Electronic supplementary information

Meniscus induced self organization of multiple deep concave wells in microchannel for embryoid bodies generation

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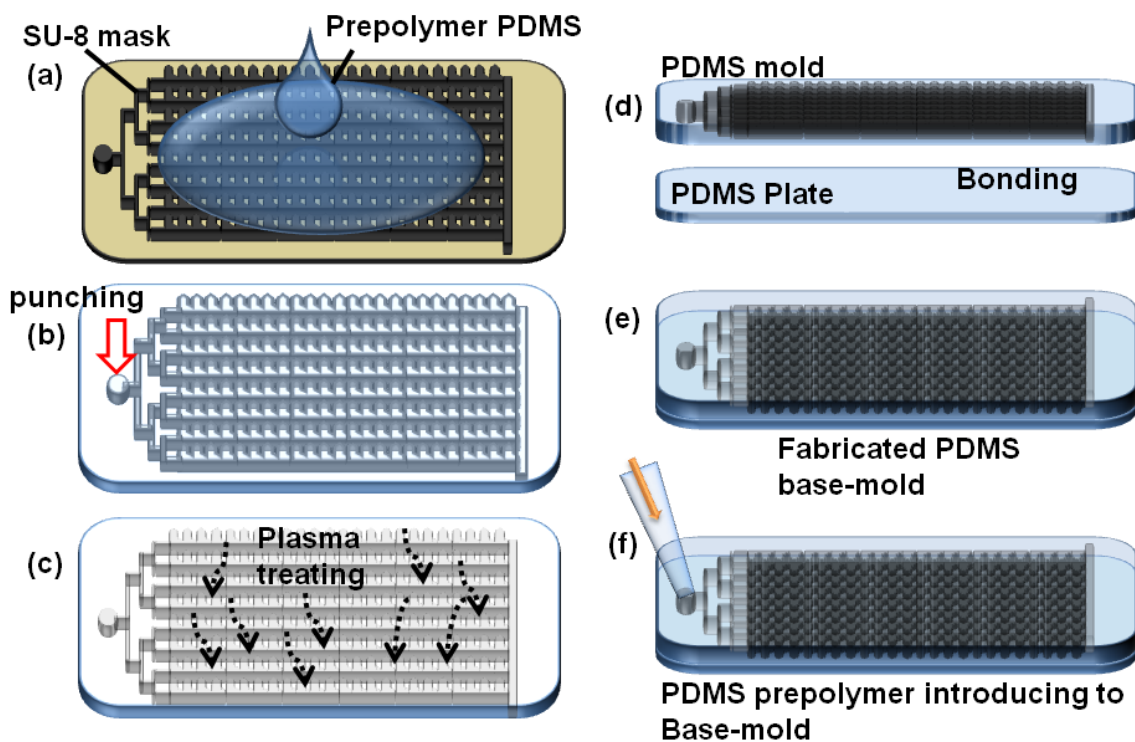Department of Biomedical Engineering, College of Health Science, Korea University

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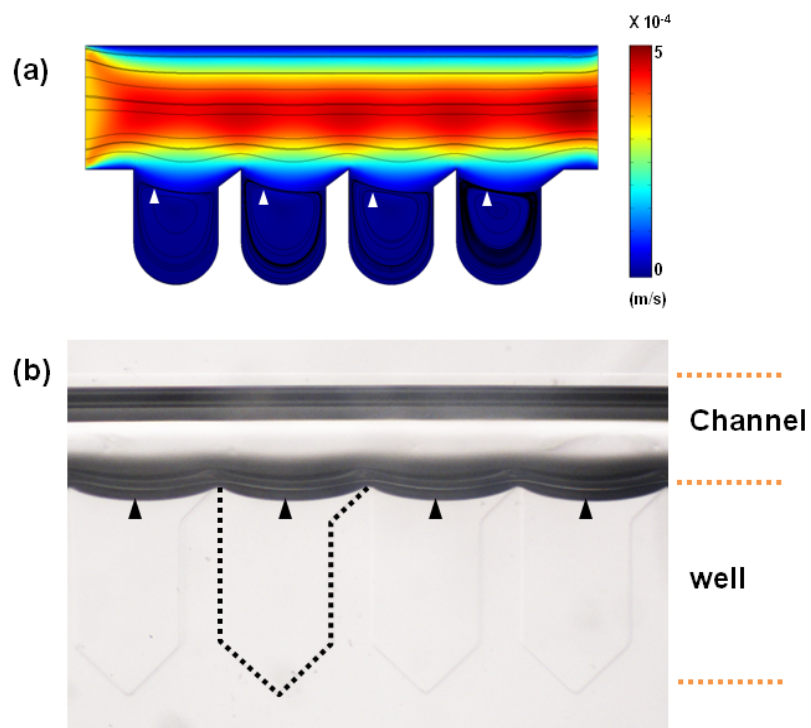TEL: +82-2-940-2880, FAX: +82-2-921-6818

