

Global RNA Based Therapies Market - 2025 -2033

<https://marketpublishers.com/r/G5054BB285FEEN.html>

Date: October 2025

Pages: 180

Price: US\$ 4,350.00 (Single User License)

ID: G5054BB285FEEN

Abstracts

Global RNA-based Therapies Market: Industry Outlook

The global RNA-based therapies market was valued at US\$90.56 billion in 2024, and is expected to reach US\$ 213.54 billion by 2033, growing at a CAGR of 10.0% during the forecast period 2025-2033.

The global RNA-based therapeutics market is growing due to advancements in delivery technologies, personalized medicine, and the rise of rare genetic disorders, cancers, and infectious diseases. Collaborations between pharmaceutical and biotechnology companies and investment in RNA research are driving growth. Commercial success of mRNA vaccines has boosted confidence in RNA modalities, leading to faster clinical development and broader therapeutic applications. However, challenges include high development costs, scalability issues, regulatory complexities, safety concerns, and competition from other treatment approaches. Opportunities are expanding in areas like oncology, cardiometabolic disorders, immunology, and rare diseases, supported by innovations like self-amplifying RNA and small activating RNA.

Drivers & Restraints

Driver: Rising Prevalence of Genetic and Rare Diseases

The increasing prevalence of genetic and rare diseases is driving the RNA-based therapeutics market, as these conditions often lack effective treatments and are caused by well-defined genetic mutations. RNA technologies, such as antisense oligonucleotides, small interfering RNAs, and messenger RNAs, can modulate or replace specific gene expressions, making them ideal for rare, inherited, and orphan diseases. Global awareness, improved genetic screening, and supportive regulatory frameworks are incentivizing research and development in this area. As more rare

disease patients receive accurate diagnoses, demand for precision therapies is increasing, positioning RNA-based therapeutics as a transformative solution.

For instance, rare diseases affect a small number of individuals, but with over 7000 types, the global burden is significant. Approximately 300 million people live with rare diseases, often neglected and marginalized, particularly in low-income and middle-income countries.

Restraint: Complex Regulatory Pathways and Safety Concerns

The RNA-based therapeutics market faces challenges due to complex regulatory pathways and safety concerns. Regulatory agencies require extensive preclinical and clinical data to assess risks like off-target effects, immune system activation, toxicity, and potential gene modulation. This often extends development timelines and increases costs.

The novelty of some RNA platforms means limited long-term safety data, prompting cautious review by authorities and conservative prescribing by clinicians. This combination of rigorous oversight, evolving compliance requirements, and safety verification can slow product launches, deter smaller companies, and affect investor confidence, despite the science's progress.

Segmentation Analysis

The global RNA-based therapies market is segmented based on type, indication, end user, and region.

Type: The Antisense Oligonucleotides (ASO) from the type segment the expected to have 25.51% of the RNA-based Therapies market share.

The Antisense Oligonucleotides (ASO) segment is gaining popularity in the RNA-based therapeutics market due to its ability to target specific genetic mutations causing rare and untreatable diseases. ASOs offer high specificity by binding to complementary RNA sequences, allowing precise gene expression modulation. Breakthrough therapies like nusinersen and eteplirsen have demonstrated clinical efficacy and regulatory and commercial viability, encouraging further investment and pipeline expansion. Advances in backbone chemistry and delivery systems are enhancing ASO stability, tissue penetration, and safety profiles, allowing systemic administration and targeting difficult-to-reach tissues.

For instance, in November 2024, Trace Neuroscience, founded in January, raised \$101 million in a series A financing round to advance its antisense oligonucleotide therapy (ASO) treatment for ALS, a condition gained awareness through the ice-bucket challenge.

Geographical Analysis

The North America global RNA-based therapies market was valued at 42.1% market share in 2024

North America's RNA-based therapeutics market is thriving due to advanced research infrastructure, robust funding, and a supportive regulatory environment. The region's RNA-focused biopharmaceutical companies, partnership with companies, academic research centers, and specialized manufacturing facilities create a robust pipeline for drug development. High adoption of genetic testing and precision medicine, along with well-established reimbursement frameworks for rare and orphan disease treatments, is fostering rapid market uptake.

