Supplementary data S2: Flow and pressure simulation models.

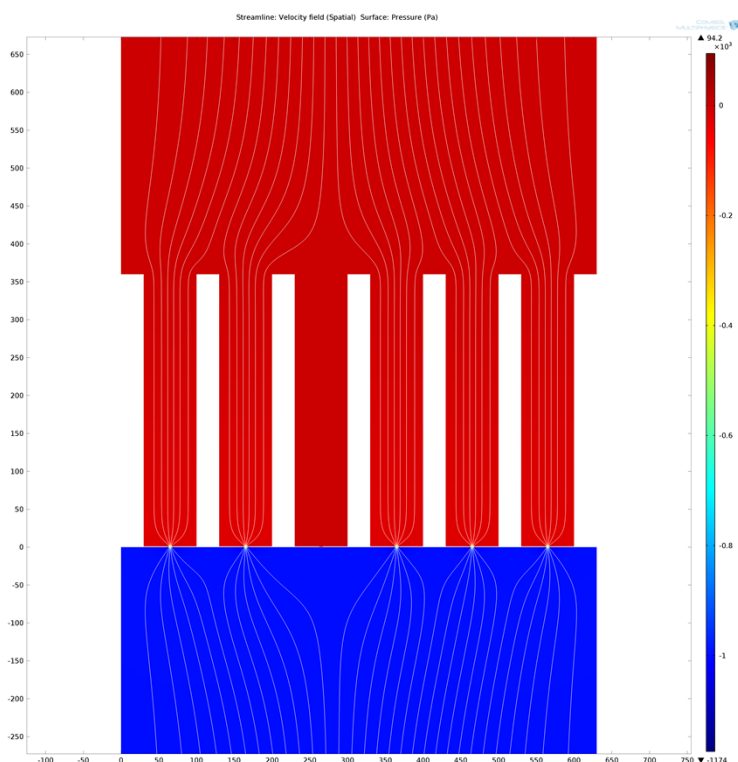Flow and pressure overview

Figure S1. Image of a Comsol simulation model of the flow and pressure over the microwells. Underneath the microwells a negative pressure of 10mbar/-1000Pa is applied (blue), in the pores the pressure drops quickly to zero (red). The white lines represent the direction of the flow in and around the microwells. The third well from the left is blocked in this model to simulate a pore blocked by a cell. The effect of the 10mbar pressure on the cell in the pore has not been taken into account because the characteristics of the cells that are used are unknown. Cells have been fixed before entering the CellSearch system, are permeabilized, stained and fixed again during CellSearch processing. The flow is simulated as a laminar flow of an incompressible fluid with the no-slip boundary condition. Density and dynamic viscosity parameters of the fluid simulated were set to $\rho=1000kg/m3$ and $\mu=0.001$ Pa·s as appropriate for water at ambient temperature and pressure.

Supplementary data S2: Flow and pressure simulation models.

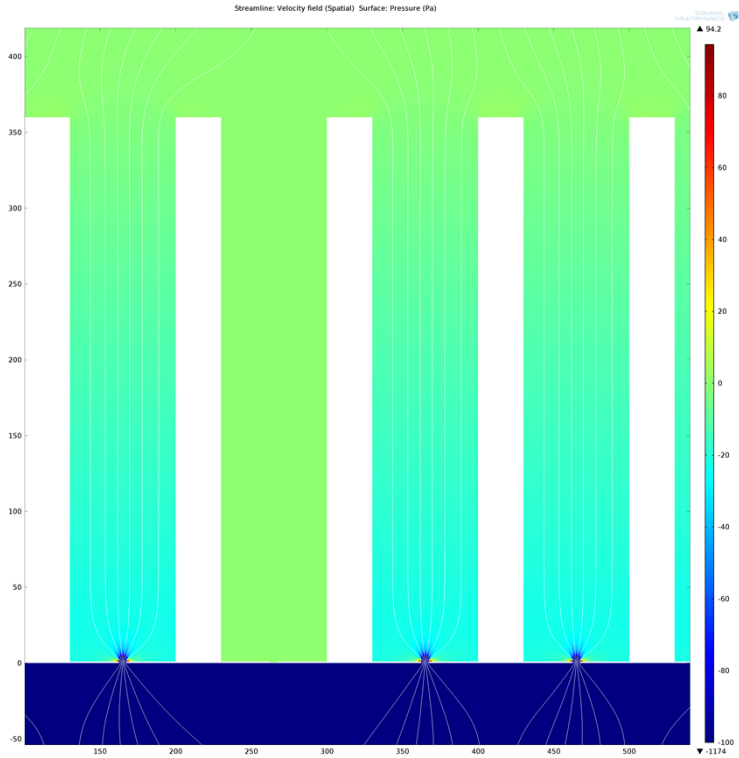Flow and pressure, pressure colourscale inflated

