

Client: Example Client ABC123  
123 Test Drive  
Salt Lake City, UT 84108  
UNITED STATES

Physician: Doctor, Example

**Patient: Patient, Example**

**DOB:** 3/28/1994  
**Gender:** Female  
**Patient Identifiers:** 01234567890ABCD, 012345  
**Visit Number (FIN):** 01234567890ABCD  
**Collection Date:** 01/01/2017 12:34

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

ARUP test code 3000724

Number of Markers 13 markers

**B-ALL MRD (COG Protocol) Interpretation**

See Note

SAMPLE: BONE MARROW

**IMPRESSION:**

Abnormal immature B-cell population identified. See comment.

**Comment:**

The abnormal immature B-cells represent 0.07% of total nucleated cells, (the COG result is 0.09% of mononuclear cells), consistent with residual B-lymphoblastic leukemia/lymphoma (COG day 29 protocol used in evaluation).

Phenotypically similar B-lineage lymphoblasts were first reported in peripheral blood and bone marrow flow cytometry studies from October 2019 and in several subsequent studies, most recently in a concurrent bone marrow (Accession #19310120500), where they represent 0.1% of the total leukocytes.

**Atypical B-lineage lymphoblasts**

Positive for: CD9 (low), CD10, CD19, CD13/CD33, dim CD45, CD58 (low), Syto 16

Negative for: CD20, CD34, CD38, CD71

Aberrant expression: weak CD13/CD33

**ANALYSIS:**

Nucleated cell differential:

36% Lymphocytes  
1% Monocytes  
44% Myeloid cells  
18% Nucleated erythroid cells  
0.1% CD34 positive myeloblasts

Markers run: CD3, CD9, CD10, CD19, CD20, CD13+CD33, CD34, CD38, CD45, CD58, CD71, Syto 16

These results have been reviewed and approved by David Ng, MD.  
11/08/2019 13:39

**H=High, L=Low, \*=Abnormal, C=Critical**

Unless otherwise indicated, testing performed at:

INTERPRETIVE INFORMATION: B-ALL MRD By Flow Cytometry  
(COG Protocol)  
For Day 29 samples: Limit of detection of B-ALL blasts is 0.01 percent of mononuclear cells.  
For Day 8 samples: Limit of detection of B-ALL blasts is 0.01 percent of total nucleated cells.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement A: aruplab.com/CS

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Number of Markers	19-310-120515	11/6/2019 1:45:00 PM	11/6/2019 4:26:33 PM	11/8/2019 1:41:00 PM
B-ALL MRD (COG Protocol) Interpretation	19-310-120515	11/6/2019 1:45:00 PM	11/6/2019 4:26:33 PM	11/8/2019 1:41:00 PM

END OF CHART

H=High, L=Low, \*=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

**ARUP LABORATORIES | 800-522-2787 | aruplab.com**  
500 Chipeta Way, Salt Lake City, UT 84108-1221  
Tracy I. George, MD, Laboratory Director

Patient: Patient, Example  
ARUP Accession: 19-310-120515  
Patient Identifiers: 01234567890ABCD, 012345  
Visit Number (FIN): 01234567890ABCD  
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