

Life Science Tools in Healthcare Market Assessment, By Type [Instruments, Consumables, Services], By Technology [Genomics, Proteomics, Cell Biology Technology, Lab Supplies, and Others], By Product [Liquid Chromatography, Mass Spectrometry, Liquid Chromatography, Flow cytometry, and Others], By End-user [Healthcare, Government & Academic Institutions, Biopharmaceutical Companies, Industrial Applications, and Others], By Region [North America, Europe, Asia Pacific, South America, Middle East and Africa], Opportunities and Forecast, 2016-2030F

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Abstracts

Global Life Science Tools market size was valued at USD 151.28 billion in 2022 which is expected to reach USD 315.66 billion in 2030 with a CAGR of 9.63% for the forecast period between 2023 and 2030. The rapid development of life sciences tools and technologies such as gene sequencing, mass spectroscopy, chromatography, nuclear magnetic resonance (NMR), and other varied goods is contributing to innovation.

Additionally, the market is being driven by factors such as increasing investments by biopharmaceutical companies for the creation of advanced therapies, increasing need for novel medicines and treatments, rapid adoption of instruments such as flow cytometers, spectrometers, microscopes, chromatography columns, nucleic acid processing equipment and increasing prevalence of chronic diseases such as cancer, diabetes, thyroid disorders and many others.

The development of molecular diagnostic techniques such as digital droplet PCR, next-generation sequencing (NGS), and genome-wide sequencing has led to the introduction of DNA testing in clinical settings. For instance, Illumina, a global leader in DNA sequencing, and Genoscreen, a genomics company announced their partnership in October 2022 to speed up ending tuberculosis globally. This collaboration aims to enhance resources and skills in nations greatly affected by tuberculosis, such as India, to improve the efficiency of identifying and fighting against multidrug-resistant TB.

Increasing Demand for Biopharmaceuticals

The growing need for biologics, which often utilize recombinant DNA technology, is expected to fuel the expansion of the life science tools market. Biopharmaceuticals offer advantages such as increased efficacy, reduced adverse effects, minimized risk of drug interactions and improved patient outcomes. To meet the increasing demand and enhance the production of biological treatments, the life science industry is currently focusing on advanced analytical models such as predictive analytics. These cutting-edge innovations are being facilitated by significant technological improvements such as laboratory upgrades, strategic advancements, and operational optimizations. The demand for biopharmaceutical products has increased due to their enhanced safety, effectiveness, and ability to cure previously untreatable medical conditions.

Rapid Technological Advancements

Technological advancements have led to the growing utilization of various tools in the field, such as next sequencers, PCR (Polymerase Chain Reaction) and qPCR (quantitative polymerase chain reaction) machines, flow cytometers, spectrometers, microscopes, chromatography columns, nucleic acid processing equipment, and cell biology instruments. These advancements have had a significant impact on the integration of DNA assays in clinical settings, specifically in molecular diagnostic techniques like digital droplet PCR, NGS, and genome-wide sequencing. These methods have improved accuracy, timeframe, and reproducibility. To effectively harness the therapeutic potential of circulating nucleic acids, it is crucial to have an efficient extraction process.

Becton , Dickinson and Company (BD), a prominent global medical technology company, and Labcorp, a premier life sciences company, announced a strategic collaboration in August 2022. The collaboration aims to establish a framework for the development, production, marketing, and commercialization of companion diagnostics (CDx) based on flow cytometry. These CDx solutions are designed to complement the

administration of potentially life-altering therapies for cancer and similar diseases.

Healthcare Sector is Experiencing Rapid Growth

The healthcare sector emerged as the leading contributor to the market value in 2022 and is expected to exhibit significant growth throughout the forecast period. This segment encompasses clinics, hospitals, community centers, diagnostic laboratories, and physician offices. The increasing adoption of proteomic and genomic workflows in hospitals for the diagnosis and treatment of various clinical abnormalities is predicted to drive market growth. The healthcare sector's expansion is primarily attributed to the extensive utilization and demand for tissue diagnostic solutions in hospitals. Clinicians are increasingly opting for tissue-based diagnostic tests over conventional methods due to their quick turnaround time. The integration of genomic sequencing in hospitals and clinical settings is predicted to improve patient care and reduce healthcare costs. This development is expected to drive the rapid growth of the healthcare sector.

