

# Artificial Intelligence in Drug Discovery Market to Surpass USD 17.55 Billion by 2032

*Artificial Intelligence in Drug Discovery Market Growth is Driven by Accelerated Innovations in AI-Powered Drug Development Solutions*

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According to Research by SNS Insider, The [Artificial Intelligence in Drug Discovery Market](#) was estimated at USD 1.7 billion in 2023 and is projected to reach USD 17.55 billion by 2032, growing at an exceptional CAGR of 29.64% over the forecast period 2024–2032.



The growth of Artificial Intelligence in Drug Discovery Market is fueled by the increasing adoption of AI technologies to streamline drug discovery processes, enhance precision medicine, and reduce time and cost barriers in pharmaceutical research.

## Market Overview

The Artificial Intelligence in Drug Discovery Market is witnessing transformative growth, driven by the rising demand for efficient and cost-effective drug discovery solutions. AI technologies are reshaping the pharmaceutical landscape by enabling faster identification of drug candidates, optimizing clinical trials, and predicting therapeutic responses. The demand for AI-powered platforms has surged with the need for advanced solutions in personalized medicine, drug repurposing, and early disease detection.

Prominent AI providers focus on partnerships and innovations to cater to this growing demand. Integrating AI with big data analytics, machine learning, and deep learning algorithms has further boosted market efficiency. Moreover, the collaboration between AI technology firms and pharmaceutical companies fosters innovation and drives market expansion. This synergy is crucial in addressing challenges such as drug efficacy, adverse effects, and regulatory hurdles, positioning AI as an indispensable tool in drug discovery.

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#### Key Artificial Intelligence (AI) in Drug Discovery Market Players:

- IBM Corporation
- Microsoft
- Google
- NVIDIA Corporation
- Atomwise Inc.
- Deep Genomics
- Cloud Pharmaceuticals
- Insilico Medicine
- BenevolentAI
- Exscientia
- Cyclica
- BIOAGE
- Numerate
- NuMedii
- Envisagenics
- twoXAR
- OWKIN Inc.
- XtalPi
- Verge Genomics
- BERG LLC

#### Segment Analysis

##### By Component:

- **Software:** The fastest-growing segment, expected to grow at a CAGR of over 30% during the forecast period, due to its role in facilitating predictive analytics, drug modeling, and molecular analysis.
- **Hardware:** This segment provides the necessary computational infrastructure for AI tools but accounts for a moderate share of the market.
- **Services:** Dominated the market with a revenue share of over 38% in 2023, driven by demand for AI-driven consulting and customization services in drug discovery.

##### By Therapeutic Area:

- **Oncology:** In 2023, this segment held the largest revenue share of over 24.7%. AI's application in early cancer detection, such as lung cancer, has been pivotal. AI-enabled systems improve diagnostic accuracy and facilitate early-stage interventions, significantly improving patient outcomes.
- **Neurodegenerative Diseases:** Fastest-growing segment, projected to expand at a CAGR of

32.5%, owing to the growing prevalence of Alzheimer's and Parkinson's diseases and the urgent need for innovative treatments.

- Other Areas: Cardiovascular, metabolic, and infectious diseases continue to exhibit steady growth due to the rising adoption of AI-driven diagnostic tools.

By Application:

- Drug Optimization and Repurposing segment accounted for the highest revenue share of more than 54.8% in 2023. Advanced AI systems like Deep Learning are widely utilized to improve drug efficacy, minimize adverse reactions, and repurpose existing drugs for new therapeutic indications.
- Preclinical Testing: The second-largest segment, growing steadily due to its role in reducing preclinical trial durations and associated costs.
- Others: Includes applications in biomarker discovery and precision medicine.

Regional Analysis

In 2023, North America led the Artificial Intelligence in Drug Discovery Market, capturing a revenue share of 58.6%.

This dominance is attributed to significant investments in AI research, well-established collaborations between technology and pharmaceutical companies, and a favorable regulatory landscape that fosters innovation. The United States is the key driver of this growth, boasting a robust healthcare infrastructure, advanced research facilities, and a thriving ecosystem for innovation. Major pharmaceutical companies in the U.S. are leveraging AI technologies to expedite drug discovery processes, enhancing efficiency and reducing costs. Additionally, the presence of global tech leaders and their investments in AI-driven healthcare solutions further solidifies the region's leadership.

Europe followed closely, showing immense potential for growth due to the increasing adoption of AI in drug repurposing and optimization. Germany and the UK are leading markets in this region, driven by their strong focus on healthcare innovation, widespread adoption of precision medicine, and government-backed initiatives to integrate AI into drug discovery.

The Asia Pacific region is poised to witness the fastest growth, fueled by rising healthcare investments, an increasing emphasis on precision medicine, and government initiatives promoting AI technologies. Countries such as China, India, and Japan are emerging as hotspots for AI integration, supported by expanding healthcare infrastructure and growing demand for advanced diagnostic and therapeutic solutions.

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Recent Developments

- May 2023: Google introduced two new AI tools—Target and Lead Identification Suite and Multiomics Suite—to accelerate drug discovery. These solutions enable more efficient in silico drug design and protein structure predictions.
- August 2023: Insilico Medicine entered into a strategic collaboration with Sanofi to identify potential drug targets using its proprietary AI platform.
- June 2023: IBM announced enhanced AI capabilities for Watson Health, aimed at accelerating clinical trials and improving patient outcomes through predictive analytics.
- April 2023: BenevolentAI identified potential drug candidates for ALS treatment using its AI platform. This breakthrough offers hope for addressing this debilitating disease.
- July 2023: Novartis established a dedicated AI research hub in Basel, Switzerland, focusing on leveraging AI for drug discovery and personalized medicine.

This innovative landscape underscores the transformative potential of AI in revolutionizing the drug discovery process, paving the way for groundbreaking advancements in healthcare.

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