REFERENCES PUBLICATIONS

Approaches to treat immune hot, altered and cold tumours with combination immunotherapies.

Evolution of metastases in space and time under immune selection.
Angiulli M et al Cell (2018)

International validation of the consensus Immunocore score for the classification of colon cancer: a prognostic and accuracy study.
Pages F et al The Lancet (2018)

Comprehensive Intratumoral Immune Quantification and Major Impact of Immunocore Score on Survival.

Evolution of metastases in space and time under immune selection.
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Comprehensive Intratumoral Immune Quantification and Major Impact of Immunocore Score on Survival.

The immune contexture in cancer prognosis and treatment.

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Total mutation burden (TMB) in lung cancer (LC) and relationship with response to PD-1/PD-L1 targeted therapies.

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Integrative analyses of colorectal cancer show Immunocore score is a stronger predictor of patient survival than microsatellite instability.
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Therapeutic use of anti-CTLA-4 antibodies.
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Genetic basis for clinical response to CTLA-4 blockade in melanoma.

Spatiotemporal dynamics of intratumoral immune cells reveal the immune landscape in human cancer.
Galon J et al Immunology (2013)

In situ cytotoxic and memory T cells predict outcome in patients with early-stage colorectal cancer.

Type, density, and location of immune cells within human colorectal tumors predict clinical outcome.
Capture the complexity of the tumor immune contexture

THE IMMUNOGRAM APPROACH

Identifying the right therapy combination is more than ever a major challenge for clinical researchers and biopharmaceutical developers. HailoDx provides a unique range of immune scoring assays to capture the complexity of the tumor immune contexture, a key determinant of patients' outcomes and response to cancer treatment.

Conducted in a Research or GCP environment, these assays are part of IMMUNOGRAM, a multi-parameter approach that offers a personalized and dynamic "fingerprint" of tumor-immune system interaction. By combining IMMUNOSCORE® expertise with advanced technologies, HailoDx delivers high-added value data and analysis to understand tumor immune contexture, identify patients more likely to respond to therapy, characterize biomarkers of treatment response or resistance, foster the development of robust assays (CTAs, CDBs), and provide more personalized treatment plans.

IMMUNOSCORE® FAMILY ASSAYS

IMMUNOSCORE® CR T cell infiltration

IMMUNOSCORE® CR T cell infiltration (T lymphocytes) accurately quantifies T cell infiltration in and around the tumor. In a variety of cancer types, infiltration is associated with better patient outcomes. The assay reliably measures the density of CD8+ & CD3+ T cells of resected or biopsied cancer samples.

IMMUNOSCORE® IC T cell exhaustion

This assay reveals exhausted T cells by combining the detection of CD3 and CD8 T lymphocytes with a panel of IC. Combined with clinical information, this powerful set of data is used to help understanding drug's mechanism of action and resistance to IC modulators.

IMMUNOSIGN® Tumor sensitivity to immunity

IMMUNOSIGN® consists in two different immune genes expression signatures (IMMUNOSIGN® 15 and 21) which allow to investigate the immune response within the TME. IMMUNOSIGN® enables the measurement of the naturally occurring immune activity in and around the tumor. This assay has been designed to assess particularly the adaptive immunity and the immune suppression within the TME. In clinical trials, IMMUNOSIGN® can provide prognostic and predictive information for immunotherapies development and guide for combination strategies.

Tumor mutational burden (TMB) and Microsatellite Instability (MSI) are two key components of IMMUNOGRAM.

Tumors of either high TMB or MSI-high likely harbor neoantigens and may respond more favorably to immunotherapies. These two biomarkers are already widely used to select patients for immunotherapy-based clinical trials. HailoDx has also developed a TCR clonality test that detects the expansion of T cell clones based on the sequencing of their T cell receptor (TCR).

Such expansion could be indicative of the response to immunotherapy. The test is based on NGS technology and is performed on the same run as tumor foreignness assessment.

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The IMMUNOGRAM* by haliodx.com

CAPTURE THE COMPLEXITY OF THE TUMOR IMMUNE CONTEXTURE

- Evaluate TMB, MSI and TCR clonality
- Tumor foreignness and TCR clonality
- Other TME biomarkers
- Tumor sensitivity to CTL
- T cell infiltration
- Immune suppression
- T cell exhaustion
- Identify immune suppressor cells within the TME (notably MDSC)

ON DEMAND ASSAYS

Molecular

IHC and image analysis

Establish the tumor class: cold, altered or hot phenotype

Determine CTL-IC spatial relations (notably CTL/PD-L1)

Measure T cells exhaustion by combining the detection of CD3 and CD8 T cells with a panel of immune checkpoints (up to 7 biomarkers)

Reveal immunomics and molecular patterns

Adapted from Blanka CJ, et al, Science 2016

Not for use in diagnostic procedures. For products regulatory status please refer to HalioDx website.

TL: T Lymphocytes; IC: Immune Checkpoints; TCE: T Cells Exhaustion; SC: Suppressor Cells