



Direzione Ricerca,  
Innovazione e  
Internazionalizzazione

**UNIVERSITÀ  
DI TORINO**

**ID**

**VP\_016\_BIOTEC**

## **Visiting Professor Program Academic Year 2025/2026**

**TEACHING COMMITMENT:** 20 hours

### **COURSE TITLE**

**RNA Processing Pathologies: from Cancer to Neurodegeneration**

### **TEACHING PERIOD**

II semester

### **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 into 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.

#### **OTHER ACTIVITIES BESIDE THE COURSE**

Seminars addressed to Ph.D. students and research fellows

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#### **VISITING PROFESSOR PROFILE**

The Visiting Professor candidate for this course should meet the following requirements:

- 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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