

Protein Characterization and Identification Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Product & Services (Consumables, Instruments, Services), By Application (Drug Discovery & Development, Clinical Diagnosis, Others), By End-Use (Pharmaceuticals & Biotechnology Companies, Academic Research Institutes, Contract Research Organizations, Others), By Region and Competition, 2020-2030F

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Abstracts

Market Overview

The Global Protein Characterization and Identification Market reached a value of USD 15.45 billion in 2024 and is projected to grow to USD 34.07 billion by 2030, at a CAGR of 14.06%. This market is expanding rapidly as the significance of proteomics continues to rise in biomedical research and drug development. Proteins are fundamental in understanding disease mechanisms and identifying biomarkers, making them essential for diagnostics and therapeutic discovery. Consequently, pharmaceutical and biotechnology companies are investing in advanced technologies such as mass spectrometry, chromatography, and electrophoresis for accurate protein analysis. The increasing focus on biologics and precision medicine is also driving demand for comprehensive protein profiling. Support from government initiatives in life sciences research and growing partnerships between academia and industry further bolster market development.

Key Market Drivers

Rising Demand for Biologics and Biosimilars

The expanding use of biologic therapies, including monoclonal antibodies, vaccines, and therapeutic proteins, is fueling the demand for precise protein characterization. As these biologics become central treatment strategies for cancer, autoimmune disorders, and genetic diseases, ensuring their structural integrity, functional accuracy, and batch consistency is critical.

In 2023, the U.S. FDA approved 55 new drugs, of which 17 were biologics, including 12 monoclonal antibodies. Similarly, the European Medicines Agency authorized 77 new medicines, 39 of which included a new active substance. These developments highlight a growing reliance on biologics and the resulting need for robust protein characterization techniques to support regulatory approval and therapeutic safety.

Key Market Challenges

High Cost of Instruments and Analytical Services

The substantial investment required for advanced protein analysis instruments remains a major challenge. High-end tools such as mass spectrometers and chromatography systems involve not only high acquisition costs but also ongoing expenses for skilled personnel, maintenance, and consumables. These costs pose a barrier to entry, particularly for smaller institutions and research facilities in developing regions. Additionally, operational complexities and the need for highly trained staff add to the financial burden, limiting access to cutting-edge protein analysis technologies and potentially slowing adoption in cost-sensitive settings.

Key Market Trends

Rise in Monoclonal Antibody and Biologics Development

The growing focus on developing monoclonal antibodies and other biologics is significantly impacting the protein characterization market. These complex molecules require thorough structural and functional analysis to meet regulatory and therapeutic standards. As biologics gain prominence in treating chronic and life-threatening conditions, demand for advanced proteomics tools continues to grow. Technologies such as high-resolution mass spectrometry and chromatographic techniques are increasingly used to ensure the quality and consistency of biologic

drugs. This trend aligns with the broader shift toward personalized medicine, where protein profiling plays a critical role in customizing treatments based on individual biological markers.

Key Market Players

Agilent Technologies, Inc.

Bio-Rad Laboratories, Inc.

Bruker Corporation

ThermoFisher Scientific Inc.

Danaher Corporation

Eurofins Scientific

Merck KGAA

Promega Corporation

Qiagen N.V.

Sartorius AG

Report Scope:

In this report, the Global Protein Characterization and Identification Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Protein Characterization and Identification Market, By Product & Services:

Consumables

Instruments

Services

Protein Characterization and Identification Market, By Application:

Drug Discovery & Development

Clinical Diagnosis

Others

Protein Characterization and Identification Market, By End-Use:

Pharmaceuticals & Biotechnology Companies

Academic Research Institutes

Contract Research Organizations

Others

Protein Characterization and Identification Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Protein Characterization and Identification Market.

Available Customizations

Global Protein Characterization and Identification Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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