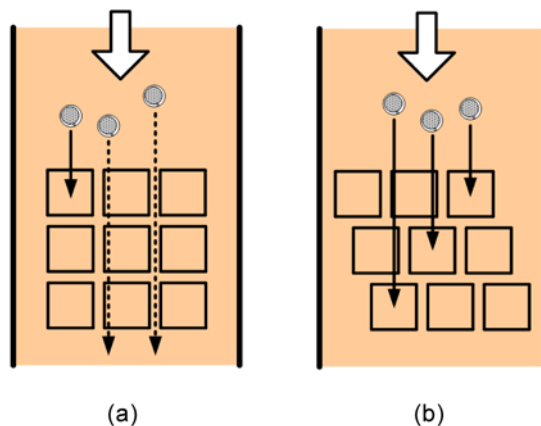


1 Electronic Supplementary Information (ESI)



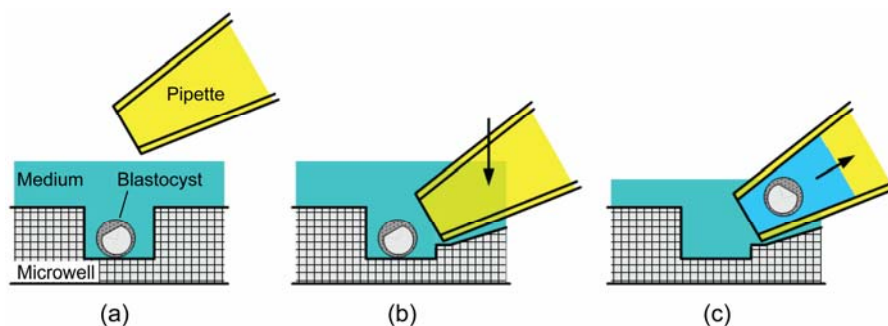
2

3 **ESI, Fig. S1** Schematic illustration of oocyte trapping facilitated by the shift of microwell rows.

4 White arrows show the flow direction. (a) A microwell array without row shift is not able to trap

5 oocytes traveling at microwell intervals (dashed arrow). (b) With each row shifted at a certain

6 distance, the microwell array can trap oocytes from any position (solid arrow).



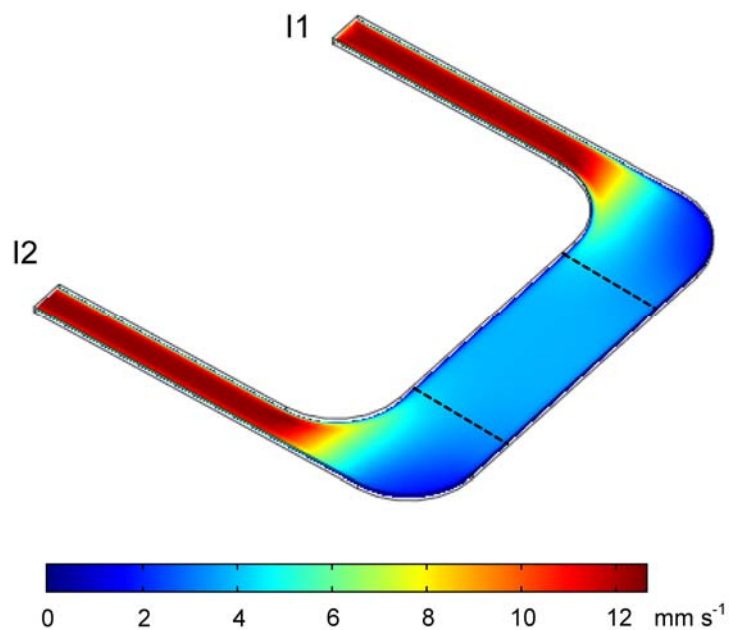
7

8 **ESI, Fig. S2** The blastocyst retrieval process. (a) A pipette is aligned above a trapped blastocyst

9 under microscopic observation. (b) The pipette presses down the sidewall of the microwell, which

10 deforms due to the elastic nature of PDMS. (c) The blastocyst is retrieved from the microwell by

11 the flow generated by pipetting.



12

13 **ESI, Fig. S3** Computational simulation of the velocity distribution in the middle of the 200 μm
14 high microchannel. Medium flows into inlet I1 at the velocity of 9 mm s^{-1} . The dashed lines
15 illustrate the borders of the microwell array.

16 **ESI, Movie S1** Oocyte rotation in the 200 μm deep microwell with the flow speed of 3 mm s^{-1} in
17 the microchamber.