Molecular Hematopathology

Test Menu:

**Test/Procedure Name:**
- **BCR-ABL1** (p210) Detection by Real Time PCR using International Standardization (IS)
- Real-Time RT-PCR Detection of **BCR-ABL1** (p190) Translocation, qualitative

**Test Includes:** Highly sensitive and accurate detection of **BCR-ABL1** translocations associated with chronic myeloid leukemia (CML) and B-acute lymphoblastic leukemia (B-ALL); monitoring residual leukemia post-therapy.

**Turnaround Time:** 4 business days

**Request Form:** Orderable in CoPath, Epic, Allscripts

**Special Instructions:** None

**Logistics**

**Send Specimens to:**
- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

**Specimen Testing:**
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

**Availability:** Monday – Friday, 9 AM – 5 PM, except holidays

**Acceptable Specimens:**
- A minimum of 2 ml of PB or BM aspirate collected in 2 EDTA (lavender top) tubes
- >20 million cells of mononuclear cells isolated
- 1µg of total RNA upon RNA extraction
- Transport ASAP at room temperature for up to 24 hours; store at 2°C – 6°C for up to 48 hours (50% of RNA is degraded in 48 hours)

**Rejection Causes:** Insufficient specimen, clotted peripheral blood or bone marrow specimens, specimens collected in heparin tubes
**Test/Procedure Name:**
- RT-PCR Detection of PML-RARA Translocation, qualitative

**Test Includes:** Detection of the t(15;17) fusion PML-RARA with suspected acute promyelocytic leukemia (APL); monitoring residual leukemia after therapy.

**Turnaround Time:** 4 business days (for residual disease); 1 business day (for diagnostic)

**Request Form:** Orderable in CoPath, Epic, Allscripts

**Special Instructions:** None

**Logistics**
**Send Specimens to:**
- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

**Specimen Testing:**
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

**Availability:** Monday – Friday, 9 AM – 5 PM, except holidays

**Acceptable Specimens:**
- A minimum of 2 ml of PB or BM aspirate collected in 2 EDTA (lavender top) tubes
- >20 million cells of mononuclear cells isolated
- 1µg of total RNA upon RNA extraction
- Transport at room temperature ASAP for up to 24 hours; store at 2°C – 6°C for up to 48 hours (50% of RNA is degraded in 48 hours)

**Rejection Causes:** Insufficient specimen, clotted peripheral blood or bone marrow specimens, specimens collected in heparin tubes

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**Test/Procedure Name:**
- Quantification of NPM1 Type A Mutation by Real-Time PCR

**Test Includes:** Quantitative, real-time PCR based assay for the detection of NPM1 Type A mutation in acute myeloid leukemia (AML) and other myeloid neoplasms

**Turnaround Time:** 4 business days

**Request Form:** Orderable in Epic

**Special Instructions:** For patients with previously known NPM1 type A mutation

**Logistics**
**Send Specimens to:**
- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

**Specimen Testing:**
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

**Availability:** Monday – Friday, 9 AM – 5 PM, except holidays
Acceptable Specimens:
- The patient should be known to previously have had a NPM1 Type A mutation (NPM1, NM_002520, Exon 11, c.860_863dupTcTG, p.W288Cfs*)
- A minimum of 2 ml of PB or BM aspirate collected in 2 EDTA (lavender top) tubes
- >5 million cells of mononuclear cells isolated (fresh or frozen)
- 1µg of total RNA upon RNA extraction
- Transport ASAP at room temperature for up to 24 hours and store at 2°C – 6°C for up to 48 hours (50% of RNA is degraded in 48 hours)

Rejection Causes: Insufficient specimen, clotted peripheral blood or bone marrow specimens, specimens collected in heparin tubes

Test/Procedure Name: JAK2 Genotyping by ARMS-PCR

Test Includes: Qualitative, sensitive ARMS-PCR assay used to detect the JAK2 V617F mutation

Turnaround Time: 4 business days

Request Form: Orderable in CoPath, Epic

Special Instructions: None

Logistics
Send Specimens to:
- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

Specimen Testing:
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

Availability: Monday – Friday, 9 AM – 5 PM, except holidays

Acceptable Specimens:
- A minimum of 2 ml of PB or BM aspirate collected in EDTA (lavender top) tubes
- >20 million cells of mononuclear cells isolated (fresh or frozen)
- At least 1µg DNA
- Transport at room temperature for up to 24 hours and store at 2°C – 6°C for up to 48 hours (longer storage compromises integrity of nucleic acids, which may lead to amplification failure)

Rejection Causes: Insufficient specimen

Test/Procedure Name: Rapid PCR Detection of FLT3 ITD and TKD Mutations

Test Includes: Rapid and sensitive detection of FLT3 ITD and TKD mutations in acute myeloid leukemia (AML) and other myeloid malignancies

Turnaround Time: 2 business days
**Request Form**: Orderable in CoPath, Epic

**Special Instructions**: None

**Logistics**

**Send Specimens to**:
- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

**Specimen Testing**:
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

**Availability**: Monday – Friday, 9 AM – 5 PM, except holidays

**Acceptable Specimens**:
- A minimum of 2 ml of PB or BM aspirate collected in EDTA (lavender top) tubes
- >20 million cells of mononuclear cells isolated (fresh or frozen)
- At least 1ug DNA
- Transport at room temperature for up to 24 hours and store at 2°C – 6°C for up to 48 hours (longer storage compromises integrity of nucleic acids, which may lead to amplification failure)

**Rejection Causes**: Insufficient specimens

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**Test/Procedure Name**: *CSF3R* Exon 14 and Exon 17 Mutation Testing

