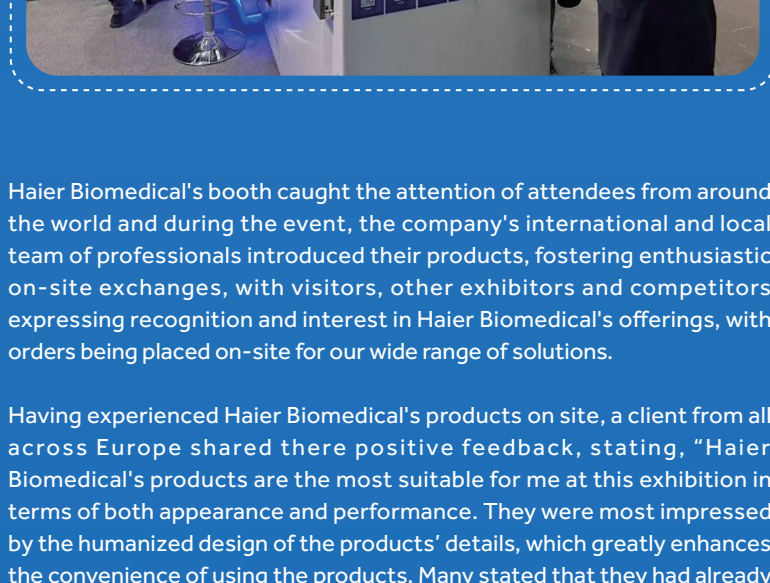


Haier Biomedical's Success @Medica 2023!

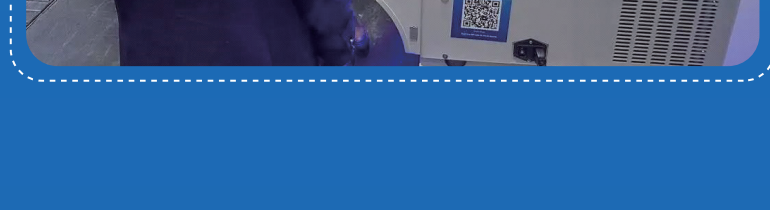
MEDICA is a comprehensive medical exhibition held in Düsseldorf, Germany, and one of the world's largest medical B2B trade fairs. The exhibition provides medical enterprises an opportunity to gain an in-depth understanding of the latest innovations and emerging trends within all global medical field channels. Since 1974, the annual exhibition has attracted the participation of over 5,000 companies from more than 140 countries and regions. Chinese medical enterprises, in recent years, have recognized the significance of participating in MEDICA as an important strategy to expand their presence in international markets.

During MEDICA 2023, the focus was primarily revolved around subjects such as imaging and diagnostics, medical equipment and devices, laboratory equipment, physiotherapy/orthopedic technology, medical consumables, and IT systems and solutions. In this exhibition, Haier Biomedical, China's leading digital scenario solution provider for life science and medical innovation, presented its latest research achievements and solutions to clients and partners at the exhibition, demonstrating its commitment to scientific and technological advancements in the field of life science and medical innovation, ultimately showcasing a positive image and positioning itself as a leader in the industry's pursuit of high-quality development.

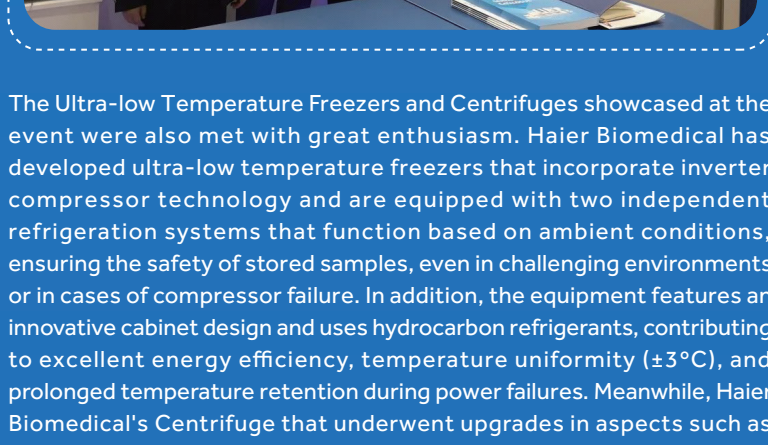


Haier Biomedical's booth caught the attention of attendees from around the world and during the event, the company's international and local team of professionals introduced their products, fostering enthusiastic on-site exchanges. With visitors, other exhibitors and competitors expressing recognition and interest in Haier Biomedical's offerings, with orders being placed on-site for our wide range of solutions.

