

# Flow Cytometry Laboratory

## 10-color flow cytometry: A comprehensive approach to cell characterization and diagnosis in hematolymphoid diseases

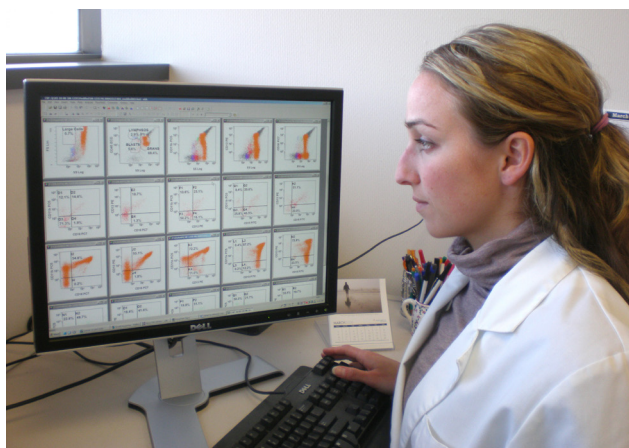
The Beaumont Flow Cytometry Laboratory offers state-of-the-art, 10-color flow cytometry in the comprehensive evaluation for hematologic neoplasia, immunodeficiency states and other non-neoplastic processes. Our lab is staffed by five board-certified hematopathologists, a supervisor with more than 30 years of flow cytometry experience and seven medical technologists who are all MT (ASCP) certified.

### What can our laboratory offer you?

- comprehensive interpretations by board-certified pathologists
- hematopathologists available to you for formal and informal consultations and questions
- full-service flow cytometry lab including:
  - multiparametric immunophenotyping for hematopoietic neoplasms (lymphoma, leukemia, myeloma, myelodysplasia)
  - ZAP-70
  - immunodeficiency states (lymphocyte subset quantitation and CD4 absolute count)
  - high-sensitivity PNH assay
  - HLA B-27 testing
  - fetal RBC (hemoglobin F) assay to evaluate feto-maternal hemorrhage
  - flow crossmatch
- state-of-the-art, 10-color flow cytometers
- College of American Pathologists, CLIA and ASHI accreditations
- laboratory open Monday – Saturday
- courier service available

### Test Menu

- hematolymphoid neoplasm
- CD4 lymphocytes subset levels
- lymphocyte subset quantitation
- paroxysmal nocturnal hemoglobinuria
- HLA-B27 screening assay
- fetal cell detection (hemoglobin F)



Our medical technologists use analysis software to evaluate for myelodysplasia and other conditions.

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**Flow cytometry for hematolymphoid neoplasm**

This test provides immunophenotypic evaluation of hematolymphoid malignancies, which include leukemias, lymphomas, plasma cell myeloma and myelodysplasia. The lab uses multiparametric flow cytometry to provide semi-quantitative and qualitative analysis of blood, bone marrow, fresh tissue (e.g. lymph nodes) and body fluids including CSF. The use of 10-color flow cytometry allows for meaningful assessment on very low specimen quantities.

**CD4 lymphocytes subset levels**

Measurement of CD4+ helper T-cell levels is important in the evaluation and monitoring of HIV+ individuals. The lab uses multiparametric flow cytometric analysis to report both the CD4 percentage and absolute counts.

**Lymphocyte subset quantitation (immune status monitoring)**

For evaluation of suspected immunodeficiency syndromes, viral infections and some autoimmune diseases, the flow cytometry laboratory utilizes multiparametric flow cytometry for the enumeration of both the percentage and absolute counts for lymphocytes subsets. This test includes evaluation for CD4 helper T-cells, CD8+ suppressor T-cells, B-cells and natural killer cells.

**Paroxysmal nocturnal hemoglobinuria screen**

PNH is a disease that evolves from a hematopoietic stem cell defect in which a somatic mutation of an X-linked gene (PIG-A) results in a partial or absolute deficiency of GPI-linked proteins. Clinical manifestations include chronic intravascular hemolysis, bone marrow failure and life-threatening thrombosis. Multiparameter flow cytometry is the gold standard for diagnosis of this disease and is used to quantitate the PNH clone in red blood cells, monocytes and neutrophils to a sensitivity of 0.01% (high sensitivity analysis).

**HLA-B27 screening assay**

Rapid and sensitive screening for the presence of HLA-B27 may be valuable in the evaluation of patients with arthritic symptoms in the evaluation for ankylosing spondylitis. Results are reported as negative or positive.

**Fetal cell detection (hemoglobin F)**

Flow cytometry is considered the gold standard for the sensitive detection of fetal red blood cells in maternal blood samples, used for the assessment of feto-maternal hemorrhage. Results are reported as the percentage of total red blood cells.

