

**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist

**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist

|                       |  |                          |                        |
|-----------------------|--|--------------------------|------------------------|
| <b>NAME</b>           | : Mrs. MANJU GUPTA                     | <b>PATIENT ID</b>        | : 1764951              |
| <b>AGE/ GENDER</b>    | : 70 YRS/FEMALE                        | <b>REG. NO./LAB NO.</b>  | : 012502210032         |
| <b>COLLECTED BY</b>   | : SURJESH                              | <b>REGISTRATION DATE</b> | : 21/Feb/2025 10:40 AM |
| <b>REFERRED BY</b>    | :                                      | <b>COLLECTION DATE</b>   | : 21/Feb/2025 10:47AM  |
| <b>BARCODE NO.</b>    | : 01525886                             | <b>REPORTING DATE</b>    | : 21/Feb/2025 03:26PM  |
| <b>CLIENT CODE.</b>   | : KOS DIAGNOSTIC LAB                   |                          |                        |
| <b>CLIENT ADDRESS</b> | : 6349/1, NICHOLSON ROAD, AMBALA CANTT |                          |                        |

| Test Name | Value | Unit | Biological Reference interval |
|-----------|-------|------|-------------------------------|
|-----------|-------|------|-------------------------------|

### SPECIAL INVESTIGATIONS

#### PROTEIN ELECTROPHORESIS: SERUM

|  |                         |       |             |
|--|-------------------------|-------|-------------|
| TOTAL PROTEINS: SERUM<br><i>by MIGRATION GEL ELECTROPHORESIS</i> | 6.67                    | gm/dL | 6.20 - 8.00 |
| ALBUMIN: SERUM<br><i>by MIGRATION GEL ELECTROPHORESIS</i>        | <b>2.85<sup>L</sup></b> | gm/dL | 3.50 - 5.50 |
| A : G RATIO: SERUM<br><i>by MIGRATION GEL ELECTROPHORESIS</i>    | <b>0.75<sup>L</sup></b> | RATIO | 1.00 - 2.00 |
| ALPHA 1 GLOBULIN<br><i>by MIGRATION GEL ELECTROPHORESIS</i>      | <b>0.44<sup>H</sup></b> | gm/dL | 0.11 - 0.40 |
| ALPHA 2 GLOBULIN<br><i>by MIGRATION GEL ELECTROPHORESIS</i>      | 0.87                    | gm/dL | 0.43 - 1.03 |
| BETA GLOBULIN<br><i>by MIGRATION GEL ELECTROPHORESIS</i>         | 1.22                    | mg/dL | 0.53 - 1.40 |
| GAMMA GLOBULIN<br><i>by MIGRATION GEL ELECTROPHORESIS</i>        | 1.29                    | gm/dL | 0.75 - 1.80 |

#### INTERPRETATION

Protein electrophoresis shows Hypoalbuminemia increased Alpha 1.

#### ADVICE

**KINDLY CORRELATE CLINICALLY**

#### INTERPRETATION:

1. Serum protein electrophoresis is commonly used to identify patients with multiple myeloma and disorders of serum proteins.
2. Electrophoresis is a method of separating proteins based on their physical properties. the pattern of serum protein electrophoresis results depends on the fractions of 2 types of protein : albumin and globulin (alpha 1 alpha2, beta and gamma.)
3. A homogeneous spike-like peak in a focal region of the gamma-globulin zone indicates a monoclonal gammopathy.
4. Monoclonal gammopathies are associated with a clonal process that is malignant or potentially malignant, including multiple myeloma, Waldenstrom macroglobulinemia, solitary plasmacytoma, smoldering multiple myeloma, monoclonal gammopathy of undetermined significance, plasma cell leukemia, heavy chain disease, and amyloidosis.
5. M-protein (in the gamma region) level greater than 3 g/dL should be interpreted along with other radiologic and haematological findings to arrive at a diagnosis of Multiple myeloma and must not be considered in isolation.
6. Occasionally M protein may appear as a narrow spike in the beta or alpha2 regions also.
7. Up to one fifth of patients with Myeloma may have an M-protein spike of less than 1 g /dL.
8. Hypogammaglobulinemia on serum protein electrophoresis occurs in about 10% of patients with multiple myeloma who do not have a serum M-protein spike.
9. Most of these patients have a large amount of Bence Jones protein (monoclonal free kappa or lambda chain) in their urine, wherein urine protein electrophoresis should be performed. Monoclonal gammopathy is present in up to 8 percent of healthy geriatric patients.



