

Biosimulation Market by Offering (Module, Integrated Platform), Application (Disease Modeling, PBPK, PKPD, Trial Simulation, Manufacturing & Supply chain: planning & forecasting), Indication (Cancer, CNS, CVS), End User, & Region - Global Forecast to 2029

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Report description:

The biosimulation market is projected to reach USD 9.18 billion by 2029 from USD 4.24 billion in 2024, at a CAGR of 16.7% from 2024 to 2029. Increasing need for cost and time reduction in the drug development process has been one of the major drivers in the adoption of biosimulation tools. These tools predict how the drugs will behave inside the human body, potentially minimizing the requirements of extensive clinical trials. But there are some restraining factors in the market; the cost of biosimulation technologies is discouragingly high and thus, prohibitive to small companies and the academic community.

"Drug Discovery held the largest market share in the biosimulation market in 2023, by application."

The biosimulation market is segmented based on application into drug discovery, drug development, disease modelling, manufacturing & supply chain management and other applications. The drug discovery segment held the largest market share in 2023, since it plays a vital role in accelerating and enriching early stages of pharmaceutical research. The tool created by biosimulation makes it possible for the researchers to simulate drug behavior at the molecular level, predict biological target interaction, even identify potential drug candidates before they reach the costly phases of preclinical and clinical trial stages. It reduces both the time and the cost incurred during the process of drug development.

"By deployment model, the cloud-based model segment is expected to register the fastest growth over the forecast period."

By deployment model, the biosimulation market is divided into on-premises, cloud-based and hybrid model. The cloud-based segment is projected to be the fastest-growing segment over the forecast period. Cloud-based platforms are much more flexible and scalable and make very significant computational resources available at the point when they are needed to run complex biosimulations. This flexibility makes cloud models highly cost-effective, particularly for smaller biotech firms and academic

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institutions that would lack the infrastructure for high-performance computing.

"Asia Pacific is estimated to register the highest CAGR over the forecast period."

The biosimulation market is geographically segmented into North America, Europe, Asia Pacific, Latin America, and Middle East & Africa. The Asia Pacific biosimulation market is projected to register highest CAGR during the forecast period. The growth of this region is due to an aggressive build-out of the pharmaceutical and biotechnology industry in this region, especially in China, India, and South Korea, where large investments are committed to drug discovery and development. Markets in this region increasingly embrace sophisticated technology, such as biosimulation, to rationalize their R&D processes, reduce costs, and accelerate their time-to-market for new drugs.

Breakdown of supply-side primary interviews by company type, designation, and region:

- By Company Type: Tier 1 (40%), Tier 2 (35%), and Tier 3 (25%)
- By Designation: Managers (40%), Directors (35%), and Others (25%)
- By Region: North America (40%), Europe (30%), Asia Pacific (20%), Latin America (5%) and Middle East Africa (5%)

List of Companies Profiled in the Report:

- o Certara USA. (US)
- o Simulations Plus. (US)
- o Dassault Systemes (France)
- o Schrodinger, Inc. (US)
- o Advanced Chemistry Development, Inc. (Canada)
- o Chemical Computing Group ULC. (Canada)
- o Rosa & Co. LLC. (US)
- o Genedata AG (US)
- o Physiomics Plc (United Kingdom)
- o In Silico Biosciences. (US)
- o Allucent. (US)
- o OpenEye, Cadence Molecular Sciences. (US)
- o Cellworks Group, Inc. (US)
- o VeriSIM Life. (US)
- o Netabolics SRL (Italy)
- o Charnwood Discovery (United Kingdom)
- o The MathWorks, Inc. (US)
- o ANSYS, Inc (US)
- o Instem Group of Companies (United Kingdom)
- o Insilico Medicine (US)
- o SCM - Software Chemistry & Materials (Netherlands)
- o BioSymetrics, Inc. (Canada)
- o Atomwise Inc. (US)
- o insitro. US)
- o Clinithink. (US)

Research Coverage:

This research report categorizes the biosimulation market by offerings (software and services), application (drug discovery, drug development, disease modelling, manufacturing & supply chain and other applications), therapeutic area (oncology, cardiovascular disease, neurological disorders, infectious disease, and others), revenue model (license-based model, subscription-based model, service-based model, and pay-per-use model), deployment model (on-premises model, cloud-based model, and hybrid model) end user (pharmaceutical & biotechnology companies, contract research organizations (CROs), academic & research institutions, regulatory bodies and others), and region. The scope of the report covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the biosimulation

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market. A thorough analysis of the key industry players has been done to provide insights into their business overview, offerings, and key strategies such as acquisitions, collaborations, partnerships, mergers, product/service launches & enhancements, and approvals in the biosimulation market. Competitive analysis of upcoming startups in the biosimulation market ecosystem is covered in this report.

Reasons to Buy the Report

The report will help market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall biosimulation market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

- Analysis of key drivers: (increase in R&D investments in the pharmaceutical and biotechnology industries), restraints (lack of standardization), opportunities (use of biosimulation solution for pediatric drug development), and challenges (difficulty in matching the complexity of biological systems and processes) influencing the growth of the biosimulation market.
- Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the biosimulation market.
- Market Development: Comprehensive information about lucrative markets - the report analyses the biosimulation market across varied regions.
- Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the biosimulation market.
- Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players such as Certara USA. (US), Simulations Plus. (US), Dassault Systemes (France), Schrodinger, Inc. (US), Advanced Chemistry Development, Inc. (Canada), Chemical Computing Group ULC. (Canada), Rosa & Co. LLC. (US), Genedata AG (US), etc. among others in biosimulation market. "

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