

Overview

Useful For

Aiding in the diagnosis of joint disease, systemic disease, inflammation, malignancy, infection, and trauma, using body fluid specimens

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
CCBF_	Cell Count and Differential, BF	No	Yes
CRSF	Morphologic Review, BF	No	Yes

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, the laboratory may reflex to a miscellaneous cytology test. Fee codes for that test vary depending on the review process.

Method Name

CCBF, CCBF\_, CRSF: Automated or Manual Cell Count/Cytocentrifugation followed by Manual Differential and Morphology Review  
CYTNG: Light Microscopy

NY State Available

No

Specimen

Specimen Type

Body Fluid

Ordering Guidance

For spinal fluid specimens, order CCCF / Cell Count and Differential, Spinal Fluid.

For bronchoalveolar lavage specimens, order BALCC / Cell Count and Differential, Bronchoalveolar Lavage.

Shipping Instructions

Specimens must arrive within 24 hours of collection.

Necessary Information

Indicate specimen source

Specimen Required

For Local Accounts Only

Sources: Synovial, pleural, peritoneal, pericardial

Container/Tube:

Preferred: Body fluid container

Acceptable: Tube containing EDTA or heparin

Specimen Volume: 1 mL

Specimen Minimum Volume

0.7 mL

Reject Due To

Gross hemolysis	OK
Clotted Nasal fluid Sputum Amniotic fluid	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: < or =70%

**Interpretation**

Trauma and hemorrhage may result in increased red and white blood cells; red blood cells predominate. White blood cells 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. Kjeldsberg C, Knight J. Body Fluids: Laboratory examination of cerebrospinal, seminal, serous and synovial fluids. American Society of Clinical Pathologists; 1993
2. Dyken PR, Shirley S, Trefz J, El Gammel T. Comparison of cyto-centrifugation and sedimentation techniques for CSF cyto-morphology. Acta Cytol. 1980;24(2)167-170
3. Sheth KV. Cerebrospinal and body fluid cell morphology through a hematologist's microscope, workshop presented at the ASCP-CAP Joint Spring Meeting; 03/1981
4. Schumacher AH, Reginato A. Atlas of Synovial Fluid Analysis and Crystal Identification. Lea and Febiger; 1991
5. Hussong JW, Kjeldsberg CR. Kjeldsberg's Body Fluid Analysis. ASCP Press; 2015

**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-9000/XN-9100] [North American Edition], Code No. CP266599. Sysmex; Revision, 03/2017)

**PDF Report**

No

Day(s) Performed

Monday through Sunday

Report Available

Same day/1 to 2 days

Specimen Retention Time

1 month

Performing Laboratory Location

Mayo Clinic Health System in Mankato

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 cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

- 89051-Cell count with differential count
- 88184-if applicable
- 88185-if applicable
- 88187-if applicable
- 88188-if applicable
- 88189-if applicable
- 88104-if applicable
- 88108-if applicable
- 88112-if applicable
- 88161-if applicable
- 88162-if applicable
- 88305-if applicable

LOINC® Information

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

Result ID	Test Result Name	Result LOINC® Value

FLD2	Fluid Type	14725-6
APP2	Gross Appearance	9335-1
TOT12	Total Nucleated Cells	74689-1
RBC1	Erythrocytes	26455-6
CMT37	Comment	48767-8
NE_BF	Neutrophils	26513-2
LY_BF	Lymphocytes	11031-2
MM_BF	Monocytes/Macrophages	30437-8
EO_BF	Eosinophils	26452-3
BA_BF	Basophils	28543-7
OTH1	Other Cells	In Process
CMT3	Diff Comments	59466-3
DCCBF	Download CCBF	No LOINC Needed
OTH11	Other Cells Are:	In Process
CMT81	Comment	48767-8
REV81	Reviewed by:	18771-6