Gene transfer and recombinant protein expression in animal cells
(2009-10)

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Cursus
Chimie et génie chimique

Sem. Type

Language Credits Session Exam
English 2 Oral presentation

Workload Hours Lecture
60h 28 28

Number of positions 18

Frequency
Every 2 years

Remarque
Next time: Fall 2018

Summary
Recombinant proteins synthesized by animal cells are becoming increasingly important in the prevention and treatment of disease. The objective of the course is to provide an overview of this process, from vector design strategies to industrial manufacturing of biopharmaceuticals.

Content
Animal cell biology: (i) Cell growth and division, (ii) Transcription and translation (iii) Protein processing. Subjects discussed in class could include:

- History of animal cell technology
  - Animal cell lines for recombinant protein expression
  - Plasmid and viral expression vectors
  - DNA purification
  - DNA transfection into animal cells
  - Transient gene expression in animal cells
  - Establishment of stable cell lines
  - Process development with stable cell lines
  - Protein detection and purification
  - Government regulations on biologics

Other topics may be included as needed.

Note
Next session Spring 2018

Keywords
recombinant protein, mammalian cells, cell culture, gene expression, transfection.

Learning Prerequisites

Recommended courses
Basic cell biology