

# **Gene Therapy Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028**

## **Segmented By Vector Type (Viral Vector, Non-Viral Vector), By Delivery Method (In-Vivo, Ex-Vivo), By Indication (Rare Diseases, Cancer, Neurological Diseases, Others), By Region, By Competition**

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### **Abstracts**

The Global Gene Therapy Market, valued at USD 6.01 Billion in 2022, is poised for substantial growth in the forecast period, with a projected Compound Annual Growth Rate (CAGR) of 9.26% and is expected to reach USD 10.13 Billion by 2028. Gene therapy involves the treatment of illnesses by modifying, replacing, or supplementing missing or defective genetic combinations responsible for the disease. It has emerged as a highly desirable research frontier in combating degenerative diseases.

The increasing prevalence of cancer and other chronic diseases worldwide is driving the need for gene therapy. Anticipated advancements in gene therapies, expected to receive approvals in the coming years, are set to contribute significantly to the growth of the gene therapy market during the forecast period. Gene therapies are designed to address diseases by altering genetic information, such as deactivating malfunctioning genes or substituting a disease-causing gene with a healthy one. This approach has demonstrated effectiveness in treating a variety of disorders, including diabetes, cancer, heart disease, and AIDS.

#### **Key Market Drivers**

1. **Advancements in Genetic Research:** Growing insights into the genetic basis of diseases have empowered scientists to pinpoint specific genes responsible for various

disorders. This knowledge is pivotal in developing precise gene therapies that can rectify or replace defective genes, tackling the root causes of diseases.

Advancements in gene editing technologies, such as CRISPR-Cas9, TALENs, and zinc finger nucleases, have revolutionized gene therapy by enabling accurate and efficient gene modifications. This, in turn, has opened new avenues for treating genetic disorders.

2. **Rising Prevalence of Genetic Disorders:** The increasing number of individuals diagnosed with genetic disorders underscores the unmet medical need for effective treatments. Gene therapy offers targeted and long-lasting solutions for these disorders, which are often managed symptomatically rather than at their genetic source. The growing prevalence of genetic disorders expands the potential patient base, driving demand for gene therapy and market opportunities.

3. **Collaborations and Partnerships:** Gene therapy necessitates a multidisciplinary approach, involving molecular biology, genetics, biotechnology, clinical research, and regulatory affairs. Collaborations facilitate the pooling of knowledge, expertise, and best practices across diverse fields, fostering innovation and expediting the development of more advanced gene therapies. Partnerships grant access to specialized technologies and tools, promoting breakthroughs in gene therapy development. They also aid in the development of scalable manufacturing techniques and provide support in navigating complex regulatory landscapes, ultimately contributing to market growth.

### Key Market Challenges

1. **Technical Complexity:** The development of effective gene therapies requires a profound understanding of genetics, molecular biology, and intricate cellular processes. The complexity of designing therapies that accurately target and modify specific genes can lead to prolonged research and development timelines. Challenges in achieving precise and controlled gene delivery, along with potential unintended consequences, pose technical difficulties, affecting therapy success.

2. **High Development Costs:** Gene therapy development involves significant initial research, extensive clinical trial costs, regulatory compliance expenses, and the need to build skilled teams. Cutting-edge technologies and sophisticated laboratory equipment also contribute to high development costs. Attracting and retaining experts in the field can be expensive due to its specialized nature.

### Key Market Trends

1. **Expanding Therapeutic Targets:** The identification of new therapeutic targets broadens the scope of gene therapy applications to include complex diseases like cancer, cardiovascular diseases, neurodegenerative disorders, and rare conditions. This diversification attracts a larger patient base, driving market growth by increasing commercial opportunities. It fosters innovation, accelerates research, and results in a more diverse clinical trial landscape.

2. **Growing CRISPR-Based Therapies:** CRISPR-Cas9 technology's precision in gene editing has accelerated gene therapy research. Its ability to target and modify genes accurately enhances therapy efficacy and safety. CRISPR-based therapies have the potential to address a wide range of genetic disorders, from monogenic to complex conditions, and simplify the regulatory approval process. The accessibility of CRISPR technology has spurred global collaboration, leading to competition, innovation, and market expansion.

### Segmental Insights

**Vector Type Insights:** The Non-Viral Vector segment is expected to witness significant market growth throughout the forecast period. Non-viral vectors offer a safer profile with reduced immune response risks compared to viral vectors. Their lower risk of integrating into the host genome enhances long-term therapeutic applications. Non-viral vectors also simplify manufacturing processes, potentially reducing production costs and enabling scalability. Their safety advantages can lead to smoother regulatory pathways, expediting approvals. The emergence of non-viral vector technologies attracts a diverse range of industry players, promoting competition, innovation, and market expansion.

**Delivery Method Insights:** The In-Vivo segment has dominated the market due to its non-invasive nature, making it more acceptable to patients and reducing risks associated with surgical procedures. In vivo gene therapy can be administered systemically, making it accessible to a broader range of patients and suitable for conditions affecting multiple organs or tissues. Its systemic effect can be beneficial for diseases with widespread genetic abnormalities, offering long-lasting effects. In vivo gene therapy's versatility attracts a diverse range of researchers, developers, and companies to the gene therapy market.

### Regional Insights

North America, specifically the United States, has been the leader in the gene therapy market in 2022. This is attributed to the region's robust research and innovation ecosystem, attracting significant investments from various sources into gene therapy research and clinical trials. North America boasts well-established clinical trial infrastructure, a multitude of biotechnology companies dedicated to gene therapy, and advanced healthcare infrastructure, creating a favorable environment for gene therapy research, clinical application, and adoption.

### Key Market Players

REGENXBIO Inc.

Oxford Biomedica PLC.

Voyager Therapeutics Inc.

Human Stem Cells Institute

Dimension Therapeutics, Inc.

Bristol-Myers Squibb Company

Sanofi-Aventis

Applied genetic technologies corporation.

F. Hoffmann-la roche ltd.

Bluebird bio, inc.

Novartis ag

Uniqure n.v

### Report Scope:

In this report, the Global Gene Therapy Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

## Gene Therapy Market, By Vector Type:

Viral Vector

Non-Viral Vector

## Gene Therapy Market, By Delivery Method:

In-Vivo

Ex-Vivo

## Gene Therapy Market, By Indication:

Rare Diseases

Cancer

Neurological Diseases

Others

## Gene Therapy Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Egypt

## Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Gene Therapy Market.

## Available Customizations:

Global Gene Therapy market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

## Company Information

Detailed analysis and profiling of additional market players (up to five).

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