

Gene Therapy Market Assessment, By Type [Gene Augmentation, Gene Silencing, Others], By Vector [Viral Vectors, Non-Viral Vectors], By Gene Delivery Method [In vivo, Ex vivo], By Application [Oncological Diseases, Genetic Diseases, Cardiovascular Diseases, Neuromuscular Diseases, Hematological Diseases, Infectious Diseases, Others], By Route of Administration [Intravenous, Others], By End-user [Hospitals, Cancer and Research Institutes, Clinics, Others], By Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Global gene therapy market is projected to witness a CAGR of 22.13% during the forecast period 2024-2031F, growing from USD 7,640 million in 2023 to USD 37,830 million in 2031F. The market has experienced significant growth in recent years and is expected to maintain a strong pace of expansion in the coming years.

The global gene therapy market is expected to experience robust growth, due to various factors such as increasing prevalence of chronic diseases and genetic disorders, technological advancements, and innovations in gene editing technologies, and growing popularity of personalized medicine along with favorable regulatory frameworks. Additionally, rise in new product launches and increased collaboration activities among the biotechnological companies and other related firms is leading to immense growth of global gene therapy market.

The global gene therapy market is experiencing rapid expansion, majorly due to increased prevalence of chronic diseases and genetic disorders worldwide. As the global elderly population is increasing, the prevalence of chronic diseases is rising, leading to the increased demand for gene therapies to combat these fatal diseases. Technological advancements such as innovation in gene editing technologies, including techniques such as CRISPR-Cas9 and TALEN, that have revolutionized the precision and efficiency of gene therapy has further contributed to the growth of the market at a global level. Increased government initiatives to enhance research and development activities in gene therapy, along with increased interest of leading market players to invest in the industry is fueling the growth of global gene therapy market.

The rising interest in personalized medicine is another major driving factor of gene therapy market, as gene therapy offers tailored treatment strategies based on an individual's genetic profile and follows a patient-centric care approach. Increased collaborative efforts and partnership agreements have accelerated growth in this market as these ventures assist in bringing innovation and advancements in gene therapy technology. Moreover, favorable, and supportive regulatory framework, that allows increased patent approvals, safe and efficient review processes and flexible pathways is leading to tremendous growth of the global gene therapy market.

Increasing Prevalence of Chronic Diseases

The demand for gene therapy is increasing significantly due to the rising prevalence of chronic diseases. Increasing aging population is responsible for onset of several chronic health conditions such as cardiovascular diseases, cancer, and autoimmune diseases. These chronic diseases are fatal and need continuous research and development activities to bring innovative therapeutics such as gene therapies. According to WHO 2023 statistics, chronic diseases are the most common diseases affecting people from all over the world and is responsible for 41 million deaths every year worldwide. Sedentary lifestyle, unhealthy diet, obesity, excessive tobacco, and alcohol consumption are the leading risk factors for the rising prevalence of chronic diseases among the population. The insufficient availability of successful therapies for treating chronic illnesses has increased emphasis on bringing innovation and advancements in gene therapy techniques, which has consequently increased the necessity for conducting advanced research and development activities in gene therapy market. Due to these factors, the global gene therapy market size is increasing.

Technological Advancements

Technological advancements such as artificial intelligence plays a crucial role in global gene therapy market. AI is being used in various phases of research during the development of gene therapies, to analyze extensive genomic details, identify precise gene target areas, predicting the potential treatment outcomes, and analyzing different genetic material delivery methods. Application of AI in exploring genetic data expedites the discovery and advancement of gene therapies. Due to it, the extensive use of AI in development of gene therapies is further escalating growth of global gene therapy market. Several innovative firms are increasing their use of AI in exploring gene therapy techniques. For instance, in March 2023, DeepMind scientists developed a tiny 'syringe' for injecting gene therapy and tumor-killing drugs using Google's AI based technology. The syringe developed using Google's AlphaFold AI system, is capable of directly delivering proteins, including cancer-fighting medications and gene therapies into human cells. These innovative technological advancements are propelling the global gene therapy market growth.

