Subject:	***Fundamentals of Immunology*** ***Lecture room: 13:30-15:00, P1***		
Study Programme:	*GM*	**Study Period:**	*SS*
Evaluation:	*Exam, 5 credits*	**Subject Type:**	*obligatory*
Content:	**28/28**		*Total 56*

Department of Medical and Clinical Microbiology

Week	***Lectures***	***Practical Lessons***
1. 10.2.	**Introduction to Immunology - history of immunology, immune system, immune mechanisms, immune response** RNDr. Marián Sabol, CSc.	Introduction to laboratory diagnostic methods of immunology. Safety in immunological laboratories.
2. 17.2.	**Cells of immune system** RNDr. Marián Sabol, CSc.	Laboratory methods for identification, isolation and cultivation of immune system cells. CD markers.
3. 24.2.	**Lymphoid organs, mucosal immune system** RNDr. Marián Sabol, CSc.	Structure and function of lymphoid organs and mucosal immune system
4. 3.3.	**Humoral nonspecific immune mechanism – complement system** MVDr. Vladimír Hrabovský, PhD.	Complement system assays – haemolytic test, measurement of individual complement components (C3, C4). Methods for detection of lysozyme levels.
5. 10.3.	**Cellular nonspecific immune mechanism – phagocytosis** Doc. RNDr. Katarína Čurová, PhD.	Evaluation of phagocytic index and phagocytic activity of polymorphonuclear leucocytes. Tests for intracellular killing.
6. 17.3.	**Main histocompatibility system, transplantation immunity** RNDr. Marián Sabol, CSc.	Transplantation tests - detection of HLA antigens, DNA tests, MLC test, anti HLA antibodies, cross match test
7. 24.3.	**Antigens. Immunoglobulins – structure, genetics, classes** RNDr. Marián Sabol, CSc.	Estimation of immunoglobulins concentrations by radial immunodiffusion Detection of immune complexes

8. 31.3.	**Immunoglobulins – isotypes, allotypes, monoclonal antibodies** RNDr. Marián Sabol, CSc.	Detection of immunoglobulins concentrations by ELISA, nephelometry, western blot.
9. 7.4.	**Tolerance** RNDr. Marián Sabol, CSc.	Mechanisms of tolerance. Detection of activation of immune cells.
10. 14.4.	**Cytokines, adhesive molecules** RNDr. Marián Sabol, CSc.	Laboratory methods for measurement of cytokines. Th1and Th2 profile in diseases. Detection of adhesive molecules.
11. 21.4.	**Tumor immunity** RNDr. Marián Sabol, CSc.	Laboratory diagnosis of tumour antigens. Flow cytometry. Principles of anticancer immunotherapy.
12. 28.4.	**Autoimmunity, immunodeficiency** RNDr. Marián Sabol, CSc.	Detection of autoantibodies and autoreactive T-cells. Laboratory diagnosis of autoimmune diseases associated with HLA system. Laboratory diagnosis of immunodeficiencies.
13. 5.5.	**Hypersensitivity reactions - I., II., III., IV. Type** **Credit test** Dr.h.c. prof. MUDr. Leonard Siegfried, CSc.	Laboratory diagnosis of hypersensitive reactions.
14. 12.5.	**Immunomodulation – immunostimulation, immunorepression, immunotherapy** RNDr. Marián Sabol, CSc.	**Retake credit test**

Conditions to be met for getting the credit

1. 60 % of total points a student may obtain in the credit test.
2. 60 % of total number of points obtainable in 3 short tests.
3. Active participation in practical exercises (demonstration of knowledge related to topic of practical exercise).
4. Presentation of a seminar work

Dr.h.c. prof. MUDr. Leonard Siegfried, CSc.
The head of Institute