

# ANATOMIC PATHOLOGY

In the anatomic pathology laboratory, pathologists use their judgment to order and examine additional studies on submitted specimens if they deem them medically necessary in order to render a diagnosis. In these situations, pathologists are acting in the capacity of a consultant in the care of the patient. This includes but is not limited to ordering special stains, decalcification of tissue, immunoperoxidase stains, microbiology cultures on tissue specimens, electron microscopy, and flow cytometry on certain tumors if indicated.

The anatomic pathology reflex test list below includes tests that Beaumont Laboratory performs if a specimen meets the reflex criteria listed. The anatomic pathology reflex test list includes tests that are often useful for the diagnosis and prognosis of the patient. Treating providers may decline the reflex testing by indicating that on the laboratory requisition or by contacting Beaumont Laboratory's Customer Service Department.

A. Fluorescence *in situ* hybridization (FISH) Panels

1. A FISH Panel for chronic lymphocytic leukemia/lymphoma (CLL), plasma cell myeloma, or myelodysplastic syndrome (MDS) will be performed on all newly diagnosed patients. All subsequent follow up studies will be reflexed to FISH when an abnormal clone was found by previous studies and is not evident by conventional analysis.

B. Mismatch Repair Analysis (IHC)

1. Performed on all newly resected colorectal carcinomas and endometrial carcinoma a screen for lynch syndrome. If Mismatch Repair Protein Immunohistochemistry Testing (MMR) for colorectal cancers are abnormal (loss of nuclear expression) for MLH1 and PMS2, the laboratory will proceed with reflex testing for MLH1 promoter methylation and BRAF testing.
2. Performed on any metastatic carcinoma (from any primary organ site) for possible immunotherapy.

C. Aggressive B-Cell Lymphoma Panel

1. When a biopsy is evaluated for aggressive B-cell lymphoma, the LSI MYC and BCL6 Dual Color Break Apart Rearrangement probes as well as the LSI IGH/BCL2 Dual Color Dual Fusion Translocation probes will be run initially when indicated by Pathologist.
2. If a MYC gene rearrangement is present we run the LSI IGH/MYC. If the LSI IGH/MYC is negative we can reflex to the IGK/MYC [for evaluation of the t(2:8)(q12;q24) and IGL/MYC [for evaluation of the 8;22)(q24;q11)] probes to determine the MYC gene translocation partner.

D. p16

1. Immunohistochemistry (IHC) testing performed on all newly diagnosed head and neck squamous carcinomas arising in the oropharynx (Base of tongue and tonsils)

2. IHC testing performed on squamous carcinoma presenting as a lymph node metastasis of unknown primary site

#### E. Plasma Cell Myeloma Reflex Testing

1. When the IgH and CCND1 Dual Color Dual Fusion Translocation probe to evaluate for the presence of the t(11;14)(q13;q32) shows additional copies of 14 the FGFR3/IgH, IgH/MAF and IgH/MAF-beta Dual Color Dual Fusion probes will be reflexed to evaluate for the presence for the t(4;14)(p16;q32), the (14;16)(q32;q23), and t(14;20)(q32;q12) respectively.

#### F. PDL-1 (Clone 22C3)

1. Performed on all newly diagnosed metastatic non-small cell carcinoma (NSCLC subtypes: adenocarcinoma, squamous cell carcinoma, adenosquamous carcinoma, large cell neuroendocrine carcinoma, NSCLC favor squamous cell/adenocarcinoma, or NSCLC-NOS).
2. Performed on all metastatic carcinoma in which the possibility of a NSCLC cannot be entirely excluded.

#### G. MGMT (O6-Methylguanine-DNA Methyltransferase (MGMT)) Methylation Status

1. Biomarker in pediatric and adult patients with glioblastoma, for diagnostic and therapy guiding purpose

#### H. Her 2 Status (IHC and FISH)

1. Performed on all newly diagnosed distant metastases of colorectal carcinoma.