

In Silico Protein Design Market to Reach USD \$4.02 Billion by 2029 at 21.1% CAGR

The Business Research Company's In Silico Protein Design Global Market Report 2025 – Market Size, Trends, And Forecast 2025-2034

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/EINPresswire.com/ -- What Is The Estimated Industry Size Of In Silico Protein Design Market?

The market size of in silico protein design has experienced considerable growth in the recent years. It is expected to expand from \$1.54 billion in 2024 to \$1.87 billion in 2025, registering a compound annual growth rate (CAGR) of 21.4%. The growth observed in the historic period is



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owed to the increasing knowledge about protein therapeutics, heightened interest in advanced immunotherapies, rising requirement for eco-friendly and sustainable biotech solutions, greater focus on enhancing drug efficacy via protein design, and an increase in the usage of cloud-based technologies in research.

Expectations are high for significant expansion in the in silico protein design market in the upcoming years, with predictions placing its value at \$4.02 billion in 2029, growing at a compound annual growth rate (CAGR) of

21.1%. Factors contributing to this surge during the forecasted period include increased use of machine learning in protein modeling, additional investments in computational biology, a growing necessity for cost-efficient drug discovery processes, an intensified focus on precision medicine, and rising demand for biopharmaceuticals. Foreseen trends for this period also involve advancements in AI-driven protein modeling, a superior level of integration with quantum computing, development of automated design platforms, breakthroughs in de novo protein synthesis, and progress in the integration of multi-omics data.

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What Are The Major Factors Driving The [In Silico Protein Design Global Market Growth](#)?

The surge in the need for personalized medicine is predicted to boost the in silico protein design market's growth in the future. Personalized medicine involves customizing prevention strategies and medical treatment to a person's unique genetic composition, lifestyle, and surroundings. The interest in personalized medicine is growing due to the advancement in genomic technologies, and the rising acceptance of value-based care models focused on enhancing patient results while minimizing overall health expenditure. In silico protein design fuels the need for personalized medicine by facilitating the quick creation of therapeutic proteins modified to suit individual patient needs. For example, the FDA sanctioned 16 new personalized treatments for patients with rare diseases in 2023, up from only six approvals in 2022, according to the Personalized Medicine Coalition (PMC), a non-profit organization based in the US in February 2024. Consequently, the rising requirement for personalized medicine is propelling the in silico protein design market's growth.

Who Are The Leading Companies In The In Silico Protein Design Market?

Major players in the [In Silico Protein Design Global Market](#) Report 2025 include:

- Dassault Systèmes SE
- Schrödinger Inc.
- Generate Biomedicines Inc.
- Insilico Medicine Inc.
- Chemical Computing Group ULC
- Arzeda Corp.
- Outpace Bio Inc.
- Evozyne Inc.
- Cradle Bio B.V.
- Seismic Therapeutics Inc.

What Are The Major Trends That Will Shape The In Silico Protein Design Market In The Future?

Leading firms in the in silico protein design market are concentrated on creating cutting-edge solutions like push-button protein design platforms. These novel solutions speed up drug discovery, enhance therapeutic effectiveness, and encourage the development of innovative biologics. Push-button protein design platforms serve as streamlined, automated tools that scientists can utilize to create and adjust proteins without an extensive need for manual intervention. For example, in July 2025, a British biotech firm, Latent Labs, launched Latent-X. This is a generative AI model available via a web-based push-button platform that gives non-coders the ability to upload targets and create macrocycles and mini-binders at an atomic scope. The system achieves 91-100% hit rates for macrocycles and 10-64% for mini-binders, attains lab-verified specificity with picomolar to micromolar binding affinities, and generates entire sequences and structures at a pace over ten times faster than old methods. Such technological advancement is broadening accessibility and quickening progress in protein therapeutics.

What Are The Primary Segments Covered In The Global In Silico Protein Design Market Report?

The in silico protein design market covered in this report is segmented as

- 1) By Software Type: Cloud-Based Software, On-Premise Software
- 2) By Technology Type: Molecular Modelling, Artificial Intelligence And Machine Learning Algorithms, Homology Modelling, Other Technology Types
- 3) By Application: Drug Discovery And Development, Enzyme Engineering, Biomarker Discovery, Vaccinology, Academic Research
- 4) By End-User: Pharmaceutical And Biotechnology Companies, Academic And Research Institutes, Other End-Users

Subsegments:

- 1) By Cloud-Based Software: Subscription-Based, Pay-Per-Use, Hybrid Cloud
- 2) By On-Premise Software: Enterprise License, Perpetual License, Customized Solutions

View the full in silico protein design market report:

<https://www.thebusinessresearchcompany.com/report/in-silico-protein-design-global-market-report>

Which Region Is Forecasted To Grow The Fastest In The In Silico Protein Design Industry?

In 2024, the global market report for in silico protein design revealed North America as the leading region. It is anticipated that the Asia-Pacific region will experience the most rapid growth in the upcoming period. The report encompasses regions such as Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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Speak With Our Expert:

Saumya Sahay

Americas +1 310-496-7795

Asia +44 7882 955267 & +91 8897263534

Europe +44 7882 955267

Email: saumyas@tbrc.info

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Oliver Guirdham

The Business Research Company

+44 7882 955267

info@tbrc.info

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