

Biopreservation Market Report by Product Type (Biopreservation Equipment, Biopreservation Media), Application (Therapeutic Applications, Biobank Applications, Drug Discovery Applications), and Region 2025-2033

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Abstracts

The global biopreservation market size reached USD 8.5 Billion in 2024. Looking forward, IMARC Group expects the market to reach USD 20.0 Billion by 2033, exhibiting a growth rate (CAGR) of 9.98% during 2025-2033. The growing focus on personalized medicine among the masses, the increasing investments in research and development (R&D) activities and the rising awareness and understanding of rare diseases are some of the major factors propelling the market.

Biopreservation refers to the process of preserving biological materials, such as cells, tissues, organs, or whole organisms, in a viable and functional state for extended periods. The goal of the process is to maintain the integrity, viability, and functionality of the biological material, allowing it to be stored, transported, and used for various purposes, including research, clinical applications, and industrial processes. It has numerous applications across various fields, including medicine, biotechnology, and research for enabling the storage of cells, tissues, and organs for transplantation, regenerative medicine, and drug development.

The global market is primarily driven by the growing focus on personalized medicine among the masses. Moreover, the increasing investments in research and development (R&D) activities by governments, academic institutions, and private organizations in the fields of life sciences, biotechnology, and healthcare is providing a boost to the market. Furthermore, the rising awareness and understanding of rare diseases and genetic disorders among individuals led to an increasing need to preserve biological samples

from affected masses. These techniques support the collection and storage of these samples for studying disease mechanisms, developing diagnostics, and facilitating the development of targeted therapies, thereby contributing to the demand on the global level. Additionally, the development of improved cryoprotectants, automated systems, and enhanced storage protocols, are expanding the capabilities and applications of biopreservation as they help in maintaining the efficiency, reliability, and safety of preserved biological materials, further creating a positive market outlook.

Biopreservation Market Trends/Drivers:

Increasing Demand for Biobanking

The increasing demand for biobanking has a significant impact on the global market. Biobanks are repositories that store various biological samples, including cells, tissues, blood, DNA, and other biomaterials, for research and diagnostic purposes. These techniques play a crucial role in maintaining the integrity, viability, and functionality of these samples, ensuring their long-term storage and usability. The growing need for large-scale population-based studies, clinical trials, and research projects that require access to diverse and well-preserved biological samples is influencing the overall biobanks segment across the globe. Additionally, the increasing focus on precision medicine and personalized healthcare has amplified the importance of biobanks as they provide a comprehensive collection of samples that can be used for genomic testing, biomarker discovery, and the development of tailored treatments.

Continual Advancements in Regenerative Medicine

Advancements in regenerative medicine have a significant influence on the global market. Biopreservation plays a crucial role in the success of regenerative medicine by preserving the viability and functionality of cells, tissues, and engineered constructs since regenerative medicine aims to restore or replace damaged tissues or organs using cell-based therapies, tissue engineering, and other innovative approaches. Moreover, these techniques are essential for maintaining the viability and potency of stem cells during storage and transportation. Cryopreservation methods, such as freezing and vitrification, are commonly employed to preserve stem cells for future use in therapies or research. Advancements in stem cell preservation protocols and cryoprotectants have enhanced the viability and post-thaw functionality of stem cells, contributing to the growth of the market.

The Expansion of the Biopharmaceutical Industry

The expansion of the biopharmaceutical industry is a significant factor influencing the market. The biopharmaceutical industry focuses on the development and production of biological drugs, including therapeutic proteins, antibodies, vaccines, and cell-based therapies. Biopreservation plays a vital role in ensuring the stability, quality, and integrity of these complex biological products throughout their lifecycle, from development to distribution. Since biological drugs are highly sensitive to environmental conditions, such as temperature, light, and moisture, there has been a considerable increase in the demand for these techniques as they are essential for maintaining the stability and quality of these drugs during storage and transportation. By employing cryopreservation, lyophilization, or other appropriate preservation methods, biopharmaceutical companies can extend the shelf life of their products and ensure their efficacy and safety when administered to patients.

Biopreservation Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global biopreservation market report, along with forecasts at the global and regional levels from 2025-2033. Our report has categorized the market based on product type and application.

Breakup by Product Type:

Biopreservation Equipment

Biopreservation Media

Biopreservation equipment dominates the market

The report has provided a detailed breakup and analysis of the market based on the product type. This includes equipment and media. According to the report, biopreservation equipment represented the largest segment.

