Transcriptomics Market to Reach USD 12.5 Billion by 2033,

Driven by Advances in Gene Sequencing and Growing Need for Precision Medicine

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VANCOUVER, BRITISH COLUMBIA, CANADA, May 14, 2025 /EINPresswire.com/ -- The latest report titled Global Transcriptomics Market contains an in-depth analysis of the fundamental parameters contributing to the global Transcriptomics market scenario. This research report offers readers an in-depth interpretation of the dynamics of the Transcriptomics market, including key drivers, opportunities, threats, and challenges. The report also briefly discusses key business strategies, supply-demand ratios, key regions, prominent market players, and offers a future outlook for the overall Transcriptomics industry.

The global transcriptomics market is projected to grow from USD 7.3 billion in 2024 to USD 12.5 billion by 2033, at a steady CAGR of 6.2%, according to recent market analysis.

This growth is largely driven by rapid technological advances in gene sequencing, particularly RNA sequencing (RNA-Seq), which has transformed the way researchers study gene expression. RNA-Seq allows for fast, detailed analysis of gene activity across various cell types and health conditions. This technology helps detect both known and previously unidentified RNA transcripts, offering deeper insights into how genes work.

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The affordability and efficiency of next-generation sequencing (NGS) technologies have also played a major role. These tools have significantly reduced the cost and time needed for transcriptomic research, making it more accessible for use in clinical labs, academic institutions, and pharmaceutical companies. For instance, in October 2024, Illumina introduced two compact

benchtop sequencers—MiSeq i100 and i100 Plus—priced at $49,000 and $109,000, respectively. These machines deliver results in under four hours and are suitable for a wide range of applications, from cancer testing to pathogen detection. Their reagents are also stable at room temperature, which cuts down on storage costs for laboratories.

A key factor boosting the market is the rising prevalence of chronic illnesses such as cancer, autoimmune diseases, and neurological disorders. These health conditions have increased the need for research tools that offer deeper insight into the genetic and molecular causes of diseases. Transcriptomics helps identify patterns in gene expression that may signal the onset or progression of diseases, enabling earlier detection and personalized treatment strategies.

For example, transcriptomic technologies are critical in cancer research, helping scientists understand how tumors develop and spread. Reflecting this trend, the Australian Government announced a $30 million investment in October 2024 to launch Genomics Australia. The initiative aims to integrate genomic testing into everyday clinical care, with a focus on improving cancer treatment outcomes.

Despite the market's growth potential, challenges remain. One of the biggest hurdles is the complexity involved in analyzing large amounts of gene expression data. High-throughput methods like RNA-Seq generate millions of data points that must be carefully processed and interpreted. This requires sophisticated software and specialized expertise, which can be difficult for smaller institutions to access.

In response to this issue, new tools are being developed to simplify the analysis process. In 2024, researchers introduced FLOP (Functional Omics Processing), a flexible pipeline that helps standardize data analysis and improve accuracy. These improvements aim to make transcriptomic studies more transparent and reproducible, addressing a major concern for researchers worldwide.

In terms of application, drug discovery and development held the largest share of the market in 2024. Transcriptomics plays a vital role in helping researchers identify promising drug candidates by showing how different compounds affect gene expression. It also helps predict side effects and resistance patterns, making the drug development process more efficient and precise.

Personalized therapies, such as cancer immunotherapy, benefit greatly from this approach by targeting treatments based on a patient's unique gene expression profile. Recent attention has also turned to the development of anti-obesity drugs, such as GLP-1 receptor agonists, which offer both medical and commercial opportunities worldwide.

Diagnostics and disease profiling is expected to be the fastest-growing segment over the forecast period. Transcriptomics is helping clinicians detect diseases earlier by identifying molecular signatures that may not be visible through traditional tests. These insights also allow for the classification of disease subtypes, leading to more accurate and targeted treatments.

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Competitive Terrain:

The global Transcriptomics industry is highly consolidated owing to the presence of renowned companies operating across several international and local segments of the market. These players dominate the industry in terms of their strong geographical reach and a large number of production facilities. The companies are intensely competitive against one another and excel in their individual technological capabilities, as well as product development, innovation, and product pricing strategies.

Some major companies included in the Transcriptomics market report are:

Pacific Biosciences of California Inc.

Thermo Fisher Scientific Inc.

Agilent Technologies Inc.

Illumina Inc.

QIAGEN

Bio-Rad Laboratories Inc.

Takara Bio Inc.

PerkinElmer Inc.

Fluidigm Corporation

F-Hoffmann La-Roche

The report further divides the Transcriptomics market into key segments such as types, applications, end-user industries, technologies, and key regions of the market. The report also sheds light on the segment and region exhibiting promising growth in the Transcriptomics market.

Transcriptomics Market Segmentation Analysis

By Type Outlook (Revenue, USD Billion; 2020-2033)

Instruments

Consumables

Software & Services

By Technology Outlook (Revenue, USD Billion; 2020-2033)

Next-Generation Sequencing (NGS)

Polymerase Chain Reaction (PCR)

Microarray

Others

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

Drug Discovery and Development

Diagnostics and Disease Profiling

Others

By End-Use Outlook (Revenue, USD Billion; 2020-2033)

Academic and Research Institutes

Pharmaceutical Companies

Biotechnology Companies

Others

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Regional Outlook:

North America (the U.S., Canada, Mexico)

Europe (the U.K., Germany, France, Italy)

Asia Pacific (India, China, Japan, Korea)

Latin America (Brazil, Argentina, Ecuador, Chile)

Middle East & Africa (Egypt, Turkey, Saudi Arabia, Iran)

Key Questions Answered by the Report:

Which region is expected to dominate the market in the coming years?

What are the recent technological and product advancements occurring in the market?

What are the key strategies adopted by the prominent players in the Transcriptomics market?

What are the key product types and applications of the Transcriptomics industry?

What is the outcome of SWOT analysis and Porter’s Five Forces analysis?

How is the competitive landscape of the Transcriptomics market?

Who are the key players in the industry?

What is the growth rate of the industry over the coming years?

What will be the valuation of the Transcriptomics Market by 2033?

Thank you for reading our report. For further details or to inquire about customization, please let us know and we will offer you the report as per your needs.

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