

Single-Cell Genome Sequencing Market- Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The Single-cell Genome Sequencing Market is projected to register a CAGR of 15.2% during the forecast period 2022-2027.

The COVID-19 pandemic had a positive effect on the studied market. Various research studies have been published about the impact of COVID-19 on single-cell sequencing. For Instance, in September 2020, research published titled "Single-cell landscape of Immunological Responses in Patients with COVID-19" stated that coronavirus disease (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, the relationship between disease severity and the host immune response is not fully understood. When single-cell sequencing was performed, most cell types in patients with COVID-19 showed a strong interferon- γ response and an overall acute inflammatory response. Such studies provide inside into the application of single-cell sequencing on COVID-19. Similarly, in February 2022, another research study titled "Integrating Single-Cell Sequencing Data with GWAS Summary Statistics Reveals CD16+ Monocytes and Memory CD8+T Cells Involved in Severe COVID-19" stated that there was a major genetics-modulated immunological shift between mild and severe infection, including an elevated expression of genetics-risk genes, increase in inflammatory cytokines, and of functional immune cell subsets aggravating disease severity, which provides novel insights into parsing the host genetic determinants that influence peripheral immune cells in severe COVID-19. Hence, such studies provide insight into COVID-19 and thus increase the market growth in the future.

Factors such as increasing diseases, initiatives by key market players, and increased funding are expected to increase the market growth. Rising disease prevalence is also likely to boost the drug development processes in the region, ultimately leading to the studied market expansion owing to the benefits offered by the devices. For Instance, as per the article titled ' United States Tax Dollars Funded Every New Pharmaceutical in the Last Decade' published in September 2020 2.2 million published research related to the biological drugs or targets of which 21% acknowledged funding from National Institutes of Health (NIH) of more than than USD 230 Billion. Such funding in the biotechnology field increases the research and the usage of PCR devices (including single-cell

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sequencing), boosting the market's growth. The collaboration among the market players and research institutes for the research and development of new diagnostics and treatment methods with the help of the sequencing method is also boosting the market's growth. For Instance, in January 2020, Illumina and Israel-based Danyel Biotech reported that scientists at the Weizmann Institute of Science in Israel are now using Illumina's next-generation sequencing (NGS) technology. Weizmann has been a pioneer of single-cell genomics, and Illumina's technology will enable the Institute's researchers to continue advancing this fast-growing field of research. The newly-installed system also expands genomic research capacity within Israel. The institutes are using NovaSeq 6000 system to investigate how cells within the immune system interact with healthy tissue and tumor cells. Since the use of NovaSeq 6000 enables researchers to sequence the genome, epigenome, and transcriptome (RNA sequence), it is expected to drive the growth of the studied market. Thus, due to the abovementioned factors, the market is likely to grow in the future.

However, analytical challenges related to single-cell genome sequencing will hinder the market's growth.

Single Cell Genome Sequencing Market Trends

PCR Segment is Expected to Hold a Significant Market Share Over the Forecast Period

The PCR segment is expected to hold a significant share in the market over the forecast period.

Factors such as initiatives by key market players such as product launches and collaborations are expected to increase the market growth in the forecast period. The market segment's growth is boosted by the launch of products in the market. For instance, in June 2020, Stilla Technologies launched one of the world's first six-color digital PCR instruments named 'the six-color Prism'. This system can be used widely in oncology, infectious disease, gene therapy, disease monitoring, and food testing. Similarly, in July 2022 Bio-Rad launched CFX Opus Deepwell real-time PCR detection system. Bio-Rad's CFX Opus Deepwell Real-time PCR Detection system is designed to support research in developing nucleic acid detection assays.

Additionally, the market segment is boosted by the strategic collaboration among the players to strengthen the opposition worldwide. For instance, in October 2021, PerkinElmer and Honeycomb Biotechnologies announced the launch of the first-of-its-kind HIVE scRNAseq Solution for single-cell isolation and analysis. The HIVE solution leverages a portable, handheld device for the capture, storage, and RNA-Seq library preparation of a diverse range of cell types, including fragile and labile cells such as granulocytes, nephrons, hepatocytes, and neurons. The HIVE solution requires no specialized instrumentation and expands opportunities for laboratories pursuing basic, translational, clinical, and preclinical research.

Thus, owing to the abovementioned factors, the PCR segment of the market is expected to project considerable growth over the forecast period.

North America is Expected to Dominate the Market Over the Forecast Period

North America is expected to hold a dominant share in market over the forecast period.

Factors such as rising disease prevalence and product launches and expansions by key market players are expected to drive market growth in the region. According to Cancer Statistics 2021, published in the American Cancer Society Journal, an estimated 1.9 million new cancer cases are diagnosed and 608,570 cancer deaths in the United States, which will drive the market significantly. Similarly, according to data by Globocan 2020, the country's estimated number of new cancer cases in 2020 was 195,449. The number of cancer cases in the country is expected to increase during the forecast period, thus driving the market's growth.

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Furthermore, launching new products based on single-cell sequencing will drive market growth significantly. For instance, in September 2020, Roche received United States Food and Drug Administration (FDA) approval for the Cobas HIV-1/HIV-2 Qualitative Test for use on the fully automated Cobas 6800/8800 Systems in the US. The test will help healthcare professionals confirm HIV diagnosis with a single test and differentiate HIV-1 and HIV-2, an important distinction needed to identify appropriate treatment options. In October 2021, Takara Bio USA, Inc., a fully owned subsidiary of Takara Bio Inc., launched the SMART-Seq Pro kit for the ICELL8 cx Single-Cell System. Scientists can collect full-length transcriptome data from over 1,500 single cells simultaneously using this automated single-cell RNA-seq technology from a wide range of sample types, including huge, delicate adult cardiomyocytes. Furthermore, in March 2020, to fight the COVID-19 public health problem, inference, a Cambridge-based company, announced the creation of a first-of-its-kind software resource that synthesizes disparate Single Cell RNA-sequencing (scRNA-seq) data sets. The library includes the nferX augmented intelligence technology, which enables machines to understand over 100 million unstructured biomedical papers and correlate emerging insights from scientific literature with deep biological signals at the single-cell level.

Thus, due to the such factors, the studied market is expected to grow significantly during the forecast period.

Single Cell Genome Sequencing Market Competitor Analysis

The market is partially fragmented and consists of several major players. Some companies currently dominating the market are Fluidigm Corporation, QIAGEN, Illumina, Inc., F. Hoffmann-La Roche Ltd., and ThermoFisher Scientific, Inc.

Additional Benefits:

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

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