Visiting Professor Program
Academic Year 2023/2024

TEACHING COMMITMENT: 20 hours

COURSE TITLE
RNA Processing Pathologies: from Cancer to Neurodegeneration

TEACHING PERIOD
2nd term

SCIENTIFIC AREA
Molecular biology

LANGUAGE USED TO TEACH
English

COURSE SUMMARY
In metazoans, alternative splicing is critical for regulating post-transcriptional gene expression and is a major contributor to organismal complexity. Mutations in cis-acting elements on the pre-mRNA that mediate RNA-protein interactions and in trans-acting factors that regulate splicing contribute to disease pathology. Through lectures and presentations this course will provide students with mechanistic insights on the molecular biology of human disorders that affect post-transcriptional RNA processing, with particular emphasis on cancer and disorders of the nervous system.

LEARNING OBJECTIVES
1. To provide students with fundamental knowledge on alternative splicing as it relates to the regulation of gene expression and to organismal complexity.
2. To understand the basic principles governing the assembly and function of RNA-protein complexes and associated pathologies at the molecular level.
3. To introduce tools and methods in RNA biology research and in the development of therapeutic strategies.

**TUTORSHIP ACTIVITIES**
N/A

**LAB ACTIVITIES**
N/A

**OTHER ACTIVITIES BESIDES THE COURSE**
Seminars addressed to PhD students and research fellows.

### ADDITIONAL COURSE

**COURSE TITLE**
Tools to Study Splicing Dysregulation in Cancer and Neurodegenerative diseases

**TEACHING PERIOD**
2nd term

**SCIENTIFIC AREA**
Molecular biology

**LANGUAGE USED TO TEACH**
English

**COURSE SUMMARY**
In metazoans, alternative splicing plays a crucial role in regulating post-transcriptional gene expression, contributing to organismal complexity. Dysregulation of splicing, caused by mutations in cis-acting elements or trans-acting factors, is a key contributor to the pathology of various human diseases.

This course provides students with a comprehensive understanding of the molecular biology of diseases that affect post-transcriptional RNA processing. Through lectures, presentations, and tutorials, students will gain mechanistic insights into the practical use of tools and methods for studying splicing dysregulation in cancer and neurodegenerative diseases.

**LEARNING OBJECTIVES**
Equip students with knowledge about the molecular mechanisms of splicing dysregulation.
Teach students practical tools and methods for investigating splicing dysregulation.

**TUTORSHIP ACTIVITIES**
N/D
LAB ACTIVITIES
N/D

OTHER ACTIVITIES BESIDES THE COURSE
Seminars addressed to Ph.D. students and research fellows

VISITING PROFESSOR PROFILE

CONTACT REFERENT
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