

AI in Drug Discovery Market: Global Industry Analysis, Trends, Market Size, and Forecasts up to 2030

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Report description:

The report on the global AI in drug discovery market provides qualitative and quantitative analysis for the period from 2021-2030. AI in drug discovery market was valued at USD 1360.81 million in 2022 and expected to reach USD 9107.49 million in 2030, with a CAGR of 23.54% during the forecast period 2023-2030. The study on AI in drug discovery market covers the analysis of the leading geographies such as North America, Europe, Asia Pacific, and RoW for the period of 2021-2030.

Artificial Intelligence (AI) is revolutionizing the drug discovery market by significantly accelerating and enhancing the drug development process. AI in drug discovery involves the utilization of machine learning algorithms, data analysis, and computational techniques to streamline various stages of drug development, from target identification and validation to compound screening and clinical trial optimization. Additionally, the major driving factor for the adoption of AI in drug discovery is the overwhelming amount of biological and chemical data generated in the field. The explosion of biological data from genomics, proteomics, and other -omics technologies, coupled with the vast chemical compound libraries, makes it nearly impossible for researchers to manually process and analyze this data efficiently. AI systems excel at handling these large datasets, identifying meaningful patterns, and predicting potential drug candidates. This data-driven approach not only saves time and resources but also increases the likelihood of identifying novel drug candidates with higher efficacy and safety profiles, ultimately benefiting patients and the pharmaceutical industry as a whole. As AI continues to evolve and mature, it is poised to play an increasingly pivotal role in drug discovery and development.

The oncology sector stands out as the most rapidly expanding segment within the Artificial Intelligence (AI) in drug discovery market. This remarkable growth can be attributed to the pressing need for innovative and personalized treatments in cancer research and therapy. AI technologies, such as machine learning and data analytics, are being harnessed to analyze vast datasets, identify potential drug candidates, and optimize drug development processes in oncology. AI expedites the development of anti-cancer medications in the field of oncology drug discovery. Given the escalating cancer rates, this sector is poised for substantial expansion. As per the 2022 report from the American Cancer Society, cancer ranks as the second most prevalent cause of mortality in the United States. Projections indicate that by the conclusion of 2022, there will be over 609,360 fatalities and an estimated 1.9 million new cancer diagnoses. This underscores the pressing demand for AI-driven advancements in oncology to address this significant public health challenge. The ability of AI to accelerate the identification of novel cancer

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therapies and tailor treatments to individual patients is driving substantial interest and investment, making oncology the focal point of AI-driven drug discovery advancements.

North America is poised to lead the market due to several key factors, including the widespread adoption of AI technologies in the pharmaceutical sector, a substantial patient population, a higher incidence of chronic and infectious diseases, advanced healthcare infrastructure, and extensive ongoing clinical research and trials in AI-driven drug discovery within the region. The United States, in particular, stands out with a notable prevalence of metabolic and lifestyle-related diseases. For instance, according to the Centers for Disease Control data for 2022, over 37.3 million adults in the United States are grappling with diabetes, and as reported by the National Institutes of Health, 1 in 7 adults in the United States is affected by chronic kidney disease. Due to the rising adoption of AI in drug discovery across academic, research, and healthcare institutions, it is anticipated that companies and their significant advancements play a pivotal role in driving growth within the North American market.

Report Findings

1) Drivers

- Artificial intelligence can rapidly analyze and optimize potential drug candidates, drastically reducing the time and cost of drug discovery.
- The abundance of biological and chemical data is driving advancements in ai for drug discovery.

2) Restraints

- Regulatory hurdles and data privacy concerns pose challenges for ai adoption in drug discovery.

3) Opportunities

- Artificial intelligence offers the potential to accelerate drug discovery by enabling data-driven insights and predictive modeling, leading to more effective and personalized treatments.

