

## 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

#### Collection Container/Tube:

**Preferred:** Serum gel

**Acceptable:** Red top

**Submission Container/Tube:** Plastic vial

**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 into a plastic vial within 2 hours of collection.

### Specimen Minimum Volume

0.5 mL

### Reject Due To

|                 |        |
|-----------------|--------|
| Gross hemolysis | Reject |
|-----------------|--------|

**Specimen Stability Information**

| Specimen Type | Temperature              | Time     | Special Container |
|---------------|--------------------------|----------|-------------------|
| Serum         | Refrigerated (preferred) | 21 days  |                   |
|               | Ambient                  | 14 days  |                   |
|               | Frozen                   | 365 days |                   |

**Clinical & Interpretive****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 Da. 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 antiinflammatory 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**

<5.0 mg/L

Reference values apply to all ages.

**Interpretation**

In normal healthy individuals, C-reactive protein (CRP) is a trace protein (<5 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).

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**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**

Rifai N, Horvath AR, Wittwer CT, eds: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. 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: CRPL3 reagent. Roche Diagnostics; 02/2020)

**PDF Report**

No

**Day(s) Performed**

Monday through Sunday

**Report Available**

Same day/1 to 3 days

**Specimen Retention Time**

7 days

**Performing Laboratory Location**

Mayo Clinic Laboratories - Rochester Main Campus

**Fees & 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 account representative. For assistance, contact [Customer Service](#).

**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

**LOINC® Information**

| Test ID | Test Order Name             | Order LOINC® Value |
|---------|-----------------------------|--------------------|
| CRP     | C-Reactive Protein (CRP), S | 1988-5             |

| Result ID | Test Result Name            | Result LOINC® Value |
|-----------|-----------------------------|---------------------|
| CRP       | C-Reactive Protein (CRP), S | 1988-5              |