BACKGROUND:
CEBPA mutations define the provisional category of “acute myeloid leukemia with mutated CEBPA” in the 2008 WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. Mutations in CEBPA are found in 15–18% of cases of cytogenetically normal AML and are associated with a favorable prognosis.

Germline mutations in CEBPA are a cause of nonsyndromic, familial AML. Inheritance appears to be autosomal dominant with high to complete penetrance. Pabst et al. detected germline CEBPA mutations in 2 of 18 (11%) CEBPA-positive AML patients.

REASONS FOR REFERRAL:
- Risk stratification in patients with cytogenetically normal AML.
- Evaluation for familial AML.

METHOD:
CEBPA mutations in leukemic cells are detected and characterized by a combination of PCR amplification, fragment analysis, and direct sequencing of the coding and junctional regions of the CEBPA gene. Germline mutations are detected by PCR amplification and direct sequencing of the CEBPA coding and junctional regions.

LIMITATIONS:
The lower limit of detection of the assay is approximately 20%. The assay is expected to detect >99% of germline variants within the CEBPA coding and junctional regions, and >99% of somatic variants within the coding and junctional regions if the mutation is present at a level of 20% or greater.

REFERENCE INTERVAL:
No mutation detected.
Sequence variations are reported using standard nomenclature.

SPECIMEN REQUIREMENTS:
3-5 ml EDTA (lavender top) whole blood or 2-5 ml EDTA bone marrow or DNA, high quality, ≥ 500ng at 25ng/ul.

SHIPPING REQUIREMENTS:
Place the room temperature specimen and requisition in plastic bags, seal and insert in a Styrofoam container. Seal the Styrofoam container, place in a sturdy cardboard box and tape securely. Ship the package in compliance with your overnight carrier guidelines. Address package to:
Client Services/Molecular Oncology Laboratory
BloodCenter of Wisconsin
638 N. 18th Street
Milwaukee, WI 53233
800-245-3117, ext. 6250
TURNAROUND TIME: 5-10 days

CPT CODES: 81218

PANEL ORDERING:

AML post-FLT3 Comprehensive Mutation Panel  
- NPM1 Mutation Analysis  CPT Codes: 81310  
- CEBPA Mutation Analysis  CPT Codes: 81218  
- DNMT3A Exon 23 Sequence Analysis  CPT Codes: 81403  
- IDH1 Exon 4 Mutation Detection  CPT Codes: 81403  
- IDH2 Exon 4 Mutation Detection  CPT Codes: 81403  

AML Mutation Panel  
- FLT3 Mutation Analysis  CPT Codes: 81245, 81246  
- NPM1 Mutation Analysis  CPT Codes: 81310  
- CEBPA Mutation Analysis  CPT Codes: 81218  

Turnaround Time: 7-10 days

REFLEX ORDERING:

AML Mutation Panel - Reflex  
- FLT3 Mutation Analysis  CPT Codes: 81245, 81246  Turnaround Time: 7-10 days  
- NPM1 Mutation Analysis (if indicated)  CPT Codes: 81310  Turnaround Time: add 3-6 days  
- CEBPA Mutation Analysis (if indicated)  CPT Codes: 81218  Turnaround Time: add 5-10 days  

NPM1 Mutation Analysis with Reflex to CEBPA  
- NPM1 Mutation Analysis  CPT Codes: 81310  Turnaround Time: 3-6 days  
- CEBPA Mutation Analysis (if indicated)  CPT Codes: 81218  Turnaround Time: add 5-10 days

CITED REFERENCES:


ADDITIONAL REFERENCES:

• Schlenk RF, Dohner K, Krauter J, et al. Mutations and Treatment Outcome in Cytogenetically Normal Acute Myeloid Leukemia.