For instance, in May 2025, Eli Lilly and South Korean biopharmaceutical company Rznomics have partnered to develop and commercialize novel RNA-editing therapies for sensorineural hearing loss, using Rznomics' proprietary trans-splicing ribozyme platform, a clinical-stage biopharmaceutical company.

Market –Major Players

The major players in the RNA-based Therapies market include Sarepta Therapeutics, Alnylam Pharmaceuticals, NS Pharma, Pfizer, Modern Therapeutics, Novartis, Biogen, and Novo Nordisk among others.

Key Developments

In January 2025, Danish biotech company nverna Therapeutics, co-founded by the University of Southern Denmark and Argobio, has launched as a leading-edge RNA therapeutics company. The company aims to improve patient outcomes in severe genetic diseases, starting with a program addressing Huntington's disease.

In September 2024, Aurora Biosynthetic, a leading RNA therapeutics

manufacturing company, has launched its new end-to-end solution for Good Manufacturing Practice (GMP) production of plasmid DNA, messenger RNA, and lipid nanoparticles, marking a new era in RNA therapeutics manufacturing in the Asia-Pacific region.

The global RNA-based therapies market report delivers a detailed analysis with 59 key tables, more than 56 visually impactful figures, and 195 pages of expert insights, providing a complete view of the market landscape.

Contents

1. MARKET INTRODUCTION AND SCOPE

- 1.1. Objectives of the Report
- 1.2. Report Coverage & Definitions
- 1.3. Report Scope

2. EXECUTIVE INSIGHTS AND KEY TAKEAWAYS

- 2.1. Market Highlights and Strategic Takeaways
- 2.2. Key Trends and Future Projections
- 2.3. Snippet by Therapy Type
- 2.4. Snippet by Indication
- 2.5. Snippet by End User
- 2.6. Snippet by Region

3. DYNAMICS

- 3.1. Impacting Factors
 - 3.1.1. Drivers
 - 3.1.1.1. Rising Prevalence of Genetic and Rare Diseases
 - 3.1.1.2. Technological Advancements in Delivery Systems
 - 3.1.2. Restraints
 - 3.1.2.1. Complex Regulatory Pathways and Safety Concerns
 - 3.1.2.2. Delivery and Stability Challenges
 - 3.1.3. Opportunity
 - 3.1.3.1. Precision Medicine & Personalized Therapies
 - 3.1.3.2. Rise in Strategic Acquisitions & Collaborations
 - 3.1.4. Impact Analysis

4. GLOBAL RNA-BASED THERAPIES MARKET: STRATEGIC INSIGHTS AND INDUSTRY OUTLOOK

- 4.1. Market Leaders and Pioneers
 - 4.1.1. Emerging Pioneers and Prominent Players
 - 4.1.2. Established leaders with largest largest-selling Brand
 - 4.1.3. Market leaders with established products& Services
- 4.2. Product Developments and Breakthroughs

- 4.3. Regulatory and Reimbursement Landscape
 - 4.3.1. North America
 - 4.3.2. Europe
 - 4.3.3. Asia Pacific
 - 4.3.4. South America
 - 4.3.5. Middle East & Africa
- 4.4. Porter's Five Force Analysis
- 4.5. Supply Chain Analysis
- 4.6. Patent Analysis
- 4.7. SWOT Analysis
- 4.8. Unmet Needs and Gaps
- 4.9. Recommended Strategies for Market Entry and Expansion
- 4.10. Pricing Analysis and Price Dynamics

