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NGS Target Enrichment Probe Market Report: Trends, Forecast and Competitive Analysis to 2030

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Abstracts

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NGS Target Enrichment Probe Trends and Forecast

The future of the global NGS target enrichment probe market looks promising with opportunities in the bioscience company and university & research institute markets. The global NGS target enrichment probe market is expected to grow with a CAGR of 14.3% from 2024 to 2030. The major drivers for this market are the increasing demand for personalized medicine, rising research in oncology, and growing applications in non-invasive prenatal testing.

•Lucintel forecasts that, within the type category, a single probe is expected to witness higher growth over the forecast period.

•Within this application category, the bioscience company is expected to witness higher growth.

> In terms of regions, APAC is expected to witness the highest growth over the forecast period.

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Emerging Trends in the NGS Target Enrichment Probe Market

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The NGS target enrichment probe market is evolving rapidly as genomic technologies continue to advance. Target enrichment probes play a crucial role in NGS by selectively capturing and enriching specific regions of interest in the genome, improving sequencing efficiency, accuracy, and cost-effectiveness. As NGS applications expand across various fields, including precision medicine, diagnostics, and genetic research, the demand for advanced, efficient, and highly specific target enrichment probes is growing. This market is driven by technological innovations, the rising importance of personalized healthcare, and the need for faster, more reliable genomic analysis.

Customizable and flexible probes: The trend toward customizing and flexibly designing probes is stronger than ever before, allowing scientists to adjust their designs according to specific targets or uses. These probes are formulated for numerous genomic targets, thereby providing more flexibility and accuracy during target enrichment. This customization enhances the detection of rare variants, enabling complex genomic analyses and resulting in more relevant outcomes.

Automation and AI integration: The NGS market's focus on automation and artificial intelligence (AI) is transforming the NGS target enrichment probe industry. This integration helps streamline the design, synthesis, and application processes of these probes through automation systems, while probe performance is optimized by AI algorithms to facilitate optimum usage and minimize errors. This approach leads to increased efficiency, throughput, and reproducibility, thereby simplifying large-scale genome-wide association studies and complex analytics.

Development of high-sensitivity probes: There is a rise in the development of high-sensitivity probes capable of accurately detecting low-abundance targets. These probes utilize advanced chemistries and materials to enable improved limits of detection with reduced background noise. Applications such as rare variant detection or early disease diagnosis require high-sensitivity probes that perform better even in challenging genomic studies.

Expansion into clinical diagnostics: NGS target enrichment probes are increasingly being adopted for use in clinical diagnostics by many organizations worldwide. Companies are now developing and validating these devices for personalized medicine and targeted therapies. This shift is fueled by the necessity for more precise, actionable genetic information that can help make

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critical treatment decisions, thereby expanding NGS beyond research into clinical practice.

Sustainable and eco-friendly reagents: Development considerations for NGS target enrichment probes have shifted toward sustainability practices related to the manufacturing of reagents used in this area. To reduce carbon footprints, companies are adopting environmentally friendly reagents and sustainable manufacturing technologies during probe production, minimizing environmental effects caused during manufacturing. This trend aligns with global efforts to minimize waste, promote greener laboratory practices, and address the increasing demand for environmentally responsible solutions within the genomics sector.

These emerging trends have significantly influenced the NGS target enrichment probe market, including customizable probes, integration with automation, highly sensitive designs, expansion into clinical diagnostics, and sustainability. These developments aim to improve probe performance, versatility in their use, and care for the environment, thereby facilitating innovation and growth in this field.

Recent Developments in the NGS Target Enrichment Probe Market

The NGS target enrichment probe market is seeing substantial advancements due to the growing demand for high-throughput sequencing in genomics, personalized medicine, and molecular diagnostics. Recent developments have underscored ongoing innovations and advancements in the NGS target enrichment probe market.

Introduction of Ultra-Sensitive Probes: Among these recent advances are ultra-sensitive probes that can detect extremely low-abundance targets with great precision. They have been designed using advanced chemistries and novel materials that increase their sensitivity while minimizing background noise. In particular, higher sensitivity is important for detecting rare genetic variants and working with difficult samples, which ultimately enhances overall performance and reliability in genomic studies.

