

Global Computer-Aided Drug Discovery Market: Key Drivers, Trends, Growth Opportunities, and Forecast for 2024-2033

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Computer-Aided Drug Discovery Global Market Report 2024 - Market Size, Trends, And Global Forecast 2024-2033

The global market for drug discovery is on an exponential rise, with computational capabilities playing a crucial role in this growth trajectory. The primary tool aiding this ascendance is computer-aided drug discovery CADD, whose market size is already experiencing a sharp

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The computer aided drug discovery market size is expected to see rapid growth in the next few years. It will grow to \$10.83 billion in 2028 at a compound annual growth rate (CAGR) of 12.8%”

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upward curve. According to the Computer-Aided Drug Discovery Global Market Report 2024, the market is projected to ascend from an estimated \$5.94 billion in 2023 to a whopping \$6.69 billion in 2024, clocking a compound annual growth rate CAGR of 12.6%. The surge during the historic period can be traced back to an amalgamation of factors such as the escalating computational power, a notable improvement in molecular modeling, and an increased demand from the pharmaceutical industry, with robust support from regulatory bodies and collaborative efforts.

What promises does [the Computer-Aided Drug Discovery](#)

[Market hold for the future?](#)

The immediate future seems promising for the computer-aided drug discovery market, with projections suggesting a steady growth in market size. The increase is poised to continue

through to 2028, with an expected rise to \$10.83 billion at a robust compound annual growth rate CAGR of 12.8%. This prospective expansion in the forecast period is credited to the integration of artificial intelligence AI and machine learning ML into drug discovery processes, a paradigm shift towards personalized medicine, increasing availability of big data, the development and adoption of cloud-based platforms for CADD, and novel therapeutics development. Notable trends in the forecast period include the movement towards collaboration between various stakeholders, expansive development of AI-driven platforms offering end-to-end solutions, innovative drug discovery, and product developments.

Get a comprehensive insight into the computer-aided drug discovery market with a detailed sample report:

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What are the key driving [factors powering the growth of the Computer-Aided Drug Discovery Market?](#)

A significant driving force behind the growth of the computer-aided drug discovery market is the rising prevalence of cancer cases, which is expected to spur the market forward. Cancer, characterized by the uncontrolled growth and division of abnormal cells, sees increasing cases due to reasons including lifestyle changes, urbanization, environmental pollution, tobacco and alcohol consumption, healthcare access, and overall awareness. CADD holds immense potential in designing drugs targeting cancer cells with specific genetic mutations, opening doors to more personalized and effective cancer treatments. In May 2024, the National Cancer Institute, a US-based agency for cancer research and training, reported nearly 20 million new cases and 9.7 million cancer-related deaths in 2022, which by 2040, is projected to significantly increase to an estimated 29.9 million new cases and 15.3 million deaths annually. This prevalent rise in cancer cases is a definitive driver of the computer-aided drug discovery market.

Get deep insights into the full report:

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Which companies hold a major stake in the Computer-Aided Drug Discovery Market?

Several major companies are operative in the computer-aided drug discovery market, including Dassault Systèmes SE, PerkinElmer Inc., Roivant Sciences Ltd., Certara Inc., Schrödinger Inc., XtalPi Inc., Dotmatics Limited, Simulations Plus Inc., ChemAxon Ltd., Exscientia Ltd., Insilico Medicine Inc., Collaborative Drug Discovery Inc., OpenEye Scientific Software Inc., Nimbus Therapeutics LLC, Atomwise Inc., GNS Healthcare Inc., BenevolentAI Limited, EpiVax Inc., Numerate Inc., Cloud Pharmaceuticals Inc., Aris Pharmaceuticals Inc., Cyclica Inc., BioSolveIT GmbH, Chemical Computing Group ULC, InSilicoTrials Technologies S.p.A

How is innovation shaping the Computer-Aided Drug Discovery Market landscape?

A significant trend emerging in the computer-aided drug discovery CADD market lies in the development of innovative solutions, such as the employment of AI in drug discovery to enhance the accuracy, speed, and efficiency of identifying prospective drug candidates, optimize lead compounds, and facilitate the development of personalized medicine. An exemplar of this is Merck KGaA, a Germany-based science and technology company that launched AIDDISON™, the first software-as-a-service platform that integrates drug discovery and synthesis, in December 2023. This platform, which marries generative AI, ML, and CADD, accelerates drug development by virtually screening compounds from over 60 billion chemical targets and recommending optimal synthesis routes to reduce the cost and time of drug discovery.

How is the Computer-Aided Drug Discovery Market segmented?

The computer-aided drug discovery market covered in this report is categorized into the following segments:

- 1 By Type: Structure-Based Drug Design, Ligand-Based Drug Design, Sequence-Based Approaches
- 2 By Therapeutic Area: Oncology, Neurology, Cardiovascular Disease, Respiratory Disease, Diabetes, Other Therapeutic Areas
- 3 By End User: Pharmaceutical Companies, Biotechnology Companies, Research Laboratories

Which region holds the dominant position in the Computer-Aided Drug Discovery Market?

In terms of regional presence, North America holds the leading position in the computer-aided drug discovery CADD market as of 2023, followed by regions including Asia-Pacific, Western Europe, Eastern Europe, South America, the Middle East, and Africa.

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