

## Electronic supplementary Information

### On-chip rapid drug screening of leukemia cells by acoustic streaming

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This PDF file includes:

Figures S1 to S6

Other supplementary materials for this manuscript include the following:

Movie S1: Trajectory of the particles around the tip of cell trap.

Movie S2: Trajectory of the particles near the cell trapped location.

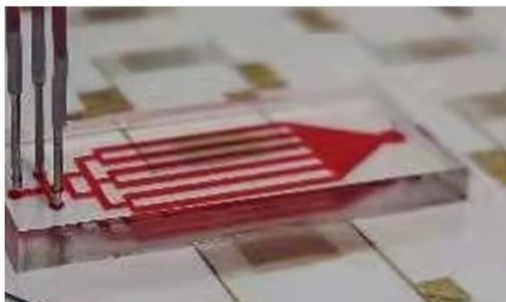
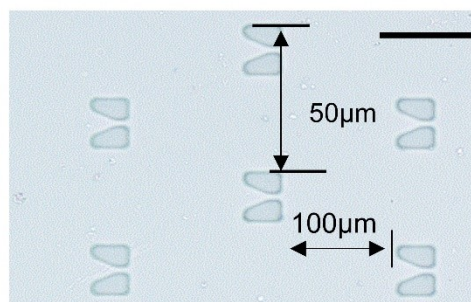
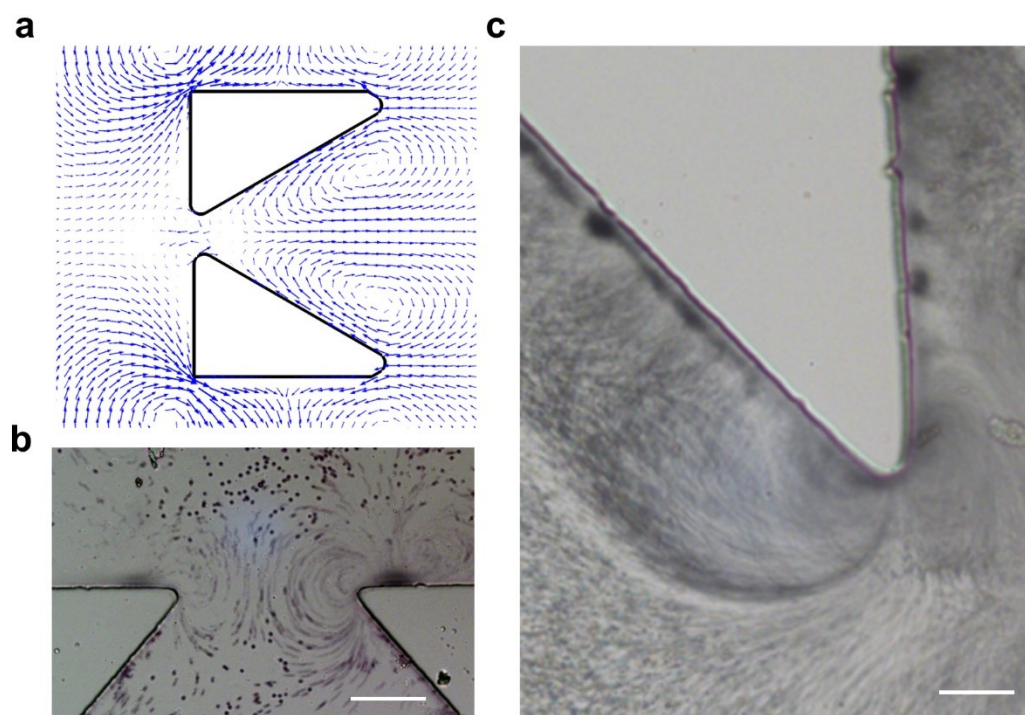
**a****b**

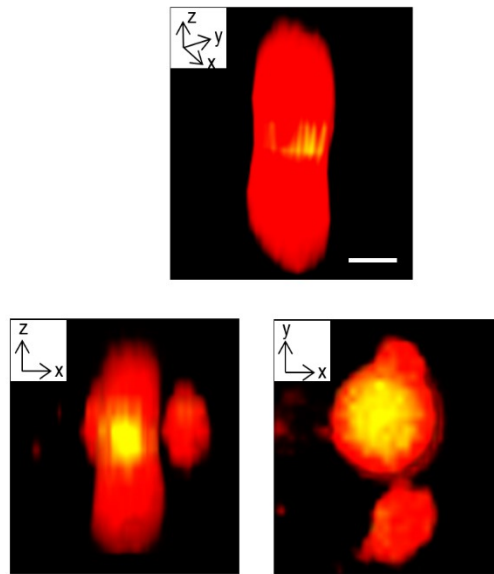
Figure S1. (a) The microfluidic device mounted on an acoustic device. (b) Size of cell traps. Scale bar is 100 µm.

