

Cell-Free Protein Expression Market is Forecasted to Reach US\$ 780.7 Million by 2034, Fact.MR

Cell-Free Protein Expression Systems Opening Lucrative Avenues in Protein Engineering for Development of Biomaterials and Biocatalysts: Fact.MR Report

ROCKVILLE, MD, UNITED STATES, August 6, 2024 /EINPresswire.com/ -- As per a new research report published by Fact.MR, the global [cell-free protein expression market](#) is expected to reach a valuation of US\$ 374.5 million in 2024 and further advance at a CAGR of 7.6% from 2024 to 2034.

Cell-free protein expression methods are becoming more and more popular in the biotechnology industry due to their adaptability, effectiveness, and variety of uses. This ground-breaking technique is transforming several fields of study and business by enabling protein synthesis without the need for live cells.

Comparing cell-free protein expression to conventional cell-based techniques reveals several significant benefits. It produces proteins more quickly—often in hours as opposed to days or weeks. Because of its greater flexibility, proteins that might be harmful to live cells can be synthesized. Additionally, because it's an open system, response conditions may be directly altered for optimal outcomes.

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Adoption is being fueled by these advantages in several areas. Cell-free methods in



pharmaceutical research are facilitating fast, high-throughput screening of protein targets, which is speeding up the drug development process. For the development of novel treatments, the speed at which different protein variations may be produced and tested is essential.

Personalized medicine is also experiencing significant advancements in technology. Because of its speed and scalability, it is perfect for on-demand protein synthesis, which may enable customized therapy based on the needs of each patient.

The field of synthetic biology is expanding steadily due to the development of cell-free expression. By utilizing these systems, scientists can produce new proteins with unusual amino acids, broadening the scope of protein engineering and perhaps producing biomaterials and biocatalysts.

Key Takeaways from Market Study

The global cell-free protein expression market is projected to reach a size of US\$ 780.7 million by the end of 2034. By 2034, the market in Canada is forecasted to reach a value of US\$ 33 million. Among the end users, pharmaceutical companies are poised to hold 13.7% of the market share in 2024.

The market in East Asia is forecasted to account for a share of 21.5% by 2034-end. The market in North America is analyzed to reach a valuation of US\$ 356 million by 2034. Based on product types, revenue from the wheat germ cell-free protein expression segment is estimated to be worth US\$ 55.3 million in 2024.

“Continuous government initiatives in countries like the United States support cell-free protein expression research in academic and biotechnology sectors, driving innovation and market growth,” says a Fact.MR analyst.

Creation of Enhanced Regeneration System Amplifying Revenue Growth for Market Players
Improved energy regeneration methods have been developed, increasing protein yields and reaction durations. Cell-free systems are becoming more affordable for larger-scale manufacturing because of this breakthrough.

The creation of customized cell-free lysates that are tailored for particular protein classes, including membrane proteins or antibodies, is another advance. The success rates for difficult protein targets are rising thanks to these customized methods.

Microfluidic technologies are being incorporated into cell-free systems to facilitate the downsizing of processes and high-throughput screening. Applications involving customized medicine and drug development benefit greatly from this combination.

In addition, scientists are investigating cell-free systems originating from creatures other than model organisms to broaden the range of proteins that can be expressed and maybe uncover

novel functions. Together, these developments are propelling the market forward and increasing the accessibility, adaptability, and efficiency of cell-free protein expression across a range of biotechnology industries.

Regional Analysis

The South Korean market is projected to grow at a compound annual growth rate (CAGR) of 8% from 2024 to 2034. By the end of 2034, South Korea is anticipated to hold a 24.3% share of the cell-free protein expression market in East Asia.

In the United States, cell-based research is increasingly prevalent within academic institutions and the biotechnology sector. Recent government initiatives have significantly contributed to the market's growth in the United States.

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Key Companies Profiled

Thermo Fisher Scientific, Inc.; Takara Bio Company; New England Biolabs; Promega Corporation; Jena Bioscience GmbH; GeneCopoeia, Inc.; Biotechrabbit GmbH; Cube Biotech GmbH; CellFree Sciences Co., Ltd.; Bioneer Corporation; Agilent Technologies Inc.; Bio-Rad Laboratories, Inc.; Genscript Biotech Corporation; Merck KGaA; Promega Corporation; Qiagen.

Market Landscape

To strengthen their market position, key players in the cell-free protein expression industry are employing a variety of strategies, both organic and inorganic. These include joint ventures, mergers and acquisitions, regional expansion, and strategic alliances. Additionally, they are adapting to evolving market trends such as in vitro protein expression and recombinant proteins.

In September 2023, the pharmaceutical discovery and development company CCM Bioscience launched its newest business unit, CCM Protein Upregulation.

VantAI, a major player in drug development utilizing artificial intelligence, announced the establishment of its latest Scientific Advisory Board (SAB) in the same month.

More Valuable Insights on Offer

Fact.MR, in its new offering, presents an unbiased analysis of the cell-free protein expression market for 2019 to 2023 and forecast statistics for 2024 to 2034.

The study divulges essential insights into the market based on product (E.coli cell-free protein, rabbit reticulocytes cell-free protein, wheat germ cell-free protein, insect cell-free protein, mammalian cell-free protein), application (enzyme engineering, protein labeling, protein-protein interaction, protein purification), expression mode (continuous flow expression, batch

expression), and end user (biotechnological companies, pharmaceutical companies, contract research organizations, academic & research institutes), across seven major regions of the world (North America, Western Europe, Eastern Europe, East Asia, Latin America, South Asia & Pacific, and MEA).

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[Recombinant Proteins Market](#): The global recombinant proteins market size was valued at US\$ 457.1 Million in 2022, and is projected to reach US\$ 719.5 Million by 2032, growing at a CAGR (Compound Annual Growth Rate) of 4.6% during the forecast period from 2022 to 2032.

[In Vitro Protein Expression Market](#): The In Vitro protein expression market is estimated to be US\$ 238.2 million in 2024 and is forecast to reach a value of US\$ 428.8 million by 2034, with a projected CAGR of 6.1% from 2024 to 2034.

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Contact:

US Sales Office

11140 Rockville Pike

Suite 400

Rockville, MD 20852

United States

Tel: +1 (628) 251-1583, +353-1-4434-232 (D)

Sales Team: sales@factmr.com

S. N. Jha

Fact.MR

+1 628-251-1583

[email us here](#)

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