



BIOL2284 Animal molecular and cellular biology

[30h+15h exercises] 3.5 credits

This course is taught in the 1st semester

Teacher(s): Bernard Knoops, René Rezsöhazi
Language: French
Level: Second cycle

Aims

To study in depth some molecular aspects of animal cell functions in regard to the physiology of the organism. This course will focus on molecular physiology of human diseases and the identification of genes involved in genetic diseases. Different cellular or animal models will be presented such as yeast or transgenic mice.

Main themes

The content of this course can change depending on novel scientific achievements or depending on the interest of students for specific topics. These chapters are indicative:

- 1/ Chromatin organization and transcriptional activity
- 2/ Genome reorganization (lymphocyte differentiation, translocations, #)
- 3/ Control of gene expression and cell response to external stimuli (steroids, #)
- 4/ Structure and function of ion channels and cell physiology (cardiac rhythm, #)
- 5/ Biogenesis of peroxisomes and diseases linked to mutations of genes coding for peroxisomal proteins (Zellweger syndrome)
- 6/ Biogenesis of mitochondria, targeting of mitochondrial proteins, and diseases associated with mitochondria defects
- 7/ Lysosomal diseases

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: basic courses in animal cellular biology (BIOL 2113), animal physiology (BIOL 2121) and molecular genetics (BIOL 2137).

Assisted work: Students choose a theme in accordance with the teacher, they go thoroughly into it by searching and analysing recent scientific articles. Students present their own work in the form of about ten pages essay that they set out to other students. The teacher evaluates written work, oral presentation and defense.

Support: scientific articles, diagram and course notes, on-line bibliographic data bank (via local web site developed with FDP).

Other credits in programs

BIOL22/A	Deuxième licence en sciences biologiques (Biologie moléculaire, cellulaire et humaine)	(3.5 credits)
-----------------	--	---------------