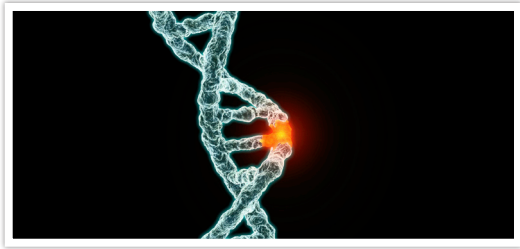




Oncology



FLT3

Mutation Analysis for Acute Leukemia

Test Code

FLT3

Specimen Requirements

5mL peripheral blood EDTA or ACD

3mL bone marrow EDTA or ACD

Storage and Handling

Ship at ambient temperature or cool.

Do not freeze.

Specimen Stability

18° -25° C for 72 hours or 4° C for up to 7 days.

CPT Codes

83891, 83898 x2, 83892

83909 x3, 83912

Turnaround Time

Reported within 3 days

Related Test Options:

Flow Cytometry

Cytogenetics

AML t(8;21) by FISH

CBFB inv (16) by FISH

PML RARA t(15;17) by FISH

PML RARA t(15;17) short & long form by PCR

For more information, contact your local representative or call MPLN client services at 800.932.2943.

Innovative...Comprehensive...Consultative

StrataFLEX™, Molecular Pathology Laboratory Network, Inc's innovative health management strategy, delivers:

- Rapid turnaround time
- Individual case management solving clinical problems
- Case review board ensuring quality assessment
- Streamlined ordering/reporting simplifying reflex testing
- One source for hematological oncology testing

PCR Based Assay Detects Mutation of the FLT3 Receptor Gene - ITD and D835 types

The FLT3 mutation assay is offered as a screening for all acute leukemia patients. FLT3 mutations are associated with a poor prognosis and overall survival in patients with AML, ALL and MDS who receive conventional chemotherapy.

- Management of patients with acute myeloid leukemia (AML) requires a rational approach to provide the most effective therapy and control treatment cost.
- Stratification of patients will identify those at risk for relapse and adverse outcomes from those needing less aggressive treatment, sparing them toxic side-effects.
- It is especially important that AML patients with normal karyotype be tested for FLT3 mutation status.

The FLT3 screening test simultaneously detects internal tandem duplication (ITD) and missense (D835) mutations in the FLT3 gene by allele specific migration patterns, with 1% analytical sensitivity.

Clinical Utility of FLT3 Mutation Analysis

Prognostic Factors for Therapeutic Outcomes in AML

Cytogenetics

Age >60 years

Prior myelodysplasia or secondary AML

FLT3 mutation

Residual disease by flow cytometry, FISH and PCR

Expression of multi-drug resistance



Clinical Utility of FLT3 Mutation Analysis

The FLT3 receptor tyrosine kinase is the most commonly mutated gene in AML, occurring in ~30% of adult and ~20% of pediatric AML patients at diagnosis. Although generally associated with normal cytogenetics, activating FLT3 mutations have also been identified in patients with the better-risk chromosomal abnormalities.

The most prevalent (23%) and clinically significant type of FLT3 mutation is an internal tandem duplication (ITD) of amino acids in the juxtamembrane domain of the receptor. Several large studies have demonstrated that FLT3 ITD mutations are strongly associated with higher leukocyte and blast counts, increased risk of relapse and short survival in patients under the age of 60. In contrast, missense mutation of an aspartic acid residue at position 835 (D835) in the FLT3 kinase domain occurs less frequently (7%), and has been linked to poor survival in some studies.

Due to rapid disease progression and resistance to conventional treatment associated with FLT3 mutations, routine testing is recommended in the initial diagnosis of patients under 60 years age without antecedent disease. Although unlikely to impact the choice of induction therapy, FLT3 mutation status stratifies patients into distinct groups for risk-adapted therapeutic strategies in the post-remission phase, such as allogeneic stem cell transplantation prior to relapse or clinical trials.

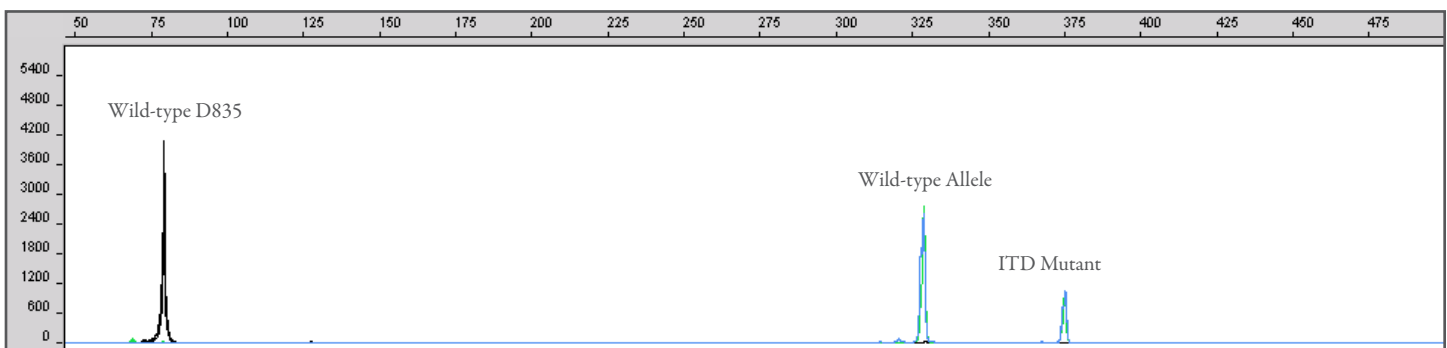
In the future, FLT3 screening may further identify candidates for targeted molecular therapy, based on the ongoing development and clinical evaluation of small molecule inhibitors of the FLT3 tyrosine kinase.

References

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Representative FLT3 ITD mutant pattern