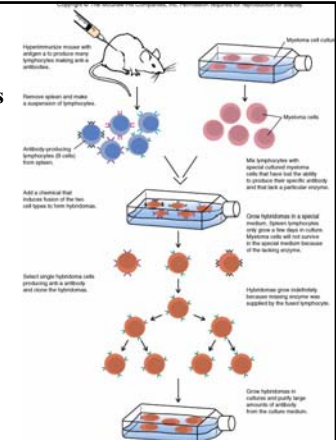


Immunological testing

- Monoclonal antibodies
- Serology
- Quantifying antigen – antibody reactions

17-1

Perspective 17.1 Monoclonal Antibodies



17-2

Serology

- Antibodies
- Antibodies detect and identify antigens

17-3

Quantifying antigen – antibody reactions

- Seroconversion or rise in titer
- Serial dilutions

17-4

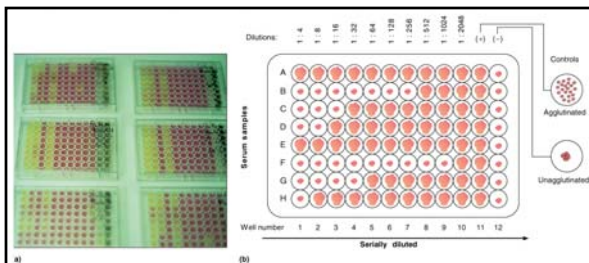


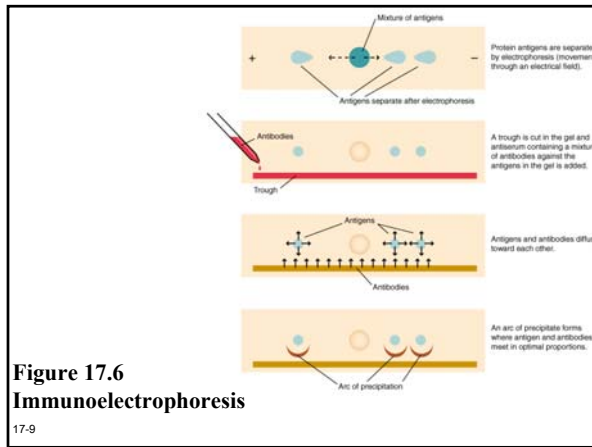
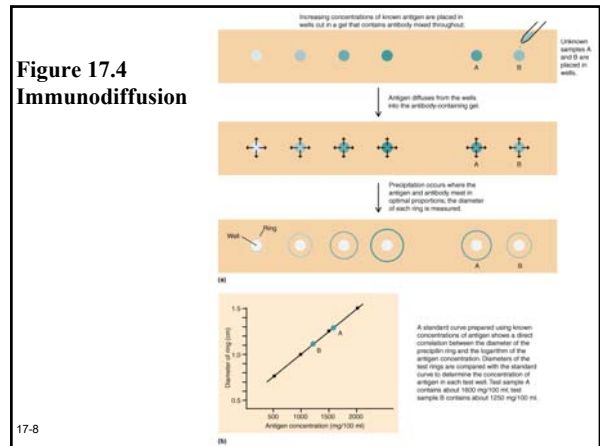
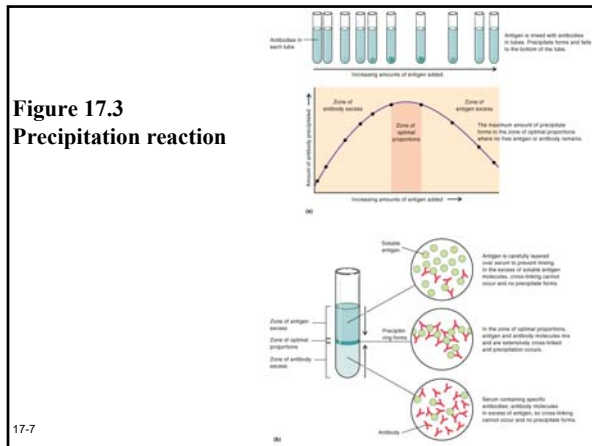
Figure 17.2 - Quantitation of immunologic tests

17-5

Precipitation reactions

- Immunodiffusion
- Immunoelectrophoresis

17-6



Agglutination reactions

- Direct agglutination
- Indirect agglutination
- Hemagglutination

17-10

Direct agglutination

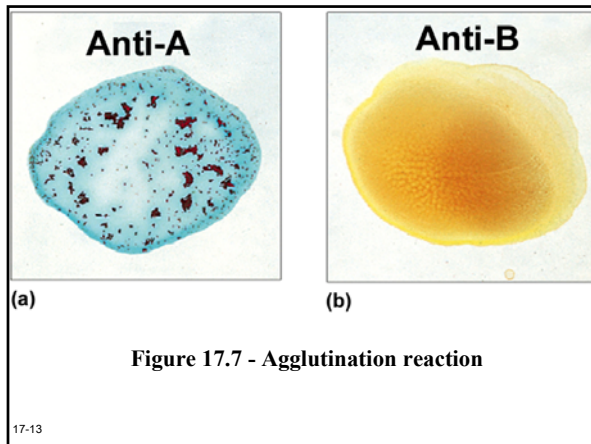
- Cross – linking and lattice formation
- Antibodies react with particulate antigens (red blood cells, bacteria, fungi)
- Visible clumps
- Estimate amount of antibody

17-11

Indirect agglutination

- Soluble antigen is coated onto particles (red blood cells, latex beads)
- Allow for visible clumps (agglutination)

