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Global Drug Discovery Market Assessment, By Drug Type [Small Molecules and Biologics], By Source [Natural and Synthetic], By Technology [Combinatorial chemistry, High-throughput screening, Nanotechnology, Pharmacogenomics, and Other Technologies], By End-user [Pharmaceutical Companies, Contract Research Organizations and Others], By Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Global drug discovery market size was valued at USD 68.24 billion in 2023, which is expected to reach USD 154.12 billion in 2031, with a CAGR of 10.72% for the forecast period between 2024 and 2031F. Growth in global drug discovery market is driven by various factors such as rising prevalence of various chronic diseases, increasing healthcare expenditure, patent expiration of certain popular drugs, adoption of AI solutions, and increasing investments in private and public sector in the biomedical research.

The global drug discovery market is further undergoing robust growth due to an increase in the elderly population. Decrease in fertility rates, increase in life expectancy due to an increase in healthcare facilities, and vast treatment options available worldwide for the elderly population are the factors helping people to live longer. However, it has further accelerated age-related modalities and chronic diseases among the population. To combat these modalities, innovation and research & development in drug discovery are needed. Moreover, each country has its own set of regulations that are responsible to check the safety and efficacy of the approved drug to ensure and

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maintain the quality and standard of the drug at every step to improve the health of the population.

The COVID-19 pandemic has accelerated the movement of care resulting in increased healthcare expenditure across different countries. The increased healthcare expenditure has surged in global drug discovery market due to increased spending on research, drug development, and manufacturing process. Drug discovery is an expensive, complex, and sensitive process that requires funding from the government and pharmaceutical industry, due to the costs and risks associated with pharmaceutical R&D. Healthcare spending results in better provision of health opportunities that further strengthens the healthcare system of a country and simultaneously leads to the growth of global drug discovery market.

Increasing Prevalence of Chronic Diseases

The increasing prevalence of chronic diseases is a major driving factor for the global drug discovery market. According to WHO, chronic diseases including cardiovascular diseases, cancer, diabetes, and respiratory illnesses are responsible for 41 million deaths every year at global level. It affects people of all age groups, irrespective of their region and countries. Unhealthy diet, sedentary lifestyle, tobacco use, and alcohol abuse are the leading risk factors for the rising chronic diseases in developing as well as developed countries. The increasing prevalence is further propelling the demand for new drug discoveries. To achieve the goal of a healthier future, pharmaceutical companies are accelerating research and development for discovering new medicines. Drug discoveries are required to treat symptoms of new diseases, chronic diseases, untreatable diseases, and to solve the issue of drug resistance. As life expectancy is increasing, people are more prone to getting exposed to these diseases, resulting in growth of global drug discovery market.

Increased Investments in Drug discovery

Significant public and private investments are needed to support the manufacturing of drugs, whether they are small molecule drugs, protein-based biologic drugs, vaccines, or in vivo diagnostics. These investments by the organizations is thriving the global drug discovery market to meet the global healthcare goals. With increase in chronic diseases and new diseases encounters, the need for developing and discovering new drugs to tackle the health issues of the growing population is the need of the hour. To meet this demand, many biotech companies in USA, Europe, and APAC have raised big investments in drug discoveries.

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For instance, in September 2023, Generate Biomedicines raised USD 273 million in a Series C round to advance its generative AI pipeline of preclinical and clinical protein therapeutics. In the same month September 2023, Grit Biotechnology raised USD 60 million in a Series B round. Grit Biotechnology has its specialization in the field of tumor immunotherapy, and this investment will further support its tumor-infiltrating lymphocyte (TIL) pipeline development in the future. Hence, these investments in the drug developing process are expected to accelerate the global drug discovery market.

