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

Indications for Ordering
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
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
Primary test
B-Cell Acute Lymphocytic Leukemia (B-ALL) Minimal 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
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
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