Having experienced Haier Biomedical's products on site, a client from all across Europe shared their positive feedback, stating, "Haier Biomedical's products are the most suitable for me at this exhibition in terms of both appearance and performance. They were most impressed by the humanized design of the products' details, which greatly enhances the convenience of using the products. Many stated that they had already purchased a few prototypes to promote the product locally in their home country, and these partners want to establish a long-lasting partnership with Haier Biomedical."



During this event, Haier Biomedical's newly developed Incubator caught the most attention. It is a high-precision thermostat equipment with light and humidification functions, which creates an optimal artificial climate for laboratory experiments. At present, incubators are used across various industries such as pharmaceuticals, agriculture, animal husbandry, and environmental science, and the conventional incubator is struggling to keep up with the current demands of experimentation. To address this concern, Haier Biomedical, the world's leading provider of digital scenario solutions for life sciences and medical innovation, has developed a new generation of incubators. This products leading features include an intelligent LCD screen and is equipped with an IoT module, both of which enhance its intelligence and user convenience. The new incubators have already been successfully deployed in laboratories worldwide, playing a crucial role in experiments across various fields.



The Ultra-low Temperature Freezers and Centrifuges showcased at the event were also met with great enthusiasm. Haier Biomedical has developed ultra-low temperature freezers that incorporate inverter compressor technology and are equipped with two independent refrigeration systems that function based on ambient conditions, ensuring the safety of stored samples, even in challenging environments or in cases of compressor failure. In addition, the equipment features an innovative cabinet design and uses hydrocarbon refrigerants, contributing to excellent energy efficiency, temperature uniformity (±3°C), and prolonged temperature retention during power failures. Meanwhile, Haier Biomedical's Centrifuge that underwent upgrades in aspects such as safety protection, high-efficiency refrigeration, and intelligent interaction comes equipped with technologies including a seamless wrapping gallbladder and assisted temperature control. In terms of safety, it employs a 3-layer safety structure to ensure operational safety, and includes rotor identification to prevent over-speed operation. With multiple protection measures in place, users can have peace of mind when using the Centrifuge. At present, this product is widely used in various scientific research laboratories, including those in the fields of biological engineering, chemical engineering, hospital testing, pharmacy engineering, and inspection and testing, greatly contributing to the progress of scientific research endeavors.

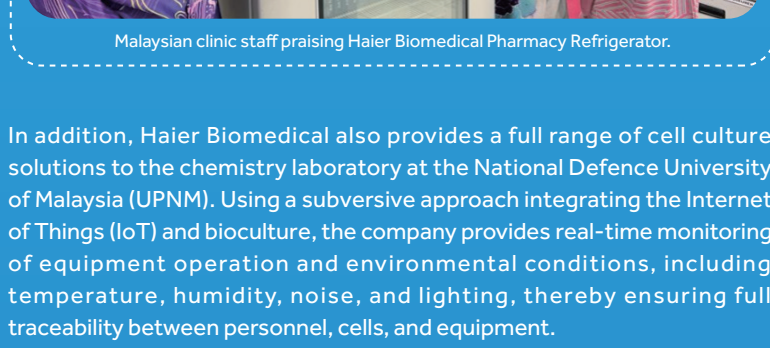


During this exhibition, dealers from various countries engaged in in-depth discussions on cutting-edge technologies. Haier Biomedical took the opportunity to present its comprehensive solutions and future development plans, allowing the global audience to gain a deeper understanding of Haier Biomedical. In the future, the company will continue to meet the diverse, segment, personalized, and intelligent needs of its clients, with a focus on delivering exceptional user experience, collaborating with global experts in the biomedical field to explore the laboratory equipment industry's development, and making continuous efforts toward building a community of common health for all, to make life better.

Haier Biomedical Supporting Healthcare in Malaysia

While Malaysia has traditionally been famous for its tourism, recent years have seen it gain recognition for its perfect healthcare system and thriving healthcare environment fueled by the country's medical tourism industry. Positioning the region as a healthcare environment hub has earned acclaim from International Living, an American magazine, being repeatedly ranked among the world's top healthcare destinations. Alongside relatively reasonable medical costs, Malaysia offers a more mature and comprehensive medical services with globally recognized standards.

