

Plant genomics



En bref

- › Langue(s) d'enseignement: Anglais
- › Méthodes d'enseignement: A distance
- › Ouvert aux étudiants en échange: Oui

Présentation

Description

The “Plant Genomics” course aims to introduce you to the complex mechanisms of gene expression in plants, with an emphasis on regulation at different levels and plant-specific features. This course will provide you with in-depth knowledge of the major stages of genetic regulation in relation to cellular functioning and plant responses to the environment.

The introductory course (sequence 1) provides an overview of gene expression in eukaryotic cells, from DNA to protein synthesis. In particular, you will learn about the four main levels of regulation: epigenetic, transcriptional, mRNA maturation, and post-transcriptional.

The following sequences explore these levels in greater depth:

Sequence 2: epigenetic modifications (DNA methylation, histone modifications) and their role in plant cell memory;

Sequence 3: transcriptional regulation, with the study of promoters, transcription factors, and functional domains specific to plant genomes;

Sequence 4: messenger RNA maturation, including capping, poly-A tailing, and splicing, with a focus on alternative splicing as a mode of qualitative regulation;

Sequence 5: editing and stability of mRNAs in the cytoplasm, as well as the crucial role of small RNAs (miRNAs and siRNAs) in post-transcriptional silencing.

Each sequence combines a narrated video, written material, illustrations, concrete plant examples (Arabidopsis, rice, corn, etc.), and a comprehension test to validate your learning.

The course is designed for students in high school, college, or university who are studying biology or related subjects. It is also suitable for anyone interested in learning about plant biology.

Heures d'enseignement

CM	Cours magistral	8h
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