5. GLOBAL RNA-BASED THERAPIES MARKET: BY TYPE

- 5.1. Introduction
 - 5.1.1. Market Size Analysis and Y-o-Y Growth Analysis (%), By Type
 - 5.1.2. Market Attractiveness Index, By Type
- 5.2. Antisense Oligonucleotides (ASO)*
 - 5.2.1. Introduction
 - 5.2.2. Market Size Analysis and Y-o-Y Growth Analysis (%)
- 5.3. RNA interference
- 5.4. CRISPR/Cas-based RNA editing system
- 5.5. mRNA vaccines
- 5.6. RNA Aptamers
- 5.7. Others

6. GLOBAL RNA-BASED THERAPIES MARKET: BY INDICATION

- 6.1. Introduction
 - 6.1.1. Market Size Analysis and Y-o-Y Growth Analysis (%), By Indication
 - 6.1.2. Market Attractiveness Index, By Indication
- 6.2. Rare Genetic Diseases*
 - 6.2.1. Introduction
 - 6.2.2. Market Size Analysis and Y-o-Y Growth Analysis (%)
- 6.3. Rare Genetic Diseases
- 6.4. Oncology
- 6.5. Infectious Diseases

6.6. Neuromuscular

6.7. Others

7. GLOBAL RNA-BASED THERAPIES MARKET: BY END USER

7.1. Introduction

7.1.1. Market Size Analysis and Y-o-Y Growth Analysis (%), By End User

7.1.2. Market Attractiveness Index, By End User

7.2. Hospitals & Clinics*

7.2.1. Introduction

7.2.2. Market Size Analysis and Y-o-Y Growth Analysis (%)

7.3. Research Institutes

7.4. Pharmaceutical & Biotech Companies

8. GLOBAL RNA-BASED THERAPIES MARKET REGIONAL MARKET ANALYSIS AND GROWTH OPPORTUNITIES

8.1. Introduction

8.1.1. Market Size Analysis and Y-o-Y Growth Analysis (%), By Region

8.1.2. Market Attractiveness Index, By Region

8.2. North America

8.2.1. Introduction

8.2.2. Key Region-Specific Dynamics

8.2.3. Market Size Analysis and Y-o-Y Growth Analysis (%), By Type

8.2.4. Market Size Analysis and Y-o-Y Growth Analysis (%), By Indication

8.2.5. Market Size Analysis and Y-o-Y Growth Analysis (%), By End User

8.2.6. Market Size Analysis and Y-o-Y Growth Analysis (%), By Country

8.2.6.1. U.S.

8.2.6.2. Canada

8.2.6.3. Mexico

8.3. Europe

8.3.1. Introduction

8.3.2. Key Region-Specific Dynamics

8.3.3. Market Size Analysis and Y-o-Y Growth Analysis (%), By Type

8.3.4. Market Size Analysis and Y-o-Y Growth Analysis (%), By Indication

8.3.5. Market Size Analysis and Y-o-Y Growth Analysis (%), By End User

8.3.6. Market Size Analysis and Y-o-Y Growth Analysis (%), By Country

8.3.6.1. Germany

8.3.6.2. U.K.

8.3.6.3. France

8.3.6.4. Spain

8.3.6.5. Italy

8.3.6.6. Rest of Europe

8.4. South America

8.4.1. Introduction

8.4.2. Key Region-Specific Dynamics

8.4.3. Market Size Analysis and Y-o-Y Growth Analysis (%), By Type

8.4.4. Market Size Analysis and Y-o-Y Growth Analysis (%), By Indication

8.4.5. Market Size Analysis and Y-o-Y Growth Analysis (%), By End User

8.4.6. Market Size Analysis and Y-o-Y Growth Analysis (%), By Country

8.4.6.1. Brazil

8.4.6.2. Argentina

8.4.6.3. Rest of South America

8.5. Asia-Pacific

8.5.1. Introduction

8.5.2. Key Region-Specific Dynamics

8.5.3. Market Size Analysis and Y-o-Y Growth Analysis (%), By Type

8.5.4. Market Size Analysis and Y-o-Y Growth Analysis (%), By Indication

8.5.5. Market Size Analysis and Y-o-Y Growth Analysis (%), By End User

