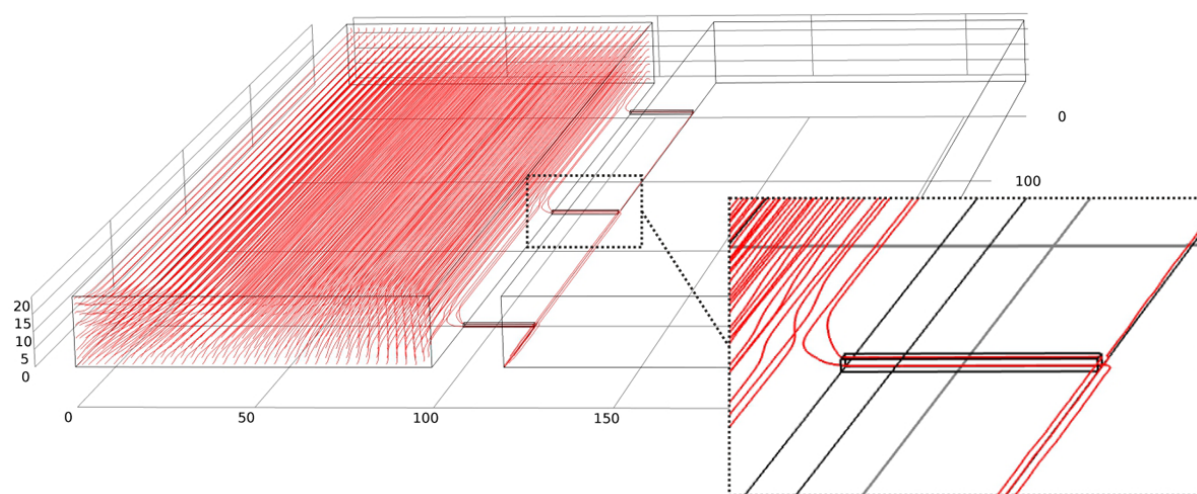


Figure S2 Fluid streamlines of the pressure difference induced fluid flow from the left to the right main channel.

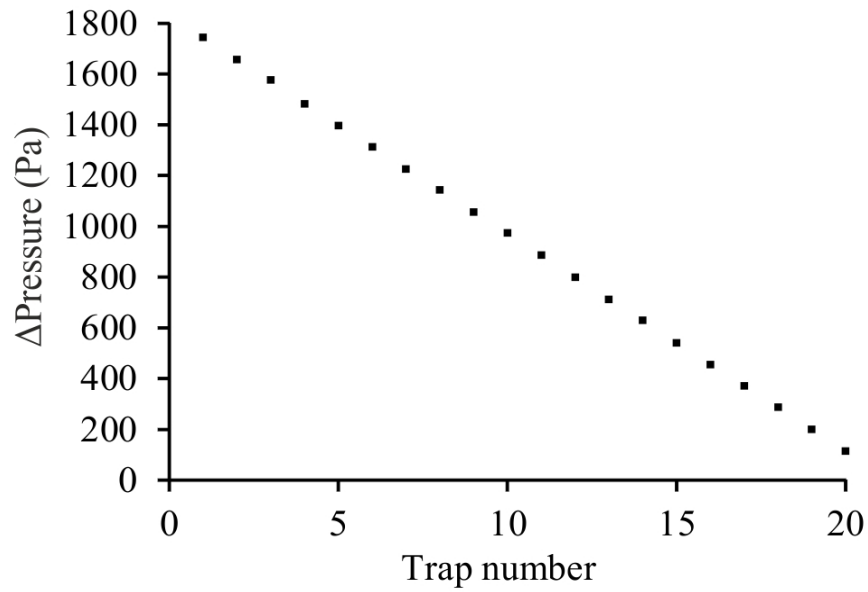


Figure S3 The pressure difference over a cell trap linearly decreases with increasing trap number. This difference is defined as the difference between the pressure at the side channel inlets (cell trapping regions) and outlets at a z-height of $0.5\ \mu\text{m}$.

Supplementary Movie 1 – Hydrodynamic entrapment of individual spermatozoa due to a pressure difference between top and bottom channel.

Supplementary Movie 2 – An entrapped spermatozoa is attempting to escape from the trap after decreasing the pressure gradient between top and bottom channel.