

Precipitin Reaction (the ring test)

Diagnostic Immunology

- Many tests based on the interactions of antibodies and antigens have been developed to determine the presence of antibodies or antigens in a patient.
- These tests require both **specificity and sensitivity** of the antibodies. **Sensitivity is the ability to recognize and bind to the antigen, specificity is the characteristic of binding only to one antigen and no others.**

- precipitin

Any antibody which reacts with an antigen to form a precipitate.

What is ring test?

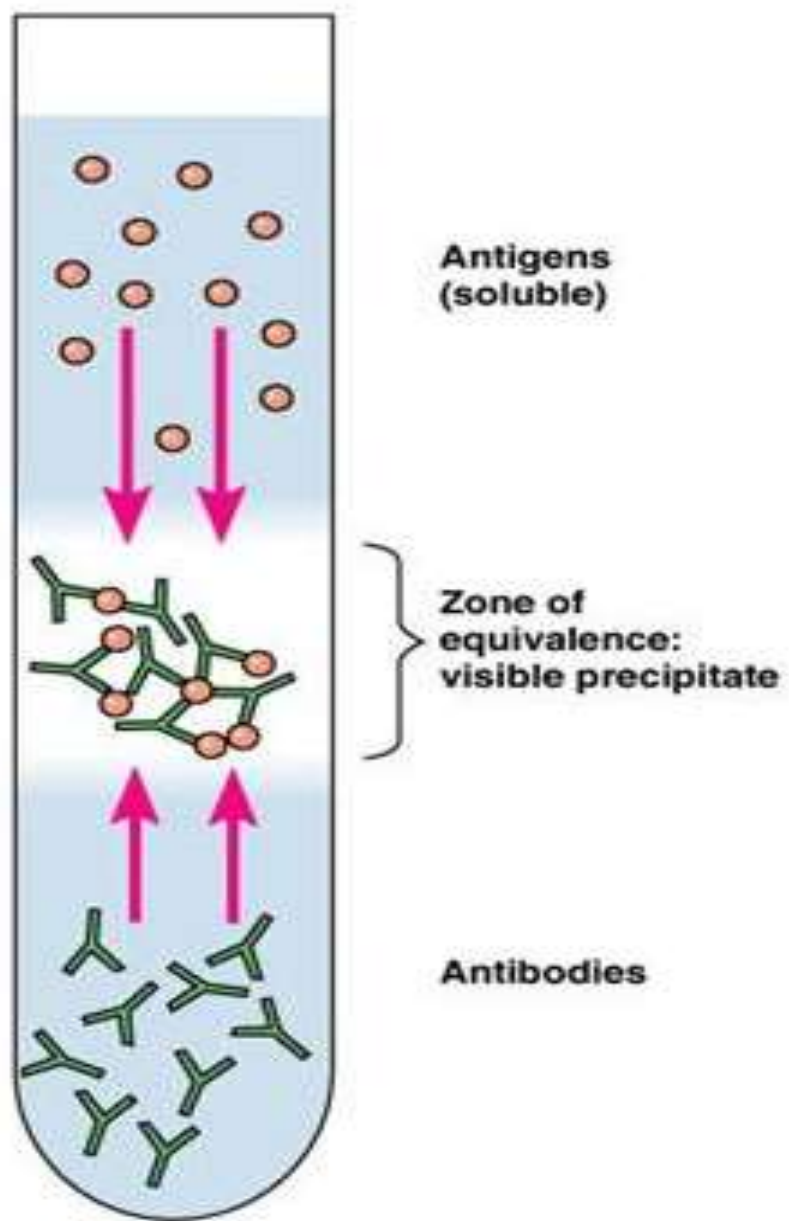
-The ring test is a simple serological technique that illustrates the precipitin reaction in solution. This antigen-antibody reaction can be demonstrated by the formation of a visible precipitate, a flocculent or granular turbidity, in the test fluid.

-Antiserum is introduced into a small diameter test tube, and the antigen is then carefully added to form a distinct upper layer. After 4 hours incubation a ring of precipitate forms at the point of contact in the presence of antigen-antibody reaction. The rates at which the visible ring forms **depends on the concentration of the antigen.**

To detect the precipitin reaction, a series of dilutions of the antigen is used, because both insufficient and excessive antigen amounts of antigen will prevent the formation of a visible precipitate. Furthermore, the optimal antibody : antigen ratio by the presence of a pronounced layer of granulation at the interface of the antiserum and antigen solution.

Objective

To demonstrate a precipitin reaction by means of the ring test



(a)



(b)