

VIROLOGY

Latex Agglutination Test



Sawa University

College of health and medical techniques

Department of Medical Laboratories

. Three :Stage

جامعة ساوة الاهلية

كلية التقنيات الصحية والطبية

قسم تقنيات المختبرات الطبية

المرحلة الثالثة

...محاضرة رقم 9..

Lecture No.9..

الجانب العملي

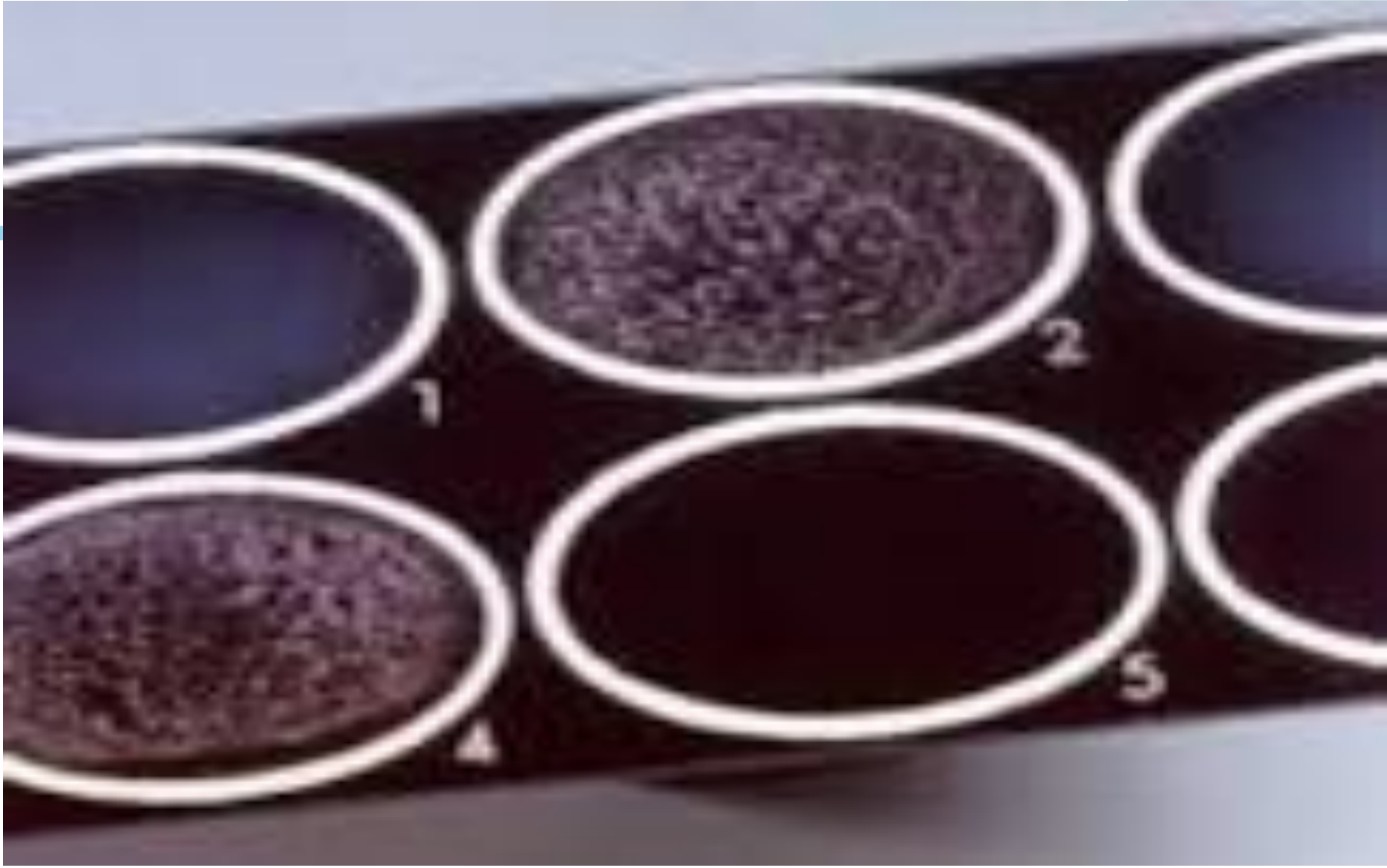
Practical

تدريسي المادة : م. د. سيف علي

Latex agglutination test

The latex agglutination test is a test done in a lab to in body fluids

 **antigens** or **antibodies** check for certain including saliva, urine, cerebrospinal fluid, or blood.



The test depends on what type of sample is needed.