8.5.6. Market Size Analysis and Y-o-Y Growth Analysis (%), By Country

8.5.6.1. China

8.5.6.2. India

8.5.6.3. Japan

8.5.6.4. South Korea

8.5.6.5. Rest of Asia-Pacific

8.6. Middle East and Africa

8.6.1. Introduction

8.6.2. Key Region-Specific Dynamics

8.6.3. Market Size Analysis and Y-o-Y Growth Analysis (%), By Type

8.6.4. Market Size Analysis and Y-o-Y Growth Analysis (%), By Indication

8.6.5. Market Size Analysis and Y-o-Y Growth Analysis (%), By End User

9. COMPETITIVE LANDSCAPE AND MARKET POSITIONING

9.1. Competitive Overview and Key Market Players

9.2. Market Share Analysis and Positioning Matrix

9.3. Strategic Partnerships, Mergers & Acquisitions

9.4. Key Developments in Product Portfolios and Innovations

9.5. Company Benchmarking

10. COMPANY PROFILES

10.1. Ionis Pharmaceuticals*

10.1.1. Company Overview

10.1.2. Product Portfolio

10.1.2.1. Product Description

10.1.2.2. Product Key Performance Indicators (KPIs)

10.1.2.3. Historic and Forecasted Product Sales

10.1.2.4. Product Sales Volume

10.1.3. Financial Overview

10.1.3.1. Company Revenue

10.1.3.2. Geographical Revenue Shares

10.1.3.3. Revenue Forecasts

10.1.4. Key Developments

10.1.4.1. Mergers & Acquisitions

10.1.4.2. Key Product Development Activities

10.1.4.3. Regulatory Approvals, etc.

10.1.5. SWOT Analysis

10.2. Sarepta Therapeutics

10.3. Alnylam Pharmaceuticals

10.4. NS Pharma

10.5. Pfizer

10.6. Moderna Therapeutics

10.7. Novartis

10.8. Biogen

10.9. Novo Nordisk (LIST NOT EXHAUSTIVE)

11. ASSUMPTIONS AND RESEARCH METHODOLOGY

11.1. Data Collection Methods

11.2. Data Triangulation

11.3. Forecasting Techniques

11.4. Data Verification and Validation

12. APPENDIX

12.1. About Us and Services

12.2. Contact Us

List Of Tables

LIST OF TABLES

Table 1 Global RNA-based Therapies Market Value, By Type, 2025, 2029 & 2033 (US\$ Billion)

Table 2 Global RNA-based Therapies Market Value, By Indication, 2025, 2029 & 2033 (US\$ Billion)

Table 3 Global RNA-based Therapies Market Value, By End User, 2025, 2029 & 2033 (US\$ Billion)

Table 4 Global RNA-based Therapies Market Value, By Region, 2025, 2029 & 2033 (US\$ Billion)

Table 5 Global RNA-based Therapies Market Value, By Type, 2025, 2029 & 2033 (US\$ Billion)

Table 6 Global RNA-based Therapies Market Value, By Type, 2022-2033 (US\$ Billion)

Table 7 Global RNA-based Therapies Market Value, By Indication, 2025, 2029 & 2033 (US\$ Billion)

Table 8 Global RNA-based Therapies Market Value, By Indication, 2022-2033 (US\$ Billion)

Table 9 Global RNA-based Therapies Market Value, By End User, 2025, 2029 & 2033 (US\$ Billion)

Table 10 Global RNA-based Therapies Market Value, By End User, 2022-2033 (US\$ Billion)

Table 11 Global RNA-based Therapies Market Value, By Region, 2025, 2029 & 2033 (US\$ Billion)

Table 12 Global RNA-based Therapies Market Value, By Region, 2022-2033 (US\$ Billion)

Table 13 North America RNA-based Therapies Market Value, By Type, 2022-2033 (US\$ Billion)

Table 14 North America RNA-based Therapies Market Value, By Indication, 2022-2033 (US\$ Billion)