Figure S2. Image of a Comsol simulation model of the flow and pressure over the microwells. In this image the pressure colourscale is inflated to show the difference in pressure between the blocked and unblocked the cups. The second well is blocked and has a slightly higher pressure than the open microwells. Underneath the microwells a negative pressure of 10mbar/-1000Pa is applied (blue). The white lines represent the direction of the flow in and around the microwells.

Supplementary data S2: Flow and pressure simulation models.

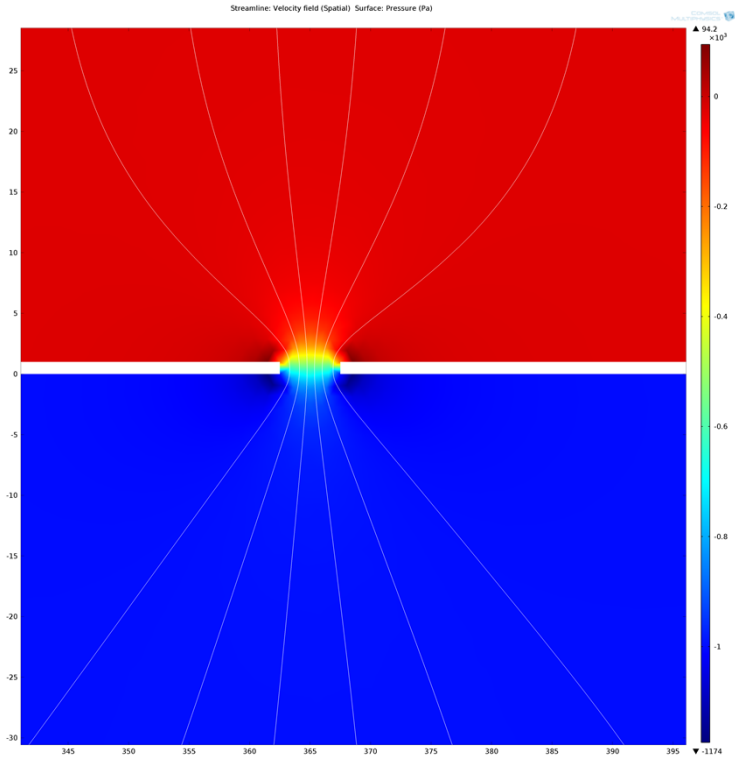Flow and pressure on a single well

Figure S3. Zoomed in on image S1 of a Comsol simulation model of the flow and pressure over a single microwell. Underneath the microwell a negative pressure of 10mbar/-1000Pa is applied (blue), in the pores the pressure drops quickly to zero (red). The white lines represent the direction of the flow in and around the microwells.

