



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

Expertise in the protein-RNA networks that control physiological splicing and its derangement in neurological and proliferative diseases. Knowledge of splicing code tuning for therapeutic purposes.

CONTACT REFERENT

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