

# Immune profiling solutions

Advance biomarker discovery, uncover immune mechanisms and expedite the development of new cancer immunotherapies with immune profiling solutions from Labcorp Oncology.

## Immunotherapy challenges and current landscape

Immunotherapy is a monumental breakthrough for cancer treatment that has revolutionized the field of oncology. Using the body's own immune system to target and destroy cancer cells, immunotherapy is a targeted approach that can be tailored to individual patients based on their immune profile and tumor characteristics for potentially more effective and durable anti-cancer responses. As a result, cancer research has turned its attention to analysis of genomic and immune changes in the tumor by analyzing the tumor and tumor microenvironment to uncover mechanisms and biomarkers that can drive development of new precision immunotherapeutics.

Labcorp Oncology's immune profiling solutions provide valuable insights into cancer pathways. By helping pharmaceutical companies discover and validate new biomarkers and optimize patient selection and stratification for clinical trials to develop more effective and personalized cancer treatments, our gene expression profiling and transcriptomics assays enable clear, comprehensive views of immune responses.

## OmniSeq Immune Profiling Assay | LDT

### Targeted NGS assay for comprehensive immune profiling

Decipher heterogeneity of the tumor microenvironment and identify potential biomarkers for immunotherapy with a targeted NGS assay that measures RNA gene expression associated with anti-tumor immune response markers, including leukocyte subsets, antigen presentation, checkpoint pathways and tumor progression.

- **Genes covered:** 395 immune markers, 64 clinically validated
- **Analysis:** RNA
- **Specimen type:** FFPE tissue
- **Sample input:** 10 ng RNA
- **Turnaround time:** 10-14 days
- **Assesses:** PD-L1, HLA Class I genotypes, T-cell priming/trafficking, T-cell recognition, T-cell infiltration, killing cancer cells and cancer testis antigens
- **Key genes:** TIGIT, LAG3 (view full list [here](#))
- **OmniSeq corporate & lab certifications:** ISO 13485:2016, CAP/CLIA, NY State CLEP





### Comprehensive

Simultaneously analyze multiple immune markers and signaling pathways for a more thorough assessment of immune response and immune cell function.



### Accurate

Identify molecular signatures or immune cell subsets that are predictive of therapeutic outcomes to guide drug development and improve patient stratification.



### Complementary Bioinformatics Signatures

Custom bioinformatics signatures including Cancer Testis Antigen Burden to measure co-expression of cancer antigens in tumor immune microenvironments, Cell Proliferation to measure overall proliferative capacity of the tumor immune microenvironments, and Tumor Immunogenic Signature to measure overall inflammation of the tumor immune microenvironments.

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## TCR- $\beta$ REPERTOIRE | RUO

### NGS-based assays for immune repertoire analysis

Facilitate translational research studies for understanding the complexity of cellular immunology as a predictive biomarker of response to immunotherapies with Labcorp's TCR- $\beta$  Repertoire assays designed to accurately characterize T-cell repertoire and detect T-cell clonal expansion.

#### TCR- $\beta$ -Long Read Assay

- **Analysis:** RNA
- **Methodology:** NGS
- **Specimen:** FFPE, whole blood or PBMC
- **Sample input:** 50 ng to 1  $\mu$ g
- **Key feature:** Interrogates 46 functional TRBV genes, 13 TRBJ genes and 2 TRBC genes and complete CDR1, CDR2 and CDR3 regions of  $\beta$  chain

#### TCR- $\beta$ -Short Read Assay

- **Analysis:** RNA + DNA
- **Methodology:** NGS
- **Specimen:** FFPE, PBMC
- **Sample input:** 50 ng to 1  $\mu$ g
- **Key feature:** Interrogates 46 functional TRBV genes, 13 TRBJ genes and 2 TRBC genes of CDR3 region of  $\beta$  chain (available for mouse and human)



### Quality Analysis

Only high-quality and on-target reads are included in the analysis. Reports detail TCR- $\beta$  sequencing QC metrics along with VDJ rearrangements and secondary analysis of repertoire features.



### Actionable

Identify specific T-cell clones, clonal expansions or other immune-related markers that correlate with treatment outcomes to guide drug development and clinical trial design and assessment.



### Complementary

The TCR- $\beta$ -LR assay can be integrated with other immune profiling technologies, such as OmniSeq INSIGHT<sup>®</sup>, to provide a more comprehensive understanding of the immune response.

## WHY LABCORP

# One partner to achieve your next cancer breakthrough

At Labcorp, we provide industry-leading biopharma services and solutions to help you discover, develop and deliver life-changing therapies that increase the potential to save the lives of people around the world. Built on a reputation for scientific and technical excellence and an unmatched global network, we can support you at every stage of the cancer care continuum.

- **Deep Scientific Knowledge and Experience:** Access comprehensive and specialized oncology expertise with our integrated medical, scientific, regulatory and statistical teams
- **Development Acceleration:** Reduce development time and risk with end-to-end support from discovery through diagnostic commercialization
- **Data-Driven Insights:** Optimize biomarker-driven development with unparalleled data and real-world evidence
- **Global Laboratory Network:** Prepare for day-one readiness with global drug and diagnostic co-development and test commercialization capabilities



Partnered with biopharma on 10 of 16 of oncology drugs approved by the FDA in 2022



Supported CDx development for PD-L1, HER-2, KRAS, EGFR, BRAF, ALK and more



Experience supporting clinical trial testing for 2,000+ trials across various tumor types

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## Contact us

Contact our biopharma team to see how we can help you accelerate your precision oncology program.

Learn more at [www.oncology.labcorp.com/biopharma-partners](http://www.oncology.labcorp.com/biopharma-partners)