Naturally, given Malaysia's status as a highly developed medical hub, the selection of medical equipment undergoes stringent scrutiny. Recently, a health clinic in Selangor, Malaysia procured Haier Biomedical's Pharmacy Refrigerator through a tender process. Following their implementation, the clinic has expressed high satisfaction with the refrigerators, citing their remarkable temperature stability, low noise levels, and overall performance. "Haier Biomedical's Pharmacy Refrigerators are able to provide reliable temperature control and safe storage conditions for our medicines," said the clinic's director. "We have decided to order an additional five Haier Biomedical HYC-390 Pharmacy Refrigerators for distribution to other health clinics."

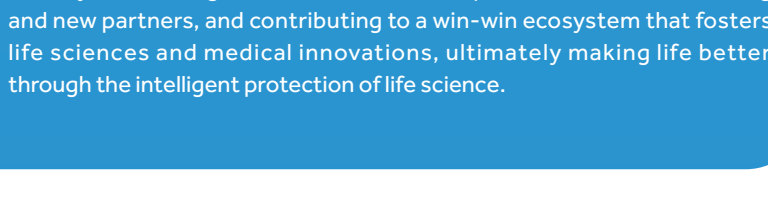


Malaysian clinic staff praising Haier Biomedical Pharmacy Refrigerator.

In addition, Haier Biomedical also provides a full range of cell culture solutions to the chemistry laboratory at the National Defence University of Malaysia (UPNM). Using a subsversive approach integrating the Internet of Things (IoT) and bioculture, the company provides real-time monitoring of equipment operation and environmental conditions, including temperature, humidity, noise, and lighting, thereby ensuring full traceability between personnel, cells, and equipment.

At present, the cell culture solution addresses critical issues in three key areas: culture preparation, environmental tasting, and disinfection and sterilization, facilitating the safe cultivation of new cell life. In this solution, Haier Biomedical's products, including Ultra-Low Temperature Freezer, Pharmacy Refrigerator, and Incubator, collaboratively and comprehensively support the research projects in Malaysian laboratories.

Among them, Haier Biomedical's CO₂ Incubator has won unanimous praise from laboratory personnel involved in the culture preparation within the chemistry laboratory. Equipped with dual PT1000 sensors and precise temperature control technology, it can maintain a temperature fluctuation range of ± 0.1°C. It also features new-generation German IR infrared sensing technology to ensure a CO₂ control accuracy of within ± 0.1%, and gas jacket heating technology to maintain temperature uniformity within ± 0.2°C. One researcher in the chemistry laboratory has shared their experience, stating, "Haier Biomedical CO₂ Incubator has brought a sea change, fundamentally eliminating previous incubator temperature fluctuations and imprecise CO₂ control, which led to incomplete sterilization and extensive cell death. This equipment has reliably safeguarded our cell and bacteria preparation and culture procedures."



The high-quality, high-level, and high-efficiency equipment offered by Haier Biomedical serve as a solid foundation for their international expansion endeavors. The company is committed to delivering high-quality medical equipment to consumers both at home and abroad, actively establishing collaborative relationships with international existing and new partners, and contributing to a win-win ecosystem that fosters life sciences and medical innovations, ultimately making life better through the intelligent protection of life science.

Haier Biomedical transforms cold storage at the University of Sussex for maximum sustainability

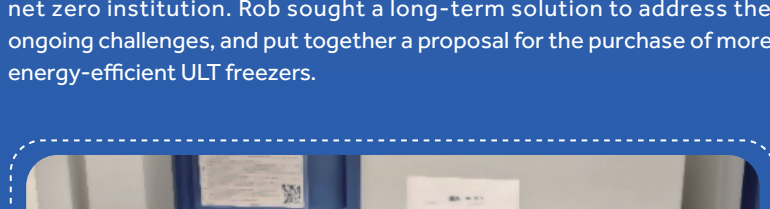
Researchers at the University of Sussex rely on ultra-low-temperature (ULT) freezers for secure storage of a wide range of biological samples. However, laboratory technicians were facing numerous challenges with outdated freezers, including frequent breakdowns, high energy consumption and temperature fluctuations compromising sample viability. In this case study, Dr Rob Fowler, Associate Director of Technical Operations at the university, describes how he reached out to Haier Biomedical for help, the implementation journey, and the benefits of the new equipment.

