

Molecular Modeling Market: Segmented: by application (Drug Development, Drug Discovery, and Others); by product type (Software and Services); , And Region – Global Analysis Of Market Size, Share & Trends For 2019–2020 And Forecasts To 2031

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Abstracts

[170+ pages Report] Molecular Modeling Market to surpass USD 17.3 billion by 2031 from USD 13 billion in 2021 at a CAGR of 13.8% in the coming years, i.e., 2021-31.

Product Overview

The technique of molecular modelling is used in medication development. It aids in the description of the formation, manipulation, and physical properties of three-dimensional molecular structures. It aids in the study of molecular architectures and behavior. Molecular modelling software is used to produce 3D computer models of molecules' structure and behavior. This is extremely useful since it allows them to alter molecules. They will then be able to predict how various medications will behave in humans. This is significantly more effective and safe than using lab animals to test drugs. When it came to designing new treatments and assessing them for detrimental consequences, scientists used molecular modelling tools. However, because of its utility, it is increasingly being employed in computational chemistry and materials science applications.

Market Highlights

Global Molecular Modeling market is expected to project a notable CAGR of 13.8% in 2031.

The rising frequency of chronic diseases is projected to fuel the development of more advanced and effective therapies. In such circumstances, the molecular modelling

market is likely to expand over the forecast period. Cancer is the second-leading cause of death worldwide, according to WHO data published in 2021. It is the cause of ten million fatalities per year. In addition, cancer-causing diseases including hepatitis and the human papillomavirus (HPV) account for over one-third of cancer incidence in low- and lower-middle-income nations. The rising frequency of chronic diseases, as well as the added benefit of drug development in providing lower-cost medications, are propelling the molecular modelling industry forward.

Global Molecular Modeling: Segments

Drug Development segment to grow with the highest CAGR during 2021-31

Global Molecular Modeling Market is fragmented by application into Drug Development, Drug Discovery, and Others. The rising prevalence of numerous diseases, as well as the growing resistance to existing treatment medications, is driving up need for new pharmacological targets. The typical cost of generating new medication compounds, as well as the time it takes to conduct out research technologies, is quite significant. As a result, numerous pharmaceutical companies are using molecular modelling approaches to discover new drugs. This element has an impact on the worldwide molecular modelling market growth of this category.

Software segment to grow with the highest CAGR during 2021-31

Global Molecular Modeling market is segmented by product type into Software and Services. Many molecular design processes are supported by the molecular modelling software, including molecular modelling, chemical structure calculations, protein simulations, and other procedures in drug design and bioinformatics. Furthermore, molecular modelling software is applicable to a wide range of scientific domains, including computational chemistry and material sciences.

Market Dynamics

Drivers

The rising frequency of numerous chronic diseases has prompted the creation of new drugs.

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the human papillomavirus (HPV) account for over one-third of cancer incidence in low- and lower-middle-income nations. The rising frequency of chronic diseases, as well as the added benefit of drug development in providing lower-cost medications, are propelling the molecular modelling industry forward.

Advancement in R&D

Molecular modelling is a significant tool for drug development. The pharmaceutical industry relies heavily on the development of novel medications with therapeutic applications. Experimental and computational strategies are complimentary approaches in drug design and discovery. Molecular modelling, on the other hand, is a safe and simple method that aids in the investigation, interpretation, explanation, and identification of molecular features utilizing three-dimensional structures. 3D modelling software, for example, is a useful tool that aids many professionals in creating complicated 3D images and visualizing their work. Molecular modelling is used in drug development to anticipate the structure of an intermolecular complex produced by two or more constituent molecules. Molecular modelling approaches are used to explore molecular systems ranging from huge biological molecules to small chemical systems in diverse domains of computational chemistry, computational biology, and material science.

Restraint

High cost

The cost of most molecular modelling tools may necessitate specialized knowledge to calculate the probable return on investment. Open-source software may not be able to meet the necessary requirements of pharmaceutical and biotechnology companies during the drug development process. It recommends the purchase of specifically customized software, which may be more expensive and raise the final drug's price. Many businesses, small businesses, and firms with limited capital and monetary resources might benefit from molecular modelling to improve their processes. Due to the expensive cost of most software, many businesses and organizations do not use it in their daily operations.

