

Gene Expression Market Size, Growth, Industry Trends | Emergen Research

The Gene Expression market is expected to grow from an estimated USD 4.59 billion in 2024 to USD 11.93 billion in 2033, at a CAGR of 11.20%.

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/EINPresswire.com/ -- The global [Gene Expression market](#) is projected to grow from USD 4.59 billion in 2024 to USD 11.93 billion by 2033, at a compound annual growth rate (CAGR) of 11.20%. This growth is driven by advancements in gene editing technologies and an increased focus on single-cell analysis, which are transforming research in genomics and medicine.



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Key Drivers of Growth in the Gene Expression Market

Gene editing tools are playing a critical role in advancing gene expression studies. Technologies such as CRISPR-Cas9, TALENs, and ZFNs enable precise genome modifications, allowing researchers to understand gene functions and regulatory mechanisms better. The development of multiplex genome editing methods has further accelerated this growth by allowing multiple genes to be targeted simultaneously within a single cell. As these technologies improve, investments in gene expression analysis are expected to rise significantly.

One of the most notable trends in gene expression research is the growing emphasis on single-cell analysis. Traditional RNA sequencing often overlooks the diversity and complexity of gene expression within individual cells. However, single-cell RNA sequencing (scRNA-seq) enables researchers to examine gene expression patterns with greater precision, revealing insights that were previously hidden in bulk data. This shift towards single-cell analysis is expected to have

wide-reaching impacts in fields such as biotechnology, pharmaceuticals, and clinical diagnostics, offering new avenues for drug development, disease detection, and personalized treatment plans.

Market Restraints

Despite its potential, the gene expression market faces some challenges. The high costs associated with the instruments and consumables used in gene expression analysis are a major hurdle. Technologies like microarrays and next-generation sequencing require advanced and expensive equipment, as well as specialized reagents for RNA extraction and amplification. These high costs can limit access to cutting-edge research and diagnostics, particularly in developing regions or smaller institutions. As the market continues to grow, ongoing research and development investments are needed to bring down costs and make these technologies more accessible.

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Market Segmentation Insights

The Gene Expression market is categorized by capacity into two key segments: Low- to Mid-Plex and High-Plex. The High-Plex segment led the market in 2023 and is expected to maintain its dominance through 2033. High-Plex technology involves the analysis of a large number of genes, making it ideal for comprehensive studies of gene expression, gene networks, and cellular pathways. This method offers several advantages, including reduced hands-on time, higher accuracy, and compatibility with multi-omics research.

On the other hand, the Low- to Mid-Plex segment, which involves the analysis of fewer gene targets, is also expected to experience significant growth. This segment is particularly appealing to researchers conducting targeted studies or hypothesis-driven research, as it is more cost-effective and easier to implement.

Some of the key companies in the global Gene Expression Market include:

Catalent Inc.

QIAGEN

Quest Diagnostics, Inc.

F. Hoffmann-La Roche Ltd.

Illumina, Inc.

PerkinElmer, Inc.

Bio-Rad Laboratories

Thermo Fisher Scientific, Inc.

Agilent Technologies.

Gene Expression Latest Industry Updates

In September 2022, Illumina, Inc., the global leader in DNA sequencing and array-based technologies, announced NovaSeq, a new line of production-scale sequencers that enhance the possibilities in genomic medicine by facilitating quicker, more efficient, and more environmentally sustainable sequencing. The NovaSeq X Plus employs innovative technology to produce approximately 20,000 whole genomes each year, achieving 2.5 times the throughput of previous sequencers. Thus, it enhances genomic discoveries and clinical understanding of diseases, ultimately transforming patient outcomes.

In December 2021, Thermo Fisher Scientific Inc., a prominent global leader in scientific services, completed its acquisition of PPD, Inc. PPD, Inc. is a leading clinical research organisation in the global biopharmaceutical and biotechnology industries. This strategic acquisition enhances Thermo Fisher's competencies in the clinical research sector, especially in gene expression analysis. Thermo Fisher, through the incorporation of PPD into its portfolio, now provides a comprehensive array of premier services that embrace all facets of the clinical development process. This extensive array of services encompasses scientific research and the thorough evaluation of safety, efficacy, and healthcare results.

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Gene Expression Market Segmentation Analysis

Process Outlook (Revenue, USD Billion; 2020-2033)

- Sample Collection

- Purification

- cDNA synthesis & conversion

- PCR Analysis

- Data analysis & interpretation

Product Outlook (Revenue, USD Billion; 2020-2033)

- Kits & Reagents

- DNA Chips

- Others

Capacity Outlook (Revenue, USD Billion; 2020-2033)

- Low- to Mid- Plex

- High-Plex

Application Outlook (Revenue, USD Billion; 2020-2033)

- Drug Discovery & Development

- Clinical Diagnostics

- Biotech & Microbiology

- Others

Technique Outlook (Revenue, USD Billion; 2020-2033)

RNA Expression

Promoter Analysis

Protein Expression & Posttranslational Modification Analysis

Regional Outlook (Revenue, USD Billion; 2020-2033)

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

Benelux

Rest of Europe

Asia-Pacific

China

India

Japan

South Korea

Rest of Asia-Pacific

Latin America

Brazil

Rest of Latin America

Middle East and Africa

Saudi Arabia

UAE

South Africa

Turkey

Rest of MEA

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