



Akoya Biosciences Announces Peer-Reviewed Publication Using Ultrahigh-Plex Spatial Phenotyping of Head and Neck Cancer to Identify Distinct Immune and Metabolic Signatures

October 17, 2023

MARLBOROUGH, Mass., Oct. 17, 2023 (GLOBE NEWSWIRE) -- [Akoya Biosciences, Inc.](#) (Nasdaq: AKYA) ("Akoya"), The Spatial Biology Company®, today announced that researchers from Akoya Biosciences and The University of Queensland's Frazer Institute have comprehensively mapped the spatial proteome of head and neck squamous cell carcinoma (HNSCC) using ultrahigh-plex spatial phenotyping. Spatial phenotyping consists of whole-slide imaging of tissue sections at single-cell resolution to visualize and quantitate biomarker expression and reveal how cells interact and organize across the entire tissue landscape.

The study, published in GEN Biotechnology in an article titled "[Mapping the Spatial Proteome of Head and Neck Tumors: Key Immune Mediators and Metabolic Determinants in the Tumor Microenvironment](#)" identified a high degree of intra- and inter-tumoral heterogeneity intrinsic to head and neck cancers and advances the understanding of the mechanistic basis of variable clinical responses.

The study analyzed head and neck cancer tissues from a patient with varying responses to immune checkpoint inhibitor (ICI) therapy. The analysis was conducted using a panel of 100+ biomarkers to measure key cancer hallmarks of tumor and immune biology with Akoya's PhenoCycler®-Fusion system. The [PhenoCycler-Fusion](#) is the fastest spatial biology solution available which enables rapid imaging of whole slides at single-cell resolution.

"This study represents a significant advancement in multiplexed imaging and, to our knowledge, is the first single-cell spatial proteomic dataset integrating information from immune, metabolic and stress pathways to provide a holistic view into the biology of heterogeneous HNSCC tumors" noted Niyati Jhaveri, PhD, Head of Applications at Akoya Biosciences. "It provides an analytical framework for future spatial studies leveraging the resolution, plex and speed of Akoya's solution to decipher the complex nuances of human tissues in homeostasis and disease."

A pivotal discovery in the study highlighted the divergent enrichment of functionally specialized immune cell subsets, as well as distinct metabolic and stress signatures organized within specific spatial domains in the tumor. This overarching observation in the paper underscored the existence of heterogeneous niches and competitive microenvironments, potentially serving as defining factors for clinical response and resistance.

"Immune checkpoint inhibitors have shown promising results in recurrent and metastatic cases of HNSCC," said Dr. Arutha Kulasinghe, of The University of Queensland's Frazer Institute, leader of the Clinical-oMx Lab, and one of the paper's authors. "Durable treatment results, however, are observed in only 30% of patients, indicating that new biomarkers for stratification of responders and non-responders are needed. The dichotomy of immune activation-induced death and tumor progression we observed in an individual patient's tissue sample correlated with the partial response seen with ICI therapy. We believe that the approach outlined in this study will pave the way towards a new understanding of tumor microenvironment features associated with response and sensitivity to immune checkpoint inhibitor therapies in head and neck cancer and other solid malignancies."

Forward-Looking Statements

This press release contains forward-looking statements that are based on management's beliefs and assumptions and on information currently available to management. All statements contained in this release other than statements of historical fact are forward-looking statements, including statements regarding our expectations about the potential of our products and services and other matters regarding our business strategies and plans and objectives for future operations.

In some cases, you can identify forward-looking statements by the words "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements involve risks, uncertainties and other factors that may cause actual results, levels of activity, performance, or achievements to be materially different from the information expressed or implied by these forward-looking statements. These risks, uncertainties and other factors are described under "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in the documents we file with the Securities and Exchange Commission from time to time. We caution you that forward-looking statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. As a result, the forward-looking statements may not prove to be accurate. The forward-looking statements in this press release represent our views as of the date hereof. We undertake no obligation to update any forward-looking statements for any reason, except as required by law.

About Akoya Biosciences

As The Spatial Biology Company®, Akoya Biosciences' mission is to bring context to the world of biology and human health through the power of spatial phenotyping. The company offers comprehensive single-cell imaging solutions that allow researchers to phenotype cells with spatial context and visualize how they organize and interact to influence disease progression and response to therapy. Akoya offers a full continuum of spatial phenotyping solutions to serve the diverse needs of researchers across discovery, translational and clinical research: PhenoCode™ Panels and PhenoCycler®, Phenolmager® Fusion, and Phenolmager HT Instruments.

Investor Contact:

Priyam Shah
Sr. Director, Investor Relations
Akoya Biosciences
investors@akoyabio.com

Media Contact:

Christine Quern

617-650-8497

media@akoyabio.com