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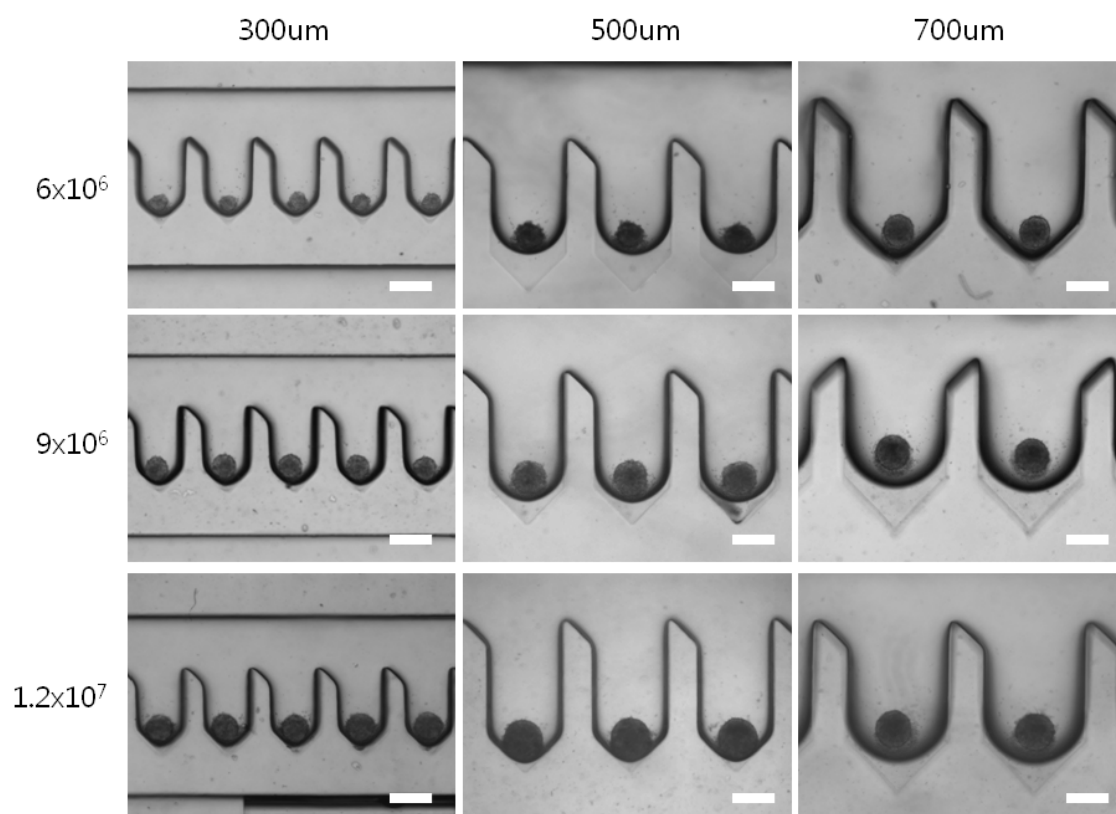
Figure S1.

Supplementary Figure 1

Fabrication of the PDMS base channel. (a) An SU-8 mask was fabricated using conventional photolithography. (b) The trimming and punching process, which allows for the fabrication of a microfluidic channel. (c) Plasma treatment both a PDMS base mold and a PDMS plate. (d) To generate microfluidic channels, the PDMS mold and the plate were bonded. (e) A prepared PDMS base-mold. And finally (f) the PDMS prepolymer was introduced to the base-mold.

Figure S2.

Removing the PDMS prepolymer using only suction. (a) The CFD simulation study shows that the prepolymer in the main channel could be removed by suction applied to the outlet. In microwells, re-circulatory flow (white arrowheads) is separated from the main flow, and the prepolymer in the microwells could not be entirely removed. (b) An illustration of the concept. All pentagonal chambers were filled with the PDMS prepolymer.

Figure S3.

Optical images of EBs forming in the concave microwell array at day 2. The size of the EBs was controlled according to the well size and cell density. The EB size distribution was sensitive to the cell density, 6.0×10^6, 9.0×10^6, and 1.2×10^7 cells/ml. (All scale bars indicate 300 μm.)