

Cell Cryopreservation Market Assessment, By Product [Cell Freezing Media, Equipment, Consumables], By Application [Stem Cells, Oocytes and Embryonic Cells, Sperm Cells, Hepatocytes, Others], By End-user [Biopharmaceutical and Pharmaceutical Companies, Research Institutes, Biobanks, IVF Clinics, Others], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

Global cell cryopreservation market is projected to witness a CAGR of 21.58% during the forecast period 2024-2031, growing from USD 9.53 billion in 2023 to USD 45.49 billion in 2031. The market's growth is supported by the increasing utilization of cell therapies in various diseases, rising requirements for biobanks, increasing requirements from IVF clinics, growing efforts to preserve biological specimens for longer periods, and rising efforts of the key players of the market to introduce technologically advanced equipment.

Additionally, the rising efforts of different governments to promote stem cells, organs, and blood donations among different ethnicities are also boosting the growth of the cell cryopreservation market. In 2023, fifty organizations and community groups across Wales and England received a share from funding of approximately USD 890,000 (£685,000) as part of the government's efforts to tackle health inequalities among Asian and Black communities. Previously known as the Community Investment Scheme, the Community Grants Program is managed by the National Health Service Blood and Transplant (NHSBT) and aids in funding community organizations to deliver projects that encourage more Asian and Black individuals to become donors. Furthermore, the rising efforts of leading companies to augment the availability of novel and advanced products and technologies are also positively influencing the expansion of the global cell cryopreservation market. In September 2024, Colder Products Company (CPC), a part of the Dover Corporation, announced the launch of a novel aseptic micro-connector that has the ability to fit directly into the freeze cassettes used in gene and cell therapy processing. Cryopreservation aids in minimizing material loss of function during storage and product shipment, which occurs prior to therapies being delivered to patients. The company's

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MicroCNX ULT connectors provide an efficient and simple method for the sterile connection of tubing and are also compatible with harsh chemicals. Such launches are expected to aid in creating sterile connections outside the biosafety cabinets, allowing for easy transport of biological specimens.

Increasing Construction of Biobanks Boosts Market Demand

The rapid expansion of disease prevention research and increasing requirement for targeted therapies and precision medicine are propelling the requirement for biobanks. Various governments also provide funding and donations to biobanks to support and promote research activities across various domains. In February 2024, the UK government provided an additional USD 27 million (£21 million) for the USD 97 million (£75 million) UK Biobank Limited in Manchester.

Additionally, various integrated healthcare providers are also investing in the construction of biobank facilities in different regions across the globe. In May 2024, CIC Innovation Services LLC and CHA Medical & Bio Group signed a memorandum of understanding for establishing an open innovation center focusing on innovation and research around the Cell Gene Biobank (CGB). Both companies agreed to collaborate to create a biotech-focused innovation ecosystem for supporting and attracting biotech companies and related ventures to CGB, which is being constructed by the CHA Medical & Bio Group in Pangyo, South Korea. Such activities are expected to boost the growth of the research sector and positively influence the expansion of the global cell cryopreservation market.

Technological Advancements Support Market Expansion

The growing efforts by various biotech companies to bolster the development and availability of novel cell cryopreservation technologies to increase convenience and redefine standards for cryopreservation are boosting the global cell cryopreservation market growth. In October 2024, Nucleus Biologics, LLC, one of the leading providers of bioprocessing and cell culture solutions for the gene and cell therapy sector, launched NB-KUL DF, a chemically defined, DMSO-free cryomedia set to redefine the standards of cryopreservation. NB-KUL DF outperforms other DMSO-free options in cell expansion, viability, and recovery. Additionally, NB-KUL DF eliminates the issues associated with DMSO-based media, such as the requirement for complex wash steps, patient issues, and additional variability and costs. Such launches mark a new era for cell cryopreservation for therapies and showcase the biotech companies' efforts to create products that make therapies more accessible and consistent for patients. Additionally, various biotech companies are entering into collaborations and partnerships with others to accelerate the development of novel products and technologies. In October 2023, Cryoport, Inc. and NMDP BioTherapies (formerly known as Be The Match BioTherapies) announced a partnership to expand the former's capabilities and provide global cryopreservation and bioprocessing support across Europe and the United States.

