

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES
AT VILNIUS UNIVERSITY**

Scientific Area/eas, Field/ds of Science	Medical and Health Sciences (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Biomedical Sciences Clinic of Internal Medicine, Oncology and General Practice			
Course unit title (ECTS credits, hours)	Anticancer Immunity, Immunotherapy in Cancer Management 5 credits (135 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	1	4
Method of the assessment (in 10 point system)	<p>Presentation. Evaluation of the presentation: the presentation is presented on an agreed topic, which needs to be discussed with the coordinating lecturer (the student must analyze, review and present the latest scientific data related to the respective topic). Criteria for evaluation of presentation (minimum score - 5): (a) novelty and relevance of the material presented (2 points); (b) general structure and scope of the presentation, clear data, reasoning, conciseness and specificity (2 points); (c) summary of the presentation, justification of conclusions (2 points); (d) raising problematic issues (2 points); (e) organization of visual aids, ability to participate in a discussion, management of questions, oratory skills (2 points).</p>			
PURPOSE OF THE COURSE UNIT				
To provide knowledge based the latest scientific and clinical research data on anti-cancer immune response and its characteristics, the application of immunotherapy in the treatment of oncological diseases, types of immunotherapy, their possible side effects, their diagnosis and side effects management, emphasizing a holistic approach to oncological patients.				
THE MAIN TOPICS OF COURSE UNIT				
<p>Principles of the immune response (structure of the immune system, innate immunity and its components, acquired immunity and its components, basics of the inflammatory response, MHC (HLA) system, antigen presentation, MHC (HLA) polymorphism; T cell development and differentiation, cytokines and their receptors, chemokines and their receptors, T, B lymphocyte receptors (TCR, BCR), signal transduction and principles, cell death, microbial interfaces with immunity and inflammation, gender immunity characteristics, immunoglobulins and their functions, T cell subsets and control of the inflammatory process, regulatory cells, complement system, phagocytic cells, protective mechanisms of the skin and mucus). Mechanisms of autoimmune diseases, immunological tolerance, administration of immunotherapy to oncology patients with autoimmune diseases. Basics of anti-cancer immunity (factors causing cancer - the influence of chronic inflammation and other factors, concepts of anti-cancer immune response - immune editing, anti-cancer immune response cycle and cancer immunogram, structural elements of innate and acquired immunity involved in cancer response).</p>				

Immunotherapy for cancer treatment, its types and efficacy (prognostic and predictive biomarkers - number of mutations, expression of PD-L1 and other receptors, cancer microenvironment; immunosuppression inhibitors, oncolytic viruses, cell therapy), areas of application, side effects caused by treatment, side effects etiopathogenesis, diagnosis and principles of side effects management.

RECOMMENDED LITERATURE SOURCES

1. Clinical Immunology: Principles and Practice by Robert R. Rich MD, Thomas A. Fleisher, et al., 2022.
2. Clinical Immunology (Fundamentals of Biomedical Science) by A. Hall, et al. 2016.
3. Basic Immunology: Functions and Disorders of the Immune System by Abul K. Abbas MBBS, Andrew H. Lichtman MD PhD, et al. | Apr 24, 2019.
4. Janeway's Immunology by Kenneth M. Murphy, et al. 2016.
5. Kuby Immunology, 8th Ed., by J. Punt, et al. 2018.
6. Cellular and Molecular Immunology, 10th Ed., by A.K. Abbas, et al. 2022.
7. Cancer Immunotherapy Principles and Practice, Second Edition – Reflects Major Advances in Field of Immuno-Oncology and Cancer Immunology, 2nd Ed., by Lisa H. Butterfield PhD, et al. 2021.

CONSULTING LECTURERS

1. Coordinating lecturer: Vincas Urbonas (Assoc. Prof. Dr.).
2. Ernestas Janulionis (Lect. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė