Next Generation Cancer Diagnostics Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Technology (Next-generation Sequencing, qPCR & Multiplexing, Lab-on- a- chip (LOAC) & Reverse Transcriptase-PCR (RT-PCR), Protein Microarrays, DNA Microarrays), By Application (Biomarker Development, CTC Analysis, Proteomic Analysis, Epigenetic Analysis, Genetic Analysis), By Cancer Type (Lung Cancer, Breast Cancer, Colorectal Cancer, Cervical Cancer, Others), By Region and Competition, 2020-2030F

Market Report | 2025-01-24 | 185 pages | TechSci Research

AVAILABLE LICENSES:

- Single User License $4500.00
- Multi-User License $5500.00
- Custom Research License $8000.00

Report description:

Global Next Generation Cancer Diagnostics Market has valued at USD 14.79 billion in 2024 and is anticipated to project robust growth in the forecast period with a CAGR of 8.33% through 2030. Global Next Generation Cancer Diagnostics represents a transformative leap in the field of oncology, revolutionizing the way we detect and understand cancer. This cutting-edge approach incorporates advanced technologies and methodologies to enhance precision, efficiency, and early detection of various cancer types. Next Generation Cancer Diagnostics leverage state-of-the-art genomic, proteomic, and imaging techniques, allowing for a comprehensive analysis of cancer at the molecular level. This approach enables healthcare professionals to identify specific genetic mutations, alterations, and biomarkers associated with different cancers, paving the way for personalized and targeted therapies. The integration of next-generation sequencing (NGS) platforms has played a pivotal role, enabling the rapid and cost-effective analysis of the entire cancer genome. For instance, In January 2023, Agilent Technologies, Inc. acquired Avida Biomed, a company specializing in advanced NGS target enrichment workflows designed to support cancer research. The liquid biopsy techniques have gained prominence, offering a minimally invasive means to detect circulating tumor DNA and other

biomarkers in blood samples, providing valuable insights into tumor dynamics and treatment response. Advancements in artificial intelligence and machine learning further contribute to the interpretation of complex data sets, facilitating more accurate diagnosis and prognosis. The global landscape of Next Generation Cancer Diagnostics is marked by ongoing research and development, collaborations between industry and academia, and a growing emphasis on bringing these innovations to the clinical setting. As the field continues to evolve, it holds the promise of revolutionizing cancer care by enabling earlier detection, personalized treatment strategies, and improved patient outcomes. The integration of these technologies into routine clinical practice has the potential to redefine the diagnostic paradigm, making a profound impact on the fight against cancer worldwide. For instance, in April 2023, Biomodal commercially launched its innovative double multi-omics solution, highlighting the integration of genetic and epigenetic information from a single, low-volume sample. This cutting-edge technology enables the extraction of diverse data modalities, starting with just 10ng of cell-free DNA, offering broad applications in advanced research and diagnostics.

Key Market Drivers

Advancements in Genomic Technologies

Advancements in genomic technologies have become the driving force behind the remarkable growth of the Global Next Generation Cancer Diagnostics (NGCD) market. The advent of Next-Generation Sequencing (NGS) has revolutionized the way we understand the genetic intricacies of cancer, enabling rapid and cost-effective sequencing of the entire cancer genome. This capability provides unprecedented insights into the specific genetic mutations and alterations responsible for cancer initiation and progression. With the ability to analyze a vast amount of genomic data, NGCD facilitates the identification of actionable biomarkers that can guide personalized treatment strategies. The precision and depth of genomic information obtained through these technologies contribute significantly to the development of targeted therapies, allowing for more effective and tailored interventions. For instance, in February 2023, the WHO introduced the Global Breast Cancer Initiative Framework, presenting a strategic plan to save 2.5 million lives from breast cancer by 2040. Launched in alignment with the World Cancer Day campaign, the framework emphasizes three core pillars: health promotion, timely diagnosis, and effective management. These measures aim to improve early detection and ensure appropriate care, enabling countries to meet the initiative's ambitious targets and reduce the global burden of breast cancer.

