

Advanced laboratory technique

IMMUNOCHROMATOGRAPHY ASSAY (ICA)



Sawa University

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. Stage third

جامعة ساوة الاهلية

كلية التقنيات الصحية والطبية

قسم تقنيات المختبرات الطبية

المرحلة / الثالثة

محاضرة رقم: 3

¹ Lecture No 3:

Practical

تدريسي المادة : م.م ايمان علي اعطيه

Immunochromatography assay (ICA)

Immunochromatography assay (ICA), namely lateral flow test , is a •
simple device intended to detect the presence or absence of the target
analyte

The concept of immune chromatography is a combination of •
chromatography and immunochemical reactions

The most widespread immunochromatographic system is the test strip •

Principal of Immunochromatography kit

- When the **liquid sample** is dropped on the **sample pad**, the **antigen** in the sample forms an **immunocomplex** with the **antibody** labeled with **colloidal gold**.

Its **complex moves** along with the **liquid sample**, and makes a contact with the antibody **immobilized on the membrane**, followed by forming an immunocomplex with the immobilized antibody, resulting in generating a **colored red purple line**.

Appearance of red purple line on the membrane indicates the presence of antigen of interest **in the sample**. Since the liquid of the sample migrates through the membrane very fast, it makes it possible to detect the presence or absence of antigen **within 15 minutes**.

Step 1: Apply 10 μ l of serum sample into the sample well (S).



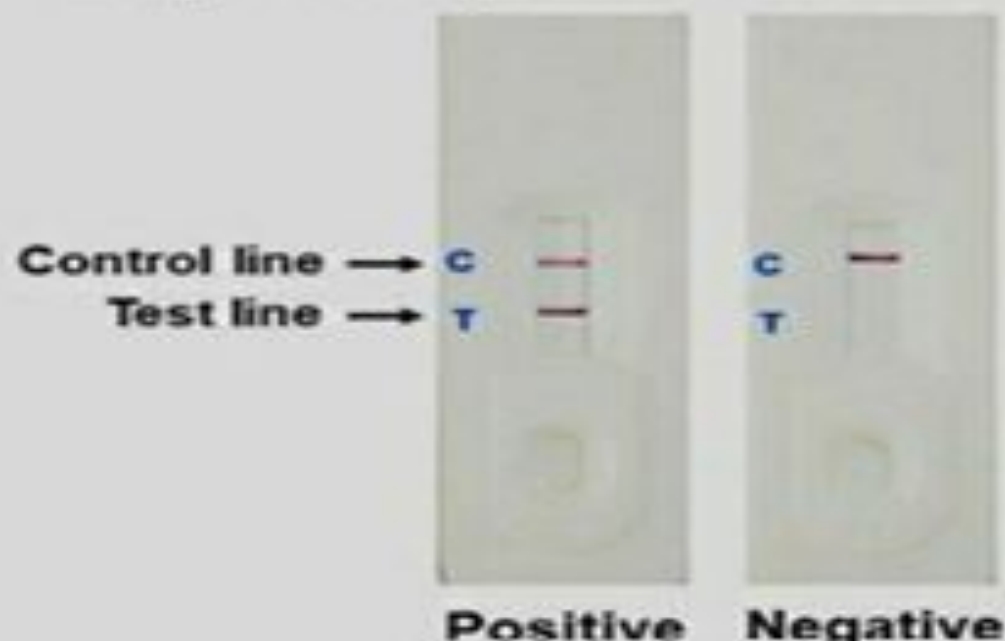
Step 2: Add 4 drops of running buffer into the sample well (S).



Step 3: Wait for 15 minutes before reading the result.

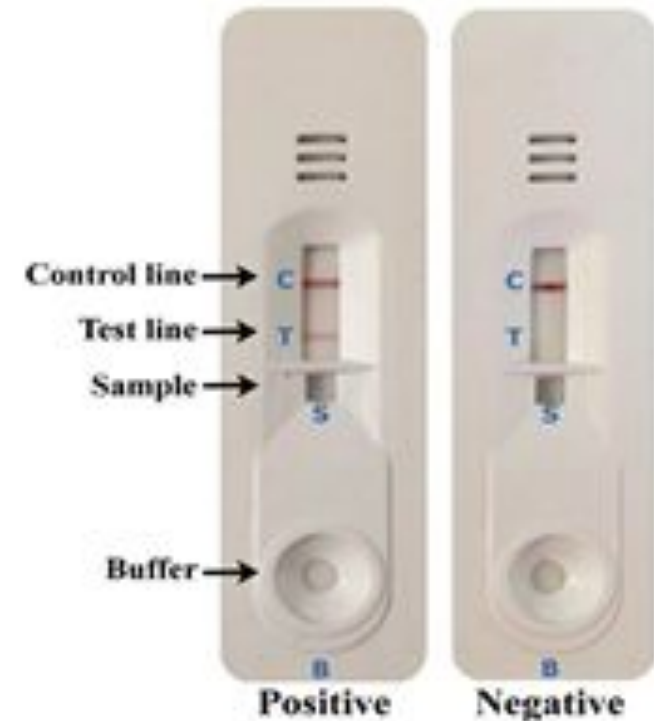


Step 4: Interpret the result.



