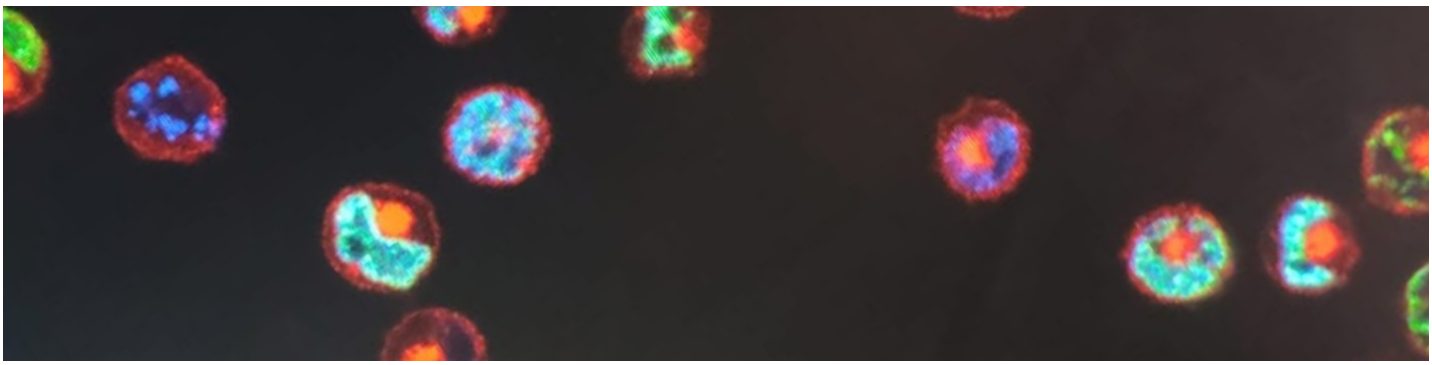

Cours

DNA Replication, Recombination and Repair (3 R) and Genome Stability

2025-2026

Codirectors of the course
Jean-Charles Cadoret et Marc Nadal

The course is divided into two parts :

The first part consists of a series of conferences.
These will be held from 27 to 31 October 2025
on the Paris Rive Gauche campus of Université Paris Cité.

The second part consists of a practical training in laboratories of the CEA.
This will take place from 5 to 9 January 2026
on the CEA's Fontenay-aux-Roses campus.

PART I
Lectures

Monday 27th October 2025

09h00-10h00 Welcome and informations about the course

Jean-Charles Cadoret & Marc Nadal

10h00-13h00 *Pushing the Limits of Genome Stability: The Case of*

Programmed DNA Elimination in Eukaryotes

Sandra Duharcourt, IJM, Paris

14h30-17h30 *Human DNA and RNA topoisomerases* (possibly by Zoom)

Yves Pommier, NIH/NCI, Bethesda, USA

Thuseday 28th October 2025

10h00-13h00 Recombination laid bare: single molecule genomic analyses reveal hidden properties of meiotic recombination.

Valérie Borde, Institut Curie, Paris

14h30-17h30 *DNA topology and topoisomerases in genome stability in bacteria.* (by Zoom)

Marc Drolet, Université de Montréal, Canada

Wednesday 29th October 2025

09h00-12h00 *Structure and Evolution of the DNA Replication Apparatus*

Ludovic Sauguet, Institut Pasteur, Paris

14h00-17h00 *Transposable Elements: Parasites that Shape Genome Evolution*

Pascale Lesage, Institut de Recherche Saint Louis, Paris

Thursday 30th October 2025

09h00-12h00 Programmed DNA double strand breaks; highly toxic lesions that are mandatory but strictly controlled

Jean-Pierre de Villartay, Imagene, Paris

14h00-17h00 DNA repair in space and time : the role of 3D genome folding

Karine Dubrana, CEA, Fontenay-aux roses

Friday 31th October 2025

09h00-12h00 *How single molecule approaches contribute to the study of DNA repair.*

Terence Strick, IBENS, Paris

14h00-17h00 *Alternative DNA double-strand break repair in immune and cancer cells*.

Ludovic Deriano, Institut Pasteur, Paris

17h00-17h30 Debriefing

Jean-Charles Cadoret & Marc Nadal

PART II
Experimental works

The practical training will be done in the IRCM-SGCSR located 31,avenue de la Division Leclercq, 92260, Fontenay-aux-Roses

It will be held from :

Monday 5th January 2026 to Friday 9th January 2026

Friday afternoon, the students will present their works.

EVALUATION

At the end of the lectures, each student must submit a written synthesis based on at least two or three different lectures (worth 40% of the final mark).

The introduction must clearly indicate the scientific field, the theme to be developed in the rest of the synthesis as well as providing a short survey of the state of research on this theme.

The following points will be taken into account in the assessment:
- Clarity of the scientific question
- Originality
- The relevance and accuracy of information
- The relevance of the presentation plan
- The quality and precision of the language

The oral participation of each student will also be taken into account (10%).

Experimental work carried out at the CEA will result in an oral presentation in english (50%).
The following points will be appreciated:

- Clarity of aim and question addressed
- Explaining the suitability of the methods used in relation to the expected results.
- The relevance and accuracy of the informations
- The relevance of the presentation plan
- The quality and precision of the language used
- The quality of the oral presentation and the slides
- -The quality of the oral presentation and slides;
- The relevance of the answers to the jury's questions.