Customer Needs

- Replace old, inefficient freezers
- Avoid sample loss and research impact
- Increase energy efficiency
- Cost savings
- Enable early detection of temperature fluctuations
- Improve insulation and cold retention
- Power outage mitigation
- Proactive preventive maintenance
- Alignment with university sustainability goal

Background and Challenges

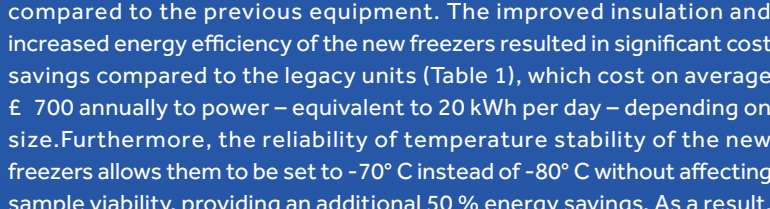
Rob and his team support the university's researchers by maintaining various equipment, including cold storage facilities for biological samples. However, the university's freezers – which were between 15 and 25 years old – were unable to maintain the required temperatures due to inefficient heat dissipation. This not only put research outcomes at risk, but also led to frustration among the university scientists.



"Our previous ULT freezers were constantly breaking down, consuming excessive energy and struggling to maintain precise temperatures," Rob explained. "This hindered our efficiency and jeopardised the integrity of valuable samples. To mitigate this, we developed an elaborate alarm system to alert technicians of temperature fluctuations. However, this system was far from ideal, and we often received requests to address issues in the middle of the night or during holidays. Additionally, our insurance only covered freezers and their contents if they were less than 15 years old, leaving us at significant risk of losing samples without a means of recovering the costs."

The Need for Sustainability-focused Upgrades

Alongside the issues being faced by researchers, the University of Sussex actively embraces sustainability initiatives, and has signed up for the Laboratory Efficiency Assessment Framework (LEAF). It was therefore essential to make changes to its cold storage provision, and to collaborate with a provider aligned with the university's commitment to becoming a net zero institution. Rob sought a long-term solution to address the ongoing challenges, and put together a proposal for the purchase of more energy-efficient ULT freezers.



Rob and his team selected Haier Biomedical's Salvum Ultimate BPT Frequency Conversion ULT Freezers as a potential solution, as these units incorporate frequency conversion compressors and hydrocarbon refrigerants to provide optimal sample security, energy efficiency and sustainability. He continued: "We decided to trial a -80°C freezer from Haier Biomedical, and quickly noticed significant improvements in energy expenditure. It was crucial to demonstrate the enhanced sustainability of the new equipment, so I worked closely with the university's sustainability manager to ensure that the collaboration with Haier Biomedical aligned with our goal of becoming one of the most sustainable universities globally. Upgrading our energy-intensive ULT freezers was clearly a necessary step, and the trial results assured us that acquiring more systems from Haier Biomedical would improve both efficiency and sustainability."

Implementation and Results

The Haier Biomedical freezers offer substantial advantages and savings compared to the previous equipment. The improved insulation and increased energy efficiency of the new freezers resulted in significant cost savings compared to the legacy units (Table 1), which cost on average £ 700 annually to power – equivalent to 20 kWh per day – depending on size. Furthermore, the reliability of temperature stability of the new freezers allows them to be set to -70°C instead of -80°C without affecting sample viability, providing an additional 50 % energy savings. As a result, the new Haier Biomedical freezers reduced energy consumption by approximately 12 kWh per freezer per day, with annual running costs to under £300 each.

	Legacy	Haier Biomedical	Model and Size
Average energy usage	20 kWh per 24 hrs	8.2 kWh per 24 hrs	DW-86L829BPT
Average energy cost per year	£700	£290	828L/29.2cu.ft

Table 1. Cost comparison of ULT freezers. Data based on electricity costs of £0.10 p per kWh in 2021

The upgrade also presented an opportunity for the university to consolidate cold storage and dispose of old samples. The improved accessibility and organisation of the new units has helped the team to reduce the overall number of freezers – from 24 to 20, with the majority of them now Haier Biomedical freezers – amounting to annual energy savings of approximately 100,000 kWh, or roughly £ 20,000 per year in energy costs. This has led to a return on investment within seven years, and helps the facilities to align with the university's sustainability goals. In addition, the gradual replacement of old freezers has significantly reduced technician workload, eliminating the stress of sample loss and instilled confidence in the reliability of the equipment.



