UNIVERSITY OF BELGRADE
FACULTY OF MEDICINE
PhD STUDIES

NAME OF THE MODULE: TUMOR BIOLOGY AND OXIDATIVE DISEASES

CONTENT OF THE MODULE

Tumor molecular and cellular biology
The curriculum will encompass the study of informational macromolecule metabolism, the genetic underpinnings of carcinogenesis, growth factors and oncogenes, tumor suppressor genes, and the involvement of viruses in the pathogenesis of specific malignancies. Furthermore, students will be educated on the significance of the antitumor immune response and the capacity of tumor cells to invade and spread to other parts of the body. By participating in this doctoral study program, students will enhance their understanding of chemotherapy and tumor resistance, gain insights into emerging technologies for diagnosing malignant diseases, and explore the advancement of novel drugs and targeted therapeutic strategies. Practical lesions will be implemented through laboratory rotations, written assignments, and individual research endeavors.

The Role of Free Radicals in Biology and Health
The curriculum will encompass a study of free radicals and reactive species, with an examination of antioxidant defense mechanisms and signs of oxidative damage. Furthermore, this curriculum aims to elucidate the significance of investigating free radicals in the pathogenesis and progression of both malignant and non-malignant diseases, encompassing cardiovascular diseases, kidney diseases, liver diseases, neurological disorders, and COVID-19. Given the significance of reactive species in the pathogenesis of autoimmune disorders, particular emphasis will be placed on examining the relationship between oxidative stress and inflammation. Furthermore, students will be afforded the chance to enhance their understanding of the prospective utilization of antioxidants in the endeavor to avoid and treat "oxidative" diseases. Practical lesions will be implemented through laboratory rotations, written assignments, and individual research endeavors.

ENROLLMENT REQUIREMENTS

Exceptions: individuals who have successfully completed six years of integrated academic studies in medical sciences (360 ESPB) OR individuals who have successfully completed academic studies in biological or medical orientation and have attained a minimum of 300 ESPB at previous levels of study.
In general, individuals who have attained a grade point average of 8.00 or higher in all prior academic endeavors; possess English language proficiency sufficient to comprehend and engage with scientific literature; have adequate computer skills; and are inclined towards pursuing recommendations pertaining to scientific and research work.

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Secretary of the module - Prof. Dr. Vesna Ćorić, assistant professor, Institute of Medical and Clinical Biochemistry, Faculty of Medicine, University of Belgrade

LIST OF OBLIGATORY SUBJECTS

Methodology of scientific and research work, Research ethics, Informatics, Statistics for researchers in the field of biomedical sciences (basic course), Molecular and cell biology of tumors, Free radicals in biology and medicine

LIST OF ELECTIVE SUBJECTS

Tumor markers