



Fraunhofer Institut Biomedizinische Technik

High Throughput Cell Freezer

- Modular and flexible
- Simple and reliable
- Platform Technology
- Parallel Processing
- Scalable
- Freezing and thawing at the same time in one system

The new IBMT Cryobank platform is focused on high sample rates for the long term storage of biological cell samples. One crucial step regarding throughput for the cryobanking process is the sample freezing. The new IBMT freezer system is flexible, allows high throughput and processes with highest quality in a very simple and robust hood system.

Technology

Liquid nitrogen at the bottom and an electrical heat source at the top of an elevator system generate the desired temperature gradient. The PID controlled elevator adjusts the height of the cell sample to the set point of desired temperature. PC software controls and stores all necessary quantities such as temperature, level and velocity.

During the process the biomedical samples are accessible and sheltered using the IBMT cover technique for working under a dry nitrogen atmosphere. The modular system can be easily extended by elevators to meet the growing demand of larger sample rates. The design facilitates concurrent freezing and thawing of cells. Automation can be adapted to the requirements of the process and the cell samples. Standard software interfaces allow easy integration within database systems such as Fraunhofer-ChameleonLab® or other laboratory management systems.

Cryobank automation

Is your existing cryobank equipped with dated technology? IBMT supports and surveys the modernisation of existing cryobanks. We develop or adapt freezers to meet your requirements.

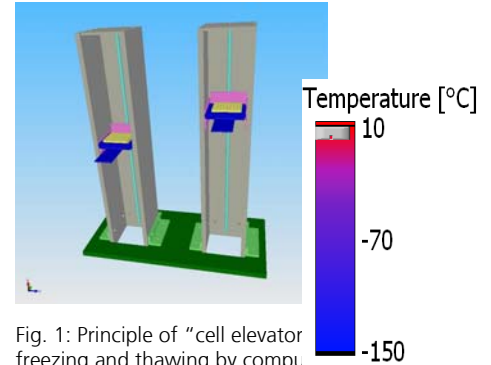


Fig. 1: Principle of "cell elevator" freezing and thawing by computer controlled elevator systems in a stratified temperature atmosphere (bottom -150°C, top +20°C)



Fig. 2: "Two elevator" Freezer mounted in a cover system to work under dry nitrogen atmosphere. Any ice formation on substrate or other parts is avoided.



Fig. 3: Modular design of multi-elevator freezer. Six freezing and thawing units.

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