



AACR 2025: Meteor Biotech showcases CosmoSort, new class of spatial cell sorter enabling deeper translational cancer research

CosmoSort's mix of meticulous spatial sorting capabilities, offering unparalleled speed and extraordinary cell sorting rates of one target per second, will be presented by Dr. Tae Hyun Hwang, Vanderbilt University Medical Center, in a session exploring how AI-powered, 3D spatial technologies are transforming cancer research

Dr. Hwang's talk: 'AI-Driven 3D Spatial Mapping of the Tumor Immune Microenvironment for Precision Oncology' will present research which used CosmoSort to analyze spatial tumor microenvironments

Meteor Biotech will also demonstrate CosmoSort, world's first spatial cell sorter, at AACR 2025, Chicago (IL, USA), April 25 – 30, at booth #3738

Seoul, South Korea, April 22, 2025 – Meteor Biotech, a specialized spatial omics technology company producing region-targeted cell sorting devices for advanced bio research analysis, today announces that its CosmoSort, the world's first spatial cell sorter, will feature in a high-profile Methods Workshop at [AACR 2025](#) (American Association for Cancer Research), in collaboration with Vanderbilt University Medical Center (VUMC). Co-chaired by Dr. Tae Hyun Hwang, a leader in AI-driven spatial oncology and professor of surgery at VUMC, this workshop will explore how AI-powered, 3D spatial technologies are transforming cancer research.

Dr. Hwang used CosmoSort to analyze spatial tumor microenvironments and will share his findings in a talk on: 'AI-Driven 3D Spatial Mapping of the Tumor Immune Microenvironment for Precision Oncology'. His presentation will show the increasing role spatial sorting technologies, notably CosmoSort, are having in translational cancer research.

CosmoSort, a new class of spatial cell sorter, marks a shift in spatial omics — from passive observation to active, precision-targeted analysis. This is the first time that researchers can isolate and focus solely on the regions that matter most: single cell areas up to 300 microns; rather than profiling entire tissue sections. Consequently, this benchtop device creates new possibilities in studying complex tissue environments in a cost-effective and focused manner.

"Meteor Biotech is honored to collaborate with Dr. Tae Hyun Hwang in presenting his research in AI-driven spatial oncology using our first-in-class device, CosmoSort, to analyze spatial tumor microenvironments. His research highlights the critical role of high-fidelity spatial data in advancing therapeutic strategies and biomarker discovery," said Amos Lee, co-founder and CEO of Meteor Biotech. "We look forward to raising awareness of CosmoSort at AACR 2025, among cancer researchers, translational scientists and core

labs; signaling that precision ROI-level analysis is now possible - without needing to process or sequence entire slides. This enables researchers to focus solely on biologically relevant areas, reducing costs and increasing data efficiency. Our aim is to push the boundaries of precision medicine, diagnostics and cancer research through innovative technology, thereby supporting research that leads to better patient outcomes.”

Transforming Spatial Omics Research

Unlike traditional platforms like Laser Capture Microdissection (LCM), CosmoSort uses a proprietary infrared (IR) laser system with a punch-and-release mechanism that gently ejects target cells or regions into a 96-well plate—preserving tissue and sample integrity without the thermal damage seen in UV-based systems.

While most spatial omics technologies—such as in situ hybridization and whole-slide transcriptomics—enable high-resolution molecular mapping, they are largely static, allowing only observation, not retrieval. CosmoSort introduces actionable spatial biology by allowing researchers to not only visualize, but also physically isolate, specific regions of interest, from single cells to 300 µm clusters, for downstream genomic, transcriptomic and proteomic analysis.

With a rapid targeting speed and seamless multi-omics compatibility, CosmoSort enhances flexibility and reduces the cost and data load of whole-slide sequencing—paving the way for functional profiling of spatially distinct microenvironments.

Since its founding in 2022, Meteor Biotech has advanced its proprietary [SLACS](#) (Spatially-Resolved Laser Activated Cell Sorting) platform and launched CosmoSort, which entered the market in mid-2024. It is now operational in leading hospitals and research labs in South Korea and the United States.

About Meteor Biotech

Meteor Biotech is a specialized spatial omics technology company producing region-targeted cell sorting devices for advanced bio research analysis, including genomics, transcriptomics and proteomics. A spin-off from Seoul National University and leveraging over a decade of research and engineering, Meteor developed its proprietary platform technology, SLACS (Spatially-Resolved Laser-Activated Cell Sorting), with which it pioneered the world’s first spatial cell sorter, CosmoSort. CosmoSort enables researchers to sort specific regions of interest from tissue sections with high spatial precision, supporting a wide range of applications in cancer biology, immunology and neuroscience, among others. By empowering scientists to both observe and retrieve spatially defined cells, CosmoSort transforms static imaging into dynamic discovery — enabling researchers to translate spatial insights into deeper, more actionable biological understanding.

Founded in 2022, Meteor Biotech has raised over \$60M in funding, predominantly in grants. The company, headquartered in South Korea, currently commercializes CosmoSort, an award-winning device, in Asia and North America, with plans to expand into Europe.

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