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Yokogawa acquires nanopipette technology for life science applications

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Low invasiveness enables single-cell injection of target substances and extraction of intracellular materials

Japan headquartered Yokogawa Electric Corporation announces that it has acquired a nanopipette technology that was developed by BioStinger, Inc., a spin-off from the University of California, Santa Cruz.

This technology is able to target specific locations inside individual cells, enabling the injection of target substances such as genes or drugs and the extraction of intracellular materials. The low invasiveness of this technology to cells enables more detailed analysis of live single cells, organelles, and cytoplasmic components.

This technology incorporates a manipulator that uses a nanopipette with a tip whose aperture is one of the smallest available for use in the biological research field, and a micropump that uses electrochemical phenomena and also enables the injection of target substances, such as genes and drugs, into the target location of a specific cell and the extraction of individual intracellular materials. Furthermore, its low invasiveness enables more detailed analysis of live single cells, organelles, and cytoplasmic components.

Yokogawa has been developing single cell analysis solutions since 2014. A single cell manipulator under development uses a micropipette, which enables the automatic sampling of single cells that have been selected using a graphical user interface and is suitable for use in research that requires the sampling of a large number of cells.

Yokogawa will accelerate the development of sampling systems that make use of micropipettes and will contribute to research and development in the drug discovery and life science fields by commercializing manipulator products that use this acquired nanopipette technology.