Furthermore, advancements in tools and equipment have significantly enhanced the accuracy of complex medical procedures in hospitals. The precision and reliability of medical diagnostic outcomes largely rely on the laboratory tools utilized for analysis, which positively impacts the expansion of the market.

For Instance, in January 2023, QIAGEN entered into an exclusive strategic agreement with Helix, a population genomics company based in California. According to the recently disclosed agreement, QIAGEN will have exclusive rights to market and handle contracts for Helix's companion diagnostic services within the United States. This collaboration will utilize the Helix Laboratory Platform, which has received the pioneering de novo class II authorization from the U.S. Food & Drug Administration for a comprehensive exome sequencing platform.

Growth of Cell and Gene Therapies is Propelling Market Growth

The utilization of genomic technologies on a global scale is on the rise, leading to advancements in diagnostic tests and procedures for various diseases and driving the growth of the market. A recent example is the commercial launch of a new molecular polymerase chain reaction (PCR) assay for the monkeypox virus by Becton, Dickinson, and Company (BD) and CerTest Biotec in September 2022, targeting both the United States and global markets. It is important to note that this PCR assay is currently intended for research purposes only. With the introduction of such innovative products, the market is expected to experience robust growth throughout the projected period. A comprehensive understanding of cell biology has emerged as an asset in laboratory

workflows, creating new opportunities for market expansion. Furthermore, scientists in the life science field are keen to adopt cutting-edge instruments, which is anticipated to further strengthen this segment. Companies such as Cytiva, BioTek Instruments, Horizon Discovery, and Seahorse Bioscience are introducing instruments related to cell analysis, cell biology and imaging. The demand for tools and equipment is being propelled by the rising research and development activities conducted by prominent industrial companies.

A notable example is the strategic partnership between Haihe and EdiGene Laboratory, announced in January 2022, aimed at developing platform technologies and stem regenerative cell treatments. This collaboration focuses on exploring advanced biomarkers to enhance quality control in stem cell production.

Impact of COVID-19

The COVID-19 pandemic has had a significant impact on the life science tools industry and their respective supply chains worldwide. This disruption can be attributed to several factors, including the scarcity of raw materials and labor, as well as interruptions in the transportation of these materials across regions. As a result, there has been a shortage of critical medical supplies in different parts of the world, including molecular and immunoassay kits, digital solutions, life-support machines, and drugs. The COVID-19 pandemic had spurred a competitive race among manufacturers to create rapid diagnostics for the detection of SARS-CoV-2 virus, resulting in remarkable advancements and breakthroughs in terms of innovative solutions. These tests utilize various methods such as PCR for detecting the SARS-CoV-2 nucleic material, nucleic acid hybridization-related techniques, or serological and immunological assays for detecting antibodies produced in response to the virus.

For instance, in December 2021, Siemens Healthineers obtained emergency use authorization from the FDA for its 'Clinitest', a rapid COVID -19 antigen self-test, that can be self-administered by individuals aged 14 and above.

Key Players Landscape and Outlook

The market is characterized by strong competition as numerous players offer similar products. These players are consistently expanding their product portfolios and introducing new platforms through extensive research and development efforts to maintain their market position. Moreover, major companies are undertaking strategic initiatives such as collaborations, mergers and acquisitions, and new product launches

to drive market growth and intensify competition. For example, in February 2022, Agilent Technologies, Inc. formed a partnership with Biosciences, Inc. to integrate the AVITI System with SureSelect target enrichment panels, aiming to provide customers with improved access to genomic tools. This initiative was anticipated to create fresh growth opportunities for the company.

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