

# **Gene Silencing Market Size, Share & Trends Analysis Report By Application (Drug Discovery & Development, Therapeutics Manufacturing), By Product & Service, By End Use, By Region, And Segment Forecasts, 2025 - 2030**

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## **Abstracts**

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### **Gene Silencing Market Growth & Trends**

The global gene silencing market size is expected to reach USD 21.29 billion by 2030 and is expected to grow at 13.8% CAGR from 2025 to 2030, according to a new report by Grand View Research, Inc. The market is experiencing significant growth due to increasing recognition of genetic disorders and urgent need for effective therapies. Over the past few years, advancements in gene silencing technologies, including RNA interference (RNAi), antisense oligonucleotides (ASOs), and CRISPR-based approaches, have led to breakthroughs in treating previously untreatable genetic diseases. As research intensifies, pharmaceutical and biotechnology companies are allocating more resources to developing gene silencing therapies to address the unmet medical needs of patients suffering from genetic conditions such as Huntington's disease, muscular dystrophy, and rare cancers. This growing demand for innovative, targeted therapies is a key driver for the market.

The COVID-19 pandemic, while disruptive in many areas, also highlighted the importance of gene-based therapies and accelerated the development of gene silencing technologies. During the pandemic, increased funding and collaboration between research institutions and pharmaceutical companies led to the rapid development of vaccine technologies, highlighting the potential of gene silencing strategies for tackling a

wide range of diseases. In addition, the pandemic led to greater focus on genetic research and innovation in drug discovery, driving the need for gene silencing solutions in areas such as viral infections, cancer treatment, and autoimmune disorders. As a result, gene silencing technologies have garnered more attention, positioning them as a critical component in the future of precision medicine.

Furthermore, the growing availability of gene silencing-related services has fueled market expansion. Contract research organizations (CROs) and contract manufacturing organizations (CMOs) have become integral partners for biotech and pharmaceutical companies developing gene silencing therapies. These service providers offer expertise in clinical trials, regulatory compliance, and scalable manufacturing, enabling faster and more cost-effective development of gene silencing-based drugs. The pandemic underscored the need for robust and scalable production systems, driving further demand for services that support gene therapy development. This trend is expected to continue as the pipeline for gene silencing products expands and as companies work to meet the increasing demand for these advanced therapeutic options.

## Gene Silencing Market Report Highlights

By product & service, services is expected to witness the fastest growth with a CAGR of 14.2% during the forecast period. The complexity of gene silencing techniques has created a need for expert support in clinical trial management, regulatory guidance, and bioinformatics analysis. This rising demand for customized solutions and end-to-end services is fueling market expansion.

By application, the drug discovery & development segment dominated the market and captured the largest revenue share in 2024. Advances in high-throughput screening, bioinformatics tools, and genomic databases have enhanced target identification and validation processes and are expected to fuel global market growth.

By end use, the pharmaceutical & biotechnology companies segment dominated the market and accounted for the largest revenue share in 2024. The market is driven by the increasing focus on precision medicine and the potential of gene-based therapies to treat a wide range of genetic disorders, cancers, and rare diseases.

North America held the largest share of 48.23% in 2024. The presence

of a population with high susceptibility to rare diseases, increased market penetration rates, and technologically advanced healthcare infrastructure support the region's growth

A few of the key market players include Revvity, Inc., Danaher, Agilent Technologies, GenScript, Merck KGaA, ThermoFisher Scientific, Inc., Illumina, Bio-Rad Laboratories, Bio-Techne, New England Biolabs, Inc.

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