

Whole Exome Sequencing Market Size, Share & Trends Analysis Report By Product (Instruments, Consumables, Services), By Technology, By Workflow, By Application, By End-use, By Region, And Segment Forecasts, 2025 - 2030

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Abstracts

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Whole Exome Sequencing Market Growth & Trends

The global whole exome sequencing market size is expected to reach USD 1,272.5 million by 2030, registering growth at a CAGR of 18.44% from 2024 to 2030 according to a new report by Grand View Research, Inc. One of the primary factors driving the market is the advancement in technology for whole exome sequencing. High throughput technology is becoming more widely used in clinical diagnostics and research which helps doctors to better understand the exome sequence disorders and make a treatment accordingly. Additionally, the rising prevalence of genetic conditions has enabled the adoption of whole exome sequencing for the investigation of protein coding regions and the derivation of valuable output about genetic variants.

Additionally, the significant increase in research including whole exomes is driven by the availability of data analysis and interpretation software. The use of these tools and software to examine genetic data is easy and it provides a fresh insight into the underlying causes of genetic abnormalities and diseases. For instance, in May 2022, Illumina's subsidiary Grail, announced a partnership with the U.S. Department of Veterans Affairs, to provide their Galleri multi-cancer early detection test to U.S. veterans. This test utilizes whole exome sequences to detect multiple types of cancer in the early stages. This partnership exemplifies how the usage of whole exome sequencing and advanced data

analysis tools can enable large-scale genomic research and transform the future of precision medicine.

The market has been significantly impacted by the COVID-19 pandemic. An example of how whole exomes have been used to better understand the virus and its dissemination is the COVID-19 Genomics UK Consortium study. The pandemic has also brought attention to the promise of exome sequence in the fight against infectious diseases, spurring additional investment in this field of study. The entire market is anticipated to develop in the upcoming years despite difficulties brought on by the pandemic in 2020.

Whole Exome Sequencing Market Report Highlights

The consumables segment dominated the market in 2024 with a market share of 62.36%. This is due to whole exome sequencing's requirement of a variety of consumable items, including reagents, kits, and sample preparation consumables, which are essential for conducting whole exome sequencing investigations.

Sequencing by synthesis segment dominated the market in 2024 with a market share of 73.49%. This is due to the effectiveness and affordability of the sequencing by synthesis approach that has increased its appeal.

The sequencing segment had a dominating presence in the market in 2024 with a market share of 49.90%, due to the growing demand for genetic testing services and personalized medicine. Whole exome sequencing has the ability to analyze a large number of genetic data in a less cost, additionally it allows for more comprehensive analysis of genetic variation.

Drug discovery & development segment dominated the market in 2024 with a market share of 47.38% due to it plays a crucial part in advancing the development of new drugs. Whole exome sequencing has become a compelling method for locating gene variations and disease-causing mutations that can be exploited to create tailored treatments.

The academic & research institutes segment in whole exome sequencing market dominated the market in 2024, with a share of 47.32%. The dominance of the segment is due to the increasing demand

for personalized medicines and healthcare.

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