Genotyping Assay Market Assessment, By Products [Instruments, Software and Services, Reagents and Kits], By Technology [Polymerase Chain Reaction, Capillary Electrophoresis, Sequencing, Microarrays, Mass Spectrometry, Others], By Application [Pharmacogenomics, Agriculture Biotechnology, Animal Genetics, Diagnostics and Personalized Medicine, Others] By End-user [Pharmaceutical and Biopharmaceutical Companies, Diagnostics and Research Laboratories, Academics Institutes, Others], By Region, Opportunities and Forecast, 2018-2032F

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Report description:

Global genotyping assay market is projected to witness a CAGR of 14.85% during the forecast period 2025-2032, growing from USD 20.99 billion in 2024 to USD 63.54 billion in 2032. The market demand for genotyping assays is anticipated to thrive drastically in the forecast years due to the rising prevalence of genetic disorders, chronic diseases, and technological advancements in genomic technologies.

Genotyping analysis is a method used in the laboratory to determine the body's genetic composition (genetic type) by analyzing the DNA. In a specific place of the genome, genetic mutations are identified, such as individual nucleotide multiple type single nucleotide polymorphisms (SNPs), insertions, deletions, or other mutations. The genetic analysis market grows significantly due to an increase in the rate of genetic disorders, the accurate medical field, and the growing demand for personalized healthcare solutions. The market is promoted by the extensive introduction of advanced technology, such as the next-generation microchip sequence (NGS), the polymerase chain reaction (PCR), and the analysis of accurate and effective genetic analysis. Leading companies are focusing on product innovation, strategic alliances, and application expansion in areas such as pharmacogenomics,

oncology, infectious disease diagnostics, etc., driving the market growth. For instance, in October 2024, LGC Biosearch Technologies Limited launched Amp-Seq One, a revolutionary one-step amplicon sequencing workflow for commercial breeding. With a 120-minute turnaround time and no liquid handling equipment needed, it minimizes hands-on time, reduces consumables, lowers contamination risks, doubles throughput, and delivers unmatched speed and precision in agricultural genomics.

Increasing Prevalence of Genetic Disorders

The growing incidence of genetic diseases is a significant growth factor for the global genotyping assay market. Increasing cases of cancer, cystic fibrosis, sickle cell anemia, and cardiovascular diseases necessitate early and accurate diagnostic tools. Genotyping assays can accurately identify the genetic mutations to allow early intervention and targeted therapy. There is now increased awareness about hereditary and somatic mutations, further increasing demand for genotyping in clinical as well as research areas. Awareness about genetic testing is also increased by both healthcare providers and patients with the implementation of genetic diagnostics in routine medical care, the adoption of genotyping assays market growth in the forecast period. For instance, in October 2024, Revvity, Inc. announced the launch of the in-vitro diagnostic EURORealTime APOE assay in CE-marked European countries. This assay enables precise apolipoprotein E (APOE) gene genotyping to assess Alzheimer's patients' risk for adverse side effects from anti-amyloid therapies, which is crucial for personalized treatment plans and managing potential amyloid-related imaging abnormalities-related risks.

Advancements in Genotyping Technologies

Advancement in genotyping technologies is poised to witness significant growth in the genotyping market; the increasing prevalence of genetic disorders is fueling the demand for accurate and efficient genotyping methods, particularly in the field of personalized medicine and drug development. Advanced technologies such as next-generation sequencing and polymerase revolutionized genetic analysis that guarantees quick and accurate detection of genetic fluctuations in various uses. These technological innovations enhance the effectiveness of genotyping analysis, reduce costs, and make it more affordable for researchers and medical workers. Additionally, increasing collaborations between academic institutions and biotech companies are helping to create an environment conducive to innovation, thereby expanding market growth. For instance, in June 2024, MGI Tech Co., Ltd. announced a new automated workflow for large-scale Low-pass Whole Genome Sequencing (WGS) Solutions for Agriculture. The solution streamlines molecular breeding with tools for extraction, library prep, sequencing, and SNP/InDel calling. The MGIEasy Large-scale polymerase chain reaction Free FS Library Prep Set simplifies library construction with a plate-based design, cutting steps, time, and consumables.

