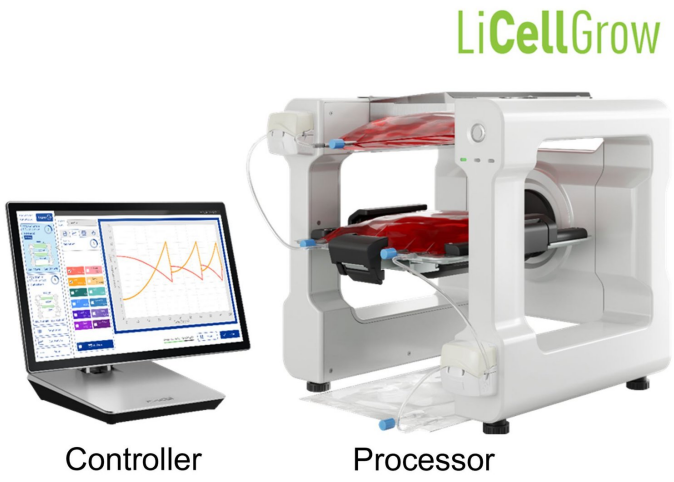
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ASIA EDITION

PHC in Japan introduces new prototype cell expansion system to support cell and gene therapy manufacturing

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Real-time cell culture management technology aims to accelerate the development of new therapie



The Biomedical Division of PHC Corporation, based in Japan, will present a prototype of its new cell expansion system, LiCellGrow, at the 2024 European Regional Conference of the International Society for Cell & Gene Therapy (ISCT), to be held in Gothenburg, in Sweden, from 4 to 6 September.

Under development, LiCellGrow has been designed to enable pharmaceutical companies to monitor cellular metabolic changes in real-time and automatically adjust culture conditions to optimise their growth. The system aims to facilitate access to cell and gene therapy products by accelerating the production of the necessary cells.

Cell and gene therapy, which involves taking cells from a patient, modifying them, and then reintroducing them into the body to fight a disease, has proven to be a promising approach to treating some difficult diseases, such as certain cancers and hematological disorders. The current method of assessing cell quality by sampling the final product can reduce manufacturing efficiency and yield, and thus increase production costs.

LiCellGrow aims to make the manufacturing of cell and gene therapy products more efficient and stable. This technology allows researchers to monitor and control the cell culture environment in real time, optimising cell quality while reducing interruptions to the manufacturing process.

The system under development uses a proprietary integrated tracking technology that continuously measures cell metabolites in the culture medium, without the need for repetitive sampling, thanks to permanently immersed sensors. LiCellGrow accurately monitors two key indicators of cellular metabolism, glucose and lactate, providing real-time visualization of changes in the culture environment and cell status. Based on this real-time data, the system automatically replaces the growing medium to maintain optimal conditions. This technology aims to improve and standardise cell quality, while increasing culture efficiency and reducing costs through reduced losses. The system will also include single-use, easy-to-install culture bags with built-in sensors, allowing closed system cell culture for a sterile environment. It can be installed in CO incubators, allowing researchers to conduct studies with the equipment of their choice.

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