An adaptive three-dimensional hydrodynamic focused microfluidic impedance

flow cytometer

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Supporting Information

1. Microfluidic simulation



Fig. S1. Schematic diagram of simulation geometric parameters

Name	Description	Value	Unit
L	The length of the main channel	150	[µm]
W	The width of the main channel	40	[µm]
Н	The height of the main channel	30	[µm]
Ws	The width of the sheath channel	20, 30, 40, 50	[µm]
Hs	The height of the sheath channel	40, 50, 60, 70, 80, 90, 100	[µm]
Dc	Diffusion coefficient	10 ⁻⁹	m^2/s

Table S1. Simulation parameters

The parameters used in this study are summarized in Fig. S1 and Table S1.

2.Electric field strength simulation



Fig. S2. Schematic diagram of simulation geometric parameters

Name	Description	Value	Unit
G	The gap of electrodes	20	[µm]
L	The length of electrodes	20	[µm]
W	The width of the channel	40	[µm]
Н	The height of the channel	30	[µm]
3	Relative conductivity of the solution	80	1
σ	Solution conductivity	1.6	S/m

Table S2. Simulation parameters



Fig. S3. Electric field strength distribution of planar electrode in microchannel.

3. Flow cytometry results for cell dead/alive ratio



Fig. S4. Ratio of dead cells obtained by flow cytometry. The area circled in red represents the proportion of dead cells.