

Medical Immunology for 2nd Year M.D. Students



Basic Immunologic and Serologic Procedures

University of Jordan

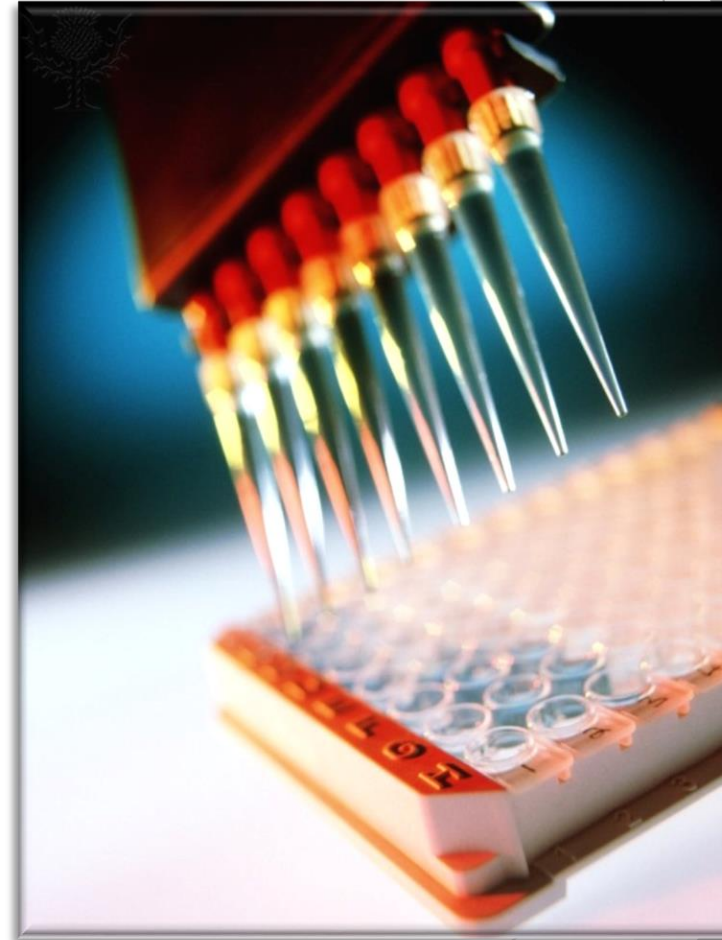
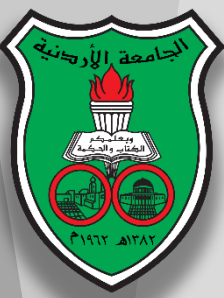
School of Medicine

Department of Pathology, Microbiology and Forensic Medicine

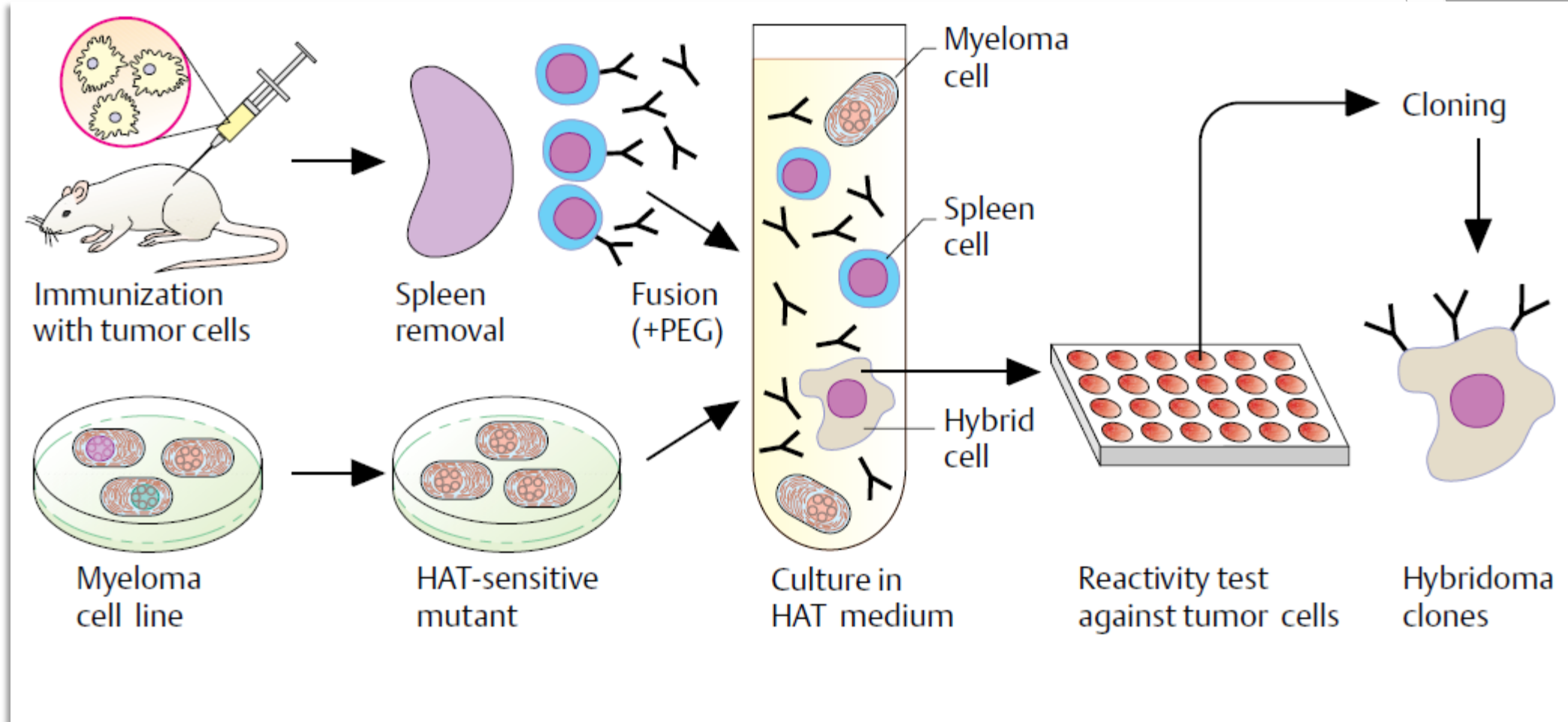
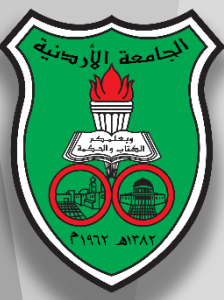
Section of Microbiology and Immunology