Global Molecular Modeling: Key Players

Simulations Plus, Inc (US)

Company Overview, Business Strategy, Key Product Offerings, Financial Performance, Key Performance Indicators, Risk Analysis, Recent Development, Regional Presence, SWOT Analysis

Cambridge Crystallographic Data Centre (England)

Optibrium (UK)

Cresset (UK)

BioSolveIT GmbH (Germany)

OpenEye Scientific Software (US)

Chemical Computing Group (Canada)

Acellera Ltd (London)

Dassault Systèmes (France)

Schrödinger, LLC (US)

Certara, L.P (US)

Other Prominent Players

Global Molecular Modeling: Regions

Global Molecular Modeling market is segmented based on regional analysis into five major regions: North America, Latin America, Europe, Asia Pacific and the Middle East and Africa. North America accounted for XX percent of the market in 2021, and the region is expected to grow at a CAGR of XX percent over the next decade. In 2021, the molecular modelling market was dominated by the North American region. Given that the majority of large pharmacy and biotech companies are based in either America or Canada, this is projected to continue until at least 2031. Many large corporations have formed strategic alliances. This has enabled them to increase their research and development spending. As a result, they have been able to develop a new generation of medications that are more effective and strong. These medications are manufactured in accordance with strict national and international regulations.

Impact of Covid-19 on Molecular Modeling Market

The pandemic of COVID-19 has had a huge impact on the molecular modelling industry. The medication development process, which includes molecular modelling processes, has been significantly disturbed at every stage. Many drug development businesses and clinical research organizations (CROs) were also compelled to halt at least some, if not all, of their clinical trials. Despite this, sponsors are continuing to find methods to advance their program by taking proactive steps to guarantee that their paused studies are ready to resume when conditions improve. Molecular investigations were carried out during the epidemic to uncover prospective therapies among the natural and synthetic drugs available. Computer simulations and related data have already been shown to play an important role in drug research and discovery.

Global Molecular Modeling is further segmented by region into:

North America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United States and Canada

Latin America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – Mexico, Argentina, Brazil and Rest of Latin America

Europe Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United Kingdom, France, Germany, Italy, Spain, Belgium, Hungary, Luxembourg, Netherlands, Poland, NORDIC, Russia, Turkey and Rest of Europe

Asia Pacific Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – India, China, South Korea, Japan, Malaysia, Indonesia, New Zealand, Australia and Rest of APAC

Middle East and Africa Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – North Africa, Israel, GCC, South Africa and Rest of MENA

Global Molecular Modeling report also contains analysis on:

Molecular Modeling Segments:

By application

Drug Development

Drug Discovery

Others

By product type

Software

Services

Molecular Modeling Dynamics

Molecular Modeling Size

Supply & Demand

Current Trends/Issues/Challenges

Competition & Companies Involved in the Market

Value Chain of the Market

Market Drivers and Restraints

Molecular Modeling Market Report Scope and Segmentation

Report Attribute Details

Market size value in 2021 USD 13 billion

Revenue forecast in 2031 USD 17.3 billion

Growth Rate CAGR of 13.8% from 2021 to 2031

Base year for estimation 2020

Quantitative units Revenue in USD million and CAGR from 2021 to 2031

Report coverage Revenue forecast, company ranking, competitive landscape, growth factors, and trends

Segments covered

product type , application and Region

Regional scope North America, Europe, Asia Pacific, Latin America, Middle East & Africa (MEA)

Key companies profiled Emery Oleochemicals (Malaysia), Deer Creek Holdings (US), Verdesian Life Sciences, LLC (US), Marrone Bio Innovations Inc. (US), Certified Organics Australia Pty Ltd (Australia), EcoPesticides International, Inc. (US), Molecular Modeling Australia Pty Ltd. (Australia), Hindustan Bio-tech (India), and Special Biochem Pvt. Ltd. (India)., and Other Prominent Players .

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**The above given segmentations and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.

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