Precision Oncology Market to Reach US$280.3 Mn by 2032, Reports Persistence Market Research

The global precision oncology market is transforming cancer care through genomics, AI, and liquid biopsy innovations for personalized treatment solutions

Precision Oncology Market

BRENTFORD, LONDON, UNITED KINGDOM, October 15, 2025 /EINPresswire.com/ -- The global precision oncology market is poised for significant expansion, projected to grow at a compound annual growth rate (CAGR) of 10.8% from 2025 to 2032. From a market size of USD 132.3 million in 2025, it is anticipated to reach an impressive USD 280.3 million by 2032. This growth is largely driven by the increasing adoption of genomic profiling, targeted therapies, and cutting-edge diagnostic technologies that are revolutionizing cancer care. As the healthcare sector continues to embrace personalized medicine, precision oncology has rapidly evolved into a critical component of modern oncology treatment regimens, offering tailored therapeutic solutions for patients based on genetic, molecular, and biomarker insights.

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Key Industry Highlights

Precision oncology is at the forefront of transforming cancer care, utilizing genomic profiling, liquid biopsy technologies, and AI-driven diagnostic tools to enhance patient outcomes. Artificial intelligence (AI) and machine learning (ML) algorithms are driving substantial improvements in early cancer detection, treatment selection, and drug discovery. The growing prominence of liquid biopsy as a less invasive alternative to traditional tissue biopsy is further advancing the field, allowing clinicians to detect mutations and monitor cancer progression in real-time. Meanwhile, Asia Pacific is emerging as the fastest-growing market region, spurred by an

increasing incidence of cancer, government initiatives, and a burgeoning research infrastructure.

Market Dynamics

Drivers: Next-Generation Companion Diagnostics

One of the key drivers of growth in the precision oncology market is the rapid evolution of companion diagnostics (CDx). Traditionally, CDx focused on single-gene tests, but today, the integration of next-generation sequencing (NGS), whole-exome sequencing (WES), and transcriptomics enables clinicians to profile tumors more comprehensively. By analyzing multiple mutations simultaneously, clinicians can create more personalized and effective treatment plans. This holistic approach facilitates a better match between patients and the most appropriate therapies, improving patient outcomes and reducing adverse effects. Moreover, the expansion of liquid biopsy platforms, which allow for non-invasive testing, is enhancing access to personalized cancer care for a broader patient population, especially those who cannot undergo traditional biopsy procedures.

Restraints: Variability in Sample Collection and Handling

Despite its vast potential, precision oncology faces certain challenges, one of the most significant being variability in sample collection and handling. The quality of test results in precision oncology can be compromised by improper collection methods, especially in liquid biopsy samples like blood and stool. Variations in stool consistency, hydration levels, diet, and transportation conditions can result in inaccuracies in fecal biomarker tests. Additionally, issues related to storage and transportation, especially with biomarkers like calprotectin, can lead to degraded samples and unreliable results. These challenges hinder the widespread acceptance and adoption of precision oncology technologies and emphasize the need for standardized collection procedures and more robust quality control protocols.

Opportunities: Liquid Biopsy for Minimal Residual Disease (MRD) Detection

The development of liquid biopsy technologies for early detection of minimal residual disease (MRD) in solid tumors represents a key growth opportunity in the precision oncology space. MRD refers to cancer cells that persist after curative treatment and remain undetectable by conventional imaging techniques. The ability to detect these residual cells through non-invasive liquid biopsy tests—such as by analyzing circulating tumor DNA (ctDNA)—is critical for monitoring relapse risks and determining the most effective post-treatment management strategies. The growing demand for non-invasive, real-time surveillance tools, particularly for cancers like breast, colorectal, lung, and pancreatic cancer, is driving innovations in MRD detection. However, challenges remain in terms of assay standardization, tumor heterogeneity, and regulatory hurdles.

Category-wise Insights

Technique Insights

Among various techniques used in precision oncology, the enzyme-linked immunosorbent assay (ELISA) leads the market. ELISA offers high sensitivity, cost-effectiveness, and the ability to handle large sample volumes, making it ideal for diagnostic labs. Its capacity for precise and reproducible quantitative measurement of biomarkers like fecal calprotectin enables better diagnostic accuracy, especially in inflammatory bowel diseases (IBD). As a service-based market, ELISA's compatibility with high-throughput screening further reduces operational costs and turnaround times, contributing to its dominance in the sector.

