

RNA Targeting Small Molecule Drug Discovery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others), By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others), By Region and Competition, 2020-2030F

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Report description:

Market Overview

The Global RNA Targeting Small Molecule Drug Discovery Market, valued at USD 1.68 billion in 2024, is projected to reach USD 5.52 billion by 2030, growing at a CAGR of 21.93%. This growth is fueled by the increasing demand for RNA-targeted small molecule drugs capable of addressing a wide range of conditions, including cancer, neurological, and genetic disorders. Innovations in RNA-targeted drug discovery methods and heightened government support for RNA research are accelerating development in this field, attracting significant investments and interest across the pharmaceutical industry.

Key Market Drivers

Advancements in RNA Biology and Drug Discovery Technologies

Recent developments in RNA biology have revealed new RNA structures and functionalities as viable therapeutic targets. Tools like high-throughput sequencing and gene editing have significantly advanced the discovery of novel RNA targets and the creation of small molecules that can regulate RNA activity. These technological strides are streamlining drug development, making therapies more precise and effective. Moreover, the integration of computational methods and artificial intelligence is improving the prediction of RNA structures and interactions, thereby enhancing the efficiency of the discovery process. These advancements are driving increased pharmaceutical investment in RNA-targeted therapy.

Key Market Challenges

Complexity of RNA Structures and Target Specificity

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Designing small molecules to selectively bind RNA targets is inherently challenging due to the intricate secondary and tertiary structures of RNA molecules. Precision is vital to prevent unintended interactions with non-target RNAs, which could cause adverse effects. The flexible nature of RNA adds another layer of difficulty in identifying stable and effective binding sites. Overcoming these hurdles necessitates sophisticated structural analysis tools and innovative drug development strategies, which demand substantial time and resources.

Key Market Trends

Integration of Artificial Intelligence in Drug Discovery

Artificial Intelligence (AI) is playing a transformative role in the discovery of RNA-targeted small molecules. AI technologies are capable of analyzing large datasets to forecast RNA structures, locate potential binding regions, and simulate molecular behavior, which greatly accelerates candidate identification. This not only improves the precision and efficiency of development but also cuts down the time and expense compared to traditional methods. As AI tools continue to evolve, their contribution to RNA-based therapeutic discovery is expected to grow, paving new pathways for drug development.

Key Market Players

- Accent Therapeutics, Inc.
- Anima Biotech Inc.
- Arrakis Therapeutics, Inc.
- AstraZeneca Plc
- Epics Therapeutics, Inc.
- Expansion Therapeutics, Inc.
- F. Hoffmann-La Roche AG
- H3 Biomedicine Inc.
- PTC Therapeutics, Inc.
- Ribometrix, Inc.

Report Scope:

In this report, Global RNA Targeting Small Molecule Drug Discovery market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

RNA Targeting Small Molecule Drug Discovery Market, By Indication:

- o Cancer
- o Infectious Diseases
- o Metabolic Diseases
- o Neurological Diseases
- o Other

RNA Targeting Small Molecule Drug Discovery Market, By End Users:

- o Pharmaceutical and Biopharmaceutical Companies
- o Academic and Research Institutes
- o Others

RNA Targeting Small Molecule Drug Discovery Market, By Region:

- o North America
 - o United States
 - o Canada
 - o Mexico
- o Europe
 - o France
 - o Germany
 - o United Kingdom
 - o Italy
 - o Spain

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????o Asia Pacific

?????? China

?????? India

?????? Japan

?????? South Korea

?????? Australia

????o South America

?????? Brazil

?????? Argentina

?????? Colombia

????o Middle East & Africa

?????? South Africa

?????? Saudi Arabia

?????? UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global RNA Targeting Small Molecule Drug Discovery Market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

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

Table of Contents:

1. Product Overview
 - 1.1. Market Definition
 - 1.2. Scope of the Market
 - 1.2.1. Markets Covered
 - 1.2.2. Years Considered for Study
 - 1.2.3. Key Market Segmentations
2. Research Methodology
 - 2.1. Objective of the Study
 - 2.2. Baseline Methodology
 - 2.3. Key Industry Partners
 - 2.4. Major Association and Secondary Sources
 - 2.5. Forecasting Methodology
 - 2.6. Data Triangulation & Validation
 - 2.7. Assumptions and Limitations
3. Executive Summary
 - 3.1. Overview of the Market
 - 3.2. Overview of Key Market Segmentations
 - 3.3. Overview of Key Market Players
 - 3.4. Overview of Key Regions/Countries
 - 3.5. Overview of Market Drivers, Challenges, Trends
4. Voice of Customer
5. Global RNA Targeting Small Molecule Drug Discovery Market Outlook

