Computational Biology Market Analysis by Application, by Service, by End User and Segment Forecasts to 2020

Description: Computational Biology Market Analysis By Application (Cellular & Biological Simulation, Pharmacogenomics, Drug Discovery, Drug Development, Lead Optimization, Lead Discovery, Pharmacokinetics, Pharmacodynamics, Disease Modeling, Clinical Trials), By Service (In-house, Contract), By End User (Academics, Industry, Commercial) And Segment Forecasts To 2020

The global market for computational biology is expected to reach USD 4,285.1 million by 2020 growing at a CAGR of 21.1%. Steady increase in the usage & application of computational biology for bioinformatics R&D programs designed for sequencing genomes to better understand biological systems and increasing number of clinical studies in pharmacogenomics and pharmacokinetics for novel drug discovery studies are expected to drive computational biology demand over the next six years.

Computational genomics for cellular and biological simulation applications dominated the market in 2013, accounting for over 47% of global revenue. Key factors driving demand for these applications include the growth of drug designing, disease modeling and personalized medicine applications and the growing usage of computational biology for functional and structural genomics, epigenomics and metagenomics for the analysis of protein transcription, protein-protein interactions, gene sequencing and expression and 3-dimensional protein structure analysis.

Further key findings from the study suggest:

- North America was the largest regional market, accounting for 58.0% of the global revenue in 2013. Its large share is majorly attributed to the growing research investments and initiatives for development of drug discovery, disease modeling technologies and innovations in biological computation methods. It is expected that Asia Pacific will witness the fastest growth in the market, at an estimated CAGR of 28.0% owing to the increasing expenditure in clinical studies for pharmacokinetics and pharmacogenomics.
- The application of computational biology in proteomics for cellular simulation is expected to grow at the fastest CAGR of over 22% owing to the shift in sequencing studies towards further analysis of the nature of various biological proteins as a part of development of personalized medicine.
- Drug discovery and disease modelling applications dominated the market, accounting for 58.0% of global revenue in 2013. This large share is attributed by the extensive drug development pipelines present for a number of global branded and generic drug manufacturing firms such as Sanofi, Novo Nordisk and Eli Lilly.
- Computational Biology databases dominated the tools segment and accounted for 44.5% of the market revenue in 2013, owing to extensive genomic database usage for warehousing and data mining of biological and sequential data generated from genomic and proteomic studies. Consequently, the software and services for the analysis of biological data is expected to witness the fastest CAGR of over 21.0%.
- Key players of this market include Schrodinger, Accelrys, Certara, Entelos, Simulation Plus and others.

For the purpose of this study, the report has segmented the computational biology market on the basis of applications, tools, services, end users and region:

Computational Biology Application Outlook

- Cellular & Biological Simulation
  - Computational Genomics
  - Computational Proteomics
  - Pharmacogenomics
  - Others (Transcriptomics/Metabolomics)
- 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

Computational Biology Tools Outlook

- Databases
- Infrastructure (Hardware)
- Analysis Software & Services

Computational Biology Services Outlook

- In-house
- Contract

Computational Biology End User Outlook

- Academics
- Industry
- Commercial

Computational Biology Regional Outlook

- North America
- Europe
- Asia Pacific
- RoW

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