Research Methodology

A) Primary Research

Our primary research involves extensive interviews and analysis of the opinions provided by the primary respondents. The primary research starts with identifying and approaching the primary respondents, the primary respondents are approached include

1. Key Opinion Leaders associated with Infinium Global Research
2. Internal and External subject matter experts
3. Professionals and participants from the industry

Our primary research respondents typically include

1. Executives working with leading companies in the market under review
2. Product/brand/marketing managers
3. CXO level executives
4. Regional/zonal/ country managers
5. Vice President level executives.

B) Secondary Research

Secondary research involves extensive exploring through the secondary sources of information available in both the public domain and paid sources. At Infinium Global Research, each research study is based on over 500 hours of secondary research accompanied by primary research. The information obtained through the secondary sources is validated through the crosscheck on various data sources.

The secondary sources of the data typically include

1. Company reports and publications
2. Government/institutional publications
3. Trade and associations journals
4. Databases such as WTO, OECD, World Bank, and among others.
5. Websites and publications by research agencies

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Segment Covered

The global AI in drug discovery market is segmented on the basis of offering, technology, application, therapeutic area, and end user.

The Global AI in Drug Discovery Market by Offering

- Software
- Services

The Global AI in Drug Discovery Market by Technology

- Machine Learning
- Natural Language Processing (NLP)
- Computer Vision
- Others

The Global AI in Drug Discovery Market by Application

- Target Identification
- Molecule Screening
- Drug Design and Drug Optimization
- Preclinical and Clinical Testing
- Others

The Global AI in Drug Discovery Market by Therapeutic Area

- Oncology
- Neurodegenerative Diseases
- Infectious Disease
- Others

The Global AI in Drug Discovery Market by End User

- Pharmaceutical & Biotechnology Companies
- Contract Research Organizations
- Academic & Government Research Institutes

Company Profiles

The companies covered in the report include

- BenevolentAI
- Atomwise Inc.
- Cyclica Inc.
- DEEP GENOMICS
- Exscientia
- IBM Corporation
- NVIDIA Corporation
- Biosymetrics
- Cloud Pharmaceuticals
- Insilico Medicine

What does this Report Deliver?

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1. Comprehensive analysis of the global as well as regional markets of the AI in drug discovery market.
2. Complete coverage of all the segments in the AI in drug discovery market to analyze the trends, developments in the global market and forecast of market size up to 2030.
3. Comprehensive analysis of the companies operating in the global AI in drug discovery market. The company profile includes analysis of product portfolio, revenue, SWOT analysis and latest developments of the company.
4. IGR- Growth Matrix presents an analysis of the product segments and geographies that market players should focus to invest, consolidate, expand and/or diversify.

Table of Contents:

Table of Content

Chapter 1. Preface

- 1.1. Report Description
- 1.2. Research Methods
- 1.3. Research Approaches

Chapter 2. Executive Summary

- 2.1. AI in Drug Discovery Market Highlights
- 2.2. AI in Drug Discovery Market Projection
- 2.3. AI in Drug Discovery Market Regional Highlights

Chapter 3. Global AI in Drug Discovery Market Overview

- 3.1. Introduction
- 3.2. Market Dynamics
 - 3.2.1. Drivers
 - 3.2.2. Restraints
 - 3.2.3. Opportunities
- 3.3. Porter's Five Forces Analysis
- 3.4. IGR-Growth Matrix Analysis
 - 3.4.1. IGR-Growth Matrix Analysis by Offering
 - 3.4.2. IGR-Growth Matrix Analysis by Technology
 - 3.4.3. IGR-Growth Matrix Analysis by Application
 - 3.4.4. IGR-Growth Matrix Analysis by Therapeutic Area
 - 3.4.5. IGR-Growth Matrix Analysis by End User
 - 3.4.6. IGR-Growth Matrix Analysis by Region
- 3.5. Value Chain Analysis of AI in Drug Discovery Market

Chapter 4. AI in Drug Discovery Market Macro Indicator Analysis

Chapter 5. Company Profiles and Competitive Landscape

- 5.1. Competitive Landscape in the Global AI in Drug Discovery Market
- 5.2. Companies Profiles
 - 5.2.1. BenevolentAI
 - 5.2.2. Atomwise Inc.
 - 5.2.3. Cyclica Inc.
 - 5.2.4. DEEP GENOMICS