Malik Sallam, MD, PhD

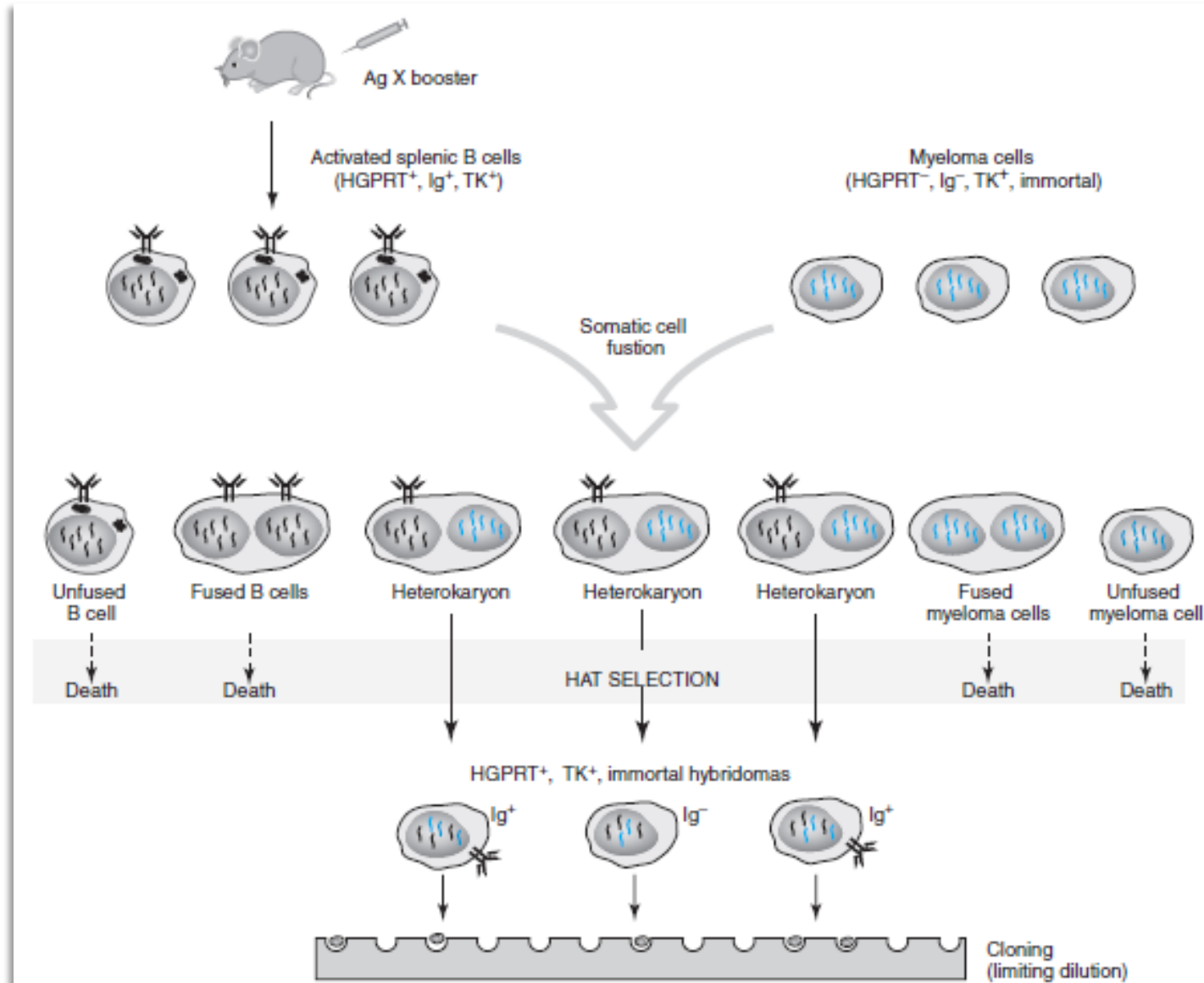
What is Serology?



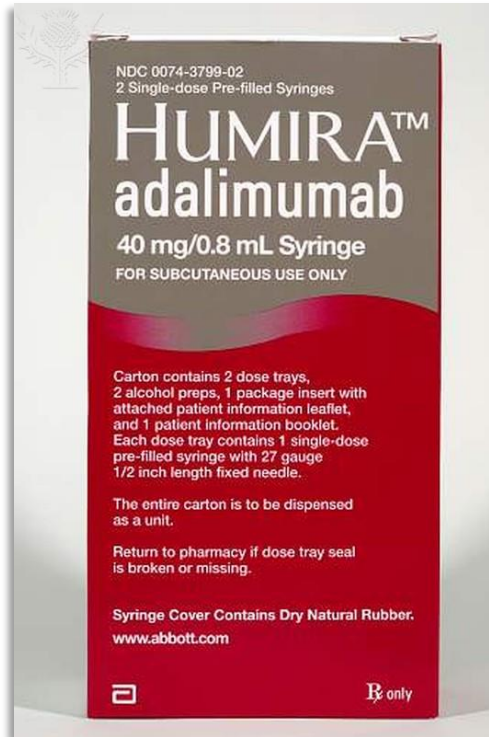
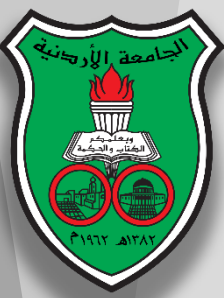
Hybridomas and Monoclonal Antibodies



