Next-Generation Sequencing (Ngs) Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The next-generation sequencing market was valued at USD 6,588.68 million in 2021, and it is expected to reach approximately USD 20,132.08 million in 2027, registering a CAGR of nearly 21.09% during the forecast period.

The NGS diagnostic technology has the potential advantage of determining the genetic sequence of a virus and helping scientists understand the mutations. Throughout the COVID-19 pandemic, government authorities across the world are constantly working with the private sector to bring NGS technology as a potential diagnostic tool into the market. In June 2020, the United States Food and Drug Administration (USFDA) issued an emergency use authorization (EUA) to Illumina Inc. for the first COVID-19 diagnostic test utilizing next-generation sequence technology. The FDA authorized the Illumina COVIDSeq Test for the qualitative detection of SARS-CoV-2 RNA. Thus, the use of NGS technology is expected to rise throughout the pandemic phase.

Furthermore, factors such as an upsurge in the use of NGS technology in clinical diagnosis, speed, cost, and accuracy of this sequencing method are likely to spur market growth. For instance, in January 2020, in the United States, the Intelligence Advanced Research Projects Activity provided USD 23 million to the Broad Institute and Harvard University and DNA Script. The organizations have been working together to explore the possibility of combining the enzymatic DNA synthesis technology and NGS into a single instrument for more than four years. Such developments are a major boost to the clinical studies and organizations progressing with NGS as their basis of innovation. Also, in August 2020, GeneDx Inc., a subsidiary of BioReference Laboratories Inc., and OPKO Health entered into an agreement with Pediatrix Medical Group to offer state-of-the-art, next-generation genomic sequencing to support clinical diagnosis in rare diseases for neonatal intensive care units. Such developments are anticipated to bolster market growth over the coming years.

In addition, efficiency in replacing the traditional technologies (such as microarrays) and growing drug discovery applications

demanding NGS technology is expected to drive the market growth further. Additionally, several market players are playing a key role in the development of drugs through this technology. For instance, in January 2022, Illumina Inc. and Nashville Biosciences LLC, a wholly-owned subsidiary of Vanderbilt University Medical Center (VUMC), entered a multi-year agreement to accelerate medicines development through large-scale genomics and the establishment of a preeminent clinical-genomic resource using Illumina's next-generation sequencing (NGS) platforms.

On the other hand, the studied market is facing challenges due to the legal and ethical interpretation of complex data and the lack of skilled professionals.

Next-generation Sequencing Market Trends

The Whole Genome Sequencing Segment is Expected to Grow at a Significant Rate Over the Forecast Period

By type of sequencing, the whole-genome sequencing segment is expected to grow substantially over the coming years. Whole-genome sequencing (WGS) has been widely accepted for providing the highest possible resolution information about COVID-19 and is believed to have the potential to transform COVID-19 infectious disease management. For instance, in early 2020, the UK government launched a new alliance, "COVID-19 Genomics UK Consortium (COG-UK)," to sequence the genomes of SARS-CoV-2, the virus responsible for the current COVID-19 pandemic. The "COVID-19 Genomics UK Consortium (COG-UK)" is comprised of the NHS (National Health Service), public health agencies, the Wellcome Sanger Institute, and several academic institutions, helping in creating funds and developing diagnostics and treatment.

Moreover, numerous initiatives undertaken by universities, academic and research institutions, and research establishments for utilizing WGS technology in identifying the root cause of diseases are likely to propel the segment growth. For instance, in February 2021, Stanford Medicine launched an in-house service for whole-genome sequencing. Similarly, Cerba Research announced two COVID-19 exploratory tools in January 2021, one PCR-based and the other NGS-based, to enhance research for vaccine development against infectious diseases, including COVID-19. The whole-genome sequencing of respiratory viruses and SARS-CoV-2 was greatly simplified using the NGS-based test.

Furthermore, the rising number of clinical trials studies pertaining to the use of whole-genome sequencing is increasing the focus on whole-genome sequencing, thereby contributing to the market growth. Thus, due to the above-mentioned factors, the segment is anticipated to witness healthy growth over the forecast period.

North America is Expected to Hold a Major Share of the Market in the Forecast Period

Within North America, the United States is expected to hold a major share of the market and is expected to continue the trend over the coming years. Next-generation sequencing (NGS) technology is gaining popularity as a routine clinical diagnostic test, particularly with the COVID-19 pandemic in this region. The market growth is supplemented by the upsurge in the number of strategic developments by the key market players operational within the region. For instance, in August 2020, Helix Laboratory received the United States Food and Drug Administration approval for its COVID-19 NGS test, which is an amplicon-based next-generation sequencing (NGS) test intended for the qualitative detection of nucleic acid from the SARS-CoV-2 in upper respiratory specimens for COVID-19 suspected individuals. Likewise, in January 2022, Pathogenomix Inc., a next-generation sequencing pathogen diagnostic company, was granted Breakthrough Device Designation for its Patho-Seq assay by the United States Food and Drug Administration (FDA).

In addition, the increasing adoption of NGS technology by the non-government and government bodies, along with increased funding by the federal government and the private players, is expected to drive market growth. For instance, in January 2020, the Centers for Medicare & Medicaid Services (CMS) implemented the action for including the USFDA approved or cleared laboratory

diagnostic tests using next-generation sequencing (NGS) for patients with germline (inherited) ovarian or breast cancer.

All these developments, along with the rising healthcare expenditure and increasing geographic footprints of the players, are driving the growth of the market in this region.

Next-generation Sequencing Market Competitor Analysis

The next-generation sequencing (NGS) market is highly competitive, with the presence of several global and international market players. The key players are adopting different growth strategies to enhance their market presence, such as partnerships, agreements, collaborations, new product launches, geographical expansions, mergers, and acquisitions. Some of the key players in the market are F. Hoffmann-La Roche Ltd, Thermo Fisher Scientific Inc., Agilent Technologies, Illumina Inc., and PerkinElmer Inc.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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