

## Electronic Supplementary Information (ESI)

### Materials and Methods

#### Examination and review of the contact angle for liquid PDMS

We dropped liquid PDMS onto the mold and, after several minutes, recorded the image of the liquid PDMS on the mold surface using a commercial digital camera.

#### Imaging of the convex and concave structures

The images of convex and concave structures were captured using optical microscopy, scanning electron microscopy, and confocal fluorescent microscopy. Fluorescent images inside concave structures filled with fluorescein isothiocyanate (FITC) solution in distilled water were observed at 488 nm excitation. Cross-sectional images were reconstructed from the raw data.

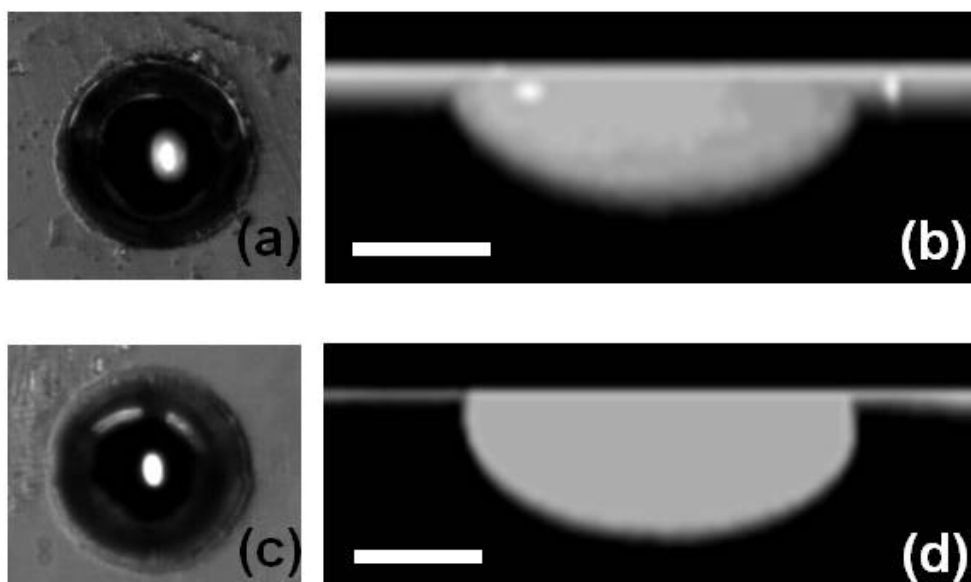
#### Cell preparation and culture

We cultured NIH-3T3 fibroblasts in a medium supplemented by 10% calf serum; L-glutamine, 0.3 mg/mL; penicillin, 100 U/mL; streptomycin, 100 µg/mL; and 20 mM N-2-hydroxyethylpiperazine-N'-2-ethanesulfonic acid at a pH of 7.4, under 5% carbon dioxide on the surface of a PDMS convex lens<sup>1</sup>.

Imprinting control region (ICR) mouse embryos (source) were seeded onto the concave structures that are filled with 50 µL of KSOM (Daiya Shiyaku) embryo culture medium covered with mineral oil<sup>2</sup>.

### References

- 1 C.-M. Cheng, J. D. Kubicek and P. R. LeDuc, *Appl. Phys. Lett.* 2006, **88**, 053902.
- 2 Y. Kuroda, K. Matsuura, M. Takenami, H. Funahashi and K. Naruse, *Fertil. Steril.* 2008, **90**, S350



**Figure ESI1** (a) and (b) are the optical images of the concave structure using the mold with 52.8 g weight and 10 mm thickness. (c) and (d) are those using the mold with 1.6 g weight and 2 mm thickness. The diameter of the structures were 300  $\mu\text{m}$ . (a) and (c) are a bright images and (b) and (d) are Laser confocal microscopy images. The depth of the structure shown in (b) was 80  $\mu\text{m}$ , which was slightly smaller than that in (d) 100  $\mu\text{m}$ ). Bars are 100  $\mu\text{m}$ . The direction of the curvature was not influenced in the difference of the mold weight.