FLT3 Mutation Detection

Indication: FLT3 (fms-like tyrosine kinase3) is a receptor tyrosine kinase that is normally expressed on many cell types including hematologic stem cells. Mutation of the FLT3 receptor, either by internal tandem duplication (ITD) of the juxtamembrane domain or by point mutation of the aspartic acid residue D835 in the activation loop of the kinase domain (TKD),causes constitutive activation of the FLT3 receptor. FLT3 ITD mutations, detected in approximately 25% of AML patients, are an independent indicator of poor prognosis in AML. Patients testing positive for FLT3 ITD may benefit from more aggressive treatment regimen and from novel therapeutic strategies that target and inhibit FLT3 tyrosine kinase activity.

Testing methods:
FLT3 ITD - Fluorescently-labeled primers are used to detect the ITD mutations. Capillary electrophoresis and gene scan analysis are used for fragment analysis. Analytic sensitivity: One mutant cell in the background of 100 normal cells.

TKD mutations - Amplicon based targeted next generation sequencing. Analytic sensitivity: Five mutant cells in the background of 100 normal cells.

Test Parameters:

FLT3 mutation detection can be ordered as an individual test or as part of DeNovo AML NGS panel.

Turnaround Time: 5-7 business days

Sample Requirements:

Blood - Specimen stability: Ambient - 72 hours; Refrigerated - 1 week

- 3 ml peripheral blood in lavender top tube (EDTA)

  Note: One lavender tube of blood is sufficient for multiple DNA based tests

Bone marrow aspirates (anticoagulated with either heparin or EDTA and, if possible, placed into tissue culture medium) **- Specimen stability: Refrigerated - 1 week** (ship cold)

CPT Codes: 81245 (81246)