

# Cellular and Molecular Immunology - Web course

## COURSE OUTLINE

Introduction: Properties of Immune system. Innate immune system. Adaptive immune system. Antibodies and Antigens. Major histocompatibility complex. Antigen processing and presentation to T lymphocyte. Antigen receptors and accessory molecules of T lymphocytes. Development of Lymphocytes. Activation of Lymphocytes.

B cell activation and antibody production. Immune memory response. Cytokines. Mechanism of cell mediated immune response. Mechanism of antibody mediated immune response. Immunity to microbes. Transplant immunology. Tumor immunology. Hypersensitivity. Congenital and acquired immunodeficiency. Laboratory techniques commonly used in immunology

## COURSE DETAIL

Module *	Topics and Contents	No of Lectures**
1	Introduction: Properties of Immune system. Innate immune system. Adaptive immune system.	6
2	Antibodies and Antigens. Major histocompatibility complex. Antigen processing and presentation to T lymphocyte. Antigen receptors and accessory molecules of T lymphocytes.	8
3	Development of Lymphocytes. Activation of Lymphocytes. B cell activation and antibody production. Immune memory response.	8



NP-TEL

# NPTEL

<http://nptel.iitm.ac.in>

## Biotechnology

**Coordinators:**

**Dr. Sachin Kumar**

Department of  
Biotechnology IIT Guwahati

4	Cytokines. Mechanism of cell mediated immune response. Mechanism of antibody mediated immune response.	6
5	Immunity to microbes. Transplant immunology. Tumor immunology.	6
6	Hypersensitivity. Congenital and acquired immunodeficiency. Laboratory techniques commonly used in immunology	6
	<b>Total</b>	<b>40</b>

\* Mid course examination after module 3 and finals after the completion of module 6.

\*\*Numbers of lectures are tentatively fixed.

**References:**

1. Cellular and Molecular Immunology: 7th Updated Edition by Abul K. Abbas Andrew H. Lichtman & Shiv Pillai.
2. Veterinary Immunology: 7th Edition by Ian R Tizard.