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|---|---|------------------|--------------------|------------------------------|
| Patient Name VALIDATIONSOFT,PCPROREPORT | Patient ID SA00061008 | Age 52 | Gender M | Order # SA00061008 |
| Ordering Phys CLIENT,CLIENT | | | | DOB 11/11/1960 |
| Client Order # SA00061008 | Account Information | | | Report Notes |
| Collected 08/25/2013 00:00 | C7028846-DLMP Rochester SDSC 2 - Client Support Rochester, MN 55901 | | | |
| Printed 10/15/2013 14:25 | | | | |

| Test | Flag | Results | Unit | Reference Value | Perform Site* |
|---|------|--------------|------|-----------------|---------------|
| Plasma Cell Proliferation, Marrow | | | | | |
| RECEIVED: 08/26/2013 15:19 REPORTED: 08/27/2013 10:12 | | | | | |
| Monotypic Plasma Cells: | | See Below | | None detected. | MCR |
| Result: Monotypic kappa plasma cells present. | | | | | |
| Supplemental PDF Report available at: | | | | | |
| https://test.mmlaccess.com/Reports/C7028846-503zA7S3nW.ashx | | | | | |
| Monotypic PC per Total Events | | 1.1 | % | | MCR |
| Monotypic Plasma Cells S-phase | | 0.9 | % | | MCR |
| Monotypic Plasma Cells DNA Index | | 1.10 | | 0.95-1.05 | MCR |
| Monotypic Plasma Cells DNA Ploidy | | Hyperdiploid | | Diploid | MCR |
| Polytypic PC per Total Events | | 0.1 | % | | MCR |
| Polytypic PC per All Plasma Cells | | 8.3 | % | | MCR |
| Final Diagnosis | | | | | |

Bone marrow, flow cytometric immunophenotyping:

1. Plasma cells express: monotypic kappa cytoplasmic immunoglobulin light chains, CD38 and CD138. They do not express: CD19 or CD45.

Comment:

Plasma cells, (monoclonal/monotypic and polyclonal/polytypic) are detected by immunoglobulin light chain restriction, surface immunophenotype, and DNA content. If present, the light chain expressed by the monotypic plasma cells is indicated. The percentage of clonal plasma cells estimated by flow cytometry is affected by specimen processing and antigen loss with specimen aging. Manual differential counting remains the accepted standard for determining the bone marrow plasma cell percentage.

The percentage of monotypic plasma cells in S-phase of the cell cycle is determined by quantitative DNA analysis. The DNA index is a calculated value. The presence of more than one value indicates the presence of cell populations with differing DNA contents within the monotypic plasma cells.

Method:

Plasma cell analysis was performed with antibodies to the following antigens: CD19, CD38, CD45, CD138, kappa and lambda cytoplasmic immunoglobulin light chains and DAPI.

Reviewed by: Steven Bashynski 2013.08.27 10:11:59

Performing Site Legend on Last Page of Report

| | | |
|---|---|-------------------------------|
| Patient Name VALIDATIONSOFT,PCPROREPORT | Collection Date and Time 08/25/2013 00:00 | Report Status Final |
| Page 1 of 2 | | >> Continued on Next Page >> |

* Report times for Mayo performed tests are CST/CDT

Performing Site:

 Mayo Clinic Laboratories - Rochester Main Campus
 200 First Street SW, Rochester MN 55905
 Franklin R. Cockerill, M.D. Lab Director
 Phone: 800-533-1710
<http://www.mayomedicallaboratories.com>
VALIDATIONSOFT, PCPROREPORT
MEDICAL RECORD # (PATIENT ID) SA00061008

| | | | | | |
|--------------|---------------|------------------|----------------|----------------|--------------------|
| DOB | 11/11/1960 | CLIENT ID/WARD | 7028846 | ORDER # | B326000328 |
| SEX | Male | CLIENT/NAME WARD | DLMP Rochester | CLIENT ORDER # | SA00061008 |
| CLIENT MRN | SA00061008 | CITY, ST, ZIP | Rochester | DATE COLLECTED | 8/25/2013 12:00 AM |
| REQUESTED BY | CLIENT CLIENT | MN | 55901 | DATE RECEIVED | 8/26/2013 3:19 PM |
| | | | | DATE REPORTED | 8/27/2013 10:11 AM |

Plasma Cell Proliferation, Marrow
Results:

| Marker Name | Result | Unit | Result Comments | Normal Range |
|-----------------------------------|---------------------------------------|------|-----------------|----------------|
| Monotypic Plasma Cells: | Monotypic kappa plasma cells present. | | | None detected. |
| Monotypic PC per Total Events | 1.1 | % | | |
| Monotypic Plasma Cells S-phase | 0.9 | % | | |
| Monotypic Plasma Cells DNA Index | 1.10 | | | 0.95-1.05 |
| Monotypic Plasma Cells DNA Ploidy | Hyperdiploid | | | Diploid |
| Polytypic PC per Total Events | 0.1 | % | | |
| Polytypic PC per All Plasma Cells | 8.3 | % | | |

Final Diagnosis:

Bone marrow, flow cytometric immunophenotyping:

1. Plasma cells express: monotypic kappa cytoplasmic immunoglobulin light chains, CD38 and CD138. They do not express: CD19 or CD45.

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Plasma cells, (monoclonal/monotypic and polyclonal/polytypic) are detected by immunoglobulin light chain restriction, surface immunophenotype, and DNA content. If present, the light chain expressed by the monotypic plasma cells is indicated. The percentage of clonal plasma cells estimated by flow cytometry is affected by specimen processing and antigen loss with specimen aging. Manual differential counting remains the accepted standard for determining the bone marrow plasma cell percentage.

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VALIDATIONSOFT, PCPROREPORT

MEDICAL RECORD # (PATIENT ID) SA00061008

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| CLIENT MRN | SA00061008 | CITY, ST, ZIP | Rochester | DATE COLLECTED | 8/25/2013 12:00 AM |
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Disclaimer:

Analyte Specific Reagent: This test was developed and its performance characteristics determined by Mayo Clinic. It has not been cleared or approved by the U.S. Food and Drug Administration.

R3Q45 Report

Site ID: C7028846

Accession Number: SA00061008

FileName: SA00061008-7WKfNO

+py219z9P11FbY756LClk45xj2gYo_tJABi9nxMlNer6Qv_XL5j2NdHbEihvk7tW6RG449IXGSEY4pg==.pdf

Reported Date & Time: 08/27/13 10:15

Test Name: Plasma Cell Proliferation, Marrow

Result Name: Monotypic Plasma Cells:

| | | | | |
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| Patient Name VALIDATIONSOFT,PCPROREPORT | Patient ID SA00061008 | Age 52 | Gender M | Order # SA00061008 |
| Ordering Phys CLIENT,CLIENT | | | | DOB 11/11/1960 |
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* Performing Site:

| | | |
|-----|---|---------------|
| MCR | Mayo Clinic Laboratories - Rochester Main Campus 200 First St SW Rochester, MN 55905 | Lab Director: |
|-----|---|---------------|

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|---|---|-------------------------------|
| Patient Name VALIDATIONSOFT,PCPROREPORT | Collection Date and Time 08/25/2013 00:00 | Report Status Final |
| Page 2 of 2 | | ** End of Report ** |

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