

**AL-Mustaqbal University College of Medical Technology**

**Department of Medical Laboratory Technology Practical Immunology 2023**

**LAB 5**

**Stage 3rd**

**A.Lecture :**

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# C-reactive protein (CRP) test

**C-reactive protein (CRP)** is a serum protein which is synthesis and produced by the liver in response to inflammation

**CRP test** measures the amount of CRP in the blood to detect inflammation due to acuteconditions or to monitor the severity of disease in chronic conditions.

it is non-specific indicator of inflammation, that means that it is released into the blood within a few hours after an injury, the start of an infection, or other cause of inflammation.

# Uses of CRP Test

Healthcare providers typically order a C-reactive protein (CRP) test to help diagnoseor rule out certain conditions, including:

Severe bacterial infections, such as sepsis.



yelitis (infection of your bone).



erythematosus).



RP-level is useful to monitor the therapy.



to

6 hours of surgery and then go down by the third day after surgery. If CRP levels stay elevated 3 days after surgery, an infection may be present.

# Principle:

CRP Test is based on the latex agglutination. This is a slide agglutination test for the **qualitative and semiquantitative** detection of C- Reactive Protein (CRP) in human serum. Latex particles coated with goat anti-human CRP are agglutinated when mixed with samples containing CRP. When latex particles coated with human anti-CRP aremixed with a patient’s serum containing C – reactive proteins, this results in visible agglutination wihtin 2 minutes.

# Materials Required:

* CRP Reagent: A stabilized buffered suspension of polystyrene latex particles coatedwith goat IgG anti-human CRP.
* Positive Control
* Negative Control
* Glass test slide.

**Procedure of Qualitative Test**

* Bring all reagents and serum sample to Room Temperature and mix latex reagentgently prior to use. Do not dilute the controls and serum.
* Place 1 drop of Serum, Positive control and Negative control on separate reactioncircle on glass slide.
* Then add 1 drop of CRP latex reagent to each of the circles.
* Mix with separate mixing sticks and spread the fluid over the entire area of the cell.
* Tilt the slide back and forth slowly for 2 minutes observing preferably under artificiallight.
* Observe for visible agglutination.

**Procedure of Semi-Quantitative Test**

* Prepare dilution of the specimen with physiological saline 0.9%(N.S) as indicated inthe following table

**Dilution is:**

* add 40 μl of N.S on each separate reaction circle on glass slide
* add 40 μl of serum in first reaction circle on glass slide an them mix It
* transport 40 μl of mixed (N.S and serum) to next reaction circle on glass slide and also mixed wih 40 μl of N.S and continuous with same way in remained reaction circleon glass slide.
* The last dilution of serum with visible agglutination is the CRP titre of the serum.



**Result Interpretation of CRP Test:**

Agglutination of latex particles is considered a positive reaction, indicating the presenceof C-reactive protein at a significant and detectable level. Specimens which do not contain human CRP will not cause agglutination

