Protein Characterization and Quantification Market- Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 118 pages | Mordor Intelligence

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Report description:

The protein characterization and quantification market is expected to grow at the registered CAGR of 9.5% during the forecast period, 2022-2027.

The market has a slightly impacted due to the COVID-19 pandemic. The development of therapeutic and preventive strategies requires an accurate understanding of proteins' role in the SARS-CoV-2 infection process and progression of COVID-19. According to the article titled ' COVID-19 Coronavirus Spike Protein Analysis for Synthetic Vaccines, A Peptidomimetic Antagonist and Therapeutic Drugs And Analysis of A Proposed Achilles' Heel Conserved Region to Minimize the Probability of Escape Mutations And Drug Resistance' published in June 2020 the protein detection and quantification technology demand were rising in COVID-19 to analyze coronavirus spike protein for synthetic vaccines using COVID-19. The amino acid residue sequences of the spike proteins of COVID-19 isolates from various states and countries, such as California, Brazil, Taiwan, and India, are identical or nearly identical as of March 2020. Thus, in such instances, the demand for protein quantification and characterization increases significantly impacted the studied market.

The rise in R&D expenditure in the pharmaceutical sector and government funding, opportunities in the field of proteomics, and advancements in protein technology set to boost market growth, as well as the rising incidences of chronic diseases, are driving the growth of the protein characterization and quantification market. Governments are promoting research in the proteomics industry by raising funds. As a result, the protein detection and quantification market is expected to grow significantly in the coming years. For instance, in August 2020, the University of Arkansas for Medical Sciences (UAMS) will be able to greatly expand its proteomics resource due to a USD 10.6 million grant from the National Institutes of Health (NIH). The IDeA National Resource for Quantitative Proteomics will be Arkansas's first NIH National Resource, serving biomedical researchers nationwide.

Furthermore, rising research and development activity is anticipated to drive the market over the projecting period. According to the article published on Pharma R&D: 2021 and beyond in 2021, before the current pandemic, the health and pharmaceutical industry in the United Kingdom was rising at an annual rate of 8.4% till 2020. Research and Development (R&D) plays a significant role in this expansion, with annual pharma R&D investment in the United Kingdom upto to a 3.3 percent increase in R&D spending across all businesses. During 2020 pharma indutry received unprecedented funding, boosting R&D development. Thus, rising research and development expenditure is likely to boost the research activity for protein characterization and quantification, thereby boosting the market studied.

Moreover, the growing adoption of biologics and biomarkers is expected to induce growth in the protein identification market. According to the article published in March 2021, "Biologics and Their Delivery Systems: Trends in Myocardial Infarction," current therapies do not adequately address the multiple dysregulated systems following Myocardial Infarction. Hence, recent studies developed novel biologics delivery systems to more effectively address these diseases. The research to develop drug delivery systems for biologics is expected to increase over the forecast period, positively impacting the market's growth.

However, the launch of technologically advanced products by key players is expected to boost the market. For instance, in September 2020, Eurofins Technologies, a supplier of test kits and systems for laboratory analyses, launched its SENSISpec Soy Total protein ELISA kit, an enzyme immunoassay for quantitatively detecting soy protein in food and swab samples.

Thus, all such factors are expected to boost the market over the forecast period.

Protein Characterization & Quantification Market Trends

Mass Spectrometry Instruments Segment is Expected to Hold Significant Market Share in the Process Component Segment

The mass spectrometer is an instrument that produces ions and separates them according to the mass to charge (m/z) ratio. The components of a mass spectrometer include an ion source, a mass analyzer, a detector, and a vacuum system.

Mass spectrometry instruments are a key technology for characterizing the protein from biological samples. According to the study titled "Quantitative Mass Spectrometry-Based Proteomics: An Overview," published in the Quantitative Method of Proteomics in July 2021, Mass Spectroscopy can be used to quantify proteins on a global scale and accurately quantify individual proteins. Thus, the accuracy of the mass spectrometry in the characterization quantification of the protein segment is expected to grow over the forecast period.

Many pharmaceutical and biotechnology companies came together to form long-term partnerships, collaborations, and agreements worldwide to fulfill the demand for mass spectrometry. For instance, in January 2021, Avacta Group (United Kingdom) partnered with Bruker Corporation (United States) to test the SARS-CoV-2 bead-assisted mass spectrometry (BAMS) assay that the company developed with Adeptrix.

Additionally, increasing product launches by the key market players increase demand for mass spectrometry instruments, thereby boosting the segment growth. For instance, in June 2021, Thermo Fisher Scientific introduced Orbitrap IQ-X Tribrid mass spectrometer. Similarly, in August 2020, Bruker Corporation and Utrecht University collaborated to develop new mass spectrophotometric methods for studying protein structures and interactions.

Thus, all factors mentioned above are expected to boost the segment over the forecast period.

North America Holds a Significant Share in the Market and Expected to do Same during the Forecast Period

The presence of key market players and a well-established healthcare framework are expected to drive the region's growth. The market growth in the region is attributed to a combination of factors, including developed infrastructure, increased R&D investment, and rising cases of various diseases in the region.

As per the January 2021 report of the American Cancer Society, there will be an estimated 1,898,160 new cancer cases. The increasing demand and acceptance of gene and monoclonal antibody-based therapies in treating diseases such as cancer, rare diseases, and other disorders are also driving the growth of the region's protein characterization and quantification market.

Furthermore, rising research and development spending is anticipated to boost the market. According to a report published in September 2021 by the Pharmaceutical Research and Manufacturers of America (PhRMA), in the last decade, biopharmaceutical companies invested more than a trillion dollars in research and development, including a record-breaking year in 2020 where PhRMA member companies invested about USD 91 billion in the research and development.

The growing patient population and regional research and development funding are boosting the market growth.

Protein Characterization & Quantification Market Competitor Analysis

The protein characterization and quantification market are fragmented. The companies present have a broad product portfolio with comprehensive features and a strong geographical presence. Some of the companies which are currently dominating the market are Agilent Technologies Inc., Thermo Fisher Scientific Inc., Merck KGA, Promega Corporation, Danaher Corporation, Waters Corporation, Creative Proteomics, and Rigaku Corporation.

Additional Benefits:

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

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