

# **Global Glycomics Market: Analysis By Product (Enzymes, Instruments, Kits and Reagents), By Application (Drug Discovery & Development, Diagnostics and Others), By End-User (Pharmaceutical & Biotechnology Companies, Contract Research Organization and Academic & Research Institutes), By Region Size and Trends with Impact of COVID-19 and Forecast up to 2028**

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## **Abstracts**

The global glycomics market was valued at US\$1.46 billion in 2022 and is expected to grow to US\$3.46 billion in 2028. Glycomics is a subset of glycobiology that involves the systematic study of all glycan structures of a given cell type, tissue, or organism. Glycans, commonly known as polysaccharides, are carbohydrate-based polymers that all living organisms produce. Glycans are crucial macromolecules that provide structure, energy storage, and system regulation. According to their biological sources, glycans are classified as plant, animal, or microbial. Glycomics is a widely emerging scientific field highlighting on defining functional aspects of glycans in biosystems. The use of glycobiology in drug research and development, disease diagnostics, cancer, immunology, and other fields has provided enormous growth prospects for players in the global market. The market is expected to grow at a CAGR of 15.68% over the projected period of 2023-2028.

Market Segmentation Analysis:

By Product: The report identifies four segments on the basis of products: Enzymes, Instruments, Kits, and Reagents. The enzymes segment dominated the market in 2022.

Enzymes aid in the acceleration of biological reactions in the bodies. Some persons with chronic diseases may require enzyme supplements to help their bodies function properly. Enzymes are essential for protein breakdown and speeding up biological reactions. The primary reasons driving the expansion of the glycomics enzymes market are the development of applications in molecular biology, protein engineering, and diagnostics, as well as increased research activities in the life science industry.

**By Application:** The report identifies three segments on the basis of application: drug discovery and development, diagnostics, and others. The drug discovery and development segment held the highest share in 2022. The worldwide population has been experiencing an increasing burden of illnesses such as cardiovascular disease, diabetes, cancer, respiratory diseases, and neurological disorders, which is boosting demand for new and novel treatments. Because of the significant rise of biopharmaceuticals, the pharmaceutical sector is projected to drive the drug discovery market in the future years.

**By End User:** The report identifies three segments on the basis of end user: pharmaceutical & biotechnology companies, contract research organizations, and academic & research institutes. The pharmaceutical & biotechnology companies segment dominated the overall market in 2020. The rising frequency of illnesses is mostly responsible for the segment's expansion. Hence, increased demand for medications and treatments is propelling the pharmaceutical & biotechnology companies sector in the glycomics market forward. Many organizations have begun academic research to create new glycomics and glycobiology technologies. Protein characterization procedures are progressing as a result of advances in chemical and biochemical research, such as High-Performance Liquid Chromatography (HPLC) and Mass Spectrometry (MS). Growth and progress in academic and research institutes to investigate glycomics, which has various applications in drug discovery, vaccine development, and precision medicine, are projected to drive the academic & research institutes market during the predicted period.

**By Region:** In the report, the global glycomics market is divided into five regions: North America, Europe, Asia Pacific, Middle East & Africa, and Latin America. The North American region had the majority of share during the year 2022, due to the increase in popularity and adoption of personalized medicines and favorable government funding & initiatives to develop novel therapeutics. The high prevalence of genetic diseases such as cancer is propelling the demand for glycomics tools in North America.

The Asia-Pacific glycomics market is expected to grow at the highest CAGR during the forecasted period, as a result of increased R&D spending and government funding for glycomics, and technological advancements. China's glycomics market dominated the Asia Pacific market due to the increasing investment, and funding by pharmaceutical companies for glycomics research. On the other hand, the India glycomics market will witness a promising share during the forecasted period due to the improving healthcare sector, supportive government initiatives, and the significant prevalence of chronic diseases.

#### Market Dynamics:

**Growth Drivers:** One of the key drivers of the market's expansion is the increased investments in R&D in the field of glycomics. The glycomics market is expanding mainly because of increased glycomics research efforts and increased R&D expenditures by pharmaceutical and biotechnology companies. On the other hand, developing countries such as China and India offer lucrative possibilities for companies in this sector. Increasing government funding, grants, and financial assistance to broaden the scope of glycomics research in academia and research institutes are also likely to boost the market growth. The growing need for novel and efficient therapies and medications to address unmet medical demand around the world has increased demand for improved glycomics and glycobiology techniques, which is projected to propel revenue growth further. Other significant growth factors of the market include expanding the pharmaceutical sector, increasing demand for the treatment of several severe chronic diseases, and glycomics application in precision medicine.

**Challenges:** However, some challenges are impeding the growth of the market such as the high cost of tools, the complexity of glycomes, and the dearth of trained professionals. The high cost of tools and instruments is one of the biggest problems the glycomic market is now facing. Due to the complexities of glycans and the requirement for specialized equipment and experience, glycomics research is often expensive and time-consuming. This challenge is faced by every company in this sector which makes their analysis challenging. The high cost of glycan analysis limits its broad application and hampers the glycomics market's growth.

**Trends:** The market is projected to grow at a fast pace during the forecast period, due to increased usage of glycobiology in cancer research, technological innovation, and increasing academic research. Glycobiology has the potential to greatly contribute to cancer research and treatment, as well as glycan-targeted therapeutics for cancer treatment. Glycomics research can provide useful insights into cancer biology and

contribute to the creation of new cancer diagnostic tools and therapeutics. Therefore, the increase in cancer research is expected to provide lucrative opportunities to the market in the coming years.

#### Impact Analysis of COVID-19 and Way Forward:

The outbreak of COVID-19 has been the worst global pandemic of the past century. The COVID-19 pandemic has drastically transformed the healthcare industry as a whole, with tremors felt throughout different healthcare sectors. Both the government and private pharmaceutical and biotechnological organizations have intensified their research efforts and investments in order to produce an effective vaccination or innovative therapy for COVID-19. The overall impact of the COVID-19 pandemic on the glycomics market was mixed, thus the market is still gaining traction and will increase in the future year. The pandemic has disrupted the worldwide supply chain which has harmed the glycomics market in the first few months of 2020. However, the pandemic has heightened interest in glycomic-based research and diagnostics. The SARS-CoV-2 virus that causes COVID-19 has a lot of glycans on its surface that help connect with host cells. Hence, glycomic research has been critical in understanding virus behavior and generating effective treatments and vaccinations.

#### Competitive Landscape:

The global glycomics market is a moderately fragmented, with many major market players operating worldwide. Companies are focusing on implementing aggressive strategies to reach a broad customer base. New product launches, collaboration, the growth of distribution networks, R&D expenditure, and mergers & acquisitions are some of the main strategies employed by market players to broaden their reach and increase their market share. For example, in April 2022 to diversify its product offering, the Bruker Company acquired the US-based IonSense. With this acquisition, Bruker Company will be able to use DART mass spectrometers.

The key players in the global glycomics market are:

Thermo Fisher Scientific, Inc.

Agilent Technologies, Inc.

Waters Corporation, Inc.

Takara Bio, Inc.

Bio Techne, Inc.

Sumitomo Bakelite Co., Ltd.

Merck KGaA

Shimadzu Corporation

AMS Bio

Asparia Glycomics

Lectenz Bio

New England Biolabs

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