**Test Includes**: Detection of *CSF3R* mutations in myeloid malignancies

**Turnaround Time**: 4 business days

**Request Form**: Orderable in CoPath, Epic

**Special Instructions**: None

**Logistics**

**Send Specimens to**:
- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

**Specimen Testing**:
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

**Availability**: Monday – Friday, 9 AM – 5 PM, except holidays

**Acceptable Specimens**:
- A minimum of 2 ml of PB and BM aspirate collected in EDTA (lavender top) tubes
- >20 million cells of mononuclear cells isolated (fresh or frozen)
- At least 1ug DNA
- Transport at room temperature for up to 24 hours and store at 2°C – 6°C for up to 48 hours (longer storage compromises integrity of nucleic acids, which may lead to amplification failure)

**Rejection Causes**: Insufficient specimen
**Test/Procedure Name:**
- PCR Detection of *IGH* Gene Rearrangement using BIOMED-2 Assay (FR3)
- PCR Detection of *IGK* Gene Rearrangement using BIOMED-2 Assay
- PCR Detection of *TCRG* Gene Rearrangement using BIOMED-2 Assay
- PCR Detection of *BCL2-IGH* Translocation using BIOMED-2 Assay

**Tests Include:** Genomic DNA-based detection of gene rearrangements and reciprocal chromosomal translocations associated with lymphoid neoplasms

**Turnaround Time:** 4 business days

**Request Form:** Orderable in CoPath, Epic, Allscripts

**Special Instructions:** None

**Logistics**

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- Location: Immunopathology, ST-715
- Phone Number: 212-746-2442

**Specimen Testing:**
- Location: Molecular Hematopathology, K-502
- Phone Number: 212-746-6485

**Availability:** Monday – Friday, 9 AM – 5 PM, except holidays

**Acceptable Specimens:**
- Formalin-fixed, paraffin-embedded tissues
  - Section area equivalent to 0.5 cm x 0.5 cm
  - Collect sections in a 1.5 ml microcentrifuge tube, or
  - A minimum of 1 slide with 0.5 cm x 0.5cm section area (unstained or H&E stained, preferably without coverslip)
    - Transport and store at room temperature
- Frozen sections
  - Transport on dry ice and store at -70°C
- Fresh or frozen tissues
  - Fresh: tissue size equivalent to 0.5 cm³ kept in cold PBS at 2°C to 6°C for up to 24 hours, transport on wet ice
  - Snap-frozen: at least 250 mg of tissue, transport in dry ice and store at -70°C
  - Mince tissue in ethanol can be transported and stored at room temperature
- Cells and other fluids
  - A minimum of 50,000 – 100,00 cells are required
  - Can be fresh or frozen (preserved as a pellet or in DMSO-containing frozen media)
  - Fresh: transport on wet ice and store at 2°C to 6°C in media
  - Frozen: transport on dry ice and store at -70°C
- Whole blood, bone marrow aspirates (fresh, frozen in cryopreservation media or DMSO, or frozen as dry pellets), bone marrow clot section and smear
  - A minimum of 2 ml of PB or BM aspirate collected in EDTA (lavender top) tubes
  - Transport at room temperature for up to 24 hours and store at 2°C – 6°C for up to 48 hours (longer storage compromises integrity of nucleic acids, which may lead to amplification failure)

**Rejection Causes:** Insufficient specimen
Test/Procedure Name:
  • PCR Detection of EBV DNA
  • PCR Detection of KSHV DNA
Tests Include: Genomic DNA-based detection of EBV and KSHV viruses

Turnaround Time: 4 business days

Request Form: Orderable in CoPath, Epic, Allscripts
Special Instructions: None

Logistics
Send Specimens to:
  • Location: Immunopathology, ST-715
  • Phone Number: 212-746-2442

Specimen Testing:
  • Location: Molecular Hematopathology, K-502
  • Phone Number: 212-746-6485

Availability: Monday – Friday, 9 AM – 5 PM, except holidays

Acceptable Specimens:
  • Formalin-fixed, paraffin-embedded tissues
    o Section area equivalent to 0.5 cm x 0.5 cm
    o Collect sections in a 1.5 ml microcentrifuge tube, or
    o A minimum of 1 slide with 0.5 cm x 0.5cm section area (unstained or H&E stained, preferably without coverslip)
    o Transport and store at room temperature
  • Frozen sections
    o Transport on dry ice and store at -70°C
  • Fresh or frozen tissues
    o Fresh: tissue size equivalent to 0.5 cm³ kept in cold PBS at 2°C to 6°C for up to 24 hours, transport on wet ice
    o Snap-frozen: at least 250 mg of tissue, transport in dry ice and store at -70°C
    o Mince tissue in ethanol can be transported and stored at room temperature
  • Cells and other fluids
    o A minimum of 50,000 – 100,00 cells are required
    o Can be fresh or frozen (preserved as a pellet or in DMSO-containing frozen media)
    o Fresh: transport on wet ice and store at 2°C to 6°C in media
    o Frozen: transport on dry ice and store at -70°C
  • Whole blood, bone marrow aspirates (fresh, frozen in cryopreservation media or DMSO, or frozen as dry pellets), bone marrow clot section and smear
    o A minimum of 2 ml of PB or BM aspirate collected in EDTA (lavender top) tubes
    o Transport at room temperature for up to 24 hours and store at 2°C – 6°C for up to 48 hours (longer storage compromises integrity of nucleic acids, which may lead to amplification failure)

Rejection Causes: Insufficient specimen