



UE2 Option B - Fungal Molecular Physiology



Niveau d'étude
BAC +4



ECTS
15 crédits



Composante
UFR Sciences
Vie Terre
Environnement

Présentation

Description

Les enseignements de cette UE sont délivrés à l'Université de Mayence en Allemagne

In this module, students will acquire the basic knowledge required to study the physiological function of proteins in filamentous fungi. These organisms are manipulated with molecular biological methods, e.g. to generate mutants in which genes have been inactivated. With these "loss-of-function" mutants it should then be possible to conduct further experiments. For example, components of signal recognition and signal transmission can be specifically switched off to investigate whether the organisms are still able to adapt to changing environmental conditions. Such studies are not only of interest for understanding the adaptability and ecology of eukaryotic microorganisms, but also for the investigation of the molecular basis of host-pathogen interactions, host recognition, differentiation, propagation and vitality of fungi. The aim of the module is to give students a profound insight into methods and basics of modern molecular biology and physiology laboratories.

Besides the lecture, the module includes a practical part in which "loss-of-function" mutants are generated in filamentous fungi for use in physiological studies. Current **molecular biological methods are taught and applied. In addition to the exercises, the students will give lectures on current topics of molecular physiology in fungi.**

Programme :

Lectures (21h)

Physiological function of proteins in filamentous fungi; introduction to methods.

Tutorials (10,5h)

Current topics of molecular physiology in fungi.

Practice (84h)

Training in molecular manipulation of higher/filamentous fungi; molecular biological methods of the modern microbiological lab, physiological studies.



Objectifs

Applying theoretical concepts of fungal molecular physiology.

Conceiving and preparing state-of-the art experiments on fungal molecular physiology.

Handling and following a protocol with respect to health, safety and sterility rules.

Obtaining, analyzing and validating experimental results to draw conclusions.

Analyzing, interpreting and reporting scientific data on fungal molecular physiology in the context of current research, presenting them in English to a scientific audience.

Heures d'enseignement

CM	Cours Magistral	21h
TD	Travaux Dirigés	10,5h
TP	Travaux Pratiques	84h

Pré-requis obligatoires

Basic knowledge and skills in microbiology and molecular biology (UE1).

Syllabus