



<u>Procedure</u>	<u>Result</u>	<u>Units</u>	<u>Ref Interval</u>	<u>Accession</u>	<u>Collected</u>	<u>Received</u>	<u>Reported/</u> <u>Verified</u>
Number of Markers	13	markers		19-344-900212	10-Dec-19	10-Dec-19	11-Dec-19
B-ALL MRD (COG Protocol) Interpretation	See Note	f		19-344-900212	10-Dec-19	10-Dec-19	11-Dec-19
					12:00:00	14:35:00	08:42:08
					12:00:00	14:35:00	08:42:08

10-Dec-19 12:00:00 B-ALL MRD (COG Protocol) Interpretation:
 SAMPLE: BONE MARROW

IMPRESSION:
 Abnormal immature B-cell population identified. See comment.

Comment:
 The abnormal immature B-cells represent 0.63% of total nucleated cells, (the COG result is 1.74% of nucleated 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 Nov 2018 (Accession #xx-xxx-xxxxxx and Accession #xx-xxx-xxxxxx) and in several subsequent studies, most recently in a CSF from July 29, 2019 (Accession #xx-xxx-xxxxxx), where they represented 15% of the total leukocytes. A concurrent comprehensive leukemia/lymphoma flow cytometry study (Accession #xx-xxx-xxxxxx), reported phenotypically similar B-lineage lymphoblasts that represent 0.6% of the total leukocytes. (COG day 29 protocol used in evaluation)

Atypical B-lineage lymphoblasts
 Positive for: CD9, CD10, CD19, CD34, CD38, dim CD45, CD58, Syto 16
 Negative for: CD20, CD71
 Aberrant expression: weak CD13/CD33

ANALYSIS:
 Nucleated cell differential:
 17% Lymphocytes
 5% Monocytes
 63% Myeloid cells
 14% 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 Tracy George, MD.

10-Dec-19 12:00:00 B-ALL MRD (COG Protocol) Interpretation:
 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

* Abnormal, # = Corrected, C = Critical, f = Footnote, H = High, L = Low, t = Interpretive Text, @ = Reference Lab