Government Initiatives

Drug discovery is a time consuming and expensive process and requires funds and support from the government on its various manufacturing steps. The Government has devoted billions for drug discovery R&D. The expenditure has covered a variety of activities such as discovering and testing new drugs, developing innovations, and clinical testing for safety-monitoring purpose. Government has launched many initiatives, policies, and programs to help and support global drug discovery market. For instance, according to an article published by US Government Accountability Office (GAO) on September 2023, The National Institutes of Health (NIH) has identified many viral families that have the potential to cause future pandemics. To combat these viral diseases there is a need to develop antiviral drugs. GAO has identified some technologies like artificial intelligence to speed up antiviral drug development process. In 2022, the White House issued the National Biodefense Strategy and Implementation Plan to support this agenda of antiviral drugs development.

Growing Demand for Biologics

There has been a notable surge in demand for biologics in the global drug discovery market. The category of Biologics is gaining momentum due to its huge potential to treat diseases, which are considered untreatable or difficult to treat. Biologics have attributes that makes them more specific to treat the targeted disease and are less likely to react with other drugs. Hence, they ensure safety of the patients who are taking multiple drugs. These attributes have resulted in an upsurge in demand for biologics and many countries, including Japan, the United Kingdom, India, China, the United States, and Sweden, beginning to develop complex biomanufacturing facilities to meet this rising demand. Major pharmaceutical corporations are entering the biologics space, for instance, in September 2023, Takeda Pharmaceuticals, Inc. got approval from Center for Biologics Evaluation and Research (CBER) for biologics named ADZYNMA, which is indicated for prophylactic or on demand enzyme replacement therapy (ERT) in adult

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and pediatric patients with congenital thrombotic thrombocytopenic purpura (cTTP).

Use of AI in Drug Discovery

Drug development is a long, complex, and uncertain process that takes an average of 10-12 years to develop. The pharmaceutical industry is trying to create a fast and effective solution for drug development, and hence, companies are applying various computational methods to reach that goal. A novel technology called computer-aided drug design, or CADD, is used in the drug discovery process to find and develop a possible lead. Molecular modelling, molecular design, rational drug design and computational chemistry are all part of CADD. The use of AI can simplify and facilitate drug design by filtering datasets available. With the use of healthcare related data available in the records along with latest innovation in AI and Machine learning, it is possible to analyze the data and use it for faster and accurate outcomes. Thus, we can say that use of AI in drug discovery is further accelerating the global drug discovery market.

Many companies are using AI in their drug development process, for instance, on November 21, 2023, Genentech, a member of the Roche Group announced a multi-year strategic research collaboration with NVIDIA to use artificial intelligence (AI) to speed up drug discovery and development. NVIDIA and Genentech collaboration will help Genentech’s AI/ML teams, to leverage AI and ML foundational models across numerous research areas including diverse therapeutic modalities as well as will help in gaining new insights, promoting growth in the global drug discovery market.

Future Market Scenario

Global drug discovery market is expected to grow in the coming years, due to multiple factors. Primarily, the increasing global aging population has led to a higher incidence of chronic illnesses such as cardiovascular diseases, cancer, diabetes, respiratory illness, and many more. Additionally, growth in the development of biosimilars and increased use of AI by the drugs manufacturing companies is further propelling the growth in the global drug discovery market. Other important driving factors are governmental support, policies, increase in healthcare expenditure and pharmaceutical regulatory agencies and organizations. The regulatory bodies maintain the safety and efficacy of the newly approved drug by thoroughly examining the drug manufacturing process. Collaborative ventures involving pharmaceutical companies, research institutions, and biotechnology firms have spurred innovation.

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Key Players Landscape and Outlook

In the drug discovery market, companies progressively establish strategic partnerships and distribution agreements, which plays a pivotal role in market expansion. These alliances empower firms to harness each other's strengths, gain access to new markets and technologies, and pool resources for research and development endeavors. Distribution agreements enable companies to broaden their market presence at an international level. These collaborative initiatives promote innovation, expedite product development, and contribute to robust growth in the drug discovery market. In September 2023, Ono Pharmaceutical Co., Ltd., a Japanese firm announced that it has entered into a drug discovery collaboration agreement with Adimab, LLC., which is a global leader in the discovery and optimization of fully human monoclonal and bispecific antibodies. The collaboration aims to discover and develop innovative antibody drugs in the oncology field.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

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