Saliva

Urine

Serum

Cerebrospinal fluid

Latex Principle of agglutination test



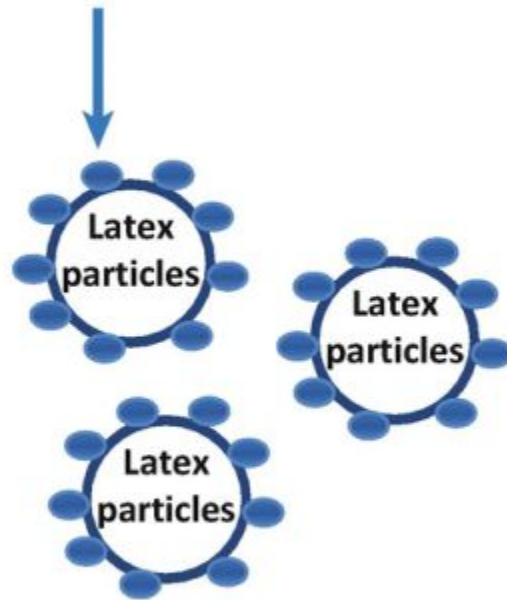
Latex bead



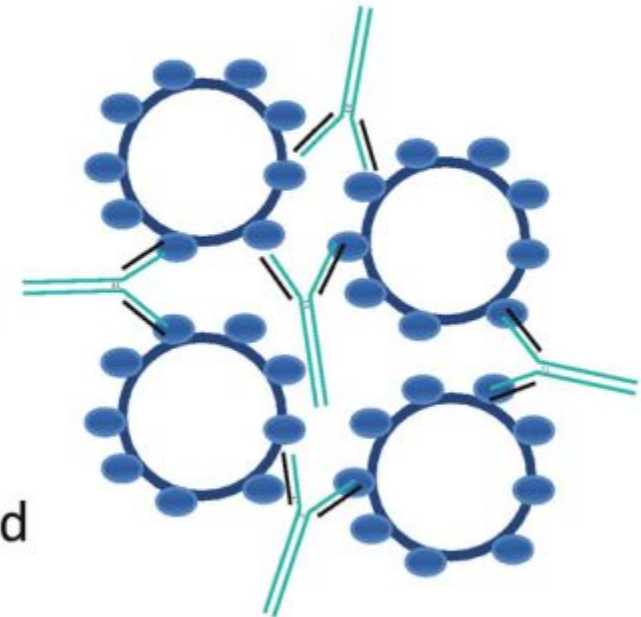
Latex agglutination Kit

Agglutination tests are **based on the presence of agglutinating antibodies in patient sera that can react with specific antigens to form visible clumps.** In the agglutination tests, the antibody - antigen reaction can be either a direct or passive agglutination reaction.

Latex particles coated with
gammaglobulin



Patient serum that could
contain RF



Agglutination

There are two stages of agglutination reaction:

The process of agglutination involves two steps:-

First step is sensitization and second is lattice formation. It is attachment of specific antibody to corresponding antigen

The sample is sent to a lab, where it is mixed with latex beads coated with a specific antibody or antigen. If the suspected substance is present, the latex beads will clump together (agglutinate).

Latex agglutination results take about 15 minutes to an hour.

Procedure

Coating of Latex

To 20 μ l of latex beads taken in a 1.5 ml vial add 40 μ l of glycine-saline buffer.

Add 60 μ l of antigen to the latex and incubate at 37°C for 2 hours.

Spin down at 5000 rpm for 10 minutes and carefully aspirate the supernatant.

Resuspend the pellet in 1 ml of blocking buffer and spin down at 5000 rpm for 10 minutes.

Repeat the washing once more.

Add 90 μ l of blocking buffer to the pellet, mix well.

Incubate at 4°C, overnight.

Agglutination Test

To 200 μ l of glycine-saline buffer taken in a vial, add 4 μ l of test antisera. (50 times diluted).

Add 50 μ l of antigen to 50 μ l of diluted antiserum in a 1.5 ml vial, mix well and incubate at room temperature for 10 minutes.

Pipette 10 μ l of coated latex onto a glass slides.

Add 10 μ l of diluted test antiserum to slide A.

Add 10 μ l of antiserum mixed with antigen (from step 8) to B.

