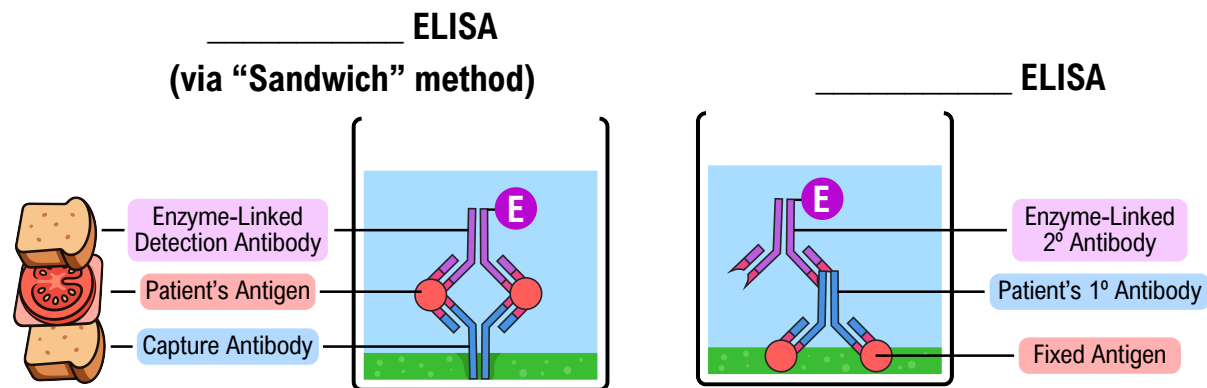
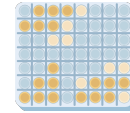


TOPIC: IMMUNOASSAY: ELISA

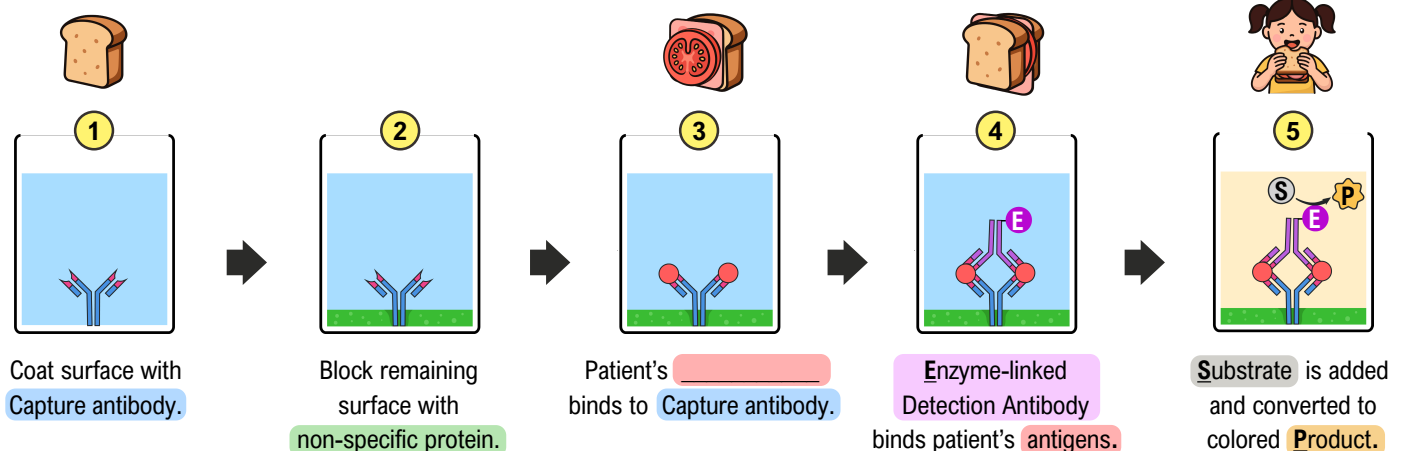
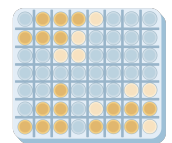
Immunoassay: ELISA

- ◆ _____ (Enzyme-Linked Immunosorbent Assay): uses antibodies & enzymes to *detect & quantify* a substance.
 - The enzyme catalyzes a reaction forming a _____ product.
 - Used to diagnose many diseases & can screen _____ samples at once.
- ◆ **Direct ELISA**: a patient's _____ is detected & “sandwiched” between capture & detection antibodies.
- ◆ **Indirect ELISA**: a patient's *primary* _____ is detected with enzyme-linked-secondary antibody.