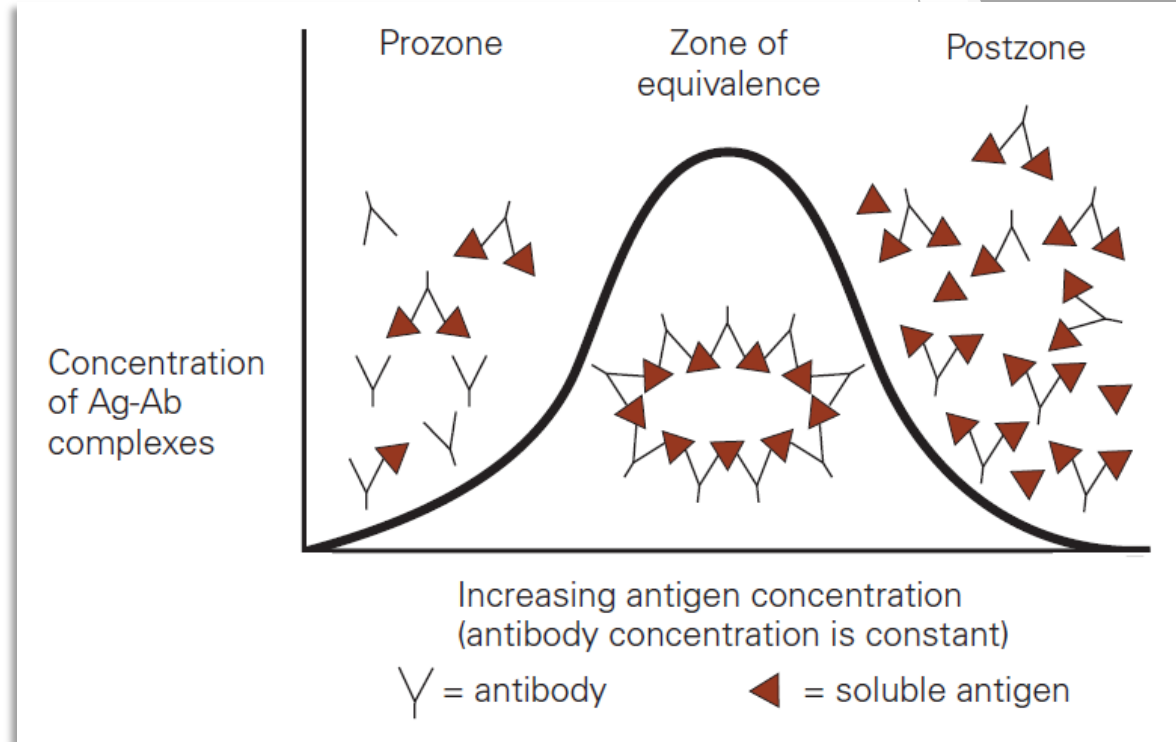
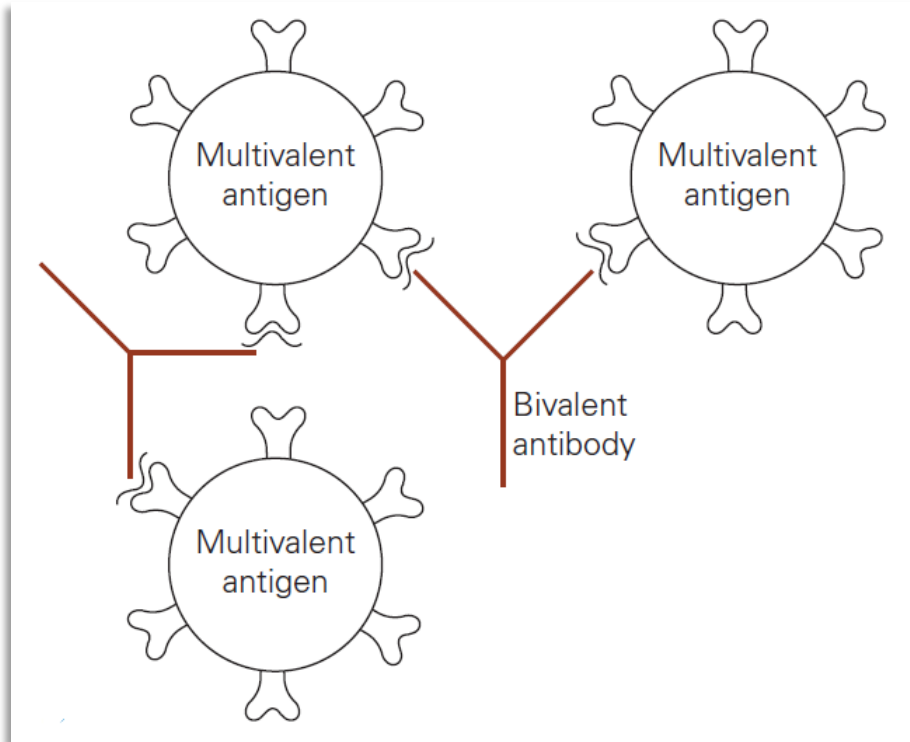
Hybridomas and Monoclonal Antibodies



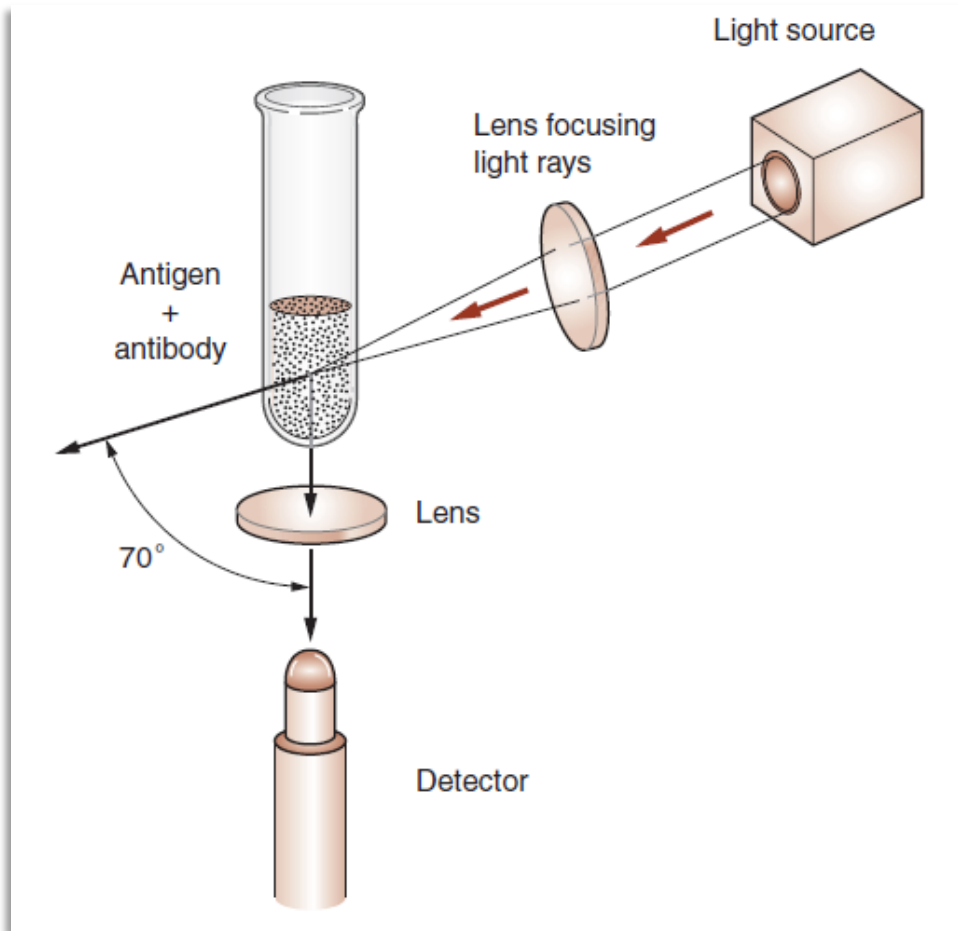
Clinical Applications of Monoclonal Antibodies



