

Oligonucleotide synthesis market is projected to grow at a 11.5% CAGR, reaching US\$17 billion by 2032

Oligonucleotide Synthesis market covering 30 + countries including analysis of US, Canada, UK, Germany, France, Nordics, GCC countries, Japan, Korea and many



ROCKVILLE , MARYLAND, USA, October

11, 2023 /EINPresswire.com/ -- The global [oligonucleotide synthesis market](#) is likely to be valued at US\$ 5.7 Billion in FY 2022, up from US\$ 5.2 Billion in 2021. During the past year, the industry registered a Y-o-Y increase worth 9.6%. From 2022 to 2032, oligonucleotide synthesis demand is poised to flourish at a CAGR of 11.5% to reach a value of US\$ 17 Billion by the end of 2032

Oligonucleotide synthesis, a cornerstone of modern biotechnology and molecular biology, has witnessed substantial growth and innovation in recent years. Oligonucleotides are short sequences of nucleic acids, primarily DNA or RNA, and play pivotal roles in various applications such as genomics, therapeutics, and diagnostics. This article explores the dynamics of the oligonucleotide synthesis market, its growth drivers, and the evolving landscape of this transformative industry.

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The Oligonucleotide Synthesis Process

Oligonucleotide synthesis involves chemically constructing DNA or RNA sequences in the laboratory. These custom-made oligonucleotides have a wide range of applications, including gene synthesis, gene editing, molecular diagnostics, and drug development.

The market's growth is propelled by factors like the increased demand for synthetic oligonucleotides, advancements in synthesis techniques, and the expanding field of genomics. Custom oligos offer precise control over sequence design and facilitate research in diverse biological areas.

Market Dynamics

1. **Expanding Genomics Research:** Genomics, the study of an organism's complete set of genes, has grown exponentially with the development of next-generation sequencing technologies. Oligonucleotide synthesis plays a crucial role in these techniques, fostering increased demand for custom oligos.
2. **Therapeutics and Diagnostics:** Oligonucleotides are key components in the development of gene therapy, antisense oligonucleotides, and RNA-based therapeutics. They also play a vital role in diagnostic assays, like PCR and DNA sequencing.
3. **Rising Investments in Biotechnology:** The biotechnology sector has attracted substantial investments, resulting in the emergence of many startups and biotech companies. These firms often rely on custom oligonucleotides for their research and product development.
4. **Technological Advancements:** Innovations in synthesis technologies, such as phosphoramidite chemistry, have increased the speed and accuracy of oligonucleotide production. These advancements have reduced the cost of synthesis, further driving market growth.
5. **Growing Demand for CRISPR Technology:** The CRISPR-Cas9 gene editing system depends on synthetic oligonucleotides to introduce specific genetic modifications. As CRISPR applications continue to expand, so does the demand for oligos.

Market Segmentation

The oligonucleotide synthesis market can be segmented into several categories:

1. **Product Type:** This includes DNA oligonucleotides, RNA oligonucleotides, and others.
2. **Application:** Genomic research, therapeutics, diagnostics, and more.
3. **End User:** Academic research, pharmaceutical and biotech companies, contract research organizations (CROs), and others.
4. **Region:** North America, Europe, Asia-Pacific, and the rest of the world.

Challenges and Opportunities

Despite its rapid growth, the oligonucleotide synthesis market faces challenges, such as the need for high capital investments in research and development, regulatory hurdles, and issues related to intellectual property. However, these challenges also present opportunities for innovation and growth.

1. **Regulatory Compliance:** The market is highly regulated, which can be a barrier to entry for new players. However, companies that successfully navigate regulatory requirements gain a competitive edge.
2. **Customization and Personalized Medicine:** Oligonucleotides are at the forefront of personalized medicine, allowing the development of individualized treatments. As this field expands, so do the market opportunities.
3. **Emerging Markets:** Asia-Pacific, particularly China and India, is witnessing substantial growth in biotechnology and research. This region offers a vast untapped market for oligonucleotide synthesis.
4. **Automation and High-Throughput Synthesis:** Automation and robotics are becoming essential for high-throughput oligonucleotide synthesis, enabling companies to meet the rising demand more efficiently.

Key Players

Prominent companies in the oligonucleotide synthesis market include Thermo Fisher Scientific, Merck KGaA, Eurofins Scientific, and Integrated DNA Technologies (IDT). These companies invest heavily in research and development to maintain their competitive edge.

Competitive Landscape

Prominent Oligonucleotide Synthesis providers are reliant on partnerships, collaborations, acquisitions, and new software launches to stay afloat in the global market. Constant innovations to ensure a seamless client-customer relationship are the main focus of prominent market players.

- In January 2021, Thermo Fisher Scientific Inc., the world leader in serving science, and Groupe Novasep SAS (Novasep), a leading supplier of services and technologies for the life sciences industry announced that Thermo Fisher has completed the acquisition of Henogen S.A., Novasep's viral vector manufacturing business in Belgium for approximately 725 Million Euros in cash.
- In June 2019, CordenPharma International and GE Healthcare's Dharmacon Business have entered a strategic collaboration to create an end-to-end solution for oligonucleotide-based drug discovery. The collaboration addressed the speed and capacity challenges researchers face when transitioning from research and preclinical stages to drug development and clinical trials.

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