Another benefit of the new freezers is that the improved insulation ensures samples remain below -50°C for up to 24 hours during power outages or other issues, compared to the previous freezers that quickly warmed up within the hour. This risk has been further mitigated by the installation of a backup generator to ensure uninterrupted power supply and preserve sample integrity. "Haier Biomedical's freezers have been a gamechanger for us," asserted Rob. "The advanced insulation and temperature retention capabilities have significantly improved sample preservation. Even in the event of a problem or power outage, we have an extended timeframe to safeguard our valuable samples. Haier Biomedical worked with us to establish a monitoring system that alerts us with a text, phone call and e-mail when there's even a slight discrepancy in the temperature, giving us an extra level of confidence in these freezers."

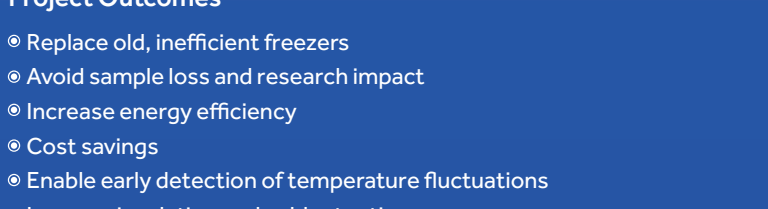
Partnership with an Expert Supplier

The University of Sussex's choice to partner with Haier Biomedical has yielded significant benefits. Taking a proactive approach to address the challenges associated with the previous cold storage equipment has resulted in enhanced operational efficiency, improved sample preservation and led to substantial cost savings. By choosing Haier Biomedical, the University of Sussex has not only transformed its cold storage capabilities, but has also taken a significant step towards achieving its sustainability goals, and established a framework for future upgrades across various equipment categories.

"We chose to go directly with Haier Biomedical because the company took the time to come and speak to us," Rob added. "That personalised service has made all the difference, helping us to enhance operational efficiency, ensure effective sample preservation and achieve significant cost savings. The team are always eager to assist us, which is why we are keen to continue working with them as we strive to become a leader in sustainability."



Model: DW-86L829BPT



Project Outcomes

- Replace old, inefficient freezers
- Avoid sample loss and research impact
- Increase energy efficiency
- Cost savings
- Enable early detection of temperature fluctuations
- Improve insulation and cold retention
- Power outage mitigation
- Proactive preventive maintenance
- Alignment with university sustainability goal

Haier Biomedical Provides Reliable Cold Storage to Support Neurological Disease Research

Cerevance, based in Cambridge, UK, conducts research looking for life-changing therapeutics for Parkinson's, of the central nervous system (CNS), including Alzheimer's and Parkinson's, using human tissue samples and the company's proprietary NETSseq platform. Pivotal to this work is the storage of over 14,000 biological samples in ultra-low-temperature (ULT) freezers, and reliance on consistent, oxygen, carbon dioxide and humidity probes to ensure a temperate and safe laboratory environment. However, in recent years, Cerevance has repeatedly had disappointing experiences working with a range of real-time monitoring systems from different companies, with occasions when false alerts were keeping the team up at night. In this article, Todd Lowings, Facilities Manager and a founding member of Cerevance, describes how a short trial with the Haier Biomedical real-time monitoring system soon changed his opinion of these devices, providing the company with products that it can trust to safeguard samples.

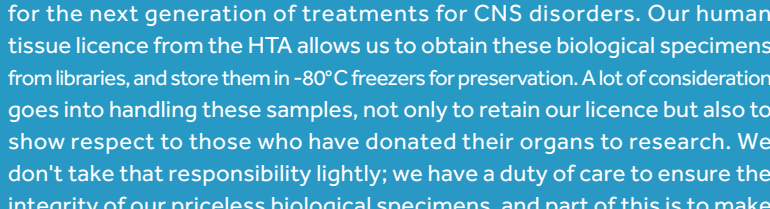
Customer Needs

- Replace inefficient freezers
- Avoid sample loss and research impact
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- Proactive preventive maintenance

"We study human tissue samples to find promising targets for the next generation of treatments for CNS disorders. Our human tissue licence from the HTA allows us to obtain these biological specimens from libraries, and store them in -80°C freezers for preservation. A lot of consideration goes into handling these samples, not only to retain our licence but also to show respect to those who have donated their organs to research. We don't take that responsibility lightly; we have a duty of care to ensure the integrity of our priceless biological specimens, and part of this is to make sure that we invest in the best monitoring systems for our freezers."

