
Lab Dept: Chemistry

Test Name: PROTEIN ELECTROPHORESIS, SERUM

General Information

Lab Order Codes: SELP

Synonyms: Protein ELP, Serum

CPT Codes: 84155 – Protein; total, except refractometry
84165 – Protein; electrophoretic fractionation and quantitation
86334 – Immunofixation, if appropriate

Test Includes: Protein electrophoresis, Total protein. If a discrete electrophoresis band is identified, the laboratory will evaluate the serum protein electrophoresis and may suggest immunofixation as an additional test at an additional charge. See [Immunelectrophoresis, Serum](#).

Logistics

Test Indications: Monitoring patients with monoclonal gammopathies. Diagnosis of monoclonal gammopathies, when used in conjunction with Immunofixation.

Lab Testing Sections: Chemistry – Sendouts

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

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 – 2 days, test performed Monday – Saturday.

Special Instructions: If multiple myeloma is suspected, please indicate. See [Patient Preparation](#)

Specimen

Specimen Type: Blood

Container: SST (Marble, gold or red)

Draw Volume: 3 mL (Minimum: 1.5 mL) blood

Processed Volume:	1 mL (Minimum: 0.5 mL) serum
Collection:	Routine blood collection
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 is preferred, but not required
Sample Rejection:	Specimens other than serum; mislabeled or unlabeled specimens

Interpretive

Reference Range:

Protein Fraction	Age	Range
Albumin		
	All ages:	3.4 – 4.7 g/dL
Globulins		
α1 (alpha 1)	All ages:	0.1 - 0.3 g/dL
α2 (alpha 2)	All ages:	0.6 – 1.2 g/dL
β (beta)	All ages:	0.7 - 1.2 g/dL
γ (gamma)	All ages:	0.6 - 1.6 g/dL
Total Protein		
	≥1 year	6.3 - 7.9 g/dL
<p>Note: An interpretive comment is provided with the report. If the electrophoretic pattern is abnormal, it will be sent by mail from Mayo.</p> <p>Reference ranges have not been established for patients that are less than 12 months of age.</p>		

Critical Values: N/A

Limitations:

A normal serum Protein Electrophoresis does not rule out disease.

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.

Hemolysis may augment the beta fraction. Penicillin may split the albumin band. Radiographic agents may produce an uninterpretable pattern.

Methodology:

ELP: agarose gel electrophoresis

Total Protein: colorimetric reflectance spectrophotometry (biuret)

References:

[Mayo Medical Laboratories](#) January 2017

Updates:

4/28/2004: Test moved from Fairview University Diagnostic Laboratories to Mayo Medical Laboratories. Note: Slight changes in reference ranges.

12/23/2004: Lab orderable test code changed from PELPS to SELP.

8/3/2016: Update tube type SST