

Bioinformatic Note



Liquid Biopsy Target

The blood-based analysis of circulating tumor cells or tumor-derived nucleic acids is referred to as liquid biopsy. The main target of this analysis is cell-free DNA (cfDNA), which is released into the bloodstream by necrotic and apoptotic cells. Elevated levels of cfDNA are found in patients with cancer and other types of diseases. Highly sensitive detection methods are required since only a small fraction of the circulating DNA is derived from the tumor (circulating tumor DNA = ctDNA).

Liquid biopsy applications are manifold, with several striking advantages over conventional tissue analysis. Most importantly, the analysis of liquid biopsies is based on a simple blood draw and, thus, easily repeatable.

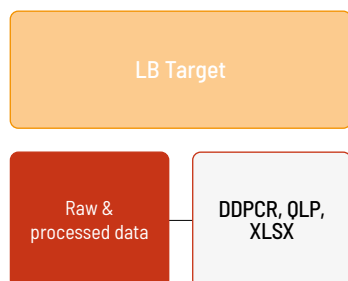
Application areas of liquid biopsies:

- ✗ Monitoring of tumor disease
- ✗ Monitoring of treatment response
- ✗ Patient stratification and treatment selection
- ✗ Detection of minimal residual disease
- ✗ Early detection and profiling of resistance to therapy

We offer three different liquid biopsy products:

- ✗ LB Target
- ✗ LB Focus
- ✗ LB Exploratory

In the following, we will focus on the analysis of the LB Target product:



Bioinformatic Analysis

In the following, we will focus on the LB Target product. We use a droplet digital PCR (ddPCR) approach for your LB Target project. The ddPCR approach is based on a water-oil emulsion droplet system. In this water-oil emulsion, droplets are formed, which separate DNA molecules. Thus, the droplets serve as individual PCR reaction rooms. Subsequent to the PCR, the droplets are evaluated with a droplet reader. For that purpose, a two-color fluorescence detection system is used to count the PCR-positive and PCR-negative droplets.

The included software directly analyzes the droplet reader's results to determine the target DNA's absolute copy number. The unit is given in copies/ μ l. The DDPCR file is a user file that is created by the software. The QLP file additionally includes the user-defined plate information and collected data from a run. The provided Excel table in XSLX format reports the concentration in copies/ μ l.

At the end of the project, you will receive a project report that includes information about the laboratory protocol, including the starting material and quality measures, and an overview of the results.

Our LB Target product is the best option to monitor a small set of well-defined variants. If you have already identified, e.g., a tumor driver mutation and wish to monitor it during a treatment intervention, the LB Target product is a cost-efficient solution.

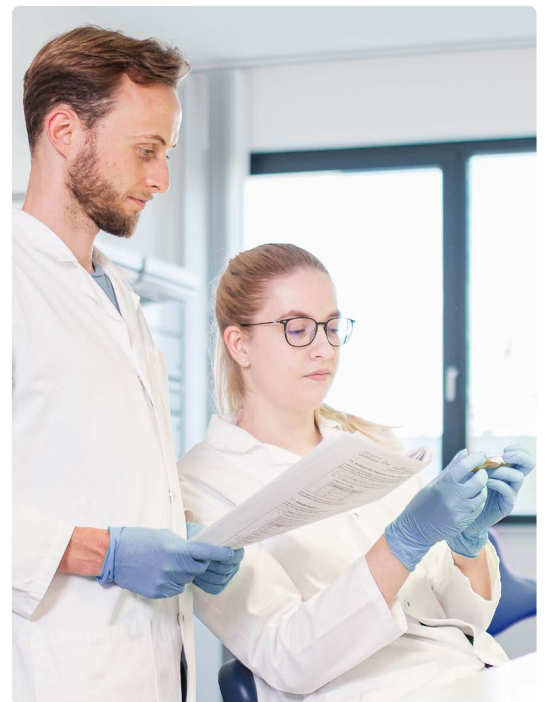


About Us

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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