

High-throughput Cell Function Screening System **Cell Voyager CV6000**

The pharmaceutical industry, faced with difficulties including the expiration of patents on well-selling products and reduction of profitable well-selling products, is striving for the speedup of new drug development. While R&D costs for new drugs is increasing every year, the number of drug approvals has not increased, thus development efficiency must be enhanced. In order to achieve this, the activity to automate and shorten the process of screening hundreds of thousands or even a million compounds to find promising drug candidates is spreading.

Drug discovery systems can satisfy these demands. A High Content Analysis (HCA) system, one of the drug discovery systems, can automatically and at high speed, administer candidate compounds to cells, take pictures of changes in the cells, process the obtained images, and confirm the effects of the administered compounds.

CellVoyager CV6000 is an HCA system that boosts the efficiency of new drug development, compound assessment, and analysis of cell function by examining various reactions in live cells at the world's fastest speed.



FEATURES

CellVoyager CV6000 consists of an image observation mechanism using a CSU confocal scanner unit capable of observing live cells in real time, a driving mechanism based on precise positioning technology to observe multiple samples at high speed, an incubation mechanism to culture sample cells, and software to analyze obtained images.

■ Fastest screening in the industry

With Yokogawa's original high-speed, precise positioning technology and confocal scanner unit capable of taking images in rapid succession, the CV6000 performs screening 2 to 10 times faster than existing HCA systems.

■ Highest resolution in the industry

While many existing HCA systems use a simple method such as the line scanning confocal method, the CV6000 uses a high-resolution real confocal method based on a

pinhole disk. The system also features an original optical system to obtain clear images and technologies to reduce the background noise to one-third, which were proven by the CSU-X1. As a result, the CV6000 offers the industry's highest resolution and clear images.

■ Cutting-edge live cell imaging

With confocal microscopes, images are obtained by excitation with a laser at fluorescent-stained live cells, but the laser may damage the cells. However, Yokogawa's CSU confocal scanner unit utilizes a multi-beam scanning method exciting with a weak laser repeatedly, thus minimizing damage and enabling continuous observation of live cells.

Since the temperature, humidity, and carbon dioxide concentration of the incubator are also controlled throughout the measurement environment such as observation stages, time-dependent changes in live cells can be observed over a long period.

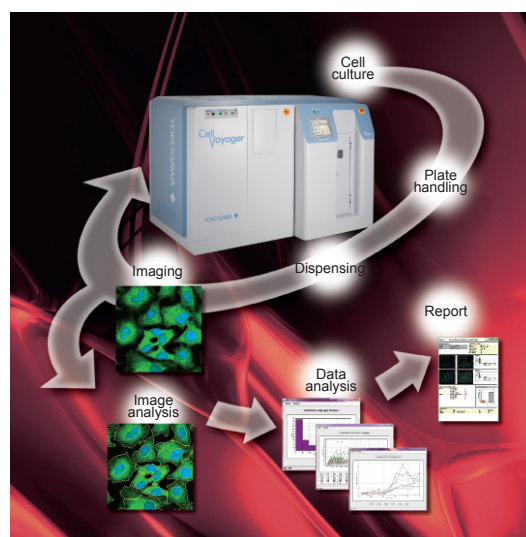


Figure 1: From Cell Culturing to Imaging, Analyzing, and Reporting

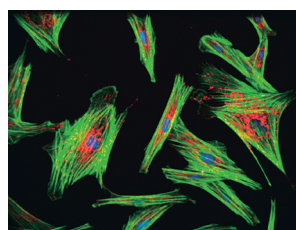


Figure 2: Confocal Image

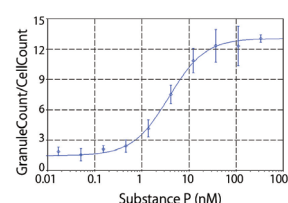


Figure 3: Displaying Analysis Results

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