



## MEMORANDUM #24

To: UNCHCS Attending Physicians, Housestaff, Nursing Coordinators, Department Heads and Supervisors

From:  Karen E. Weck, M.D., Director of Molecular Genetic Pathology Laboratory  
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Date: March 15, 2018

**SUBJECT: Changes to *FLT3* Testing in Acute Myeloid Leukemia**

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Effective March 19, 2018, the Molecular Genetics Laboratory offers twice weekly *FLT3* internal tandem duplication (ITD) and tyrosine kinase domain (TKD) mutation testing. In addition, allelic ratios will now be reported as part of *FLT3*-ITD testing.

### **Clinical Indications for *FLT3*-ITD/TKD Testing:**

*FLT3* mutation status helps refine prognosis and guide therapy in patients with acute myeloid leukemia (AML). The presence of either a *FLT3*-ITD or *FLT3*-TKD mutation identifies patients who are more likely to respond to the tyrosine kinase inhibitor midostaurin.<sup>1</sup>

In addition, the presence of a *FLT3*-ITD mutation may be associated with inferior prognosis in patients with AML, particularly when the allelic ratio (mutant allele:wild-type allele ratio) is elevated.<sup>2</sup> The threshold for a high allelic ratio has varied in publications, with cut-offs ranging from 0.5 to 0.8.

*FLT3*-ITD/TKD testing is included as a reflex order with all Myeloid Mutation Panel- AML orders. *FLT3*-ITD/TKD testing or stand alone *FLT3*-ITD testing may also be ordered separately.

### **Specimen Requirements:**

Bone marrow aspirate (1 mL, EDTA) and peripheral blood (3mL, EDTA) are preferred. However, Wright-stained or unstained bone marrow aspirate smears are also accepted. The assay is generally sensitive to variants above 5% allele fraction (10% clonal cells). Therefore, a minimum percentage of 10% neoplastic cells is required.

### **Reference:**

1. Stone RM, *et al.* *N Engl J Med.* 2017; 377(5):454-464. PMID: 28644114.
2. Schlenk RF, *et al.* *Blood.* 2014; 124(23):344-3449. PMID: 25270908.

If you have questions please call the UNC Molecular Genetics Lab at **(984) 974-1825** or contact Dr. Nathan D. Montgomery at (919) 445-6414. E-mail: [nathan.montgomery@unchealth.unc.edu](mailto:nathan.montgomery@unchealth.unc.edu)

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