Flow Cytometry Market Assessment, By Products and Service [Instruments, Kits and Reagents, Software and Services, Others], By Technology [Cell-based Flow Cytometry, Bead-based Flow Cytometry], By Application [Oncology, Drug Discovery, Stem Cell Therapy, Hematology, Immunology, Other Applications], By End-user [Hospitals, Clinical Testing Laboratories, Academic and Research Institutes, Others], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

Global flow cytometry market is projected to witness a CAGR of 7.89% during the forecast period 2024-2031, growing from USD 5.01 billion in 2023 to USD 9.2 billion in 2031. The increasing geriatric population and the rising prevalence of chronic and infectious diseases drive growth in the global flow cytometry market. Flow cytometry is a powerful tool with applications in multiple disciplines such as immunology, virology, molecular biology, cancer biology, and infectious disease monitoring. Moreover, increasing healthcare expenditure on research and development for the development of the latest technologies and products is further expected to drive the market.

Technological advancements and new product launches in flow cytometry have significantly impacted the industry. One notable development is various companies' commercial launch of spectral flow cytometry technology. These advancements are crucial in addressing the increasing prevalence of diseases, such as cancer, immunodeficiency disorders, and infectious diseases. They are expected to play a vital role in personalized medicine, drug discovery, and development. However, the high cost of advanced flow cytometry equipment remains challenging, potentially limiting accessibility for smaller research facilities or emerging countries. Moreover, government initiatives for improving access to these technologies in developing and under-developed countries, the presence of several leading players, and ongoing partnerships between public and private companies for engineering advanced

flow cytometry devices and instruments are facilitating market growth.

Increasing Prevalence of Chronic and Infectious Diseases

There has been a surge in the demand for flow cytometry due to the rising number of chronic and infectious diseases worldwide. Flow cytometry plays a crucial role in detecting and analyzing diseases such as cancer, HIV, AIDS, TB, and many more. Rising awareness among healthcare professionals regarding the accuracy and sensitivity of flow cytometry is contributing to industry growth.

According to WHO 2023 statistics, chronic diseases are responsible for 41 million deaths every year at a global level. This affects people of all age groups, irrespective of their region or country. A sedentary lifestyle, unhealthy diet, and excessive tobacco and alcohol consumption are the leading risk factors for the rising prevalence of chronic diseases. Early diagnosis, accurate detection, and early intervention of the disease and its disease-causing agents are the only solutions to combat the growing prevalence of chronic diseases. This, in turn, enables healthcare professionals to use advanced technologies and highly efficient testing options, such as flow cytometry, acting as a major growth-inducing factor.

Technological Advancements

With a high prevalence of cancer, AIDS, and many other infectious diseases, there is an increasing demand to bring innovation in the flow cytometry industry that can enhance the accuracy of diagnosis and gather insights related to cell structure and functions. Key players are constantly investing in research and development to launch innovative products and instruments to facilitate flow cytometry technological advancements. In June 2023, Becton, Dickinson and Company, a global leader in medical technology, announced that it has launched an innovative automated instrument "BD FACSDuet", that can prepare samples for clinical diagnostics using flow cytometry to improve standardization and reproducibility in cellular diagnostics. The entire sample preparation process, including cocktailing, washing, and centrifuging, is automated by this product. These samples are then transferred to the physically integrated BD FACSLyric clinical flow cytometry system without any human intervention.

Government Initiatives

Government initiatives are playing a significant role in supporting the field of flow cytometry. One notable example is the establishment of the NIST Flow Cytometry Standards Consortium, which brings together industry, academia, and government to identify and address measurement and standard needs across the flow cytometry field. Additionally, government support through funds, grants, and public-private partnerships is contributing to the growth of the flow cytometry market, particularly in the context of research activities such as cancer, stem cell, and HIV studies. These initiatives are crucial in advancing the field of flow cytometry and addressing standardization issues, ultimately contributing to the development of new and innovative technologies in the market.

In August 2022, NanoCellect Biomedical Inc., a leader in developing and manufacturing microfluidic cells, announced that it received a grant of USD 1.8 million from Small Business Innovation Research (SBIR). This fund was granted to assist NanoCellect Biomedical Inc. in developing AI-based imaging flow cytometry technology. It would further help in research programs to develop novel imaging flow cytometry technology.

Growth in Demand for Cell Based Flow Cytometry

Among the technology segment, cell-based flow cytometry segment is expected to grow faster. Cell-based flow cytometry offers the advantage of high throughput and the potential to analyze millions of cells. Flow cytometry provides highly detailed information on single cells for immunotherapy clinical trials, enabling the monitoring of immune responses and the detection of abnormal cells. This technology monitors changes in immune cell phenotype, tracks therapeutic cells, and detects abnormal cells, thus offering a comprehensive view of a disease's micro-environment. In May 2023, Becton, Dickinson and Company, announced global commercial launch of an innovative cell sorting instrument, "BD FACSDiscover", a cell-based technology that will enable researchers to get more insights about cells in various areas, such as drug discovery, immuno-oncology and genomics, which is not possible in traditional flow cytometry experiments. BD FACSDiscover allows the investigation of different aspects of single-cell biology and sorts complex phenotypes for immunologic or genetic discovery.

North America Accounts for the Largest Share in Flow Cytometry Market

North America accounted for the largest share of the global flow cytometry market in 2022, with the United States being a major contributor to this dominance. The region's favorable business environment, substantial government support through funds and grants, and a robust healthcare infrastructure have driven its leadership in the flow cytometry market. Additionally, the high

prevalence of HIV/AIDS and cancer has led to a growing focus on the development of treatment options for these target diseases, further propelling the demand for flow cytometry technologies.

The strong presence of key regional players, such as BD, Danaher Corporation, and Thermo Fisher Scientific, has also contributed to North America's market leadership. According to the CDC (Center for Disease Control), 6 out of 10 adults in the US are affected by a chronic disease, whereas 4 out of 10 adults in the USA have 2 or more chronic diseases. Thus, the significant prevalence of chronic and infectious diseases in this region will contribute to increased demand for rapid detection and diagnosis by flow cytometry.

Future Outlook of Global Flow Cytometry Market

Global flow cytometry market is expected to grow in the coming years, due to the growing elderly population and the increasing prevalence of infectious and chronic diseases globally. Technological advancements, research and development, government support, increasing healthcare budget, and collaborative ventures involving medical devices manufacturers, research institutions, and other healthcare providers are anticipated to drive the market growth over the forecasted period.

Key Players Landscape and Outlook

In the flow cytometry market, mergers and acquisitions, partnerships, and distribution agreements are pivotal in driving the global market. These alliances empower firms to adapt to each other's strengths, gain access to new markets and technologies, and pool resources for research and development. Distribution agreements enable companies to expand their market presence. These collaborative initiatives promote innovation, expedite product developments, and contribute to the development and growth of the global flow cytometry market. In February 2023, Luminex Corporation signed an agreement to sell all its flow cytometry & imaging (FCI) business unit assets to Cytek Biosciences. With this strategic acquisition, the company would gain insights into all facets of cellular phenotypes and morphology. There are more than 7,000 instruments, which will be under the Cytek umbrella following this acquisition that will further expand the company's global presence.

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