

Multiple Myeloma Minimal Residual Disease Detection by Flow Cytometry

Multiple myeloma (MM) is a rare cancer of plasma cells (white blood cells) that begins in the bone marrow. Abnormal plasma cells begin to multiply out of control until these cells constitute the majority of the cells in the bone marrow and form tumors within bone leading to pain and an increased risk of fracture. Patients undergoing treatment for MM will be tested for evidence of remaining malignant cells to help determine the effectiveness of therapy and to aid in prognosis.

Test Interpretation

Clinical Sensitivity

Limit of detection: 0.001%

- Sensitivity is dependent on number of events and may be lower in some samples, particularly hypocellular or hemodilute samples

Results

Aberrant or monoclonal plasma cells: detected or not detected.

- Aberrant plasma cells will be reported as percentage of total events
- Marker expression on aberrant plasma cells will be reported at positive or negative

Limitations

- Poor cell viability may adversely affect antigens and impede the ability to properly identify neoplastic cells
- Number of events collected may affect sensitivity
- Does not assess for aberrant myeloid cells/blasts or T-cell or B-cell lymphoid disorders, including monoclonal B-cells
- Flow results should not be used alone to diagnose malignancy
 - Should be interpreted in conjunction with morphology, clinical information, and other necessary ancillary tests for a definitive diagnosis

Related Information

[Plasma Cell Dyscrasias](#)
[Plasma Cell Dyscrasias Testing Algorithm](#)

ARUP Laboratories is a nonprofit enterprise of the University of Utah and its Department of Pathology, 500 Chipeta Way, Salt Lake City, UT 84108
(800) 522-2787 | (801) 583-2787 | aruplab.com | arupconsult.com
Content Review November 2019 | Last Update May 2020

Tests to Consider

[Multiple Myeloma Minimum Residual Disease by Flow Cytometry 3002069](#)

Method: Flow Cytometry

- Aids in monitoring therapy in individuals with an established diagnosis of MM or plasma cell dyscrasia (PCD)
- Use for detection of minimal residual disease (MRD) in patients after treatment for MM/PCD
- Not appropriate for initial diagnosis of MM

[Leukemia/Lymphoma Phenotyping Evaluation by Flow Cytometry 3001780](#)

Method: Flow Cytometry

- Aids in evaluation of hematopoietic neoplasms (ie, leukemia, lymphoma)
- Monitor therapy in patients with established diagnosis of hematopoietic neoplasms

[Multiple Myeloma Panel by FISH 3002063](#)

Method: Fluorescence in situ Hybridization

- Aids in risk stratification of individuals with multiple myeloma
- Recommended at initial diagnosis and in low-risk individuals at time of relapse