## Overview

### Useful For
- Assessment of an undetectable total complement (CH50) level
- Diagnosing congenital C1 (first component of complement) deficiency
- Diagnosing acquired deficiency of C1 inhibitor

### Method Name
Nephelometry

### NY State Available
Yes

## Specimen

### Specimen Type
Serum

### Specimen Required

| Patient Preparation: | Fasting |

### 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>Result</th>
</tr>
</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>
</tr>
</tbody>
</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>
<td></td>
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</tbody>
</table>
Clinical and Interpretive

Clinical Information
The first component of complement (C1) is composed of 3 subunits designated as C1q, C1r, and C1s. C1q recognizes and binds to immunoglobulin complexed to antigen and initiates the complement cascade. Congenital deficiencies of any of the early complement components (C1, C2, C4) results in an inability to clear immune complexes. Inherited deficiency of C1 is rare.

Like the more common C2 deficiency, C1 deficiency is associated with increased incidence of immune complex disease (systemic lupus erythematosus, polymyositis, glomerulonephritis, and Henoch-Schonlein purpura). Low C1 levels have also been reported in patients with abnormal immunoglobulin levels (Bruton and common variable hypogammaglobulinemia and severe combined immunodeficiency). This is most likely due to increased catabolism.

The measurement of C1q is an indicator of the amount of C1 present.

Reference Values
12-22 mg/dL

Interpretation
An undetectable C1q in the presence of an absent total complement (CH50) and normal C2, C3, and C4 suggests a congenital C1 (first component of complement) deficiency.

A low C1q in combination with a low C1 inhibitor and low C4 suggests an acquired C1 inhibitor deficiency.

Cautions
This is a different assay than C1q binding, which is an assay for circulating immune complexes.

Clinical Reference


Performance

Method Description
Nephelometry and anti-C1q antiserum are used to quantitate the C1q antigen level. (Instruction manual: Nephelometer II Operations. Siemens, Inc., Newark, DE, 5/2005)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Friday; 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 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**
86160

**LOINC® Information**

<table>
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<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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</thead>
<tbody>
<tr>
<td>C1Q</td>
<td>Complement C1q, S</td>
<td>4478-4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
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<tr>
<td>C1Q</td>
<td>Complement C1q, S</td>
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