MAYO CLINIC LABORATORIES

Test Definition: BFCC

Cell Count and Differential, Body Fluid

Overview

Useful For

Aiding in the diagnosis of joint disease, systemic disease, inflammation, malignancy, infection, and trauma

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
LCMS	Leukemia/Lymphoma, Phenotype	Yes	No
CYTNG	Cytology Non-GYN	Yes	No

Testing Algorithm

When abnormal cytologic features are present, a miscellaneous cytology test may be added and performed at an additional charge. Additionally, leukemia/lymphoma phenotyping by flow cytometry may also be added to aid in the review. Fee codes for these tests vary depending on review process.

Method Name

Automated or Manual Cell Count/Cytocentrifugation followed by Manual Differential and Morphology Review

NY State Available

No

Specimen

Specimen Type

Body Fluid

Shipping Instructions

Specimen must arrive within 24 hours of collection.

Necessary Information

Indicate specimen source

Specimen Required

For Local Accounts Only

Sources: Synovial, pleural, peritoneal, pericardial fluid

Container/Tube:

Preferred: Body fluid container

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

Specimen Volume: 1 mL

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	OK
Clotted	Reject
Diluted specimens	Reject
Specimens from sources other than those listed	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Body Fluid	Ambient (preferred)	24 hours	
	Refrigerated	24 hours	

Clinical & Interpretive

Clinical Information

Body fluids, other than the commonly analyzed urine and blood, include synovial, pleural, peritoneal, and pericardial fluids. These fluids may be present in increased volumes and may contain increased numbers of normal and abnormal cells in a variety of disease states.

Reference Values

TOTAL NUCLEATED CELLS
Synovial fluid: <150/mcL
Peritoneal/pleural/pericardial fluid: <500/mcL

NEUTROPHILS
Synovial Fluid: <25%
Peritoneal/pleural/pericardial fluid: <25%

LYMPHOCYTES
Synovial fluid: <75%

MONOCYTES/MACROPHAGES
Synovial fluid: <70%

Interpretation

Trauma and hemorrhage may result in increased red blood cells (RBC) and white blood cells (WBC); RBC predominate.
WBC are increased in inflammatory and infectious processes:
-Neutrophils predominate in bacterial infections
-Lymphocytes predominate in viral infections
-Macrophages may be increased in inflammatory and infectious processes
-Eosinophils may be increased in parasitic or fungal infections

Cautions

No significant cautionary statements

Clinical Reference

1. Glassy EF. Color Atlas of Body Fluids. 2nd ed. College of American Pathologists; 2025
2. Kjeldsberg CR, Hussong, JW: Body Fluid Analysis. ASCP Press; 2015
3. Dyken PR, Shirley S, Trefz J, El Gammal T. Comparison of cyto-centrifugation and sedimentation techniques for CSF cyto-morphology. Acta Cytol. 1980;24(2):167-170
4. Sheth KV: Cerebrospinal and body fluid cell morphology through a hematologist's microscope, workshop presented at the ASCP-CAP Joint Spring Meeting, San Diego, March 1981
5. Schumacher AH, Reginato A. Atlas of Synovial Fluid Analysis and Crystal Identification. Lea and Febiger; 1991

Performance

Method Description

The cells are applied to a glass slide by cytocentrifugation. Wright-Giemsa stained slides are examined by light microscopy and a differential is performed. Total nucleated cell count is determined using an automated hematology analyzer or a microscopic counting chamber.(Instruction manual: Automated Hematology Analyzer XN series [XN-1000]. Code No. CJ410539. North American Edition. Sysmex; 11/2015)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

1 to 2 days

Specimen Retention Time

1 week

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

89051-Cell count with differential

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
BFCC	Cell Count and Differential, BF	34557-9

Result ID	Test Result Name	Result LOINC® Value
SPEBF	Fluid Type	14725-6
APPF	Gross Appearance	9335-1
TNCF	Total Nucleated Cells	55793-4
RBCF	Erythrocytes	26455-6
CMTF	Comment	48767-8
NEBFL	Neutrophils	26513-2
LYBFL	Lymphocytes	11031-2
MMBFL	Monocytes/Macrophages	30437-8
EOBFL	Eosinophils	26452-3
BABFL	Basophils	28543-7
OTHBF	Other Cells	In Process
CMTBF	Diff Comments	59466-3
OTHMR	Other Cells Are:	In Process
CMTBR	Comment	48767-8
REVMR	Reviewed by:	18771-6