Reagents and Kits Segment to Dominate the Genotyping Assay Market

The reagents and kits segment is anticipated to dominate the genotyping assay market primarily because of its role in ensuring accurate results, as well as reproducible results, across various genotyping applications. The segment further benefits from the increasing adoption of ready-to-use kits, which simplify the workflow and reduce procedural errors in research and clinical settings. Due to the increasing demand for high-throughput genotyping, innovations in reagent formulation for technologies like next-generation sequencing and polymerase chain reaction and microarrays enhance the segment's growth prospects. Additionally, this contributes to a continuous flow of revenue, making the segment fuel the market growth. For instance, in June 2024, Omixon Inc. launched HoloGRAFT ONE, a simplified digital polymerase chain reaction kit for monitoring donor-derived cell-free DNA (dd-cfDNA) in transplant research. Its single-use, dry reagent format eliminates handling errors and streamlines workflows. The assay offers direct, absolute quantification of donor-specific genetic markers for improved transplant monitoring.

North America Dominates Genotyping Assay Market

The overall market for genotyping assays worldwide is dominated by North America, due to the excellent infrastructural facilities for healthcare available here, high research and development activity, and extensive adoption of advanced genomic technologies. Notable biotechnology and pharmaceutical firms, as well as huge government spending on genomics research, make further enhancements in the market. The increasing incidence of chronic diseases, personalized medicine initiatives, and the increasing demand for precision diagnostics have created a strong demand for genotyping assays in the region. For instance, in May 2024, F. Hoffmann-La Roche AG launched an HPV self-collection solution that received FDA approval, offering an accessible screening option. Individuals can collect vaginal samples in a healthcare setting, then analyze them using Roche's Cobas molecular instrument. Positive results lead to further care with a healthcare provider, enabling early detection of cervical cancer risks.

Future Market Scenario (2025-2032F)

The future market scenario for the global genotyping assay market looks very promising, as rapid advancement in genomic technologies and the adoption of precision medicine are driving this market. Emerging trends such as artificial intelligence and machine learning integration in genomic data analysis are expected to streamline workflows and enhance diagnostic accuracy. The increasing incidence of genetic diseases, along with the increased demand for pharmacogenomics and personalized medicines, will fuel further growth in the market. In addition, the increased focus on agricultural genomics and animal breeding is expected to create new growth opportunities. Increased access to cost-effective, high-throughput genotyping platforms is sustainable growth in the market. For instance, in March 2024, Nucleus Genomics, Inc. launched DNA analysis and whole genome sequencing services for personalized genetic risk and health reports. Customers can upload existing microarray DNA data to gain insights into diseases like type 2 diabetes and breast cancer, with analysis incorporating lifestyle factors like age, body mass index, and cholesterol.

Key Players Landscape and Outlook

The genotyping assay market is characterized by its dynamic landscape, shaped by the actions of numerous key players, including significant business agreements and regulatory approvals for various products. The sector experienced a surge in strategic initiatives, encompassing mergers, acquisitions, and collaborations, reflecting a robust drive for innovation and growth within the industry.

For instance, in January 2024, Thermo Fisher Scientific Inc. launched Axiom PangenomiX Array, its most comprehensive and ethnically diverse array of genetic research. Designed for large-scale disease studies and pharmacogenomic research, this array offers optimal genetic coverage based on the pangenome, a more inclusive representation of human genomic variation. This launch supports the shift toward proactive healthcare and personalized medicine, focusing on the genetic basis of disease risk and drug responses.

For instance, in September 2024, Integrated DNA Technologies, Inc. launched Archer HRD Technology for comprehensive genomic profiling solutions with the addition of homologous recombination deficiency assessment. This new technology is available as a standalone assay, a supplementary module, or integrated into Archer's existing NGS panels, offering customizable solutions for cancer research labs.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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