

# B-Cell Acute Lymphocytic Leukemia Minimal Residual Disease Detection by Flow Cytometry (COG Protocol)

## Indications for Ordering

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Detection of minimal residual disease (MRD) in patients with B-ALL

- The assay is performed according to the Children's Oncology Group (COG) protocol and is appropriate for patients enrolled in COG clinical trials
  - Although developed to meet COG requirements, this assay is applicable to any patient (at any age) with B-ALL
- Specimens include Day 29 post-induction bone marrow or induction Day 8 peripheral blood

## Test Description

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### Test methodology

- Multiparameter flow cytometry analysis (6 color) of bone marrow and peripheral blood specimens
  - COG approved protocol
- Antigens included:
  - CD3, CD9, CD10, CD13, CD19, CD20, CD33, CD34, CD38, CD45, CD58, CD71, Syto 16

## Tests to Consider

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### Primary test

[B-Cell Acute Lymphocytic Leukemia \(B-ALL\) Minimum Residual Disease Detection by Flow Cytometry \(COG Protocol\) 3000724](#)

### Related test(s)

[Leukemia/Lymphoma Phenotyping by Flow Cytometry 2008003](#)

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

[Chromosome FISH, Interphase 2002298](#)

- Use to individually order one or more oncology FISH probes when FISH panels are not desired

## Disease Overview

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### Diagnosis/treatment/follow-up issues

- Aid in monitoring therapy in individuals with established diagnosis
- This test is not appropriate for initial diagnosis of ALL

## Test Interpretation

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### Sensitivity/specificity

- Clinical sensitivity: limit of detection – 0.01%

### Results

Antigens will be reported as positive or negative

- Positive results will be reported as percentage

### Limitations

- Poor cell viability may adversely affect antigens and impede the ability to properly identify neoplastic cells
- Number of events collected may affect sensitivity
- 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