

Spatial Genomics & Transcriptomics Market: Current Analysis and Forecast (2024-2032)

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Abstracts

Spatial Genomics & Transcriptomics deals with the spatial organization of genetic and transcriptomic information within biological systems. Spatial genomics is the study of the entire DNA collection in its natural setting. It focuses on comprehending the biological processes influenced by the physical configuration of DNA within cells and tissues. By preserving the spatial linkages of the genetic material, researchers can get to know more about gene regulation, cellular connections, and structural organization of genetic material. It is vital to get to know about gene expression, genome organization, and the effect of epigenomes while maintaining the positional context. Spatial transcriptomics is the study of the transcriptome fingerprint or net gene expression of each cell during development and within diseased tissues. It may assist in providing the necessary information on cellular phenotype, cell state, and ultimately the function of the cell and tissues.

The Spatial Genomics & Transcriptomics Market is expected to grow with a significant CAGR of 12.03% during the forecast period (2024-2032). With the increasing pervasiveness of chronic diseases, there is a demand for new cost-effective, and efficient health management solutions, such as Spatial Genomics & Transcriptomics. With advancements in technology and integration with AI and Bioinformatics, it fulfills the demand for personalized medicine. Moreover, partnerships and collaborations with governments, institutions, and pharmaceutical providers are becoming increasingly common. Through partnerships with drug discoverers, Spatial Genomics & Transcriptomics suppliers can provide various products focused on cellular and tissue analysis. For instance, on January 5, 2022, Bio-Techne, a global life sciences company providing innovative tools and bioactive reagents for the research and clinical diagnostic communities, and Akoya Biosciences Inc., announced a partnership to develop the first single-cell, spatial multiomics workflow for comprehensive, unbiased analysis of tissue

samples. Through this agreement, the partners would bring to the market an automated, spatial multiomics workflow that can perform rapid, in situ analysis of multiple analytes, at single cell resolution, across whole slides.

Based on the technology type, the market is segmented into spatial genomics and spatial transcriptomics. The spatial genomics market dominated the spatial genomics & transcriptomics market in 2023. This is mainly due to the increased demand for precision medicine and advancements in cancer research. The tailored treatments provide explicit acumen into tissue organization, cell interactions, and gene expressions. Spatial genomics helps to decipher the complexities of cancer at the cellular level. Further, the integration assists organizations in dealing with the increasing complexities in cancer diagnosis and treatment, which is enabled by spatial genomics, as it allows researchers to study genes in their native spatial context. For instance, On Sept. 19, 2023, Akoya Biosciences, Inc. highlighted the industry-leading scale and speed in whole-slide, spatial biology workflows enabled by the recently launched PhenoCycler Fusion 2.0 and Phenomager HT 2.0 platform upgrades. Enhancements to the PhenoCycler-Fusion 2.0 System allow customers to process twice as many samples per week, making it the highest throughput spatial discovery platform on the market. The Phenomager 2.0 platform delivers a 5x workflow improvement by enabling rapid real-time image analysis directly on the HT instrument. With an unprecedented ability to perform whole-slide spatial biology at scale, Akoya's customers can accelerate progress towards discoveries, identification of clinically relevant biomarkers, and development of novel spatial signatures.

Based on the product type, the market is segmented into instruments, consumables, and others. The instruments segment held a significant market share in 2023. The market for instruments is led by large corporations that incorporate Spatial Genomics & Transcriptomics solutions to improve drug discoveries through rapid advancements in technological innovations. Further, the use of artificial intelligence for analyzing spatial data has enhanced the utility and appeal of these instruments. Moreover, these instruments are essential for comprehending the intricate biological systems peculiarly in areas such as cancer, neuroscience, and developmental biology. Accordingly, Spatial Genomics & Transcriptomics have gained adoption among large enterprises due to integration with AI, and it opened new markets for pharmaceutical companies breaking the dependence on traditional technologies.

Based on the end users, the market has been divided into biopharmaceutical and biotechnology companies, academic and research institutes, contract research organizations, and others. Biopharmaceutical and biotechnology companies are expected to grow with a significant CAGR in the forecast period (2024-2032). With the upsurge in the number of research laboratories, rising investments in R&D, and advancements in technology, the largest share of the market. Further, drug discoveries and development enable companies to identify potential target drug targets and develop more effective therapies. These companies utilize spatial genomics & transcriptomics to offer their clients better drugs, targeted therapies, and precision medicines. The increase in demand for spatial genomics & transcriptomics products continues to fuel the market since companies are getting ample funding from the government and private organizations.

