UE Epigenetics and cell differentiation

ECTS
6 credits

Component
UFR Chimie-Biologie

- **Teaching language(s):** English
- **Open to exchange students:** Yes
- **Code d'export Apogée:** YAX9BI15

Presentation

Description

Today, the term Epigenetics is used to describe the study of heritable changes in genome function that occur without a change in DNA sequence. This includes the way gene expression is passed from one cell to its progeny, how gene expression changes during the differentiation of one cell type into another, and how environmental factors can change the way genes are expressed.

Epigenetic regulation involves changes of chromatin structure. Interestingly, the mechanisms involved in epigenetic regulation, such as histone modifications, also participate in the transient changes of gene expression.

This course is therefore opened to all students with an interest in the control of gene expression. There are far-reaching implications of epigenetic research for plant and human biology and disease.

The different mechanisms involved in epigenetic regulation, and the different contexts involving epigenetic regulation will be presented.

- Actors involved in epigenetic regulation (role of histone modification, chromatin remodeling complex, histone variants, DNA methylation, small and long noncoding RNA),

- Contexts involving an epigenetic regulation (response to cell environment, cell differentiation, development)

- Implication in diseases

Course parts

UE Epigenetics and cell differentiation - TD	Tutorials (TD)	20h
UE Epigenetics and cell differentiation - CM	Lectures (CM)	20h

Period : Semester 9

Skills

Targeted skills:

Understanding of the different contexts involving an epigenetic control.

Understanding of the scientific and therapeutic issues of research in Epigenetics.

Ability to present within a time limit, a scientific work (+ the context of the work and the general issues).

Acquisition of a solid intellectual formation through scientific questioning.

Useful info

Contacts

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Place

Grenoble

Campus

Grenoble - University campus