Automation and High-Throughput Systems: The NGS target enrichment probe market is being transformed by automation integrated into high-throughput systems. Probe design, synthesis, and application processes are now automated, leading to increased throughput and elimination of manual labor

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costs. High-throughput systems allow for the processing of large numbers of samples more efficiently, accelerating large-scale genomic studies and speeding up clinical research workflows.

Development of Customizable Probe Kits: Customizable probe kits have been introduced into the market, enabling researchers to develop custom probes targeting specific genes, protein families, or phenotypes based on their requirements or interests. This affords kit users a wider range of applications while enabling improved accuracy through targeted enrichment techniques. Today, such customizable probes help address specific genetic questions or applications within both research and clinical settings.

Emphasis on Eco-Friendly Solutions: Recently, there has been an increasingly popular movement toward creating environmentally friendly reagents and sustainable practices in the production of NGS target enrichment probes. Companies are now embracing green technologies to minimize waste generated during probe manufacture. This sustainability focus aligns with wider environmental objectives and responds to a rising need for eco-friendly solutions within the genomics field.

Going Clinical: More recently, NGS target enrichment probes have been used in clinical diagnostics and personalized medicine. Probes are being developed and validated for use in targeted therapies, disease diagnosis, and patient-specific treatments. The expansion into clinical applications underscores the increased importance of using genomic information to guide treatment decisions and improve patient outcomes.

Advancements such as ultra-sensitive probes, automation, customizable kits, eco-friendly solutions, and clinical applications have characterized recent developments in the NGS target enrichment probe market. These innovations drive improved performance, efficiency, and sustainability, shaping the future of genomic research and diagnostics.

Strategic Growth Opportunities for NGS Target Enrichment Probe Market

The NGS target enrichment probe market is experiencing significant growth as advancements in genomic technologies drive improvements in precision medicine, diagnostics, and research. Key strategic opportunities available in this market include:

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Emerging Markets Entry: Expanding into emerging markets offers significant growth prospects for NGS target enrichment probe manufacturers, as regions like Asia-Pacific and Latin America experience growth in genomic research and clinical diagnostics, which boost demand for advanced probing technologies. Therefore, companies can enter these markets to capture new revenue streams while also supporting the global expansion of genomics research.

Investing in Automation Technologies: Companies should consider investments in automation technologies to improve efficiency and throughput when designing and applying probes. Automation reduces manual labor, thereby enhancing processing speed and improving reproducibility, while integrated automated systems enable HP genome studies to handle larger sample volumes, catering to increasing needs.

Development of Specialized Probes for Clinical Applications: Strategic opportunities include focusing on developing specialized probes for clinical use. Probes designed for specific diseases, rare genetic disorders, or personalized medicine applications could satisfy the growing demand for precision diagnostics and targeted therapies. This emphasis on clinical relevance increases the value proposition of probe technologies, thereby expanding market potential.

Sustainable Practices: Sustainable practices and eco-friendly reagents align with global shifts toward environmentally friendly behaviors. Companies that endorse green technologies and sustainable manufacturing processes can differentiate themselves in the market and appeal to environmentally conscious customers. This trend is expected to support long-term growth while addressing the increasing need for responsible solutions within the genomics industry.

Strategic Partnerships and Collaborations: Collaboration with research institutions, biotech companies, and healthcare facilities provides opportunities for growth through strategic partnerships. These partnerships can lead to joint innovation, expanded market reach, and enhanced product offerings. Through such alliances, firms can gain an edge by accessing complementary expertise.

The strategic growth opportunities in the NGS target enrichment probe market include entering emerging markets, automating processes, designing specialized clinical probes, practicing eco-friendliness, and forming strategic partnerships. Consequently,

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these initiatives will lead to increased innovation efforts, improving sustainability across all realms of genomics sectors, including marketing outreach.