For a better understanding of the market adoption of spatial genomics & transcriptomics market is analyzed based on its worldwide presence in countries such as North America (U.S., Canada, and the Rest of North America), Europe (Germany, France, U.K., Spain, Italy, Rest of Europe), Asia-Pacific (China, Japan, India, Rest of Asia-Pacific), Rest of World. Asia-Pacific is expected to grow with a significant CAGR in the forecast period (2024-2032). The increasing rampancy of chronic and infectious diseases, R&D investments, and the rise in the number of research laboratories in Asia-Pacific is fueling this market. Rapid economic growth and improvements in the healthcare infrastructure in the Asia Pacific countries are enabling the adoption of advanced genomic tools. Further, the partnership between international corporations and regional research institutes will help to boost regional revenue creation. Apart from this, the introduction of innovative and cost-effective sequencing platforms for academic and translational research is further driving the market. According to the Indian Council of Medical Research (ICMR) 2023, India had 163 Viral Research Diagnostic Laboratories, 117 Multidisciplinary Research Units (MRUs) and 35 Model Rural Health Research Units (MRHRUs). For instance, on October 27, 2022, Vizgen, announced the availability of its MERSCOPE® spatial genomics platform in Asia-Pacific (APAC), Europe, the Middle East, and Africa (EMEA). To support its global expansion, Vizgen has signed agreements with the distributors of the APAC region with Gene Company covering China/Hong Kong while PRIMETECH covers Japan.

Some of the major players operating in the market include Akoya Biosciences, Bruker Spatial Biology, Illumina, Inc., Veracyte, Inc., MacroGen, Inc., Miltenyi

Biotec, Standard Biotoools, Lunaphore Technologies S.A., 10x Genomics, Vizgen Inc.

Contents

1 MARKET INTRODUCTION

- 1.1. Market Definitions
- 1.2. Main Objective
- 1.3. Stakeholders
- 1.4. Limitation

2 RESEARCH METHODOLOGY OR ASSUMPTION

- 2.1. Research Process of the Spatial Genomics & Transcriptomics Market
- 2.2. Research Methodology of the Spatial Genomics & Transcriptomics Market
- 2.3. Respondent Profile

3 EXECUTIVE SUMMARY

- 3.1. Industry Synopsis
- 3.2. Segmental Outlook
 - 3.2.1. Market Growth Intensity
- 3.3. Regional Outlook

4 MARKET DYNAMICS

- 4.1. Drivers
- 4.2. Opportunity
- 4.3. Restraints
- 4.4. Trends
- 4.5. PESTEL Analysis
- 4.6. Demand Side Analysis
- 4.7. Supply Side Analysis
 - 4.7.1. Merger & Acquisition
 - 4.7.2. Investment Scenario
 - 4.7.3. Industry Insights: Leading Start-ups and Their Unique Strategies

5 PRICING ANALYSIS

- 5.1. Regional Pricing Analysis
- 5.2. Regional Pricing Analysis

6 GLOBAL SPATIAL GENOMICS & TRANSCRIPTOMICS MARKET REVENUE (USD BN), 2022-2032F

7 MARKET INSIGHTS BY TECHNOLOGY TYPE

- 7.1. Spatial Genomics
- 7.2. Spatial Transcriptomics

8 MARKET INSIGHTS BY PRODUCT TYPE

- 8.1. Instruments
- 8.2. Consumables
- 8.3. Others

9 MARKET INSIGHTS BY END-USERS

- 9.1. Biopharmaceutical and Biotechnology Companies
- 9.2. Academic and Research Institutes
- 9.3. Contract Research Organization
- 9.4. Others

10 MARKET INSIGHTS BY REGION

- 10.1. North America
 - 10.1.1. U.S.
 - 10.1.2. Canada
 - 10.1.3. Rest of North America
- 10.2. Europe
 - 10.2.1. Germany
 - 10.2.2. France
 - 10.2.3. Uk
 - 10.2.4. Spain
 - 10.2.5. Italy
 - 10.2.6. Rest of Europe
- 10.3. Asia-Pacific
 - 10.3.1. China
 - 10.3.2. Japan
 - 10.3.3. India

- 10.3.4. Rest of APAC
- 10.4. Rest of The World

11 VALUE CHAIN ANALYSIS

- 11.1. Marginal Analysis
- 11.2. List of Market Participants

12 COMPETITIVE LANDSCAPE

- 12.1. Competition Dashboard
- 12.2. Competitor Market Positioning Analysis
- 12.3. Porter Five Forces Analysis

13 COMPANY PROFILES

- 13.1. Akoya Biosciences
 - 13.1.1. Company Overview
 - 13.1.2. Key Financials
 - 13.1.3. Swot Analysis
 - 13.1.4. Product Portfolio
 - 13.1.5. Recent Developments
- 13.2. Bruker Spatial Biology
- 13.3. Illumina, Inc.
- 13.4. Veracyte, Inc.
- 13.5. Macrogen, Inc.
- 13.6. Miltenyi Biotec
- 13.7. Standard Biotech
- 13.8. Lunaphore Technologies S.A.
- 13.9. 10x Genomics
- 13.10. Vizgen Inc.

14 ACRONYMS & ASSUMPTION

15 ANNEXURE

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