

LEARNING OBJECTIVES: To enable the students to

- Acquaint them with immunological techniques vis-à-vis theory taught in the class room
- Interconnect the theoretical and practical knowledge of immunity with the outer world for the development of a healthier life.
- Demonstrate basic laboratory skills necessary for Biotechnology research
- Promoting application of the lab techniques for taking up research in higher studies

COURSE OUTCOMES: By the end of the course, students will be able to

- CO1:** Identify and demonstrate the understanding different lymphoid organs.
CO2: Acquire skills in determination of different immunological test like blood group, Rh typing.
CO3: Acquire skills in careful handling of glass ware and maintaining laboratory equipments.
CO4: Explain the function of autoclave and importance of sterilization.
CO5: Able to summarize the separation of compounds using paper chromatography
CO6: Apply standardized procedures using safety measures in the laboratory.

I. IMMUNOLOGY

1. Demonstration of lymphoid organs (as per UGC guidelines)
2. Histological study of spleen, thymus and lymph nodes (through prepared slides)
3. Blood group determination
4. Demonstration of
 - a. ELISA
 - b. Immuno electro phoresis

II. ANIMAL BIOTECHNOLOGY

1. DNA isolation ,quantification using DPA Method
2. Techniques: Western Blot, Southern Hybridization, DNA Finger printing
3. Separation, Purification of biological compounds by paper, Thin-layer and Column chromatography
4. Cleaning and sterilization of glass and plastic wares for cell culture.
5. Preparation of culture media.

REFERENCE BOOKS

1. Immunology Lab Biology 477 Lab Manual; Spring 2016 Dr. Julie Jameson
2. Practical Immunology A Laboratory Manual; **LAP LAMBERT Academic Publishing**
3. Manual of laboratory experiments in cell biology by Edward, G
4. Laboratory Techniques by Plummer.