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Single-Cell Omics Market Outlook 2025-2034: Market Share, and Growth Analysis By Product (Single-Cell Genomics, Single-Cell Transcriptomics, Single-Cell Proteomics, Single-Cell Metabolomics), By Technology (Cell Isolation Technologies, Sample Preparation Technologies, Analysis Of Next-Generation Sequencing), By Application, By End-User

https://marketpublishers.com/r/S2990EB1E8C8EN.html
Date: October 2025
Pages: 160
Price: US$ 3,950.00 (Single User License)
ID: S2990EB1E8C8EN

Abstracts

The Single-Cell Omics Market is valued at USD 2.9 billion in 2025 and is projected to grow at a CAGR of 15.5% to reach USD 10.6 billion by 2034.The single-cell omics market represents a transformative frontier in molecular biology, enabling the high-resolution study of individual cells at the genomic, transcriptomic, proteomic, and epigenomic levels. Unlike bulk analysis, single-cell omics captures the functional heterogeneity within seemingly identical cell populations, providing critical insights into development, disease progression, immune responses, and cellular interactions. Applications of single-cell omics span oncology, neurology, immunology, regenerative medicine, and microbiology. It is particularly impactful in understanding tumor microenvironments, rare cell populations, and dynamic cellular states. Rapid advancements in sequencing, mass spectrometry, and microfluidics have accelerated adoption, while integration with AI and high-throughput platforms is making single-cell analyses more scalable. As personalized medicine evolves, single-cell omics stands at the core of diagnostics, drug discovery, and therapeutic innovation, poised for exponential market growth in the coming years. The single-cell omics market experienced significant expansion due to rising demand in oncology research, cell therapy development, and infectious disease studies. Single-cell RNA sequencing (scRNA-seq) continued to lead the segment, with broader application of single-cell ATAC-seq and proteomics via mass cytometry and imaging platforms. Pharmaceutical

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companies increasingly used single-cell multi-omics data to identify biomarkers, improve drug targeting, and reduce attrition in clinical trials. The development of multiplexed assays and barcoding technologies allowed simultaneous analysis of multiple omics layers from the same cell, while automation improved throughput in core labs and hospitals. AI-enhanced data processing platforms emerged to manage the complexity of multi-dimensional datasets. Strategic collaborations between bioinformatics firms, equipment manufacturers, and academic consortia helped drive standardization and global access to single-cell omics tools. However, high data storage demands and bioinformatic interpretation remained critical challenges to adoption in resource-limited settings. The single-cell omics market is expected to become central to translational medicine, especially in oncology, autoimmune disorders, and neurodegenerative disease research. Technological innovations will drive cost reduction, improved cell capture efficiency, and integration of multi-modal data, including spatial omics and single-cell metabolomics. Clinical diagnostics will increasingly adopt single-cell platforms for early disease detection, patient stratification, and treatment monitoring. Emerging applications in organoid research and synthetic biology will further expand the market's reach. Precision medicine initiatives and growing investment in global health infrastructure will create opportunities in developing regions. AI and machine learning will be crucial in linking cell-level molecular signatures with clinical outcomes. Despite this growth, the market must address challenges related to reproducibility, data interoperability, and ethical concerns around high-resolution patient data. Regulatory clarity will also be essential for clinical translation.

Key Insights Single-Cell Omics Market

Widespread adoption of multi-omics platforms combining genomics, transcriptomics, and proteomics at single-cell resolution.

Emergence of spatial single-cell omics technologies for tissue context and microenvironment mapping.

Increased integration of AI and machine learning tools to analyze complex, high-dimensional single-cell datasets.

Automation and miniaturization of single-cell workflows for increased throughput and lower sample input requirements.

Application of single-cell omics in drug discovery pipelines to identify novel targets and optimize therapeutic strategies.

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Growing demand for precision medicine tools that offer cellular-level insights into disease progression and treatment response.

Technological advancements in single-cell capture, sequencing, and data integration driving new biological discoveries.

Increased funding for cancer and immune-related research requiring detailed cellular characterization.

Rising adoption of single-cell platforms in clinical trials to stratify patients and validate biomarkers.

High data complexity and lack of standardized analysis pipelines make reproducibility and cross-study comparison difficult, requiring coordinated efforts in computational biology, data governance, and global regulatory alignment to fully realize clinical utility.

Single-Cell Omics Market Segmentation

By Product

- Single-Cell Genomics
- Single-Cell Transcriptomics
- Single-Cell Proteomics
- Single-Cell Metabolomics

By Technology

- Cell Isolation Technologies
- Sample Preparation Technologies
- Analysis Of Next-Generation Sequencing

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By Application

- Oncology
- Cell Biology
- Neurology
- Immunology

By End-User

- Pharmaceutical And Biotechnology Companies
- Academic And Research Organizations
- Hospital And Diagnostic Laboratories
- Other End Users

Key Companies Analysed

- Danaher Corporation
- Merck KGaA
- Becton Dickinson and Company
- GE HealthCare Technologies Inc.
- Thermo Fischer Scientific Inc.
- Agilent Technologies Inc.
- Sartorius AG

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Illumina Inc.

PerkinElmer Inc.

Bio-Rad Laboratories Inc.

Qiagen N.V

DiaSorin S.p.A.

Tecan Group Ltd.

BGI Genomics Co. Ltd.

Promega Corporation

10x Genomics Inc.

Takara Bio Inc.

NanoString Technologies Inc.

Vizgen

HiFiBiO Therapeutics

Deepcell

Immunai

Mission Bio Inc.

Standard BioTools Inc.

CYTENA GmbH

Celsius Therapeutics

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Scailyte AG

Single Cell Discoveries

ImmunoScape Pte. Ltd.

Nodexus Inc.

1CellBio Inc.

Single-Cell Omics Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modeling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends.

Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behavior are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are incorporated to assess their impact on future market performance.

Single-Cell Omics Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption.

Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

Countries Covered

North America — Single-Cell Omics market data and outlook to 2034

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United States

Canada

Mexico

Europe — Single-Cell Omics market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Single-Cell Omics market data and outlook to 2034

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India

South Korea

Australia

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Malaysia

Vietnam

Middle East and Africa — Single-Cell Omics market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Single-Cell Omics market data and outlook to 2034

Brazil

Argentina

Chile

Peru

** We can include data and analysis of additional countries on demand.*

Research Methodology

This study combines primary inputs from industry experts across the Single-Cell Omics value chain with secondary data from associations, government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

Key Questions Addressed

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What is the current and forecast market size of the Single-Cell Omics industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to invest over the next 3–5 years?

Your Key Takeaways from the Single-Cell Omics Market Report

Global Single-Cell Omics market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Single-Cell Omics trade, costs, and supply chains

Single-Cell Omics market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Single-Cell Omics market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Single-Cell Omics market trends, drivers, restraints, and opportunities

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Porter’s Five Forces analysis, technological developments, and Single-Cell Omics supply chain analysis

Single-Cell Omics trade analysis, Single-Cell Omics market price analysis, and Single-Cell Omics supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and products

Latest Single-Cell Omics market news and developments

Additional Support

With the purchase of this report, you will receive

An updated PDF report and an MS Excel data workbook containing all market tables and figures for easy analysis.

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