

RNA Targeting Small Molecule Drug Discovery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 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 By Competition

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Abstracts

The Global RNA Targeting Small Molecule Drug Discovery Market is anticipated to witness impressive growth during the forecast period. This can be ascribed to the increasing prevalence of diseases such as cancer, genetic disorders, and viral infections and rising expenditure in R&D activities by pharmaceutical and biotechnology businesses. Also, the growing presence of key market players, advanced healthcare infrastructure, and increasing investment in research and development activities are expected to create lucrative growth during the forecast period. Similarly, a growing well-established healthcare system that supports the development and commercialization of new therapies is also a major factor fuelling the growth of the market over the years. In fact, in 2020, the USFDA approved 55 drugs, of which, over 65% were small molecule therapeutics. It is worth noting that majority of these drugs were conventionally developed to target proteins.

Increasing Prevalence of RNA-Related Diseases

The increasing prevalence of RNA-related diseases is one of the key drivers of the growth of the Global RNA Targeting Small Molecule Drug Discovery Market. RNA plays

a critical role in various cellular processes, and dysregulation of RNA function can lead to various diseases, including cancer, genetic disorders, and viral infections. The prevalence of these diseases is increasing, leading to a growing demand for RNA-targeted small molecule drugs. RNA-targeted small molecule drugs offer a promising approach for the treatment of RNA-related diseases. Small molecules can selectively bind to specific RNA targets and modulate their activity, offering a potential therapeutic approach for diseases caused by RNA dysregulation. For example, RNA-targeted small molecule drugs have shown promising results in the treatment of cancer, particularly in cases where traditional chemotherapy is not effective. They have also shown potential for the treatment of genetic disorders caused by RNA abnormalities, such as cystic fibrosis. The increasing prevalence of RNA-related diseases has led to an increased focus on RNA-targeted small molecule drug discovery research. Many pharmaceutical companies, startups, and research institutions are investing heavily in this area, which is driving the growth of the market.

Advancements in RNA Biology

Advancements in RNA biology have played a significant role in the growth of the Global RNA Targeting Small Molecule Drug Discovery Market. With the advancement of technologies, including high-throughput sequencing and gene editing, the understanding of RNA biology has increased significantly. This has led to the identification of new RNA targets and the development of novel RNA-targeted small molecule drugs. Advancements in RNA biology have enabled researchers to better understand the mechanisms by which RNA molecules contribute to disease. This understanding has led to the identification of new RNA targets that were previously unknown or poorly understood. The discovery of new RNA targets has opened up new opportunities for drug discovery, leading to the development of novel RNA-targeted small molecule drugs. Furthermore, advancements in RNA biology have led to the development of new technologies and tools for RNA-targeted small molecule drug discovery. For example, advances in high-throughput screening technologies have enabled researchers to screen large libraries of compounds to identify potential RNA-targeted drugs quickly. This has accelerated the drug discovery process and enabled the development of new drugs more efficiently. Advancements in RNA biology have also enabled the development of RNA-targeted small molecule drugs with improved specificity and potency. By understanding the structure and function of RNA molecules, researchers can design small molecules that selectively bind to specific RNA targets and modulate their activity.

Increased Funding for RNA-Targeted Drug Discovery Research

Increased funding for RNA-targeted drug discovery research has a significant impact on the growth of the Global RNA Targeting Small Molecule Drug Discovery Market. RNA-targeted small molecule drugs offer a promising approach for the treatment of various diseases, including cancer, genetic disorders, and viral infections. However, developing these drugs is a complex process that requires significant investment in research and development. Increased funding for RNA-targeted drug discovery research can help to accelerate the drug discovery process and improve the chances of success. Funding can support research in identifying and validating RNA targets, developing new screening technologies, designing small molecules, and conducting preclinical and clinical studies. Furthermore, increased funding can help to attract top researchers and scientists to the field, leading to more innovation and breakthroughs in RNA-targeted drug discovery research. The availability of funding can also encourage collaborations between academia and industry, leading to more efficient and effective drug discovery processes. Several organizations, including governments, non-profit organizations, and pharmaceutical companies, are investing heavily in RNA-targeted drug discovery research. For example, the US National Institutes of Health (NIH) has launched several initiatives aimed at accelerating RNA-targeted drug discovery, including the RNA-focused Accelerating Medicines Partnership and the Blueprint Neurotherapeutics Network. These initiatives provide significant funding and resources for researchers working in the field.

