Supporting Information

Efficient Separation of Large Particles and Giant Cancer Cells Using an Isosceles Trapezoidal Spiral Microchannel

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Table S1 Primer sequences for qRT-PCR.

Gene name	5'-3' primer sequences
IL-6	GTACATCCTCGACGGCATCT (F)
	GTGCCTCTTTGCTGCTTTCA (R)
CD133	GCATTGGCATCTTCTATGGTT (F)
	CGCCTTGTCCTTGGTAGTGT (R)
SOX2	TTGCTGCCTCTTTAAGACTAGGA (F)
	CTGGGGCTCAAACTTCTCTC (R)
GAPDH	AGGTGGTGAAGCAGGCGTCGGAGGG (F)
	CAAAGTGGTCGTTGAGGG (R)

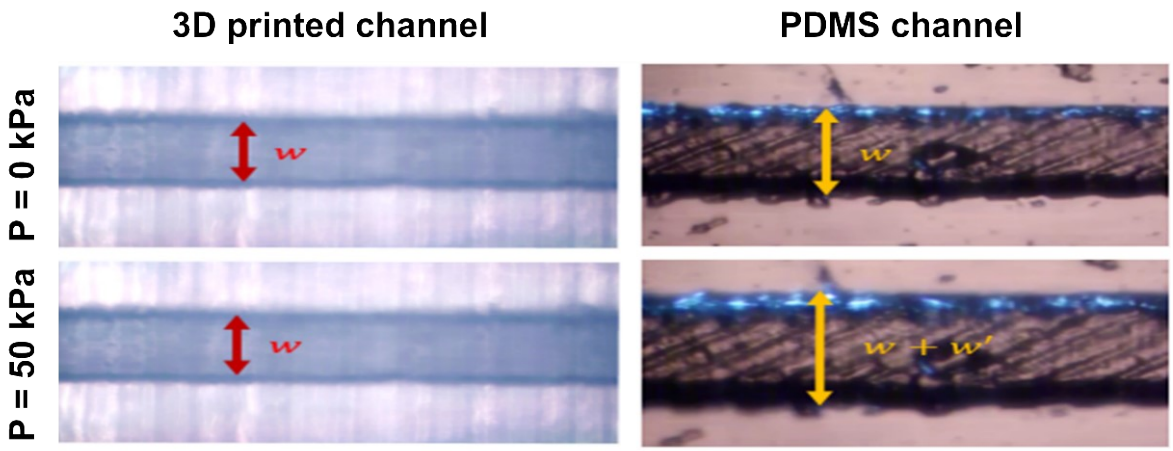

Fig. S1 Comparison of deformation between the 3D printed spiral microchannels (SμCs) and PDMS SμCs. w: 500 μm.