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- 5.1. Market Size & Forecast
 - 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others)
 - 5.2.2. By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others)
 - 5.2.3. By Region (North America, Europe, Asia Pacific, South America, Middle East & Africa)
 - 5.2.4. By Company (2024)
- 5.3. Market Map
 - 5.3.1 By Indication
 - 5.3.2 By End Users
 - 5.3.3 By Region
- 6. North America RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 6.1. Market Size & Forecast
 - 6.1.1. By Value
 - 6.2. Market Share & Forecast
 - 6.2.1. By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others)
 - 6.2.2. By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others)
 - 6.2.3. By Country
 - 6.3. North America: Country Analysis
 - 6.3.1. United States RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 6.3.1.1. Market Size & Forecast
 - 6.3.1.1.1. By Value
 - 6.3.1.2. Market Share & Forecast
 - 6.3.1.2.1. By Indication
 - 6.3.1.2.2. By End User
 - 6.3.2. Canada RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 6.3.2.1. Market Size & Forecast
 - 6.3.2.1.1. By Value
 - 6.3.2.2. Market Share & Forecast
 - 6.3.2.2.1. By Indication
 - 6.3.2.2.2. By End User
 - 6.3.3. Mexico RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 6.3.3.1. Market Size & Forecast
 - 6.3.3.1.1. By Value
 - 6.3.3.2. Market Share & Forecast
 - 6.3.3.2.1. By Indication
 - 6.3.3.2.2. By End User
- 7. Europe RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 7.1. Market Size & Forecast
 - 7.1.1. By Value
 - 7.2. Market Share & Forecast
 - 7.2.1. By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others)
 - 7.2.2. By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others)
 - 7.2.3. By Country
 - 7.3. Europe: Country Analysis
 - 7.3.1. France RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 7.3.1.1. Market Size & Forecast

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- 7.3.1.1.1. By Value
- 7.3.1.2. Market Share & Forecast
- 7.3.1.2.1. By Indication
- 7.3.1.2.2. By End User
- 7.3.2. Germany RNA Targeting Small Molecule Drug Discovery Market Outlook
- 7.3.2.1. Market Size & Forecast
- 7.3.2.1.1. By Value
- 7.3.2.2. Market Share & Forecast
- 7.3.2.2.1. By Indication
- 7.3.2.2.2. By End User
- 7.3.3. United Kingdom RNA Targeting Small Molecule Drug Discovery Market Outlook
- 7.3.3.1. Market Size & Forecast
- 7.3.3.1.1. By Value
- 7.3.3.2. Market Share & Forecast
- 7.3.3.2.1. By Indication
- 7.3.3.2.2. By End User
- 7.3.4. Italy RNA Targeting Small Molecule Drug Discovery Market Outlook
- 7.3.4.1. Market Size & Forecast
- 7.3.4.1.1. By Value
- 7.3.4.2. Market Share & Forecast
- 7.3.4.2.1. By Indication
- 7.3.4.2.2. By End User
- 7.3.5. Spain RNA Targeting Small Molecule Drug Discovery Market Outlook
- 7.3.5.1. Market Size & Forecast
- 7.3.5.1.1. By Value
- 7.3.5.2. Market Share & Forecast
- 7.3.5.2.1. By Indication
- 7.3.5.2.2. By End User
- 8. Asia-Pacific RNA Targeting Small Molecule Drug Discovery Market Outlook
- 8.1. Market Size & Forecast
- 8.1.1. By Value
- 8.2. Market Share & Forecast
- 8.2.1. By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others)
- 8.2.2. By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others)
- 8.2.3. By Country
- 8.3. Asia-Pacific: Country Analysis
- 8.3.1. China RNA Targeting Small Molecule Drug Discovery Market Outlook
- 8.3.1.1. Market Size & Forecast
- 8.3.1.1.1. By Value
- 8.3.1.2. Market Share & Forecast
- 8.3.1.2.1. By Indication
- 8.3.1.2.2. By End User
- 8.3.2. India RNA Targeting Small Molecule Drug Discovery Market Outlook
- 8.3.2.1. Market Size & Forecast
- 8.3.2.1.1. By Value
- 8.3.2.2. Market Share & Forecast
- 8.3.2.2.1. By Indication

