Department of Medical and Molecular Genetics  
Division of Diagnostic Genomics  
Laboratory Test Directory

Chromosome Analysis – Bone Marrow

CPT Code(s): 88237, 88261, 88280, 88285

Service Code (IU Health): 53101259, 53100533, 53100723, 53100756

Ordering Recommendation: Detection of acquired genetic chromosomal anomalies associated with a neoplastic process. Assists in the diagnosis, classification, prognosis and follow-up of certain malignant hematopoietic neoplasms. Continued monitoring of chromosomes through treatment and remission for assessment of disease status, observation of clonal progression, and direction of therapy. Companion fluorescence in-situ hybridization (FISH) testing with appropriate probe sets may further delineate chromosome abnormalities and assess minimal residual disease.

Synonyms: Karyotype, G-bands, Hematopoietic neoplasms

Methodology: Tissue culture, microscopic analysis of G-banded chromosomes. If ordered, fluorescence in-situ hybridization (FISH) of interphase and/or metaphase cells.

Performed: Monday through Saturday

Reported: 5-7 days (Prelim), 7-10 days (Final)

Specimen Requirements

Patient Preparation: None

Collect: Non-diluted bone marrow aspirate in sodium heparin (green top) vacutainer, heparinized syringe or flask with sterile media (provided upon request).

Specimen Volume: Preferred: 2 mL for normal WBC (decreased WBC requires more, elevated WBC requires less); 0.5 mL (minimum).

Storage/Transport: Room temperature. Do not freeze or expose to extreme temperatures.

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Remarks: Bone marrow is the recommended specimen type for hematological disorder studies, however, unstimulated peripheral blood and bone core specimens may be substituted if bone marrow cannot be obtained. See also Chromosome Analysis-Leukemic Blood.

Stability: Ambient: 48 hours; Frozen: Unacceptable

Interpretive Data

Characteristics:
Negative: A 46,XX or 46,XY karyotype indicating no apparent chromosomal abnormality is considered negative.
Positive: Identification of any numerical or structural chromosomal abnormality. A report detailing interpretation of results will be provided.
Microscopic or computer analysis of available metaphases at 400-500 bands is completed. Additional staining techniques may be utilized. Results of companion FISH testing (if requested) are reported along with the chromosome analysis.

Limitations: This does not eliminate the possibility of low frequency mosaicism or small structural abnormalities. Living cells are required for chromosome analysis. As such, sample quality can affect the turnaround time.