

# Protein Crystallization and Crystallography Market Will Grow Exponentially US\$ 2.45 Billion by 2032, at a CAGR of 7.2%

*The global protein crystallization and crystallography market was estimated to be US\$ 1.22 Billion in 2022 and is expected to reach US\$ 2.45 Billion by 2032.*

SANTA ROSA, CALIFORNIA, UNITED STATES, July 17, 2023

/EINPresswire.com/ -- The Global

Protein Crystallization & Crystallography Market Share, Trends, Analysis and Forecasts, 2023-2032 presents extensive information on the latest trends, factors driving the market growth, potential opportunities, and challenges that may impact the industry's market dynamics. It offers a detailed examination of the different market segments, such as product & services, technology, end user, and competitive landscape.



North America currently dominates the protein crystallization and crystallography market and is expected to maintain its leading position in the forecasted period. "

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The Global Protein Crystallization & Crystallography Market was estimated to be US\$ 1.22 Billion in 2022 and is expected to reach US\$ 2.45 Billion by 2032 at a CAGR of 7.2%.

Protein crystallization and crystallography are techniques used in structural biology to determine the 3D structure of proteins at the atomic level. Proteins are essential macromolecules that perform critical biological functions in living organisms. Understanding these protein structures helps us understand their interactions, functions, and involvement in the progression of diseases. The main aim of the crystallization process is to develop ordered protein crystals that overcome the inherent fragility of protein molecules, making them suitable for analysis.

Crystallography involves studying the protein crystals using X-ray crystallography. These protein

crystals are subjected to X-rays, and the subsequent diffraction pattern is studied. This diffraction pattern helps us understand the arrangement of atoms in the crystal lattice. The structure obtained through the process of crystallization and crystallography provides various insights into protein function, active sites, and the interaction between protein molecules. This information is critical for drug discovery as it helps researchers design and shape various therapeutics that interact with specific proteins to modulate their activity and treat diseases.



Protein crystallization and crystallography market is a specialized field of research that involves the study of the structure and function of proteins. This is achieved by crystallizing the protein and then using X-ray diffraction to determine its three-dimensional structure. The resulting data is used to understand the protein's function and to design drugs that can interact with it.

The key factor augmenting the growth of the global protein crystallization and crystallography market is the increasing adoption of this technique by researchers to develop more advanced and targeted drugs. Pharmaceutical companies worldwide are investing significant amounts of money in research and development to better understand disease progression and behaviour in the human body, aiming to develop drugs with more targeted actions against diseases. Protein crystallization and crystallography techniques are used in various therapeutics for treating chronic diseases such as cancer, multiple sclerosis, and diabetes, among others.

Governments and various funding agencies are also investing in the protein crystallization and crystallography market to understand the behaviours of chronic diseases like cancer and develop more effective and targeted drugs, ensuring access to medicines for patients. Recognizing that medicine for chronic diseases is scarce, it is in the best interest of all countries to increase investment in research and development to develop drugs, rather than relying on other nations.

However, the major restraint in the market's growth is the high costs associated with crystallization equipment and the scarcity of educated and competent personnel. Additionally, the lack of standardized protocols for protein crystallization investigations is likely to affect the demand for the protein crystallization and crystallography market.

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The global protein crystallization and crystallography market is segmented based on product

and services, technology, and end user.

In terms of product and services, the market is categorised into consumables, instruments, and software & services. The consumables segment is further sub-segmented into reagents & kits/screens, microplates, and others. The instruments segment is further sub-segmented into liquid handling instruments and crystal imaging instruments. The consumables segment currently dominates the market and is expected to continue its dominance during the forecast period.

Based on technology, the market is segmented into X-ray crystallography, spectroscopy, cryo-electron microscopy, and small-angle X-ray scattering (SAXS). X-ray crystallography is the largest segment in this category and is the most preferred technology for determining biomolecules and protein structures.

Regarding the end user, the market is segmented into pharmaceutical and biotechnology companies, and research and government institutes. The pharmaceutical and biotechnology segment is the largest segment and is expected to grow significantly in the forecasted period. Protein crystallization plays a vital role in structural biology, particularly in controlled drug discovery and in silico drug discovery.

In silico drug discovery helps accurately understand the three-dimensional structure of protein molecules, aiding in enhanced drug design and understanding the biological function of proteins. The data collected through this process helps design more effective drugs with targeted actions, thus driving demand in the pharmaceutical and biotechnology industry.

Protein crystallization and crystallography market is divided into North America, Europe, Asia-Pacific, Middle East & Africa, and Latin America based on geography.

The global protein crystallization and crystallography market is divided into North America, Europe, Asia-Pacific, Middle East & Africa, and Latin America based on geography. North America currently dominates the market and is expected to maintain its leading position in the forecasted period. This dominance can be attributed to factors such as favorable government policies, regulations, and initiatives undertaken by public and private institutions to drive research activities in the region.

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Some key players in the global protein crystallization and crystallography market include Rigaku Corporation, Corning Incorporated, FORMULATRIX, METTLER TOLEDO, Hampton Research Corp, Jena Bioscience GmbH, Creative Proteomics, and Molecular Dimensions.

Protein crystallization and crystallography market

Protein crystallization and crystallography market

- Consumables
  - > Reagents & Kits/Screens
  - > Micro Plates
  - > Others
- Instruments
  - > Liquid Handling Instruments
  - > Crystal Imaging Instruments
- Software & Services

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- X-ray Crystallography
- Spectroscopy
- Cryo-electron Microscopy
- Small-angle X-ray Scattering(SAXS)

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- Pharmaceutical & Biotechnology Companies
- Research & Government Institutes

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- North America
  - > United States
  - > Canada
  - > Rest of North America

- Europe
  - > Germany
  - > United Kingdom
  - > Italy
  - > France
  - > Spain
  - > Rest of Europe

- Asia Pacific
  - > Japan
  - > India
  - > China

- > Australia
- > South Korea
- > Rest of Asia Pacific

- Middle East & Africa

- > UAE
- > Saudi Arabia
- > South Africa
- > Rest of the Middle East & Africa

- South America

- > Brazil
- > Rest of South America

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