Precipitin Reaction (the ring test)
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
Antigens (soluble)

Zone of equivalence: visible precipitate

Antibodies

(a)

(b)