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- 5.2.5. Exscientia
- 5.2.6. IBM Corporation
- 5.2.7. NVIDIA Corporation
- 5.2.8. Biosymetrics
- 5.2.9. Cloud Pharmaceuticals
- 5.2.10. Insilico Medicine

Chapter 6. Global AI in Drug Discovery Market by Offering

- 6.1. Software
- 6.2. Services

Chapter 7. Global AI in Drug Discovery Market by Technology

- 7.1. Machine Learning
- 7.2. Natural Language Processing (NLP)
- 7.3. Computer Vision
- 7.4. Others

Chapter 8. Global AI in Drug Discovery Market by Application

- 8.1. Target Identification
- 8.2. Molecule Screening
- 8.3. Drug Design and Drug Optimization
- 8.4. Preclinical and Clinical Testing
- 8.5. Others

Chapter 9. Global AI in Drug Discovery Market by Therapeutic Area

- 9.1. Oncology
- 9.2. Neurodegenerative Diseases
- 9.3. Infectious Disease
- 9.4. Others

Chapter 10. Global AI in Drug Discovery Market by End User

- 10.1. Pharmaceutical & Biotechnology Companies
- 10.2. Contract Research Organizations
- 10.3. Academic & Government Research Institutes

Chapter 11. Global AI in Drug Discovery Market by Region 2023-2030

- 11.1. North America
 - 11.1.1. North America AI in Drug Discovery Market by Offering
 - 11.1.2. North America AI in Drug Discovery Market by Technology
 - 11.1.3. North America AI in Drug Discovery Market by Application
 - 11.1.4. North America AI in Drug Discovery Market by Therapeutic Area
 - 11.1.5. North America AI in Drug Discovery Market by End User
 - 11.1.6. North America AI in Drug Discovery Market by Country
 - 11.1.6.1. The U.S. AI in Drug Discovery Market
 - 11.1.6.1.1. The U.S. AI in Drug Discovery Market by Offering
 - 11.1.6.1.2. The U.S. AI in Drug Discovery Market by Technology
 - 11.1.6.1.3. The U.S. AI in Drug Discovery Market by Application