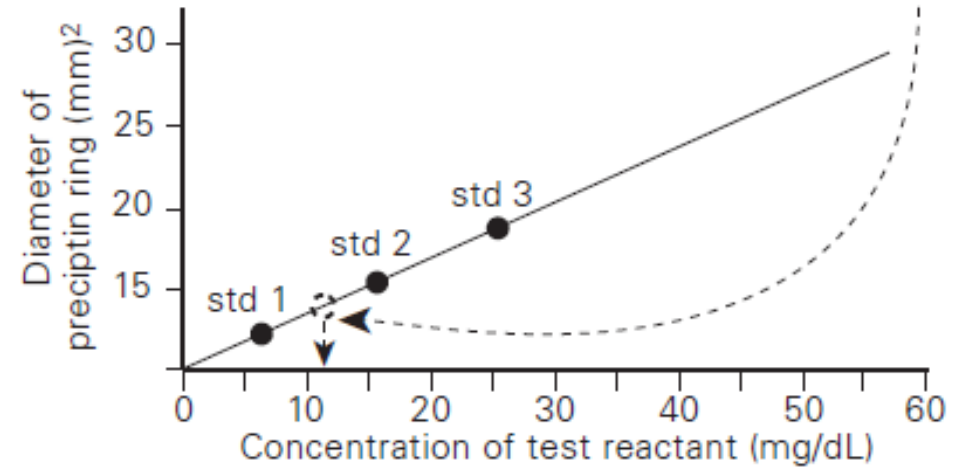
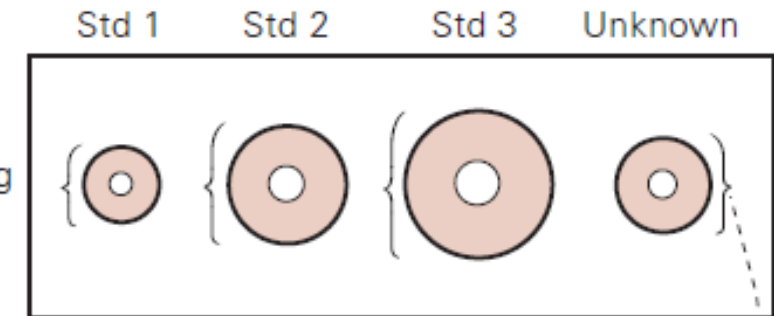
Antigen-antibody Binding Features



Precipitin, Turbidimetric and Nephelometric Immunoassays

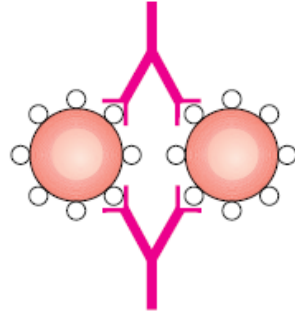


Glass slide coated with agar containing specific antibody



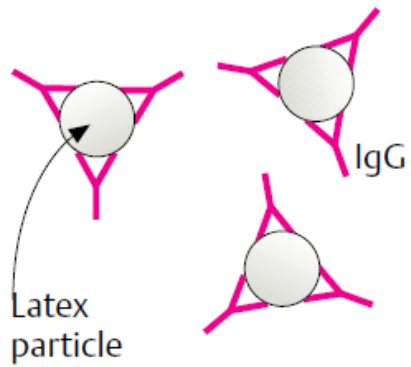
Agglutination, Coomb's Tests

Agglutination of Ag-loaded test erythrocytes in the presence of specific antibodies in patient serum

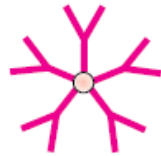


Before: chemical binding
 ○ ↔ ● Sheep erythrocyte
 Ag

1. Hemagglutination

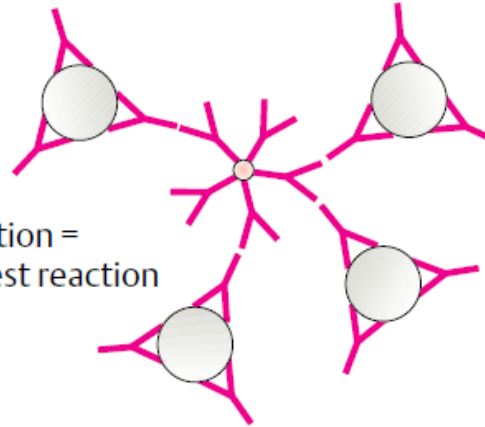


RF (IgM anti-IgG)

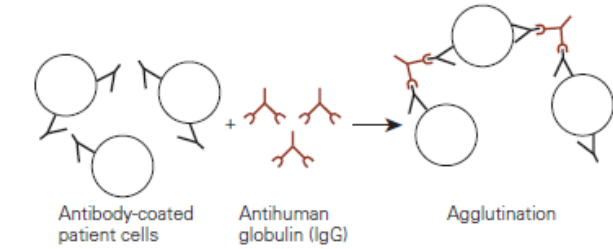


IgM-RF in patient serum

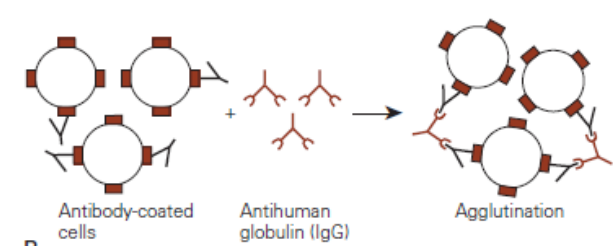
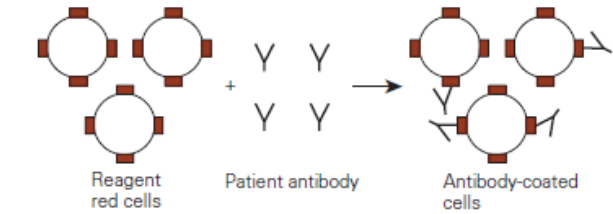
Agglutination = positive test reaction