NGS Target Enrichment Probe Market Driver and Challenges

The NGS target enrichment probe market is shaped by various technological, economic, and regulatory factors that drive its growth and present challenges. Understanding these dynamics is essential for stakeholders looking to innovate and remain competitive in an industry characterized by rapid advancements in genomic research and personalized medicine.

The factors responsible for driving the NGS target enrichment probe market include:

Increasing Genomics Research: The field of genomics research is emerging, which calls for advanced target enrichment probes. Funding and interest in genomics research have increased, leading to the growth of this market.

Technological Advancements in NGS Technology: Scientific progress made in Next-Generation Sequencing (NGS) has led to the development of more refined target enrichment probes. The developers of these kits recognize that improved sequencing technologies with high sensitivity, speed, and accuracy offer a potential opportunity for highly advanced probe platforms, enhancing genomic analysis efficiency.

Rising Demand for Personalized Medicine: The demand for personalized medicine increases the need for targeted enrichment probes. These bespoke tests aid in the identification of specific genetic profiles or diseases, thus furthering the development of customized treatment options as well as diagnostic tools. There is also an emerging focus on individualized healthcare aimed at precision medical practice.

Increased Knowledge About Genetic Diseases: There is a rising awareness of genetic disorders necessitating the application of sophisticated target enrichment probes. For instance, there is increasing recognition and hence higher demand for tools that can precisely identify various disease-associated genetic variants by researchers, such as those used in clinical research.

Automation and Technological Integration: Automation-based workflows supported by state-of-the-art technologies foster expansion prospects within

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genomic industry domains through the incorporation of various gene sequences.

Challenges in the NGS target enrichment probe market are:

Advanced Probes Are Expensive: The high cost associated with advanced target enrichment probes may hinder the market growth rate since some scientific bodies cannot afford them due to their manufacturing complexities, making them more expensive compared to existing alternatives.

Complexities of Designing a Probe: Efficient target enrichment probe design is not easy and may require sophisticated scientific know-how. Manufacturers face challenges in designing and developing these probes, especially as they become increasingly complex.

Regulatory Compliance: Complying with the rules guiding probe development and application can be tedious. The registration of new probes is slowed by time-consuming regulatory processes that involve obtaining approvals from relevant authorities.

Competition and Market Saturation: High price competition coupled with market saturation is likely to negatively affect profitability and market share for NGS target enrichment probe companies. Maintaining competitiveness means that players in this sector must continually develop new products that address the changing needs of consumers.

Technological Integration Challenges: Integrating new technologies, such as automation systems, into existing workflows poses unique problems. Compatibility issues or ensuring seamless operation among advanced technological equipment require substantial investment in infrastructure and training, which many organizations may not be able to commit to.

The NGS target enrichment probe market is driven by growing genomics research, advancements in NGS technology, demand for personalized medicine, rising awareness of genetic diseases, and technological integration. Nevertheless, it is necessary to address issues such as complicated designs, high costs associated with manufacturing advanced probes, regulatory compliance, and competition, among other challenges affecting the growth of the NGS target enrichment probe market and the

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paths leading to their industrial evolution.

List of NGS Target Enrichment Probe Companies

Companies in the market compete on the basis of product quality offered. Major players in this market focus on expanding their manufacturing facilities, R&D investments, infrastructural development, and leverage integration opportunities across the value chain. Through these strategies NGS target enrichment probe companies cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the NGS target enrichment probe companies profiled in this report include-

Genscript

Shanghai Bailige Biomedical Technology

Agilent

Nanjing Vazyme Biotech

Cobioer

iGenetech

Shanghai Biotechnology

Nabodigmbio

Boke Biotechnology

Celemics

NGS Target Enrichment Probe by Segment

The study includes a forecast for the global NGS target enrichment probe market by type, application, and region.

NGS Target Enrichment Probe Market by Type [Analysis by Value from 2018 to 2030]:

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Single Probe

Chip Probe

NGS Target Enrichment Probe Market by Application [Analysis by Value from 2018 to 2030]:

Bioscience Company

Universities & Research Institutes

Others

NGS Target Enrichment Probe Market by Region [Analysis by Value from 2018 to 2030]:

North America

Europe

Asia Pacific

The Rest of the World

Country Wise Outlook for the NGS Target Enrichment Probe Market

The materials used in the NGS (next-generation sequencing) target enrichment probe market are primarily nucleotides, oligonucleotides, and other chemical reagents.

