

Protein Purification And Isolation - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The global protein purification and isolation market is valued at USD 9.69 billion in 2024 and is expected to reach USD 16.18 billion by 2029 registering a CAGR of 10.6% over the forecast period.

The outbreak of the pandemic impacted the protein purification and isolation market. The demand for protein purification and isolation procedures drastically increased as it was used to analyze and research severe acute respiratory syndrome coronavirus (SARS-CoV-2). For instance, according to an NCBI study published in September 2021, there was a strong global demand for diagnostic and serological supplies, as countries needed to establish their technologies for producing high-quality biomolecules. The two major viral antigens used to diagnose SARS-CoV-2 are the structural proteins spike (S) protein and nucleocapsid (N) protein. Thus, the demand for protein purification and isolation increased during the pandemic as it was one of the initial and essential steps needed to proceed with further diagnosis and research work. Therefore, the market witnessed healthy growth during the pandemic. In addition, protein purification and isolation are also essential for vaccine manufacturing and are utilized for COVID-19 vaccine preparation. Thus, the market is expected to continue the upward trend over the forecast period.

Increasing investment in pharmaceutical and biotechnological research and development and the rising need for more accurate and rapid purification kits drive market growth. For instance, as per the journal published by Pharma Statistics in April 2023, many key drug companies reinvested 19.2% of prescription drug sales profit into new drug development. Modern drug discovery uses libraries of purified proteins. The proteins used in the initial steps of drug discovery should be highly purified ones, and structural features of proteins must be preserved because protein function is highly dependent on tertiary structure. Thus, protein purification is an essential step for drug discovery and development. Therefore, such facts are anticipated to propel the demand for protein purification and isolation procedures, positively impacting the market growth over the forecast period.

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Furthermore, the product launches by the key players to meet the rising need for more accurate and rapid purification kits may also help the market to grow. For instance, in March 2023, Gyros Protein Technologies AB launched three service offerings to support developing and manufacturing peptide-based drugs. The new services are based on the Company's PurePep EasyClean (PEC) orthogonal peptide purification technology. Two existing PEC kit types support the services: Starter Kits and High Throughput Kits. Similarly, in May 2023, 10x Genomics Inc. commercially launched the new Visium CytAssist Gene and Protein Expression product to expand the breadth of the Visium CytAssist spatial analysis capabilities. Thus, owing to such instances, considerable market growth is expected over the forecast period.

However, the high cost of purification instruments and the lack of skilled professionals will likely impede the market growth over the forecast period.

Protein Purification And Isolation Market Trends

Ultrafiltration Segment is Expected to Witness Growth Over the Forecast Period

Ultrafiltration is the process of separating extremely small particles and dissolved molecules from liquids. The primary basis for separation is the size of the molecules, although the permeability of the filter can be affected by the sample's chemical, molecular, or electrostatic properties. To be separated by ultrafiltration, molecules must differ in size by at least an order of magnitude and have a molecular weight between 1 kDa and 1000 kDa. Ultrafiltration membranes can be used to clean the filtrate or collect the retentate. Ultrafiltration is typically used to separate proteins from buffer components for buffer exchange, concentration, or desalting.

The advantages of ultrafiltration and the wide application of ultrafiltration for protein purification and isolation are significant drivers for segment growth over the forecast period. For instance, according to the NCBI study published in January 2021, proteins could be beneficial in their concentrated products or isolates, of which membrane filtration methods such as ultrafiltration include application in a wide range of protein sources. Furthermore, the advantages of ultrafiltration technology, such as the high product throughput and ability to generate rapid results, also boost the use of ultrafiltration. Moreover, traditional techniques such as chromatography require complex instrumentation support to run efficiently and yield low throughput of product at an extremely high cost, owing to which ultrafiltration technique is becoming more popular as it overcomes such disadvantages. Thus, such advantages and the increasing use of ultrafiltration are expected to propel the segment growth.

Furthermore, product launches by key players are also expected to contribute to the segment's growth. For instance, in March 2023, DuPont launched the next generation of multi-capillary PES In-Out Ultrafiltration (UF) membrane, DuPont Multibore PRO. Thus, considerable segment growth is anticipated over the forecast period due to such factors.

North America is Expected to Witness Considerable Growth Over the Forecast Period

North America is expected to grow considerably in the protein purification and isolation market over the forecast period. The growth is due to increasing research work and rising investments in R&D by the public and private sectors. For instance, according to the data provided by the Organization for Economic Co-operation and Development in November 2022, the research and development expenditure by the biotechnology industries in Canada was USD 651 million in 2022. Additionally, increasing government initiatives such as high investments in developing various biotechnology research is expected to boost North America's market's growth. For instance, according to the article published by the Government of Canada in August 2022, the Government of Canada invested more than USD 2.2 billion over seven years to boost biomanufacturing. This investment of USD 250.0 million over four years, starting in 2022-2023, was to create a tri-agency administered by the Social Sciences and Humanities Research Council (SSHRC) on behalf of three federal research funding agencies. Thus, such high investments are

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expected to accelerate drug development and research work in the North American region. Thereby, considerable market growth is expected over the forecast period.

Key product launches, high concentration of market players or manufacturer's presence, acquisition and & partnerships among significant players, and increased investments by biopharmaceutical companies in R&D in the United States are some of the factors driving the growth of the protein purification and isolation market in the country. For instance, according to the NCBI article published in June 2022, the investments in research development by pharmaceutical companies in the United States represented a record more than USD 133.0 billion, an increase from more than 44% in the past 5 years. Similarly, in July 2021, the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBP) received two grants totaling USD 153.0 million from the National Institute of Standards and Technology (NIST) of the United States Department of Commerce. Thus, biopharmaceutical companies' increasing research and development expenditures are expected to drive market growth in the United States. Furthermore, product launches in the United States may also help the market to grow. For instance, in June 2022, Bio-Rad Laboratories, Inc. launched the EconoFit Low-Pressure Prepacked Chromatography Column Packs to support resin screening experiments in developing protein purification workflows. Thus, considerable market growth is expected over the forecast period due to such factors.

Protein Purification And Isolation Industry Overview

The protein purification and isolation market is fragmented in nature due to the presence of several companies operating globally as well as regionally. The competitive landscape includes an analysis of a few international as well as local companies that hold the market shares and are well known, including Thermo Fisher Scientific Inc., Merck KGaA, QIAGEN, Bio-Rad Laboratories, Inc., Agilent Technologies, Inc., Promega Corporation, and Danaher Corporation (Cytiva) among others.

Additional Benefits:

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

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