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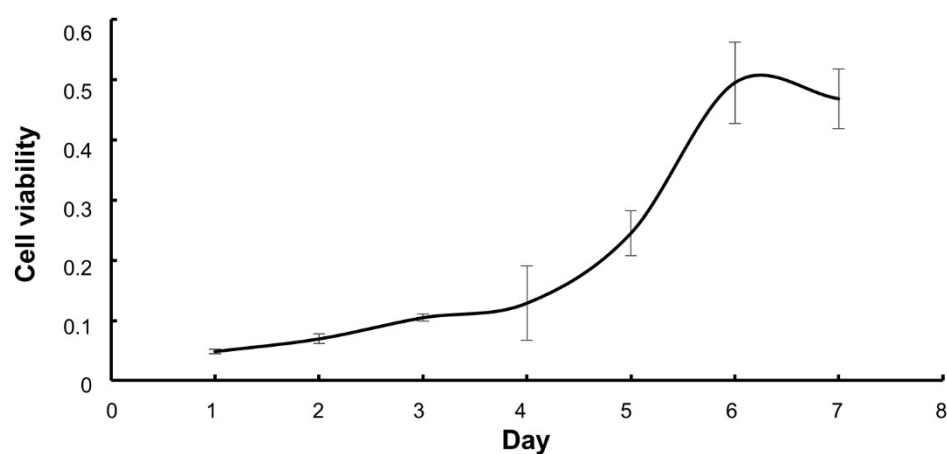
**Figure S2.** (a) Velocity vectors of the fluid field. (b) Optical images of fluid flow induced by acoustic streaming near the cell trapped location. (c) Optical images of fluid flow induced by acoustic streaming near the tip of the cell trap. Scale bar is 10  $\mu\text{m}$ .

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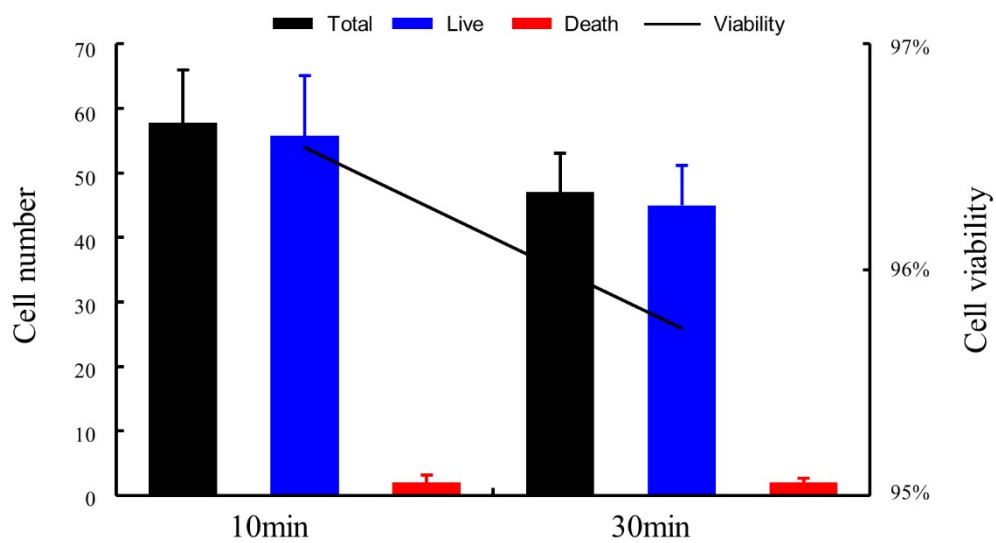
**Figure S3.** Three-dimensional model of a representative cell. Scale bar is 10  $\mu\text{m}$ .

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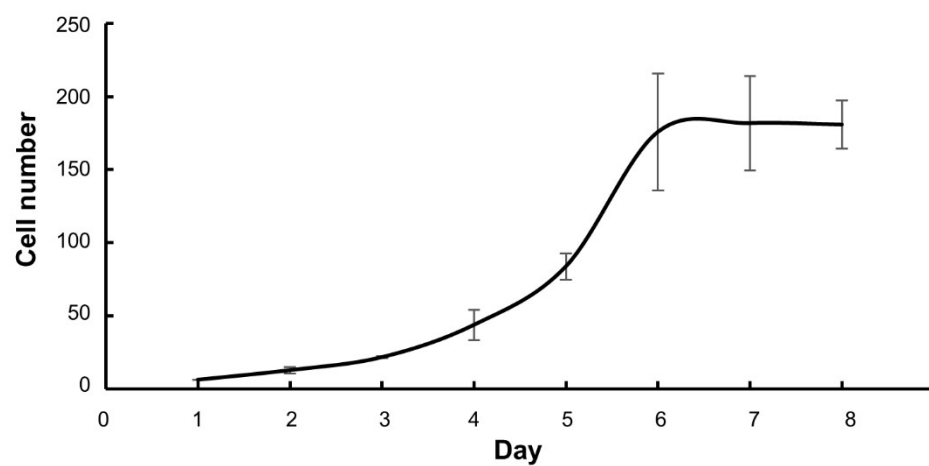


**Figure S4.** THP-1 cells used in the experiment were detected by cell counting kit-8 (CCK-8) before the whole experiment to ensure that the viability of cells does not affect the result of the experiment.

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**Figure S5.** Viability of the cell cultured on a microfluidics platform. The cells were cultured on a platform only with the complete medium. The viability after 10 and 30 min were tested by GFP fluorescence.



**Figure S6.** THP-1 cells treated by acoustics were cultured for eight days to make sure the acoustics will not affect cell proliferation. We counted the cell number every day to characterize cell proliferation.

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