Direct ELISA (via “Sandwich” Method)

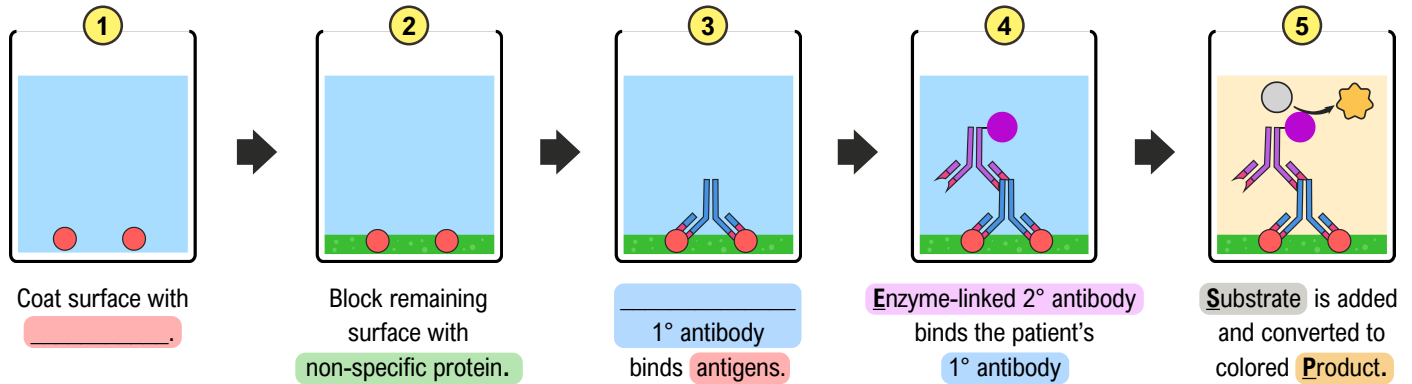
- ◆ Direct ELISA can be set up & performed in _____ general steps:
 - 1 Adhere *known* primary **capture** _____ to the surface in the wells of a microplate.
 - 2 _____ any unoccupied sites on the surface by washing with a **nonspecific protein** (e.g. casein).
 - 3 Treat surface with _____ from a patient's sample (if present, the target antigen binds the antibody).
 - 4 Treat with an **enzyme-linked-_____**-antibody specific to antigen of interest.
 - Enzyme can catalyze a reaction forming a _____ product.
 - 5 Add _____ for the enzyme-linked-antibody & look for a **color change (+ result)**.
 - **Color intensity** is directly _____ to the amount of antigen present in the sample.



TOPIC: IMMUNOASSAY: ELISA

Indirect ELISA

◆ Recall: in an indirect ELISA, we're detecting a patient's primary _____, not the antigen.



◆ Presents fewer challenges to perform than direct ELISA but has _____ sensitivity & specificity.

PRACTICE

An ELISA can be used for:

- a) Quantitative analysis.
- b) Size analysis.
- c) Sequence analysis.
- d) Structure analysis.

PRACTICE

All the following are advantages to identifying infectious diseases with ELISAs except:

- a) ELISA can utilize a patient's blood, urine, or cells to identify disease.
- b) ELISA can be used to identify a wide range of diseases.
- c) ELISA can test samples from multiple patients at one time.
- d) ELISA can identify multiple different antigens in the same preparation.

TOPIC: IMMUNOASSAY: ELISA

PRACTICE

A doctor orders a patient's blood to be drawn, and an indirect ELISA test to be performed on the patient's blood to check for a rubella infection. This means that the doctor hopes to identify what in the patient's blood?

- a) The presence of rubella virus antigens in the patient's blood.
- b) The severity of the patient's rubella infection.
- c) The presence of antibodies against the rubella virus in the patient's blood.
- d) The presence of cytotoxic T cells in the patient's blood.

PRACTICE

Home pregnancy tests determine if human chorionic gonadotropin (hCG) hormone is present in a woman's urine. If it is present, the individual is pregnant. What type of ELISA test is an at home pregnancy test?

- a) Indirect ELISA.
- b) Sandwich ELISA.
- c) Hormone ELISA.