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**Reporting Title:** Leukemia/Lymphoma; Tech Only Flow**Performing Location:** Rochester**Ordering Guidance:**

This test is available to clients through MayoAccess or MayoLink.

For B-cell acute lymphoblastic leukemia minimal residual disease testing in either blood or bone marrow, order BALLM / B-Cell Lymphoblastic Leukemia Monitoring, Minimal Residual Disease Detection, Flow Cytometry, Varies.

For bone marrow specimens being evaluated for possible involvement by a myelodysplastic syndrome (MDS) or a myelodysplastic/myeloproliferative neoplasm (MDS/MPN) including chronic myelomonocytic leukemia (CMML), order MYEFL / Myelodysplastic Syndrome by Flow Cytometry, Bone Marrow.

Bronchoalveolar lavage specimens submitted for evaluation for leukemia or lymphoma are appropriate to send for this test.

This test is not appropriate for and cannot support diagnosis of sarcoidosis, hypersensitivity pneumonitis, interstitial lung diseases, or differentiating between pulmonary tuberculosis and sarcoidosis (requests for CD4/CD8 ratios); specimens sent for these purposes will be rejected.

This test is not intended for product of conception (POC) specimens. For POC specimens see CMAPC / Chromosomal Microarray, Autopsy, Products of Conception, or Stillbirth.

**Additional Testing Requirements:**

For bone marrow testing, if cytogenetic tests are desired along with this test request, an additional specimen should be submitted. It is important that the specimen be obtained, processed, and transported according to instructions for the other test.

**Shipping Instructions:**

Specimen must arrive within 4 days of collection.

**Necessary Information:**

The following information is required:

1. Pertinent clinical history including reason for testing or clinical indication/morphologic suspicion
2. Specimen source
3. For tissue specimens:
  - Tissue type
  - Location
  - Pathology/diagnosis report, including client surgical pathology case number
4. For spinal fluid specimens: spinal fluid cell and differential counts are required

**Specimen Requirements:**

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Submit only 1 of the following specimens:

Specimen Type: Whole blood

Container/Tube:

Preferred: Yellow top (ACD solution A or B)

Acceptable: Lavender top (EDTA) or green top (sodium heparin)

Specimen Volume: 10 mL

Slides: If possible include 5 to 10 unstained blood smears, labeled with two unique identifiers

Collection Instructions:

1. Send whole blood specimen in original tube. Do not aliquot.

2. Label specimen as blood.

Specimen Stability Information: Ambient < or =4 days/Refrigerated < or =4 days

Specimen Type: Bone marrow

Container/Tube:

Preferred: Yellow top (ACD solution A or B)

Acceptable: Lavender top (EDTA) or green top (sodium heparin)

Specimen Volume: 1 to 5 mL

Slides: If possible include 5 to 10 unstained bone marrow aspirate smears, which must be labeled with two unique identifiers

Collection Instructions:

1. Submission of bilateral specimens is not required.

2. Send bone marrow specimen in original tube. Do not aliquot.

3. Label specimen as bone marrow.

Specimen Stability Information: Ambient < or =4 days/Refrigerated < or = 4 days

Specimen Type: Fluid

Sources: Serous effusions, pleural, pericardial, or abdominal (peritoneal fluid)

Container/Tube: Body fluid container

Specimen Volume: 20 mL

Collection Instructions:

1. If possible, fluids other than spinal fluid should be anticoagulated with heparin (1 U/mL of fluid).

2. Label specimen with fluid type.

Additional Information: The volume of fluid necessary to phenotype the lymphocytes or blasts in serous effusions depends upon the cell count in the specimen. Usually, 20 mL of pleural or peritoneal fluid is sufficient. Smaller volumes can be used if there is a high cell count.

Specimen Stability Information: Refrigerated < or =4 days/Ambient < or =4 days

Specimen Type: Spinal fluid

Container/Tube: Sterile vial

Specimen Volume: 1 to 1.5 mL

Collection Instructions:

1. An original cytospin preparation (preferably unstained) should be included with the spinal fluid specimen so correlative morphologic evaluation can occur.

2. Label specimen as spinal fluid.

Specimen Stability Information: Refrigerated /Ambient < or =4 days

Additional Information: The volume of fluid necessary to phenotype the lymphocytes or blasts in spinal fluid depends upon the cell count in the specimen. A cell count should be determined and submitted with the specimen. Usually, 1 to 1.5 mL of spinal fluid is sufficient. Smaller volumes can be used if there is a high cell count. If the cell count is less than 10 cells/mcL, a larger volume of spinal fluid may be required. When cell counts drop below 5 cells/mcL, the immunophenotypic analysis may not be successful.

Specimen Type: Tissue

Supplies: Hank's Solution (T132)

Container/Tube: Sterile container with 15 mL of tissue culture medium (eg, Hank's balanced salt solution, RPMI, or equivalent)

Specimen Volume: 5 mm(3) or larger biopsy

Collection Instructions:

1. Send intact specimen (do not mince).
2. Specimen cannot be fixed.

Specimen Stability Information: Ambient < or =4 days/Refrigerated < or =4 days

**Specimen Minimum Volume:**

Blood: 3 mL

Bone marrow: 0.5 mL

Spinal fluid: 1 mL

Fluid from serous effusions: 5 mL

Tissue: 1 mm(3) or larger biopsy

**Forms:**

1. Hematopathology Patient Information (T676)

2. If not ordering electronically, complete, print, and send a Hematopathology/Cytogenetics Test Request (T726) with the specimen.

Specimen Type	Temperature	Time	Special Container
Varies	Varies		

**Result Codes:**

Result ID	Reporting Name	Type	Unit	LOINC®
CK071	Flow Cytometry	Alphanumeric		69052-9
CK072	Final Diagnosis	Alphanumeric		22637-3
CK073	Microscopic Description	Alphanumeric		22635-7
CK074	Special Studies	Alphanumeric		30954-2

LOINC and CPT codes are provided by the performing laboratory.

**Supplemental Report:**

Supplemental

**CPT Code Information:**

88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker

88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each)

Additional CPTs may be added if consultative help is needed with the case, or algorithm dictates Mayo consultant involvement.

88187-Flow cytometry interpretation, 2 to 8 markers (if appropriate)

88188-Flow cytometry interpretation, 9 to 15 markers (if appropriate)

88189-Flow cytometry interpretation, 16 or more markers (if appropriate)

**Reflex Tests:**

Test ID	Reporting Name	CPT Units	CPT Code	Always Performed	Orderable Separately
FCINT	Flow Cytometry Interp, 2-8 Markers			No	No (Bill Only)
FCIMS	Flow Cytometry Interp, 9-15 Markers			No	No (Bill Only)
FCINS	Flow Cytometry Interp, 16 or greater			No	No (Bill Only)
FIRST	Flow Cytometry, Cell Surface, First			Yes	No (Bill Only)
ADD1	Flow Cytometry, Cell Surface, Addl			Yes	No (Bill Only)

**Reference Values:**

Not applicable