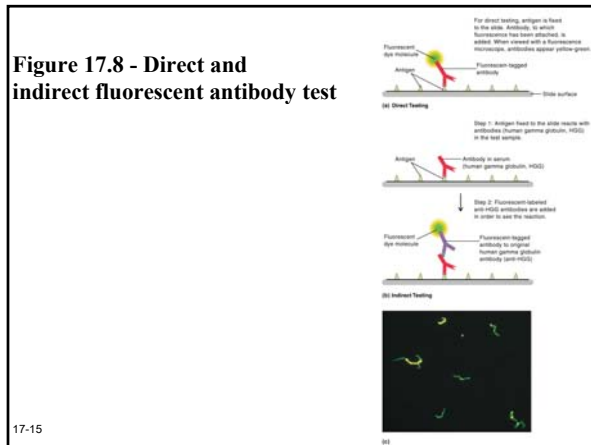
17-12



Immunofluorescence tests

- Direct fluorescent antibody test
- Indirect fluorescent antibody test

17-14



Antigen – antibody assays

- Radioimmunoassay (RIA)
- Enzyme – linked immunosorbant assay (ELISA)
- Western blot

17-16

Radioimmunoassay (RIA)

- Competitive inhibition assay
- Measure antigen or antibody
- Ex. Measure small amounts of hormones or drugs in a clinical sample
- Ex. Measure small amounts of IgE antibody (radioallergosorbent test)

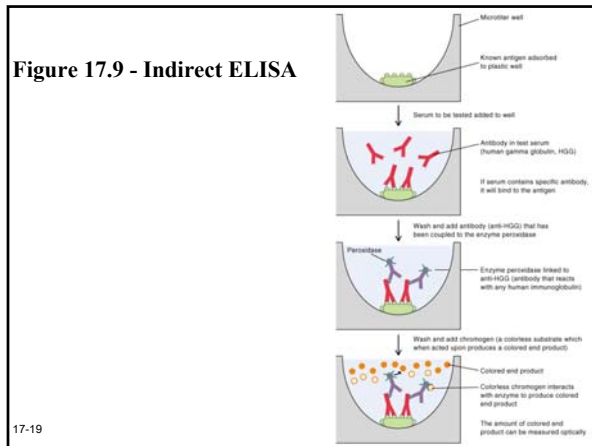
17-17

Enzyme – linked immunosorbant assay (ELISA)

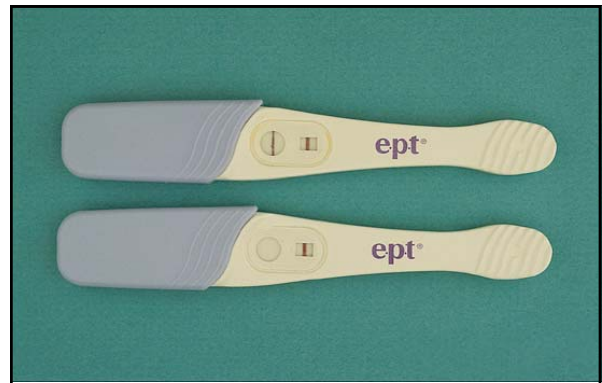
- Color reaction assay
- Indirect ELISA
- Direct ELISA

17-18

Figure 17.9 - Indirect ELISA



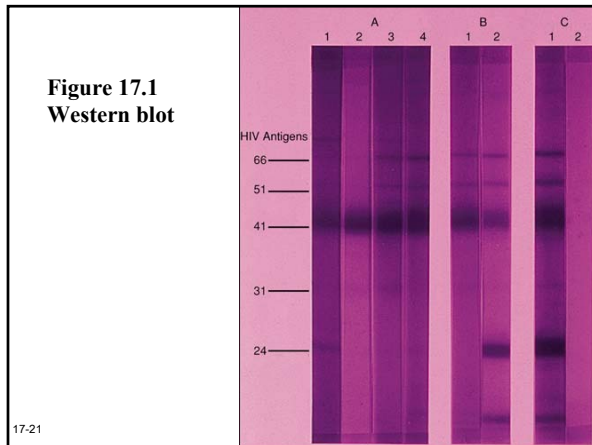
17-19



17-20

Figure 17.1 - Direct ELISA

Figure 17.1 Western blot



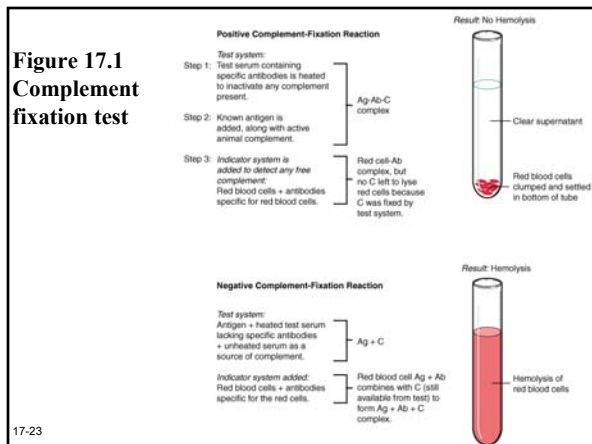
17-21

Complement fixation test

- Measures the binding of complement by an antigen – antibody interaction
- Indicator system determine positive or negative reactions

17-22

Figure 17.1 Complement fixation test



17-23

Neutralization test

- Antibody bind to specific antigen (virus, toxin)
- Antibody – antigen complex prevents antigen from binding (neutralization)

17-24

Cellular immunology test

- **Identification of subsets of lymphocytes**
- **Lymphocyte response to mitogens**
- **Cytotoxic T – cell function**
- **Cell – mediated immunity to infectious agents**

17-25