Increase in Demand for Viral Vectors

Among the vector segment, viral vectors hold a significant market share in the overall global gene therapy market. The increasing demand for adeno-associated virus (AAV) vectors in gene therapy is significantly propelling the global gene therapy market. AAV vectors have proved to be highly efficient vectors for delivering genetic materials to the targeted tissues. These vectors are safe and have high specificity, due to which these are majorly used in the treatment of various diseases such as rare genetic disorders and cancer.

Several researchers and biotech companies are investing in developing gene therapies using AAV vectors. For instance, in July 2023, Astellas announced to enter into a substantial agreement with 4D Molecular Therapeutics, which is a well-known firm that focuses on treating rare eye diseases. The partnership agreement will allow Astellas to gain rights to use the intravitreal retinotropic R100 vector, which is an AAV vector that was invented by 4D Molecular Therapeutics for intravitreal genetic material delivery. The growing interest of innovative players in investing in using viral vectors is accelerating the growth of global gene therapy market.

Application of Oncological Disorders Holds Dominating Share in Global Gene Therapy Market

Among the application segment, oncological disorders hold a significant market share in global gene therapy market. Increased worldwide prevalence of cancer leads to

increased investments by the major players to develop efficient gene therapies to treat cancer. With the emergence of cell-based immunotherapy, such as chimeric antigen receptor (CAR) T-cell therapy, gene therapy has become a potent tool in the immunology arsenal, redirecting immune cells against cancer cells with remarkable success. The ability of gene therapy to offer targeted and personalized treatments for oncological diseases is reshaping the landscape of cancer treatment. The increasing application of gene therapy in oncological diseases is significantly driving the demand for gene therapy treatments. Due to it, there has been increased FDA approvals, for instance, in December 2022, Ferring Pharmaceuticals announced that it has received FDA approval for “Adstiladrin”, which is a novel adenovirus vector-based gene therapy, designed to provide treatment of invasive bladder cancer in the adult patients. These growing research and development activities in gene therapies for the treatment of cancer, along with favorable regulatory frameworks is escalating the growth of global gene therapy market.

North America Holds a Significant Market Share

North America holds the maximum share in global gene therapy market. The United States is well-known for its robust healthcare infrastructure and world class healthcare facilities, which leads to increased investments by the major players in conducting quality research and development activities in gene therapies. Due to it, the region is dominating the global gene therapy market. For instance, Iovance Biotherapeutics, Inc. announced that it has received FDA approval for “AMTAGVI”. It is a tumor-derived autologous T-cell immunotherapy, specially designed for the treatment of metastatic melanoma in adult patients. Moreover, the presence of key market players, such as Bristol-Myers Squibb Company and Amgen, Inc. in the region, further accelerate the growth of gene therapy market in North America.

Future Market Scenario (2024 – 2031F)

The future of global gene therapy market appears promising due to several driving key factors. Increased prevalence of chronic diseases worldwide, rapidly ongoing advancements in gene editing technologies, such as CRISPR-Cas9 and other emerging techniques, are enhancing the efficiency of gene therapy. These innovative technological advancements enable scientists to target and modify specific genes with high accuracy and assist in discovering treatment for a wide range of diseases. Favorable and supportive regulatory frameworks worldwide are increasingly recognizing the potential of gene therapy and adopting more flexible and expedited review processes for these innovative treatments. Due to it, there has been increased

investment activities by major players in pharmaceutical and biotech industry, leading to the development of a robust pipeline of gene therapy candidates across a wide spectrum of medical conditions. Increased research and development in developing personalized medicine, along with increased collaboration activities are driving the growth of global gene therapy market in the forecasted period.

Key Players Landscape and Outlook

In global gene therapy market, major pharmaceutical and biotechnology companies are entering into partnerships and collaborations. These collaborations facilitate effective utilization of resources, knowledge, and expertise, leading to expediting the development and commercialization of gene therapies. For pharmaceutical leaders, collaboration with innovative biotechnology firms allows them to enhance and diversify their product portfolios and assist in developing innovative gene therapy solutions.

For instance, in May 2023, Novartis, which is an innovative healthcare solutions company, announced to acquire Avrobio's rare disease gene therapy. Through the acquisition, Novartis aims to enhance and expand its product portfolio of innovative cell and gene therapy segment. The investment signifies Novartis's commitment to expand its presence in these critical therapeutic areas, leveraging its capabilities to bring innovation and development of novel treatments. These collaborative ventures further assist in elevating the global gene therapy 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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