Overview

Useful For
Investigating an undetectable total complement (CH50)
Confirming hereditary angioedema (with low C1 inhibitor)
Assessing disease activity in systemic lupus erythematosus, proliferative glomerulonephritis, rheumatoid arthritis, and autoimmune hemolytic anemia

Method Name
Nephelometry

NY State Available
Yes

Specimen

Specimen Type
Serum

Specimen Required

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

Specimen Volume: 1 mL
Specimen Minimum Volume
0.5 mL

Reject Due To

<table>
<thead>
<tr>
<th>Hemolysis</th>
<th>Mild OK; Gross OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipemia</td>
<td>Mild OK; Gross reject</td>
</tr>
<tr>
<td>Icterus</td>
<td>Mild OK; Gross OK</td>
</tr>
<tr>
<td>Other</td>
<td>NA</td>
</tr>
</tbody>
</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
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<tr>
<td></td>
<td>Ambient</td>
<td>72 hours</td>
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**Clinical and Interpretive**

**Clinical Information**

The complement system is an integral part of the immune defenses. It can be activated via immune complexes (classic pathway) or by bacterial polysaccharides (alternative pathway). The classic complement pathway consists of recognition, (C1q, C1r, C1s), activation (C2, C3, C4), and attack (C5, C6, C7, C8, C9) mechanisms with respect to their role in antibody-mediated cytolysis. C4 is one of the activation proteins of the classic pathway.

In the absence of C4, immune complexes will not be cleared by C3 activation peptides, but bacterial infections can still be defended via the alternative pathway.

C4 may be decreased in systemic lupus erythematosus, early glomerulonephritis, immune complex disease, cryoglobulinemia, hereditary angioedema, and congenital C4 deficiency.

**Reference Values**

14-40 mg/dL

**Interpretation**

C4 levels will be decreased in acquired autoimmune disorders, in active phase of lupus erythematosus, and in rheumatoid arthritis.

An undetectable C4 level (with normal C3) suggests a congenital C4 deficiency.

Levels will be increased in patients with autoimmune hemolytic anemia.

**Cautions**

The results are dependent on appropriate specimen transport.

**Clinical Reference**


**Performance**

**Method Description**


**PDF Report**

No

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

Monday through Saturday; 3 p.m.

**Analytic Time**
Test Definition: C4
Complement C4, S

1 day

**Maximum Laboratory Time**
2 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.

**CPT Code Information**
86160

**LOINC® Information**

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<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tr>
<td>C4</td>
<td>Complement C4, S</td>
<td>4498-2</td>
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<table>
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<tr>
<th>Result ID</th>
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<tr>
<td>C4</td>
<td>Complement C4, S</td>
<td>4498-2</td>
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