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- 8.3.2.2.2. By End User
- 8.3.3. Japan RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 8.3.3.1. Market Size & Forecast
 - 8.3.3.1.1. By Value
 - 8.3.3.2. Market Share & Forecast
 - 8.3.3.2.1. By Indication
 - 8.3.3.2.2. By End User
- 8.3.4. South Korea RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 8.3.4.1. Market Size & Forecast
 - 8.3.4.1.1. By Value
 - 8.3.4.2. Market Share & Forecast
 - 8.3.4.2.1. By Indication
 - 8.3.4.2.2. By End User
- 8.3.5. Australia RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 8.3.5.1. Market Size & Forecast
 - 8.3.5.1.1. By Value
 - 8.3.5.2. Market Share & Forecast
 - 8.3.5.2.1. By Indication
 - 8.3.5.2.2. By End User
- 9. South America RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 9.1. Market Size & Forecast
 - 9.1.1. By Value
 - 9.2. Market Share & Forecast
 - 9.2.1. By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others)
 - 9.2.2. By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others)
 - 9.2.3. By Country
 - 9.3. South America: Country Analysis
 - 9.3.1. Brazil RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 9.3.1.1. Market Size & Forecast
 - 9.3.1.1.1. By Value
 - 9.3.1.2. Market Share & Forecast
 - 9.3.1.2.1. By Indication
 - 9.3.1.2.2. By End User
 - 9.3.2. Argentina RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 9.3.2.1. Market Size & Forecast
 - 9.3.2.1.1. By Value
 - 9.3.2.2. Market Share & Forecast
 - 9.3.2.2.1. By Indication
 - 9.3.2.2.2. By End User
 - 9.3.3. Colombia RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 9.3.3.1. Market Size & Forecast
 - 9.3.3.1.1. By Value
 - 9.3.3.2. Market Share & Forecast
 - 9.3.3.2.1. By Indication
 - 9.3.3.2.2. By End User
- 10. Middle East and Africa RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 10.1. Market Size & Forecast

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- 10.1.1. By Value
- 10.2. Market Share & Forecast
 - 10.2.1. By Indication (Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others)
 - 10.2.2. By End Users (Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others)
 - 10.2.3. By Country
- 10.3. MEA: Country Analysis
 - 10.3.1. South Africa RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 10.3.1.1. Market Size & Forecast
 - 10.3.1.1.1. By Value
 - 10.3.1.2. Market Share & Forecast
 - 10.3.1.2.1. By Indication
 - 10.3.1.2.2. By End User
 - 10.3.2. Saudi Arabia RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 10.3.2.1. Market Size & Forecast
 - 10.3.2.1.1. By Value
 - 10.3.2.2. Market Share & Forecast
 - 10.3.2.2.1. By Indication
 - 10.3.2.2.2. By End User
 - 10.3.3. UAE RNA Targeting Small Molecule Drug Discovery Market Outlook
 - 10.3.3.1. Market Size & Forecast
 - 10.3.3.1.1. By Value
 - 10.3.3.2. Market Share & Forecast
 - 10.3.3.2.1. By Indication
 - 10.3.3.2.2. By End User
- 11. Market Dynamics
 - 11.1. Drivers
 - 11.2. Challenges
- 12. Market Trends & Developments
 - 12.1. Recent Development
 - 12.2. Mergers & Acquisitions
 - 12.3. Product Launches
- 13. Global RNA Targeting Small Molecule Drug Discovery Market: SWOT Analysis
- 14. Porter's Five Forces Analysis
 - 14.1. Competition in the Industry
 - 14.2. Potential of New Entrants
 - 14.3. Power of Suppliers
 - 14.4. Power of Customers
 - 14.5. Threat of Substitute Products
- 15. Competitive Landscape
 - 15.1. Accent Therapeutics, Inc.
 - 15.1.1. Business Overview
 - 15.1.2. Company Snapshot
 - 15.1.3. Products & Services
 - 15.1.4. Financials (As Reported)
 - 15.1.5. Recent Developments
 - 15.1.6. Key Personnel Details
 - 15.1.7. SWOT Analysis

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- 15.2. Anima Biotech Inc.
- 15.3. Arrakis Therapeutics, Inc.
- 15.4. AstraZeneca Plc
- 15.5. Epics Therapeutics, Inc.
- 15.6. Expansion Therapeutics, Inc.
- 15.7. F.Hoffmann-La Roche AG
- 15.8. H3 Biomedicine Inc.
- 15.9. PTC Therapeutics, Inc.
- 15.10. Ribometrix, Inc.
- 16. Strategic Recommendations
- 17. About Us & Disclaimer

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