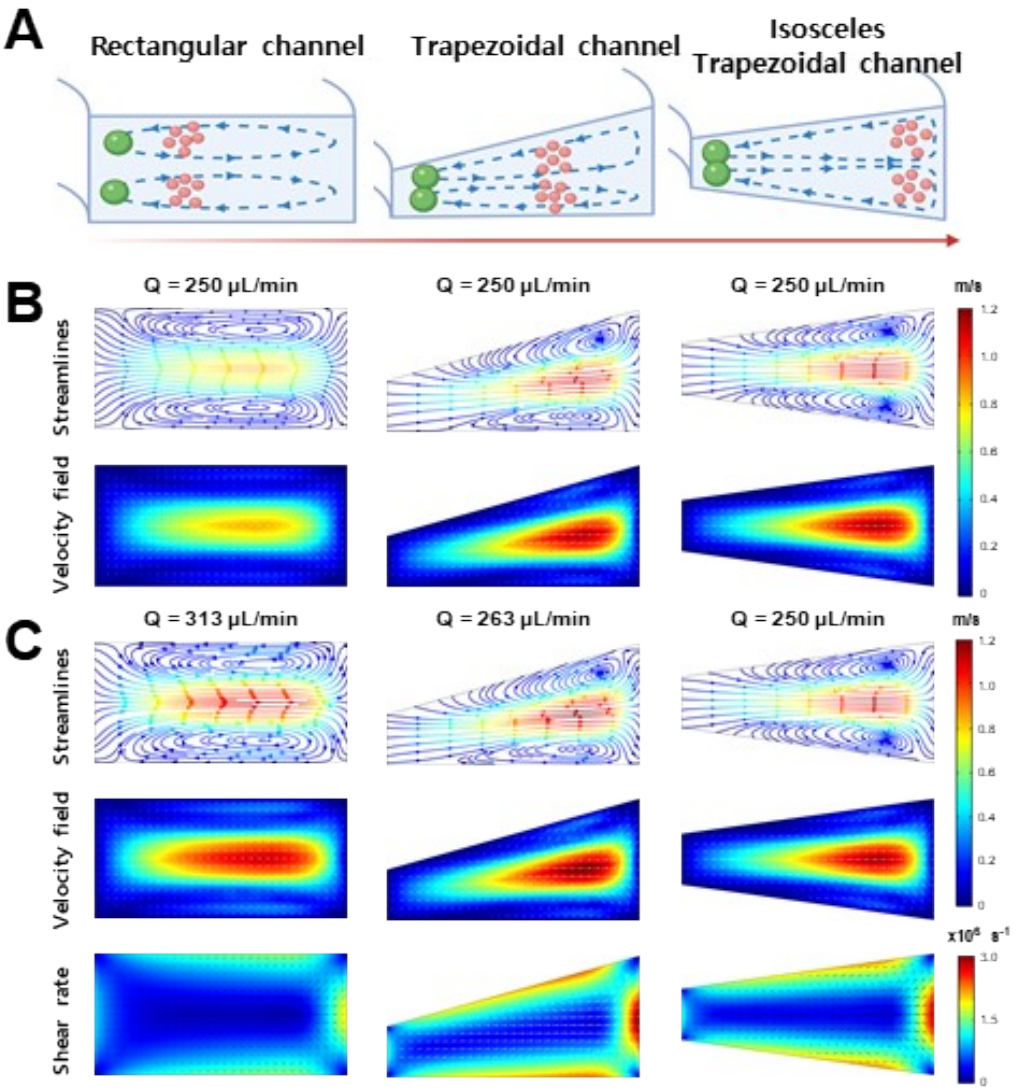

Fig. S2 Numerical simulations were performed to compare the fluid flow and particle behavior in SμCs with different cross-sectional shapes: rectangular, trapezoidal, and isosceles trapezoidal. (A) Schematics describing the position of particles/cells with different size in the SμCs. (B) Streamline and velocity gradient inside the SμCs with the same flow rate (Q = 250 μL/min). (C) Streamline, velocity gradient, and shear rate SμCs at the same maximum velocity. Theoretical modeling of the devices was performed by COMSOL MultiPhysics 5.4. The simulation environment was set up for incompressible, laminar flows. The physical properties of water were (density ρ = 1,000 kg/m^3 and dynamic viscosity $\mu = 10^{-3}$ kg/ms) applied to the simulation.

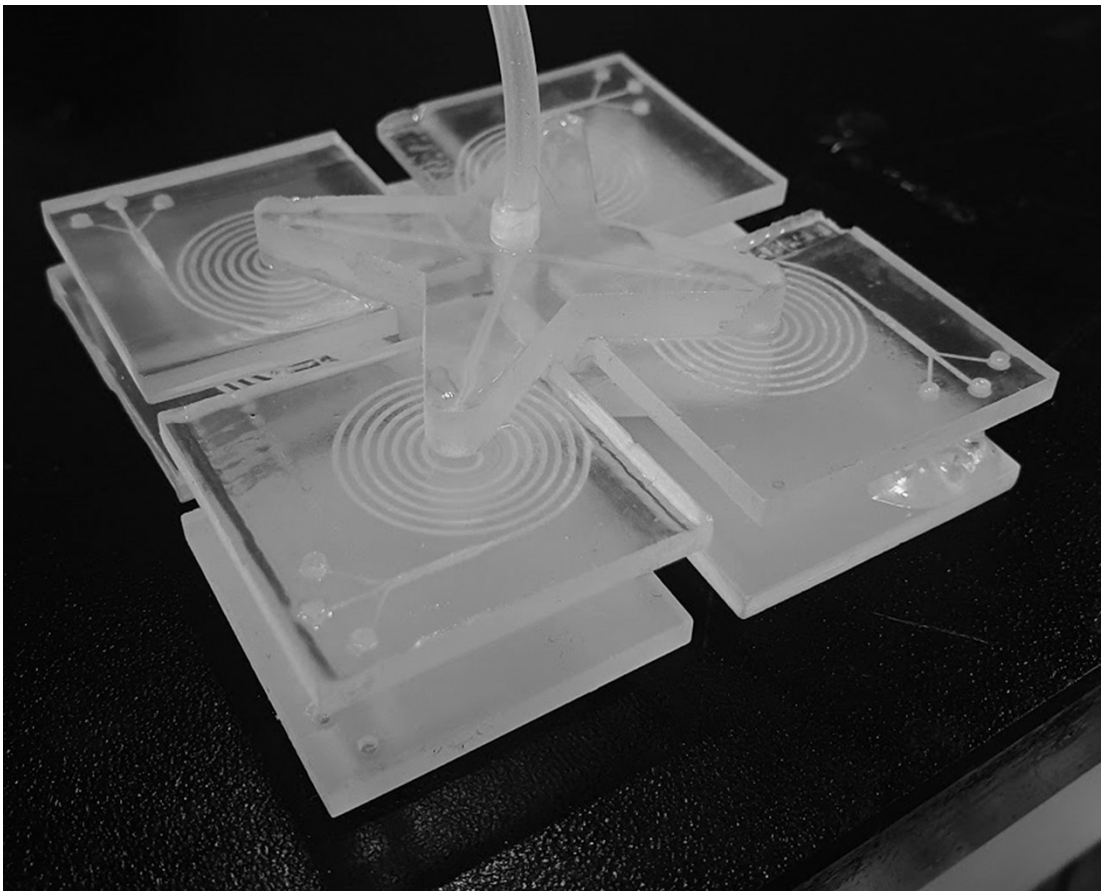

Fig. S3 3D Printed lego-like modular device by connecting ITSμC.