NGCD's reliance on genomic technologies also addresses the complexity of heterogeneous cancers, where different genetic mutations drive distinct subtypes of the disease. This nuanced understanding enhances the diagnostic accuracy and therapeutic relevance of NGCD, marking a departure from traditional one-size-fits-all approaches. The continuous evolution of genomic technologies ensures that the diagnostic landscape remains dynamic and adaptable to emerging challenges. As sequencing costs decrease and throughput increases, the accessibility of NGCD in clinical settings expands, fostering its integration into routine cancer diagnostics.

the synergy between NGCD and advancements in genomic technologies has ushered in a new era in cancer diagnostics. The ability to unravel the genetic blueprint of tumors with unprecedented speed and precision has elevated NGCD to the forefront of modern oncology. This synergy not only accelerates the pace of cancer research but also translates into tangible benefits for patients through early and accurate diagnosis, personalized treatment strategies, and improved overall outcomes in the challenging battle against cancer.

Rising Incidence of Cancer

The escalating global incidence of cancer stands as a compelling driver propelling the ascent of the Next Generation Cancer Diagnostics (NGCD) market. As the prevalence of cancer continues to rise globally due to factors such as aging populations, lifestyle changes, and environmental influences, there is an urgent need for advanced diagnostic tools to cope with this growing burden. Next Generation Cancer Diagnostics, with its ability to provide detailed molecular insights into various cancer types, has emerged as a critical solution in addressing this challenge. For instance, in 2024, approximately 2,001,140 new cancer cases are expected to be diagnosed in the United States, with an estimated 611,720 deaths attributed to the disease. The most common cancers, ranked by projected new cases for the year, include breast cancer, prostate cancer, lung and bronchus cancer, colorectal cancer, melanoma, bladder cancer, kidney and renal pelvis cancer, non-Hodgkin lymphoma, endometrial cancer, pancreatic cancer, leukemia, thyroid cancer, and liver cancer.

Early detection of cancer is crucial for initiating timely interventions and improving patient outcomes. NGCD's capacity to detect

cancer at the molecular level, identifying specific genetic mutations and biomarkers associated with different cancers, positions it as an invaluable tool for achieving early and accurate diagnoses. The rising incidence of cancer underscores the importance of comprehensive and efficient diagnostic methodologies to meet the increasing demand for precision medicine. NGCD not only facilitates early detection but also contributes to the development of targeted therapies by uncovering the molecular underpinnings of individual tumors. This alignment between the rising incidence of cancer and the capabilities of NGCD highlights the market's growth potential as healthcare systems worldwide seek innovative approaches to tackle the diagnostic challenges posed by the expanding cancer landscape.

The demand for more sophisticated and precise diagnostic techniques, driven by the growing prevalence of cancer, is likely to fuel sustained advancements in the NGCD market, making it a pivotal player in the global effort to enhance cancer diagnosis and treatment strategies. As the global healthcare community grapples with the increasing burden of cancer, the role of Next Generation Cancer Diagnostics becomes increasingly indispensable in reshaping the diagnostic landscape and improving patient outcomes.

Key Market Challenges

Cost Barriers and Accessibility

Cost barriers and accessibility issues pose formidable challenges to the widespread integration of Next Generation Cancer Diagnostics (NGCD) into mainstream healthcare. The sophisticated technologies underpinning NGCD, such as Next-Generation Sequencing (NGS) and advanced imaging techniques, often come with substantial price tags. The high cost of acquiring and implementing these technologies creates a barrier for many healthcare providers, particularly those in resource-constrained settings. As a result, access to NGCD becomes limited, hindering its potential impact on early cancer detection and personalized treatment strategies. The economic considerations extend beyond the initial purchase of equipment. Maintenance, training, and data analysis add to the overall expense, making NGCD a financially challenging proposition for many healthcare institutions. Consequently, the burden of these costs is often transferred to patients, potentially limiting access for individuals with lower socioeconomic status. The accessibility challenge is further compounded by disparities in healthcare infrastructure across regions. Developed nations with robust healthcare systems are better positioned to invest in and adopt NGCD technologies, while developing regions may struggle to allocate resources to these advanced diagnostic tools. This discrepancy exacerbates global health inequalities, leaving certain populations without the benefits of cutting-edge cancer diagnostics.

Complex Regulatory Landscape

The Global Next Generation Cancer Diagnostics (NGCD) market is encountering a formidable obstacle in the form of a complex regulatory landscape. While the rapid evolution of diagnostic technologies promises groundbreaking advancements in cancer care, the regulatory frameworks governing their approval and implementation often struggle to keep pace.

The intricate nature of Next Generation Cancer Diagnostics, encompassing technologies like Next-Generation Sequencing (NGS) and advanced imaging modalities, demands comprehensive validation and rigorous regulatory scrutiny. However, the dynamism and innovation within the field can lead to misalignments between technological advancements and existing regulatory processes. Delays in regulatory approvals can impede the timely integration of NGCD into routine clinical practice, hindering healthcare providers' ability to offer state-of-the-art diagnostic solutions to patients.