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- 11.1.6.1.4. The U.S. AI in Drug Discovery Market by Therapeutic Area
- 11.1.6.1.5. The U.S. AI in Drug Discovery Market by End User
- 11.1.6.2. Canada AI In Drug Discovery Market
 - 11.1.6.2.1. Canada AI in Drug Discovery Market by Offering
 - 11.1.6.2.2. Canada AI in Drug Discovery Market by Technology
 - 11.1.6.2.3. Canada AI in Drug Discovery Market by Application
 - 11.1.6.2.4. Canada AI in Drug Discovery Market by Therapeutic Area
 - 11.1.6.2.5. Canada AI in Drug Discovery Market by End User
- 11.1.6.3. Mexico AI in Drug Discovery Market
 - 11.1.6.3.1. Mexico AI in Drug Discovery Market by Offering
 - 11.1.6.3.2. Mexico AI in Drug Discovery Market by Technology
 - 11.1.6.3.3. Mexico AI in Drug Discovery Market by Application
 - 11.1.6.3.4. Mexico AI in Drug Discovery Market by Therapeutic Area
 - 11.1.6.3.5. Mexico AI in Drug Discovery Market by End User
- 11.2. Europe
 - 11.2.1. Europe AI in Drug Discovery Market by Offering
 - 11.2.2. Europe AI in Drug Discovery Market by Technology
 - 11.2.3. Europe AI in Drug Discovery Market by Application
 - 11.2.4. Europe AI in Drug Discovery Market by Therapeutic Area
 - 11.2.5. Europe AI in Drug Discovery Market by End User
 - 11.2.6. Europe AI in Drug Discovery Market by Country
 - 11.2.6.1. Germany AI in Drug Discovery Market
 - 11.2.6.1.1. Germany AI in Drug Discovery Market by Offering
 - 11.2.6.1.2. Germany AI in Drug Discovery Market by Technology
 - 11.2.6.1.3. Germany AI in Drug Discovery Market by Application
 - 11.2.6.1.4. Germany AI in Drug Discovery Market by Therapeutic Area
 - 11.2.6.1.5. Germany AI in Drug Discovery Market by End User
 - 11.2.6.2. United Kingdom AI in Drug Discovery Market
 - 11.2.6.2.1. United Kingdom AI in Drug Discovery Market by Offering
 - 11.2.6.2.2. United Kingdom AI in Drug Discovery Market by Technology
 - 11.2.6.2.3. United Kingdom AI in Drug Discovery Market by Application
 - 11.2.6.2.4. United Kingdom AI in Drug Discovery Market by Therapeutic Area
 - 11.2.6.2.5. United Kingdom AI in Drug Discovery Market by End User
 - 11.2.6.3. France AI in Drug Discovery Market
 - 11.2.6.3.1. France AI in Drug Discovery Market by Offering
 - 11.2.6.3.2. France AI in Drug Discovery Market by Technology
 - 11.2.6.3.3. France AI in Drug Discovery Market by Application
 - 11.2.6.3.4. France AI in Drug Discovery Market by Therapeutic Area
 - 11.2.6.3.5. France AI in Drug Discovery Market by End User
 - 11.2.6.4. Italy AI in Drug Discovery Market
 - 11.2.6.4.1. Italy AI in Drug Discovery Market by Offering
 - 11.2.6.4.2. Italy AI in Drug Discovery Market by Technology
 - 11.2.6.4.3. Italy AI in Drug Discovery Market by Application
 - 11.2.6.4.4. Italy AI in Drug Discovery Market by Therapeutic Area
 - 11.2.6.4.5. Italy AI in Drug Discovery Market by End User
 - 11.2.6.5. Rest of Europe AI in Drug Discovery Market
 - 11.2.6.5.1. Rest of Europe AI in Drug Discovery Market by Offering

