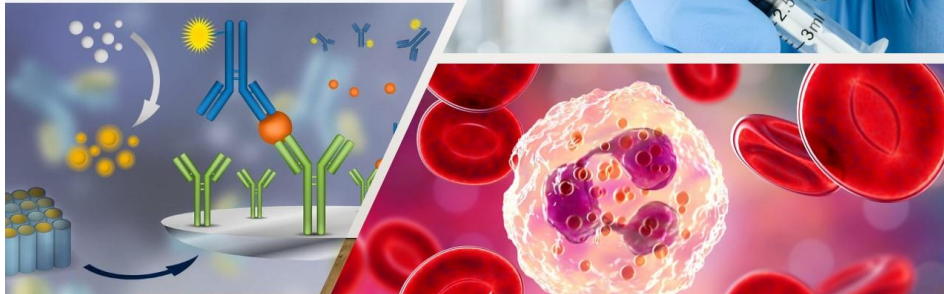


Fundamentals of Immunology

Mode of instruction : Offline
Duration : 30 hours
For further details contact : 7760231210



Fundamentals of Immunology

Syllabus

Module I (5 hrs)

Types of immunity: Innate and adaptive immunity, Cells and organs of the immune system. Antigens and haptens/incomplete antigens, adjuvants. Immunoglobulins: structure and function. Receptors on T and B cells. Antigenic determinants.

Module II (5 hrs)

Antigen-antibody reactions: Agglutination, Precipitation, immunodiffusion. Affinity and avidity. Organization and Expression of Immunoglobulin Genes: Antibody diversity-V (D) J rearrangements, Hypersensitivity reactions: Types I, type II, type III & type IV.

Module III (5 hrs)

Major Histocompatibility Complex. Antigen processing and presentation: endogenous and exogenous pathways. B-cell & T-Cell Activation, maturation and differentiation.

Module IV (5 hrs)

Effector mechanisms in immunity: cytokines, cytokine antagonists, complement system-complement activation and pathways.

Module V (5 hrs)

Rationale of vaccine design: types of vaccines, Monoclonal antibodies. Polyclonal antibodies vs. monoclonal antibodies. Applications of monoclonal antibodies.

Module VI (5 hrs)

Radioimmunoassay, ELISA, Western blot, comet assay, ELISPOT assay, FACS. Cell Functional Assays – lymphoproliferation, mixed lymphocyte reaction.

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3. Delves, P. J., Martin, S. J., Burton, D. R., & Roitt, I. M. (2017). Roitt's Essential Immunology, 13th ed., United Kingdom: John Wiley & Sons Ltd.

4. Goering, R., Dockrell, H., Zuckerman, M., & Chiodini, P. (2018). Mims Medical Microbiology and Immunology, 6th ed., Elsevier Ltd.
5. Paul, W. E. (2014). Fundamental Immunology, 7th ed., Philadelphia: Lippincott Williams & Wilkins.
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