Overview

Useful For
Detecting systemic inflammatory processes
Detecting infection and assessing response to antibiotic treatment of bacterial infections
Differentiating between active and inactive disease forms with concurrent infection

Method Name
Immunoturbidimetric Assay

NY State Available
Yes

Specimen

Specimen Type
Serum

Ordering Guidance
To assess the risk of cardiovascular disease or events using C-reactive protein, order HSCRP / C-Reactive Protein, High Sensitivity, Serum.

Necessary Information
Indicate patient's age and sex.

Specimen Required
Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Specimen Volume: 0.5 mL

Collection Instructions:
1. Serum gel tube should be centrifuged within 2 hours of collection.
2. Red-top tube should be centrifuged and the serum aliquoted within 2 hours of collection.

Reject Due To
Gross hemolysis  Reject

Specimen Minimum Volume
0.25 mL

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>14 days</td>
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**Clinical Information**

C-reactive protein (CRP) is one of the most sensitive acute-phase reactants for inflammation. CRP is synthesized by the liver and consists of 5 identical polypeptide chains that form a 5-membered ring with a molecular weight of 105,000 daltons. Complexed CRP activates the classical complement pathway. The CRP response frequently precedes clinical symptoms, including fever.

CRP elevations are nonspecific and may be useful for the detection of systemic inflammatory processes; to assess treatment of bacterial infections with antibiotics; to detect intrauterine infections with concomitant premature amniorrhexis; to differentiate between active and inactive forms of disease with concurrent infection, eg, in patients suffering from systemic lupus erythematosus or colitis ulcerosa; to therapeutically monitor rheumatic disease and assess anti-inflammatory therapy; to determine the presence of postoperative complications at an early stage, such as infected wounds, thrombosis, and pneumonia; and to distinguish between infection and bone marrow rejection. Postoperative monitoring of CRP levels of patients can aid in the recognition of unexpected complications (persisting high or increasing levels).

Measuring changes in the concentration of CRP provides useful diagnostic information about the level of acuity and severity of a disease. It also allows judgments about the disease genesis. Persistence of a high serum CRP concentration is usually a grave prognostic sign that generally indicates the presence of an uncontrolled infection.

**Reference Values**

< or =8.0 mg/L

**Interpretation**

In normal healthy individuals, C-reactive protein (CRP) is a trace protein (<8 mg/L). Elevated values are consistent with an acute inflammatory process.

After onset of an acute phase response, the serum CRP concentration rises rapidly (within 6-12 hours and peaks at 24-48 hours) and extensively. Concentrations above 100 mg/L are associated with severe stimuli such as major trauma and severe infection (sepsis).

**Cautions**

C-reactive protein (CRP) response may be less pronounced in patients suffering from liver disease. Elevated CRP values are nonspecific and should not be interpreted without a complete clinical history.

**Clinical Reference**

Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. Sixth edition. Edited by N Rafai, AR Horvath, CT Wittwer. Elsevier, 2018

**Performance**

**Method Description**
Particle-enhanced immunoturbidimetric assay. Human C-reactive protein (CRP) agglutinates with latex particles coated with monoclonal anti-CRP antibodies. The aggregates are determined turbidimetrically. (Package insert: Roche CRPL3 reagent. Roche Diagnostics 02/2020)

**PDF Report**
No

**Specimen Retention Time**
7 days

**Performing Laboratory Location**
Rochester

**Fees & Codes**

**Test Classification**
This test has been cleared, approved, or is exempt by the US 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**
86140