MAYO CLINIC LABORATORIES

Test Definition: CRP

C-Reactive Protein (CRP), Serum

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

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).

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: CRP4 reagent. Roche Diagnostics; 10/2023)

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.

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C-Reactive Protein (CRP), Serum

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