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# Gene Cloning Services Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Service Type (Gene Synthesis Service, Molecular Biology Service, Custom Cloning Service, Others), By Gene Type (Stranded Gene, Complex Gene, Others), By Application (Gene Synthesis, Gene Expression, Gene Therapy, Vaccine Research, Others), By End User (Pharmaceutical & Biotechnology Companies, Clinical Laboratories, Others), By Region & Competition, 2021-2031F

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## Abstracts

The Global Gene Cloning Services Market is projected to expand from USD 3.59 Billion in 2025 to USD 8.54 Billion by 2031, registering a CAGR of 15.54%. These services involve specialized laboratory techniques designed to assemble recombinant DNA molecules and replicate them within host organisms to create identical genetic copies, encompassing essential processes such as mutagenesis, plasmid design, and gene synthesis. The market is primarily driven by the booming biotechnology sector, particularly in biologics development, and the increasing demand for personalized medicine, alongside the need to accelerate research workflows to address the rising prevalence of chronic and genetic diseases.

However, the market faces obstacles due to the high operational costs and technical complexities of advanced cloning procedures, which create entry barriers for smaller research entities. Despite these challenges, the necessity for these services remains critical, as reflected in industry activity. According to the American Society of Gene &

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Cell Therapy, over 3,200 gene, cell, and RNA therapy trials were active globally in 2025, highlighting the indispensable role of cloning services in sustaining this extensive pipeline of therapeutic developments.

**Market Driver**

The surging demand for gene and cell therapies acts as a major catalyst for the Global Gene Cloning Services Market. As pharmaceutical pipelines increasingly focus on biologics, the need for precision cloning to produce viral vectors, recombinant plasmids, and modified DNA sequences for treating oncology and rare genetic disorders has intensified. This demand is further supported by regulatory achievements; according to the Alliance for Regenerative Medicine's January 2024 "State of the Industry" report, a record five gene therapies for rare diseases received approval in the United States and European Union in 2023, indicating a maturing market that depends heavily on scalable cloning workflows.

Additionally, rising government funding and private investment in life sciences are accelerating the shift toward outsourced cloning models. This financial support enables academic centers and biotech firms to utilize specialized providers rather than investing in capital-intensive in-house facilities. This trend is underscored by substantial R&D spending; PhRMA's "2024 Membership Survey" from August 2024 notes that member companies invested USD 103.5 billion in research and development in 2023. This robust funding environment directly benefits service providers, as evidenced by Twist Bioscience's "Fiscal 2024 Financial Results" in November 2024, which reported USD 313 million in total revenue, reflecting the growing reliance on synthetic biology and cloning services.

**Market Challenge**

The substantial technical complexity and high operational costs associated with advanced gene cloning procedures present a significant barrier to the growth of the Global Gene Cloning Services Market. These intricate techniques require expensive instrumentation, specialized reagents, and highly skilled personnel, establishing steep financial hurdles for emerging biotechnology firms and smaller research institutions. Consequently, these entities often struggle to allocate sufficient budgets for outsourcing critical services, which limits the potential customer base and slows the broader adoption of precision cloning technologies.

This financial strain is further highlighted by recent declines in investment capital

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available to the sector's core clientele. According to the Biotechnology Innovation Organization, biotech startup funding dropped sharply in 2025, falling from 2.6 billion dollars in the first quarter to 900 million dollars in the second quarter. This significant reduction in capital forces early-stage companies to scale back their research and development activities, thereby diminishing the demand for external gene cloning services and impeding the market's potential for rapid expansion.

**Market Trends**

The integration of Artificial Intelligence for Sequence Optimization is transforming the gene cloning landscape by improving the predictive design of complex genetic constructs. Advanced algorithms are increasingly utilized to analyze large datasets, allowing providers to optimize codon usage, predict secondary structures, and identify instability regions prior to synthesis, thus reducing failure rates and accelerating the design-to-product timeline. The impact of this technology is significant; according to the Pistoia Alliance's "2025 Lab of the Future Survey" released in September 2025, 77% of life sciences laboratories plan to adopt AI technologies within the next two years, signaling a major shift toward computational precision in genetic engineering.

Simultaneously, the deployment of Automated High-Throughput Cloning Platforms is revolutionizing scalability by enabling the rapid processing of massive libraries. By replacing manual pipetting with robotic liquid handling systems, service providers can execute thousands of cloning reactions concurrently, drastically reducing turnaround times for mutant library construction and large-scale plasmid preparation. This operational efficiency is driving commercial growth, as illustrated by GenScript Biotech Corporation's "FY 2024 Results" in March 2025, which reported continuing operations revenue of USD 594.5 million, underscoring the financial success supporting their industrial-scale cloning expansion.

**Key Market Players**

Thermo Fisher Scientific, Inc

Eurofins Scientific SE

GenScript Biotech Corp

Merck KGaA

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Takara Bio Inc

Charles River Laboratories International, Inc

Sartorius AG

Cellecta, Inc

Creative Biogene, Inc

Biocompare, Inc

**Report Scope**

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

Gene Cloning Services Market, By Service Type

Gene Synthesis Service

Molecular Biology Service

Custom Cloning Service

Others

Gene Cloning Services Market, By Gene Type

Stranded Gene

Complex Gene

Others

Gene Cloning Services Market, By Application

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  - India
  - Japan
  - Australia
  - South Korea
- South America
  - Brazil
  - Argentina
  - Colombia
- Middle East & Africa
  - South Africa
  - Saudi Arabia
  - UAE

**Competitive Landscape**

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

**Available Customizations:**

Global Gene Cloning Services Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following

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customization options are available for the report:

**Company Information**

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

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