Standardizing regulatory processes globally presents an additional challenge. Divergent regulatory requirements across different regions create a fragmented landscape, complicating the pathway for manufacturers seeking to introduce NGCD technologies on a global scale. Harmonizing regulatory standards and fostering international collaboration are essential to streamline the approval process and ensure that NGCD can be deployed consistently across diverse healthcare systems.

The intricate nature of NGCD often blurs the lines between diagnostics and therapeutics, challenging traditional regulatory frameworks that are more accustomed to evaluating pharmaceutical interventions. The interdisciplinary nature of NGCD requires a nuanced approach that considers both diagnostic and therapeutic aspects, necessitating regulatory bodies to adapt and evolve their evaluation criteria.

Key Market Trends

Integration of Artificial Intelligence (AI) and Machine Learning (ML)

The Global Next Generation Cancer Diagnostics Market is witnessing a revolutionary transformation, driven by the seamless integration of Artificial Intelligence (AI) and Machine Learning (ML) technologies. AI and ML have emerged as powerful tools in the

realm of cancer diagnostics, significantly enhancing the precision, efficiency, and depth of insights derived from complex genomic and imaging data.

Machine learning algorithms, when fed with vast datasets of genetic information and clinical outcomes, can discern intricate patterns and relationships that may elude traditional diagnostic approaches. This capability is particularly evident in the identification of subtle genetic mutations associated with various cancers, allowing for more accurate risk assessment and early detection. AI-powered image analysis in radiology is playing a pivotal role in interpreting medical images, detecting abnormalities, and aiding in the diagnosis and staging of cancer.

The integration of AI and ML into next-generation cancer diagnostics not only expedites the analysis of vast datasets but also facilitates personalized treatment strategies by predicting individual responses to specific therapies based on genetic profiles. AI-driven diagnostic tools contribute to the development of liquid biopsies and non-invasive diagnostic methods, such as the analysis of circulating tumor DNA (ctDNA), opening new avenues for real-time monitoring of treatment response and disease progression.

The ongoing advancements in AI and ML algorithms enable continuous learning and adaptation, refining diagnostic accuracy over time and contributing to the evolution of cancer diagnostics. As a result, the market is witnessing increased investments in AI-driven diagnostic solutions by biotechnology and healthcare companies. This amalgamation of cutting-edge technologies not only augments the diagnostic capabilities but also holds the promise of improving patient outcomes, reducing time-to-diagnosis, and fostering a more personalized and targeted approach to cancer care. The global market for next-generation cancer diagnostics is poised for sustained growth as the integration of AI and ML continues to redefine the landscape, offering a glimpse into a future where innovative technologies play a central role in shaping the trajectory of cancer diagnosis and treatment.

Patient-Centric Approach and Informed Decision-Making

The Global Next Generation Cancer Diagnostics Market is undergoing a paradigm shift driven by a patient-centric approach and the emphasis on informed decision-making. Increasingly, healthcare providers are recognizing the significance of tailoring cancer diagnostics to meet individual patient needs, and this personalized approach is reshaping the global market. Patient-centric cancer diagnostics prioritize the overall patient experience, focusing on accessibility, convenience, and the empowerment of individuals in their healthcare journey.

Next-generation cancer diagnostics, incorporating advanced technologies such as liquid biopsies, genomics, and AI-driven analyses, play a pivotal role in providing patients with comprehensive information about their cancer profile. The shift towards a patient-centric model is fostering greater patient engagement and involvement in decision-making, enabling individuals to make more informed choices about their treatment options. Informed decision-making is crucial in cancer care, considering the complex landscape of treatment modalities and the variability in individual responses.

Next-generation cancer diagnostics empower both patients and healthcare providers with detailed insights into the genetic makeup of tumors, enabling the identification of targeted therapies and predicting responses to specific treatments. This not only facilitates more personalized treatment plans but also allows patients to actively participate in discussions about their care. The integration of patient-generated data and preferences into the diagnostic process enhances the overall patient experience, fostering a sense of collaboration and shared decision-making between healthcare professionals and patients. As the demand for patient-centric cancer diagnostics grows, the market is witnessing increased innovation in user-friendly interfaces, accessible reporting, and tools that facilitate easy communication between patients and their healthcare teams.