2. Latex agglutination in rheumatoid factor screening

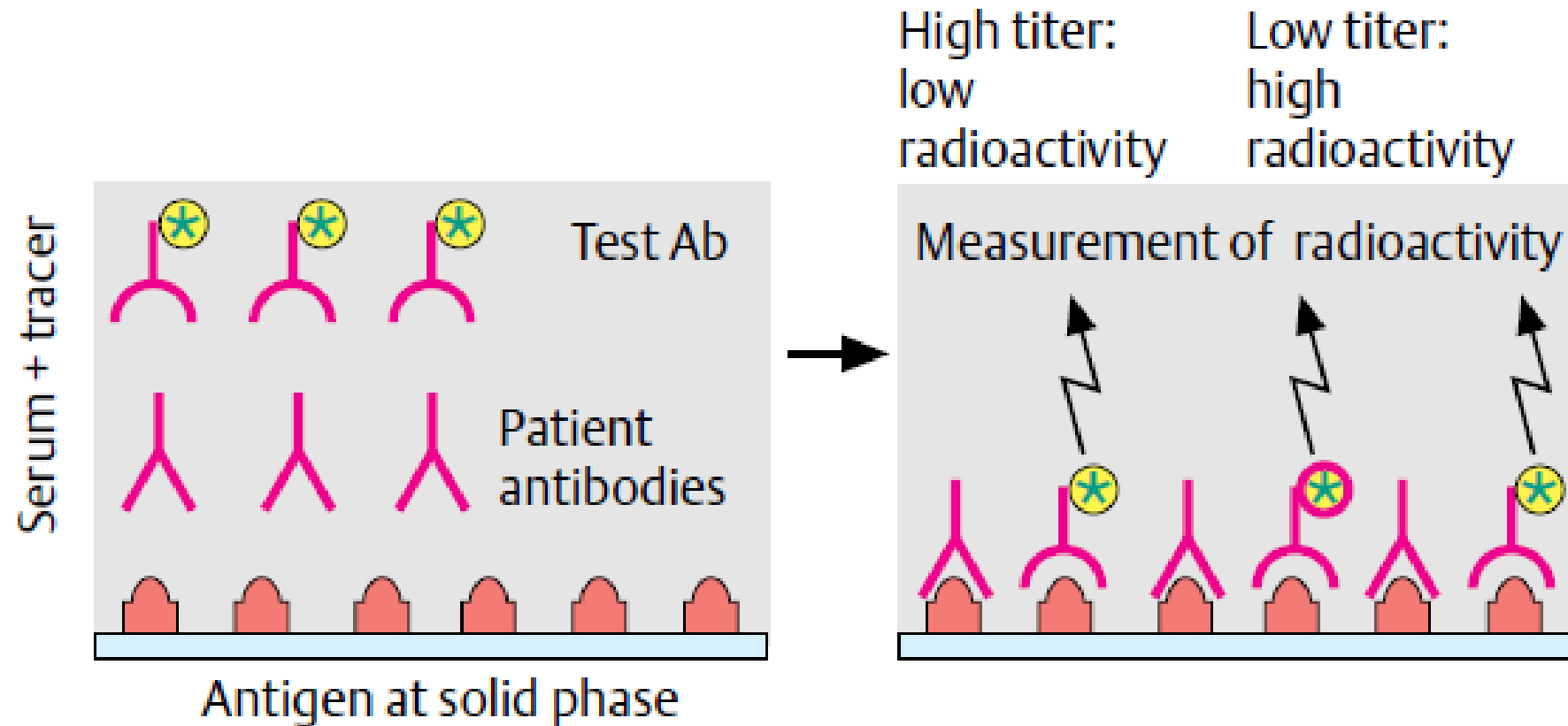


A



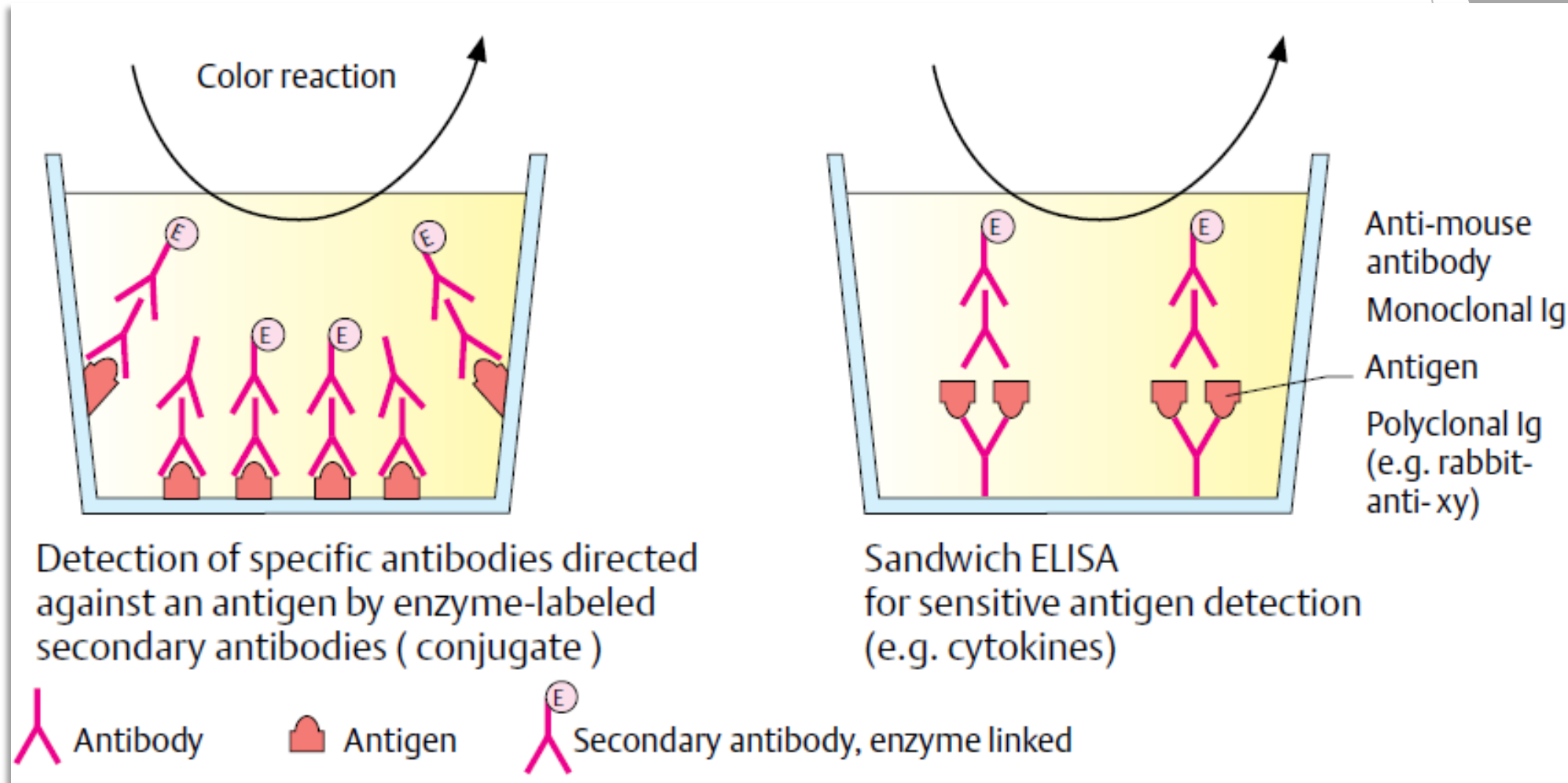
B

Radioimmunoassay (RIA)

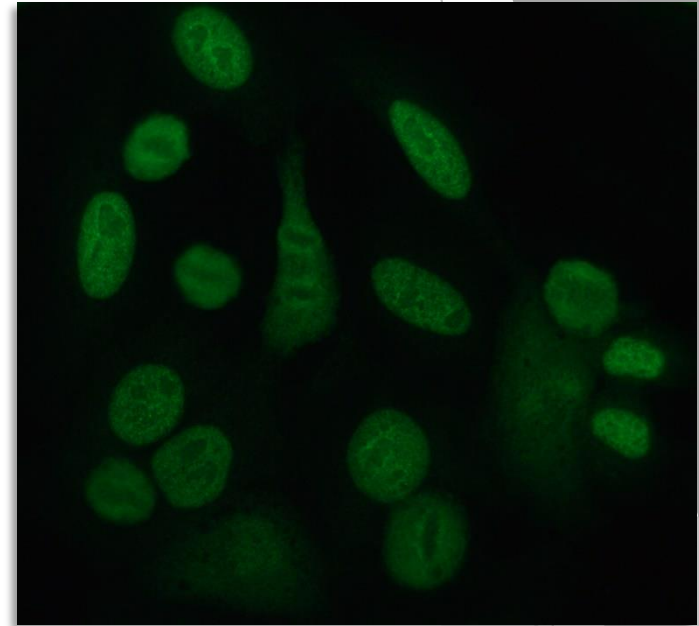
