

The Growing demand for Spatial OMICS in Cancer Research is Driving the Global Spatial OMICS Market.

Global Spatial OMICS Market to Reach USD 566.1 Mn by 2031, with Rising CAGR of 11.2% by 2031: The Niche Research

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[/EINPresswire.com/](https://www.einpresswire.com/) -- Spatial OMICS refers to a cutting-edge field in biology and biotechnology that focuses on analyzing molecular information within the context of spatial organization in tissues and cells.

This field combines techniques from genomics, transcriptomics, proteomics, and other "omics" disciplines with spatial information to provide a more comprehensive understanding of cellular and tissue function.

This technique allows researchers to simultaneously analyze gene expression within specific regions of tissue. It involves spatially capturing RNA molecules and sequencing them, revealing the gene expression patterns within the context of tissue architecture.

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Trends in the Global Spatial OMICS Market

Spatial OMICS is particularly relevant in cancer research, where tumor heterogeneity and interactions with the microenvironment play a crucial role. The ability to analyze gene expression and protein distribution in relation to tumor architecture is enhancing the understanding of cancer progression. Researchers are gaining new understanding of cancer in its original physical setting because of spatial OMICS capacity to maintain the architecture of tissue from patient samples. Spatial OMICS, when combined with data from other modalities such as imaging, genes, and proteomics, gives a comprehensive, multimodal knowledge of disease causes. For these reasons, spatial OMICS is set to deliver significant advances in cancer research in the next years.

Furthermore, spatial OMICS technology allows for the visualisation of previously unobservable cell architecture and biological activities, which may be utilised to create molecular-level "cell

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atlases" of various species. Spatial OMICS has the potential to contribute in treatment development, cancer characterisation, and infectious disease research. The market for spatial OMICS solutions is expanding, but technological hurdles such as data gathering, processing, storage, and standardised reporting must be overcome before the sector can reach its full potential. With its potential to transform knowledge of biological systems in the long run the global spatial OMICS market will continue to grow during the forecast period.

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Key Takeaways from the Global Spatial OMICS Market

- Spatial transcriptomics had a significant share in the global spatial OMICS market in 2022. Many spatial transcriptomics techniques offer single-cell resolution, which is enabling researchers to study gene expression at an individual cell level within their spatial context. This level of granularity is crucial for identifying distinct cell types, characterizing cell states, and uncovering cellular heterogeneity within tissues. Moreover, due to the rising interest, researchers are adopting spatial transcriptomics reflecting its potential to enhance understanding of complex biological systems, disease processes, and tissue-specific gene expression dynamics. As the field continues to evolve and mature, spatial transcriptomics is expected to play a pivotal role in the global spatial OMICS market.
- Spatial OMICS techniques are being used by a wide range of researchers, institutions, and industries for various applications across the fields of biology, medicine, and biotechnology. In 2022, Academic and Research Institutions end user segment had the highest share in the spatial OMICS market in 2022. The use of spatial OMICS to translate real-time tissue reactions to an external agent expands the technology's use in translational research. They apply spatial OMICS to obtain a better knowledge of complicated biological systems, discover new insights, and improve fundamental scientific concepts.
- During the forecast period, Asia Pacific region is anticipated to be the fastest growing region in the spatial OMICS market. The biotechnology industry in Asia has been expanding rapidly, with a focus on drug discovery, precision medicine, and diagnostics, along with strong research programs in genomics, proteomics, and related fields. Countries such as China, Japan, South Korea, and Singapore made significant investments in life sciences and biotechnology, fostering an environment conducive to the development and adoption of cutting-edge technologies like spatial OMICS. Besides due to the rising relevance of cancer in Asia there is a strong interest in advancing cancer research and diagnostics wherein spatial OMICS techniques play a vital role in understanding tumor heterogeneity and optimizing treatment strategies. Thus, considering the above factors the spatial OMICS market has huge scope for the growth in the upcoming years.

