



ALVERNO LABORATORIES

Precision Medicine Requisition

CLIENT INFORMATION		PATIENT INFORMATION	
ACCOUNT NAME: STREET ADDRESS: CITY, ST, ZIP: PHONE: REQUISITION COMPLETED BY: DATE: ORDERING PHYSICIAN (LAST, FIRST): NPI #: TREATING PHYSICIAN (LAST, FIRST): NPI #: <i>THE UNDERSIGNED CERTIFIES THAT HE/SHE IS LICENSED TO ORDER THE TEST(S) LISTED BELOW AND THAT SUCH TEST(S) ARE MEDICALLY NECESSARY FOR THE CARE/TREATMENT OF THIS PATIENT.</i> AUTHORIZED SIGNATURE: DATE:		LAST NAME: MALE FEMALE FIRST NAME: M.I. D.O.B.: OTHER PT ID/ACCT #: MED. RECORD #: <i>CLIENT REPRESENTS IT HAS OBTAINED CONSENT FROM PATIENT TO PERFORM THE SERVICES DESCRIBED HEREIN.</i>	
BILLING INFORMATION		SPECIMEN INFORMATION	
REQUIRED: PLEASE INCLUDE FACE SHEET AND FRONT/BACK OF PATIENT'S INSURANCE CARD. PATIENT STATUS: Hospital Patient (in) Hospital Patient (out) Non-Hospital Patient BILL TO: Client Bill Insurance Medicare Medicaid Patient/Self-Pay Split Billing- Client(TC) and Insurance (PC) OP Molecular to MCR, all other testing to Client Bill charges to other Hospital/Facility: PRIOR AUTHORIZATION #:		SPECIMEN ID: BLOCK ID: FIXATIVE/PRESERVATIVE: COLLECTION DATE: COLLECTION TIME: RETRIEVED DATE: AM PM HOSPITAL DISCHARGE DATE: BODY SITE: Primary Metastasis- If Metastasis, list Primary: Peripheral Blood: Green Top(s) Purple Top(s) Other FNA cell block: Slides # Unstained Stained H&E Paraffin block(s) #: Choose best block Perform tests on all blocks Other <i>(Please contact the lab before sending.)</i> Breast Marker & GI HER2 Fixation (CAP/ASCO Requirement for Breast and Non-Breast) Cold ischemic time ≤ 1 hour: Yes No Unknown 10% neutral buffered formalin: Yes No Unknown HER2/ER/PgR Fixation duration 6 to 72 hours: Yes No Unknown	
CLINICAL FORMATION		CIRCULATING TUMOR CELL COUNT	
REQUIRED: PLEASE ATTACH PATIENT'S PATHOLOGY REPORT (REQUIRED), CLINICAL HISTORY, AND OTHER APPLICABLE REPORT (S). ICD-10 (DIAGNOSIS) CODE/NARRATIVE (REQUIRED): REASON FOR REFERRAL: New Diagnosis Relapse In Remission Monitoring STAGING: 0 I II III IIIA IIIB IV NOTE:		ARUP BREAST COLORECTAL PROSTATE CANCER ORIGIN:	
GERMLINE TESTING ARUP 5-FLUOROURACIL ALLOPURINOL(ZYLOPRIM) CYTOCHROME P450 GENOTYPING PANEL CYP2D6			
MELANOMA - ALVERNO BRAF 52 GENE NGS SOLID TUMOR PANEL COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB ARUP NRAS (2003123) KIT (2002674) PD-L1 (28-8) (OPDIVO)		GIST - ALVERNO BRAF ARUP KIT/PDGRFA PANEL (2002674)	
NON-SMALL CELL LUNG (LOW STAGE) - ALVERNO EGFR BRAF KRAS EGFR WITH REFLEX TO ALK AND ROS1 FISH ALK FISH ROS1 FISH PD-L1 (22C3) (KEYTRUDA) KRAS WITH REFLEX TO EGFR/ALK/ROS1 ARUP PD-L1 (28-8) (OPDIVO) QUEST PD-L1 (SP142) (TECENTRIQ)		ESOPHAGUS/GASTRIC CARCINOMA - ALVERNO HER2 IHC WITH REFLEX TO FISH PD-L1 (22C3) (KEYTRUDA) MMR 52 GENE NGS SOLID TUMOR PANEL COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB	
NON-SMALL CELL LUNG CANCER (ADVANCED STAGE) - ALVERNO 52 GENE GS SOLID TUMOR PANEL COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB ARUP MET AMPLIFICATION FISH (3001313) RET FISH (3001312) NEOGENOMICS MET EXON 14 SKIPPING		OVARIAN CARCINOMA - ALVERNO EGFR HER2 IHC KRAS COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB NEOGENOMICS BRCA1/2	
MISC TEST		BREAST CARCINOMA - ALVERNO PD-L1 (SP142) (TRIPLE NEGATIVE) (TECENTRIQ) COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB	
		ENDOMETRIUM - ALVERNO MMR WITH MLH1 METHYLATION REFLEX (ALVERNO/ARUP) MSI COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB ARUP MLH1 METHYLATION STUDIES (2202499)	
		CNS TUMORS ARUP 1P19Q DELETION (FISH) IDH 1/IDH2 (2014188) MGMT PROMOTER METHYLATION (2009310) COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB	
		ADVANCED SOLID TUMOR (TUMOR TYPE) - ALVERNO MMR MSI 52 GENE NGS SOLID TUMOR PANEL PD-L1 (22C3) (KEYTRUDA) COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB ARUP PD-L1 (28-8) (OPDIVO) NEOGENOMICS PD-L1 (SP142) (TECENTRIQ) PD-L1 (SP263) (IMFINZI)	
		COLORECTAL CARCINOMA - ALVERNO BRAF MSI KRAS MMR WITH REFLEX TO BRAF/MLH1 METHYLATION STUDIES 52 GENE NGS SOLID TUMOR PANEL COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB ARUP NRAS (2003123) MLH1 METHYLATION STUDIES (2202499)	
		THYROID - ALVERNO BRAF KRAS COMPREHENSIVE SOLID TUMOR PANEL WITH MSI/TMB ARUP NRAS (2003123) RET FISH (3001312)	
		GTG *See PAGE 2 FOR DETAILS SOLID TUMOR PROFILE PLUS (434 DNA/1408 RNA Genes) LIQUID TRACE™ SOLID TUMOR (284 DNA/1501 RNA Genes)	