Add 10 μ l of glycine-saline buffer to C.

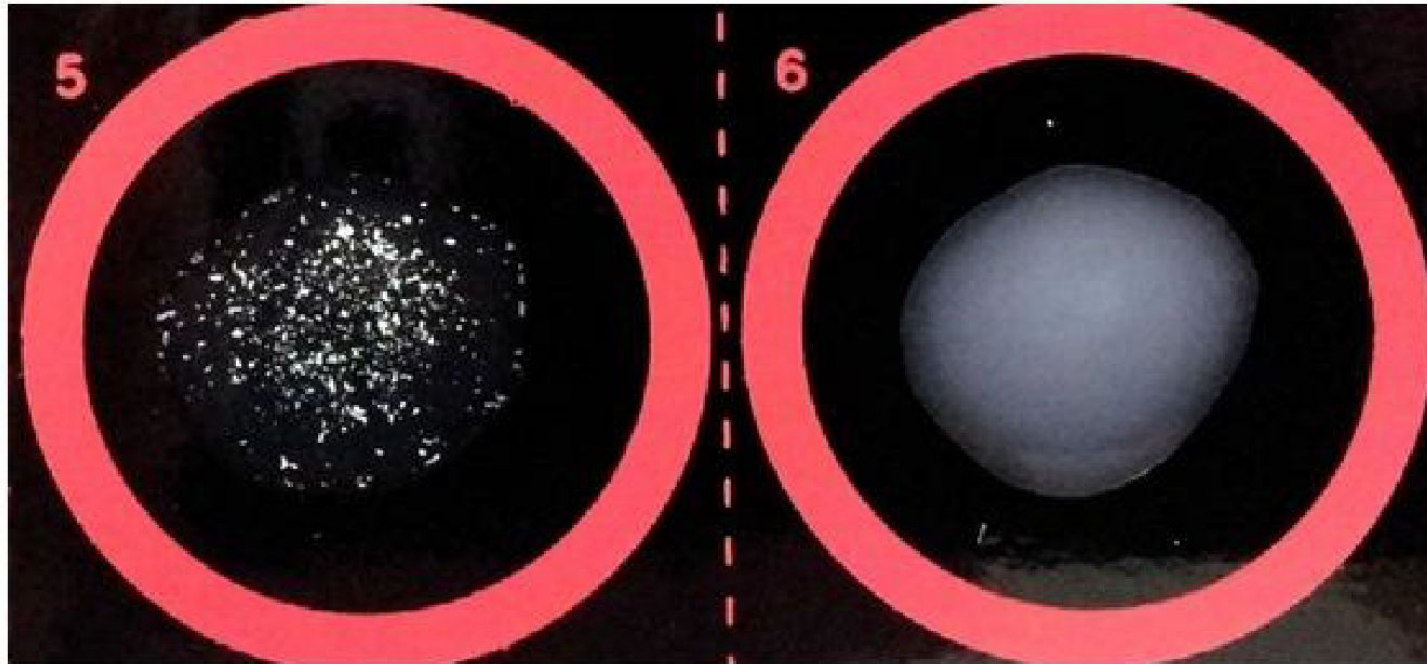
Take a toothpick and mix the content in each slide. Discard the toothpick after using in one slide (take a new one for the next slide).

After mixing, wait for 2 minutes to observe the result

Result of Latex Agglutination:

Positive Agglutination Result: The presence of White clumps indicates a positive result i.e suspected particle is present (no.5).

Negative Agglutination Result: The absence of white clumps indicates a negative result i.e Suspected particle is not present (no.6)



Types of Latex Agglutination

Latex agglutination test is divided into two classes based on the processes of detection;

A. Latex Agglutination Test (LAT) for Antibody Detection , in this method antigen is coated on the **passive agglutination test** .

It is a surface of latex beads to detect the antibody in the test sample.

B. Latex Agglutination Test (LAT) for Antigen Detection

It is a Reverse Passive Agglutination Test. In this method, antibody is coated on the surface of latex beads to detect the antigen in the test sample

Use of Latex Agglutination

In the clinical laboratory, it is used for the detection of antigen to *Cryptococcus neoformans* in CSF or serum.

Used for the confirmation test of beta-hemolytic streptococcus from the culture plates.

It also used for the detection of *Streptococcus agalactiae*, *Clostridium difficile* toxins A and B and rotavirus.

Any questions?

*Thank
You*