

NGS-Based RNA-Sequencing - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The NGS-Based RNA-Sequencing Market size is estimated at USD 3.71 billion in 2024, and is expected to reach USD 9.27 billion by 2029, growing at a CAGR of 20.06% during the forecast period (2024-2029).

The COVID-19 pandemic had an effect on the growth of the NGS-based RNA sequencing market, as next-generation sequencing has become the research tool of choice for many scientists trying to stop the COVID-19 pandemic. For example, an article in *Frontiers in Cellular and Infection Microbiology* from March 2021 says that researchers have used next-generation sequencing (NGS) to look at hundreds of coronavirus genomes and the SARS-CoV-2 genome. But because of their many benefits, NGS and RNA sequencing have made more technological progress, which has pushed companies and researchers to use them more. For example, in February 2022, a group of researchers from different institutions led by professors at IIT Jodhpur came up with a way to use artificial intelligence (AI) and genome sequencing to recognize COVID-19 virus RNA variations. So, the studied market is likely to grow because NGS platforms are being used more and more in research and development around the world.

Market growth is being driven by things like the rise in the number of products approved for RNA sequencing platforms and consumables, progress in precision medicine, and the benefits of NGS-based RNA sequencing.

The growing number of product approvals and launches of RNA-sequencing platforms and consumables is anticipated to drive the growth of the market over the forecast period. For instance, in October 2021, Takara Bio USA, Inc. launched the SMART-Seq Pro kit for the ICELL8 cx Single-Cell System, an automated single-cell RNA-seq solution that allows scientists to generate full-length transcriptome data from over 1,500 single cells simultaneously and from a wide range of sample types. Also in September 2021, Alithea Genomics released its first MERCURIUS BRB-seq kits. These kits allow RNA-seq library preparation from a variety of RNA sources with high throughput and low cost.

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The fast emergence of next-generation sequencing technology has revolutionized the field of genomics and medical diagnosis and changed the traditional model of a gene-by-gene approach to a syndrome-based panel sequencing, diagnostic exome sequencing (DES), and diagnostic genome sequencing (DGS) precision model.

Additionally, the advancement of precision medicine has provided specific strategies for targeted therapies and medicines for patients with cancer and Mendelian diseases that prove to be better than traditional clinical practices. This is anticipated to fuel the demand for NGS-based sequencing, hence propelling the market's growth. For instance, according to the data published by the CDC, it is projected that by May 2021, more than 60 million people will have their genomes sequenced worldwide by 2025, as countries have taken the initiative to sequence large populations.

Furthermore, NGS-based RNA sequencing has several advantages over traditional methods for transcriptome analysis with cost-effective procedures, such as direct quantification and identification of transcripts, covering an extremely broad dynamic range, providing sensitive and accurate measurement of gene expression, generating both qualitative and quantitative data, and revealing the full transcriptome. Additionally, NGS-based RNA sequencing eliminates cross-hybridization and suboptimal hybridization seen in microarrays. Thus, such advantages are expected to increase their adoption over other conventional methods, which in turn is anticipated to fuel market growth over the forecast period.

Therefore, owing to the factors such as increasing product approvals, advantages of NGS-based RNA sequencing, and growing focus on precision medicine, the studied market is expected to grow over the forecast period. However, the lack of standardization and interpretation of complex data and the lack of skilled professionals are likely to impede the growth of the NGS-based RNA sequencing market over the forecast period.

NGS-based RNA-Sequencing Market Trends

Sequencing Platform and Consumables Segment is Expected to Hold the Significant Market Share in the NGS-Based RNA-Sequencing Market Over the Forecast Period

The RNA sequencing platform and consumables segment is expected to witness significant growth in the NGS-based RNA sequencing market over the forecast period owing to factors such as the growing technological advancements in the field of next-generation sequencing techniques and the continuous R&D efforts of biotechnological companies for manufacturing cost-effective and innovative RNA sequencing platforms for disease research.