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TEST MENU DETAILS

Genomic Testing Cooperative(GTC)

Solid Tumor Profile Plus

The Solid Tumor Profile Plus test combines the analysis of DNA with targeted transcriptome sequencing (RNA) to provide a comprehensive evaluation of cancer that includes detection of single nucleotide variation, copy number variation, gene expression levels and fusions irrespective of their partner genes. This includes testing of DNA abnormalities in 434 genes and targeted transcriptome analysis of 1408 genes. In addition, the test is designed to detect microsatellite instability (MSI), tumor mutation burden (TMB), homologous recombination repair (HRR) and homologous recombination deficiency (HRD). Other notable features include RNA levels of CTLA4, PD-L1, PD-L2, MET Exon 14 skipping, EGFRvIII, AR-V7 and DYPD gene polymorphism and prediction of toxicity to fluoropyrimidine therapy. The provided information helps in determining prognosis, designing a therapeutic approach and predicting response to immunotherapies, targeted therapies, and precision medicines.

Targeted transcriptome sequencing can also detect:

- Gene expression levels that correlate to immunophenotype
- Gene amplifications
- Exon skipping
- Alternative splicing
- Biomarker discovery

Liquid Trace™ Solid Tumor

Pan-Tumor Assay for Solid Tumors

GTC's Liquid Trace Solid Tumor 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.

Liquid Trace Solid Tumor may provide additional information not detected by tissue biopsies including information on the presence of germline mutations or mutations in the subclones not present in the tissue sample (heterogeneity).

Types of solid tumors Liquid Trace can detect:

- Lung
- Breast
- Thyroid
- Colon
- Oropharyngeal tumors
- Pancreatic
- Ovarian
- Prostate
- HPV
- Cancer of unknown primary (CUP)

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.

Solid Tumor Profile Plus

Genes: **434/1408**

TAT: **7-10 Days**

Indications

All solid tumors
Fusions: ALK, ROS1, RET, NTRK1/2/3, and more.
BRAF, CIC, EWSR1, PD-L1, MET exon 14 skipping and various alternative splicing, MET, HER2, EGFR, Gene amplifications, PIK3CA, PTEN, AKT1, RAS and HRD
Cancer of unknown primary (CUP)

Sample Type: **FFPE**

Sample Requirements

1 H&E slide and 6-8 unstained slides, 5-7 microns of tissue fixed with 10% NBF fixative

Results Reported:

DNA + RNA

Liquid Trace™ Solid Tumor

Genes: **284/1501**

TAT: **5-7 Days**

Indications

All solid tumors
Chromosomal abnormalities, gene amplifications, HRR, MRD,
Fusions: ALK, ROS1, RET, NTRK1/2/3, and more.
BRAF, CIC, EWSR1, PD-L1, MET exon 14 skipping and various alternative splicing, MET, HER2, PIK3CA, PTEN, Gene amplifications, AKT1, RAS, HER2, MYC, EGFR,
Cancer of unknown primary (CUP)
HPV

Sample Type: **Peripheral blood**

Sample Requirements

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