

Incubators, Freezers & Cooling Equipment



The power of intelligent storage for precious brain tissues

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Diseases of the central nervous system are on the rise, owing to an aging population, and a great number of studies are currently underway to help build our understanding of these complex conditions. Researching human tissue provides an accurate representation of what is happening in the human brain at a cellular, or even molecular, level. However, tissue samples are scarce, so preserving their integrity and viability is crucial to the success of research, and there is a clear need for reliable cold storage solutions that can achieve this. This article looks at the storage challenges facing researchers using tissue models, and describes how the pharmaceutical company Cerevance has overcome these difficulties to secure the future of its research programmes.

The burden of central nervous system (CNS) disorders - particularly neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease and amyotrophic lateral sclerosis (ALS) - is increasing at an extremely concerning rate. The global incidence of ALS is expected to rise by 69% between 2015 and 2040 [1], and the number of people living with Alzheimer's disease is set to double every 20 years, rising to 78 million by 2030 [2]. The causes of CNS disorders can vary between conditions and cases, but they are often linked to genetics, age, infections, trauma and lifestyle. The aging global population is thought to be an important factor in the increasing incidence of neurodegenerative diseases, as we live longer thanks to the successes of modern healthcare [2]. However, without a cure, patients are forced to face debilitating





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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 batteries are also replaced annually by the supplier, giving us reassurance that the instrument will not run out of power.”

This positive experience has given the team confidence in the systems once again, and the company now has several freezers with temperature probes to house all of its tissue samples, as well as carbon monoxide, oxygen and humidity monitoring in its laboratories and offices. In doing so, the company can ensure the optimal environment for samples - from storage right through to use - avoiding unexpected variations that could result in discrepancies in research data.

Summary

Researchers at Cerevance are using a biobank of over 14,000 human brain tissue samples to identify critical targets for the next generation of treatments for CNS disorders. Preserving the company’s precious brain bank in ULT freezers is a vital step in ensuring the integrity of its tissue samples, and investing in reliable real-time monitoring systems and freezers from Haier Biomedical will help the company to

secure the future of this research, offering hope to individuals affected by a range of neurodegenerative diseases.

About the authors

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Scott graduated with a degree in forensics before moving into IoT-connected technologies. He joined Haier Biomedical to support the stakeholders of its IoT and monitoring portfolios, and advises customers on the best technologies for their current and future operations. He also provides ongoing technical support and training for a broad spectrum of clients from within healthcare, academia, pharmaceutical and biotech fields.

Todd Lowings, Facilities Manager, Cerevance

Todd is an industry expert with a demonstrated history of working with start-ups and well-established companies within the pharmaceutical and biotechnology industries. During the course of his career, he has accumulated a wealth of experience in facilities management, laboratory management practices, health and safety, and procurement, and has also gained a strong skillset in lab and business operations.

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