Overview

Useful For
Providing important information on the humoral immune status.

Method Name
Nephelometry

NY State Available
Yes

Specimen

Specimen Type
Serum

Advisory Information
MPSS / Monoclonal Protein Studies, Serum should be performed to distinguish between polyclonal and monoclonal IgD.

Specimen Required
Patient Preparation: Fasting preferred but not required

Container/Tube:
Preferred: Red top
Acceptable: Serum gel

Specimen Volume: 1 mL

Specimen Minimum Volume
0.5 mL

Reject Due To

<table>
<thead>
<tr>
<th>Condition</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Gross hemolysis</td>
<td>OK</td>
</tr>
<tr>
<td>Gross lipemia</td>
<td>Reject</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>OK</td>
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</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>21 days</td>
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</table>
**Clinical and Interpretive**

**Clinical Information**

Antibodies or immunoglobulins (Ig) are formed by plasma cells as a humoral immune response to antigens. The first antibodies formed after antigen stimulation are of the IgM class, followed later by IgG and also IgA antibodies. IgD normally occurs in serum in trace amounts.

Increased serum immunoglobulin concentrations occur due to polyclonal or oligoclonal immunoglobulin proliferation in hepatic diseases (chronic hepatitis, liver cirrhosis), acute and chronic infections, autoimmune diseases, as well as in the cord blood of neonates with intraterine and perinatal infections. Increases in serum immunoglobulin concentration are seen in monoclonal gammopathies such as multiple myeloma, Waldenstrom macroglobulinemia, primary amyloidosis, and monoclonal gammopathy of undetermined significance.

Decreased serum immunoglobulin concentrations occur in primary immunodeficiency conditions as well as in secondary immune insufficiencies including advanced monoclonal gammopathies, lymphatic leukemia, and advanced malignant tumors.

Changes in IgD concentration are used as a marker of changes in the size of the clone of monoclonal IgD plasma cells.

**Reference Values**

< or =10 mg/dL

**Interpretation**

The physiologic significance of serum IgD concentration is unclear and in many normal persons serum IgD is undetectable.

Increased concentrations may be due to polyclonal (reactive) or monoclonal plasma cell proliferative processes.

A monoclonal IgD protein is present in 1% of patients with myeloma. Monoclonal IgD proteins are often in low concentrations and do not have a quantifiable M-peak on serum protein electrophoresis. However, the presence of an IgD monoclonal protein is almost always indicative of a malignant plasma cell disorder such as multiple myeloma or primary amyloidosis.

**Cautions**

An elevated IgD cannot be taken as evidence for a monoclonal IgD protein. MPSS / Monoclonal Protein Studies, Serum should be performed to distinguish between a polyclonal and monoclonal IgD.

**Clinical Reference**


Performance

Method Description
In this Siemens Nephelometer II method, the light scattered onto the antigen-antibody complexes is measured. The intensity of the measured scattered light is proportional to the amount of antigen-antibody complexes in the sample under certain conditions. If the antibody volume is kept constant, the signal behaves proportionally to the antigen volume.

A reference curve is generated by a standard with a known antigen content on which the scattered light signals of the samples can be evaluated and calculated as an antigen concentration. Antigen-antibody complexes are formed when a sample containing antigen and the corresponding antiserum are put into a cuvette. A light beam is generated with an LED, which is transmitted through the cuvette. The light is scattered onto the immuno-complexes that are present. Antigen and antibody are mixed in the initial measurement, but no complex is formed yet. An antigen-antibody complex is formed in the final measurement.

The result is calculated by subtracting value of the final measurement from the initial measurement. The distribution of intensity of the scattered light depends on the ratio of the particle size of the antigen-antibody complexes to the radiated wavelength.(Unpublished Mayo method; Instruction manual: Siemens Nephelometer II, Version 3 Siemens, Inc., Newark, DE, 2008)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Saturday; Continuously until 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 cleared or approved by the U.S. Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.
### Test Definition: IGD

Immunoglobulin D (IgD), S

### CPT Code Information

82784

### LOINC® Information

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<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>IGD</td>
<td>Immunoglobulin D (IgD), S</td>
<td>2460-4</td>
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<table>
<thead>
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