

Cell & Gene Therapy Manufacturing Market Forecasts to 2034 – Global Analysis By Manufacturing Service (Cell Therapy Manufacturing, Gene Therapy Manufacturing, Viral Vector Manufacturing, Plasmid DNA Manufacturing, Process Development and Optimization and Analytical Development and Testing), Therapy Type, Vector Type, Manufacturing Stage, Manufacturing Workflow, End User and By Geography

<https://marketpublishers.com/r/CD743E504F90EN.html>

Date: October 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: CD743E504F90EN

Abstracts

According to Statistics MRC, the Global Cell & Gene Therapy Manufacturing Market is accounted for \$6.0 billion in 2026 and is expected to reach \$18.5 billion by 2034 growing at a CAGR of 15.1% during the forecast period. Cell and gene therapy manufacturing refers to the specialized processes and facilities designed to produce living cells and genetic materials for therapeutic applications. They function by isolating, modifying, and expanding patient or donor cells under strict regulatory conditions to ensure safety, efficacy, and consistency. These systems encompass viral vector production, cell culture, and purification technologies that enable the scalable creation of advanced therapies. Their application ensures the reliable delivery of curative treatments for genetic disorders, cancers, and rare diseases, supporting the global expansion of regenerative medicine.

Market Dynamics:

Driver:

Rising Prevalence of Genetic Disorders

The escalating global prevalence of genetic and rare diseases compels pharmaceutical companies to adopt cell and gene therapy manufacturing platforms offering curative treatment alternatives. Growing recognition of the long-term benefits of one-time therapies is accelerating the integration of these advanced manufacturing processes into clinical development frameworks. This transition is supported by advancements in viral vector production, which enhance therapeutic yield. Consequently, biotech firms are investing in specialized manufacturing technologies to achieve compliance with efficacy benchmarks while optimizing production costs.

Restraint:

Complex Regulatory and Quality Control Requirements

The substantial regulatory complexities associated with producing living cell therapies represent a significant barrier to widespread commercial adoption. Developing highly consistent and safe manufacturing processes often requires complex quality control techniques and sophisticated monitoring systems, which escalate overall production costs. Furthermore, the variability in patient-derived starting materials limits the operational reliability of standardized manufacturing pipelines. These factors collectively constrain market expansion, particularly for smaller enterprises with limited regulatory expertise.

Opportunity:

Expansion in Allogeneic Off-the-Shelf Therapies

The allogeneic therapy sector presents substantial growth opportunities for cell and gene therapy manufacturing providers due to increasing demand for scalable, donor-derived treatments. Advanced manufacturing platforms offer a highly effective pathway to produce standardized therapeutic batches without relying on patient-specific cells, utilizing robust cell culture techniques as primary inputs. As global investments in regenerative medicine expand, the adoption of advanced allogeneic manufacturing solutions is expected to surge significantly.

Threat:

Competition from Small Molecule Drugs

The continuous reliance on traditional small molecule drug development poses a considerable threat to the cell and gene therapy manufacturing market. Conventional

chemical synthesis and established pharmaceutical production methods often exhibit superior cost-effectiveness under current healthcare budgets and can be more economically viable for treating chronic conditions. Additionally, the rapid advancement of targeted protein degradation technologies is enhancing the efficiency of conventional therapeutic methods. This competitive pressure may hinder market penetration.

Covid-19 Impact:

The pandemic initially disrupted supply chains and delayed clinical trials due to facility closures. However, the subsequent need for rapid vaccine development accelerated the adoption of advanced viral vector manufacturing platforms for therapeutic production. Post-pandemic, the heightened focus on biodefense and regenerative medicine has reinforced long-term investments in cell and gene therapy manufacturing technologies, driving robust market recovery and expansion across diverse pharmaceutical sectors globally.

The cell therapy manufacturing segment is expected to be the largest during the forecast period

The cell therapy manufacturing segment is expected to account for the largest market share during the forecast period, due to its foundational role and widespread applicability across diverse therapeutic environments. Cell therapy manufacturing platforms offer exceptional production scalability and operate effectively in expanding patient-derived cells, which significantly reduces treatment delays and minimizes cellular contamination in daily production processes. As industries increasingly prioritize efficient and cost-effective regenerative medicine methods, the demand for specialized cell therapy manufacturing continues to surge, thereby solidifying its dominant market position.