Basic Components of Lateral flow test

- Sample pad •
- .Conjugate (detector) pad •
- .Detection conjugate •
- .Nitro-cellulose membrane •
- .Absorbent (sink) pad •
- .Test and control reagent lines •
- .Plastic-adhesive backing card •



The benefits of immunochromatographic tests includes

- .Can detect antigen or antibody.1
- .Commercially available.2
- .Easy to perform .3
- .Limited/no instrumentation.4
- .Single use, rapid test.5
- .User friendly format.6
- .Very short time to get test result.7
- Long-term stability over a wide range of climates..8
- 9.Relatively inexpensive to make



:Limitations



.Results are qualitative-1

.Rapid tests can be less sensitive or less accurate compared to existing tests-2

:Test format

Strip •

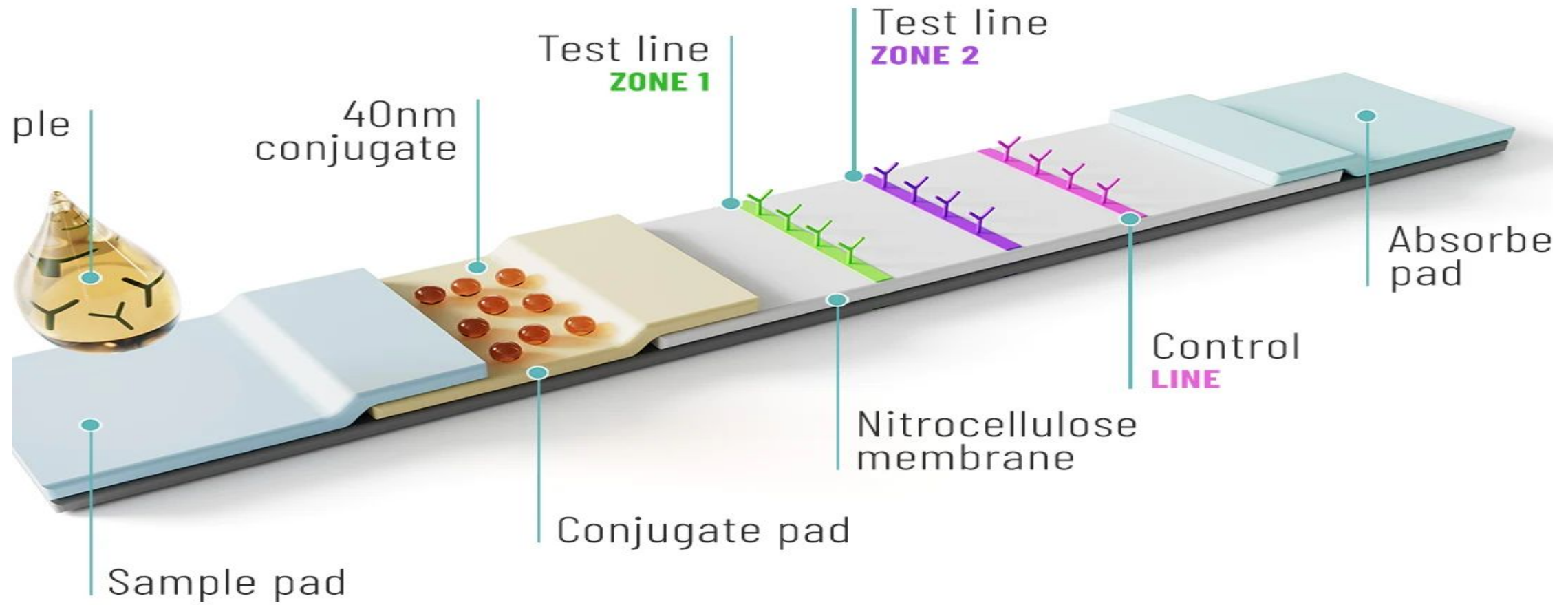
Cassette •

Multi-devices Strip •

.Midstream (hCG & LH only) •

Applications of Immunochromatographic

Applications of Immunochromatographic assays It can be applied for multiple test platforms for liver, sexually transmitted diseases, cardiac markers, as well as women's and men's health (hCG, VDRL, CMV, PSA, H. Pylori, Troponin I, TORCH, HIV)



Any questions?



*Thank
You*