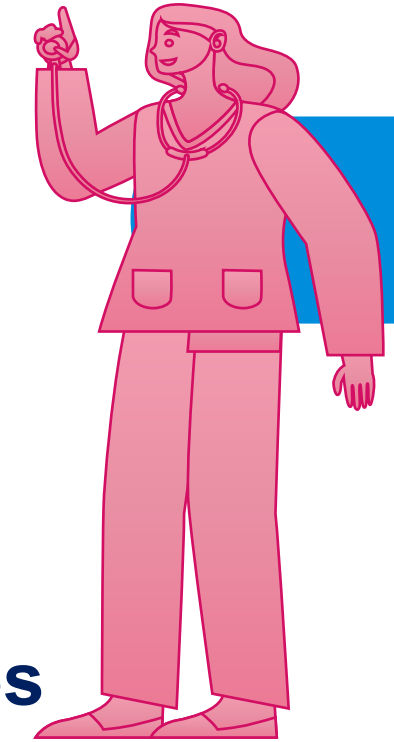
Agglutination test

Fatimah Miftah 2071
Heba Adel 2409

ILOS

- Define agglutination test
- Explain types agglutination test
- Discuss the uses of agglutination test
- Mention the advantage and disadvantages



Agglutination test

- The interaction between antibody and a particulate antigen results in visible clumping called agglutination
- Antibodies that produce such reactions are called **agglutinins**

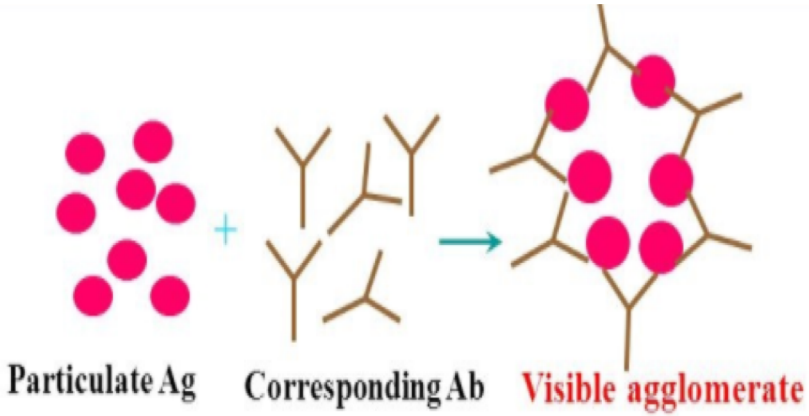
❖ Particulate antigen include :

- Bacteria
- white blood cells
- red blood cells
- latex particles

Types Agglutination

- Agglutination is classified into three groups based on the reaction types between antigen and antibody:

1. **Direct Agglutination:** In this technique cells or insoluble part antigens are agglutinated direct the antibodies.



Direct agglutination reaction

Type Agglutination

Direct agglutination test is divided into two classes, such as;

A. Slide Agglutination:

In this method, blood samples are mixed with Anti-A, Anti-B, and Anti-D antibody on a slide to perform the agglutination.

B. Tube Agglutination:

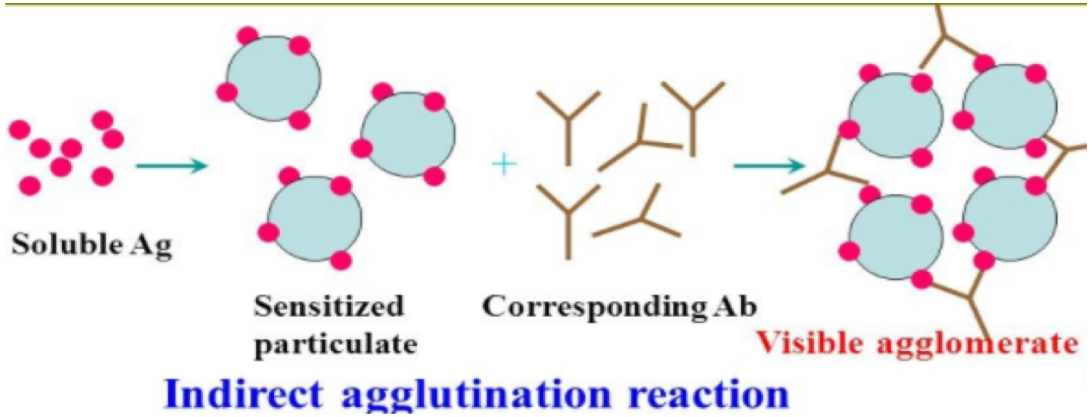
This technique is used for the detection of a specific antibody in a blood sample with the presence of a constant amount antigen.

Types Agglutination

2. Indirect Agglutination

When a soluble antigen used in an agglutination reaction it is often coated on a carrier particle, and agglutination takes place on the surface of the carrier molecule, this type of reaction called indirect agglutination reaction.

