Examples of application (using a prototype)

Mesenchymal stem cell

Automated operation by the prototype machine

Example of automated cell culture results

Corneal cells (sheets)

Manipulation of various vessels including dishes using a multi-purpose hand

Cross section of cell sheet

Myoblast

Large-scale culture using a HYPERFlask®

Specifications

Applicable cells	Adherent cells
Operation mode	Operating time : continuous operation for 24 hours a day, 7 days a week except maintenance period Operating method : unmanned operation by scheduling
Culture performance	Maximum 10 incubators Up to 6 flasks can be stored in an incubator
Culture operations	Primary culture, medium change, observing cells, subculture, harvesting cells, etc.
Compatible vessels	T175flask/T500 flask/HYPERFlask® 50-mL/225-mL centrifuge tubes
Installation environment	Clean class 100,000 (Clean class 100 inside)
Dimensions	W 6.4 × D 1.65 × H 2.4 (m) (when operated with 4 incubators)
Contamination control	Automatic decontamination by vaporized hydrogen peroxide

Contact us if you require additional functions, customization, system upgrades or if you have other requests.

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Auto Culture

Automatic Cell Culture System

For Clinical Use

Kawasaki's wide range of technologies contributes to the cell processing for regenerative medicine and cell therapy.

The system is intended for use in clinical research and practice to support advances in regenerative medicine and cell therapy using automated cell culture system.

Alternative to cell processing facility (CPF)

With the automated cell culture system, CPFs with their associated high construction and maintenance costs are no longer necessary. Its installation environment is the same as that for an isolator. With its glove box function, the system can also be used as an isolator. The best configuration for each culture method is achieved by combining the advantages of automated and manual processes.

Achieving safe, secure and stable large-scale production of cells

Thanks to automated culture procedures, cells are cultured in a safe, secure and stable way for large-scale production. Culture vessels and other vessels have individual identification systems to prevent errors such as misidentification.

Contamination control

With its VHP (Vaporized Hydrogen Peroxide) decontamination function, the system eliminates cross contamination risks when it handles multiple samples from plural donors.
It also assures the safety of medical personnel because wastes are disposed of after decontamination.

High versatility and expandability

General processes for adherent cell culture are automated. By changing parameters and adding software, the system can be used to culture various types of cells. It can also be used for plural donors and large-scale culture by increasing the number of incubators.

Recording and monitoring

As all devices are computer - controlled, all operations of the system, robot movements and the state of cells including their image data are recorded. And its network connection capability enables remote monitoring and remote control.

Wide varieties of protocols for cell culture can be automated.
e. g. Culture of bone marrow mesenchymal stem cell

› Loading

Loading consumable supplies, reagents and bone marrow aspirate into the system

▲ Loading consumable supplies

▲ Storage inside the system

› Primary culture

Centrifugation of bone marrow aspirate, removal of heparin and seeding in a T-flask

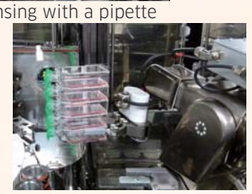
▲ Centrifugation

▲ Loading bone marrow aspirate into the system

› Medium exchange

Medium is exchanged automatically based on scheduling.

▲ Dispensing with a pipette



▲ Taking flasks out of the incubator

› Cell observation

Cells can be observed by image processing technology without taking cells outside.

▲ Observation device

› Subculture

Subculture from harvesting to seeding is performed.

▲ Tapping

▲ Pipetting

› Harvesting and delivery

Cultured cells are harvested and its suspension is delivered.

▲ Harvesting cells

▲Delivery of suspension

＊ Use of this system for clinical purposes may require individual application and approval.
＊ The contents of this catalogue are subject to change or improvement without prior notice.