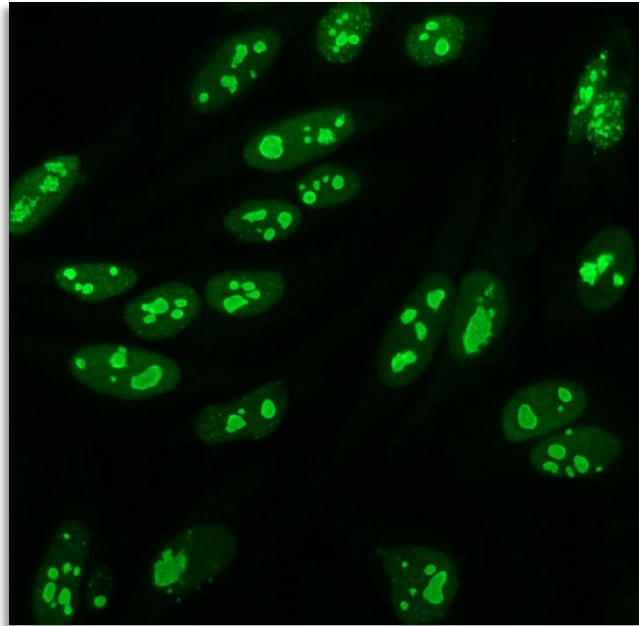
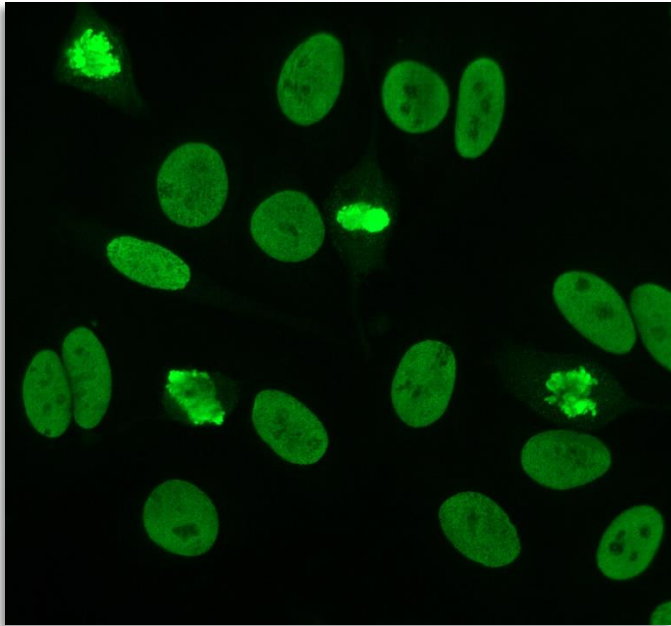


Principle: antibody in patient serum competes with radioactively labeled test antibody