Table 15 North America RNA-based Therapies Market Value, By End User, 2022-2033 (US\$ Billion)

Table 16 North America RNA-based Therapies Market Value, By Country, 2022-2033 (US\$ Billion)

Table 17 Europe RNA-based Therapies Market Value, By Type, 2022-2033 (US\$ Billion)

Table 18 Europe RNA-based Therapies Market Value, By Indication, 2022-2033 (US\$ Billion)

Table 19 Europe RNA-based Therapies Market Value, By End User, 2022-2033 (US\$ Billion)

Table 20 Europe RNA-based Therapies Market Value, By Country, 2022-2033 (US\$ Billion)

Table 21 Asia-Pacific RNA-based Therapies Market Value, By Type, 2022-2033 (US\$ Billion)

Table 22 Asia-Pacific RNA-based Therapies Market Value, By Indication, 2022-2033 (US\$ Billion)

Table 23 Asia-Pacific RNA-based Therapies Market Value, By End User, 2022-2033 (US\$ Billion)

Table 24 Asia-Pacific RNA-based Therapies Market Value, By Country, 2022-2033 (US\$ Billion)

Table 25 South America RNA-based Therapies Market Value, By Type, 2022-2033 (US\$ Billion)

Table 26 South America RNA-based Therapies Market Value, By Indication, 2022-2033 (US\$ Billion)

Table 27 South America RNA-based Therapies Market Value, By End User, 2022-2033 (US\$ Billion)

Table 28 South America RNA-based Therapies Market Value, By Country, 2022-2033 (US\$ Billion)

Table 29 Middle East and Africa RNA-based Therapies Market Value, By Type, 2022-2033 (US\$ Billion)

Table 30 Middle East and Africa RNA-based Therapies Market Value, By Indication, 2022-2033 (US\$ Billion)

Table 31 Middle East and Africa RNA-based Therapies Market Value, By End User, 2022-2033 (US\$ Billion)

Table 32 Middle East and Africa RNA-based Therapies Market Value, By Country, 2022-2033 (US\$ Billion)

Table 33 Ionis Pharmaceuticals: Overview

Table 34 Ionis Pharmaceuticals: Product Portfolio

Table 35 Ionis Pharmaceuticals: Key Developments

Table 36 Sarepta Therapeutics: Overview

Table 37 Sarepta Therapeutics: Product Portfolio

Table 38 Sarepta Therapeutics: Key Developments

Table 39 Alnylam Pharmaceuticals: Overview

Table 40 Alnylam Pharmaceuticals: Product Portfolio

Table 41 Alnylam Pharmaceuticals: Key Developments

Table 42 NS Pharma: Overview

Table 43 NS Pharma: Product Portfolio

Table 44 NS Pharma: Key Developments
Table 45 Pfizer: Overview
Table 46 Pfizer: Product Portfolio
Table 47 Pfizer: Key Developments
Table 48 Moderna Therapeutics: Overview
Table 49 Moderna Therapeutics: Product Portfolio
Table 50 Moderna Therapeutics: Key Developments
Table 51 Novartis: Overview
Table 52 Novartis: Product Portfolio
Table 53 Novartis: Key Developments
Table 54 Biogen: Overview
Table 55 Biogen: Product Portfolio
Table 56 Biogen: Key Developments
Table 57 Novo Nordisk: Overview
Table 58 Novo Nordisk: Product Portfolio
Table 59 Novo Nordisk: Key Developments