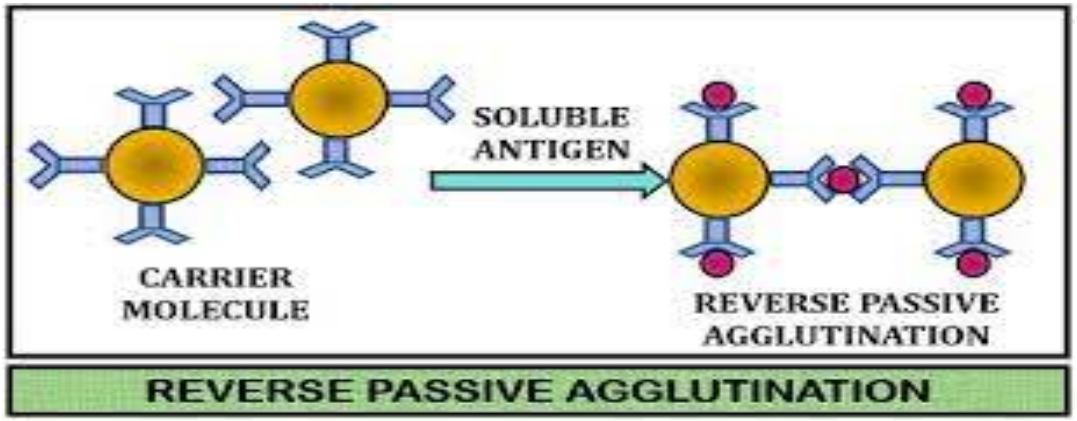
In indirect agglutination test RBC, latex or betonies, etc used as carrier molecules.



Indirect agglutination reaction

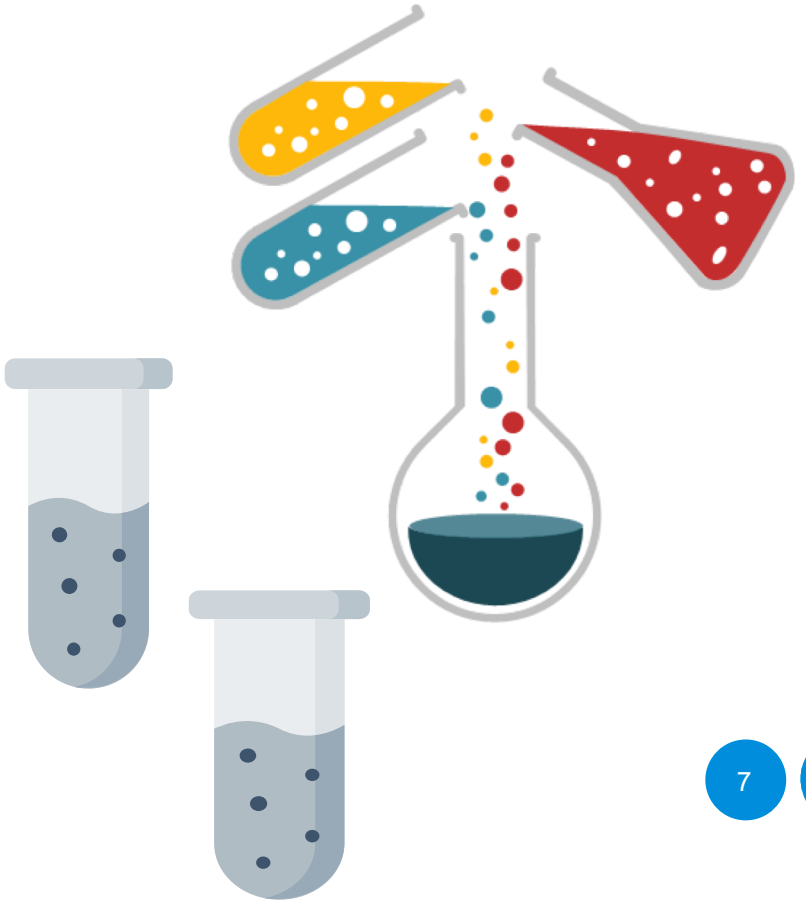
3. Reverse passive agglutination

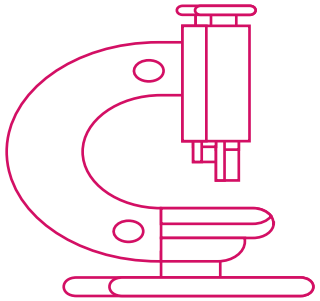
In this technique, the antibody is coated on a carrier molecule which then detects antigen in the patient's serum.



Uses agglutination test

1. Blood grouping
2. Diagnosis of infectious & non-infectious diseases
3. Measure levels of certain therapeutic drugs, hormones, and plasma proteins
4. Agglutination Test is basically used to determine whether the quantity of antibodies against a particular infectious agent in a patient's blood





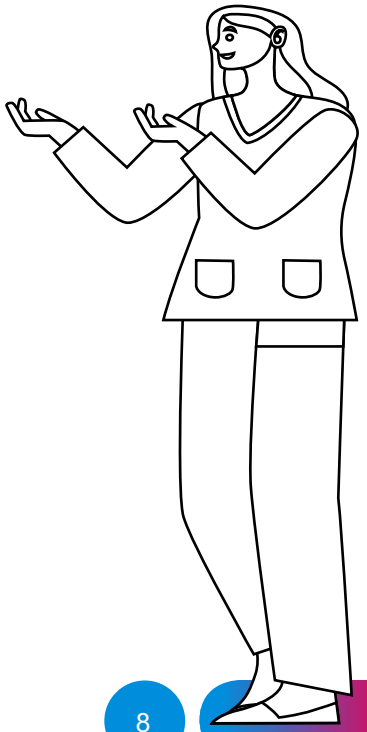
Advantage and disadvantages

Advantage

- Agglutination Require less time
- Easy to perform
- High degree of analytic sensitivity.
- can detect an enormous variety of antibodies

Disadvantages

- low specificity (have false positive results) need confirmatory tests
- The reaction are only semi quantitative
- Some of components need to be fresh(RBCs, Complement)



References

- https://microbiologynote.com/agglutination-test-definition-types-uses-advantages-disadvantages/
- https://biologyreader.com/agglutination-reaction.html
- https://microbiologynote.com/agglutination-test-definition-types-uses-advantages-disadvantages/
- https://www.slideshare.net/MostafaMahmoud76/serological-diagnosis-of-infectious-diseases


Thank you!