



Mr. KULWANT SINGH
 AMBALA, CHEMBUR
 Tel No : 8607344999
 PIN No: 133001
 PID NO: P542100706908
 Age: 51.0 Year(s) Sex: Male



Reference: Dr.VINAY CHOPRA
 Sample Collected At:
 DR VINAY KUMAR CHOPRA
 KOS Diagnostic Lab, 6349/I, Nicholson
 Road, Ambala Cantt, HRY 133001.
 Sample Processed At: Metropolis
 Healthcare Ltd E-21, B1 Mohan Co-op Ind
 Estate New Delhi-110044

VID: 54213320015880
 Registered On:
 30/09/2021 09:24 PM
 Collected On:
 30/09/2021 9:24PM
 Reported On:
 01/10/2021 04:32 PM

| <u>Investigation</u> | <u>Observed Value</u> | <u>Unit</u> | <u>Biological Reference Interval</u> |
|---------------------------------------|---------------------------------------|-------------|--------------------------------------|
| SERUM, PROTEIN ELECTROPHORESIS | | | |
| (Serum) | | | |
| Total Protein* | 7.3 | | 6.4-8.3 |
| (Biuret) | | | |
| Serum Albumin | 4.15 | g/dL | 3.57-5.42 |
| Alpha 1 Globulin | 0.28 | g/dL | 0.19-0.40 |
| Alpha 2 Globulin | 0.67 | g/dL | 0.45-0.96 |
| Beta 1 Globulin | 0.39 | g/dL | 0.30-0.59 |
| Beta 2 Globulin | 0.48 | g/dL | 0.20-0.53 |
| Gamma Globulin | 1.32 | g/dL | 0.71-1.54 |
| Albumin, Globulin Ratio | 1.31 | | 1.1-2.2 |
| "M" Band | <u>NO MONOCLONAL BAND SEEN</u> | | Absent |

Comment

-

Interpretation :

1. Serum protein electrophoresis is commonly used to identify multiple myeloma & related disorders.
2. Electrophoresis is a method of separating proteins based on their physical properties & the pattern is dependant on the fractions of 2 types of protein: Albumin & Globulin (alpha1, alpha2, beta & gamma).

| Components | Major Components | Interferences |
|--------------------|---|---|
| Albumin | Albumin | Lipoproteins, Drugs, Bilirubin, Radiological contrast |
| Alpha1 - globulins | α-1 antitrypsin, α-1 acid glycoprotein | - |
| Alpha2 - globulins | α-2 macroglobulin, haptoglobin | Haptoglobin - haemoglobin complex |
| Beta globulins | Transferrin, β-lipoprotein, IgA, IgM & sometimes IgG with complement proteins – C3 & C4 | Fibrinogen |
| Gamma globulins | IgG, IgA, IgM, IgD, IgE | CRP |

Dr. Geeta Chopra
 M.D (Pathology)



Mr. KULWANT SINGH
AMBALA, CHEMBUR
Tel No : 8607344999
PIN No: 133001
PID NO: P542100706908
Age: 51.0 Year(s) Sex: Male



Reference: Dr.VINAY CHOPRA
Sample Collected At:
DR VINAY KUMAR CHOPRA
KOS Diagnostic Lab, 6349/I, Nicholson
Road, Ambala Cantt, HRY 133001.
Sample Processed At: Metropolis
Healthcare Ltd E-21, B1 Mohan Co-op Ind
Estate New Delhi-110044

VID: 54213320015880
Registered On:
30/09/2021 09:24 PM
Collected On:
30/09/2021 9:24PM
Reported On:
01/10/2021 04:32 PM

| <u>Investigation</u> | <u>Observed Value</u> | <u>Unit</u> | <u>Biological Reference Interval</u> |
|----------------------|-----------------------|-------------|--------------------------------------|
|----------------------|-----------------------|-------------|--------------------------------------|

Direct detection at 200 nm in capillaries yields relative concentrations (percentages) of individual protein zones.

Remarks :

1. In following conditions serum Immunofixation is required to confirm monoclonal gammopathy or to differentiate monoclonal and polyclonal disorders.

(A) A well defined 'M' band

(B) Non-discrete bands..

(C) Chronic inflammatory pattern (decreased Albumin, increased Alpha, increased Gamma region), which may mask the monoclonal band.

(D) Isolated increase in any region, with otherwise normal pattern.

2. SPE- Distortions/ Non-Discrete bands:

Distortions in Serum Protein Electrophoresis (SPE) usually affect curves of the gamma, beta, and alpha-2 peaks. Distortions are subtle, non-discrete bands which cannot be quantified & therefore not plotted on the graphs. These could be seen in the following situations:

a) Patients on therapy for Multiple myeloma.

b) Distortions at the point of sample application can be especially problematic when one is dealing with cryoglobulins (often precipitates at the origin).

c) Monoclonal gammopathies involving any of beta-migrating immunoglobulins (produce subtle distortion of the transferrin or C3 band)

d) Subtle distortions in the beta & gamma regions may indicate towards Ig D / Ig E gammaopathies.

Method : Capillary Electrophoresis

