MAYO CLINIC LABORATORIES

TEST OBSOLETE

Notification Date: February 9, 2021
Effective Date: March 16, 2021

Monoclonal Gammopathy Screen, Serum

Test ID: SMOGA

Explanation:
On the effective date this test will become obsolete due to instrumentation and methodology changes.

Recommended Alternative Test:

Monoclonal Gammopathy, Diagnostic, Serum

Test ID: DMOGA

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:
Screening and diagnosis of monoclonal gammopathies including analysis of free light chains

Assessing the risk of progression from monoclonal gammopathy of undetermined significance to multiple myeloma

Advisory Information:
To monitor a patient with an established diagnosis of a monoclonal gammopathy, order TMOGA / Monoclonal Gammopathy, Monitoring, Serum.

Profile Information:

Test ID	Reporting Name	Available Separately	Always Performed
TMAB	Therapeutic Antibody Administered?	No	Yes
TPE	Total Protein	Yes (Order TP)	Yes
SPE	Protein Electrophoresis	No	Yes
MPTS	M-protein Isotype MALDI-TOF MS, S	Yes (Order MALD)	Yes
KFLCS	Kappa Free Light Chain, S	Yes (Order FLCS)	Yes
LFLCS	Lambda Free Light Chain, S	Yes (Order FLCS)	Yes
KLRS	Kappa/Lambda FLC Ratio	Yes (Order FLCS)	Yes

Reflex Tests:

Test ID	Reporting Name	Available Separately	Always Performed

IFXED	Immunofixation Delta and Epsilon, S	Yes	No

Testing Algorithm:

This test includes total protein, serum protein electrophoresis, heavy and light chain typing (kappa and lambda), and quantitation of kappa and lambda free light chains.

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:

TPE: Colorimetric; Biuret
SPE: Agarose Gel Electrophoresis
MPTS: Matrix-Assisted Laser Desorption/Ionization-Time of Flight Mass Spectrometry (MALDI-TOF MS)
KFLCS, LFLCS: Turbidimetry
KLRS: Calculation
IFXED: Immunofixation

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

M-PROTEIN ISOTYPE MALDI-TOF MS
No monoclonal protein detected

M-protein Isotype MALDI-TOF MS Flag
Negative

KAPPA-FREE LIGHT CHAIN
0.33-1.94 mg/dL

LAMBDA-FREE LIGHT CHAIN
0.57-2.63 mg/dL

KAPPA/LAMBDA-FREE LIGHT-CHAIN RATIO
0.26-1.65

Specimen Requirements:

Patient Preparation:	Fasting (12 hour) preferred but not required
Container/Tube:	
Preferred:	Serum gel
Acceptable:	Red top
Specimen Volume:	2 mL
Specimen Minimum Volume:	1.5 mL

Specimen Stability Information:

Specimen Type	Temperature	Time
Serum	Refrigerated (preferred)	14 days
	Ambient	72 hours
	Frozen	14 days

Cautions:

Serum protein electrophoresis (SPE) alone is not considered an adequate screen for monoclonal gammopathies.

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

Although the SPE M-spike is the recommended method of monitoring monoclonal gammopathies, IgA and IgM proteins that are contained in the beta fraction may be more accurately monitored by quantitative immunoglobulins.

Fibrinogen will migrate as a distinct band in the beta-gamma fraction but will be negative on immunofixation electrophoresis.

Hemolysis may augment the beta fraction.

Penicillin may split the albumin band.

Radiographic agents may produce an uninterpretable pattern.

CPT Code:

83520 x2
84155
84165
0077U
86334 (if appropriate)

Day(s) Setup:

TPE, SPE, FLCS: Monday through Saturday
MPTS, IFXED: Monday through Friday

Analytic Time: 2 days

Questions

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