List Of Figures

LIST OF FIGURES

- Figure 1 Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 2 Global RNA-based Therapies Market Share, By Type, 2024 & 2033 (%)
- Figure 3 Global RNA-based Therapies Market Share, By Indication, 2024 & 2033 (%)
- Figure 4 Global RNA-based Therapies Market Share, By End User, 2024 & 2033 (%)
- Figure 5 Global RNA-based Therapies Market Share, By Region, 2024 & 2033 (%)
- Figure 6 Global RNA-based Therapies Market Y-o-Y Growth, By Type, 2023-2033 (%)
- Figure 7 Antisense Oligonucleotides (ASO) RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 8 RNA interference RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 9 CRISPR/Cas-based RNA editing system RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 10 mRNA vaccines RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 11 RNA Aptamers RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 12 Others RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 13 Global RNA-based Therapies Market Y-o-Y Growth, By Indication, 2023-2033 (%)
- Figure 14 Rare Genetic Diseases Indication in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 15 Oncology Indication in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 16 Infectious Diseases Indication in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 17 Neuromuscular Indication in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 18 Others Indication in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 19 Global RNA-based Therapies Market Y-o-Y Growth, By End User, 2023-2033 (%)
- Figure 20 Hospitals & Clinics End User in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 21 Research Institutes End User in Global RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)
- Figure 22 Pharmaceutical & Biotech Companies End User in Global RNA-based

Therapies Market Value, 2022-2033 (US\$ Billion)

Figure 23 Global RNA-based Therapies Market Y-o-Y Growth, By Region, 2023-2033 (%)

Figure 24 North America RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)

Figure 25 North America RNA-based Therapies Market Share, By Type, 2024 & 2033 (%)

Figure 26 North America RNA-based Therapies Market Share, By Indication, 2024 & 2033 (%)

Figure 27 North America RNA-based Therapies Market Share, By End User, 2024 & 2033 (%)

Figure 28 North America RNA-based Therapies Market Share, By Country, 2024 & 2033 (%)

Figure 29 Europe RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)

Figure 30 Europe RNA-based Therapies Market Share, By Type, 2024 & 2033 (%)

Figure 31 Europe RNA-based Therapies Market Share, By Indication, 2024 & 2033 (%)

Figure 32 Europe RNA-based Therapies Market Share, By End User, 2024 & 2033 (%)

Figure 33 Europe RNA-based Therapies Market Share, By Country, 2024 & 2033 (%)

Figure 34 Asia-Pacific RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)

Figure 35 Asia-Pacific RNA-based Therapies Market Share, By Type, 2024 & 2033 (%)

Figure 36 Asia-Pacific RNA-based Therapies Market Share, By Indication, 2024 & 2033 (%)

Figure 37 Asia-Pacific RNA-based Therapies Market Share, By End User, 2024 & 2033 (%)

Figure 38 Asia-Pacific RNA-based Therapies Market Share, By Country, 2024 & 2033 (%)

Figure 39 South America RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)

Figure 40 South America RNA-based Therapies Market Share, By Type, 2024 & 2033 (%)

Figure 41 South America RNA-based Therapies Market Share, By Indication, 2024 & 2033 (%)

Figure 42 South America RNA-based Therapies Market Share, By End User, 2024 & 2033 (%)

Figure 43 South America RNA-based Therapies Market Share, By Country, 2024 & 2033 (%)

Figure 44 Middle East and Africa RNA-based Therapies Market Value, 2022-2033 (US\$ Billion)

Figure 45 Middle East and Africa RNA-based Therapies Market Share, By Type, 2024 & 2033 (%)

Figure 46 Middle East and Africa RNA-based Therapies Market Share, By Indication,

2024 & 2033 (%)

Figure 47 Middle East and Africa RNA-based Therapies Market Share, By End User, 2024 & 2033 (%)

Figure 48 Ionis Pharmaceuticals: Financials

Figure 49 Sarepta Therapeutics: Financials

Figure 50 Alnylam Pharmaceuticals: Financials

Figure 51 NS Pharma: Financials

Figure 52 Pfizer: Financials

Figure 53 Moderna Therapeutics: Financials

Figure 54 Novartis: Financials

Figure 55 Biogen: Financials

Figure 56 Novo Nordisk: Financials

I would like to order

Product name: Global RNA Based Therapies Market - 2025 -2033

Product link: <https://marketpublishers.com/r/G5054BB285FEEN.html>

Price: US\$ 4,350.00 (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/G5054BB285FEEN.html>