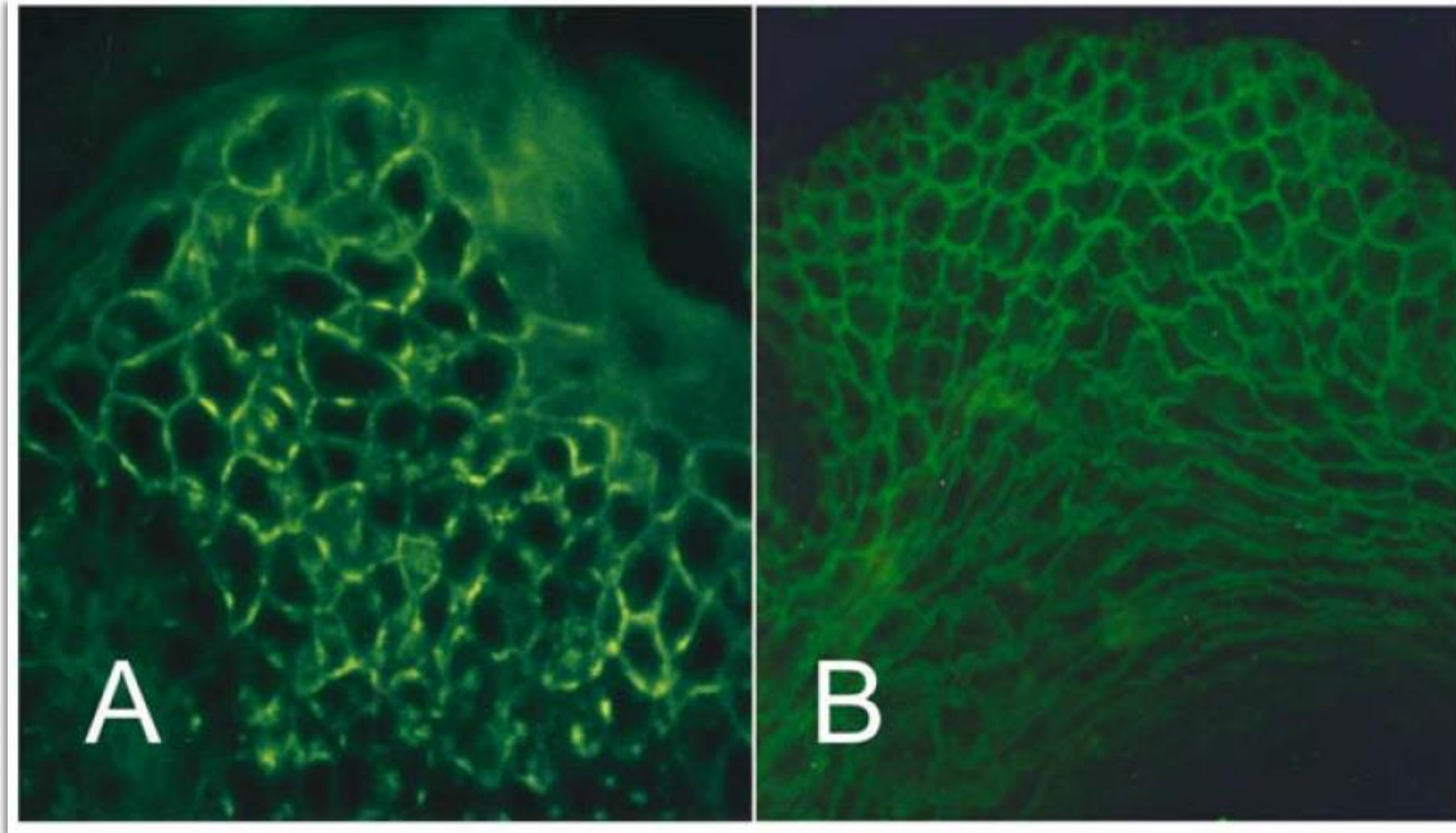
Enzyme Immunoassay



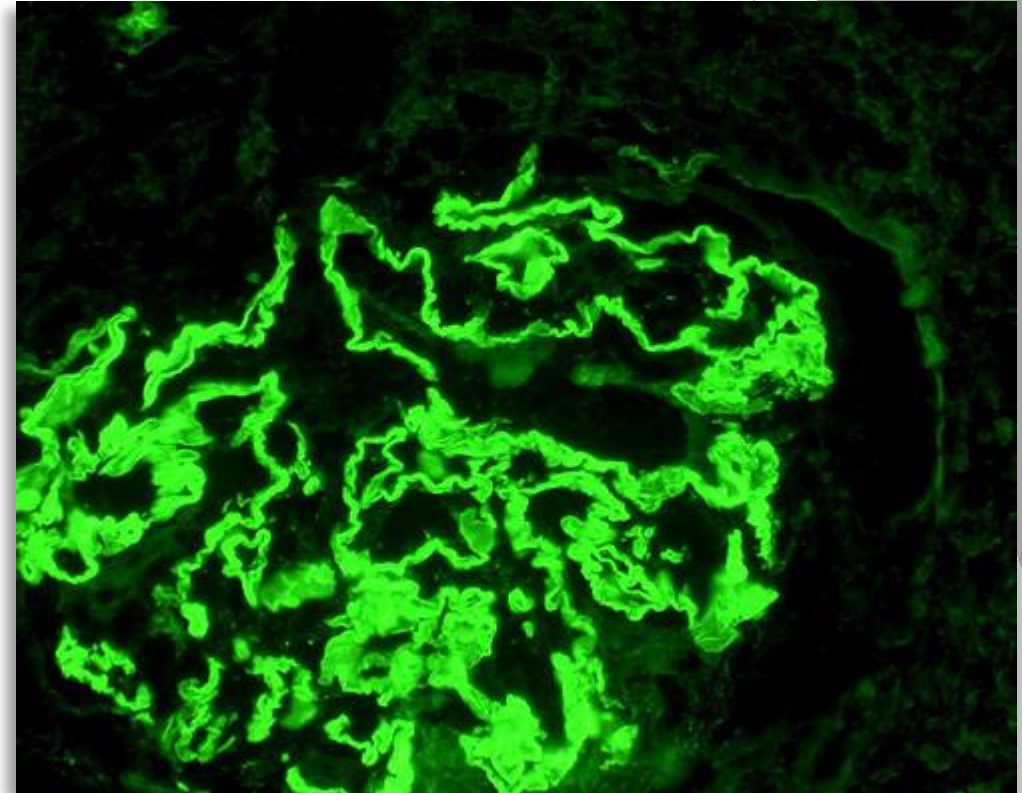
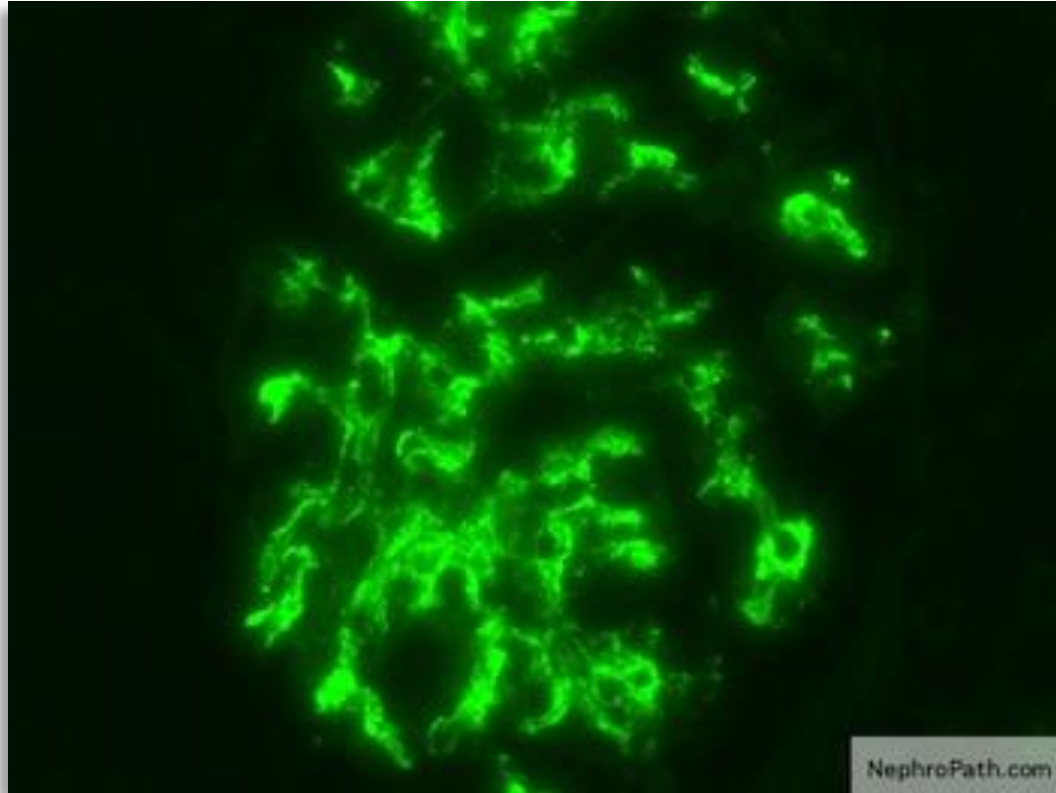
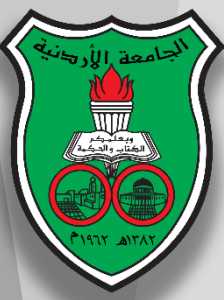
Fluorescent Immunoassay (ANA Testing)