The global market for next-generation cancer diagnostics is poised for sustained growth as patient-centric approaches and informed decision-making become central tenets of modern healthcare. This evolution not only contributes to improved patient outcomes but also aligns with the broader shift towards precision medicine, where the unique characteristics of each patient's cancer inform the design of targeted and effective treatment strategies.

Segmental Insights

Technology Insights

Based on the Technology, Next-generation Sequencing (NGS) emerged as the dominant segment in the global market for Global Next Generation Cancer Diagnostics in 2024. NGS allows the simultaneous analysis of multiple genes and genomic regions, providing a comprehensive view of the genetic landscape of cancer. This capability is crucial for identifying genetic mutations, alterations, and biomarkers associated with various cancer types, aiding in personalized and targeted treatment strategies. NGS

platforms can process a large number of samples in parallel, offering high throughput and rapid results. This is particularly advantageous in a clinical setting where timely diagnosis is critical for effective treatment planning.Over time, advancements in NGS technologies have led to a reduction in sequencing costs, making it more economically feasible for routine clinical applications. The decreasing cost has contributed to the widespread adoption of NGS in cancer diagnostics.

Regional Insights

North America emerged as the dominant player in the Global Next Generation Cancer Diagnostics Market in 2024, holding the largest market share. North America boasts a highly advanced and well-established healthcare infrastructure. The region is equipped with state-of-the-art medical facilities, research institutions, and diagnostic laboratories. This infrastructure provides a conducive environment for the adoption and integration of cutting-edge technologies, including next-generation cancer diagnostics. North America has been at the forefront of early adoption when it comes to incorporating technological innovations in healthcare. The region's healthcare system has been quick to embrace and integrate Next Generation Cancer Diagnostics technologies into clinical practice, allowing for more accurate and timely cancer diagnoses.

Key Market Players

- GE HealthCare
- Janssen Pharmaceuticals, Inc.
- Illumina, Inc.
- Novartis AG
- F. Hoffmann-La Roche Ltd
- Koninklijke Philips N.V.
- QIAGEN
- Agilent Technologies, Inc. (Dako)
- Abbott Laboratories Inc.
- Thermo Fisher Scientific Inc

Report Scope:

In this report, the Global Next Generation Cancer Diagnostics Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

- Next Generation Cancer Diagnostics Market, By Technology:
  - Next-generation Sequencing
  - qPCR & Multiplexing
  - Lab-on- a- chip (LOAC) & Reverse Transcriptase-PCR (RT-PCR)
  - Protein Microarrays
  - DNA Microarrays
- Next Generation Cancer Diagnostics Market, By Application:
  - Biomarker Development
  - CTC Analysis
  - Proteomic Analysis
  - Epigenetic Analysis
  - Genetic Analysis
- Next Generation Cancer Diagnostics Market, By Cancer Type:
  - Lung Cancer
  - Breast Cancer
  - Colorectal Cancer
  - Cervical Cancer
  - Others
- Next Generation Cancer Diagnostics Market, By Region:
  - North America
    - United States

 Canada
 Mexico
o Europe
 France
 United Kingdom
 Italy
 Germany
 Spain
o Asia-Pacific
 China
 India
 Japan
 Australia
 South Korea
o South America
 Brazil
 Argentina
 Colombia
o Middle East & Africa
 South Africa
 Saudi Arabia
 UAE
 Kuwait
 Turkey
 Egypt
Competitive Landscape
Company Profiles: Detailed analysis of the major companies present in the Global Next Generation Cancer Diagnostics Market.
Available Customizations:
Global Next Generation Cancer Diagnostics Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:
Company Information
Detailed analysis and profiling of additional market players (up to five).

Table of Contents:

Next Generation Cancer Diagnostics Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Technology (Next-generation Sequencing, qPCR & Multiplexing, Lab-on- a- chip (LOAC) & Reverse Transcriptase-PCR (RT-PCR), Protein Microarrays, DNA Microarrays), By Application (Biomarker Development, CTC Analysis, Proteomic Analysis, Epigenetic Analysis, Genetic Analysis), By Cancer Type (Lung Cancer, Breast Cancer, Colorectal Cancer, Cervical Cancer, Others), By Region and Competition, 2020-2030F

Market Report | 2025-01-24 | 185 pages | TechSci Research

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4500.00
	Multi-User License	$5500.00
	Custom Research License	$8000.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email* Phone*

First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2025-05-09
		Signature	