

Program of Study : Dentistry

Course : Immunology

Abbreviation : KIM/ZAA11

Schedule : 15 hours of lectures
15 hours of exercises

Course Distribution : 4th year, 7th term

Number of Credits : 2

Course Form : Lectures and exercises

Lectures:

Coordination,

syllabus layout: prof. MUDr. Mgr. Milan Raška, Ph.D.

Teaching: ongoing

Day, time: Wednesday, 13:30 - 15:05

Room: TU-MPP (right lecture hall)

	Date	Topic	Hours	Teacher
1	21.9.2022	Introduction The immune system as the third homeostatic regulatory system, structure, main components. Characteristics of the immune response. The mechanisms of innate immunity - cellular, humoral phagocytosis, complement, acute phase proteins.	2	prof. MUDr. Mgr. Milan Raška, Ph.D.
2	5.10.2022	Mechanisms of specific immunity Humoral component of specific immunity (Immunoglobulins - structure, genetic basis of antibody diversity). Cellular mechanisms of specific immunity (lymphocytes - classification, functional distribution).	2	Mgr. Kateřina Zachová, Ph.D. Mgr. Michal Křupka, Ph.D.
		Major histocompatibility complex (theory and practice) Gene organization, structure and	2	doc. MUDr. František Mrázek, Ph.D.

3	19.10.2022	function. Role in the recognition and antigen presentation. Other polymorphic immune genes. Practical implications with emphasis on organ and stem cell transplantation.		
4	2.11.2022	Cytokines and other regulatory mechanisms of immunity Structure and function of immune mediators and their mutual relationship, anticytokine therapy. Regulatory T-cells.	2	prof. MUDr. Mgr. Milan Raška, Ph.D.
5	16.11.2022	Theoretical Basis of Clinical Immunology I - immunopathological reactions Mechanisms of immunopathological reactions (hypersensitivity types I-IV), type I reactions (allergy) incl. basic practical questions (anaphylactic shock).	2,5	doc. MUDr. František Mrázek, Ph.D.
6	30.11.2022	Theoretical Basis of Clinical Immunology II - autoimmune diseases Basic theoretical aspects, an overview of organ / systemic autoimmune diseases, new treatments based on immunological principles.	2,5	MUDr. Zuzana Heřmanová, Ph.D
7	14.12.2022	Current news from Immunology, Immunology as a field of laboratory medicine Cooperation with other specializations in clinical diagnostics and biomedical research	2	prof. MUDr. Mgr. Milan Raška, Ph.D.

Practical sessions and demonstrations:

Teachers:	prof. MUDr. Mgr. Milan Raška, Ph.D. prof. MUDr. František Mrázek, Ph.D. MUDr. Jaroslava Braunová, Ph.D. Mgr. Michal Křupka, Ph.D.
Teaching:	ongoing
Day, time:	Tuesday, 11:15 - 12:50 practical 1: TD 2.520 (New building - room 2.520)
Room:	practical 2 - 4: TD 2.518 practical 5 – 7: FN ALE (building F, 2nd floor)

	Date	Topic	Hours
1	20.9.2022	Organization of practical courses, course curriculum. Introduction to immunology laboratory diagnostics - brief indications, principles of specimen collections. Methods in cellular immunology. Demonstration of selected techniques in the laboratory.	2

		<i>prof. Raška</i>	
2	4.10.2022	Laboratory aspects of transplantation. HLA system and immunogenetics. Demonstration of related techniques in the laboratory. <i>prof. Mrázek</i>	2
3	18.10.2022	Determination of humoral immunity parameters. Laboratory tests in autoimmune diseases, autoantibody determination. Laboratory diagnostics of allergic diseases. Demonstration of selected techniques in the laboratory. <i>Mgr. Zachová, Mgr. Křupka</i>	2
4	1.11.2022	Immunological aspects of dental medicine, mucosal immunity and its investigations. HIV-infection. <i>prof. Raška</i>	2
5	15.11.2022	Examination of "allergic" patient (patient history, skin testing, exposure tests, role of laboratory). Examination of "immunological" patient (patient history, clinical examination, laboratory tests). Spectrum of allergic diseases. Pollinosis. Allergic Rhinitis. <i>MUDr. Braunová</i>	2
6	29.11.2022	Respiratory infections from the perspective of dental medicine. Bronchial Asthma. <i>MUDr. Braunová</i>	2
7	13.12.2022	Allergic reaction to drugs and food components. Allergy to insects. Anaphylactic shock. <i>MUDr. Braunová</i> Practicavit	3

The practical training includes excursions into the laboratory, therefore, each student must have the coat, slippers and a identification card (badge) !!!

Requirements: Attendance of all teaching session is required to obtain the "Practicavit" signature.

Completed by: Practicavit, examination

Literature : Rabson A, Roitt IM, Delves PJ (2004): Really Essential Immunology. ISBN 978-1405121156