Program of Study: General Medicine

Course: Medical Immunology

Abbreviation: KIM/VAB12

Schedule: 14 hours of lectures
12 hours of exercises

Course Distribution: 5th term, 3rd year

Number of Credits: 3

Course Form: Seminars and tutorials

Seminars:

Teachers: prof. MUDr. Mgr. Milan Raška, Ph.D.
doc. MUDr. František Mrázek, Ph.D.
doc. ing. Eva Kriegová, Dr

Time: 9:15 – 10:45
Room: LLH - Left Lecture Hall

<table>
<thead>
<tr>
<th>Termín</th>
<th>Téma</th>
<th>Vyučující</th>
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<tbody>
<tr>
<td>1 19.2.2018</td>
<td>Introduction, history of immunology, innate immunity mechanisms</td>
<td>prof. MUDr. Mgr. Milan Raška, Ph.D.</td>
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<tr>
<td>2 5.3.2018</td>
<td>Mechanisms of specific immunity - humoral immunity, antigen, hapten, semihapten, mucosal immunology, epithelial barriers.</td>
<td>Prof. MUDr. Mgr. Milan Raška, Ph.D.</td>
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<tr>
<td>3 19.3.2018</td>
<td>Hypersensitivity reactions as a mechanisms of immune-associated pathologies, principles of peripheral tolerance.</td>
<td>doc. MUDr. František Mrázek, Ph.D.</td>
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<tr>
<td>4 2.4.2018</td>
<td>Mechanisms of specific immunity – cellular, NK cells</td>
<td>prof. MUDr. Mgr. Milan Raška, Ph.D.</td>
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<td>5 16.4.2018</td>
<td>Cytokines and other factors involved in immune regulation.</td>
<td>doc.ing. Eva Kriegová, Dr</td>
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<tr>
<td>6 30.4.2018</td>
<td>Immune defense against infection and cancer.</td>
<td>prof. MUDr. Mgr. Milan Raška, Ph.D.</td>
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<tr>
<td>7 14.5.2018</td>
<td>HLA system, antigen processing and presentation, interactions between specific and innate immunity. Final test</td>
<td>Prof. MUDr. Mgr. Milan Raška, Ph.D.</td>
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Tutorials:

**Teachers:** prof. MUDr. Mgr. Milan Raška, Ph.D.
doc. MUDr. František Mrázek, Ph.D.
Ing. Eva Kriegová, Dr.

**Time:** 8:00 – 10:15
**Room:** FN ALE - Library of the Department of Immunology (building F)

<table>
<thead>
<tr>
<th>Prof. Raška</th>
<th>Dr. Kriegová</th>
<th>Doc Mrázek</th>
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<tr>
<td><strong>Group</strong></td>
<td><strong>Dates</strong></td>
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<tr>
<td>A</td>
<td>13.2., 20.2., 27.2., 6.3.</td>
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<td>B</td>
<td>13.3., 20.3., 27.3., 3.4.</td>
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<td>C</td>
<td>10.4., 17.4., 24.4., 15.5.</td>
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**Topic**

### I. Cellular Immunity
prof. MUDr. Mgr. Milan Raška, Ph.D.

Indication for laboratory examinations, processing of biological specimens. Laboratory diagnostics of immunodeficiencies I, examination of lymphocyte subpopulations, test of lymphocyte blastic transformation, testing of phagocytosis, laboratory diagnostics of allergic diseases – total and specific IgE, demonstration of selected methods in laboratory.

### II. Humoral Immunity
prof. MUDr. Mgr. Milan Raška, Ph.D.

Laboratory diagnostics of immunodeficiencies II, examination of antibodies concentration and complement components, complement function tests. Autoimmunity, autoantibodies testing.

### III. Molecular biology methods in Immunology, next generation sequencing
Doc.ing. Eva Kriegová, Dr.

Examination of gene mutations and polymorphism in clinical practice, principles of sequencing and other molecular biological methods, clinical examples, interpretation in diagnostics.
IV. HLA typing, ensuring of histocompatibility for transplantations, association of HLA with diseases

Doc. MUDr. František Mrážek, Ph.D.

HLA typing – serological and molecular biology approaches, testing of anti-HLA antibodies, immunological aspects of transplantation of solid organs and stem cells, ensuring of histocompatibility match between donor and recipient, HLA-associated diseases.

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

Completed by: Credit

Requirements: 100% attendance on all seminars and tutorials, > 80% of the points in the final test is required to obtain the credit.

Literature: Rabson A, Roitt IM, Delves PJ: Really Essential Immunology

Aktualizováno 9.2.2018