United States RNA Therapeutics Market Assessment, By Type [RNA Interference Therapeutics, mRNA Therapeutics, Antisense Oligonucleotide Therapeutics, Others], By Product [Vaccines, Drugs], By Indication [Rare Genetic Diseases/Hereditary Diseases, Infectious Diseases, Others], By End-user [Hospitals, Academic Research Centers, Contract Research Organizations, Others], By Region, Opportunities and Forecast, 2017-2031F

Market Report | 2024-11-27 | 117 pages | Market Xcel - Markets and Data

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Report description:

United States RNA therapeutics market is projected to witness a CAGR of 13.29% during the forecast period 2024-2031, growing from USD 8,647.64 million in 2023 to USD 23,471.87 million in 2031. The market's growth is supported by increasing research activities, growing demand for targeted therapies for various chronic and infectious diseases, and rising approvals from the United States Food and Drug Administration (US FDA).

The growing emphasis and demand for precision medicine is another major factor propelling the demand for RNA therapeutics in the United States market. RNA therapeutics provide personalized approaches for treating diseases by directly targeting disease-causing genes. RNA therapies intervene at the molecular level, due to which they have garnered popularity as potential treatment solutions for chronic conditions such as cancer. In May 2024, WestGene Biopharma Co., Ltd. received approval from the US FDA for their mRNA vaccine, WGc-043. After commercialization, the mRNA cancer vaccine is expected to provide a new range of treatment solutions for hematologic malignancies and advanced Epstein-Barr virus-positive solid tumors. The mRNA vaccine has efficient scalability, broad applicability, low toxicity, and is cost-effective in nature.

Additionally, increasing investments in research and development activities by different biopharmaceutical and biotechnology companies to investigate the potential of RNA therapeutics in a wide range of diseases is further propelling the United States RNA

therapeutics market size. Several RNA therapies are undergoing clinical trials in the United States and are expected to gain approvals in the coming years. Furthermore, advancements in drug delivery systems are aiding in increasing the safety and effectiveness of RNA therapies. Moreover, the highly scalable nature of RNA therapeutics makes them a viable alternative to traditional alternatives for combatting the emerging threat of novel infectious diseases.

Increasing Research Activities Support Market Expansion

RNA formulations have been considered suitable for various diseases due to their diverse targeting abilities. Therefore, various medical centers and research organizations are actively investing in research activities in RNA therapeutics. In February 2024, Pfizer Inc. partnered with the University of Texas Southwestern Medical Center to develop improved RNA delivery technologies. The partnership is expected to leverage engineering contributions and transformative chemistry for Southwestern and Pfizer and aid in the development of novel delivery technologies for creating therapies and expanding the utilization of artificial intelligence design methodologies. These collaborations are essential for Pfizer to build a successful portfolio of RNA-based medicines through new strategies and technologies. Such efforts are expected to improve the delivery of RNA-based therapies, expand the understanding of RNA-based biology, and potentially propel the development of genetic medicines.

Rising Approvals from FDA Boosts Market Expansion

The rising number of approvals received from the US FDA is one of the major factors supporting the United States RNA therapeutics market growth. In July 2024, Rgenta Therapeutics, Inc. announced that it has received clearance for its investigational new drug (IND) application by the US FDA for RGT-61159, which is being developed for potentially treating colorectal cancer, acute myeloid leukemia, adenoid cystic carcinoma, and other solid tumors. Such clearances are expected to propel the development of small molecule RNA-targeting medicines to provide treatment solutions for previously deemed incurable diseases. The RGT-61159 is designed to modulate the splicing of the transcription factor MYB, which results in the inhibition of oncogenic MYB protein production. It can potentially induce cell death or inhibit the proliferation of cancer cells that are responsible for overexpressing MYB protein. Additionally, the growing clarity on specific guidelines and regulations to provide clear pathways for post-market surveillance, manufacturing, and clinical trials of RNA therapeutics is bolstering investments towards research and development activities, which positively influence the United States RNA therapeutics market expansion.

Infectious Diseases Hold Major Market Share

RNAs, including ribosomal RNA (rRNA), messenger RNA (mRNA), and transfer RNA (tRNA), play a crucial role in viruses and living organisms. Over the past few years, RNA-based technologies such as reprogramming genetic information, targeting proteins, and encoding therapeutical proteins have been useful in therapeutic and prophylactic vaccines. mRNA vaccines hold potential for treating and preventing the spread of animal and human infectious diseases. Small interfering siRNA-based therapies have emerged as a novel platform for treating a wide range of disorders and infectious diseases. The growing concerns about emerging pathogens have propelled the requirement for effective vaccines and therapeutic solutions, providing lucrative growth opportunities to the market.

As per the estimates of the Center for Disease Control and Prevention, approximately 3.8 million visits to the emergency department result in a primary diagnosis of parasitic and infectious diseases in the United States in a year.

mRNA Therapeutics Account for Major Market Share

The growth of the segment can be attributed to the versatile nature of mRNA therapeutics and the different advantages associated with lipid-nanoparticle-based mRNA delivery systems, such as low-cost manufacturing processes, transfection efficiency, and high stability. These advantages have allowed the rapid development of mRNA drugs and vaccines.

Moreover, increasing research and development activities are also supporting the segment's expansion. RNA therapeutics serve as a promising candidate for diseases that cannot be targeted by antibodies or small molecules and provide effective solutions for diseases that were previously without any drugs.

Future Market Scenario (2024-2031F)

As per the United States RNA therapeutics market analysis, the rising demand for precision medicine is expected to boost investments by pharmaceutical and biotech companies in the development of RNA-based treatments. Furthermore, as RNA technology continues to get better, new therapeutic applications are expected to emerge for rare diseases and chronic conditions such as diabetes, cardiovascular diseases, and autoimmune disorders. As per the estimates of the Center for Disease Control and Prevention, by 2060, approximately 526,000 young individuals are expected to be diagnosed with diabetes in the United States.

The market is expected to witness more regulatory support by the US FDA in the coming years. In the future, especially for breakthrough therapies that aid in meeting the unmet requirements of the patients, the regulatory pathways are expected to be further streamlined.

Strategic collaborations and partnerships between pharmaceutical companies, research institutions, and CDMOs are expected to play a crucial role in the future of RNA therapeutics, enabling faster clinical development and large-scale production. Additionally, various pharmaceutical and biotech companies and research organizations are expected to continue to enter alliances to accelerate their RNA pipelines and meet the growing requirement for RNA-based therapies.

Key Players Landscape and Outlook

The rising investments towards collaborations by key market players to propel the discovery of RNA-based drug candidates are providing lucrative growth opportunities to the market. In September 2023, Pfizer Inc. and Ginkgo Bioworks, Inc. announced their partnership to advance the development and discovery of novel RNA molecules. The latter received an upfront payment and was eligible to receive an aggregate total of USD 331 million. By leveraging Ginkgo's technology that allows the identification of synthetic and natural elements that are optimal for specific applications by combining a multi-parameter design framework with high-throughput screening of the RNA constructs, the partnership aims to achieve enhanced translation, circularization, efficient production, and improved stability of every RNA construct.

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