



ALVERNO LABORATORIES

HEMATOPATHOLOGY Patient Information Sheet

TEST MENU DETAILS

Genomic Testing Cooperative(GTC)

GTC Hematology Profile Plus™

GTC Hematology Profile Plus™ combines expression and fusion with mutation analysis in DNA and RNA. The test covers 302 DNA genes and 1600 RNA genes. This is a comprehensive evaluation of all hematologic neoplasms. However, it is especially recommended for:

- **Acute Lymphoblastic Leukemia (ALL):** This comprehensive assay is designed to confirm the diagnosis of Ph-ALL and Ph-like ALL and distinguish them from other types of ALL. It can be used for diagnosis as well as for monitoring. Ph-like ALL is detected in 20% to 25% of adult ALL and in 15% of pediatric ALL. Diagnosis of Ph+ ALL and Ph-like ALL is very important because TKI therapy can be helpful in most of these patients. This assay can determine most of the mutations, translocations, and expression of genes (CRLF2) associated with Ph+ ALL and Ph-like ALL.
- **Diffuse Large B-cell Lymphoma (DLBCL) and other Types of Lymphoma:** This assay can provide very valuable information for the management and monitoring of patients with DLBCL. It can distinguish between ABC and GCB and can help in the diagnosis of double hit lymphoma. The assay is also useful for follicular lymphoma and T-cell neoplasms.
- **Acute Myeloid Leukemia (AML):** Translocations in AML are very important for diagnosis, prognosis and selecting therapy. This comprehensive testing can provide a complete evaluation of fusion mRNA and mutations. It also helps in determining a diagnosis in acute leukemia with ambiguous phenotype.
- **Clonal Hematopoiesis of Indeterminate Potential (CHIP):** Distinguish CHIP from clinically active and relevant hematologic neoplasm based on an internally developed algorithm using variant allele frequency, chromosomal structural abnormalities, clinical and laboratory data and longitudinal data. This distinction is particularly important when evaluating minimal residual disease and in the presence of other neoplastic process.
- **IgVH Mutation Status:** IgVH mutation status is very important for prognosis and selecting therapy in patients with chronic lymphocytic leukemia (CLL).
- **VEXAS Syndrome:** Recently described VEXAS (vacuoles, E1 enzyme, X-linked, autoinflammatory, somatic) is caused by mutations in the UBA1 gene. This is an adults-onset fatal disease that may present as myelodysplastic syndrome, aplastic anemia or multiple myeloma, but characterized by fevers, low white cell count, vacuoles in bone marrow cells, dysplastic bone marrow, pulmonary inflammation, chondritis, and vasculitis. Detecting the presence of mutations in the UBA1 gene is the only way for confirming the diagnosis of this syndrome.

Liquid Trace® Hematology

Pan-Tumor Assay for Hematologic Malignancies

GTC's Liquid Trace® Hematology is a pan-cancer highly sensitive test evaluating cfRNA and cfDNA providing highly informative data that can be used for diagnoses, evaluating the host immune response, and identifying biomarkers for predicting responses to various therapies.

GTC's Liquid Trace® can significantly reduce the need for bone marrow biopsies for hematology patients. Furthermore, the test can detect, chromosomal abnormalities, translocations, and gene amplifications. Liquid Trace® can detect all types if hematologic cancers including:

- Multiple myeloma
- Lymphoma
- Acute Lymphoblastic Leukemia
- Acute myeloid leukemia
- MDS
- CMML
- MPN
- MRD
- VEXAS syndrome
- EBV – related neoplasms
- Hypersinophilia

Liquid biopsy in its current form is dependent on cfDNA analysis; this method likewise presents multiple challenges. These include variations in DNA shedding between tumors as well as low sensitivity (especially in early-stage cancer), difficulty in detecting fusion genes (i.e., chromosomal translocations leading to the expression of chimeric mRNA from two genes), and inability to reflect the numerous biological processes that modify RNA expression levels, such as alternative splicing, stability, and allele-specific methylation. The latter limitation is critically important as recent studies have shown that RNA testing provides another level of biological information regarding the tumor and its microenvironment.

The Benefits of cfRNA

RNA sequencing has proven to be more sensitive for some types of mutations. Cancer cells typically contain one copy of mutated DNA but numerous copies of RNA. This research is consistent with GTC's findings that cfRNA has increased sensitivity over cfDNA alone. More specifically, cfRNA allowed GTC's Liquid Trace® to detect more mutations and fusions in hematologic and solid tumor samples, which may be undetected by conventional cfDNA.

Hematology Profile Plus™	Liquid Trace® Hematology
Genes: 302 /> 1600	Genes: 302 /> 1600
TAT: 7-10 Days	TAT: 5-7 Days
Indications	Indications
All hematologic neoplasms including lymphoma Classification and diagnosis of lymphoma, multiple myeloma, acute lymphoblastic leukemia, and acute myeloid leukemia Includes IgVH Chromosomal abnormalities, and gene amplifications	All hematologic neoplasms including lymphoma multiple myeloma, acute lymphoblastic leukemia, acute myeloid leukemia, MDS, CMML, MPN, MRD, VEXAS syndrome, and EBV Chromosomal abnormalities, and gene amplifications
Sample Type	Sample Type
Bone marrow, Peripheral blood, Fresh tissue	Peripheral blood
Sample Requirements	Sample Requirements
Bone marrow: 2ml. Peripheral blood: 5 ml. EDTA tube preferred FFPE: 1 H&E slide and 6-10 unstained slides, 5-7 microns of tissue fixed with 10% NBF fixative	8-10 mL. EDTA tube is required RNA stability is 48-72 hours from blood draw. DNA stability is 7 days from blood draw. Samples received beyond 72 hours may include only DNA results.
Results Reported: DNA + RNA	Results Reported: DNA + RNA