SUBJECT TEACHING GUIDE

M6 - Normal and Pathological Immune Response

University Master's Degree in Molecular Biology and Biomedicine

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	University Master's Degree in Molecular Biology and Biomedicine			Type and Year	Optional. Year 1
Faculty	Faculty of Medicine				
Discipline	Optional Subjects Module				
Course unit title and code	M6 - Normal and Pathological Immune Response				
Number of ECTS credits allocated	5	Term	Semester based (1)		
Web	http://departamentos.unican.es/biomol/merino.html				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. BIOLOGIA MOLECULAR
Name of lecturer	RAMON MERINO PEREZ
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Other lecturers	MANUEL IGNACIO GONZALEZ-CARRERO LOPEZ JESUS MERINO PEREZ JOSE PEDRO VAQUE DIEZ MARCOS LOPEZ HOYOS

3.1 LEARNING OUTCOMES
- To adquire the capacity of reading and understanding scientific reports on Immunology

4. OBJECTIVES

To discuss the latest outstanding advances in basic and clinical immunology. During the first three classes of this course, we will update basic concepts about the function of the innate and adaptive immune system in physiological conditions. With an experimental approach, the remaining 70% of the classes will be focused in the study of different pathological conditions in which the immune system takes an active and prominent role. After a brief theoretical introduction, in each session and for every particular issue, we will analyze a recent and relevant scientific article, focusing the discussion mainly in the experimental approach followed by the authors to demonstrate their hypothesis, in the relevance of their findings for the understanding of the field and in the possible therapeutical benefits of the discovery. The final goal of our course is to teach the students to read and criticize a paper on immunology understanding the basic mechanisms involved in the development of immunological diseases.

6. COURSE ORGANIZATION

	CONTENTS
1	Lesson 1: The adaptive immune system. The generation of functional T and B cell repertoires in the thymus and bone marrow, respectively. The activation of lymphocytes in secondary lymphoid organs. The maturation of antibody-mediated immune responses and the functional differentiation of CD4 lymphocytes. Lesson 2: The innate immune system: The cells and molecules involved and the nature and importance of the connection between the innate and adaptive immune system. The immunological synapsis in the activation of the immune system. Lesson 3: the immune system during an infection: The immune response against intracellular pathogens, parasites, extracellular bacteria and fungi. Tissue control of the immune response. Lesson 4: Cellular and molecular basis for the control of the immune response: The immunological tolerance. Lesson 5: Cellular and molecular mechanisms in inflammatory and autoimmune diseases. The importance of experimental models of inflammatory and autoimmune diseases. Lesson 6: The immunology of allogenic organ Transplantation. Lesson 7: Vaccines: Cellular and molecular basis for vaccine development. The adjuvants. Mucosal vaccination. Lesson 8: Mucosal immunity and the role of microbiota in the control of immune system functionality. Lesson 9: Tumor immunology. Cellular and molecular basis of anti-tumor immune responses. Tumor immunotherapy. Day 10: Oral presentations.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
The final score will be established after taking into consideration the assistance to the course and the participation of the students in the discussion of the papers.	Others	No	Yes	60,00
Oral Presentation	Others	Yes	Yes	40,00
TOTAL				100,00

Observations

Observations for part-time students

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- RA Goldsby "Inmunología", Mc Graw Hill Eds, 5ª Edición, 2005.
- CH. Janeway "Immunobiology. The immune system in health and disease" Garland Eds, 5th Edition 2005.
- A.K. Abbas, A.H. Lichtman, "Inmunología Celular y Molecular", Elsevier Eds, 5ª Edición, 2004.