

## Monoclonal Gammopathy, Monitoring, Serum

**Test ID:** TMOGA

For more information on how Mayo Clinic Laboratories is using this testing to detect monoclonal proteins, please visit our website: <https://news.mayocliniclabs.com/2021/02/02/mass-fix-a-test-in-focus/>

### **Useful for:**

Monitoring patients with monoclonal gammopathies

This test is **not recommended** to screen or establish a first-time diagnosis for a monoclonal gammopathy.

### **Advisory Information:**

Protein electrophoresis alone is not considered an adequate screen for monoclonal gammopathies. When screening a patient or establishing a first-time diagnosis for a monoclonal gammopathy, consider ordering DMOGA / Monoclonal Gammopathy, Diagnostic, Serum instead, which includes free light chain analysis.

### **Profile Information:**

Test ID	Reporting Name	Available Separately	Always Performed
SPE	Protein Electrophoresis	No	Yes
TMAB	Therapeutic Antibody Administered?	No	Yes
TPE	Total Protein	Yes (Order TP)	Yes

### **Reflex Tests:**

Test ID	Reporting Name	Available Separately	Always Performed
MPTS	M-protein Isotype MALDI-TOF MS, S	Yes (Order MALD)	No
IFXED	Immunofixation Delta and Epsilon, S	Yes	No

### **Testing Algorithm:**

This test includes total protein and serum protein electrophoresis.

If a discrete electrophoresis band is not identified, the laboratory will evaluate the serum protein electrophoresis and, if necessary, perform M-protein isotype at an additional charge.

If a light chain is identified without a corresponding heavy chain during initial testing, immunofixation with IgD and IgE antisera will be performed at an additional charge.

If a history of an IgD or IgE has been previously established and no M-spike is seen on electrophoresis, immunofixation with IgD and IgE antisera will be performed at an additional charge.

**Method Name:**

TPE: Colorimetric, Biuret

SPE: Agarose Gel Electrophoresis

**Reference Values:****TOTAL PROTEIN:**

> or =1 year: 6.3-7.9 g/dL

Reference values have not been established for patients that are <12 months of age.

**PROTEIN ELECTROPHORESIS:**

Albumin: 3.4-4.7 g/dL

Alpha 1-Globulin: 0.1-0.3 g/dL

Alpha 2-Globulin: 0.6-1.0 g/dL

Beta-Globulin: 0.7-1.2 g/dL

Gamma-Globulin: 0.6-1.6 g/dL

An interpretive comment is provided.

Reference values have not been established for patients that are <16 years of age.

**Specimen Requirements:**

**Patient Preparation:** Fasting (12 hour) preferred but not required

**Container/Tube:**

**Preferred:** Serum gel

**Acceptable:** Red top

**Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Collection Instructions:** Centrifuge and aliquot serum

**Specimen Stability Information:**

Specimen Type	Temperature	Time
Serum	Refrigerated (preferred)	14 days
	Ambient	7 days
	Frozen	14 days

**Cautions:**

Very large IgG M-spikes (>4 g/dL) may saturate the protein stain. In these situations, quantitative IgG assays (IGG / Immunoglobulin G, [IgG], Serum) 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 samples 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 fraction.

Penicillin may split the albumin band.

Radiographic agents may produce an uninterpretable pattern.

**CPT Code:**

84155

84165

0077U (if appropriate)

86334 (if appropriate)

**Day(s) Setup:**

TPE, SPE, IFXED:

Monday through Saturday

**Analytic Time:** Same day/1 day

**MPTS:**

Monday through Friday

**Questions**

Contact Amy Ennis, Laboratory Technologist Resource Coordinator at 800-533-1710.