

36–48 Volume Control System of Liquid in Nano-Pipette Using Fluid Interface

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Exchange and injection into the core of a cell is briskly performed in the field of biotechnology. Such conventional operation had been conducted in the size of several tens μ m. Recently, it becomes an overwhelming need to operate on the core as well as the organelles, such as mitochondrion or chloroplast, which size is about 1 μ m or less. Concretely speaking, for breed improvement or over-coming genetic diseases, such as mitochondrial diseases, operation of small organelles w

ith sub-1 μ m range is strongly demanded. We have been carried out a research and a development on a system for surgical operation of the cell. We have already completed the trial production of the nano-surgery equipment with combining the conventional confocal laser scanning microscope. The volume control technology of the liquid in the pipette is required for the nano-surgery in order to precisely discharge or suck cell organelles and to inject drug solution into a cell.

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