  
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**NOTE:**

The following conditions require serum immunofixation to confirm monoclonality or to differentiate monoclonal and polyclonal disorders.

1. A well defined "M" band.
2. Faint band .
3. Chronic inflammatory pattern (decreased albumin, increased alpha, increased gamma fractions)
4. Isolated increase in any region with an otherwise normal pattern.
5. Shouldering of albumin peak along anodal or cathodal side may be seen with lipoproteins, drugs, bilirubin or radiological contrast.

\*\*\* End Of Report \*\*\*



  
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# KOS Diagnostic Lab

(A Unit of KOS Healthcare)

## PROTEIN ELECTROPHORESIS

NAME MANJU GUPTA

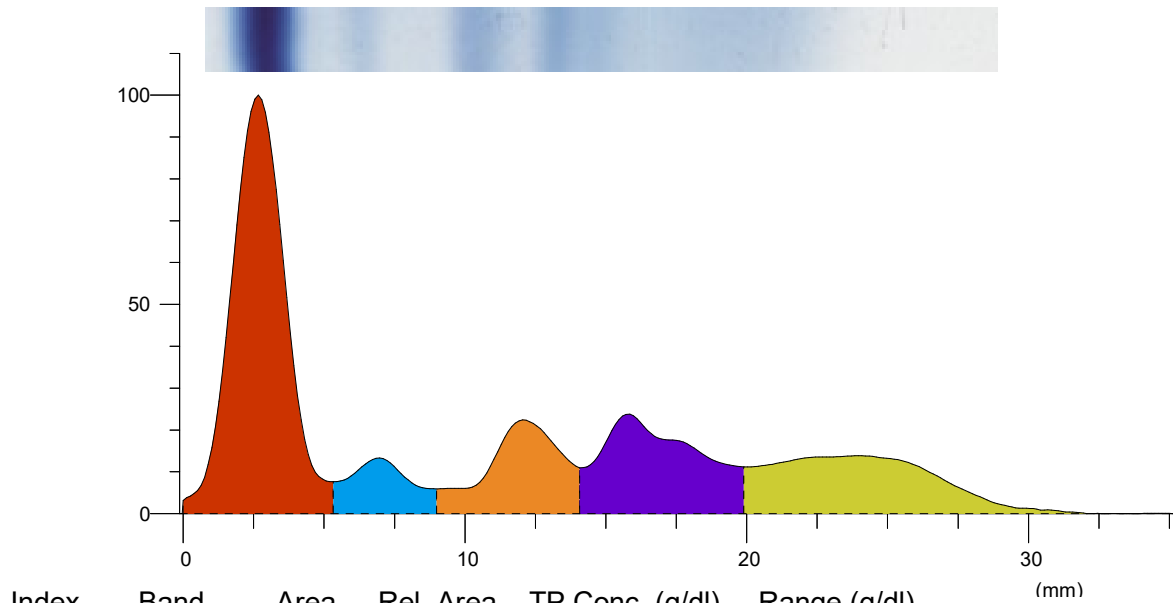
BARCODE ID 01525886

AGE/SEX 70/f

DATE 21/02/2025

Chemistry Results

TP 6.67(g/dl)



Index Band Area Rel. Area TP Conc. (g/dl) Range (g/dl) (mm)

|       |         |       |        |        |               |
|-------|---------|-------|--------|--------|---------------|
| 1     | Albumin | 1.258 | 42.72% | 2.85 L | 3.50 ... 5.00 |
| 2     | Alpha 1 | 0.195 | 6.62%  | 0.44 H | 0.11 ... 0.40 |
| 3     | Alpha 2 | 0.385 | 13.07% | 0.87   | 0.43 ... 1.03 |
| 4     | Beta    | 0.538 | 18.28% | 1.22   | 0.53 ... 1.40 |
| 5     | Gamma   | 0.568 | 19.30% | 1.29   | 0.75 ... 1.80 |
| Total |         | 2.945 |        | 6.67   |               |

Ratio A/G 0.75

### Comment:-

Protein electrophoresis shows Hypoalbuminemia, increased Alpha 1. Kindly correlate clinically.

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