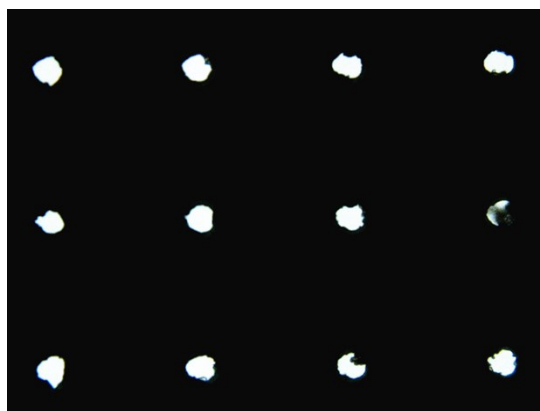


## Supporting Information

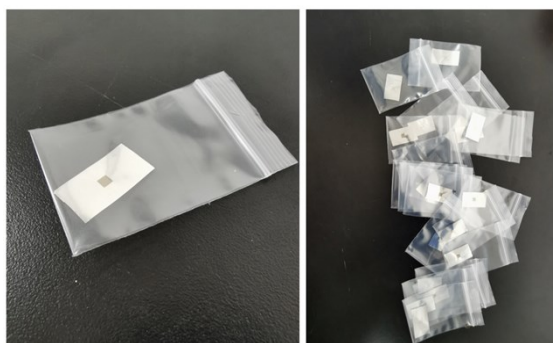
### Reusable Single-Cell Patterning Strategy Based on Ultrathin Metal Microstencil

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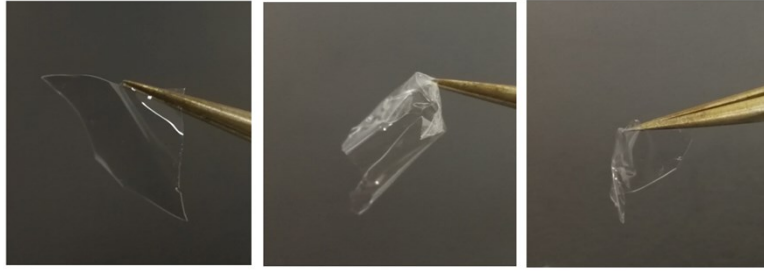
Collaborative Innovation Center of Tumor Marker Detection Technology, Equipment and Diagnosis-Therapy Integration in Universities of Shandong, Shandong Province Key Laboratory of Detection Technology for Tumor Makers, School of Chemistry and Chemical Engineering, Linyi University, Linyi, 276005, China.



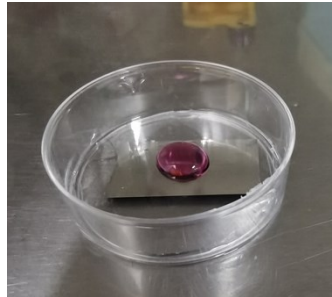
**Figure S1.** A UTmS chip fabricated with non-optimal parameter has a charred and irregularity edge.



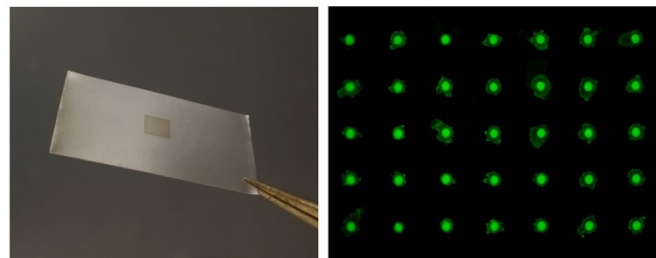
**Figure S2.** The UTmS chips can be easily fabricated on a commercial laser-drilling equipment with general configurations. The optimized parameters can be used for mass production.



**Figure S3.** The PDMS layer with about 10 $\mu$ m thickness is difficult to handle with a tweezer because it is easy to bend or collapse or conglutinate.



**Figure S4.** The UTmS chips can be reused for single cells patterning after a series of cleaning operations including ultrasonic, organic cleaning and high temperature drying.



**Figure S5.** A thicker stainless steel stencil with 10  $\mu$ m thickness possessed good bending strength (a), but without excellent flexibility characteristic. It is not suitable for single-cell patterning without additional fixture. The fluorescence intensity obtained from the back side shows apparent liquid leakage under standing conditions.