IVF Clinics Hold Significant Market Share

The rising cases of infertility and the increasing requirement for the freezing and donating of biological material are propelling the segment's expansion and bolstering the global cell cryopreservation market size. As per the estimates of the World Health Organization (WHO), 1 in 6 adults across the globe experience infertility in their lifetime. Thus, propelling the requirement for effective and dependable cryopreservation solutions to ensure the viability of frozen eggs and sperm for long periods of time. Additionally, the rising cases of infertility are also augmenting the construction of fertility clinics in various regions across the globe, providing lucrative growth opportunities to the market. In June 2024, a new state-of-the-art fertility clinic was opened in Walnut Creek, United States, to address the rising requirement for expert fertility care. The increasing acceptance and awareness of assisted reproductive technologies (ART) is also boosting the demand for cell cryopreservation tools by IVF clinics. Various government and non-government organizations (NGOs) are also working on raising awareness about infertility, destigmatizing ARTs, and promoting education and understanding.

North America Holds Major Market Share

The expansion of the North American cell cryopreservation market is driven by the increasing emphasis on research and development activities, rising investments in the biotech sector, and the presence of advanced healthcare infrastructure. Additionally, the strong presence of leading market players in the region also provides lucrative growth opportunities for the market by ensuring the availability of advanced and novel technologies. The increased product demand can also be attributed to the rising construction of biobanks in countries such as the United States to support medical research for developing new and personalized therapies.

Furthermore, the rising efforts of various companies and research organizations to expedite cell and gene therapy development

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and manufacturing are also propelling the market's demand. In June 2023, GenScript Biotech Corporation and Comprehensive Cell Solutions, a business unit of New York Blood Center, Inc., announced their partnership to spearhead the development of gene and cell therapies to offer seamless and unique solutions that span apheresis and cell collections through cryopreservation of final therapeutics. The partnership will also focus on aiding drug developers in advancing treatment options for immune disorders and blood cancer. Additionally, the increasing breakthroughs in the region in gene and cell therapies are further augmenting the demand for reliable cryopreservation equipment to support clinical trials, distribution, and manufacturing activities.

Future Market Scenario (2024-2031F)

As per the global cell cryopreservation market analysis, the increasing investments in biobanking, advancements in cryoprotectant formulations, and automated cryopreservation systems are expected to provide lucrative growth opportunities to the market. Private organizations and governments across the globe are significantly investing in establishing biobanks to support drug discovery and disease research. Such initiatives are anticipated to boost the market's growth as biobanking facilities rely on effective cryopreservation technologies for storing biological specimens and ensuring they remain viable for future use. The growing popularity of personalized medicines is also expected to bolster the demand for efficient cell storage solutions, propelling the global cell cryopreservation market demand.

Moreover, the growing focus on cell-based therapies for treating autoimmune diseases, neurological disorders, and cancer, among others, is also expected to bolster the requirement for cell cryopreservation products. According to the estimates of the World Health Organization (WHO), over 35 million new cases of cancer are expected to occur in 2050. Additionally, the market is also expected to benefit from the increasing initiatives that aim to improve the regulatory framework, allowing companies to bring novel products to the market with ease.

Key Players Landscape and Outlook

The rising efforts by the key market players towards novel product launches are providing lucrative growth opportunities for the market. In June 2023, BioLife Solutions Inc, one of the leading suppliers and developers of class-defining bioproduction services and products for gene and cell therapy, announced the launch of their new, large-capacity controlled-rate freezer (CRF). The IntelliRate i67C tabletop freezer fulfills the growing customer requirement for high production of cell therapies. The new CRF has been designed to increase single-batch, LN2 CRF capacity from commercial manufacturing volumes to late- and mid-stage clinical research. Additionally, in October 2024, Cryoport, Inc. announced the launch of their IntegriCell cryopreservation solution provided by Cryoport Systems, along with the opening of their new facility in Texas, United States. The new facility is developed for standardized cryopreservation of leukapheresis material to support the commercialization and development of cell-based therapies. IntegriCell is designed to enhance cell therapy manufacturing efficiency and ensure quality, safety, and product stability to support the development of lifesaving treatment. Such developments and investments are expected to aid the key players in expanding their market share while positively influencing the expansion of the cell cryopreservation market.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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