Overview

Useful For
Detection of increased viscosity
Monitoring patients with hyperviscosity syndrome

Method Name
SonoclotCoagulationAnalyzer

NY State Available
Yes

Specimen

Specimen Type
Serum Red

Specimen Required
Container/Tube: Red top

Specimen Volume: 1.5 mL

Collection Instructions: Keep specimen at 37 degrees C (eg, 37 degrees C Thermopak, heat block) until after centrifugation and separation of cells.

Forms
If not ordering electronically, complete, print, and send the following form with the specimen:

--Hematopathology/Cytogenetics Test Request Form (T726)

--Benign Hematology Test Request Form (T755)

Specimen Minimum Volume
0.65 mL

Reject Due To

| Gross hemolysis | OK |
| Gross lipemia   | OK |
| Gross icterus   | OK |

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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</thead>
<tbody>
<tr>
<td>Serum Red</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
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Clinical and Interpretive

Clinical Information
Viscosity is the property of fluids to resist flow. Hyperviscosity may be manifested by nasal bleeding, blurred vision, headaches, dizziness, nystagmus, deafness, diplopia, ataxia, paresthesias, or congestive heart failure. Funduscopic examination reveals dilation of retinal veins and flame shaped retinal hemorrhages.

The most common cause of serum hyperviscosity is the presence of large concentrations of IgM monoclonal proteins, and Waldenstrom's macroglobulinemia accounts for 80% to 90% of hyperviscosity cases. Hyperviscosity syndrome can also occur in multiple myeloma patients.

Because the ability of a monoclonal protein to cause hyperviscosity is affected by its concentration, molecular weight, and aggregation, sera with concentrations of monoclonal IgM greater than 4 g/dL, IgA greater than 5 g/dL, or IgG greater than 6 g/dL should be tested for hyperviscosity.

Serum viscosity and electrophoresis are recommended before and after plasmapheresis in order to correlate viscosity and M-spike with patient symptoms. This correlation may be useful for anticipating the need for repeat plasmapheresis.

Reference Values
> or =16 years: < or =1.5 centipoises

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

Interpretation
Although viscosities greater than 1.5 centipoises (cP) are abnormal, hyperviscosity is rarely present unless the viscosity is greater than 3 cP.

Cautions
This test is not suggested in patients with small concentrations of monoclonal proteins.

Hyperviscosity syndrome may not be present even if the viscosity is greater than 3 centipoises.

Clinical Reference

Performance

Method Description
The viscosity is measured with a V1 Sonoclot Viscosity-Coagulation Analyzer (Sienco, Inc., Boulder, CO). The instrument measures the power required to oscillate a probe at a constant rate. The increased power required in sera with increased viscosity is calibrated by standards of known viscosity. (Chandler WL, Schmer S: Evaluation of a new dynamic viscometer for measuring the viscosity of whole blood and plasma. Clin Chem 1986;32/3:505-507)
Test Definition: VISCS
Viscosity, S

No

Day(s) and Time(s) Test Performed
Monday through Friday; 3 p.m.

Analytic Time
Same day/1 day

Maximum Laboratory Time
3 days

Specimen Retention Time
14 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 has been modified from the manufacturer's instructions. Its performance characteristics were 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
85810

LOINC® Information

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<td>Viscosity, S</td>
<td>3128-6</td>
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<tr>
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<td>Viscosity, S</td>
<td>3128-6</td>
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