
Lab Dept: Chemistry

Test Name: IMMUNOELECTROPHORESIS, SERUM

General Information

Lab Order Codes: IMEL

Synonyms: Monoclonal Protein Study, Serum

CPT Codes: 86334 – Immunofixation electrophoresis
84165 – Protein; electrophoretic fractionation and quantitation
84155 – Protein; total

Test Includes: Serum protein electrophoresis (SPEP), heavy-chain typing, and light-chain typing (kappa and lambda).

Logistics

Test Indications: Useful for identifying and characterizing cases of monoclonal gammopathy when used in conjunction with urine monoclonal studies. Protein electrophoresis alone is not considered an adequate screening for monoclonal gammopathies. Also useful for monitoring patients with known monoclonal gammopathies.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: MPSS)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1-2 days, test set up Monday through Saturday

Special Instructions: See [Patient Preparation](#)

Specimen

Specimen Type: Blood

Container: SST (Gold, marble or red) tube

Draw Volume: 3 mL blood

Processed Volume: 1 mL serum

Collection: Routine venipuncture

Special Processing: Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly.

Patient Preparation: Fasting specimen is recommended.

Sample Rejection: Mislabeled or unlabeled specimen; gross lipemia; grossly icteric

Interpretive

Reference Range:

Protein electrophoresis:	
Total Protein (≥1 year):	6.3 – 7.9 g/dL
Albumin:	3.4 – 4.7 g/dL
α-1-globulin:	0.1 – 0.3 g/dL
α-2-globulin:	0.6 – 1.0 g/dL
β-globulin:	0.7 – 1.2 g/dL
γ-globulin:	0.6 – 1.6 g/dL
An interpretive comment is provided with the report.	
Immunofixation:	
Negative (reported as positive or negative)	

Critical Values: N/A

Limitations:

Very large IgG M-spikes (>4 g/dL) may saturate the protein stain. In these situations, quantitative IgG assays should be performed to accurately determine M-spike concentrations to monitor disease progression or response to therapy.

Fibrinogen will migrate as a distinct band in the beta-gamma-fraction. Serum specimens from new patients with a beta-gamma band are to be treated with thrombin to ensure complete conversion of fibrinogen.

Hemolysis may augment the beta function.

Penicillin may split the albumin band.

Radiographic agents may produce an uninterpretable pattern.

Methodology:

Total protein: Biuret

Protein Electrophoresis: Electrophoresis

Immunofixation: Immunofixation and/or Immunodiffusion

References:

[Mayo Medical Laboratories Web Site](#) (November 2017)

Updates:

11/8/2017: Updated collection container