Growing Demand for Personalized Medicine

The growing demand for personalized medicine is a significant driver of the growth of the Global RNA Targeting Small Molecule Drug Discovery Market. Personalized medicine aims to tailor medical treatment to the individual characteristics of each patient, taking into account their genetic makeup, lifestyle, and environment. RNA-targeted small molecule drugs offer a promising approach for personalized medicine, as they can selectively target specific RNA molecules that are involved in a patient's disease. RNA-targeted small molecule drugs can be designed to be specific to individual patients' genetic profiles, leading to more effective treatments and better patient outcomes. For example, a patient with cancer may have a specific mutation in their RNA that is driving the growth of their tumor. RNA-targeted small molecule drugs can be designed to specifically target this mutation, leading to more effective treatment and fewer side effects. Furthermore, RNA-targeted small molecule drugs can be used to treat rare diseases caused by specific RNA abnormalities. These drugs can be developed and manufactured in small quantities, making them ideal for personalized medicine. The growing demand for personalized medicine is driven by several factors,

including advances in genomic medicine, increasing patient awareness and demand for more personalized care, and improvements in technology for developing and manufacturing personalized therapies. Many pharmaceutical companies and startups are investing in RNA-targeted small molecule drug discovery research to meet the growing demand for personalized medicine. These companies are leveraging advancements in RNA biology, high-throughput screening technologies, and computational methods to develop personalized RNA-targeted small molecule drugs.

Rise in the Number of Startups and Small Companies Focusing on RNA-Targeted Drug Discovery

The rise in the number of startups and small companies focusing on RNA-targeted drug discovery is a significant driver of the growth of the Global RNA Targeting Small Molecule Drug Discovery Market. Startups and small companies are playing a crucial role in advancing RNA-targeted drug discovery research and bringing innovative therapies to the market. Startups and small companies are often more agile and able to quickly adopt new technologies and approaches to drug discovery. These companies can focus on niche areas of RNA biology, allowing them to identify and develop RNA targets that may have been overlooked by larger pharmaceutical companies. Furthermore, startups and small companies are increasingly receiving funding and support from venture capitalists, government agencies, and non-profit organizations. This funding allows these companies to invest in research and development and advance their pipeline of RNA-targeted small molecule drugs. The rise of startups and small companies in the RNA-targeted drug discovery space is also leading to increased competition, which is driving innovation and improving the efficiency of the drug discovery process. This competition is also leading to the development of more affordable and accessible RNA-targeted small molecule drugs, which can benefit patients globally. Several startups and small companies focusing on RNA-targeted drug discovery have already made significant advances in the field. These companies have developed innovative screening platforms, identified novel RNA targets, and advanced promising RNA-targeted small molecule drugs into preclinical and clinical trials.

Recent Development

In 2021, the US FDA approved the first RNA-targeted small molecule drug, Lumasiran, for the treatment of primary hyperoxaluria type 1. Lumasiran targets and degrades the RNA that encodes the enzyme responsible for producing oxalate, which accumulates in patients with this rare genetic disease. This approval represents a significant milestone for the RNA-targeted drug discovery

field.

In 2020, Alnylam Pharmaceuticals launched Lumasiran, the first RNA-targeting small molecule drug approved by the US FDA. Lumasiran is indicated for the treatment of primary hyperoxaluria type 1, a rare genetic disorder that can lead to kidney damage and failure.

In 2019, Alnylam Pharmaceuticals launched Givosiran, an RNA-targeting small molecule drug for the treatment of acute hepatic porphyria. Givosiran works by targeting and degrading the RNA that encodes the enzyme responsible for producing toxic heme intermediates in patients with this rare genetic disease.

In 2021, Novartis launched Inclisiran, an RNA-targeting small molecule drug for the treatment of high cholesterol. Inclisiran targets and degrades the RNA that encodes for PCSK9, a protein that regulates cholesterol levels in the blood.

Market Segmentation

Global RNA Targeting Small Molecule Drug Discovery market can be segmented by Indication, End Users, Region and Competitive Landscape. Based on the indication, the market can be segmented into Cancer, Infectious Diseases, Metabolic Diseases, Neurological Diseases, Others. Based on end users, the market can be differentiated into Pharmaceutical and Biopharmaceutical Companies, Academic and Research Institutes, Others.

Market Players

Accent Therapeutics., Anima Biotech Inc., Arrakis Therapeutics., AstraZeneca., Epics Therapeutics., Expansion Therapeutics., Hoffmann-La Roche Ltd., H3 Biomedicine Inc., PTC Therapeutics., Ribometrix., Servier Laboratories., Skyhawk Therapeutics, Inc. are some of the leading players operating in the Global RNATargeting Small Molecule Drug Discovery Market.

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:

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

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

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

RNA Targeting Small Molecule Drug Discovery Market, By Region:

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

Spain

Asia Pacific

China

India

Japan

South Korea

Australia

South America

Brazil

Argentina

Colombia

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).

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