

CRP TEST

PRINCIPLE:

C-Reactive Protein usually appears in the sera of patients in the acute stages of a number of inflammatory conditions, most bacterial and some viral infections; acute rheumatic fever with or without carditis, rheumatoid arthritis and most other collagen diseases and in a number of other conditions characterised by inflammation. C - reactive protein can usually be demonstrated in cases of acute myocardial infarction and in several types of malignancies particularly those that are metastatic. CRP is based on the latex agglutination method introduced by Singer, et. al., in 1957. In this method, the immunologic reaction between CRP as an antigen and the corresponding antibody coated on the surface of biologically inactive latex particles results in visible agglutination within 2 minutes.

When serum is drawn from a patient and tested at the appropriate intervals, changes in the level of CRP can be used as an index of recovery. The use of CRP testing to measure effectiveness of therapy is a clinical significance, particularly in the management of patients with acute rheumatic fever.

SENSITIVITY:

The CrpTEST[®] latex reagent has a sensitivity of 7 ug/ml CRP.

REAGENTS:

01. CRP latex reagent
02. Positive control
03. Negative control
04. Glass slide & Mixing sticks

STABILITY:

The reagents and control sera are stable upto the expiry date as mentioned on the vial label, when stored at 2^o - 8^o C, do not freeze.

PROCEDURE:

A. QUALITATIVE TEST:

Bring all reagents and serum sample to Room Temperature and mix latex reagent gently prior to use. Do not dilute the controls and serum.

Place on separate reaction circle on glass slide.

- Serum specimen 1 drop
- Positive control 1 drop
- Negative control 1 drop

Then add CRP latex reagent 1 drop 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 artificial light.

INTERPRETATION OF RESULTS:

Agglutination is a positive result and indicates the presence of elevated level of CRP.

No agglutination is a negative result and indicates normal of CRP.

Sera with positive results in the screening test should be retested in the semi quantitative test for obtaining the titre.

B. SEMIQUANTITATIVE TEST:

Prepare dilution of the specimen with physiological saline 0.9%, as indicated in the following table

Dilution	CRP (ug/ml) in undiluted sample
1:2	14
1:4	28
1:8	56
1:16	112
1:32	224
1:64	448
Then proceed as in qualitative test	

INTERPRETATION OF RESULTS:

The last dilution of serum with visible agglutination is the CRP titre of the serum. This has been calculated upto titre of 1:64 in the above table for ready references.

CALCULATION OF TITRE:

CRP ug/ml = 7 x D, where D is the highest dilution of serum showing agglutination and 7 is the sensitivity in ug/ml.

CLINICAL SIGNIFICANCE:

The CRP-test is a sensitive indicator for inflammatory process e.g., for rheumatic fever and for the acute phase of rheumatoid arthritis.

The determination of the CRP-level is useful to monitor the therapy.

REFERENCES:

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3. Claus, D.R., Osmand, A.P., Gewurz, H., J. Lab. Clin. Med., 87, (1976), 120 - 128.
4. Sabel, K.G., Wadsworth, Ch., Acta Paediatr. Scand., 68, (1979), 825 - 831.