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- 11.2.6.5.2. Rest of Europe AI in Drug Discovery Market by Technology
- 11.2.6.5.3. Rest of Europe AI in Drug Discovery Market by Application
- 11.2.6.5.4. Rest of Europe AI in Drug Discovery Market by Therapeutic Area
- 11.2.6.5.5. Rest of Europe AI in Drug Discovery Market by End User
- 11.3. Asia Pacific
 - 11.3.1. Asia Pacific AI in Drug Discovery Market by Offering
 - 11.3.2. Asia Pacific AI in Drug Discovery Market by Technology
 - 11.3.3. Asia Pacific AI in Drug Discovery Market by Application
 - 11.3.4. Asia Pacific AI in Drug Discovery Market by Therapeutic Area
 - 11.3.5. Asia Pacific AI in Drug Discovery Market by End User
 - 11.3.6. Asia Pacific AI in Drug Discovery Market by Country
 - 11.3.6.1. China AI in Drug Discovery Market
 - 11.3.6.1.1. China AI in Drug Discovery Market by Offering
 - 11.3.6.1.2. China AI in Drug Discovery Market by Technology
 - 11.3.6.1.3. China AI in Drug Discovery Market by Application
 - 11.3.6.1.4. China AI in Drug Discovery Market by Therapeutic Area
 - 11.3.6.1.5. China AI in Drug Discovery Market by End User
 - 11.3.6.2. Japan AI in Drug Discovery Market
 - 11.3.6.2.1. Japan AI in Drug Discovery Market by Offering
 - 11.3.6.2.2. Japan AI in Drug Discovery Market by Technology
 - 11.3.6.2.3. Japan AI in Drug Discovery Market by Application
 - 11.3.6.2.4. Japan AI in Drug Discovery Market by Therapeutic Area
 - 11.3.6.2.5. Japan AI in Drug Discovery Market by End User
 - 11.3.6.3. India AI in Drug Discovery Market
 - 11.3.6.3.1. India AI in Drug Discovery Market by Offering
 - 11.3.6.3.2. India AI in Drug Discovery Market by Technology
 - 11.3.6.3.3. India AI in Drug Discovery Market by Application
 - 11.3.6.3.4. India AI in Drug Discovery Market by Therapeutic Area
 - 11.3.6.3.5. India AI in Drug Discovery Market by End User
 - 11.3.6.4. South Korea AI in Drug Discovery Market
 - 11.3.6.4.1. South Korea AI in Drug Discovery Market by Offering
 - 11.3.6.4.2. South Korea AI in Drug Discovery Market by Technology
 - 11.3.6.4.3. South Korea AI in Drug Discovery Market by Application
 - 11.3.6.4.4. South Korea AI in Drug Discovery Market by Therapeutic Area
 - 11.3.6.4.5. South Korea AI in Drug Discovery Market by End User
 - 11.3.6.5. Australia AI in Drug Discovery Market
 - 11.3.6.5.1. Australia AI in Drug Discovery Market by Offering
 - 11.3.6.5.2. Australia AI in Drug Discovery Market by Technology
 - 11.3.6.5.3. Australia AI in Drug Discovery Market by Application
 - 11.3.6.5.4. Australia AI in Drug Discovery Market by Therapeutic Area
 - 11.3.6.5.5. Australia AI in Drug Discovery Market by End User
 - 11.3.6.6. Rest of Asia-Pacific AI in Drug Discovery Market
 - 11.3.6.6.1. Rest of Asia-Pacific AI in Drug Discovery Market by Offering
 - 11.3.6.6.2. Rest of Asia-Pacific AI in Drug Discovery Market by Technology
 - 11.3.6.6.3. Rest of Asia-Pacific AI in Drug Discovery Market by Application
 - 11.3.6.6.4. Rest of Asia-Pacific AI in Drug Discovery Market by Therapeutic Area
 - 11.3.6.6.5. Rest of Asia-Pacific AI in Drug Discovery Market by End User

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- 11.4. RoW
 - 11.4.1. RoW AI in Drug Discovery Market by Offering
 - 11.4.2. RoW AI in Drug Discovery Market by Technology
 - 11.4.3. RoW AI in Drug Discovery Market by Application
 - 11.4.4. RoW AI in Drug Discovery Market by Therapeutic Area
 - 11.4.5. RoW AI in Drug Discovery Market by End User
 - 11.4.6. RoW AI in Drug Discovery Market by Sub-region
 - 11.4.6.1. Latin America AI in Drug Discovery Market
 - 11.4.6.1.1. Latin America AI in Drug Discovery Market by Offering
 - 11.4.6.1.2. Latin America AI in Drug Discovery Market by Technology
 - 11.4.6.1.3. Latin America AI in Drug Discovery Market by Application
 - 11.4.6.1.4. Latin America AI in Drug Discovery Market by Therapeutic Area
 - 11.4.6.1.5. Latin America AI in Drug Discovery Market by End User
 - 11.4.6.2. Middle East AI in Drug Discovery Market
 - 11.4.6.2.1. Middle East AI in Drug Discovery Market by Offering
 - 11.4.6.2.2. Middle East AI in Drug Discovery Market by Technology
 - 11.4.6.2.3. Middle East AI in Drug Discovery Market by Application
 - 11.4.6.2.4. Middle East AI in Drug Discovery Market by Therapeutic Area
 - 11.4.6.2.5. Middle East AI in Drug Discovery Market by End User
 - 11.4.6.3. Africa AI in Drug Discovery Market
 - 11.4.6.3.1. Africa AI in Drug Discovery Market by Offering
 - 11.4.6.3.2. Africa AI in Drug Discovery Market by Technology
 - 11.4.6.3.3. Africa AI in Drug Discovery Market by Application
 - 11.4.6.3.4. Africa AI in Drug Discovery Market by Therapeutic Area
 - 11.4.6.3.5. Africa AI in Drug Discovery Market by End User

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