

## Faculty of Medicine



### BCMM2140 Biologie cellulaire et moléculaire des régulations hormonales

[30h] 3 credits

This course is taught in the 1st semester

**Teacher(s):** Stefan Constantinescu, Frédéric Lemaigre  
**Language:** French  
**Level:** Second cycle

#### Aims

The students should acquire a global vision and the rationale behind the molecular mechanisms by which intercellular signals (hormones, growth factors, messengers of intercellular communication) control cell activity. At the end of the course the students should be able to (i) understand the literature of the field, (ii) understand how perturbations of these very signalling mechanisms lead to several pathologic conditions, (iii) use their acquired knowledge to approach novel questions in the field.

#### Main themes

The course describes the molecular cell biology of hormone action and focuses on the main molecular mechanisms of action of the major classes of intercellular signals (signal transduction pathways). The course approaches the theoretical and technical principles by which these signalling mechanisms are studied. How perturbations in these signalling pathways lead to pathologic conditions represents an important focus of the course.

#### Content and teaching methods

This course follows those of cell biology, molecular biology and biochemistry that are taught during the baccalaureat in medicine or biomedical sciences. Half of the course is dedicated to lectures on the major signal transduction pathways. The other half is dedicated to analysis and discussion of primary scientific articles that pioneered knowledge on signalling, in order to confront theory and practice and to compare physiologic and pathologic situations. The analysis of scientific articles is jointly accomplished by students and teachers.

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

Requirements : Basic notions of general biochemistry, molecular biology and cell biology.

Evaluation: Oral exam with written preparation. The student will be evaluated with respect to acquired knowledge and the ability to use this knowledge in order to solve problems.

Support: Notes of the course and reprints of scientific papers.

#### Other credits in programs

<b>BIOL22/A</b>	Deuxième licence en sciences biologiques (Biologie moléculaire, cellulaire et humaine)	(3 credits)	
<b>SBEX22</b>	Deuxième licence en sciences biomédicales (sciences biomédicales expérimentales)		Mandatory