

Cell and Gene Therapy Biomanufacturing Market - Strategic Insights and Forecasts (2026-2031)

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Abstracts

The Cell and Gene Therapy Biomanufacturing market is forecast to grow at a CAGR of 11.7%, reaching USD 8.7 billion in 2031 from USD 5.0 billion in 2026.

The cell and gene therapy biomanufacturing market is strategically positioned for strong expansion, supported by the rapid transition of advanced therapies from clinical development to commercialization. As therapies targeting cancer, rare genetic disorders, and chronic diseases gain regulatory approvals, the need for scalable and compliant manufacturing infrastructure is increasing significantly. The market is benefiting from rising investments by biopharmaceutical companies and contract manufacturing organizations aimed at expanding production capacity. In parallel, the growing shift toward personalized medicine is reinforcing the need for flexible and small-batch manufacturing systems, particularly for autologous therapies. Continuous advancements in process technologies and manufacturing platforms are strengthening operational efficiency and supporting long-term market growth.

Market Drivers

A key driver of the market is the increasing number of cell and gene therapy products advancing through clinical trials and reaching commercialization. This trend is creating strong demand for robust manufacturing solutions capable of handling complex biological processes at scale. The expanding pipeline of therapies, particularly in oncology and rare diseases, is further accelerating manufacturing requirements.

The growing adoption of personalized medicine is also contributing to market expansion. Patient-specific therapies, especially autologous cell therapies, require highly specialized and flexible manufacturing systems. This has increased the need for

modular production facilities and customized workflows.

Technological advancements in upstream and downstream processing are enhancing production efficiency. Innovations in viral vector production, cell expansion, and purification processes are improving yield and consistency while reducing contamination risks. Automation and closed-system technologies are also playing a critical role in streamlining manufacturing operations and improving product quality.

Market Restraints

High production costs remain a major challenge for the market. The complexity of manufacturing biological therapies, combined with the need for specialized facilities and skilled personnel, leads to elevated operational expenses. This can limit scalability and affect profitability for manufacturers.

Regulatory complexity is another significant restraint. Strict compliance requirements for advanced therapies increase the time and cost associated with product approvals. Variability in global regulatory standards further complicates market entry and expansion.

Additionally, the shortage of skilled workforce in bioprocessing and advanced manufacturing techniques presents an operational constraint. The need for highly trained personnel to manage sophisticated manufacturing systems continues to impact production efficiency.

Technology and Segment Insights

The market is segmented by type into consumables, equipment, and software solutions. Consumables hold a significant share due to their recurring usage in production processes, while equipment and software are gaining traction with the adoption of automated and digital manufacturing systems.

By workflow, key segments include upstream processing, downstream processing, vector production, fill and finish operations, and quality testing. Vector production, particularly viral vectors, represents a critical component due to its role in gene delivery systems.

In terms of application, life sciences companies, contract development and manufacturing organizations, and research institutions are primary end users. Contract

manufacturing is witnessing increased demand as smaller biotechnology firms outsource production to specialized providers.

Competitive and Strategic Outlook

The competitive landscape is characterized by strong investment in capacity expansion and technological innovation. Companies are focusing on scaling manufacturing capabilities through new facility development and strategic partnerships. Collaborations between biotechnology firms and contract manufacturers are increasing to address capacity constraints and accelerate time to market.

Market participants are also investing in automation, digitalization, and modular manufacturing systems to improve efficiency and reduce operational risks. Expansion of viral vector manufacturing capacity remains a key strategic priority across the industry.

Conclusion

The cell and gene therapy biomanufacturing market is poised for sustained growth through 2031, driven by increasing commercialization of advanced therapies and continuous technological innovation. While cost and regulatory challenges persist, advancements in manufacturing technologies and rising industry investments are expected to support long-term expansion.

Key Benefits of this Report

Insightful Analysis: Gain detailed market insights across regions, customer segments, policies, socio-economic factors, consumer preferences, and industry verticals.

Competitive Landscape: Understand strategic moves by key players to identify optimal market entry approaches.

Market Drivers and Future Trends: Assess major growth forces and emerging developments shaping the market.

Actionable Recommendations: Support strategic decisions to unlock new revenue streams.

Caters to a Wide Audience: Suitable for startups, research institutions,

consultants, SMEs, and large enterprises.

What Businesses Use Our Reports For

Industry and market insights, opportunity assessment, product demand forecasting, market entry strategy, geographical expansion, capital investment decisions, regulatory analysis, new product development, and competitive intelligence.

Report Coverage

Historical data from 2021 to 2025 and forecast data from 2026 to 2031

Growth opportunities, challenges, supply chain outlook, regulatory framework, and trend analysis

Competitive positioning, strategies, and market share evaluation

Revenue growth and forecast assessment across segments and regions

Company profiling including strategies, products, financials, and key developments

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