United States: The introduction of high-throughput custom-designed probes has marked significant advances in the United States NGS target enrichment probe market. Companies are looking to make improvements by forming probes with enhanced specificity and lower background noise. These include the use of advanced chemistry that improves probe performance and the incorporation of AI into probe design optimization processes. These advancements have driven increased efficiency and accuracy in genomic studies as well as personalized

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medicine applications.

China: China is increasingly becoming a leader in the NGS target enrichment probe market, concentrating on expanding production capacities while enhancing probe quality. Partnership agreements have been signed between local biotech firms and foreign firms to bring in modern technologies, among other recent advances. In addition, there is a shift toward making probes cheaper through localized manufacturing, allowing more researchers and clinical practices to access high-quality probes for studies and treatment purposes. The country has significantly invested in genomics and biotechnology infrastructure, contributing to its thriving market sector.

Germany: Improving the performance of probes while integrating them with automated systems has been the focus of Germany's NGS target enrichment probe market. New probe kits have been launched for specific purposes, such as rare variant detection or multi-gene panels. German firms also engage in eco-friendly practices by developing sustainable reagents that produce less waste, in line with the wider environmental goals of Europe.

India: In India, increasing emphasis on cost-effectiveness and availability is driving the growth of the NGS target enrichment probe market. Recent developments include the introduction of low-cost probes that support expansion in genomic research as well as clinical diagnostics. Development efforts are now concentrated on creating probes that respond to different genetic profiles from various populations, expanding the relevance and applicability of genomics within these localities.

Japan: Precision and cutting-edge technology underpin Japan's NGS target enrichment probe market. For instance, novel materials and technologies have been employed to develop probes that offer improved sensitivity and specificity. Additionally, Japanese firms strive to enter into agreements with international partners to enhance their probe technology while capturing a larger market, all while maintaining their focus on quality and innovation within genomic research.

Features of the Global NGS Target Enrichment Probe Market

Market Size Estimates: NGS target enrichment probe market size estimation in terms of value ($B).

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Trend and Forecast Analysis: Market trends (2018 to 2023) and forecast (2024 to 2030) by various segments and regions.

Segmentation Analysis: NGS target enrichment probe market size by type, application, and region in terms of value ($B).

Regional Analysis: NGS target enrichment probe market breakdown by North America, Europe, Asia Pacific, and Rest of the World.

Growth Opportunities: Analysis of growth opportunities in different types, applications, and regions for the NGS target enrichment probe market.

Strategic Analysis: This includes M&A, new product development, and competitive landscape of the NGS target enrichment probe market.

Analysis of competitive intensity of the industry based on Porter’s Five Forces model.

If you are looking to expand your business in this market or adjacent markets, then contact us. We have done hundreds of strategic consulting projects in market entry, opportunity screening, due diligence, supply chain analysis, M & A, and more.

This report answers following 11 key questions:

Q.1. What are some of the most promising, high-growth opportunities for the NGS target enrichment probe market by type (single probe and chip probe), application (bioscience company, universities & research institutes, and others), and region (North America, Europe, Asia Pacific, and the Rest of the World)?

Q.2. Which segments will grow at a faster pace and why?

Q.3. Which region will grow at a faster pace and why?

Q.4. What are the key factors affecting market dynamics? What are the key challenges and business risks in this market?

Q.5. What are the business risks and competitive threats in this market?

Q.6. What are the emerging trends in this market and the reasons behind them?

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Q.7. What are some of the changing demands of customers in the market?

Q.8. What are the new developments in the market? Which companies are leading these developments?

Q.9. Who are the major players in this market? What strategic initiatives are key players pursuing for business growth?

Q.10. What are some of the competing products in this market and how big of a threat do they pose for loss of market share by material or product substitution?

Q.11. What M&A activity has occurred in the last 5 years and what has its impact been on the industry?

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