

Single Cell Genome Sequencing Market 2019 Exclusivity, Size, Share, Growth, Value, Trends, Segmentat

Impact Analysis of Covid-19

The complete version of the Report will include the impact of the COVID-19, and anticipated change on the future outlook of the industry, by taking into the account the political, economic, social, and technological parameters.

Single cell genome sequencing involves isolating a single cell and amplifying and sequencing genes within that single cell. Sequencing single cell carries significant importance as individual cells can differ at great extent in size, protein levels, and expressed RNA transcripts. These variations could provide important insights about several research applications such as cancer research, stem cell biology, immunology, developmental biology, and neurology. Single-cell analysis enables a closer view of the gene expression of individual cells to understand their functions in complex tissues.

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Kits and instruments based on technological platform such as [next generation sequencing \(NGS\)](#), polymerase chain reaction (PCR), quantitative polymerase chain reaction (qPCR), and others provide high-throughput sequencing of individual cells. Single cell sequencing has significantly evolved with in-depth understanding of genomes and increasing genomic research to trace the root cause of many chronic diseases.

Single Cell Genome Sequencing Market Dynamics

Single cell genome sequencing is one of the most focused area of research for finding cure for chronic disease such as cancer as it could help to observe tumor microenvironment. According to World Health Organization (WHO), cancer is one of leading non-communicable disease and second leading cause of death, worldwide. Moreover, according to a report by International Age for Research on Cancer (IARC) in 2012, around 14.1 million new cases of cancer were registered with around 8.8 million death and around 32.6 million people are living with cancer in the year 2012.

Introduction of new therapies for the treatment of cancer such as personalized medicine (Immuno-oncology and others.) is expected to increase adoption of single cell genomic sequencing for advancing research in order to observe cellular level changes in cancer cells.

Furthermore, application of single cell genomic sequencing in other diseases such as immune system disorder and infectious diseases (Tuberculosis, meningococcal disease, and others.) is a key factor that is expected to drive market growth. For instance, according to statistics by Centers for Disease Control and Prevention 2017 Vital Signs, around 54.4 million U.S. adults suffered from arthritis, which is equivalent to 25% of the U.S. population. Rheumatoid arthritis is leading autoimmune disorder that holds significant

share in the overall arthritis prevalence.

Continuous development in sequencing technologies is further expected to propel growth of the single cell genome sequencing market. PCR and next generation sequencing are rapidly emerging as preferred technology for several applications including single cell genomic sequencing. For instance, Oxford Nanopore, in 2017, launched two sequencing kits for direct or PCR cDNA analysis that facilitate easy use and provide results in reduced time and cost.

Several collaborations amongst commercial companies and academic and research institutes is expected to propel the single cell genome sequencing market growth. For instance, in 2015, three single cell genomics centers were started in Sweden, Australia, and the U.S with an objective to facilitate R&D activities in single cell genome sequencing. The center in Australia was started with collaboration of Monash University, the University of Melbourne, the University of Newcastle and the Hudson Institute of Medical Research, and Fluidigm Corporation.

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Single Cell Genome Sequencing Market – Regional Insights

On the basis of region, single cell genome sequencing market is segmented into North America, Latin America, Europe, Asia Pacific, Middle East, and Africa. North America is expected to hold dominant position in the market during forecast period. High prevalence of different types of cancer is witnessed in the U.S. According to a report by American Cancer Society, 2018, cancer is the second leading cause of death after cardiovascular disease. The report further projected around 1.7 million new cases of cancer with around half million deaths, worldwide.

Single cell genome sequencing is utilized by several research institutes and commercial companies for revealing changes at gene level in single cell which could lead to potential therapies and access to develop new medicines.

Moreover, key players that offer cutting edge technologies such as NGS technology, qPCR technology and high commercial and academic research spending are present in the U.S, which is expected to accelerate the market growth.

Single Cell Genome Sequencing Market – Competitive Landscape

Key players operating in the single cell genome sequencing market include Illumina, Inc., Fluidigm Corporation, Thermo Fisher Scientific, F. Hoffmann-La Roche Ltd., Inc., QIAGEN, Bio-Rad Laboratories, 10x Genomics, Novogene, BGI, Oxford Nanopore Technologies, and Pacific Biosciences

Companies are focused on new product launches and collaborations to extend their market share. For instance,

- In January 2018, Illumina launched semiconductor-based sequencing system, iSeq 100t that uses sequencing-by-synthesis chemistry coupled with CMOS detection technology.
- In June 2018, QIAGEN launched QIAseq 16S/ITS Panels and UCP Multiplex PCR Kit with a new generation of reagents that enables the most accurate microbial community profiling from complex microbiome

samples and is used for single cell sequencing.

- In January 2018, Thermo Fisher Scientific and Illumina Inc. entered into commercial agreement, under which Illumina could sell Ion AmpliSeq technology to researchers who conduct scientific studies on Illumina's next-generation sequencing (NGS) platforms.
- In 2017, Illumina Inc. and Bio-Rad Laboratories, Inc. launched Illumina Bio-Rad Single-Cell Sequencing Solution. It is the first next-generation sequencing (NGS) workflow for single-cell analysis, which would enable researcher investigate the role of single cells in tissue function, disease progression, and therapeutic response.

Single Cell Genome Sequencing Market Taxonomy

On the basis of product type:

- Kits and Reagents
- Instruments

On the basis of technology:

- Next Generation Sequencing
- PCR
- qPCR
- Microarray
- MDA
- Others

On the basis of end user:

- Research and Academic Institutes
- Sequencing laboratories
- Pharmaceutical and Biotech Companies
- Others

On the basis of region:

- North America
- Latin America
- Europe
- Asia Pacific
- Middle East
- Africa

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