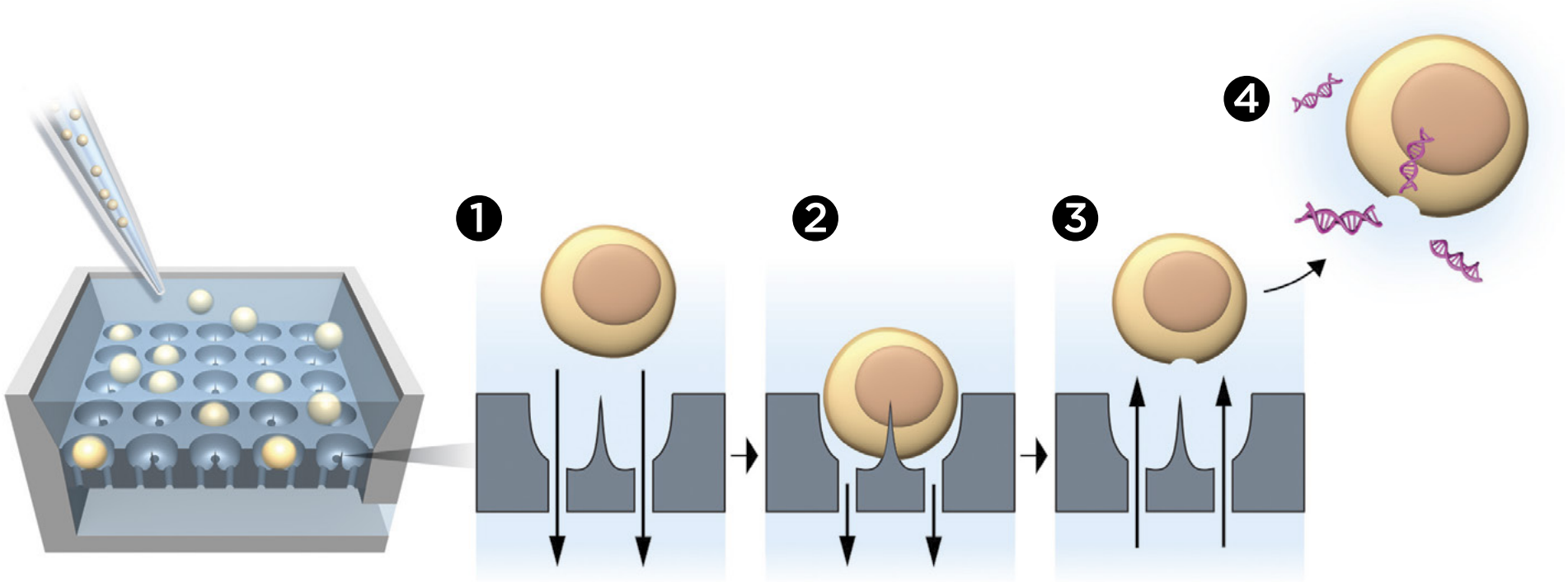

SPIKED CELLS: Cells in suspension are pipetted into a reservoir with an array of cell-size wells each containing a single spike. Microfluidic channels running through the wells generate a suction force that draws cells into individual wells ❶, where the spikes pierce the cell membranes ❷. The flow is reversed to release the cells ❸, which are then mixed with the DNA of interest ❹. The DNA diffuses into the cells via the temporary pores, which then close up on their own.