Research &
Pharma Solutions

T-Cell Receptor Sequencing

Investigate the Diversity, Clonality, and Changes in The T-Cell Receptor Repertoire or Single Clones

Located on the surface of T-cells, the T-cell receptor (TCR) is relevant for recognizing antigens presented by the major histocompatibility complex (MHC) molecules on antigen-presenting cells. Through somatic rearrangements, T-cells express a broad range of unique receptors. These highly diverse heterodimers are mostly composed of two subunits, the α and β chains, and a minor percentage of the γ and the δ chains. The TCR α and γ chains are generated by V/J recombination, which arises from random rearrangements of the variable (V) and joining (J) genes. The β and δ chains are generated by V/J/D recombination, which additionally includes the diversity (D) genes.

Thus, the individual TCR repertoire is shaped by V/J/D recombination. This recombination results in an extremely diverse complementary-determining region 3 (CDR3). This region is an attractive target to assess the overall TCR repertoire diversity, given that it is thought to be unique to each TCR- β variant.

Investigation of the TCR repertoire can

- provide insights into functions of T-cells in immune response, e.g., immunosuppression.
- enable monitoring drug therapies, such as immunotherapies in cancer and the related change in T-cell status.
- improve personalized medicine by tumor-infiltrating T-cell analysis.

We offer TCR Sequencing to investigate the T-cell receptor repertoire. We provide information about diversity, clonality, and changes in the TCR repertoire or single TCR clones (TCR clone tracking) for different time points.

Want to Discover More?
We invite you to take a look at our website.
www.cegat.com/t-cell-receptor-sequencing

Explore Our Product for T-Cell Receptor Sequencing

	TCR RNA
Species	Human
Sample types	Sorted cells, PBMCs, whole blood, fresh frozen tissue, FFPE tissue
Target	RNA
Target chain	Beta (CDR3)
Sequencing platform	Illumina
Output	2 million clusters
Included deliverables	Project report & FASTQ files

TCR: T-Cell Receptor

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.

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