



Visiting Professor Program Academic Year 2024/2025

TEACHING COMMITMENT: 12 hours

COURSE TITLE

Molecular Immunology of Innate Lymphoid Cells

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

General Pathology - Immunology

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

Innate Lymphoid Cells (ILC) reside in tissues and respond to cytokines and local stimuli but have no antigen receptors.

ILCs produce cytokines and factors that influence the tissue micro-environment, including other immune cells. As such, ILCs are key components of immune responses to pathogens and regulate tissue physiology, including mucosal integrity, interactions with the microbiome, metabolism of adipose tissue, contraction of smooth muscles, and expulsion of parasites. According to the transcription factors they depend on and the cytokines they respond to and produce, ILCs belong to either Group 1, 2, or 3. These groups of ILCs functionally resemble Th1, Th2, and Th17 cells. Broadly speaking, Group 1 ILCs are involved in responses to intracellular pathogens, Group 2 ILCs are involved in responses to parasites, and Group 3 ILCs are involved in responses to extracellular pathogens. NK cells belong to Group 1 ILCs and recognize the self, its variants – missing, stressed, and transformed self – and “the other” (allorecognition).

The course will mainly focus on NK cells: their localization in the body, their receptors, genes, human genetic diversity, cellular education, their function, and how these relate to physiology and pathology.

LEARNING OBJECTIVES

Students will acquire an advanced level of knowledge on how ILCs perform their functions, the most important molecular pathways used by ILC, and the importance of ILC response in medicine, with a particular focus on NK cells.

OTHER ACTIVITIES BESIDES THE COURSE

The Visiting Professor will also give seminars to PhD students (Molecular Medicine course) and research fellows about NK cell biology and involvement in the antitumor response.

VISITING PROFESSOR PROFILE

The Visiting Professor candidate should meet the following requirements:

- Strong background in immunology and immune-based technologies, particularly in the field of ILC and NK cells as demonstrated by high-impact scientific publications, participation at international meetings, and coordination of research projects.
- At least ten years of work experience in an English-speaking Academic Institution
- Teaching experience is desirable but not mandatory

CONTACT REFERENT

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