Supplementary data S2: Flow and pressure simulation models.
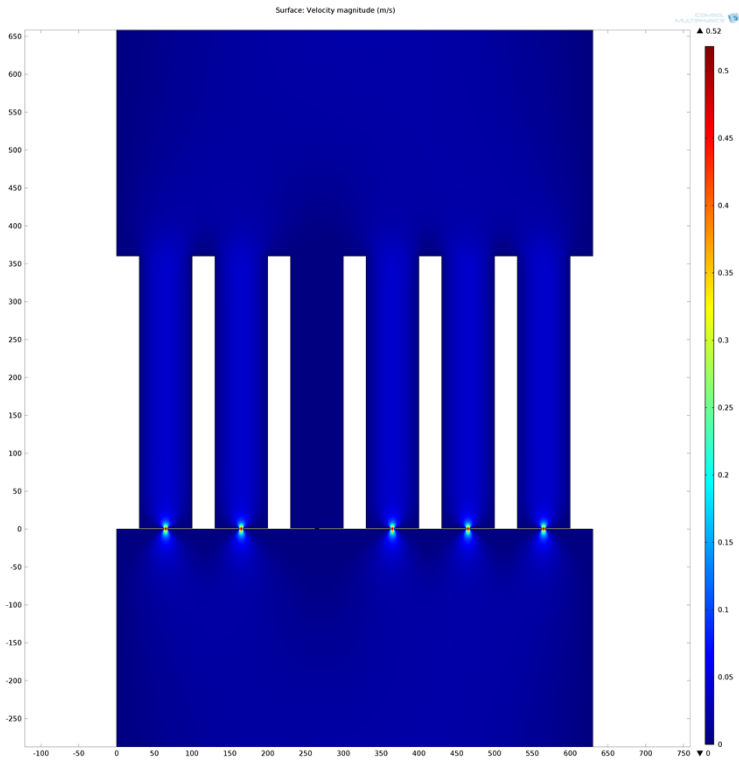
Flow and pressure overview

Figure S4. Image of a Comsol simulation model of the flowspeed through the microwells.

Supplementary data S2: Flow and pressure simulation models.
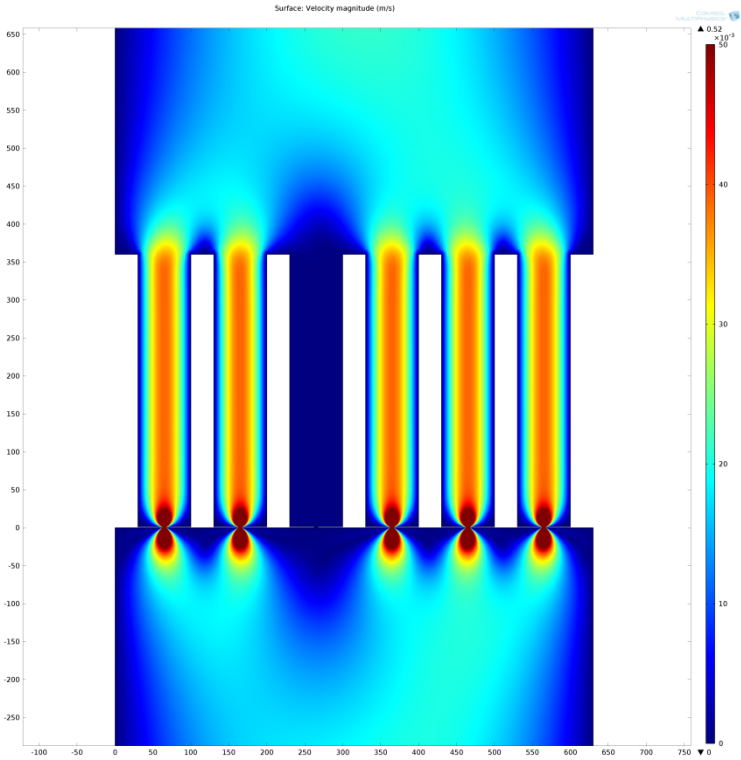
Flow and pressure overview

Figure S5. Image of a Comsol simulation model of the flowspeed through the microwells with the colourscale inflated to show the distribution of the flowspeed in and above the microwells.