

Whole Genome Sequencing Market - Global Industry Size, Share, Trends, Competition, Opportunity, and Forecast, 2018-2028. Segmented By Sequencing Type (Large Whole-Genome Sequencing, Small Genome Sequencing), By Product Type (Instrument, Kits, Service), By Application (Diagnostics, Drug Discovery and Development, Personalized Medicine, Others), By End User (Hospitals and Clinics, Pharmaceutical and Biotechnology Companies, Others), By Region and Competition

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Abstracts

Whole Genome Sequencing Market is expected to grow with an impressive CAGR in the forecast period 2024-2028. This can be attributed to factors such as

Whole Genome Sequencing Market (WGS) is a widely used application included in genome, microbial resequencing, and genome sequencing. It is expected to increase significantly with the growing research in genomics. Additionally, a rise in the usage of this technology against COVID-19 in sequencing the data of the COVID-19 virus is expected to drive market growth.

Whole Genome Sequencing Market (WGS) technology can deliver quick results and high-quality data. It can be used to locate, monitor, and address disease outbreaks in a region. WGS is shown to be most useful in research and rarely in therapeutic treatments.

The mapping of novel organisms' genomes, the completion of the genomes of already-known organisms, or the comparison of genomes from other samples all benefit from microbial whole-genome sequencing. To create reliable reference genomes, microbial identification, and other comparative genomic investigations, it is required to sequence the full bacterial, viral, and other microbial genomes.

Growing Technological Advancement

Increasing technological advancement in NGS instruments and update in technology utilized in Sequencing techniques are adding to further drive the sequencing market growth in the forecast period. Moreover, with its multiplexing feature, next-generation sequencing (NGS) enables microbiology researchers to sequence hundreds of organisms, unlike capillary sequencing or PCR-based methods. NGS-based microbial genome sequencing is time efficient and streamlines the workflow, and does not rely on time-consuming cloning stages like older techniques. Additionally, low-frequency variations and genomic rearrangements that might be overlooked are too expensive to find using current techniques that can be found using NGS (Next Generation Sequencing). Also, population-level WES (whole exome sequencing) data generation has increased in today's time. Whole exome sequencing (WES) is a successful application in the field of sequencing and is proved by the discovery of the genes for the conditions such as Mendelian phenotypes, Miller's disease, and other diseases. Whole exome sequencing is more useful than whole genome sequencing since the majority of known disease-causing mutations take place in exons and are in high demand in the market and thus anticipated to propel the market growth in the future.

Growing Demand in Disease Diagnosis

Whole genome sequencing has an increased demand in clinical applications regarding disease diagnosis and has significant importance in the identification of a mutation in a genome segment for isolating a variant or mutation in a gene. Moreover, techniques such as Microbial whole-genome resequencing involve the sequencing of the entire genome of a bacteria, virus, or other microbe and comparing the sequence to that of a known reference and thus is helpful in disease diagnosis. This microbial genome sequencing is thus an important tool for microbial identification. Additionally, the whole genome sequencing technique is used for identifying the order of bases in the organism and is thus utilized to produce a precise DNA fingerprint and thus can aid in linking the cases allowing the eruption or defect to be detected quickly and, thus, is significant in infectious disease diagnosis to bolster the market growth in the forecast period.

Increased Application in Genome Mapping

The rising demand for genome mapping in government projects for the rising research and development related to disease diagnosis and research for improved treatment in cancer, mutated disorders, and other diseases, etc. Furthermore, governments of distinct countries and regions are sequencing millions of genomes to progress research and discover better ways to identify and cure cancer, uncommon disorders, and other ailments. For instance, the European government is undertaking efforts to improve the region's large-scale genomic data with projects such as France's French Plan for Genomic Medicine 2025 and, similarly, the United Kingdom's 100,000 Genomes Project. These initiatives have resulted in the growth of NGS's Next-generation sequencing (NGS) informatics services in the region. For instance, in November 2022, using Nanopore Genome Sequencing, AI, and Cloud Computing, scientists at Stanford Medicine University sequenced a patient's whole genome in under five hours.

Recent Development

In November 2021, Illumina and Genetic Alliance announced a USD 120 million global initiative—the iHope Genetic Health program. This initiative aims to offer Whole Genome Sequencing (WGS) access to various patients impacted by genetic disorders globally.

Also, In 2020, a leading company QIAGEN acquired NeuMoDx Molecular and secured its position in the market in automated molecular testing. The company now includes medium- and high-throughput NeuMoDx automation solutions based on PCR testing technology as a new component of its updated product portfolio.

Market Segmentation

The whole Genome Sequencing Market is segmented based on the sequencing type, product type, application, end-user, and region. Based on sequencing type, the market is segmented into large whole-genome sequencing and small-genome sequencing. Based on product type, the market is segmented into instruments, kits, and services. Based on application, the market is segmented into diagnostics, drug discovery and development, personalized medicine, and others. Based on end users, the market is further fragmented into hospitals and clinics, pharmaceutical and biotechnology companies, and others. Based on the region, the market is further segmented into North America, Europe, Asia-Pacific, South America, and MEA.

Market Players

GE Healthcare, Inc., Illumina, Inc., QIAGEN N.V., Thermo Fisher Scientific, Agilent Technologies, 10 x Genomics, BGI, Oxford Nanopore, Nebula Genomics, Veritas Genetics, etc., are some of the major players operating in the global Whole Genome Sequencing Market.

Report Scope:

In this report, Whole Genome Sequencing Market has been segmented into the following categories, in addition to the industry trends, which have also been detailed below:

Whole Genome Sequencing Market, By Sequencing Type:

- Large Whole-Genome Sequencing

- Small Genome Sequencing

Whole Genome Sequencing Market, By Product Type:

- Instrument

- Kits

- Service

Whole Genome Sequencing Market, By Application:

- Diagnostics

- Drug Discovery and Development

- Personalized Medicine

- Others

Whole Genome Sequencing Market, By End User:

- Hospitals and Clinics

Pharmaceutical and Biotechnology Companies

Others

Whole Genome Sequencing Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

Asia-Pacific

China

Japan

India

South Korea

Australia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

South America

Brazil

Argentina

Colombia

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in Whole Genome Sequencing Market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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