

---

## Overview

### Useful For

Aiding in the diagnosis of monoclonal gammopathies, when used in conjunction with free light chain studies

This test alone is **not** considered an adequate screen for monoclonal gammopathies

### Testing Algorithm

This test includes M-protein isotyping. 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.

### Method Name

Only orderable as part of a profile. For more information see:

SPISO / Protein Electrophoresis and Isotype, Serum

SMOGA / Monoclonal Gammopathy Screen, Serum

MMOGA / Monoclonal Gammopathy Monitoring, Serum

Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS)

### NY State Available

Yes

## Specimen

### Specimen Type

Serum

### Advisory Information

This test ID, MPTS, is only available as a part of a profile. For individual M-protein isotype testing, order MALDO / M-Protein Isotype, Matrix-Assisted Laser Desorption-Ionization Time-of-Flight Mass Spectrometry, Serum.

### Specimen Required

Only orderable as part of a profile. For more information see:

SPISO / Protein Electrophoresis and Isotype, Serum

SMOGA / Monoclonal Gammopathy Screen, Serum

MMOGA / Monoclonal Gammopathy Monitoring, Serum

**Patient Preparation:** Fasting preferred but not required

**Container/Tube:**

**Preferred:** Serum gel

**Acceptable:** Red top

**Specimen Volume:** 1 mL

**Reject Due To**

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

**Specimen Stability Information**

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	28 days	
	Frozen	14 days	
	Ambient	7 days	

**Clinical and Interpretive**

**Clinical Information**

Immunotyping of monoclonal (M-) proteins identifies the monoclonal immunoglobulin heavy chain type (gamma, alpha, mu, delta, or epsilon) and light chain type (kappa or lambda) in serum specimens.

**Reference Values**

Only orderable as part of a profile. For more information see:

SPISO / Protein Electrophoresis and Isotype, Serum

SMOGA / Monoclonal Gammopathy Screen, Serum

MMOGA / Monoclonal Gammopathy Monitoring, Serum

No monoclonal protein detected

**Interpretation**

A characteristic monoclonal band (M-spike) is often found on serum protein electrophoresis (SPE) in the gamma globulin region and, more rarely, in the beta or alpha-2 regions. The finding of an M-spike, restricted migration, or hypogammaglobulinemic protein electrophoresis pattern is suggestive of a possible monoclonal protein.

Immunoaffinity purification followed by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) is performed to identify the immunoglobulin heavy and light chains.

**Cautions**

No significant cautionary statements

**Clinical Reference**

Mills JR, Kohlhagen MC, Dasari S, et al: Comprehensive assessment of M-proteins using nanobody enrichment

coupled to MALDI-TOF mass spectrometry. Clin Chem 2016;62(10):1334-1344

## Performance

### Method Description

M-protein isotype by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) is performed with immunoaffinity purification followed by MALDI-TOF MS analysis. For the immunoaffinity purification, patient serum is applied to 5 separate immunoaffinity resins (CaptureSelect, Life Sciences) specific to immunoglobulin G, A, M, K, and L. Unbound protein is washed away and the isolated immunoglobulins are broken down in to their reduced to separate the heavy and light chains subunits to be analyzed via MALDI-TOF MS. The 5 separate spectra from each patient immunopurification are overlaid and investigated for an overabundance of immunoglobulin and immunoglobulin light chain. (Milani P, Murray DL, Barnidge DR, et al: The utility of MASS-FIX to detect and monitor monoclonal proteins in the clinic. Am J Hematol 2017;92(8):772-779 doi: 10.1002/ajh.24772)

### PDF Report

No

### Day(s) and Time(s) Test Performed

Monday through Friday

### Analytic Time

Same day/1 day

### Maximum Laboratory Time

3 days

### Performing Laboratory Location

Rochester

## Fees and Codes

### Fees

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact [Customer Service](#).

### Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

### CPT Code Information

0077U

86334 (if appropriate)

### LOINC® Information

Test ID	Test Order Name	Order LOINC Value
MPTS	M-protein Isotype MALDI-TOF MS, S	90990-3

---

Result ID	Test Result Name	Result LOINC Value
65198	M-protein Isotype MALDI-TOF MS	90990-3