



<b>Study program:</b> Doctoral Academic Studies in Biomedical Sciences
<b>Name of the subject:</b> MOLECULAR DIAGNOSTICS AND THERAPY OF MALIGNANT DISEASES
<b>Teacher(s):</b> Jasna D. Trifunović, Borislava L. Nikolin, Tatjana V. Ivković Kapicl, Jasna M. Mihailović, Karmen M. Stankov, Ivana M. Urošević, Jovanka L. Kolarović, Milica K. Medić Stojanoska, Ljiljana N. Andrijević
<b>Status of the subject:</b> elective
<b>Number of ECTS points:</b> 20
<b>Condition:</b> -
<p><b>Goal of the subject</b></p> <p>Basic teaching objectives are to get acquainted with modern molecular diagnostics for different types of tumors and with the possibilities of choosing therapies for malignant diseases. Acquiring knowledge in diagnostic and therapeutic approach and monitoring of different malignant tumors. Interactive methods of education in the choice of diagnostics and therapy for the most common malignant disease based on case reports from real clinical practice.</p>
<p><b>Outcome of the subject</b></p> <p>Acquiring knowledge about the possibilities of modern molecular diagnostics and its application in the treatment of malignant disease.</p> <p>Adoption of new knowledge in the diagnostics and specifics in the treatment of the most common malignant disease.</p> <p>Gaining knowledge about the possibilities of tumor tissue analysis, gene expression analysis, molecular biomarkers, and adaptation of therapy. Acquiring knowledge for the interpretation of the obtained findings and application in clinical practice.</p> <p>Acquiring knowledge needed to predict the course and outcome of the disease and the choice of therapy.</p>
<p><b>Content of the subject</b></p> <p><i>Theoretical lectures</i></p> <ol style="list-style-type: none"> <li>1. Molecular diagnostics in the therapeutic approach of metastatic melanoma.</li> <li>2. Tumor markers of squamous cell carcinoma of the head and neck.</li> <li>3. The molecular pathology of cancer.</li> <li>4. Expression of PD-L1 in different tumors</li> <li>5. Tumor markers and hormones</li> <li>6. Targeted therapies for breast cancer</li> <li>7. Prognosis of the course and outcome of breast cancer in the era of molecular diagnostics and therapy.</li> <li>8. The diagnosis of lung cancer in molecular testing era.</li> <li>9. Personalized, molecular-directed therapy for lung cancer.</li> <li>10. Molecular biomarkers in diagnostics of myeloid leukemia.</li> <li>11. Predictive pharmacogenetic biomarkers of drug sensitivity and resistance in myeloid leukemia therapy.</li> <li>12. PET/CT metabolic imaging diagnostics-indications and application in clinical practice of malignant disease.</li> <li>13. Molecular diagnosis and therapies in pediatric solid tumors</li> <li>14. Genetic basis and molecular pathophysiology of myeloproliferative neoplasms</li> <li>15. Molecular genetics in acute leukemia</li> </ol> <p><i>Practical lectures</i></p> <ol style="list-style-type: none"> <li>1. Interactive methods of education within workshops based on case reports from real clinical practice</li> <li>2. Consideration of diagnostics and choice of targeted therapy in patients with different malignant tumors</li> <li>3. Diagnostic methods for monitoring the therapeutic response during the treatment of malignant diseases</li> <li>4. Digital microscopy session: clinical case review – the role of multidisciplinary team</li> <li>5. Preparation of two seminar papers in consultation with the mentor (topic of the candidate's choice).</li> </ol>
<p><b>Recommended literature</b></p> <ol style="list-style-type: none"> <li>1. Stankov K. Biochemistry and Genetics of Hereditary Diseases. Medical Faculty, Novi Sad 2016. ISBN:978-86-7197-480-6.</li> <li>2. Vrdoljak E, Belac-Lovasic I, Kusic Z, et al. Clinical Oncology, 3<sup>rd</sup> updated and revised ed. Medicinska naklada, Zagreb, 2018.</li> <li>3. Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE. Abeloff's Clinical Oncology. 6<sup>th</sup> ed. Elsevier, 2019.</li> <li>4. DeVitta VT, Lawrence TS, Rosenberg SA. Cancer, Principles and Practice of Oncology. 11th ed. 2018.</li> <li>5. Gelmann EP, Sawyers CL, Rauscher FJ. Molecular Oncology. Causes of Cancer and Targets for Treatment. Cambridge Univ. Press, 2015.</li> <li>6. Literature recommended by lecturers</li> </ol>

<b>Number of active classes</b>	<b>Theory: 60</b>	<b>Practice: 45</b>
<b>Methods of delivering lectures</b> Lectures,workshops,seminar papers.		
<b>Evaluation of knowledge (maximum number of points 100)</b> activities during lectures: 15 seminars: 15 SRW: 30 oral exam: 40		