National Center for Global Health and Medicine

CUSTOMER TESTIMONIAL - National Center for Global Health and Medicine BioBank, Japan

PHCbi products to support National Center for Global Health and Medicine BioBank

Huge freezers line the basement where the room temperature is kept low. This is the BioBank of the National Center for Global Health and Medicine (NCGM) in Shinjuku, Tokyo, where patients are examined and treated above ground, while in the basement lie the seeds of cutting-edge research.

The PHCbi freezers are where these seeds are stored. Read on to find out how they are being used and why they were selected for this facility. We interviewed Satoshi Suzuki, Manager of the BioBank Promotion Department, National Center for Global Health and Medicine.

The BioBank's mission is to store samples safely for future research

A BioBank is a facility for the storage of biospecimens. Biospecimens include animal tissues and cells, plant seeds, and microorganisms, however, the NCGM BioBank specializes in the collection of human blood components, genes, and tissues for medical research. In essence, collecting and storing samples is not the only job the BioBank performs.

This BioBank plays a variety of roles, from obtaining patient consent to providing a bridge between patients and researchers. First, the BioBank coordinator will explain the consequences to the patient when they are asked to donate a sample, such as blood or spinal fluid, for research purposes.

A neutral coordinator will provide support to ensure that the patient is fully apprised of the situation and is able to cooperate without feeling pressured by the attending physician. Once comprehensive consent has been obtained for future use in any study, the samples are anonymized and stored appropriately, with detailed records of the time and method of collection, without any time limits in place. In addition, the BioBank is responsible for responding to researchers' inquiries and providing samples after reviewing their suitability and availability. If any part of this process is left out, the goal of using the samples to advance medicine cannot be achieved.

"I see BioBank rather as infrastructure to support research than as a research facility," says Suzuki.

"Samples will be made available to researchers in Japan and abroad to help develop the next generation of medicine. The NCGM BioBank works closely with the center's hospitals to collect such samples. We have collected a lot of specimens from various infectious diseases, pre-surgical specimens, and many other things that are in high demand for research use."

The PHCbi's ultra-low temperature freezer plays an important role in storing these samples.

Why choose the PHCbi ultra-low-temperature freezer?

BioBank samples are collected permanently and stored for a long period of time in preparation for future research. Ultra-low-temperature freezers are used to keep biospecimens stable, and their performance is critical to the success of the BioBank business.

As of September 2020, 15 PHCbi ultra-low-temperature freezers are in operation at the NCGM BioBank and are being used to store samples. When we asked Suzuki, who established the NCGM BioBank, what made him decide to install PHCbi products, he replied, "because of the reputation of the manufacturer".

Many of the samples stored here are blood and spinal fluid of patients. For many studies it is imperative to keep them at a constant temperature. Some blood samples are more sensitive to temperature changes than others, so if the freezer malfunctions or the temperature inside the chamber changes, the stored samples may not be viable for use in research. Suzuki says that as PHCbi is an electrically robust company, even if an earthquake or a typhoon caused a voltage imbalance, it would be unlikely to cause a compressor failure or other problems.

In addition, Suzuki cited the fact that the PHCbi products have a dual cooling system as a reason for choosing them. This is a technology that PHCbi calls TwinGuard. If any issues arise with one refrigeration circuit, the other is enough to keep the temperature inside the chamber from rising.

In 2011, PHCbi's freezers were installed at the same time as the Biobank was built. As of now, there have been no malfunctions or failures. However, there is no guarantee that there will not be a major disaster or an emergency situation such as unplanned power outages in the future. The freezers used by the BioBank must be designed to minimize damage to the specimens in the chamber, even if such problems were to occur. With the mission of BioBank in mind, as well as the future, Satoshi Suzuki chose the PHCbi product.

"Of course, I am satisfied with its performance under normal circumstances. I especially like the very stable temperature in the freezer. All the freezers here are constantly monitored using a measuring device in the chamber. Every morning I receive an email with the temperature data of all the freezers, and the PHCbi freezers have a very small margin of error of +/- 1 degree Celsius against the set temperature, unlike the others I've experienced. I think it's very good."

Easy-to-use design and built for growth

Suzuki said that when he uses the PHCbi products, he found them appealing in unexpected ways.

He said, “It's a small matter, but when you open the door, it feels pleasingly soft. The feel and design are gentle and not brusque. I think it's easy for anyone to use. I also like the fact that we currently have both the large size 702VX and the medium size 502VX and the layout of the shelves in the chamber is virtually the same. We first used the medium size and later bought the large size, but the size change only increased the width, so we didn't have to redesign the software”.

As the number of samples stored in the BioBank increases, the BioBank will buy more freezers. In this case, a consistent design makes it easier to manage. It also fits in well with the overall appearance of the freezer.

Another advantage of the PHCbi freezer is that the engineers are very caring in their maintenance and inspection.

Seeing the engineer maintaining the freezer as if he was "taking care of his own child", Suzuki was convinced that PHCbi would not let him down, which gave him further peace of mind.

“I was impressed by how happy the engineers looked working beside me,” he said. “The freezer contains valuable specimens that are entrusted to us by the patients, so it's nice to know that they take good care of the equipment used to store them.”

NCGM BioBank supports medical research into the future

In closing, Suzuki talked about the future of the NCGM BioBank.

“The NCGM BioBank will serve as an infrastructure to support research, and I hope that it will be reasonably sustainable. The kind of research that has been done so far is showcased on our website.”

Samples from NCGM's BioBank are used by universities, companies, and other organizations for a variety of research. In addition to basic research and development of new drugs, BioBanks are also used to provide corporate researchers with samples used in, for example, performing evaluation tests for the purpose of filing in vitro diagnostic applications, evaluating the usefulness of seeds, and searching for biomarkers.

“Collecting samples from scratch is hard, but using a BioBank saves time and money. We have a list of what kind of samples we have available on the collection results page, so please feel free to contact us for more information.”

When you open the NCGM BioBank website, a cute green logo catches your eye. At first glance, it looks like a tree with lots of leaves, but upon closer inspection, you can see that it is designed with many small hearts clustered around a person with outstretched arms.

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"The BioBank business is made possible by the cooperation of many patients. We designed this place with that in mind. Whether we can carry this feeling into the future depends on the performance of the freezer. We look forward to using more PHCbi products in the future."

Products Delivered to:

National Center for Global Health and Medicine BioBank

Address:

1-21-1 Toyama Shinjuku-ku, Tokyo 162-8655, Japan
http://biobank.ncgm.go.jp/

Supplied equipment

Ultra-low-temperature freezer
MDF-DU702VX × 4
MDF-U700VX × 4
MDF-U500VX × 4

*Photos are for reference only. Models may differ.

PHC Corporation, Biomedical Division

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