The gene-edited cell therapy segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the gene-edited cell therapy segment is predicted to witness the highest growth rate, driven by rapid advancements in CRISPR technology and cellular engineering. These technologies enable the precise modification of genetic sequences to produce highly specialized and robust therapeutic outputs tailored for specific disease applications. The ability to enhance editing efficiency, operational scalability, and therapeutic safety through advanced gene-editing integration significantly improves process economics, accelerating commercial adoption globally.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to the presence of well-established biotechnology industries and advanced manufacturing infrastructure that heavily utilize cell and gene therapy manufacturing. The region benefits from substantial research and development investments, robust intellectual property protection, and supportive government initiatives promoting technological innovation in healthcare. Furthermore, the early adoption of advanced manufacturing platforms by key industry players in the United States and Canada reinforces the region's dominant position globally.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to rapid biotechnology modernization and expanding regenerative medicine sectors in emerging economies. Countries such as China, India, and Japan are increasingly investing in manufacturing infrastructure and cell therapy technologies to meet growing domestic healthcare demands and stringent efficiency regulations. Additionally, favorable government policies, rising foreign direct investment, and the availability of cost-effective technological resources are collectively driving the accelerated adoption of cell and gene therapy manufacturing across the region.

Key players in the market

Some of the key players in Cell & Gene Therapy Manufacturing Market include Lonza Group AG, Charles River Laboratories International, Inc., Catalent, Inc., Thermo Fisher Scientific Inc., Danaher Corporation, Samsung Biologics Co., Ltd., Merck KGaA, AGC Inc., Oxford Biomedica plc, Sartorius AG, Repligen Corporation, Recipharm AB, Fujifilm Holdings Corporation, WuXi AppTec Co., Ltd., WuXi Biologics (Cayman) Inc., GenScript Biotech Corporation, Almac Group, and Origenesis Inc.

Key Developments:

In September 2026, Lonza Group AG launched a next-generation viral vector manufacturing platform optimized for high-titer production, achieving a thirty percent improvement in yield while significantly reducing contamination risks for global biotech researchers.

In August 2026, Charles River Laboratories International, Inc. expanded its cell therapy

capacity through a strategic partnership with a leading academic firm, enabling the scalable deployment of novel quality control modules for regenerative medicine.

In July 2026, Catalent, Inc. secured a major supply agreement to provide customized gene therapy manufacturing services for a prominent pharmaceutical company, facilitating the efficient integration of advanced viral vector tools into next-generation therapeutic ecosystems globally.

Manufacturing Services Covered:

Cell Therapy Manufacturing

Gene Therapy Manufacturing

Viral Vector Manufacturing

Plasmid DNA Manufacturing

Process Development and Optimization

Analytical Development and Testing

Therapy Types Covered:

Autologous Cell Therapy

Allogeneic Cell Therapy

Ex Vivo Gene Therapy

In Vivo Gene Therapy

Gene-Edited Cell Therapy

Stem Cell Therapy

Other Cell and Gene Therapies

Vector Types Covered:

Adeno-Associated Viral Vectors

Lentiviral Vectors

Adenoviral Vectors

Retroviral Vectors

Herpes Simplex Viral Vectors

Non-Viral Delivery Systems

Other Vector Types

Manufacturing Stages Covered:

Preclinical Manufacturing

Phase I Manufacturing

Phase II Manufacturing

Phase III Manufacturing

Commercial Manufacturing

Process Validation and Scale-Up

Technology Transfer

Manufacturing Workflows Covered:

Upstream Processing

Downstream Processing

Cell Collection and Sourcing

Cell Expansion and Activation

Gene Transfer and Transduction

Cell Harvesting and Formulation

Cryopreservation and Storage

End Users Covered:

Pharmaceutical Companies

Biotechnology Companies

Contract Development and Manufacturing Organizations

Academic and Research Institutes

Hospitals and Clinical Centers

Government and Public Research Organizations

Other End Users

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY MANUFACTURING SERVICE

- 5.1 Cell Therapy Manufacturing
- 5.2 Gene Therapy Manufacturing
- 5.3 Viral Vector Manufacturing
- 5.4 Plasmid DNA Manufacturing
- 5.5 Process Development and Optimization
- 5.6 Analytical Development and Testing

6 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY THERAPY TYPE

- 6.1 Autologous Cell Therapy
- 6.2 Allogeneic Cell Therapy
- 6.3 Ex Vivo Gene Therapy
- 6.4 In Vivo Gene Therapy
- 6.5 Gene-Edited Cell Therapy
- 6.6 Stem Cell Therapy
- 6.7 Other Cell and Gene Therapies

7 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY VECTOR TYPE

- 7.1 Adeno-Associated Viral Vectors
- 7.2 Lentiviral Vectors
- 7.3 Adenoviral Vectors
- 7.4 Retroviral Vectors
- 7.5 Herpes Simplex Viral Vectors
- 7.6 Non-Viral Delivery Systems
- 7.7 Other Vector Types

