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Molecular Oncology Diagnostics Market - A Global and Regional Analysis: Focus on Product, Technology, Application, Cancer Type, End User, and Country - Analysis and Forecast, 2024-2033

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Abstracts

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This report will be delivered in 7-10 working days.Global Molecular Oncology Diagnostics Industry Overview:

The global molecular oncology diagnostics market was valued at $2,410.9 million in 2024, and the market is expected to grow with a CAGR of 11.06% and reach $6,195.1 million by 2033. The growth in the global molecular oncology diagnostics market is expected to be driven by rising technological advancements in molecular diagnostics such as next-generation sequencing, digital PCR, and liquid biopsy, among others and the rising prevalence of cancers globally. However, the expansion of the global molecular oncology diagnostics market has been hindered by several challenges. The high cost of molecular diagnostic tests remains a major barrier, particularly in low- and middle-income countries where healthcare funding is often limited. Additionally, there has been a noticeable gap in the availability of skilled professionals who are trained to use these advanced diagnostic tools effectively, further restraining the growth.

Despite these challenges, the global molecular oncology diagnostics market continues to grow, driven by continuous technological advancements. Strategic collaborations between biotechnology companies, pharmaceutical firms, and academic institutions are vital, fostering innovation and accelerating the development and adoption of new diagnostic technologies. Overcoming the hurdles of cost and workforce training will be crucial for maximizing the potential of molecular diagnostics in improving cancer care

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globally.

Market Lifecycle Stage

The global molecular oncology diagnostics market is in progressive phase. The molecular oncology diagnostics ecosystem is witnessing a surge in the launch of innovative products and obtaining regulatory approvals, driving significant advancements in cancer care. Companies are continuously developing new diagnostic tools that leverage cutting-edge technologies such as next-generation sequencing (NGS), liquid biopsy, and digital PCR, which enhance the accuracy and efficiency of cancer detection and monitoring. These innovations are crucial in providing personalized treatment plans and improving patient outcomes.

Impact

The expansion of the global molecular oncology diagnostics market in the coming years will be primarily driven by the rising prevalence of cancer across all types. The global incidence of cancer continues to increase due to factors such as an aging population, sedentary lifestyles, and hereditary risk factors. In 2022, there were approximately 20 million new cancer cases and 9.7 million cancer-related deaths worldwide. Lung cancer accounted for the highest share of total cancer cases at 12.40%, followed by breast cancer at 11.60%. The growing burden of cancer and the increasing emphasis on early detection are expected to propel the growth of the molecular oncology diagnostics market over the forecast period.

Market Segmentation:

Segmentation 1: by Product

Kits and Assays

Instruments

Software

Based on product, the kits and assays in the global molecular oncology diagnostics market is expected to dominate by product segment owing to their recurring demand and lower cost.

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Segmentation 2: by Technology

- Polymerase Chain Reaction
- Next-Generation Sequencing
- Immunohistochemistry
- Fluorescence In-Situ Hybridization
- Flow Cytometry
- Other Technologies

On the basis of technology, the global molecular oncology diagnostics market is dominated by the polymerase chain reaction segment due to its high sensitivity, accuracy, and cost-effectiveness.

Segmentation 3: by Application

- Clinical Diagnostics
- Research Use

Based on application, the global molecular oncology diagnostics market is dominated by the clinical diagnostics. This predominance has been driven by the increasing adoption of precision medicine in healthcare, where molecular diagnostics are integral for identifying specific oncogenic mutations to guide targeted therapy decisions.

Segmentation 4: by Cancer Type

- Solid Tumors
- Hematologic Malignancies

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Based on cancer type, the global molecular oncology diagnostics market is dominated by the solid tumors. This predominance can be attributed to the higher prevalence of solid tumors, such as breast, lung, and colorectal cancers, compared to hematological malignancies. Solid tumors represent a broad array of the most common cancers, which necessitates extensive diagnostic testing for effective treatment planning, thus driving higher demand for molecular diagnostics within this segment.

Segmentation 5: by End User

Hospitals and Diagnostic Centers

Reference Laboratories

Pharmaceutical and Biotechnology Companies

Academic and Research Institutes

Based on end user, the global molecular oncology diagnostics market is dominated by the hospitals segment. This is primarily due to hospitals' direct patient care setting, where rapid and accurate diagnostic testing is crucial for timely decision-making in cancer treatment.

Segmentation 6: by Region

North America - U.S., and Canada

Europe – U.K., Germany, France, Italy, Spain, and Rest-of-Europe

Asia-Pacific - Japan, China, India, South Korea, Australia, and Rest-of-Asia-Pacific

Rest-of-the-World

North America generated the highest revenue of $969.6 million in 2023. The molecular oncology diagnostics market in North America is poised for significant growth driven by several key factors. The increasing incidence of cancer across the region is a major driver, with projections indicating a substantial rise in both solid tumors and

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hematological malignancies by 2050. Moreover, the region benefits from the strong presence of both global and local players, enhancing accessibility to advanced diagnostic technologies.

Recent Developments in the Global Molecular Oncology Diagnostics Market

In May 2024, Becton, Dickinson and Company announced that the U.S. Food and Drug Administration (FDA) has approved the use of self-collected vaginal specimens for human papillomavirus (HPV) testing, to be utilized when cervical specimens are not available.

In February 2024, Myriad Genetics, Inc. announced a research collaboration with the National Cancer Center Hospital East (NCCHE) in Japan to investigate the prognostic and predictive value of molecular residual disease (MRD) testing. The SCRUM-MONSTAR-SCREEN-3 study will utilize Myriad's ultra-sensitive MRD test, Precise MRD, to monitor circulating tumor DNA (ctDNA) over time in patients with various solid tumors and hematological cancers.

In January 2024, Guardant Health and Hikma have partnered to provide cancer screening and comprehensive genomic profiling tests in the Middle East and North Africa.

In November 2023, Illumina launched an advanced liquid biopsy assay designed to enable comprehensive genomic profiling of solid tumors.

Demand - Drivers and Limitations

The following are the demand drivers for the global molecular oncology diagnostics market:

Rising Incidence of Cancer Cases

Rising Technological Advancements in Molecular Diagnostics

Growth in Biomarker Identification and Transformation in Molecular Techniques

Growing Demand for Personalized Medicine

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The market is expected to face some limitations due to the following challenges:

Lack of Qualified Professionals

High Cost of Molecular Diagnostic Kits and Assays Hindering the Adoption Rate

Key Market Players and Competition Synopsis

The global molecular oncology diagnostics market is expected to witness significant growth, fueled by the increasing incidence of cancer worldwide and the rising demand for personalized medicine. This sector is revolutionizing cancer treatment by enabling precise tumor profiling through advanced technologies such as next-generation sequencing (NGS). These innovations allow for the early detection of cancers and the identification of specific genetic mutations, facilitating tailored therapeutic strategies that enhance treatment efficacy and patient outcomes.

Some of the prominent key players in this market are:

Abbott Laboratories

Agilent Technologies, Inc.

Abbott Laboratories

Agilent Technologies, Inc.

Biocartis Group NV

bioM?rieux

Bio-Rad Laboratories, Inc.

Danaher Corporation

Exact Sciences Corporation

F. Hoffmann-La Roche Ltd

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Guardant Health, Inc.

Hologic, Inc.

Illumina, Inc.

Invivoscribe, Inc.

Myriad Genetics, Inc.

QIAGEN N.V.

Sysmex Corporation

Thermo Fisher Scientific, Inc.

Companies that are not a part of the aforementioned pool have been well represented across different sections of the report (wherever applicable).

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