UCL Université catholique de Louvain

LBRMC2101

2010-2011

Genetic engineering

3.0 credits	30.0 h + 7.5 h	1q

Teacher(s) :	Boutry Marc ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	The theoretical part consists in a detailed analysis of the major steps of genetic engineering: construction and screening of libraries, characterization and modification of genes, gene expression in heterologous hosts. Typical problems of genetic engineering will be solved. Examples of genetic engineering achievements will be illustrated from the recent literature.
Aims :	To acquire broad knowledge of the methodology of genetic engineering, including the various strategies to clone genes, modify and move them into various organisms. The course should provide the student with the ability to outline an experimental approach to solve common genetic engineering problems. *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	1. Theoretical part : Methods for screening genomic and cDNA libraries Global analysis of the genome: genomics, transcriptomics, proteomics Directed mutagenesis Gene expression in heterologous hosts: bacteria, yeast, animal cell lines, plant cell lines, transgenic animals and plants Protein engineering Gene therapy 2. Exercices: the students will be trained in solving typical problems of genetic engineering by combining the different approaches seen in the theoretical part. 3. Seminars given by the students will illustrate recent examples of genetic engineering achievement in the microbial, animal and plant field.
Other infos :	Prerequisite: BIRC 2103 Molecular biology and concepts of genetic engineering or an equivalent course.
Cycle and year of study :	> Master [60] in Biology > Master [120] in Biochemistry and Molecular and Cell Biology > Master [120] in Chemical and Materials Engineering > Master [120] in Chemistry and Bio-industries
Faculty or entity in charge:	AGRO