8 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY MANUFACTURING STAGE

- 8.1 Preclinical Manufacturing
- 8.2 Phase I Manufacturing
- 8.3 Phase II Manufacturing
- 8.4 Phase III Manufacturing
- 8.5 Commercial Manufacturing
- 8.6 Process Validation and Scale-Up
- 8.7 Technology Transfer

9 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY MANUFACTURING WORKFLOW

- 9.1 Upstream Processing
- 9.2 Downstream Processing
- 9.3 Cell Collection and Sourcing
- 9.4 Cell Expansion and Activation
- 9.5 Gene Transfer and Transduction
- 9.6 Cell Harvesting and Formulation
- 9.7 Cryopreservation and Storage

10 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY END USER

- 10.1 Pharmaceutical Companies
- 10.2 Biotechnology Companies
- 10.3 Contract Development and Manufacturing Organizations
- 10.4 Academic and Research Institutes
- 10.5 Hospitals and Clinical Centers
- 10.6 Government and Public Research Organizations
- 10.7 Other End Users

11 GLOBAL CELL & GENE THERAPY MANUFACTURING MARKET, BY GEOGRAPHY

- 11.1 North America
 - 11.1.1 United States
 - 11.1.2 Canada
 - 11.1.3 Mexico
- 11.2 Europe
 - 11.2.1 United Kingdom
 - 11.2.2 Germany

- 11.2.3 France
- 11.2.4 Italy
- 11.2.5 Spain
- 11.2.6 Netherlands
- 11.2.7 Belgium
- 11.2.8 Sweden
- 11.2.9 Switzerland
- 11.2.10 Poland
- 11.2.11 Rest of Europe
- 11.3 Asia Pacific
 - 11.3.1 China
 - 11.3.2 Japan
 - 11.3.3 India
 - 11.3.4 South Korea
 - 11.3.5 Australia
 - 11.3.6 Indonesia
 - 11.3.7 Thailand
 - 11.3.8 Malaysia
 - 11.3.9 Singapore
 - 11.3.10 Vietnam
 - 11.3.11 Rest of Asia Pacific
- 11.4 South America
 - 11.4.1 Brazil
 - 11.4.2 Argentina
 - 11.4.3 Colombia
 - 11.4.4 Chile
 - 11.4.5 Peru
 - 11.4.6 Rest of South America
- 11.5 Rest of the World (RoW)
 - 11.5.1 Middle East
 - 11.5.1.1 Saudi Arabia
 - 11.5.1.2 United Arab Emirates
 - 11.5.1.3 Qatar
 - 11.5.1.4 Israel
 - 11.5.1.5 Rest of Middle East
 - 11.5.2 Africa
 - 11.5.2.1 South Africa
 - 11.5.2.2 Egypt
 - 11.5.2.3 Morocco

11.5.2.4 Rest of Africa

12 STRATEGIC MARKET INTELLIGENCE

12.1 Industry Value Network and Supply Chain Assessment

12.2 White-Space and Opportunity Mapping

12.3 Product Evolution and Market Life Cycle Analysis

12.4 Channel, Distributor, and Go-to-Market Assessment

13 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

13.1 Mergers and Acquisitions

13.2 Partnerships, Alliances, and Joint Ventures

13.3 New Product Launches and Certifications

13.4 Capacity Expansion and Investments

13.5 Other Strategic Initiatives

14 COMPANY PROFILES

14.1 Lonza Group AG

14.2 Charles River Laboratories International, Inc.

14.3 Catalent, Inc.

14.4 THERMO FISHER SCIENTIFIC INC.

14.5 Danaher Corporation

14.6 Samsung Biologics Co., Ltd.

14.7 Merck KGaA

14.8 AGC Inc.

14.9 Oxford Biomedica plc

14.10 Sartorius AG

14.11 Repligen Corporation

14.12 Recipharm AB

14.13 Fujifilm Holdings Corporation

14.14 WuXi AppTec Co., Ltd.

14.15 WuXi Biologics (Cayman) Inc.

14.16 GenScript Biotech Corporation

14.17 Almac Group

14.18 Orgenesis Inc.

List of Tables

Table 1 Global Cell & Gene Therapy Manufacturing Market Outlook, By Region

(2023-2034) (\$MN)

Table 2 Global Cell & Gene Therapy Manufacturing Market Outlook, By Manufacturing Service (2023-2034) (\$MN)

Table 3 Global Cell & Gene Therapy Manufacturing Market Outlook, By Cell Therapy Manufacturing (2023-2034) (\$MN)

