+357 96 030922
info@marketpublishers.com

Custom Gene Synthesis Service Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Below 1000 bp, 1001 to 3000 bp, 3001 to 5000 bp, above 5000 bp), By Application (Commercial, Academic Research), By Region and Competition, 2020-2030F

https://marketpublishers.com/r/CF8B9868EE13EN.html
Date: February 2025
Pages: 185
Price: US$ 4,500.00 (Single User License)
ID: CF8B9868EE13EN

Abstracts

The global Custom Gene Synthesis Service Market was valued at USD 1.54 billion in 2024 and is projected to reach USD 2.52 billion by 2030, growing at a CAGR of 8.54% during the forecast period. This market has emerged as a dynamic and rapidly evolving sector within the life sciences and biotechnology industries. Custom gene synthesis services involve the artificial creation of DNA sequences, enabling researchers and biotech companies to design and obtain custom genetic material for various applications.

The market has experienced significant growth in recent years, driven by the increasing demand for synthetic DNA constructs across fields such as gene therapy, synthetic biology, vaccine development, and genetic engineering. The rise of personalized medicine and targeted therapies is one of the key drivers. Custom-designed DNA sequences are essential for developing gene therapies aimed at treating genetic disorders and diseases at the molecular level. Additionally, the expansion of synthetic biology has created new opportunities for designing and engineering biological systems, further increasing the demand for synthetic DNA.

Technological advancements, particularly in gene synthesis methods like solid-phase synthesis, have improved the accuracy and efficiency of DNA synthesis, fueling market growth. The reduction in gene synthesis costs, coupled with a growing number of

+357 96 030922
info@marketpublishers.com

service providers, has made custom gene synthesis more accessible to researchers and organizations of all sizes.

Key Market Drivers

Increasing Demand for Personalized Medicine: Personalized medicine is a significant driver for the growth of the custom gene synthesis service market. This healthcare approach aims to tailor treatments based on an individual's genetic makeup and relies heavily on the precise design and creation of custom DNA sequences. For example, in February 2022, Integrated DNA Technologies, Inc. launched Alt-R HDR Donor Blocks, which facilitate gene editing using Homology-directed Repair (HDR) – a critical tool for developing new treatments.

Custom gene synthesis services are central to the development of personalized treatments by providing the necessary genetic material for advanced therapies. In gene therapy, custom DNA sequences are used to correct or replace faulty genes that cause genetic disorders, ensuring treatments are specific and effective while minimizing side effects. The rise of CRISPR-Cas9 technology, which depends on precisely engineered DNA sequences to target and modify genes, further boosts the demand for custom gene synthesis.

Custom gene synthesis services are also essential in developing treatments for cancer, autoimmune diseases, and rare conditions, as these therapies require the creation of DNA constructs to target the unique genetic markers of individual patients. As personalized medicine continues to gain traction, the demand for custom gene synthesis services is expected to increase significantly.

Key Market Challenges

Cost Constraints: Despite the impressive growth of the custom gene synthesis service market, cost remains a significant challenge to its widespread adoption. One of the primary cost-related challenges is the high expense associated with synthesizing long and complex DNA sequences. Although technological advancements have improved efficiency, DNA production is still relatively costly, posing a barrier for researchers, especially those working with limited budgets in academic institutions or startups. This can limit access to custom gene synthesis services, hindering the broader adoption of this technology.

Another challenge is the variability in pricing among service providers. The absence of

+357 96 030922
info@marketpublishers.com

standardized pricing models makes it difficult for customers to compare options and select the most cost-effective solutions. This lack of consistency can create confusion and uncertainty among potential users, slowing market growth. Furthermore, the cost of custom gene synthesis services impacts research budgets, limiting researchers' ability to fully utilize these services, potentially delaying research and slowing scientific progress.

Key Market Trends

Emerging Applications in Drug Discovery: Emerging applications in drug discovery are playing a critical role in driving the demand for custom gene synthesis services. The pharmaceutical industry, a significant consumer of these services, is increasingly relying on synthesized DNA constructs for gene function studies, drug target validation, and therapeutic protein production. As drug discovery becomes more complex, the need for precision and customization has risen sharply.

The CRISPR-Cas9 genome editing technology is one of the key innovations fueling the demand for custom gene synthesis. This technology enables precise gene editing, which is essential for identifying and validating potential drug targets. Custom-designed DNA constructs are vital for guiding CRISPR-Cas9 to the specific genomic locations, enabling accurate gene editing.

Additionally, the growing focus on personalized medicine within drug development is driving the demand for custom gene synthesis. Custom DNA sequences are used to create patient-specific models for drug response testing, ensuring that treatments are tailored to individual genetic profiles, which improves drug efficacy and reduces adverse effects.

In June 2023, Eurofins Genomics Blue Heron introduced its In-Vitro Transcription (IVT) Messenger RNA (mRNA) Synthesis Service. This service offers a high-quality, customizable solution for researchers involved in various fields, including molecular biology, drug discovery, vaccine development, and gene therapy.

Key Market Players

GenScript Biotech Corporation

Biomatik Corporation

+357 96 030922
info@marketpublishers.com

Thermo Fisher Scientific Inc.

Integrated DNA Technologies, Inc.

Synbio Technologies LLC

Biomol GmbH

Eurofins Genomics Germany GmbH

BioCat GmbH

Azenta US Inc.

ProMab Biotechnologies, Inc.

Report Scope:

This report segments the Global Custom Gene Synthesis Service Market as follows, along with detailed insights on industry trends:

By Type:

Below 1000 bp

1001 to 3000 bp

3001 to 5000 bp

Above 5000 bp

By Application:

Commercial

Academic Research

By Region:

+357 96 030922
info@marketpublishers.com

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

Competitive Landscape: This section provides a detailed analysis of major companies operating in the Global Custom Gene Synthesis Service Market.

Available Customizations: TechSci Research offers customizations to this report to meet the specific needs of a company. Customization options include:

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

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

8. ASIA-PACIFIC CUSTOM GENE SYNTHESIS SERVICE MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

9. SOUTH AMERICA CUSTOM GENE SYNTHESIS SERVICE MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

10. MIDDLE EAST AND AFRICA CUSTOM GENE SYNTHESIS SERVICE MARKET OUTLOOK

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Custom Gene Synthesis Service Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Below 1000 bp, 1001 to 3000 bp, 3001 to 5000 bp, above 5000 bp), By Application (Commercial, Academic Research), By Region and Competition, 2020-2030F

Product link: https://marketpublishers.com/r/CF8B9868EE13EN.html

Price: US$ 4,500.00 (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/CF8B9868EE13EN.html