The multiple myeloma interphase fluorescence in situ hybridization (FISH) panel analysis on a CD138+ plasma enriched fraction of the sample was normal. There were no nuclei with extra copies of 1q, Cyclin D1/IgH, FGFR3/IGH, or IGH/c-MAF gene fusions, 13q14 deletion, or p53 gene deletion observed.

The FISH results on the enriched assay should not be used as a quantitative assay since the abnormal cells DO NOT represent the percentage of abnormal plasma cells in the aspirate. The percentage of abnormal cells should not be compared to any pervious results on un-enriched specimens.

Specific FISH results.

1q21/1p36: NORMAL nuc ish 1p36(SRDx2), 1q21(CKS1Bx2) [100]
FGFR3/IGH: NORMAL nuc ish 4p16(FGFR3x2), 14q32(IGHx2) [100]
CCND1/IgH: NORMAL nuc ish 11q13(CCND1x2), 14q32(IgHx2) [100]
CMAF/IGH: NORMAL nuc ish 14q32(IGHx2), 16q23(CMAFx2) [100]
13q14: NORMAL nuc ish 13q14(DLEU1x2), 13q34(TFDP1x2) [100]
<table>
<thead>
<tr>
<th>TESTS</th>
<th>RESULT</th>
<th>FLAG</th>
<th>UNITS</th>
<th>REFERENCE INTERVAL</th>
<th>LAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>p53:</td>
<td>NORMAL nuc ish 17p13.1(p53x2) [100]</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

FISH results should be interpreted within the context of a full hematopathology evaluation.

*Plasma cell enrichment is designed to increase sensitivity of the FISH assay to detect genetic abnormalities in plasma cell neoplasia especially in cases with low numbers of neoplastic plasma cells.

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Fonesca, R. et al. Leukemia 23:1−12, 2009

Director Review: Comment: 01
M. Katharine Rudd, PhD, FACMG

01 YU LabCorp RTP Dir: Arundhati Chatterjee, MD
1904 TW Alexander Drive Suite C, RTP, NC 27709-0153
For inquiries, the physician may contact Branch: 800-222-7566  Lab: 800-735-4087
FISH RESULT: NORMAL MULTIPLE MYELOMA PANEL

INTERPRETATION: MULTIPLE MYELOMA PANEL NORMAL

The multiple myeloma interphase fluorescence in situ hybridization (FISH) panel analysis on a CD138+ plasma enriched fraction* of the sample was normal. There were no nuclei with extra copies of 1q, Cyclin D1/IgH, FGFR3/IGH, or IGH/c-MAF gene fusions, 13q14 deletion, or p53 gene deletion observed.

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Fonesca, R. et al. Leukemia 23:1-12, 2009
LCLS Specimen Number: 250-225-9009-0
Patient Name: SAMPLE REPORT, 510325
Date of Birth: 06/12/1985
Gender: F
Patient ID:
Lab Number: YU16-70517 F

Account Number: 90000999
Ordering Physician: BONE MARROW
Specimen Type:
Client Reference:
Date Collected: 09/06/2016
Date Received: 09/06/2016
### Multiple Myeloma FISH Panel

**Specimen Type**
- Comment: BONE MARROW

**Cells Counted**
- Comment: 100/PROBE

**Cells Analyzed**
- Comment: 100/PROBE

**FISH Result**
- Comment: NUCLEI POSITIVE FOR THREE 1Q SIGNALS, THREE CCND1 SIGNALS, MONOSOMY 13, AND THREE TP53 SIGNALS

**Interpretation**
- Comment: MULTIPLE MYELOMA RELATED CLONE DETECTED

The multiple myeloma interphase fluorescence in situ hybridization (FISH) panel analysis of CD138+ enriched plasma cells was positive for three 1q signals, three CCND1 signals consistent with trisomy 11, loss of one 13q14 and one 13q34 signal consistent with monosomy 13, and three TP53 signals. There were no cells with FGFR3-IGH, CCND1-IGH, or IGH-MAF fusions. No aneuploidy for chromosomes 7, 9 and 15 were observed.

Gains of 1q have been associated with advanced disease and adverse outcome in patients with MM. Trisomy 11, loss of the tumor suppressor genes at 13q, and gains of TP53 are common findings in MM.

**SPECIFIC PROBE RESULTS:**

**FGFR3/IGH:** NORMAL
- nuc ish 4p16(FGFR3x2),14q32(IGHx2) [100]

**CCND1/IGH:** ABNORMAL(NO FUSION)
- nuc ish 11q13(CCND1x3),14q32(IGHx2) [80/100]
IGH/MAF: NORMAL
  nuc ish 14q32(IGHx2),16q23(MAFx2) [100]

1p36/1q21: ABNORMAL
  nuc ish 1p36.3(SRDx2),1q21(CKS1Bx3) [80/100]

13q: ABNORMAL
  nuc ish 13q14(DLEU1x1),13q34(TFDP1x1) [80/100]

TP53: ABNORMAL (NO DELETION)
  nuc ish 17p13(TP53x3) [80/100]

CEP 7/9/15: NORMAL
  nuc ish 7cen(D7Z1x2),9cen(D9Z4x2),15cen(D15Z4x2) [100]

This analysis is not quantitative. Results obtained using CD138+ plasma cells are NOT representative of the percentage of abnormal plasma cells in the aspirate. FISH analysis is limited to abnormalities detectable by the specific probes included in the study. Results should be interpreted within the context of a full hematologic and clinical evaluation.

This test was developed and its performance characteristics determined by Laboratory Corporation of America Holdings (LabCorp). It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary.

Director Review: Inder K. Gadi, PhD, FACMG

Comment: 01

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DOC1 Ver: 1.49
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nuc ish 13q14(DLEU1x1),13q34(TFDP1x1) [80/100]

**TP53:** ABNORMAL (NO DELETION)
nuc ish 17p13(TP53x3) [80/100]

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nuc ish 7cen(D7Z1x2),9cen(D9Z4x2),15cen(D15Z4x2) [100]

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Board Certified Cytogeneticist

Arundhati Chatterjee, MD
Medical Director

Peter Papenhausen, PhD
National Director of Cytogenetics