CeGaT

Research &
Pharma Solutions

Single-Cell Immune Profiling

Explore the Immune System on Single-Cell Resolution

The immune system is a complex, vital network that includes various organs, cell types, and molecules. Two important components of this complex network are the T- and B-cells with their corresponding T-cell receptors (TCRs) and B-cell receptors (BCRs). BCRs recognize antigens leading to activation and subsequent antibody secretion of the cells. TCRs recognize antigens presented by other cells and, therefore, play a vital role in discriminating pathogenic antigens from host antigens. Due to the somatic rearrangement of the B- and T-cell receptor genes, which is also known as V/D/J recombination, a vast number of unique receptors for the detection of various antigens is build. This V/D/J recombination results in an individual's TCR and BCR repertoire.

Investigating the diversity of immune cells with respect to the TCR and BCR repertoires provides insights into the functioning of our immune system and its response to different conditions. Thus, studies at single-cell resolution using RNA sequencing allow the identification of different clonotypes and clone-specific gene expression. Since a functioning immune system is essential for our health, insights are of high relevance and a better understanding of the immune system composition can help to better understand the complexity of diseases and to develop and test appropriate therapies or vaccines.

Application areas of single-cell immune profiling:

- Response to different conditions and therapeutic interventions
- Vaccination and therapy development
- Target specificity of different clonotypes
- Investigation of autoimmune diseases

Explore Our Product Portfolio for Single-Cell Immune Profiling

	SIP B-Cell	SIP T-Cell	SIP Combined
Species	Human, mouse		
Sample type	Frozen single cell suspensions		
Sample requirements	1 million cells in 1 ml cryopreservation medium > 90% cell viability Other samples might be possible upon request		
Target	Gene expression + BCRs	Gene expression + TCRs	Gene expression + BCRs + TCRs
Platform	Chromium™ system (10x Genomics®) Illumina		
Output	Flexible		
Included deliverables	Project report & FASTQ files		

SIP: Single-Cell-Immune-Profiling

Want to Discover More?

We invite you to take a look at our website.

www.cegat.com/single-cell-immune-profiling

About Us

CeGaT was founded in 2009 in Tübingen, Germany. Our scientists are specialized in next-generation sequencing (NGS) for genetic diagnostics, and we also provide a variety of sequencing services for research purposes and pharma solutions. Our sequencing service portfolio is complemented by analyses suited for microbiome, immunology, and translational oncology studies.

Our dedicated project management team of scientists and bio-informaticians works closely with you to develop the best strategy to realize your project. Depending on its scope, we select the most suitable library preparation and conditions on our sequencing platforms.

We would be pleased to provide you with our excellent service. Contact us today to start planning your next project.

DAkkS Deutsche Akkreditierungsstelle D-PL-13206-01-00

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CAP ACCREDITED COLLEGE of AMERICAN PATHOLOGISTS

CLIA CERTIFIED ID: 99D2130225

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2023/09