Platforms and supplies for RNA sequencing make it possible to measure the expression of the transcriptome by finding gene fusions, transcript isoforms, and single nucleotide variants. Some of these platforms are Illumina HiSeq, SOLiD systems, Ion Torrent, PacBio IsoSeq, and Oxford Nanopore Technologies (ONT) Nanopore sequencing, among others. These platforms have revolutionized the study of the transcriptome by providing researchers with the perceptibility to acknowledge the changes in the diseased state of an individual that previously went undetected.

The growing number of product launches is also contributing to market growth. For instance, in January 2022, Singular Genomics Systems, Inc. partnered with Lexogen to demonstrate the G4 sequencing platform's compatibility with Lexogen's products for RNA research, specifically the QuantSeq, Corall, and Luthor library preparation kits. Also, in December 2021, Singular Genomics Systems, Inc. launched the G4 NGS-based sequencing platform. The NGS platform combines cutting-edge technology with revolutionary high-performance chemistry to give accuracy, flexibility, speed, and power for a variety of applications, including oncology and immunology research.

Therefore, owing to factors such as rising product launches and the availability of a variety of platforms, the studied segment is

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expected to grow over the forecast period.

North America is Expected to Have the Significant Market Share Over the Forecast Period

Over the next few years, the NGS-based RNA-sequencing market is expected to grow significantly in North America. Major biotechnological research companies like Illumina, Inc., Thermo Fischer Scientific, Inc., Agilent Technologies, Inc., PerkinElmer, Inc., and GeneWise, Inc. are located in the region. This, along with the early adoption of NGS technology, is expected to drive market growth in the region. The market is also growing because of the growing demand for next-generation sequencing services and applications in drug development, clinical procedures, and precision medicine, as well as the use of the most recent technology for next-generation sequencing.

According to an article published in JTO Clinical and Research Reports in February 2022, Canadian researchers found that the ultra-focused RNA-next-generation sequencing assay is a good way to find clinically significant hotspot mutations and fusions in NSCLC at the same time by focusing on actionable gene targets with a single unified procedure. Thus, with the aid of next-generation sequencing, several molecular modifications can be recognized, each of which presents unique analytical difficulties. This is anticipated to fuel the adoption of RNA-based NGS sequencing to study mutations in various diseases, hence boosting market growth.

Also, the growing company's focus on adopting different business strategies like collaboration, agreements, partnerships, and others, as well as putting out more products in the region, are likely to drive market growth over the next few years. For instance, in March 2022, the University of Mississippi Medical Center set up a clinical next-generation sequencing (NGS) machine that allows physicians to assess the DNA sample from cancer patients faster and more cost-efficiently. Also, in July 2021, Switch Health started working with Anven Biosciences, a leader in next-generation therapeutics and diagnostics for personalized medicine. Under the agreement, Anven and Switch Health will work together to create a new class of artificial antibodies that can be used as molecular diagnostics to find both symptomatic and asymptomatic SARS-CoV-2 infections. This will help Canadian patients get faster, more convenient, and easier access to health care. In the same way, Bio-Rad Laboratories, Inc. released the SEQuoia RiboDepletion Kit for NGS in May 2021. This kit removes unnecessary ribosomal RNA from the RNA-sequencing library and makes the assay more effective.

Because of things like the growing use of NGS-based RNA sequencing in cancer and the increasing number of new products and company activities, the studied market is expected to grow over the next few years.

NGS-based RNA-Sequencing Industry Overview

The NGS-based RNA-sequencing market is moderately competitive with several players across the globe. In terms of market share, various major players currently dominate the market. With the increase in research and development activity, many regional players are expected to be part of the NGS-Based RNA-Sequencing Market over the forecast period. Some of the major players in the market are Illumina, Inc.; Oxford Nanopore Technologies; Agilent Technologies, Inc.; Thermo Fisher Scientific, Inc.; PerkinElmer, Inc.; F. Hoffmann-La Roche Ltd.; Hamilton Company; and Takara Bio, Inc., among others.

Additional Benefits:

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

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