Indication Insights

The growing prevalence of inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis, has significantly contributed to the adoption of precision oncology services. The demand for non-invasive, reliable biomarkers for IBD diagnosis and monitoring has been a key factor in driving market growth. Fecal calprotectin testing, an increasingly popular tool for differentiating between inflammatory and non-inflammatory gastrointestinal conditions, helps avoid unnecessary invasive procedures like endoscopy. As the global incidence of IBD rises, the need for efficient, non-invasive testing will continue to fuel the demand for precision oncology solutions.

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Regional Insights

North America

North America holds the largest share of the precision oncology market, primarily due to its advanced healthcare infrastructure, high cancer incidence, and a growing preference for diagnostic outsourcing. The United States, in particular, has a well-established network of diagnostic laboratories and reference centers that provide broad access to precision oncology services. Furthermore, the increasing prevalence of diseases like IBD has accelerated demand for non-invasive diagnostic tools, such as fecal calprotectin testing. Favorable reimbursement policies from both public and private insurers further bolster the market, making precision oncology increasingly accessible to patients and clinicians alike.

Europe

Europe is the second-largest market for precision oncology, driven by a strong healthcare system, high cancer rates, and government support for diagnostic innovations. Countries like

Germany, the UK, and France have well-established diagnostic services that facilitate the adoption of precision oncology solutions. With over 3.4 million cases of IBD in Europe, the demand for non-invasive, accurate biomarkers is on the rise. Stringent clinical guidelines, such as those from the European Crohn's and Colitis Organization (ECCO), further encourage the routine use of precision oncology technologies in monitoring disease progression.

Asia Pacific

Asia Pacific is experiencing rapid growth in the precision oncology sector, fueled by increasing cancer rates and the rising demand for early disease detection. Countries like Japan and South Korea are leading the way in diagnostic innovation, with well-established laboratory networks and supportive insurance schemes. Meanwhile, nations like India and those in Southeast Asia are rapidly expanding their diagnostic capabilities, driven by the growth of private diagnostic labs offering affordable precision oncology solutions. The region's expanding healthcare infrastructure and the adoption of outsourced laboratory testing models have contributed to the accelerating market growth in Asia Pacific.

Competitive Landscape

The precision oncology market is highly competitive, with several key players focused on technological advancements, partnerships, and expanding diagnostic networks. Leading companies are investing heavily in automation, AI-driven diagnostic platforms, and liquid biopsy technologies to differentiate themselves in the market. Strategic collaborations between hospitals, research institutions, and third-party laboratories are also shaping market dynamics, as companies seek to broaden their service offerings and improve patient access to personalized treatments.

Key Players

Epitope Diagnostics Inc.
Hycult Biotech
Actim
OPERON
Svar Life Science
BÜHLMANN
DRG International Inc.
ALPCO
Diazyme Laboratories
Thermo Fisher Scientific Inc.

These players are at the forefront of driving innovation in the precision oncology market, focusing on the development of advanced diagnostic tools, automation, and expanding laboratory networks to ensure broader access to personalized cancer care.

Key Industry Developments

In November 2023, new guidelines from the American Gastroenterological Association highlighted the need for fewer invasive procedures for individuals with Crohn's disease, further driving the demand for non-invasive diagnostic technologies in precision oncology. Additionally, in May 2023, Epitope Diagnostics introduced a comprehensive panel of test manuals and devices specifically designed to facilitate easy fecal sample collection and extraction. These developments showcase the continuous evolution of the precision oncology market, underscoring the importance of improving diagnostic accuracy, patient comfort, and healthcare accessibility.

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Market Segmentation

By Technique

Enzyme-linked Immunosorbent Assay
Enzyme Fluroimmunoassay
Immunochromatography
Point-of-care tests
Others

By Indication

Inflammatory Bowel Disease (IBD)
Irritable Bowel Syndrome (IBS)
Colorectal Cancer
Infections
Others

By End-user

Hospitals & Clinics
Diagnostic Laboratories
Research Institutes
Gastroenterology Centers

By Region

North America
Europe

East Asia
South Asia and Oceania
Latin America
Middle East and Africa

Future Outlook

The future of the precision oncology market looks promising, driven by the continued advancements in diagnostic technologies, an expanding range of biomarkers, and the growing integration of AI and machine learning in oncology. As liquid biopsy and companion diagnostics gain traction, the market is expected to witness continued growth in both developed and emerging regions. Furthermore, increased collaboration between industry players and ongoing regulatory support will likely result in more accessible and affordable precision oncology solutions. The continued rise of personalized cancer treatments and non-invasive diagnostic tools will play a crucial role in shaping the future of cancer care worldwide.

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