Table 4 Global Cell & Gene Therapy Manufacturing Market Outlook, By Gene Therapy Manufacturing (2023-2034) (\$MN)

Table 5 Global Cell & Gene Therapy Manufacturing Market Outlook, By Viral Vector Manufacturing (2023-2034) (\$MN)

Table 6 Global Cell & Gene Therapy Manufacturing Market Outlook, By Plasmid DNA Manufacturing (2023-2034) (\$MN)

Table 7 Global Cell & Gene Therapy Manufacturing Market Outlook, By Process Development and Optimization (2023-2034) (\$MN)

Table 8 Global Cell & Gene Therapy Manufacturing Market Outlook, By Analytical Development and Testing (2023-2034) (\$MN)

Table 9 Global Cell & Gene Therapy Manufacturing Market Outlook, By Therapy Type (2023-2034) (\$MN)

Table 10 Global Cell & Gene Therapy Manufacturing Market Outlook, By Autologous Cell Therapy (2023-2034) (\$MN)

Table 11 Global Cell & Gene Therapy Manufacturing Market Outlook, By Allogeneic Cell Therapy (2023-2034) (\$MN)

Table 12 Global Cell & Gene Therapy Manufacturing Market Outlook, By Ex Vivo Gene Therapy (2023-2034) (\$MN)

Table 13 Global Cell & Gene Therapy Manufacturing Market Outlook, By In Vivo Gene Therapy (2023-2034) (\$MN)

Table 14 Global Cell & Gene Therapy Manufacturing Market Outlook, By Gene-Edited Cell Therapy (2023-2034) (\$MN)

Table 15 Global Cell & Gene Therapy Manufacturing Market Outlook, By Stem Cell Therapy (2023-2034) (\$MN)

Table 16 Global Cell & Gene Therapy Manufacturing Market Outlook, By Other Cell and Gene Therapies (2023-2034) (\$MN)

Table 17 Global Cell & Gene Therapy Manufacturing Market Outlook, By Vector Type (2023-2034) (\$MN)

Table 18 Global Cell & Gene Therapy Manufacturing Market Outlook, By Adeno-Associated Viral Vectors (2023-2034) (\$MN)

Table 19 Global Cell & Gene Therapy Manufacturing Market Outlook, By Lentiviral Vectors (2023-2034) (\$MN)

Table 20 Global Cell & Gene Therapy Manufacturing Market Outlook, By Adenoviral Vectors (2023-2034) (\$MN)

Table 21 Global Cell & Gene Therapy Manufacturing Market Outlook, By Retroviral Vectors (2023-2034) (\$MN)

Table 22 Global Cell & Gene Therapy Manufacturing Market Outlook, By Herpes Simplex Viral Vectors (2023-2034) (\$MN)

Table 23 Global Cell & Gene Therapy Manufacturing Market Outlook, By Non-Viral Delivery Systems (2023-2034) (\$MN)

Table 24 Global Cell & Gene Therapy Manufacturing Market Outlook, By Other Vector Types (2023-2034) (\$MN)

Table 25 Global Cell & Gene Therapy Manufacturing Market Outlook, By Manufacturing Stage (2023-2034) (\$MN)

Table 26 Global Cell & Gene Therapy Manufacturing Market Outlook, By Preclinical Manufacturing (2023-2034) (\$MN)

Table 27 Global Cell & Gene Therapy Manufacturing Market Outlook, By Phase I Manufacturing (2023-2034) (\$MN)

Table 28 Global Cell & Gene Therapy Manufacturing Market Outlook, By Phase II Manufacturing (2023-2034) (\$MN)

Table 29 Global Cell & Gene Therapy Manufacturing Market Outlook, By Phase III Manufacturing (2023-2034) (\$MN)

Table 30 Global Cell & Gene Therapy Manufacturing Market Outlook, By Commercial Manufacturing (2023-2034) (\$MN)

Table 31 Global Cell & Gene Therapy Manufacturing Market Outlook, By Process Validation and Scale-Up (2023-2034) (\$MN)

Table 32 Global Cell & Gene Therapy Manufacturing Market Outlook, By Technology Transfer (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

I would like to order

Product name: Cell & Gene Therapy Manufacturing Market Forecasts to 2034 – Global Analysis By Manufacturing Service (Cell Therapy Manufacturing, Gene Therapy Manufacturing, Viral Vector Manufacturing, Plasmid DNA Manufacturing, Process Development and Optimization and Analytical Development and Testing), Therapy Type, Vector Type, Manufacturing Stage, Manufacturing Workflow, End User and By Geography

Product link: <https://marketpublishers.com/r/CD743E504F90EN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/CD743E504F90EN.html>