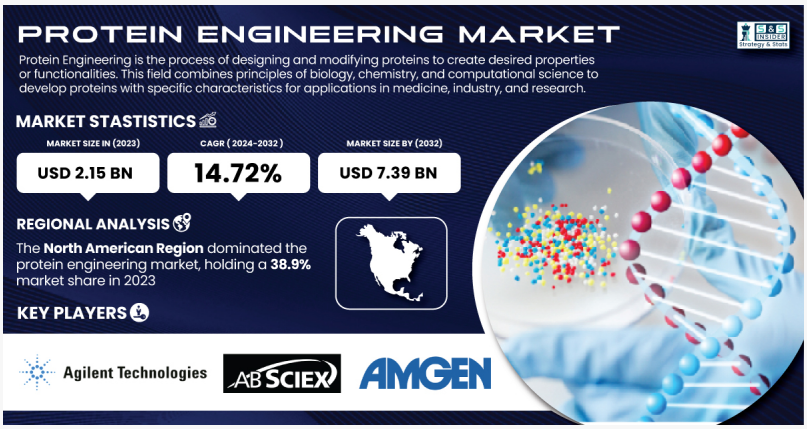
Global Protein Engineering Market to Reach USD 7.39 Billion by 2032, Fueled by a 14.72% CAGR

Surging Demand for Personalized Medicine & Biopharmaceutical Innovations Drive Robust Growth in Protein Engineering Industry



Protein Engineering Market

AUSTIN, TX, UNITED STATES, December 11, 2024 /EINPresswire.com/ -- The global Protein Engineering Market is witnessing unprecedented growth, with its value projected to expand from USD 2.15 billion in 2023 to USD 7.39 billion by 2032, reflecting a compound annual growth rate (CAGR) of 14.72% during the forecast period. T

The Protein Engineering Market is undergoing substantial expansion, fueled by the rising need for protein-based treatments, especially in cancer and autoimmune disorders. Biotech and pharmaceutical companies are prioritizing protein-focused therapies because of their efficacy and cost-effectiveness. With cancer cases increasing, nearly 1.96 million new diagnoses are anticipated in the U.S. in 2023, heightening the demand for innovative protein therapies and driving market growth. Cutting-edge methods like CRISPR, directed evolution, and computational design are speeding up the creation of personalized, targeted treatments. Moreover, the increasing accessibility of research tools, such as Daicel Arbor Biosciences' myTXTL kits introduced in June 2024, is improving protein production efficiency. These advancements are facilitating quicker therapeutic innovations, further propelling the expansion of the protein engineering market. The increasing prevalence of diseases along with technological advancements is generating significant opportunities for global market growth.

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Key Protein Engineering Market Players:

Agilent Technologies
AB Sciex
Bio-Rad Laboratories Inc.
Bruker Corporation
GE Healthcare
PerkinElmer Inc.
Sigma-Aldrich Corp.
Thermo Fisher Scientific
Waters Corp.
Merck KGaA
Danaher Corp.
Genscript Biotech Corp.
Amgen Inc.

Market Analysis

The protein engineering market is expanding quickly, fueled by rising demand for biopharmaceuticals including monoclonal antibodies, vaccines, and therapeutic proteins. Improvements in techniques such as CRISPR, directed evolution, and computational design have increased the accuracy of protein alterations, boosting the effectiveness and safety of biologics. The increase in chronic illnesses, such as cancer and autoimmune diseases, is driving the demand for targeted, personalized treatments, which in turn enhances the requirement for engineered proteins. Moreover, heightened investments in research and development, coupled with expanding healthcare infrastructure in developing markets, are presenting considerable opportunities for market growth.

Key Market Segments

By Product & Service
Instruments
Consumables
Software & Services

By Technology
Rational Protein Design
Irrational Protein Design

By Protein Type
Monoclonal Antibodies
Erythropoietin
Interferons
Vaccines
Colony-stimulating Factors

Growth Hormones
Coagulation Factors
Other Proteins

By End User
Biopharmaceutical Companies
Contract Research Organizations
Academic Research Institutes

Segment Analysis

By Product type
Instruments accounted for a leading share of 52% in 2023. The dominance of this segment is mainly attributed to the implementation of automated technologies that enable swift molecular advancement. Scientists are progressively utilizing high-efficiency protein engineering technologies such as real-time PCR equipment and chromatographic systems, which enhance speed and efficiency in the processes of protein engineering.

By Technology type
Rational Protein Design held the largest market share of 30% in 2023, due to its widespread application in protein engineering and antibody development. Rational design methods, like site-directed mutagenesis, provide exact control over enzyme modification and antibody creation, resulting in improved applications for therapeutic protein production.

By Protein Type
Monoclonal Antibodies dominated 23% market share in 2023. The segment's expansion is fueled by substantial R&D funding aimed at creating sophisticated therapeutic monoclonal antibodies, particularly for addressing cancer and other long-term illnesses. Moreover, innovative genetic platforms that employ next-generation sequencing technology facilitate the effective engineering of monoclonal antibodies, enhancing the potential of this segment.

Regional Development

In 2023, North America dominated the worldwide protein engineering market, achieving a CAGR of 42%. This leadership is driven by strategic partnerships among top players to enhance their R&D capabilities. For example, Selecta Biosciences, Inc. teamed up with Cyrus Biotechnology, Inc., combining Selecta’s ImmTOR platform with Cyrus' expertise in protein restructuring to create a unique interleukin-2 (IL-2) agonist, designed to enhance regulatory T cell proliferation for managing autoimmune diseases.

The Asia-Pacific region is projected to achieve the fastest CAGR throughout the forecast period. The rapid economic expansion in emerging markets like China and India, alongside high rates of chronic diseases, fuels this growth. The area's extensive population, ideal for research and clinical trials in protein engineering applications, boosts market growth, creating substantial expansion opportunities.

Recent Developments

In October 2023: Thermo Fisher Scientific revealed a major expansion in proteomics by agreeing to purchase Olink Holding for around USD 3.1 billion. This purchase bolsters Thermo Fisher's position and skills in the proteomics sector, improving its prospects in protein engineering research.

On June 18, 2024, GenScript Biotech Corporation launched its newest product, the GenScript FLASH Gene service, an extremely quick sequence-to-plasmid service created to satisfy the increasing need for swift gene construct delivery. This innovative service guarantees unparalleled speed, quality, and cost-effectiveness, highlighting GenScript's dedication to enhancing synthetic biology and gene synthesis.

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