

# **Next Generation Sequencing Market, Global Forecast, Impact of COVID-19, Industry Trends, Growth, Opportunity By Types of Test, Company Analysis**

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## **Abstracts**

Next-generation sequencing refers to the deep, high-throughput, in-parallel DNA sequencing technologies developed a couple of decades after the Sanger DNA sequencing method first emerged in 1977. It is a massively parallel sequencing technology that offers scalability, ultra-high throughput, and high speed to determine the order of nucleotides in the entire genome. DNA pre-sequencing is one of the most significant steps in the overall sequencing protocol as it involves the preparation of the sample for the subsequent sequencing reaction. Further, the expansion of the worldwide next-generation sequencing market is majorly driven by a rise in genome mapping programs, a rise in applications of next-generation sequencing; an increase in healthcare expenditure; and technological advancements in sequencing platforms. According to Renub Research, The Next Generation Sequencing Market will reach US\$ 34.8 Billion by 2027.

### **Impact of COVID-19 Pandemic**

The potential advantage of NGS diagnostic technology was to determining the genetic sequence of a virus and helping scientists understand the change of the virus. Throughout the COVID-19 pandemic, government authorities worldwide are constantly working with the private sector to bring NGS technology the potential diagnostic tool within the market. In 2020, the (US FDA) United States Food and Drug Administration issued an emergency use authorized (EUA) to Illumina Inc. for the first COVID-19 diagnostic test adopting NGS technology. The FDA approved the Illumina COVID Seq Test for the qualitative detection of SARS-CoV-2 RNA.

### **Based on Type**

Next Generation Sequencing Market includes Targeted Re-sequencing (TPS/WES), RNA-Sequencing, Whole Genome Sequencing, Chip-Sequencing, De Novo Sequencing, and Methyl-Sequencing. Targeted Re-sequencing holds the largest market share; the technology allows economic options for WGS (World Geodetic System) and facilitates the in-depth study of genomic regions. RNA-based targeted sequencing is expected to witness lucrative growth in the coming years due to the growing demand for differential expression analysis. As per this report, the Next-generation Sequencing Industry will grow with a CAGR of 22.94% during 2020 - 2027.

Moreover, in recent years, NGS has been considered the most potent tool in diagnostics and research to understand the treatment regimen for various diseases, including cancer, infectious diseases and cardiovascular diseases. In cancer diagnostics, due to the widespread adoption of liquid biopsies, there has been a significant increase in the utilization of NGS technologies. These technologies utilize cell-free circulating tumour DNA (ctDNA) as a non-invasive cancer biomarker for real-time cancer monitoring and detection.

NGS is steadily being integrated into user verticals like Academic and Research Institutes, Biopharmaceutical Industry, Diagnostics Industry, Governments Agencies, Hospitals and Clinics. The academic and Biopharmaceutical Industry dominates the NGS industry. Academic created the most significant revenue to the high usage of the next-generation sequencing platforms for basic research programs within universities and institutes. As per this study, Next-generation sequencing Market Size was US\$ 8.2 Billion in 2020.

In addition, Next-generation sequencing informatics Services are used in clinical applications of NGS, technological advancements in NGS informatics tools, growing preference toward personalized medicines and early disease diagnosis, and the increasing demand for NGS services and investments by key companies.

The key players include Illumina, Thermo Fisher Scientific, Pacific Biosciences, Oxford Nanopore Technologies, and Roche. They were operating in the global next-generation sequencing market. In 2020, Illumina Inc. acquired GRAIL, a healthcare company focused on multi-cancer early detection, for cash and stock consideration of US\$ 8 Billion upon closing of the transaction.

Renub Research latest report "Next-generation sequencing Market by Types of Test (Targeted Re-sequencing (TPS/WES), RNA-Sequencing, Whole Genome Sequencing,

ChIP-Sequencing, De Novo Sequencing, and Methyl-Sequencing) by Disease (Reproductive Health NGS test , NGS Test Market (Rare Disease Diagnostics), Cancer (Risk Prediction, therapy Selection & Respose), Metabolic Immune (Diagnostic), Cardiovascular NGS Test Market, Others NGS Test Market) by Informatics (NGS Informatics Services, Primary and Secondary Data Analysis Tools, Computing, Storage, Biological Interpretation and Reporting Tools, LIMS (Laboratory Information Management System) by End User (Academic and Research Institutes, Biopharmaceutical Industry, Diagnostics Industry, Governments Agencies, Hospitals and Clinics)' provides a detailed analysis of Next-generation sequencing Industry.

Types of Test - Next Generation Sequencing Market have been covered from 6 viewpoints:

1. Targeted Re-sequencing (TPS/WES)
2. RNA-Sequencing
3. Whole Genome Sequencing
4. ChIP-Sequencing
5. De Novo Sequencing
6. Methyl-Sequencing

Disease – Global Next Generation Sequencing Test Market have been covered from 6 viewpoints:

1. Reproductive Health NGS test
2. NGS Test Market (Rare Disease Diagnostics)
3. Cancer (Risk Prediction, therapy Selection & Response)
4. Metabolic Immune (Diagnostic)
5. Cardiovascular NGS Test Market
6. Others NGS Test Market

Informatics – Global Next Generation Sequencing Market have been covered from 6 viewpoints:

1. NGS Informatics Services
2. Primary and Secondary Data Analysis Tools
3. Storage
4. Computing
5. Biological Interpretation and Reporting Tools
6. LIMS (Laboratory Information Management System)

End User - Global Next Generation Sequencing Market have been covered from 5 viewpoints:

1. Academic and Research Institutes
2. Biopharmaceutical Industry
3. Diagnostics Industry
4. Governments Agencies
5. Hospitals and Clinics

Company Insights:

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Companies Covered:

1. Illumina
2. Thermo Fisher Scientific
3. Pacific Biosciences
4. Oxford Nanopore Technologies
5. Roche

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