

Tumor Diagnostics

CancerNeo®



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Identify neoantigens for personalized cancer vaccine design

The personalization of cancer treatment is evolving rapidly. Developing a personalized cancer vaccine is a promising strategy for cancer treatment.

Body cells constantly present peptides on their surface, indicating the current state of the cell. Immune cells can recognize if a cell presents normal or abnormal peptides and use this information to determine and eliminate defective cells. Abnormal peptides, so-called neoantigens, arise from DNA mutations in tumor cells and are targets for therapy using personalized vaccines.

CeGaT CancerNeo® enables the analysis of a patient's tumor exome to detect tumor-specific (somatic) mutations, identifies the HLA-types, and predicts neoantigens. The expression of these neoantigens is confirmed by whole RNA sequencing (transcriptome) from the same tumor sample. Thus, CeGaT's CancerNeo® provides the insights required for the design of personalized cancer vaccines - a powerful tool to boost the immune system's response to cancer cells.



Key Facts of CancerNeo®

- ✗ Whole exome sequencing of tumor/normal tissue using CeGaT's ExomeXtra®
- ✗ Detailed assessment of treatment-relevant variants detected in more than 700 tumor-relevant genes and fusions in more than 30 genes
- ✗ Medical report with
 - Validated list of variants with potential therapeutic relevance
 - Treatment options based on somatic variants
 - TMB determination / MSI prediction / HRD score calculation
 - Detection of copy number variants (CNVs)
 - A list of all eligible drugs with EMA and/or FDA approval, for which corresponding biomarkers could be detected in the tumor
 - Determination of pharmacogenetically relevant germline variants affecting the metabolism of certain tumor drugs or anesthetics
 - Assessment of the evidence for CHIP (Clonal Hematopoiesis of Indeterminate Potential)
- ✗ Tumor whole RNA sequencing with rRNA depletion
- ✗ HLA typing
- ✗ Prediction of HLA class I restricted peptide epitopes (neoepitopes) spanning tumor-specific variants from sequencing data
- ✗ Selection of most relevant neoepitopes for HLA class I and HLA class II
- ✗ Second medical report with selected peptides for formulation of a vaccine

Optional Services

- ✗ RNA-based fusion transcript analysis (CancerFusionRx®) covering over 150 genes for fusion detection and over 120 exon-exon-specific enrichments with known breakpoints
- ✗ Immunohistochemical (IHC) analyses: PD-L1, CAR-T cell panel, HLA class I and class II staining (external)
- ✗ MGMT promoter methylation analysis

Do you have a question, or are you interested in our service?

Send us an email at **tumor@cegat.com** or reach us via phone at **+49 7071 565 44-55**. We will be happy to send you more information about our tumor diagnostics.

Would You Like to Know More?

For further information visit:

www.cegat.com/cancerneo



Process

Duration 4-6 weeks



Receipt of samples in the laboratory ($\geq 20\%$ tumor content; FFPE* or frozen), normal tissue (1-2 ml EDTA blood*), and the order form. Deviating sample material possible upon request (e.g., liquid biopsy).

*Recommended sample type



Parallel sequencing of tumor and normal tissue.



Detection and identification of neoepitopes and therapy-relevant mutations by bioinformatic analysis of the sequencing data.



Interpretation and discussion of the results by an interdisciplinary team.



Summary of the results in a comprehensive medical report.



About Us

CeGaT is a global provider of genetic analyses for a wide range of medical, research, and pharmaceutical applications.

Founded 2009 in Tübingen, Germany, the company combines state-of-the-art sequencing technology with medical expertise – with the aim of identifying the genetic causes of diseases and supporting patient care. For researchers and pharmaceutical companies, CeGaT offers a broad portfolio of sequencing services and tumor analyses. CeGaT generates the data basis for clinical studies and medical innovations and drives science forward with its own insights.

The owner-managed company stands for independence, comprehensive personal customer service, and outstanding quality. CeGaT's laboratory is accredited according to CAP/CLIA, DIN EN ISO 15189, DIN EN ISO/IEC 17025, and thus meets the highest international standards. To obtain first-class results, all processes are carried out in-house under scientific supervision. We would be pleased to provide you with our award-winning service.



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Accredited by DAkkS according to
DIN EN ISO 15189:2014

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