

Nucleic Acid Therapeutics Market: Advancements, Opportunities, and Future Prospects 2031

PORTLAND, OREGON, UNITED STATES, May 31, 2023 /EINPresswire.com/ -- According to the report published by Allied Market Research, the [global nucleic acid therapeutics market](#) was estimated at \$4.1 billion in 2021 and is expected to hit \$12.2 billion by 2031, registering a CAGR of 11.6% from 2022 to 2031. The study analyzes the important strategies, drivers, competition, market dynamics, size, and important investment regions.



Nucleic Acid Therapeutics Market 2023

Key Takeaways:

Growing Market: The nucleic acid therapeutics market has been experiencing significant growth in recent years. This can be attributed to advancements in biotechnology, increased understanding of the role of nucleic acids in disease mechanisms, and the potential of nucleic acid-based therapies in treating various diseases.

RNA-Based Therapeutics Leading the Way: RNA-based therapeutics, including mRNA and small interfering RNA (siRNA), have emerged as the dominant segment within the nucleic acid therapeutics market. The success of mRNA vaccines, such as the ones developed for COVID-19, has further boosted the interest and investment in RNA-based therapeutics.

Therapeutic Applications: Nucleic acid therapeutics hold promise for the treatment of a wide range of diseases, including genetic disorders, cancer, infectious diseases, cardiovascular diseases, and rare diseases. The ability to target specific genes or gene expression pathways makes nucleic acid therapeutics a potentially powerful tool in precision medicine.

Gene Silencing and Gene Editing: Nucleic acid therapeutics can be used for gene silencing and gene editing. Gene silencing involves suppressing the expression of specific genes associated with disease, while gene editing aims to modify the DNA sequence itself. Both approaches offer

potential therapeutic avenues for addressing genetic diseases.

Clinical Advancements: Several nucleic acid therapeutics have advanced into clinical trials and received regulatory approvals. For example, the first RNA interference (RNAi)-based therapeutic, Onpattro (patisiran), was approved by the U.S. Food and Drug Administration (FDA) in 2018 for the treatment of hereditary transthyretin-mediated amyloidosis.

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Market Drivers:

Advancements in Biotechnology: Advances in biotechnology have significantly contributed to the development of nucleic acid therapeutics. Techniques such as gene sequencing, gene editing (e.g., CRISPR-Cas9), and high-throughput screening have improved our understanding of disease mechanisms and the role of nucleic acids, enabling the development of targeted therapies.

Growing Prevalence of Genetic and Rare Diseases: The increasing prevalence of genetic and rare diseases has created a strong demand for innovative therapeutic approaches. Nucleic acid therapeutics offer the potential to target specific genes or gene expression pathways, making them attractive for treating these conditions.

Market Segmentation:

Type of Nucleic Acid Therapeutics:

- a. **RNA-based Therapeutics:** This segment includes mRNA-based therapeutics, small interfering RNA (siRNA), antisense oligonucleotides (ASOs), and microRNA-based therapeutics.
- b. **DNA-based Therapeutics:** This segment includes gene therapy approaches utilizing plasmid DNA or viral vectors for gene delivery and expression.

Therapeutic Application:

- a. **Genetic Disorders:** Nucleic acid therapeutics targeting genetic disorders caused by specific gene mutations or variations.
- b. **Cancer:** Nucleic acid therapeutics used in cancer treatment, such as gene silencing, immune stimulation, or targeted gene therapy approaches.
- c. **Infectious Diseases:** Nucleic acid-based therapies targeting viral or bacterial infections.
- d. **Cardiovascular Diseases:** Nucleic acid therapeutics for the treatment of cardiovascular conditions, including gene-based therapies for heart failure, atherosclerosis, etc.
- e. **Rare Diseases:** Nucleic acid therapeutics developed specifically for rare diseases with a genetic basis.

Delivery Method:

- a. **Lipid Nanoparticles:** Nucleic acid therapeutics delivered using lipid-based nanoparticles for efficient cellular uptake and gene expression.

- b. Viral Vectors: Nucleic acid therapeutics delivered using viral vectors, such as adeno-associated viruses (AAVs) or lentiviruses, for gene delivery.
- c. Non-viral Vectors: Nucleic acid therapeutics delivered using non-viral vectors, such as polymer-based nanoparticles or electroporation techniques.

Geography:

- a. North America
- b. Europe
- c. Asia Pacific
- d. Latin America
- e. Middle East and Africa

Stage of Development:

- a. Preclinical: Therapeutics that are still in the early stages of development, including in vitro and animal studies.
- b. Clinical: Therapeutics that have advanced to clinical trials, typically categorized into different phases (Phase I, Phase II, Phase III).
- c. Approved: Therapeutics that have received regulatory approval for commercialization.

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Regional Growth Dynamics:

Based on region, the market across North America generated more than two-fifths of the global market revenue in 2021, and is anticipated to retain the lion's share by 2031. The Asia-Pacific region, on the other hand, would also manifest the fastest CAGR of 13.8% during the forecast period. The other regions studied in the report include LAMEA and Europe.

Competitive Landscape:

DS Smith Plc, Evergreen Packaging LLC, International Paper, MetsÅ Board, Mondi Plc, Nippon Paper Industries Co. Ltd., Nampak Products Ltd., Amcor Plc, Nine Dragons Paper (Holdings), Oji Fibre Solutions (NZ) Ltd., Sappi, Stora Enso, Smurfit Kappa Group Plc., Svenska Cellulosa Aktiebolaget (SCA), Westrock, and Keystone Folding Box.

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David Correa
Allied Analytics LLP
+ 1-800-792-5285
[email us here](#)

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