



Researchers at Karolinska Institutet have developed a web-based platform that offers an unprecedented view of the human body at the cellular level. The aim is to create an invaluable resource for researchers worldwide to increase knowledge about human health and disease. The study is [published](#) in *Genome Biology*.

Simultaneous measurement of numerous biomolecular variables, known as multi-omics, enables deep and comprehensive profiling of human biology. The new Single Cell Atlas (SCA) is based on analyses of thousands of human tissue samples from 125 different adult and fetal tissues. The researchers combined eight cutting-edge omics technologies, including single-cell RNA sequencing, [whole-genome sequencing](#), and spatial transcriptomics to map and localize genes expressed in the tissue.

## **Paving the way for new discoveries**

The platform provides unique insights into individual cell properties and their interactions within tissues. The extensive collection of data is freely accessible through the [platform's website](#).

"The Single Cell Atlas not only saves time and resources but also fosters a collaborative environment for scientists from diverse fields, paving the way for new discoveries and innovations," says Lu Pan, researcher at the Institute of Environmental Medicine, Karolinska Institutet, and the study's first author.

Looking ahead, the team plans to refine the SCA by introducing more detailed analyses and annual updates. These enhancements will fill gaps in [tissue](#) representation and expand the sample size, allowing for more precise research.

"The creation of the SCA marks a significant step forward in [biomedical research](#)," says Xuexin Li, researcher at the Department of Physiology and Pharmacology (previously at the Department of Medical Biochemistry and Biophysics), Karolinska Institutet. "Our goal is to continually enrich the atlas, making it an invaluable resource for understanding [human health](#) and disease."

**More information:** Lu Pan et al, Single Cell Atlas: a single-cell multi-omics human cell encyclopedia, *Genome Biology* (2024). [DOI: 10.1186/s13059-024-03246-2](#)

Provided by Karolinska Institutet

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