Background and Challenges

The team at Cerevance carries out ground breaking research on the effects of novel discovery stage and clinical stage compounds for the treatment of neurological disorders on human tissue samples. Storage of these biological specimens is covered by a human tissue licence and must adhere to regulations from the Human Tissues Authority (HTA), which includes storing samples in ULT freezers and closely monitoring any fluctuations in temperature. However, the company trialled a range of monitoring systems from different suppliers and found that false alerts were all too common, taking up valuable employee time and ruining the team's trust in the devices.



Todd explained: "We study human tissue samples to find promising targets for the next generation of treatments for CNS disorders. Our human tissue licence from the HTA allows us to obtain these biological specimens from libraries, and store them in -80°C freezers for preservation. A lot of consideration goes into handling these samples, not only to retain our licence but also to show respect to those who have donated their organs to research. We don't take that responsibility lightly; we have a duty of care to ensure the integrity of our priceless biological specimens, and part of this is to make sure that we invest in the best monitoring systems for our freezers. It is also vital to ensure that the temperature in our lab is consistent – as too much variation can result in discrepancies in our data – and assess the oxygen and carbon dioxide levels as a critical safety precaution for working with liquid nitrogen. Our lab does already have a built-in oxygen sensor on the wall, however, we ideally need an independent secondary monitoring system that we can access remotely in the event of an incident, in order to evaluate the situation from a safe distance."

"Unfortunately, our experience with monitoring equipment in the past has been pretty poor," Todd continued, "I personally have worked with six or seven different systems and not one of them has been completely fault free or even satisfactory. The biggest issue has been false alarms; we have sometimes been woken up in the middle of the night and been forced to drive into work to investigate alerts – particularly frustrating when many turned out to be errors. It has been a real headache but, of course, we have a responsibility to the donors and the company to protect the frozen samples, and had to investigate every alert to be truly confident that there was no danger."

The Need for Reliable Monitoring Systems and Freezers

Todd and his team continued searching for reliable ULT freezers and monitoring systems that they could trust and that would give them the confidence to react should there be a genuine failure, and soon discovered Haier Biomedical. Todd elaborated: "I met a representative from Haier Biomedical to discuss purchasing freezers when they explained that the company also offers monitoring systems. I was a bit apprehensive – given my past experience with instruments from other companies – but decided to take the plunge. We successfully trialled the Haier Biomedical system for several weeks, which was extremely helpful because we could truly test the instrument with our own parameters. For example, we set the maximum and minimum temperature range on the temperature probes, established a time delay of 15 minutes to account for the freezer being opened several times a day, and optimised the positioning of the probe. This really positive experience gave us the confidence to work with Haier Biomedical instruments more, and we now have several freezers with temperature probes to house all of our tissue samples, as well as carbon monoxide, oxygen and humidity monitoring in our laboratories and offices."



Instruments You Can Trust

The monitoring system has been critical for ensuring that Todd and his team are alerted quickly, giving them time to act and preserve their samples if necessary. The system wirelessly monitors data in real time and issues an automated phone call and text if a fault occurs. In addition, a significant benefit of this system is that it is run independently on batteries. This means that it does not need to rely on mains electricity and can still be used during a power outage, which is a fairly common cause of freezer faults.

"The monitoring system is absolutely critical for safeguarding our samples," Todd explained. "It has been incredibly useful in a number of scenarios where a fault has occurred, as it has given us enough warning to get to the lab and save an entire freezer's worth of contents."



No Higher Praise than Total Trust for Haier Biomedical

"We have a really great business relationship with Haier Biomedical and we have full confidence in its products. Our team is finally able to sleep at night knowing that if we do get an alert, the chances are that it is genuine and, in the rare instances where we've had any issues, Haier Biomedical has resolved them very quickly. This has given us an incredible amount of confidence in these instruments, so much so that we're now using the freezers for our whole human tissue library and, for us, there's no higher praise than that," Todd concluded.

Project Outcomes

- Energy-efficient operation and cost savings
- Reliable and precise temperature control
- Consistent and stable storage conditions
- Enhanced sample integrity and viability
- Efficient and optimised use of space
- Improved accessibility and organisation of stored samples
- Enhanced data logging and monitoring
- Contributes to overall sustainability goals

