

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 portfolio is complemented by non-sequencing-based methods such as immunomonitoring.

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

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

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T-Cell Receptor Sequencing

Research & Pharma Solutions

T-Cell Receptor Sequencing



Located on the surface of T cells the T cell receptor (TCR) is relevant for the recognition of antigens presented by the MHC molecules on antigen-presenting cells.

Through somatic rearrangements T cells express a broad range of unique receptors consisting of α and β chains, in few T cells of δ and γ . These α and β chains are encoded through random rearrangements of the variable (V), joining (J) and in β chains the diversity (D) genes. In response to antigen recognition the individual TCR repertoire is shaped through VDJ recombination with additional nucleotides added or deleted between gene segments.

This results in an extremely diverse complementary-determining region 3 on the β chain (CDR3) which encompasses V, J and D junctions and thus represents the region that directly recognizes the peptide antigen. Therefore, the CDR3 region has served as a useful tool for classifying overall TCR repertoire.

Investigation of TCR repertoire can provide

- insights into functions of T cells in immune response e.g. immunosuppression and immune response
- monitoring drug therapies such as immunotherapies in cancer and the related change in T cell status
- improvement of personal medicine through tumor-infiltrating T cell analysis

Explore our TCR product portfolio

Choose your option →	TCR DNA	TCR RNA
Sample type	Sorted cells, PBMC, Whole blood, Fresh frozen tissue, FFPE	
Species	Human	
Target	DNA	RNA
Detected chain	Beta (CDR3)	
Sequencing technology	Illumina	
Output	2 M clusters	
Deliverables	FASTQ	
Bioinformatics	TCR sequencing includes basic data analysis Advanced bioinformatic options are available on request	