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The competitive landscape of the global spatial OMICS market is characterized by a mix of established companies, startups, and academic research institutions driving innovation in the field. Many academic research groups and institutions are actively involved in developing spatial OMICS technologies, often collaborating with industry partners. Several collaborative initiatives,

both public and private, are fostering innovation in spatial OMICS. These may involve partnerships between academia, industry, and government organizations strengthening the growth of the global spatial OMICS market.

Key Developments in the Global Spatial OMICS Market

In June 2022, Akoya Biosciences, Inc. presented data created using its proprietary RNA chemistry, which allows whole-slide spatial multiomics at single-cell resolution on the PhenoCycler-Fusion system. This unique spatial transcriptomics solution will be added to Akoya's industry-leading spatial proteomics offering on the PhenoCycler-Fusion, giving customers a strong option for whole-slide spatial multiomics.

In October 2022, NanoString technology, Inc. established a partnership with Visiopharm to speed the development of new biomarkers and therapeutic targets by leveraging cutting-edge spatial imaging and machine learning technology.

Key players operating in the global spatial OMICS market are

- o 10x Genomics
- o Agilent Technologies Inc
- o Akoya Biosciences
- o Bio-Techne
- o CD Genomics
- o Illumina Inc
- o Indica Labs, Inc.
- o Miltenyi Biotec
- o NanoString Technologies Inc
- o Owkin
- o RareCyte, Inc.
- o S2 Genomics, Inc.
- o SciLifeLab
- o Ultivue Inc.
- o Visiopharm A/S
- o ZEISS
- o Other Industry Participants

Global Spatial OMICS Market

By Techniques

- o Spatial Transcriptomics
- o Immunohistochemistry (IHC)
- o Fluorescence In-Situ Hybridization (FISH)
- o Sequencing
 - In Situ Sequencing (ISS)
 - Microdissection Sequencing
 - Others
- o In-Situ capturing

- o Microscopy based RNA imaging techniques
 - Padlock Probes & Rolling Circle Amplification
 - Single Molecule RNS Fluorescence In-Situ Hybridization (smFISH)
 - Branched DNA probes
- o Transcriptome In-Vivo Analysis (TIVA)
- o Spatial Genomics
- o Fluorescence in situ Sequencing
- o Fluorescence Microscopy-based
- o Others
- o Spatial proteomics
- o Spatial metabolomics
- o Spatial multi-omics
- o Others

By Offerings

- o Products
- o Solutions
- o Consumables

By Application

- o Biomarker Discovery
- o Drug Development
- o Cancer Research
- o Infectious Diseases
- o Immunology
- o Metabolic Studies
- o Others

By Sample Type

- o Frozen tissues
- o FFPE tissues

By End Users

- o Academic and Research Institutes
- o Pharmaceutical and Biotechnology Companies
- o Contract Research Organizations (CROs)
- o Others

By Region

- o North America (U.S., Canada, Mexico, Rest of North America)
- o Europe (France, The UK, Spain, Germany, Italy, Nordic Countries (Denmark, Finland, Iceland, Sweden, Norway), Benelux Union (Belgium, The Netherlands, Luxembourg), Rest of Europe)
- o Asia Pacific (China, Japan, India, New Zealand, Australia, South Korea, Southeast Asia (Indonesia, Thailand, Malaysia, Singapore, Rest of Southeast Asia), Rest of Asia Pacific)

- o Middle East & Africa (Saudi Arabia, UAE, Egypt, Kuwait, South Africa, Rest of Middle East & Africa)
- o Latin America (Brazil, Argentina, Rest of Latin America)

Consult with Our Expert:

Jay Reynolds

The Niche Research

Japan (Toll-Free): +81 663-386-8111

South Korea (Toll-Free): +82-808- 703-126

Saudi Arabia (Toll-Free): +966 800-850-1643

United Kingdom: +44 753-710-5080

United States: +1 302-232-5106

Email: askanexpert@thenichereresearch.com

Website: www.thenichereresearch.com

Jay Reynolds

The Niche Research

+1 302-232-5106

[email us here](#)

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