

Computational Biology Market Report by Application (Cellular and Biological Simulation, Drug Discovery and Disease Modelling, Preclinical Drug Development, Clinical Trials, Human Body Simulation Software), Services (In-House, Contract), End Use (Academics, Pharmaceutical Industry, Commercial), and Region 2023-2028

Market Report | 2023-11-24 | 140 pages | IMARC Group

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Report description:

The global computational biology market size reached US\$ 4.7 Billion in 2022. Looking forward, IMARC Group expects the market to reach US\$ 15.24 Billion by 2028, exhibiting a growth rate (CAGR) of 21.66% during 2022-2028.

Computational biology, also known as bioinformatics, is the interdisciplinary branch of science that uses math, statistics and computer science for understanding and modeling the structures and processes of life. It involves various aspects of biology, such as genetics, evolution, cell biology, and biochemistry. The process uses computational techniques, including algorithms, to represent and simulate biological systems and interpret experimental data on a large scale. Computational biology also helps understand the treatment for diseases and cellular function by creating a database of biological information from amino-acid sequences, nucleotides, and macromolecular structures. Nowadays, computational biology has become an essential part of biological research projects, including the human genome project, protein data banks and genomic databases.

Computational Biology Market Trends:

The global computational biology market is primarily driven by the rising number of clinical studies in the field of pharmacogenomics. This has helped increase the understanding of the diverse biological makeup of the patient population, biological pathways, and the genomes underpinning them. As a result, there is a high demand for computational biology solutions, as they help reduce the overall time needed for drug discovery and various other scientific experiments. The process also aids the visualization of tools to simulate advanced drug-drug interactions. In addition to this, the growing demand for computational biology in epi-genomics, proteomics, and meta-genomics to undertint protein structures and interactions is also propelling the

market growth. Furthermore, various technological advancements in drug development and disease modeling, along with increasing investments by private and government organizations in research and development (R&D) activities, are also anticipated to provide a positive thrust to the market in the near future.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global computational biology market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on application, services and end use.

Breakup by Application:

Cellular and Biological Simulation **Computational Genomics Computational Proteomics** Pharmacogenomics Others Drug Discovery and Disease Modelling **Target Identification Target Validation** Lead Discovery Lead Optimization Preclinical Drug Development Pharmacokinetics Pharmacodynamics **Clinical Trials** Phase I Phase II Phase III Human Body Simulation Software

Breakup by Services:

In-house Contract

Breakup by End Use:

Academics Pharmaceutical Industry Commercial

Breakup by Region:

North America United States Canada Asia-Pacific

China Japan India South Korea Australia Indonesia Others Europe Germany France United Kingdom Italy Spain Russia Others Latin America Brazil Mexico Others Middle Fast and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Certara, Chemical Computing Group ULC, Compugen Ltd, Dassault Systemes, Genedata AG, Insilico Biotechnology AG, Instem plc, Nimbus Therapeutics LLC, Schrodinger Inc. and Simulations Plus Inc.

Key Questions Answered in This Report

- 1. What was the size of the global computational biology market in 2022?
- 2. What is the expected growth rate of the global computational biology market during 2023-2028?
- 3. What are the key factors driving the global computational biology market?
- 4. What has been the impact of COVID-19 on the global computational biology market?
- 5. What is the breakup of the global computational biology market based on the application?
- 6. What is the breakup of the global computational biology market based on the services?
- 7. What is the breakup of the global computational biology market based on the end use?
- 8. What are the key regions in the global computational biology market?
- 9. Who are the key players/companies in the global computational biology market?

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