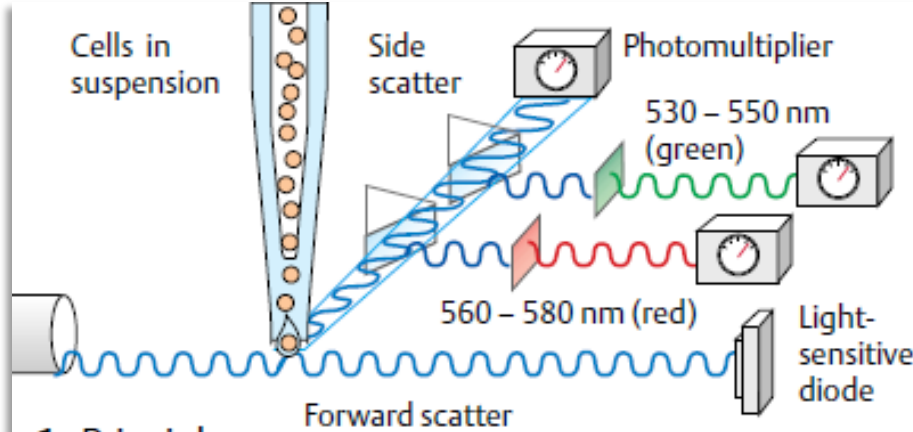
Fluorescent Immunoassay (Skin Ab)



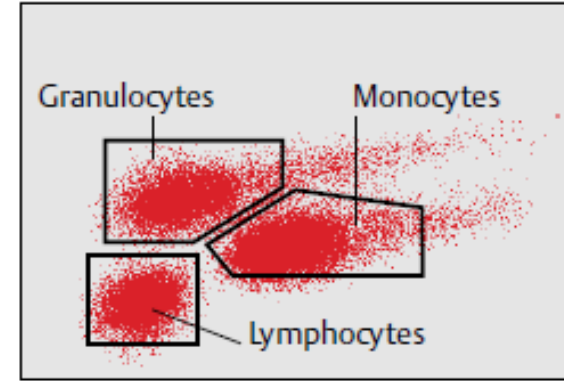
Fluorescent Immunoassay (Glomerular Ab)



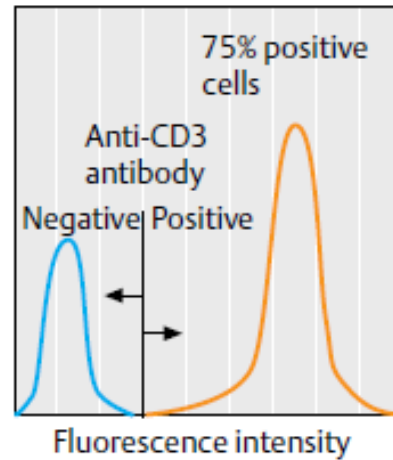
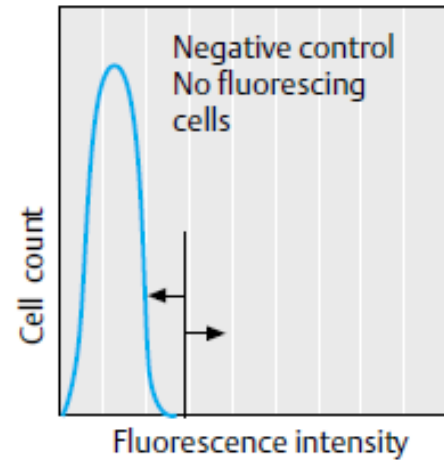
Flow Cytometry (FCM)



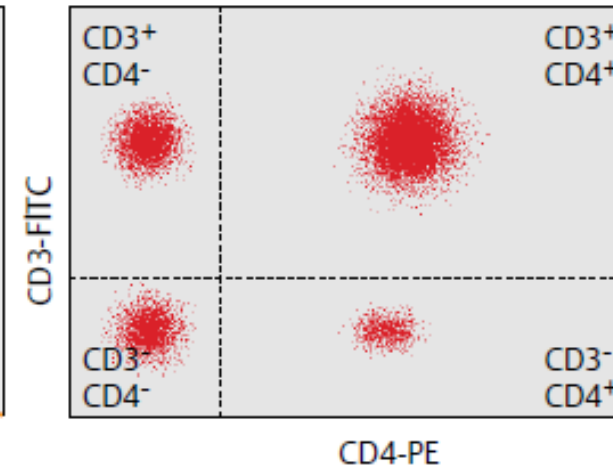
1. Principle
Flow cytometry



2. Separation of cell fractions



1. Histograms
Flow cytometry: Histograms



2. Dot plot, two-color analysis

Thanks for Listening!