Biopreservation equipment plays a dominant role in the market due to its essential role in preserving and storing biological materials. It refers to the specialized devices, instruments, and infrastructure used in various preservation techniques, such as cryopreservation, vitrification, lyophilization, and chemical fixation. This equipment ensures the optimal conditions for preserving the viability, integrity, and functionality of

biological samples over extended periods. Additionally, biopreservation equipment manufacturers adhere to strict quality standards and regulations to ensure the reliability and safety of their products. The increasing demand for biobanking and research activities on account of advancements in genomics, personalized medicine, and drug development, is fueling the demand for these equipment.

On the other hand, biopreservation media, also known as cryopreservation media or storage media, are specifically designed to provide the optimal environment for preserving cells, tissues, and other biological samples. These media contain various components, including cryoprotectants, osmotic agents, antioxidants, and nutrients, which help protect cells from freezing or storage-related damage and support their viability and functionality upon thawing or reconstitution.

Breakup by Application:

Therapeutic Applications

Biobank Applications

Drug Discovery Applications

Biobank applications hold the largest share in the market

A detailed breakup and analysis of the market based on the application has also been provided in the report. This includes therapeutic applications, biobank applications, and drug discovery applications. According to the report, biobank applications accounted for the largest market share.

Biobanks are specialized facilities that are widely constructed to store and manage large collections of biological samples, including cells, tissues, blood, DNA, and other biomaterials, for research, clinical, or diagnostic purposes. Biobank applications heavily rely on biopreservation techniques in order to ensure the long-term preservation and usability of the stored samples. Biobank facilities often participate in collaborative research initiatives and multi-center studies. These initiatives involve sharing and exchanging samples among different biobanks to facilitate large-scale research projects. Biobanks involved in collaborative research efforts rely on effective techniques to ensure the compatibility, integrity, and viability of the samples during transportation and exchange.

On the contrary, drug discovery applications also play a significant role in positively affecting the market and driving the demand for these technologies and solutions. As drug discovery relies heavily on the use of cell lines and primary cells for screening, testing, and studying the efficacy and safety of potential drug candidates. Also, these technologies and equipment are essential for storing and maintaining the viability of cell-based assays and tissue samples used in high-throughput screening (HTS). The ability to preserve and retrieve these samples accurately and efficiently is crucial for conducting large-scale screening campaigns is accelerating the drug discovery process.

Breakup by Region:

North America

Asia Pacific

Europe

Latin America

Middle East and Africa

North America exhibits a clear dominance, accounting for the largest market share

The report has also provided a comprehensive analysis of all the major regional markets, which include North America, Europe, Asia Pacific, Latin America and the Middle East and Africa.

North America held the biggest market share due to the presence of well-established healthcare infrastructure, including advanced medical research institutions, pharmaceutical companies, and biotechnology firms. These organizations drive significant demand for these technologies to support their research, drug discovery, and clinical applications.

Moreover, North America has a robust network of biobanks, including government-funded initiatives, academic biorepositories, and private biobanks. These biobanks collect and store a wide range of biological samples for research and clinical applications, making them a significant consumer of these technologies. The well-

developed infrastructure and standardization practices in North American biobanks contribute to the region's dominance in the market.

On the other hand, Asia Pacific is another largest region in this domain due to its large population and healthcare needs and the rapidly expanding biopharmaceutical industry. Furthermore, the concept of personalized medicine, tailoring medical treatments to individual patients based on their genetic and biological characteristics, is also gaining traction in the Asia Pacific region.

Competitive Landscape:

Top companies operating in the market recognize the growing demand for biobanking services. Biobanks serve as repositories for various biological samples used in research, diagnostics, and personalized medicine. The need for long-term preservation and storage of these samples drives the demand for biopreservation technologies and solutions. Moreover, numerous leading players are acknowledging the significant advancements in regenerative medicine and cell-based therapies. These therapies rely on the preservation of cells, tissues, and engineered constructs to ensure their viability and functionality. The growth in regenerative medicine and cell therapy drives the development and adoption of advanced these technologies and protocols. Furthermore, several key players operating in the market recognize the expanding biopharmaceutical industry. This is encouraging them to heavily invest in ensuring the quality and integrity of these samples, which is creating a positive market outlook.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

BioLife Solutions, Inc.

Thermo Fisher Scientific Inc.

VWR International, LLC

Panasonic Corporation

BioCision LLC

Key Questions Answered in This Report

- 1.What was the size of the global biopreservation market in 2024?
- 2.What is the expected growth rate of the global biopreservation market during 2025-2033?
- 3.What are the key factors driving the global biopreservation market?
- 4.What has been the impact of COVID-19 on the global biopreservation market?
- 5.What is the breakup of the global biopreservation market based on the product type?
- 6.What is the breakup of the global biopreservation market based on the application?
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